Planning Export of Agricultural Produce

A
Training Workshop
For
Yap Farmers

March 24—27, 2008




Organized by:

Agricultural Experiment Station
College of Micronesia-FSM
Yap Campus

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Venue:

Seminar Room
Division of Agriculture and Forestry

Facilitators:

Dr. Clarence L. Cheshire
Pacific Business Center Program, University of Hawaii

&

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Agricultural Experiment Station
College of Micronesia-FSM

Sponsored by:

State of Yap, Federated States of Micronesia
College of Micronesia land Grant Programs

Workshop Manual

Contents

Preparing an Agribusiness Plan

Planning for Profit

"Business Planning is critical component to any operation. Many times it takes too long to figure out if a decision is poor one; you can waste years doing the wrong thing when you could have been doing the right thing."

Greg Reynolds

Regardless of whether you are a beginning entrepreneur, an experienced farmer who is considering on-farm processing, or a retiring business owner who is looking to pass on the farm, business planning is important. It is an ongoing process that begins with the identification of values and ends with a strategic plan to address critical management functions.

WHAT PLANNING CAN AND CAN'T DO FOR YOU

- Planning will, or should, prevent unpleasant surprises.
- It will help you adjust and deal with problems if and when they arise.
- Planning enables you to revise your goals and objectives if revision is needed
- Planning will result in the integration of all of your operation's activities from growing to sales.
- It will also make the most of all the efforts which you and your organization put in to the success of the venture.
- Planning enhances creativity by creating order in activities, through which plans can be out into practice and goals can be reached.
- Planning gives you much better chance for success than not planning!
- Planning will NOT give you a prefect crystal ball, neither will it enable you to predict the future with complete accuracy.
- Planning will not necessarily prevent mistakes from being made.

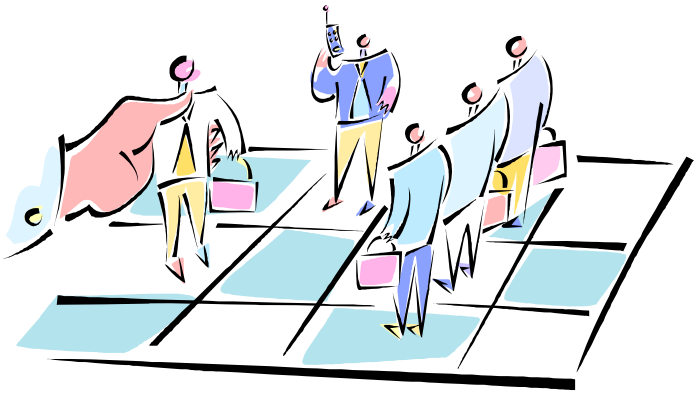
Source: Guide to Preparing Marketing Plans

You may have a strong sense of values that drew you to the land or inspired you to begin a business. You may also have a clear set of personal and business goals that you would like to pursue “when the time is right.” But, it is likely that you run into problems when trying to incorporate values and goals into day-to-day business decisions. How can you build a balanced and sustainable business - one that reflects your values and is successful - in the long run?

Planning is the map of where you are now, where you are going, and when and how you will get there. It sets out your strengths, assets, knowledge and skills and how these will be used to best advantage. It also acknowledges any weaknesses, liabilities, lack of knowledge and skills and states how these will be dealt with or overcome. Since most of you are a first time rural land owner or beginning farmer considering the establishment of community supported agriculture enterprise, business planning can help you to identify management tasks and financing options that are compatible with your long-term personal, environmental, economic, and community values.

Business planning is an ongoing, problem-solving process that can identify business challenges and opportunities that apply to your marketing, operations, human resources and finances, and strategic objectives to move your business beyond its current situation toward future business vision.

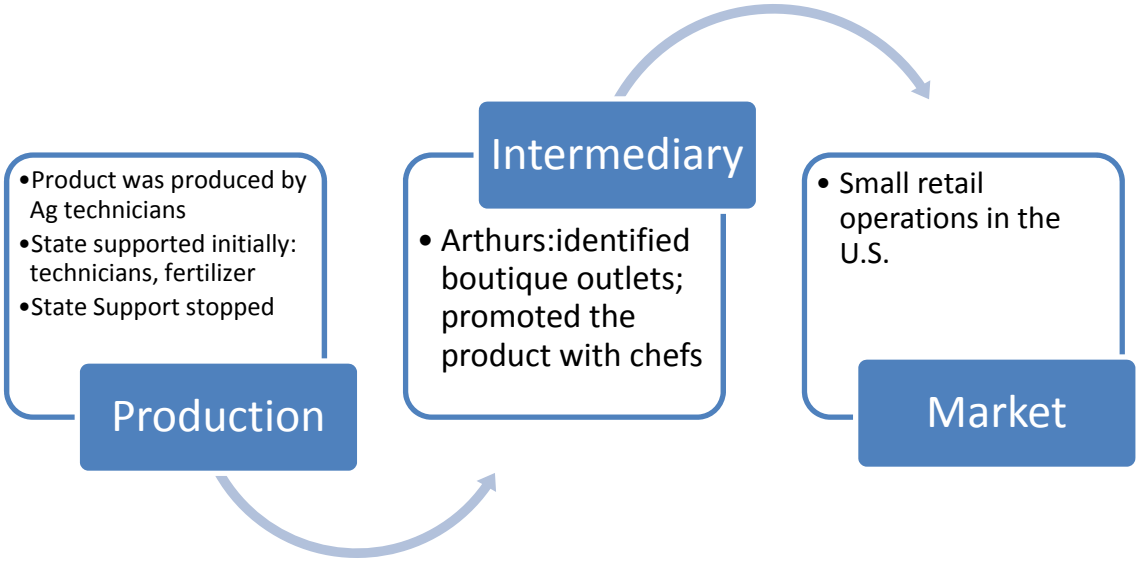
The contents for this workshop are structured to guide you to the process of business planning without any difficulty. Successful and unsuccessful case studies from Pacific region are discussed in detail which will help to plan and take necessary steps in the larger process of developing a business structure for your organization.



CASE STUDIES

What hasn't worked? Why?

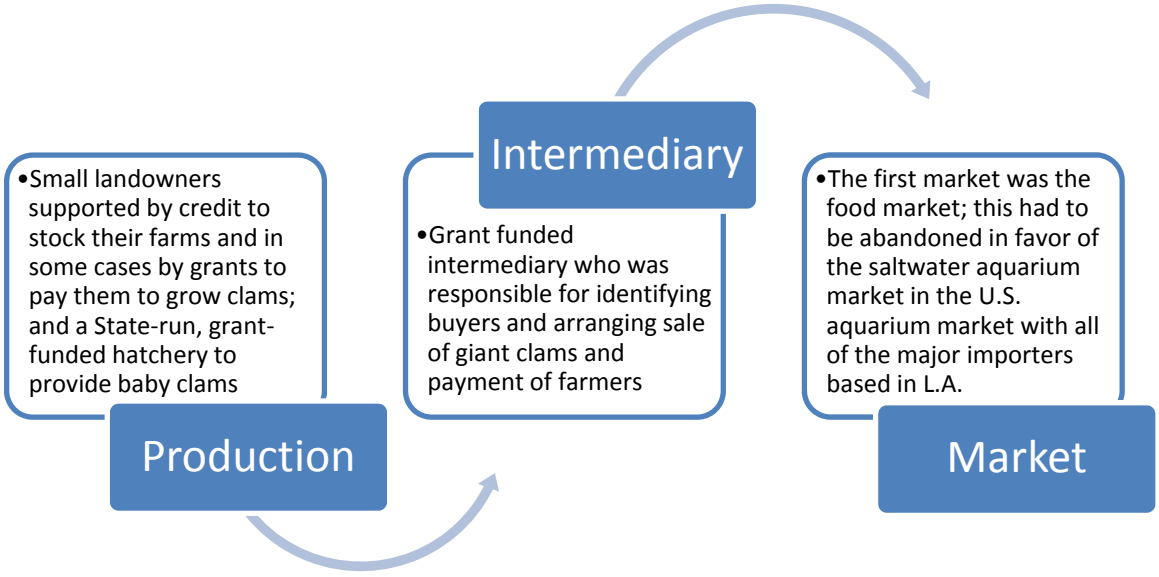
1990s: Pohnpei Pepper (1)



Pohnpei pepper farmers borrowed money to set up their farms. The loan payment stayed constant while the yield from their farms declined. Farm production continued to decline because the farmers failed to assume the expense and responsibility for purchasing and applying fertilizer when this assistance stopped. The farmers pressed for a higher price for their pepper arguing that the retail price was several times the farm gate price (the price the farmers were getting). The Arthurs refused citing their own distribution costs. The farmers appealed to the Pohnpei State government who offered to buy the pepper and distribute (sell) it as a state supported enterprise. The Arthurs went out of business due to lack of affordable product; Pohnpei State went out of business due to lack of marketing, buyers, etc. (commitment?; incentive?: or this is not governments are set up to do?)

Comments/Discussion:

1980-90s: State-run Giant Clam Aquaculture (Palau, FSM, RMI)



Note: In the early 1980s, the market identified for giant clams was the food market. This approach did not work when the clams could not command sufficient prices to cover the cost of production and shipping. A second effort to produce and market the clams occurred in the early 1990s when the market was the saltwater aquarium market. Farms were set up in lagoons using seedlings from the state operated hatchery; credit (to be paid back when the clams were sold) was extended to the farmers for seedlings and submerged grow-out tables. When the clams were ready to be sold, the volume of clams available from all of the states in the Pacific (several South Pacific countries such as Tonga, Fiji, Samoa and the Cook Islands) drove down the price of the clams making them virtually worthless and insufficient to pay off the farmers' debt. The project, as a public development project was dropped.

Comments/Discussion:

Republic of the Marshall Islands Giant Clam Farming:
An example of a Pacific Island state-run aquaculture development program

The Micronesian Marine Development Center in Palau provided Marshall Islands Community Action Agency (which later became the Marshall Islands Private Industry Council [MICAA/PIC]) 2,000 giant clams to give to 20 outer atoll site owners (100 clams each) to grow out. Funding for the project initially came from the Pacific Fisheries Development Foundation (PFDF) of the U.S. Department of the Interior and later from the Center for Tropical and Subtropical Aquaculture (CTSA) funded by the U.S. Department of Agriculture, and the Asian Development Bank (ADB). Soon it became clear to the clam farmers that the MMDC's business model for growing and selling giant clams did not address a number of critical operating issues:

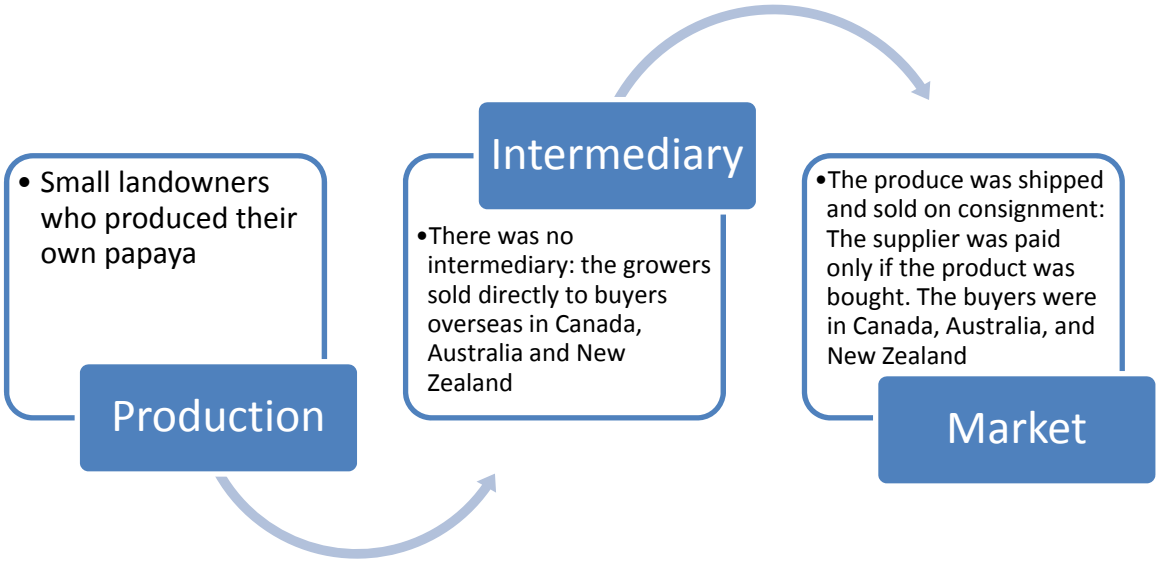
- optimum giant clam species to market;
- optimum size of giant clam to market;
- optimum market;
- barriers to market entry;
- staffing requirements and operating costs for a facility that produced clam products, other than seeds, such as meat and live animals for aquariums;
- impact of local poaching on production;
- competition from Taiwanese fishermen selling the meat of much older, much larger giant clams.

The optimum grow-out time for a food clam went from 3.0 years (Helsinga 1985) to 7.3 years (Leung et al. 1994). This significantly longer grow-out period effectively doubled the size of the upfront investment. Another factor that weighed heavily in the decision to reassess giant clam farming was an article (Heslinga 1990) indicating the marine aquarium market for live giant clams was much more accessible than the food market. A marketable giant clam (2.0 – 4.0 inches) for the marine aquarium market could be raised in two to three years, as opposed to six years. Moreover, there were no post-harvest processing costs (apart from packing and shipping) and no need to find several markets for the various parts of the clam (shell, abductor muscle, other meat). Market data for giant clams for the aquarium market, though, proved to be misleading. Only some species (brightly colored, large maximas and gigas) were commanding high prices while other, more common species (derasa, crocea, squamosa) went for much lower prices. Also, because the aquarium market for giant clams was relatively small, the market price for giant clams was influenced by changes in the supply of clams. A significant decrease in the clam supply would drive the price of clams way up while an increase in the

number of available clams drove prices down. When almost all of the states in the Pacific increased their export of giant clams (80% harvested from the wild) to the U.S. at the same time, the price for giant clams temporarily fell so much that the RMI could not sell its clams for a price that would cover its farmers' costs. As a result, the RMI legislature stopped funding giant clam farming and there were no more granting agencies willing to fund it either. The RMI government did continue to fund and operate its hatchery and some farmers continued to take care of their clams, but none of this generated a commercial income.

Comments/Discussion:

1980s: Fiji (Haphazard) Small-holder Papaya

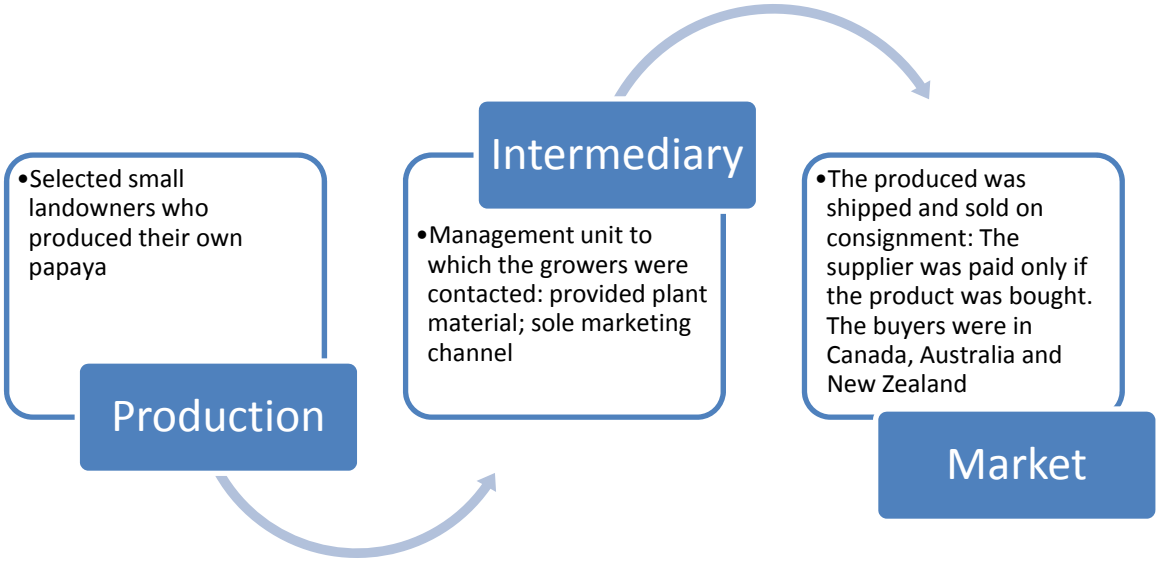


These are the small time exporters who air-freight consignments of papaya to Australia, New Zealand and Canada. They usually ship "a few cartons of papaya in a composite container consisting of other fresh fruits and vegetables. Supplies are secured from farmers in an informal ad hoc fashion." *Many of these exporters were "fly-by-night opportunists who dump inferior fruit on wholesale markets" and in the process give all of Fiji's fruit producers a bad reputation*. In the 1980s the National Marketing Association, a government agency, stepped in to handle all the marketing of all of Fiji's small-holder papaya with the goal of "opening up new markets and establishing Fiji's reputation for quality." The NMA distributed seed; the farmers agreed to sell their papaya at a set price; and NMA was responsible for picking and packing the fruit. McGregor states: "the arrangements were haphazard and inefficient and generated only limited expansion in exports." He gives the following reasons for the poor performance of the project:

- No extension support or material inputs were supplied by NMA;
- Purchase agreement with growers was often not honored by both parties;
- Disorganized and uncoordinated collection and shipping arrangements meant that mature fruit was often not collected;
- Growers frequently sold their papaya to the small exporters when offered a better price.

Comments/Discussion:

1980s: Fiji (Direct: Management Company) Small-holder Papaya



This approach called for "the establishment of a nucleus commercial management unit, to which small-holders would be contracted." This unit would be responsible for:

- The supply of planting material to contracted farmers (supplied and charged to the farmers' account)
- Provision of mechanical services for cultivation and spraying
- Regulatory control of grower performance
- Sole marketing channel for contracted production (managing unit agrees to buy all exportable fruit; farmers agree to sell all exportable fruit to the management unit for an agreed upon price)

The small-holders were selected to participate on the basis of the following:

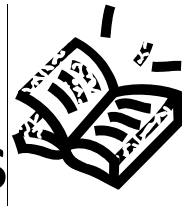
- Past farming record
- Availability and suitability of land
- Agreement to follow a defined package of practices (planting, cultivation, fertilization and harvesting program were all specified)
- Agreement to the financing and cost recovery procedures
- Guarantee to deliver the produce exclusively through the nucleus unit

Where the farms were correctly sited and cultivated, a management company approach proved to be a better vehicle for transferring new agronomic ideas and innovative techniques than the normal communication routes such as government agricultural services. On the marketing side, however, the product suffered from inconsistency and poor quality. NMA was responsible for quality control, but it lacked "the institutional structure and the legal basis to enforce . . .

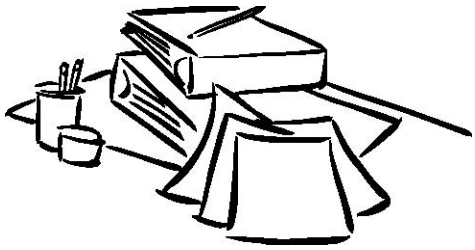
standards." Some of the small-holders did not honor their sales agreement and sold directly to local retailers. And, finally, the Fiji government failed to have its government fumigation facility operational: "This situation caused chaos for the papaya and other horticultural export industries and further undermined Fiji's reputation as a reliable supplier." McGregor concludes: "If Fiji wants to become a papaya exporter of any significance, the industry should be privatized including post-harvest treatment."

Comments/Discussion:

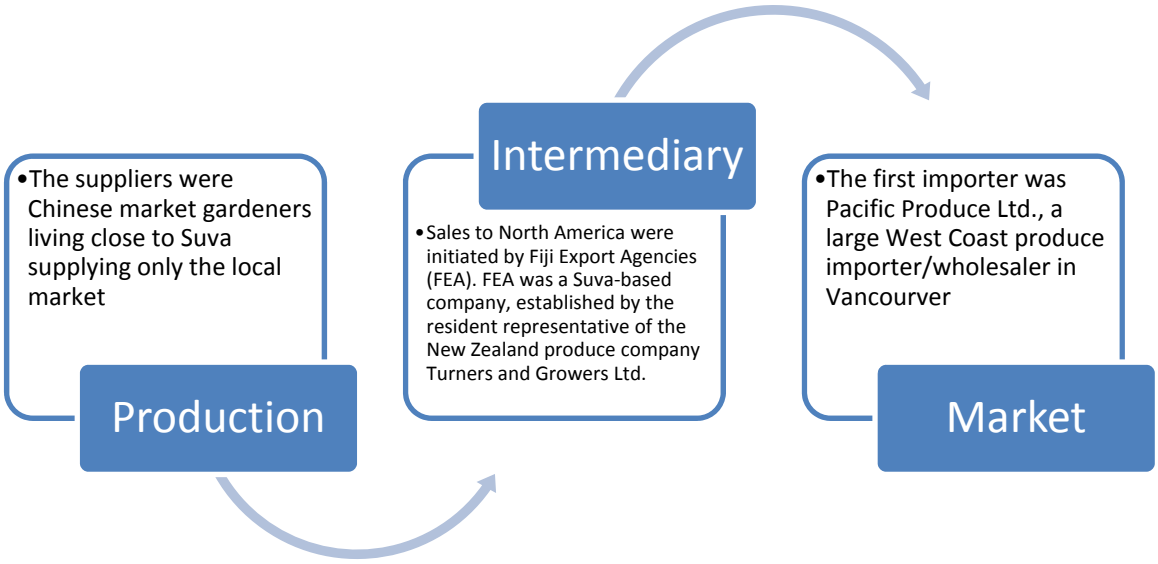
CASE STUDIES



What has worked? Why?



1960-1975: Fiji Fresh Ginger (1)

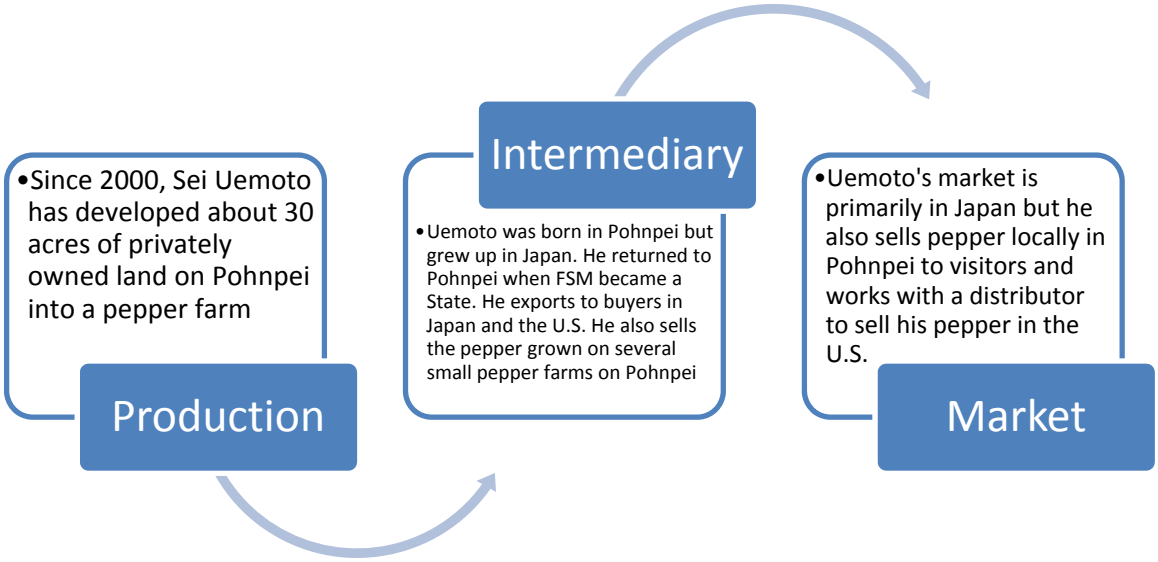


In the 1960s exports expanded rapidly in response to rising prices. Some of FEA's larger suppliers broke off and began exporting for themselves. They entered the market by offering lower prices and selling directly to some of the wholesalers that Pacific Produce Ltd. sold to. The mid-1970s saw the entry of Fijian growers into the industry. They now (1988) account for 30% of the growing area and 25% of the production. "These Fijian farmers were largely settlers from the outer islands who needed an alternative crop to replace bananas. ***Their entry into the industry was accompanied by substantial government support via an intensive commodity-oriented extension effort, a modest research program and the provision of physical infrastructure (road access).*** Produce Processing Ltd. (pioneered the development of the Fiji processed ginger industry, and became the largest exporter of fresh ginger) played a major role in the successful entry of Fijian smallholders into ginger production. *The critical service provided was the provision of short-term credit.*" The North America market was saturated with Fiji fresh ginger production by 1980 when there were 20 exporters exporting 1,000 tons a year to North America. As a result, there was a cut throat marketing environment characterized by undercutting prices and selling directly to retailers (claiming to have found "new markets").

This situation was exacerbated by recent Chinese immigrant farmers who rapidly expanded their production and exported their own product as grower/exporters. ***Lower prices and dumping were accompanied by "lower quality standards of the large new growers."***

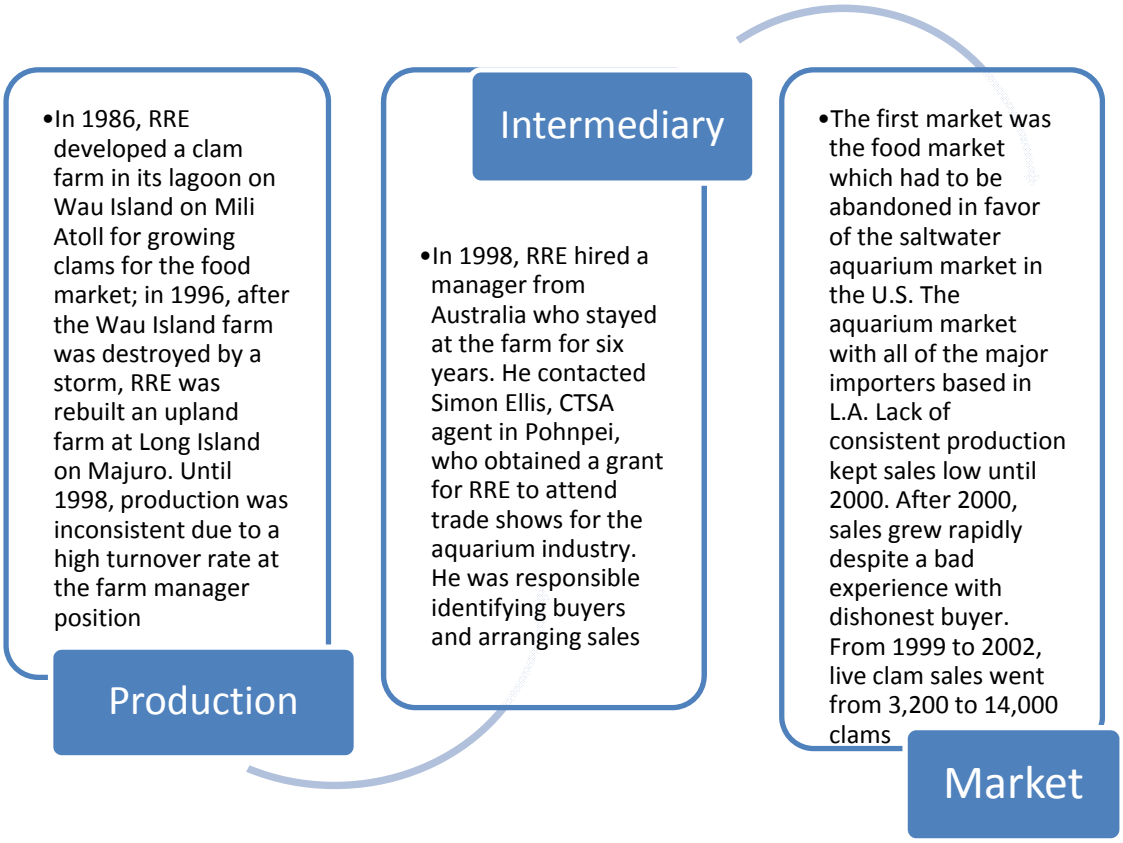
Comments/Discussion:

2000s: Pohnpei Pepper (2)



Comments/Discussion:

1986-2002: Private (RRE/Majuro, RMI) Giant Clam Aquaculture



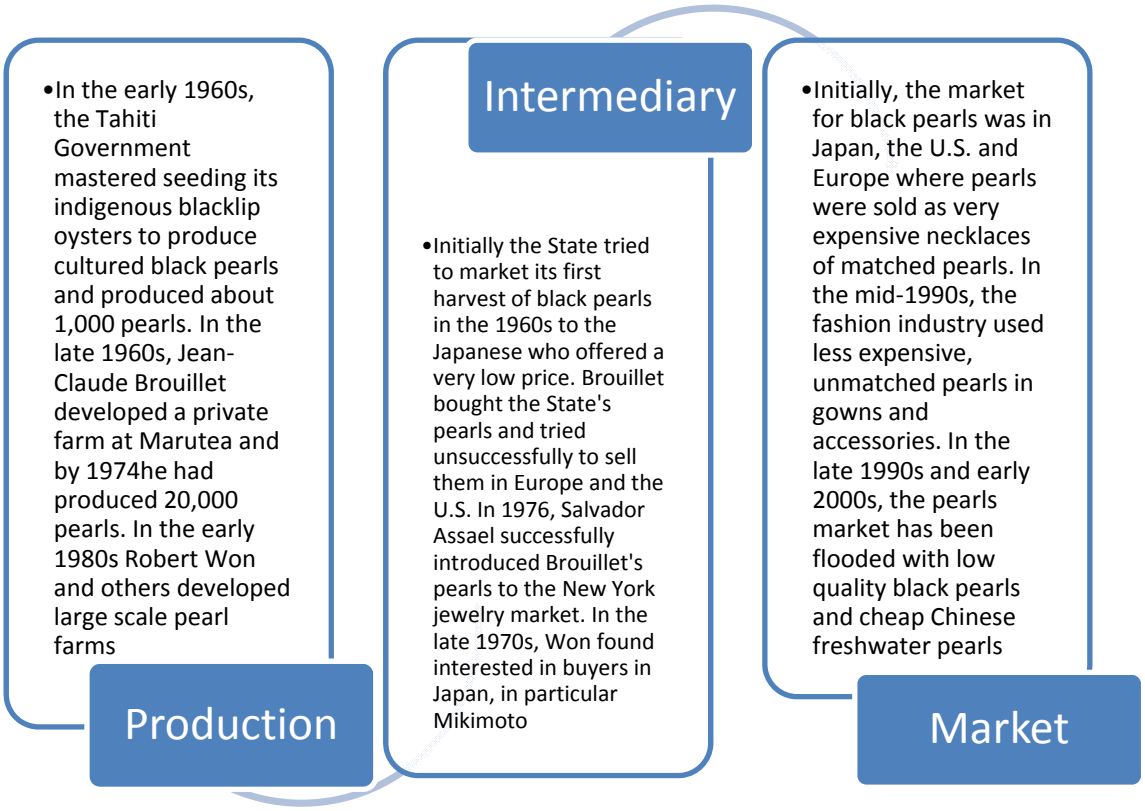
Note: in 2004, RRE sold its giant clam farm on Long Island to Oceans, Reefs, Aquariums (ORA), a large distributor of marine aquarium animals based in Florida and RRE's biggest customer. During the eighteen years that RRE was in the giant clam business it probably invested over one million dollars in capital and operating costs and probably only got back a little over half of that. The farm, however, continues to grow under ORA ownership and there are plans to expand its giant clam and live coral production by using outer atoll lagoons as grow-out farms.

The RRE experience demonstrates several things. First, in the absence of a good production system and a good link to the market, profitability can be delayed for many years. Second, a diversified, local company like RRE, even if it is a wholesale/retail operation can be a good

platform for an aquaculture or agriculture business because it can cover the operating costs of the venture with cash flow from other businesses without having to go deeply in debt.

Comments/Discussion:

1960s to 2005: Tahitian Black Pearl Industry



Note: Before Brouillet became a successful pearl farmer, he had been a successful businessman who had owned and operated an airline business in Tahiti for many years. The black pearl market, however, had been closed to him, partly due to his ignorance of the pearl market's distribution system, but primarily because of the policy of Mikimoto – producers of the world's finest akoya pearls – of controlling the world's supply of pearls and closely guarding its proprietary seeding technology. Brouillet discovered this only after he had exhausted almost all of his resources on his black pearl farm without making any significant sales. By mere chance, though, Brouillet was put in contact with Salvador Assael, a successful pearl dealer in New York. After a short visit by Assael to Tahiti and on the strength of only a handshake, Brouillet gave Assael his pearls to take back with him to New York to sell. There, Assael had Brouillet's pearls set and transformed into fine jewelry. Six months later Assael invited Brouillet to come to New York to see his pearls and to see the enthusiastic response from New York's most exclusive jewelry houses. Brouillet praised Assael effusively, but Assael responded by reminding Brouillet that: "Each person has his own job, Jean-Claude; I would never have been

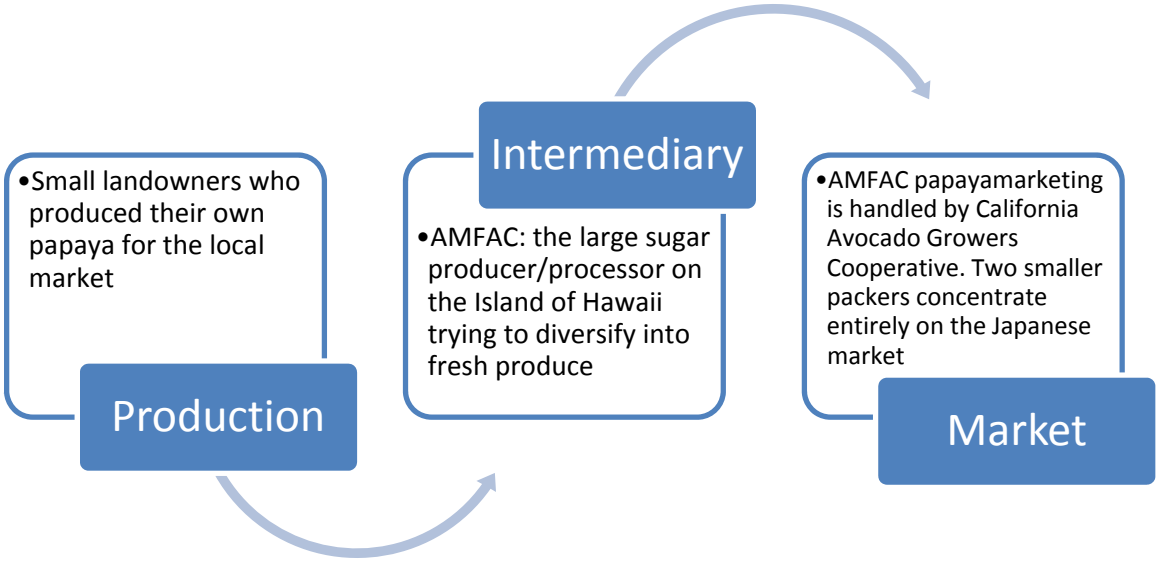
able to accomplish what you achieved on your atoll. . . . I could never live on an island; the solitude would have been too much for me to endure."

After Brouillet's pearls were introduced in New York, Mikimoto saw the wisdom of securing its own source of Tahitian pearls and responded positively to offers from Robert Won, another successful Tahitian business man who had developed his own pearl farm in Tahiti. In the 1980s and the 1990s the Tahitian pearl market took off, with the Japanese being the primary buyers. From 1982 to 1990 the average value of a pearl harvested in Tahiti went from just under twenty-five dollars to one hundred and eighteen dollars and the volume of pearls sold went from 32,300 grams to 575,000 grams (Hisada & Fukuhara, 1999; Tisdell & Poirine, 2000). New pearl farms sprung up all over Tahiti. The Tahitian government, though, had no policies or regulations in place to control this rapid growth. The consequences for the Tahitian environment and the Tahitian pearl industry were disastrous with massive die-offs of oysters and the contamination of whole lagoons due to overstocking.

Nevertheless, Won and the other major pearl farmers continued to increase their investment in the Tahitian pearl industry by buying up pearl farms. They also introduced new techniques and equipment to improve pearl production and increase their percentage of Grade A pearls. Tahitians were taught how to seed the oysters themselves thereby effectively cracking, if not breaking, the Japanese monopoly on pearl seeding technology. The owners of the larger farms also expanded their market beyond the Japanese controlled distribution system by selling more and more of their lower end pearls to U.S. and Chinese buyers. Recently, Won and others have begun to challenge the Japanese control of the high end of the black pearl market – matched strands of Grade A Tahitian pearls – by auctioning matched pearls in Hong Kong.[23] Today, despite all of the problems it had to contend with, the Tahitian pearl industry – one of the most technically demanding industries in the world (typically only 5% of a pearl harvest produces Grade A pearls and it can be much less) – has not only survived but is a mature, locally owned, locally controlled industry that is the world leader in the production of black pearls.

Comments/Discussion:

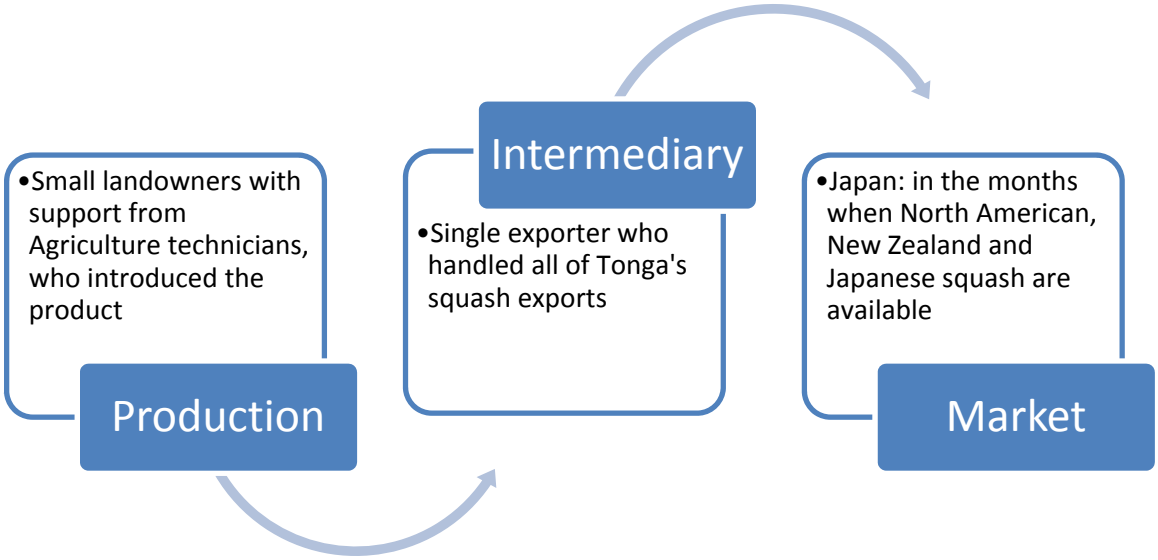
1980s: Hawaii Papaya Growers



Hawaii's papaya industry started as local fruit vendors in Honolulu who expanded into shipments to the mainland. Papaya production moved from Oahu to the Big Island where AMFAC, the big sugar producer, was looking for agricultural diversification alternatives. The industry grew with the rapid growth in the tourism industry; increased air transportation made the mainland an accessible market (initially, the air transport to the mainland was via barge from the Big Island to Honolulu and from Honolulu to the mainland; later, it was direct by wide body jets from Hilo to the mainland and Japan). "The industry is characterized by small-holder production and by corporate marketing and processing. AMFAC had until recently (1989) been involved in papaya production and at its peak was cultivating over 400 ha. It now contracts production for its processing and packing operations from 130 independent growers to whom it rents land. These farmers are supported by two field extension officers." "Six packing houses export fruit. They are dominated by AMFAC, which accounts for 50% of U.S. mainland sales. AMFAC papaya marketing is handled by the giant California Avocado Growers Cooperative. Packers are responsible for their own post-harvest fruit fly treatment and operate their own facilities. The dominance of AMFAC tends to add to marketing stability."

Comments/Discussion:

1980s: Tonga Squash



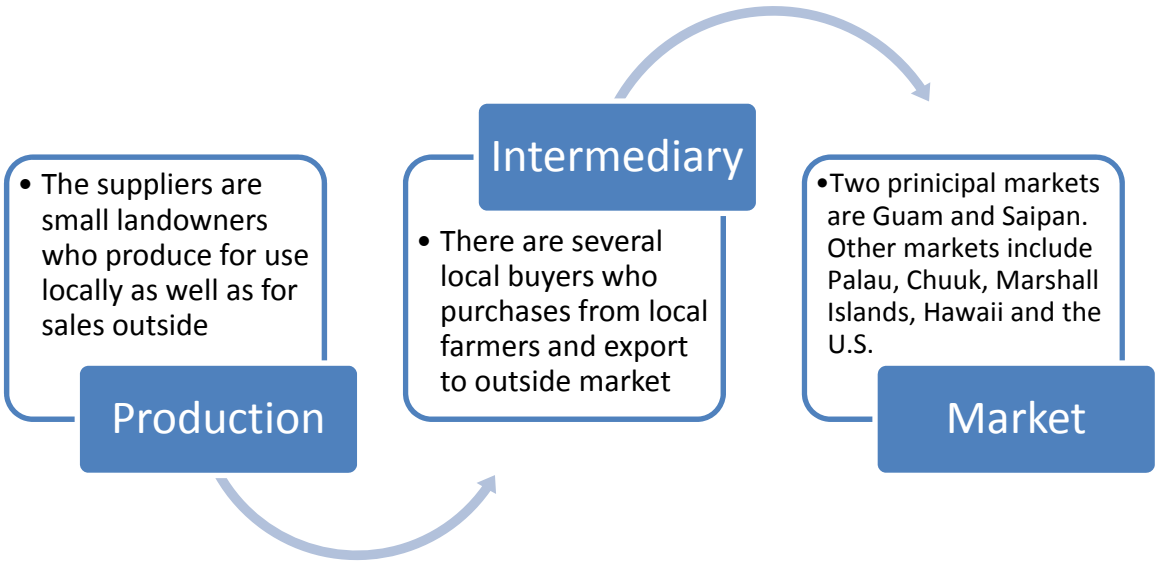
In Tonga 64 farmers were contracted to a single exporter. “The impetus came from the formation of a farmers’ association (the Tongan Pumpkin Association or TPA) and involvement of the Tongan Development Bank through provision of short term credit.”

The Tongan product was smaller than the market preferred but it “established a reputation for excellent quality” and “good export timing enabled Tongan squash to receive the highest unit price of any exporter in 1988 and twice that received by Fiji.”

Squash development in Tonga, though, needs technical support for the growers and quality control and market development, preferably from “producer-based organizations such as the TPA (Tonga Pumpkin Association). McGregor rules out direct government support in marketing and extension: “The nature of the market is such that the direct involvement of the ponderous government marketing agencies can only be counterproductive. Furthermore, the government extension services tend to be too diffuse for an intensive short-term crop such as squash.”

Comments/Discussion:

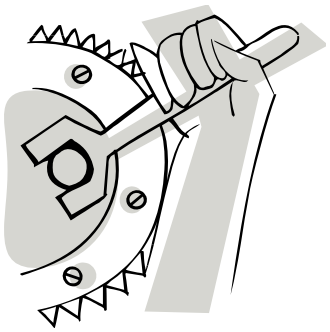
Yap Betel Nut



Scott Radway once wrote in Pacific Magazine about Yap's betel nut as 'Cuban Cigar of Micronesia' that fuels entrepreneurial spirit. Yap exported $1.56 million worth betel nuts in the year 2006. Two principal markets for this agricultural commodity are Guam and Saipan. Yap's betel nut is also a sought after commodity in Chuuk, Palau, Marshall Islands, Hawaii and the U.S. There are several local buyers who act as exporters.

Comments/Discussion:

What needs to be done?



Market 

Where is not?

Where is it? Who is it?

Accessing the market:

Identifying the market

Reaching the market (Transportation and Distribution)

Selling the Product (Advertising and Sales)

Payment

Who does what?

Production

Product (fruit, juice, tablets, powder etc)

Production

Harvesting, buying and delivering raw noni

Primary Processing

Facilities (land and building)

Equipment (What is needed? Where do you get it?)

Financing (source?)

Management (qualifications?)

Production staff (training)

Cash flow (source?)

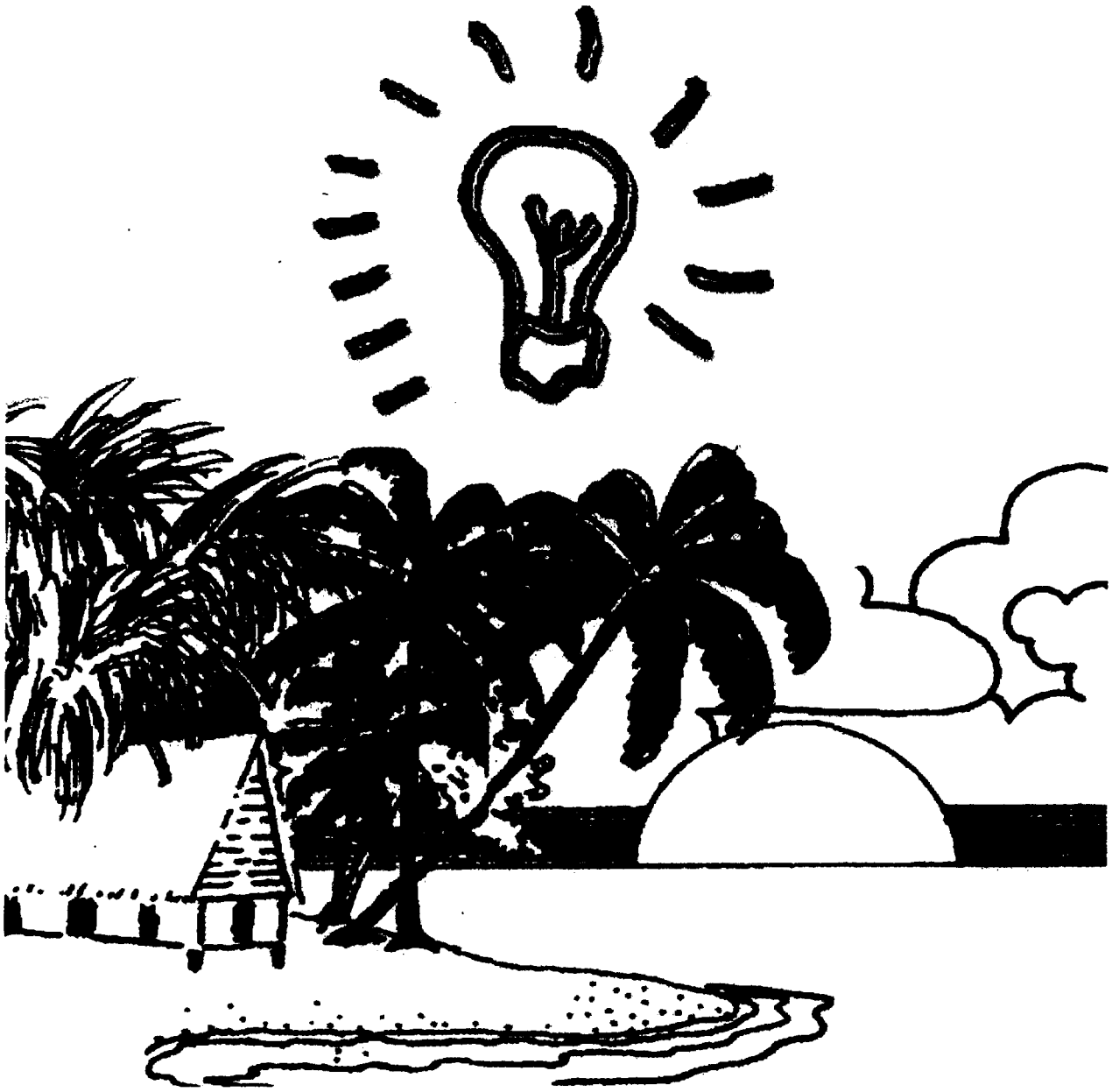
Storage and Shipping

Payment

Notes:

Appendices

Micronesian Counselor
June 2, 2003 Issue 47



Developing an Export

C.L. Cheshire

Introduction

Over the past fifty years, successive Micronesian governments have labored to achieve economic self sufficiency. Since the Compacts of Free Association were established in the late 1980's, the island states that make up the Caroline and Marshall islands have tried to meet this challenge through a variety of export development initiatives. In addition to developing a local tuna industry, Micronesians have attempted to establish an aquaculture industry (giant clams, trochus, sponges, black pearls, and hard and soft corals). They have worked to wring profits from the region's traditional export, copra, and have constructed two coconut soap factories. Rather than reduce Micronesia's dependency on foreign aid, however, these efforts have been, for the most part, a drain on its aid funds. The challenge of developing a thriving export industry to achieve self-sufficiency still remains.

For an export industry in Micronesia to be truly Micronesian, it needs to be locally owned and operated. Some commentators, however, have suggested there is no export in Micronesia because there is insufficient business experience to develop a locally owned export industry. As the argument goes, successfully exporting a locally manufactured product is more complicated and requires a different set of business skills than those possessed by local business owners. This argument overlooks the considerable business experience and expertise that is in Micronesia. There are several large diversified service and retail businesses in Micronesia that employ scores of employees and have annual sales in the hundreds of thousands or even millions of dollars. These businesses can be viewed as an important asset in a strategy to develop a locally owned export industry in Micronesia.

Others have argued that the reason various export development initiatives have not been successful in Micronesia is its geography and scant natural resources. Micronesia, with its small, remote islands, simply cannot compete in the global marketplace with countries like Indonesia and the Philippines, with their large local markets, cheap labor, and well developed infrastructure. Yet, one can also argue that had Micronesians focused on producing export

products where Micronesia possesses a competitive advantage, the results may have been different. Tahitians, for example, who are no less geographically challenged than Micronesians, were able to transform their abundance of black lip oysters into a multi-million dollar black pearl industry that they now dominate. Pohnpei, for a short time, marketed a successful pepper product that was unique to Pohnpei and was sold not simply as pepper but as "Pohnpei Pepper". The product was admittedly a high end, niche product without a large volume of sales, but the potential of the product was barely tapped before production ceased. Likewise, Yap betelnut is prized throughout the region and could also be developed as an export product. All of these examples suggest that given the right products and the right development strategy, Micronesia, too, could develop a competitive export industry.

This paper is a proposal for an alternative export development strategy for Micronesia that is organized under the following three headings: product, team, government support. The purpose of organizing the proposal this way is to examine those aspects of export development that are particularly significant for Micronesia but are often overlooked in the standard approaches to developing an export industry.

Product

One can find example after example of export products such as fresh tuna, Kosrae limes, coconut soap and giant clams that make economic sense (ie, a good market and a price that exceeded the cost of production and delivery) and resource sense (an abundance of natural resources such as coconuts and tuna to make high value products such as coconut soap and sashimi grade fresh tuna), but did not succeed in Micronesia for reasons that have little to do with economics and resources.

In contrast, the list of successful export products from Micronesia (products that actually produced a profit for local producers) is very short: copra, betelnut, and reef fish. All of these products were "low tech" with low start-up costs. All were relatively

easy to ship. The market was readily accessible; there was a fairly simple distribution chain to connect producers with end users and demand was consistent and in line with the available supply. And most important, local Micronesians willingly produced these products consistently over an extended period of time. In summary, all of the products that succeeded "fit" Micronesia *geographically*, *economically*, *technically* and *culturally*. Those that failed did not.

Geography

Geography affects product viability in Micronesia in several ways. On a small remote island, the business developer has only a small local market that is quickly saturated with product. To get beyond the local market requires exporting, and the closest export markets can only be reached by sea or by air. The one airline that serves all of Micronesia (Continental) has limited space for freight. Moreover, there is no guarantee that this space will be available. Producers of fresh limes in Kosrae have repeatedly brought their produce to the airport to ship it to Pohnpei only to learn that there was no freight space.

For almost all fresh products like limes and tuna, surface carriers are not a viable alternative because they are too slow. Those products that can be shipped by surface carriers must be shipped in container loads. LCL (less than container load) space is expensive and is often unavailable. This means that the local producer has to increase production to 20,000–30,000 lbs. of product per month if the shipping rates are to be affordable. Furthermore, the schedules and routes for surface carriers reflect the fact that most of their business comes from goods delivered to Micronesia rather than goods being exported from Micronesia. Thus, a local producer often has trouble finding a vessel that will stop to make a backhaul to the U.S. mainland. Increasing production from a few thousand pounds a month of local sales to 20,000 to 30,000 pounds a

month of export sales is very hard to do overnight. It may be no harder, though, than convincing a shipping line to change its route and schedule just to pickup a single container once a month.

Given the uncertainties of shipping, the product must be hardy: it must have an indefinite shelf-life and be immune to the effects of delay. This requirement automatically eliminates many fresh products or forces the producer to develop an expensive, and often elaborate, transportation system to get the fresh product to market. For example, fresh tuna requires its own jet airplane or tank ship (for shipping live fish); bananas require refrigerated containers and equipment to retard the ripening process until the bananas reach their destination.

Business Economics

Business economics have also been a limiting factor in the history of product development in Micronesia. The commercial banks have been better than business developers and development banks in identifying these limits. Commercial bankers have recognized that products that have high start up costs and require highly leveraged loans (80% debt to 20% equity) leave the business with a debt burden that the business usually cannot support. But this has not prevented business and development advisers from helping their clients to apply for these loans, nor has it prevented the development banks from making these loans. Yet, the poor performance of these loans speaks for itself.

Recently, the Asian Development Bank has been critical of some export industries, like aquaculture, because the length of time required to generate an income is so long. While this should not eliminate agriculture and aquaculture products as possible export products, it does highlight the need for a developer to have sufficient financial resources of his own to cover the costs of product development until the product becomes profitable.

The product also must have a competitive advantage by being produced in Micronesia. It is not enough just to be able to produce a product in Micronesia; the product must be able to

compete in a global market. What constitutes a competitive advantage, however, is not always apparent. It is just as easy to overlook a competitive advantage as it is to see an advantage where none exists. For example, Micronesia's remote atoll lagoons have often been dismissed as commercially un-developable because they are so remote, possess few developable resources and have so little commercial infrastructure. Now, however, they are being seen as excellent sites for open ocean aquaculture because they are pristine and relatively inexpensive to develop. On the other hand, Micronesia's often touted "cheap" labor continues to be mistakenly viewed as a competitive advantage.

Technology

The technology needed to produce a potential export product is another component of the export business that must fit its Micronesian environment. Too often business planners are content to assume that because a piece of equipment worked well in another part of the world, it will also work well on a remote island in Micronesia. But can this outside technology be supported in a remote environment? Something as common and "low tech" as an outboard motor must be maintained regularly. This maintenance requires a certain amount of expertise that is not always locally available. Outboard motors also have parts that wear out and must be replaced. These parts must be ordered from factories and suppliers that are usually several hundred miles away and often do not ship to Micronesia. On many of the remote islands in Micronesia it is difficult just to communicate with suppliers. As a result, an outboard motor may sit for months before anyone can repair it. If the motor and the boat are essential to the business, this part of the business suffers. The issue here is not whether a specific kind of technology is appropriate for the job, but whether it is appropriate in a remote Micronesian location. To determine whether a particular technology

is appropriate in Micronesia, one must recognize how much outside support is required, estimate the costs of this support, and include them in the project budget.

A similar caution applies to training. In those cases where the technical expertise required to operate and maintain a piece of essential equipment is lacking, there is a tendency to gloss over this lack of local "fit" with the promise "we will provide training." Too often what the training can accomplish is overestimated while the cost of the training is underestimated. When the training takes too long or costs too much, it does not occur. The result is an inadequately trained staff or one that must be replaced by outsiders who possess the necessary skills. This latter scenario defeats the whole purpose of creating a local economy: that is, to create jobs for Micronesians.

Culture

A cultural or social fit is also essential for a successful Micronesian export product. It has been assumed that unemployed Micronesians will take just about any job offered to them. But this assumption has been shown repeatedly to be incorrect. Just because a person is technically "unemployed" does not mean that the person needs or wants a job. Many of the "unemployed" are active participants in the subsistence economy and so receive many of their basic needs from the extended family. The reciprocal obligations that come with membership in an extended family in Micronesia can take up much of a person's time. In fact, a person who wants a job may not be able to take and keep one because of the demands placed on him or her by the extended family.

Several export development projects like commercial fishing, agriculture, handicraft production and even tourism have been promoted in Micronesia on the grounds that they fit the local culture. The promoters have argued that since Micronesians have traditionally fished, planted gardens, produced handicrafts and hosted each other on a regular basis, they will be equally adept at

doing all of these same activities commercially. This argument fails to recognize how much commercialization changes an activity. The obvious differences between the traditional subsistence activity and its commercial counterpart are completely overlooked. Yet the importance of these differences is evident in the difficulty of getting Micronesians to work on commercial fishing boats; the numerous unsuccessful attempts to develop a local handicraft industry; and the absence of sustainable commercial agriculture, even on islands that have excellent soil and abundant rainfall.

Why the transition from traditional to commercial has not been as smooth and rapid as some expected is a question too complex to answer here. Part of the answer, though, is that most commercial activities, regular nine to five jobs, are too inflexible to accommodate the many traditional obligations that take precedence over the desire for a cash income. Also, commercial activity is often too impersonal and the benefits are too indirect. When a Micronesian fishes for subsistence, for instance, he goes out on a daily basis and catches fish which he either takes home to eat or gives away to someone he knows. Subsistence fishing is far more personal and the rewards are far more immediate than commercial fishing, where the fisherman is required to be away from his family for weeks at a time and receives wages that are paid out at the end of the season. Subsistence fishing and commercial fishing are, socially and culturally, two very different activities. The same can be said for growing food and producing handicrafts. The benefits from these subsistence activities are personal, social and immediate. These are qualities that, more often than not, are missing in most commercial employment. In the end, what is needed is an awareness of the fundamental differences between the two economies and the development of management strategies that take into account those differences and address them in the commercial workplace.

Team

A typical export business employs people who produce products, people who market and sell the products and people who oversee the whole operation. Looking back at the various attempts to develop an export industry in Micronesia, one finds that all of these positions were identified and people were hired to fill them. Nevertheless, almost all of the export ventures in Micronesia failed: because production was inconsistent both in respect to quantity and quality or because the markets disappeared or could not be reached competitively; or because the managers, whether expatriates or local managers, failed to find a way to manage effectively. To prevent the same failures from being repeated over and over again, we need to assess what is required to develop and manage a successful export business in Micronesia.

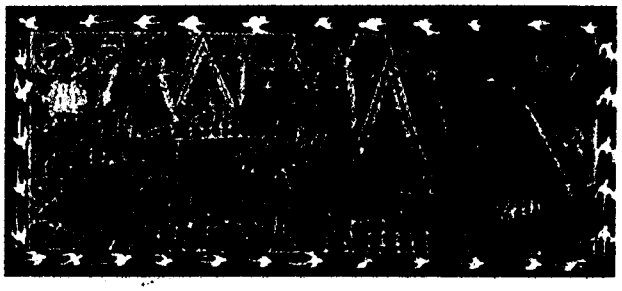
Local Owners

The most important position that must be filled in any Micronesia business is the position of owner/operator. To succeed in Micronesia, the owner/operator must be a business person who understands that the business must make a profit in order to be a success. Government initiated businesses may start with the goal of making a profit, but they also have other goals such as creating local employment and utilizing local raw materials. In Micronesia these other goals have led governments into the difficult position of trying to make a profit from tuna and copra with a local workforce. When they have failed, the political consequences of admitting their failure have been weighed against the benefits of cutting losses by closing the business. For a business owner, who is spending his own money, business decisions like cutting losses are more obvious. These decisions are also easier to make since they are made in private with little risk of public embarrassment.

Building an export industry with local business owners allows us to tap into the energy and diversity of the local business community. Businesses in Micronesia have had to diversify in order to grow. To grow a business in Micronesia, the owner/operator must

be constantly diversifying into new products and services because small islands with small populations have small markets. One business owner in Micronesia, for instance, started with a stevedoring contract and diversified into construction, sand dredging and manufacturing concrete blocks. Another started as a travel agency and car rental and added a multi-unit apartment building, followed by a twenty-five room hotel and restaurant and dive shop. This same growth strategy has been used by Robert Reimer Enterprises in Majuro in the Marshall Islands, which went from general retail to hotels and bottled water production to aquaculture. Aquaculture development requires a large upfront investment and takes a long time to produce a positive income, but when aquaculture is developed within the context of an existing diversified business, the upfront investment is significantly reduced. This is because the business owner can use the personnel, facilities and cashflow from his other businesses to support the development of the aquaculture venture.

Although the strengths that business experience and business assets bring to an export development project are crucial, they are probably not as important for the success of the venture as local ownership. A local owner, even if he or she is an expatriate, has a place in the local community and with it local connections and support that translate into local authority and power. This fact is important, because eventually any business success in Micronesia will be challenged by local rivals. For example, family members will question whether or not the business owner really owns the land that the business is on so that they can claim ownership themselves and take over any of the business assets that happen to be on the land. Landlords will seek to "renegotiate" the terms of the lease or rent agreement, thereby raising the rent or the lease payment to a point where the business owner must either close the business or pay the landowner a rent that makes the landowner a virtual partner. Rivals can also use political influence to undermine or even shut down a successful business for the purpose of starting a similar business of their own. When these inevitable challenges occur, it is important that the business owner have sufficient local authority to confront them. It is even better if the local owner has so much local authority that no one is willing to mount any challenge at all.



Another benefit of local ownership is that many of the larger locally owned businesses in Micronesia are family businesses. As such, the owner is able to draw on his/her traditional authority within the family to obtain the cooperation and support of his employees who are, for the most part, family members. It is one thing to stay home from work when the manager is a stranger; it is a different matter entirely to skip work when the owner is your father or your uncle. This is true everywhere, but it is more significant in Micronesia where one's place in one's family is a primary concern.

Most family owned businesses in Micronesia, though, must employ individuals outside of the family who have no obligations to the business apart from their responsibility to their job. Consequently, traditional family authority can take a local business owner only so far. To go beyond this, any business owner in Micronesia must understand and appreciate what motivates his/her Micronesian employees. From my discussions with several successful business owners in Micronesia, no simple rule or single set of guidelines has emerged on how to motivate Micronesian employees. All of the business owners I have spoken to have indicated they had to work this out for themselves. Even though every solution was different, all of the owners emphasized the importance of knowing their employees personally and understanding how the local culture makes demands on them.

Technical Assistance

Micronesian business owners who want to develop a Micronesian export industry usually lack experience producing a product, as well as the necessary contacts and connections in markets outside of Micronesia. Consequently, production and marketing expertise must be brought in from outside the business. All of the export development projects in Micronesia–from tuna to coconut soap to sponges and giant clams–have benefited from experts from a variety of development programs. These experts have been most

effective when they have become directly involved either in setting up and refining the production system (as in the case of the two coconut soap factories and the sponge farms in Pohnpei and the giant clam hatchery in Kosrae) or in actively marketing the product (as in the case of RRE's giant clams in Majuro and the pearl farm on Nukuoro atoll in Pohnpei).

But experts can only do so much. They must rely on local owner/operators to implement the recommendations that the experts make. For example, Kaselel, the coconut soap manufacturer in Pohnpei, and its sister company, Afata in Chuuk, benefited from the input of production experts from Indonesia who greatly improved the consistency and quality of their coconut soap. Unfortunately, there was not an equally successful marketing effort to find buyers for the improved product. A similar situation exists for Pohnpei's sponge farmers. With the help of Dick Croft at PATS, several farmers have successfully grown commercial sponges, but none of the farmers have been able to export them because they did not know how to contact buyers. In contrast, RRE in Majuro, with the help of various aquaculture experts, successfully grew its first giant clams for the aquarium market in 1996, but it was not until 1999 that RRE was able to find buyers in Canada and the U.S. RRE sent representatives to attend several trade shows where they met several potential buyers. Now, RRE has the enviable problem of having more orders for its giant clams than it can fill.

Government Support

If there are commercially viable export products in Micronesia and there are local business managers who are able to develop and manage a locally owned Micronesian export industry, and there are several development programs ready to provide technical assistance, why have the local business owners in Micronesia never built on their success in the local retail market and developed some of Micronesia's obvious export products?

For one thing, export is not where local business owner/ operators have a competitive advantage. Their advantage lies in local retail where they can use their knowledge of local markets. Export is more expensive to get into and requires a different kind of expertise and experience. To get into export, a business owner/ operator needs to be able to manufacture a product consistently to specifications set by foreign buyers. He needs to know who his foreign buyers are and who his foreign competitors are. It is possible to acquire this information through first-hand experience, training programs and by hiring outside experts. But gaining experience and attending training programs take time and cost money. Hiring outside experts is also expensive. Some outside experts who are very qualified in their field can be ineffective because they lack sufficient knowledge of Micronesia.

A second reason local business owners/operators have not ventured into export is because, until recently, there has been no pressing need to do so. There have been easier alternatives in the local market for expanding and diversifying their businesses. Local business owners have been able to grow by expanding their general stores into construction companies, apartment buildings, hotels and other services. This has been possible because there has been sufficient money in the local economy from government payrolls and government purchasing and government contracts to insure enough sales to keep the large diversified Micronesian businesses going.

Finally, government's lack of success in developing export products has tended to discourage private business owners from getting into export. The business community in Micronesia is conservative and generally takes a "wait and see" approach to developing new businesses. Seeing how much export ventures can cost, how difficult it is to become competitive, and how much work is involved in finding buyers has only made private business owners more reluctant to spend their own money to get into exporting Micronesian products.

What Can Government Do?

What can the state and national governments in Micronesia do to stimulate the development of a locally owned export industry in Micronesia? Micronesian governments have already taken an important first step by getting out of the export business themselves and exploring ways to privatize many of the government sponsored export ventures. The governments in Micronesia can also take the following steps to lower the barriers to export development.

Provide Technical Assistance: Most of the business development assistance in Micronesia has been directed at those who are not in business, but would like to be. Classes, workshops and loan programs have been funded by governments in Micronesia to assist potential Micronesian entrepreneurs start their own businesses. But no assistance has been provided to existing businesses to help them expand into export. Such an assistance program is needed for a variety of reasons:

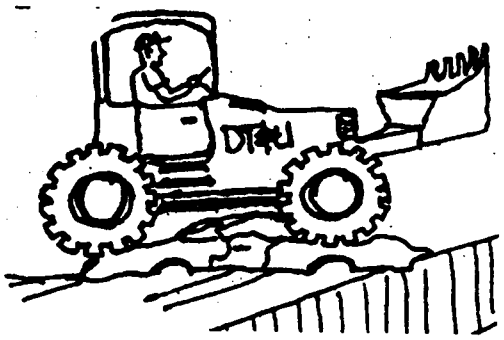
1. Local retailers who have been successful running their own businesses in Micronesia are in the best position to develop and manage a local export business. They know how to manage and motivate a local Micronesian workforce. They know how to develop a new product or service. They know how to make a profit. But local managers and owners lack the technical expertise to identify potential export products, install efficient production systems, find foreign buyers, and complete sales abroad.

2. All of the requisite expertise and experience needed to establish and operate an export business is costly to obtain. The expense of acquiring this expertise and experience is a major barrier keeping local retailers from developing products for export. By providing existing businesses with technical assistance in market analysis, product development and oversees sales, Micronesian governments would be lowering this barrier.

3. Finally, government funded technical assistance could speed up export by attracting several private businesses to invest in export development or by helping them to be successful once they have made their initial investment. The market study recently completed by the Pacific Business Center to find sponge buyers for Pohnpei's sponge growers was designed to help all of the sponge farmers on Pohnpei, not just one of them. No single sponge farm on Pohnpei is large enough to supply the potential demand for sponges by itself. The more sponge farmers that take advantage of the Center's market study, the sooner Micronesia will be recognized as a significant supplier of natural sponges. In the absence of government funded technical assistance, however, the government and the rest of Micronesia will have to wait for a private business owner like Ramsey Reimers at RRE to slowly develop an export industry by himself.

Provide Access to Low Interest Financing for Export Development: Previous business development programs in Micronesia have been supported by development loan programs with relatively low interest rates (9%) and low owner equity (20%) requirements. Making loans available for export development could be an attractive incentive to encourage business owners to look at export as a way to grow their business.

This does not mean that Micronesian governments should make export development loans easy to obtain. Making it easy to qualify for a business development loan has not significantly lowered the barriers to business development. Export products, because they take more time to produce a profit, are particularly poor candidates for excessive financing. For example, by the time a new aquaculture farm can produce an exportable product that is accepted by foreign buyers, it will be swamped with debt from the original loan and the accumulated interest on the loan. Consequently, the requirements for an



export development loan should be more stringent than other development loans. In particular, the requirements should include a high equity contribution on the part of the owner and the owner should be required to show that he has other sources of income to cover the operating costs of the export venture until it can show a profit. Hence, it is almost essential that the loan applicant have another business or substantial personal assets with which to support the development of the export business. Making ownership of a profitable business a requirement for obtaining an export development loan is appropriate for another reason: it demonstrates that the manager knows how to make a profit and knows how to manage and motivate a Micronesian workforce.

Another appropriate requirement for an export development loan is that the product must not only be feasible, but also competitive. There are many ways to assess the relative competitiveness of a product or a business. The following five criteria should be taken into consideration in evaluating a Micronesian export product:

1. There must be a strong market demand for the product, and the product must have a high profit margin. Given the high costs of producing and transporting Micronesian products, niche products with high profit margins like Pohnpei pepper, marine sponges and black pearls are more likely candidates for export development than commodity products like limes and bananas unless the latter can be marketed and sold as specialty products as well.

2. There must be a competitive advantage in producing the product in Micronesia. Geography has given Micronesia so many competitive disadvantages that one rarely hears of any of the region's natural advantages. But the abundance of clean, accessible lagoons for growing marine aquaculture products gives Micronesia a competitive advantage over other producers of marine products whose marine habitats have been compromised by the pollution from over development.

3. The product must fit the existing transportation infrastructure rather than require its own separate transportation system. Sashimi grade

tuna, which is abundant in Micronesia and is a high end specialty product with a high profit, did not meet this criteria. The cost of providing a chartered jet to transport the fresh tuna to Guam from the FSM ultimately proved to be prohibitively high as the volume of tuna shipped from the FSM declined.

4. The product needs to be something that Micronesians can and will produce. This cannot be easily determined since Micronesian managers and owners play a decisive role in motivating employees. But where training is required, the proposal for the venture must show that the training is readily available at a price that is consistent with the projected profitability of the business. Given the high cost of training in Micronesia, this criterion should be given close attention.

5. The technology required to produce, package and ship the product must be appropriate for Micronesia. It must not only be able to operate reliably and efficiently in Micronesia, but it must also be maintainable in Micronesia at a cost that is consistent with the revenue projected for the sale of the product.

A final requirement for an export development loan is that the applicant must show that the venture has adequate technical support. As noted above in the discussion of the export development team, local owners/operators need the support of technical assistance to set up production systems, train employees, identify markets, contact buyers and make initial sales. This kind of technical assistance requires those providing the assistance to be actively involved in the business. It also requires the owner to follow up the assistance with the necessary investments in personnel and equipment to ensure that what is recommended is implemented.

Explore Ways to Improve Micronesia's Transportation Infrastructure: The single greatest barrier to export development in Micronesia is the lack of transportation dedicated to supporting export development. Currently, the only airline serving the whole region is primarily a passenger carrier, and the only surface carrier that serves all of Micronesia is set up to bring goods into Micronesia rather than take goods out. The current transportation industry in Micronesia will continue to

view Micronesian export as a secondary concern until there is sufficient freight volume to justify providing more service. But until there is a transportation system in Micronesia that supports export development, export development in Micronesia will continue to struggle. Government can play a role in helping Micronesia break out of this chicken and egg predicament by identifying the transportation exporters need to get their products to market. Once this is done, they can begin to explore with the various members of the region's transportation industry how these services can be provided.

Conclusion

The keys to developing a Micronesian export industry are:

- Select products that are geographically, economically, technologically and culturally appropriate and commercially competitive.
- Capitalize on the business experience that already exists in the region by removing barriers and creating incentives for local business people to invest in export development.
- Limit government's role in export development to providing technical assistance, low interest loans and economical, efficient export infrastructure (transportation, communication, utilities, etc.).

There is nothing new here. All of the pieces needed to construct an export industry in Micronesia already exist. What has been missing in the past has been a way to assemble these pieces so that they add up to a successful Micronesian export industry. This proposal suggests that the way to do this is to first recognize which of the region's natural resources are economic opportunities and then to create the incentives and the means for those best able to develop and exploit those opportunities: the local Micronesian business people.

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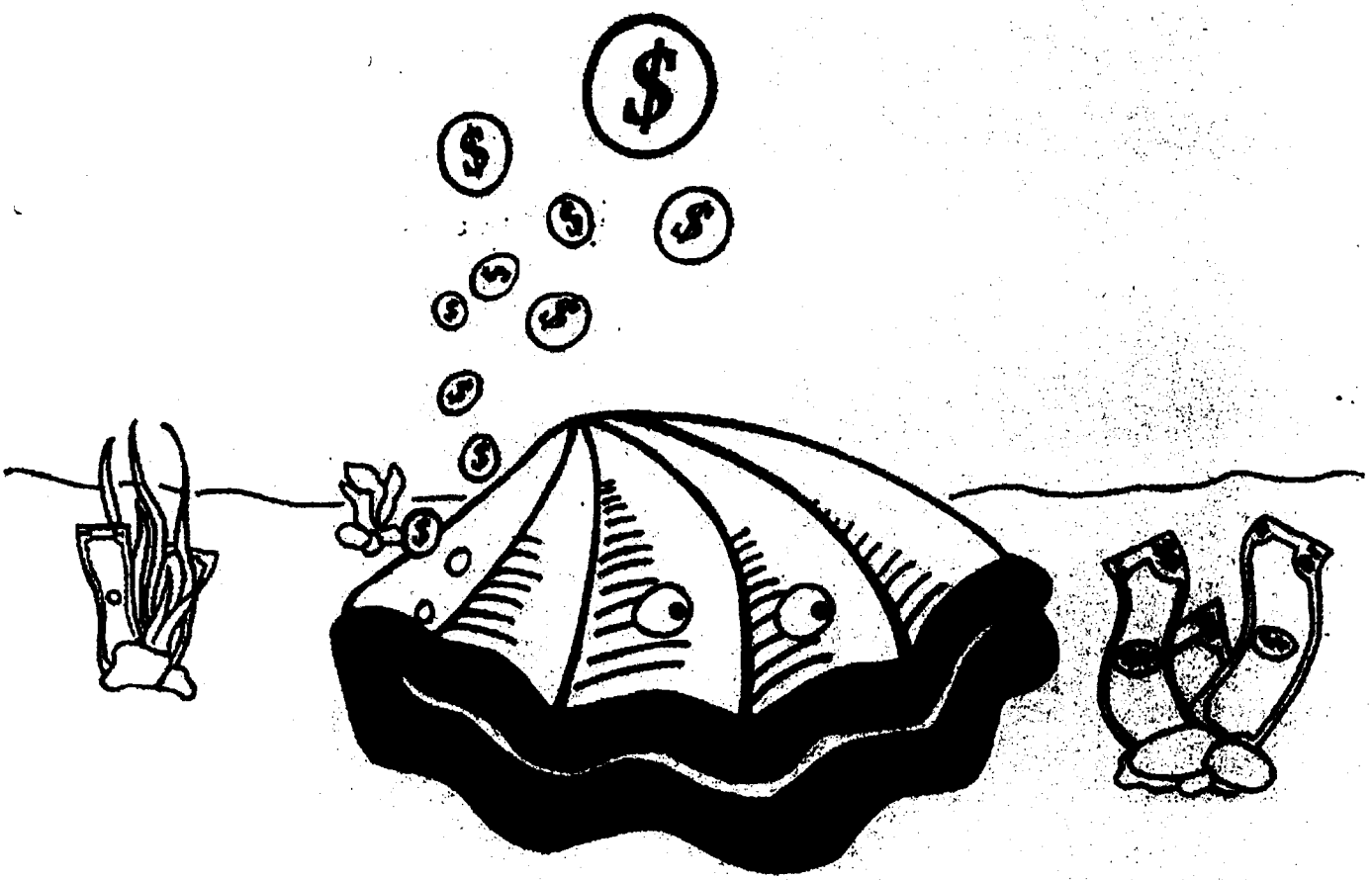
The Clam Industry in the Marshalls



C.L. Cheshire

This article is an analysis of Robert Reimers Enterprises' (RRE) effort to commercially develop giant clams in the Marshall Islands from 1986 to the present. The purpose of this analysis is to explore what succeeded and what has failed and why. It might be that the lessons learned from RRE's experience will show us how to better support and assist this kind of business development in the future.

History of Robert Reimers Enterprises

Before we can understand how RRE was established and how it operates, we need to look first at Robert Reimers, the founder of RRE. Robert Reimers' most telling characteristic may have been what can only be described as his entrepreneurial spirit. Despite his many successes, Robert Reimers was, according to his son Ramsey, "always on the lookout for what he referred to as 'new money.' While he was managing stores for the Japanese on Jaluit and Wotje before the war, he was also making a local "vodka" from pandanus and selling it to them. While he was working at the U.S. Navy boat pool, he came in contact with a Hawaiian who could ship consumer goods from Hawaii. Together they formed a partnership to import fabrics and perfume from Hawaii.

From the time Robert Reimers was old enough to hold a job, he was building his own business. Through his position as store manager for the Japanese on Jaluit and Wotje, he learned how to sell retail goods on outer atolls in exchange for copra. He combined this knowledge with his experience building boats and importing consumer goods from Hawaii to import goods and sell them to outer island communities. Over time, he expanded his line of imported products from fabric and perfume to include food and other consumer goods from Hawaii and the US mainland. By 1960, Robert Reimers' import business was large enough to require a store with enough freezer space to store whole container loads of frozen food. When he applied for a commercial loan (the first commercial loan granted to a Marshallese) to build his store,

Robert Reimers was not entering business; he was merely expanding the business he had been developing in one way or another for more than three decades.

Part of the explanation for RRE's success in general Retail was Robert Reimer's ability to find people who could develop new ventures, such as a hotel, a restaurant and a bottled water business. Ramsey Reimers under scored the importance of people when he said: "the most important single requirement for developing a successful business operation in the Marshall islands is finding the right people." This includes local Marshallese as well expatriates, and it involves not only finding the "right people" but also matching people with the jobs they are best suited to do. This is difficult for any business owner, but it is particularly difficult on a small, remote Pacific atoll, where the labor pool is small and the working conditions can be very difficult. Yet, Robert Reimers was consistently able to find and recruit the "right people" - people who possessed the training, the experience and maturity to manage what became a large, complicated, diversified business with a predominantly Marshallese workforce and clientele.

"The most important single requirement for developing a successful business operation in the Marshall islands is finding the right people."

Reimers was also successful in developing management strategies that addressed the particular challenges of doing business in Micronesia. In the Marshall Islands, it is difficult for island business owners to say no to customers who expect local business owners to share what they have. To survive as a business, RRE needed to limit its use of credit just like any other store, but this often required saying no to requests for credit purchases.

Rather than turn down his customers personally, Robert Reimers found that it was culturally more acceptable to hire an accountant or a manager from "the outside" to tell family, friends and customers they could not have any more credit.

Giant Clam Development in RMI: 1986-2002

When Robert Reimers decided to go into aquaculture in 1986, he had already built a large retail store, a hotel and a restaurant. Although there was no pressing need for RRE to develop a new industry, Robert Reimers said that the decision to grow giant clams was prompted by articles coming out of Palau: "I saw news from Palau about giant clams . . . . They are cheap and easy to grow, so I said 'why not do it here?'

Dr. Gerald Heslinga at the Micronesia Marine Development Center (MMDC) in Palau, noted that "giant clams are a high-value food commodity" that could be mass-produced in captivity. Heslinga's general enthusiasm for the future of giant clam aquaculture in Micronesia was echoed by the public media in several newspaper, magazine, and newsletter articles that came out at the time. These articles consistently described giant clam farming as low tech, low cost and profitable.

Heslinga offered to all of the islands in Micronesia a development strategy based on growing giant clams. MMDC in Palau would sell seed clams to the marine resource development departments in each of the island states. These facilitating agencies would then distribute the clams to farmers on atoll islands where it was determined that giant clams would grow well. In three years the giant clams would be harvestable. The farmers could then sell the clams in the local food market and/or export them to generate an income for themselves.

By the time RRE got into the giant clam business in 1986, it was following rather than leading in an industry that was already at least a year old in the RMI.

As such, giant clams farming could hardly be characterized as "new money", but it was consistent with RRE's overall growth strategy of diversifying into local products that complemented RRE's existing businesses. When RRE decided to grow giant clams, it planned to sell the clam meat at RRE's stores in the RMI as well as export it to Japan and Taiwan.

RRE's decision to go into giant clam farming was also influenced by the site it owned on Wau Island in Mili. The lagoon in front of the island is large, far from any populated areas and filled with giant clams. At the time it appeared to be an excellent site for a commercial clam farm.

Cost

Capital costs, the costs involved in setting up the farm, were not a problem for RRE. Ramsey Reimers estimated that the cost of clearing the site and building the farm and the living quarters for the farm employees was between $10,000 and $15,000 when the farm was built in 1987. The estimate of the total investment in the Wau island facility as of 2004 is thought to be close to $50,000. These costs, however, were low enough that RRE could finance the entire project out of its own cash flow and so did not need to apply for a loan finance the project.

Operating expenses were not a significant problem either for RRE. These expenses, paid for out of the cash flow from RRE's other operations, included the farm's fuel, maintenance and personnel costs, including a marine biologist to design and manage the facility. Keeping the operating costs on Wau low or spreading them out and sharing them with other projects was important because the food clam needed three years to grow out to a market size. This translates into three years of upfront operating costs totaling more than $100,000 before the farm could produce any revenue.

Shift to Aquarium Clams

In 1988, Heslinga and T.C. Watson published an article that concluded that the optimum size of a giant clam for the food market would take not three years, but six to nine years to grow out. This new grow out scenario effectively doubled the upfront investment required for the project and forced RRE to re-evaluate its giant clam operation.

Another factor that weighed heavily in RRE's decision to re-consider growing giant clams for the food market was the discovery that the marine aquarium market for giant clams for the food market was the discovery that marine aquarium market for giant clams was much more attractive. A marketable giant clam (2-4 inches) for the marine aquarium market could be raised in two to three years, as opposed to six years, and the farm gate price could range anywhere from $3 to $8 for a single clam depending on the clam's size and color. Moreover, there were no post-harvest processing costs apart from packing and shipping.

The relative advantages of the marine aquarium market were spelled out in Heslinga's 1990 publication, *Giant Clam Farming:*

> MMDC began regular shipments of juvenile clams to aquarium wholesalers in Los Angeles, Chicago and Miami in 1987. By 1989 MMDC was making monthly or twice monthly shipments, grossing about US $30,000 per year on sales to the aquarium trade. . . . Judging by the rate of increase we estimate that the US and European aquarium industry could absorb at whole sale about $50,000 worth clams per year. . . This is a small niche market but it is by no means in significant.

Heslinga's assessment of the opportunity for giant clams as a food product was more guarded than it had been when he estimated that the market was worth 100 million dollars.

The only opportunity he now saw for food clams was in Okinawa, for giant clams are not popular on the main islands of Japan in the sashimi market. This market was available only if the clam meat could be delivered very fresh and on the half shell, but this required that the clam be shipped by air at considerable expense.

The need to get out of the food clam business and focus on the marine aquarium market was obvious. But getting into the marine aquarium market was not easy. RRE needed to grow the more colorful species prized by the marine aquarium market, ones that RRE had little experience working with. RRE also needed to expand its hatchery and nursery. The Wau Island facility, however, could not be expanded to due to its distance from the airport, was a very poor location from which to export live aquarium clams.

The need to get out of the food clam business and focus on the marine aquarium market was obvious.

In the end, RRE decided to continue to operate its giant clam arm on Wau Island as an extension and complement to its eco-tourism development there, but it began to look for a location for a giant clam nursery and hatchery near the airport on Majuro. RRE found a good site at Long Island on Majuro, but did not construct an upland giant clam farm there (an investment of approximately $400,000) until 1995 when a bad storm did extensive damage to the farm on Wau Island, and wiped out most of its broodstock. This disaster made the move to Long Island and the construction of an upland clam farm not only advisable but also unavoidable.

Three factors during this period helped to stabilize the farm and put it on a growth path that saw the farm increase its production four-fold from 1999 through 2002.

First, moving the farm to the upland facility at Long Island eliminated the disruption from storms and predation and created a more stabile environment in which to spawn and grow out giant clams.

Second, the arrival of Aloha Airlines in 1999 significantly increased the farm's shipping options. This was critical. So many shipments of clams were bumped by Continental Airlines in 1998 due to a lack of freight space that RRE seriously considered closing the farm.

Through these contacts Bourke was able to double the farm's giant clam export volume between 2001 and 2002 to 14,000 clams.

Third, the Center for Tropical and Subtropical Aquaculture (based in Honolulu) through its agent, Simon Ellis, was instrumental in identifying several key tradeshows in the U.S. for marine aquarium products. Ellis passed this information on to Rod Bourke, who was managing RRE's clam farm at the time. Ellis then went a step further and found grant programs that provided funds for attending tradeshows. Bourke attended several trade shows on the U.S. Mainland and was successful in contacting buyers from Canada and Europe as well as the US, Bourke. Through these contacts Bourke was able to double the farm's giant clam export volume between 2001 and 2002 to 14,000 clams.

Bourke's success as both the clam farm's production manager as well as its marketing and sales manager after years of inconsistent production and poor sales underscores a point made by Ramsey Reimers. Regardless of how much money is invested; regardless of how large the market; regardless of how many natural advantages or disadvantages the venture possesses, the most important factor in determining the success or failure of the project is finding the right people who can do the job.

Lessons Learned

In a recent study funded by the Asian Development Bank titled "Community-Based Coastal Marine Resource Development in the Republic of the Marshall Islands" (2002), the authors, Mike McCoy and Kevin Hart, surveyed sixteen private and seventeen public marine development projects carried out in the Marshall Islands over the thirty years from the 1970's to 2002.

From their analysis of these projects they developed a list list of "lessons learned" and a list of "important considerations" that must be addressed by any outer atoll marine resource development project:

- Investment capital is in short supply in the outer atoll where the most promising aquaculture sites are located.

- Commercial export must compete with subsistence harvesting of various marine resources.

- The producers on outer atolls typically have no appreciation of the problems and the costs of bringing a product to market and selling it successfully.

- Continuity and sustainability are difficult to establish: when the grants and other government support runs out, the project collapses.

- The technical difficulties involved in developing many outer atoll marine products can be substantial and very expensive to address.

McCoy & Hart explain RRE's aquaculture success as a consequence of being located in Majuro: "That these activities are able to succeed in a more urban setting despite the limited natural resources

available has as much or more to do with access to necessary services as it does to the specific commodities they produce. In addition to reliable electric power and other basic utilities . . . transportation costs at rates the market can absorb (air freight in particular), international telecommunications, and an easy access to postal services and commercial banking, enable the products to be efficiently produced and effectively marketed."

No one would disagree that having a base in Majuro is necessary for exporting live clams. There is an obvious need to have a facility on Majuro where the clams can be consolidated and packed for shipment from the airport on Majuro. But the experience of RRE, particularly when it is contrasted with the experience of the RMI in growing giant clams, suggests that the relative success of RRE involves much more than its location on Majuro. If we go down McCoy & Hart's list of "lessons learned" and "important considerations," it becomes clear that the appropriate business model and business strategy have had more to do with the successful development of giant clams than a location on Majuro.

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Investment capital is in short supply: The business model promoted by Heslinga called for outer atoll residents to become self-employed giant clam farmers. Since none of the outer atoll residents had any capital to invest, the Marshalls government with the assistance of outside funding sources covered the start-up costs by providing the farmers with the seed clams to grow out. The government paid the farmers $300/quarter to grow out the seed clams they were given. Although the clam farmers were required to sign a

contract making them responsible for paying for the clams after their sale, this did little to place the responsibility of ownership on the shoulders of the farmers. The government continued to be responsible for spawning and growing out the seed clams. It also bore the responsibility for selling the clams, while assuming all of the financial risk for the project as well.

The farmer's only role in the operation was to keep predators away for the 6-9 months they held the clams. The government's total responsibility for the project became clear when the grant money for the project ran out and the project stopped.

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RRE saw giant clams as a commercial opportunity and was able to finance the development of a giant clam farm from the cash flow from its other operations. As a result, there was no need for RRE to raise the capital for the project through grants, bank loans or investments from outside partners.

Also, when it became clear that growing giant clams for the food market was not feasible, RRE was able to increase its investment and make the necessary changes in its operation so that it could produce live clams for the aquarium market. Over the fifteen years (1987 to 2002) that RRE was in the giant clam business, the company was able to invest several hundred thousand dollars in the project.

Commercial export must compete with subsistence harvesting of various marine resources. This was an issue as long as the government "farmers" as well as RRE were growing food clams. But RRE was better set up to deal with this problem than was the government. Its site on Wau Island, because it was isolated and away from any other communities was buffered, if not protected, from poaching.

Also, RRE had full-time employees at the site to provide security. Finally, there was never any question about who the clams belonged to or how they were intended to be used. RRE's purpose in raising giant clams at its Wau Island facility was always explicitly commercial.

Security does not appear to have been considered in the government-sponsored food clam project. The clams were distributed to several outer-atoll communities throughout the RMI with the goal of getting the clams to as many good grow out sites as possible.

The intended use of the clams was never spelled out for the farmers. The reports by Heslinga and others make it clear that these food clam projects had overlapping goals: to restock the reef to replace a diminishing resource; to provide a source of subsistence food for the local community; and to produce a cash product for the local as well as the export market. This multi-purpose approach to clam rearing in the absence of any plan for protecting the clams practically guaranteed that the clams would be harvested and eaten as soon as they were large enough.

The producers on outer atolls typically have no appreciation of the problems and the costs of bringing a product to market and selling it successfully. This was certainly true for the outer-atoll "farmers" who participated in the government-sponsored food clam project and the aquarium clam project. None of the outer atoll farmers had the resources or the business experience to do the things that were necessary to link them to wholesalers who could buy their giant clams. Instead, they relied upon government agencies to address these problems for them. But these agencies also appear to have underestimated the complexity of the problem and were always, it seems, a step behind where they needed to be if they were going to be successful in supporting the farmers. Market studies were done *after* farmers in the RMI and the other states in Micronesia had already committed themselves to growing food clams, and production models were done *after* the hatcheries and farms had already been built.

RRE, too, underestimated the cost of successfully producing and selling live giant clams. From 1989 to 1996 it underestimated what it cost to recruit and retain an experienced mariculturist to run its Wau Island farm,resulting in a constant turnover at this position. The cost of getting RRE's products in front of wholesalers was also underestimated.

It was not until Rod Bourke, in 1999, began attending marine aquarium tradeshows that the sales of RRE's giant clams began to take off. But, this was *ten years* after RRE decided to focus on growing giant clams for the aquarium market. In the end, though, even with its miscalculations, RRE was able to use its financial resources, entrepreneurial determination and its business experience to correct its mistakes and turn its giant clam operation into a sustainable business.

Continuity and Sustainability. Any business can achieve continuity if the owners are willing to fund it with their own money regardless of whether the business makes a profit. The challenge comes in turning a continuous business into a self-sustaining business. RRE was eventually able to do this; the government-supported clam farms have never accomplished this. The difference between RRE's clam farms and the government's clam farms was that the former was based on a business model that possessed both the potential and the incentive to be self-sustaining. The government-supported clam farms, however, used a business model that would always require government intervention and government subsidies, thus insuring that they would always be dependent. The outer atoll farmers, lacking the resources, the infrastructure and the experience to market their own clams, would need the government to continue to act as a purchasing agent to sell their clams. Even with such purchasing agents, however, there could be no guarantee of success. As McCoy & Hart observe in their study,

> Because they have no vested financial interest in the products, the agents have little incentive to maintain quality control, or even to care properly for the shipments while on board.

Where this type of scheme has been tried in the past, it is reported that government ends up losing considerable amounts of money while warehouses can fill with unmarketable products.

The technical difficulties involved in developing many outer atoll marine products can be substantial and very expensive to address. Production of giant clams from brood stock held in hatcheries requires almost constant attention to water quality, cleaning, and checking the clams for parasites.

A variety of agencies and programs offered funding and technical assistance for extended periods of time to provide the seed clams, to train the farmers and to market the clams. Still the government-funded giant clam projects failed. RRE, which also received extensive assistance from CTSA and other mariculture development organizations, eventually succeeded in establishing a self-sustaining profitable business. The difference in the two projects was that the outer atoll clam farmers were never in a position to take the technical assistance that was provided and turn their farms into independent businesses. RRE, on the other hand, had the resources and the experience to take advantage of all of the technical assistance that was provided. They used that assistance to develop a successful giant clam farm.

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Value-added strategy for production and marketing noni products in Yap

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Introduction

Noni made a remarkable transition from traditional Polynesian herbal medicine to modern natural remedy over the last few decades. It has become incredibly popular before sufficient evidence had accumulated to establish its efficacy according to biomedical criteria. Noni grows extensively throughout the Pacific and is widely used as herbal medicine in almost all Pacific island communities. Noni juice has become increasingly popular in recent years as a health food drink in western and Asian countries where there appears to be substantial market. This has prompted the establishment of commercial export enterprises in the Pacific on noni products. Noni appears to be a promising cash crop for Pacific island communities including those on the atoll and islands, where it grows successfully.

The field of natural remedies has flourished over the last decade as natural products become increasingly popular around the world, noni has become part of a growing healthcare trend and the subject of much science, myth and marketing hype. Noni plant is regarded as a living biochemical factory, for it produces many biologically active and useful chemical compounds (Nelson and Elevitch, 2006). So far, about 160 phytochemical compounds have been identified in the noni plant and the list grows constantly as scientists characterize new molecules. Owing to its antioxidant potential, commercial interest has increased tremendously in recent years, as provided by the number of patents registered. In the United States 19 patents have been registered by the US Patent and Trademark Office since 1976 (USPTO, 2005). Noni juice has been recently accepted in the European Union as a novel food (European Commission, Scientific Committee for Food, 2002).

Potential of noni enterprises in Yap

As the terms of the Compact of Free Association shifted from annual financial assistance to a trust fund arrangement, island States of Federated States of Micronesia (FSM) is striving for self-sufficiency. During the third FSM 3rd Economic Summit, agriculture emerged as one of the pillars of the country's high growth strategy. Agriculture production in the FSM had traditionally been small-scale and on subsistence level, with surplus harvests going to local markets and retailers. There are, however, several export opportunities for lucrative niche agriculture products indigenous to the FSM. Noni is one such medicinal plant that has attained significant economic importance worldwide in recent years through a variety of health and cosmetic products made from leaves and fruits. It grows abundantly throughout the FSM and presents a lucrative opportunity for coordinated cultivation, harvesting and export. The exploration of returns from noni products will provide alternative sources of economic growth and promise for sustainable development while opening doors for private sector development.

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Agricultural Experiment Station of College of Micronesia-FSM, Yap Campus has embarked on a project in 2006 to promote commercialization of noni and small-scale private sector development in Yap[1]. Overall project goal is to create an environment for the local population to begin small scale enterprises based on noni products to improve local economy. A comprehensive training workshop conducted recently paved the way for farmer participants to gain better understanding of noni products, its business aspects and a range of marketing potentials (Murukesan, 2007). Commercial exploitation of noni in Yap is still in its infancy but the idea of successful business venture is gaining rapid momentum and popularity after the training workshop. Being a small island developing state Yap has several challenges, but also have some unique features that could be explored for the success of any potential business venture involving noni.

Value added noni products: a viable strategy for Yapese agriculture

The competitiveness of any agricultural produce would depend upon quality, reliability of supplies, ability to meet various standards and the extent to which value can be added to these commodities before export. Although the quantity of trees or products to initiate wholesale production and marketing currently available in Yap is limited, future prospects seems very promising. Being a small island with limited number of trees growing in wild, there are few items that a Yapese farmer can produce and sell profitably in its basic form on the open market. However, a value-added strategy will bring long-term survival of small farm enterprises in Yap. Value addition and commercialization by linking formal and informal knowledge of farmers will spur innovations to bring out special products in the market. Often simple characterization of natural products adds value and creates demands or meets the existing demand in more cost effective manner than otherwise available. Value-added production is a way to keep more value of a product within a local economy and, thereby, stimulate economic growth and development.

With the continuous shifting to a global economy, the international market for value-added noni products is growing. Market forces have led to greater opportunities for product differentiation and added value to raw products because of:

- Increased consumer demands regarding health, nutrition and convenience
- Efforts by producers to improve their productivity, and
- Technological advances that enable producers to produce what consumers and processors desire.

For case in point, in Hawaii a processor gets about $448.00 when juice from 100 pounds of noni fruit is bottled and marketed. In contrast, value of 100 pounds of noni

[1] Project entitled 'Production agriculture of Noni (*Morinda citrifolia* L.) to promote commercialization and small-scale private sector development on Yap' is funded by State of Yap and College of Micronesia Land Grant Programs

fruit to a farmer who simply sells his fruits to a processor is about $30.00[2] (Nelson and Elevitch, 2007). In Kosrae, farmers get $50.00 for 100 pounds of fruit, whereas processor derives approximately $900.00 when juice is marketed.

Value is usually created by focusing on the benefits associated with the product or service that arises from:

- Quality
- Functionality
- Form
- Place
- Time
- Ease of possession

Since the product is simply a bundle of benefits, the more benefit a product has, the more customers will perceive the product as having value.

The amount of value to be added to noni is limited only by imagination. This was evident from participants' ideas during the recent training workshop. In order to protect their rights ideas are not listed here, but altogether concepts for 36 new products, most of them in combination with local produce, were tossed around. Linking these value addition concepts with appropriate marketing strategies (Table 1) and by taking greater responsibility for their products as they move to the final consumer, Yapese agricultural producers can capture some or all of the profits that others had previously taken from a noni product. Small farmers can increase their profitability by vertically integrating their operations rather than simply expanding horizontally to increase their volume of production.

Table 1: Value added selling points for Noni in Yap

• Pure noni without additives	• Supports Pacific small island development
• Certified organic	• Hand processed
• Better quality	• Family farmed
• Pasteurized	• Grown by natives
• Superior quality	• Biodiverse environment
• Traditionally cultivated	• Tropical pristine environment
• Used by islanders for centuries	• Unique varieties

[2] Noni fruits contain about 65 percent extractable juice by weight. Therefore, 100 pounds of noni fruits yield about 65 pounds of juice, which is approximately 7.2 gallons of juice.

Some challenges

Since commercial development of noni products in Yap is still its infancy, it poses certain challenges.

Adding value: Producers have a challenge to be responsive to consumer demands by producing what is desired. Attentiveness to consumer demands in quality, variety and packaging are important, because demographic trends show growth in the convenience-oriented, health conscious and environmentally concerned sectors where price is not as important as quality.

Adding value to products can be accomplished in a number of different ways, but generally falls into two main categories: innovation or coordination. The problem is to evaluate what, where, how and who can efficiently perform the marketing functions.

Business Planning: The old adage, "people don't plan to fail, they fail to plan" certainly holds true when it comes to small business success. Adequate planning in the beginning is needed that will help to undertake any venture in the right direction. Adding value to agricultural commodities often requires significantly different business skills and information needs than a businessperson may possess. A good business helps to identify potential characteristics that may cause business failure and improve the chances for business success.[3]

Conclusion

Success with noni venture in Yap requires producing a high-quality product or service, working to increase sales and cut costs, diversifying to reduce risk, and finding niche markets where the added value of noni products can be realized in higher prices. It also entail added advantage that comes from whatever it is about one's operation that cannot be copied, or can only be copied with great difficulty or expense. Adopting an explicit value-added strategy and properly marketing the unique character of Yap's noni (Table 1) will give it a competitive advantage in the local and world market.

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[3] Yap Small Business Development Center provides free one-on-one confidential counseling and low-cost business training workshops and assist in business plan development.

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