

Final Report to:  
South Pacific Regional  
Environmental Program

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# Pre-Feasibility Study into Natural Resource Based Income Generation Options

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Huvalu Forest Conservation Area - Niue  
October 1998

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## Acknowledgement

This report was prepared by William (Bill) Parr, specialist business and development consultant following in-country investigations during the period 25 June - 9 July, 1998. The Terms of Reference for this study are contained by way of appendix to this report.

The author gratefully acknowledges the assistance and cooperation given by all those representatives of the private and public sector contacted. Special appreciation is afforded to the Director and staff - Department of Community Affairs, staff of the Environmental Unit, the communities of Hakupu and Liku villages, and members and organizations within both the public and private sectors.

The timeliness of meetings requires special mention and the willingness of all respondents to devote valuable time was most appreciated.

## Executive Summary

Economic benefits to the communities of Liku and Hakupu from the Huvalu Conservation Area have been limited to date, with only a few individual operators deriving an income directly from the natural resources existing within the forest. Those who are utilizing the CA are generally only deriving a modest income (\$1,500 - \$2,000p.a.) The initial P.P.D. placed an expectation on forecast growth in the tourist sector to provide income generating opportunities, and this has yet to be realized. There are no clearly defined strategies for supporting income generating opportunities contained within the P.D.D..

While the project has good linkages at the policy making level through the CACC, inadequate linkages exist operationally to enhance benefit spread from income generating options. It is recommended that a strengthening of links, particularly with Niue Tourism Office and Niue Development Bank be an emphasis this year.

A range of strategies have been identified that will generate more direct benefits to the target villages within the Huvalu CA. These include the specific promoting of the Huvalu conservation area and associated businesses operating within a set of values statements through the use of logos and brochures. Additional strategies will place more emphasis on using the two villages as secondary hubs from which tours and other income generating options occur.

Historically, Niue industries have been "boom and bust", and causal effects include the productive capacity being only sufficient to enable entry into a single customer, single market, resulting in a higher risk to the industry from potential market collapse through customer default or increased competition.

The communities of Huvalu CA must diversify and spread the risk across a range of niche industry sectors, rather than pinning their hopes on one single sector, and these niche opportunities should provide income generating opportunity for as wide a cross section of the communities of Hakupu and Liku as possible.

A number of constraints are unique to Niue including the small population base, low tourist numbers and a (relatively) high income expectation among the residents. The recommendations contained in the body of this report attempts to work within the constraints that exist, rather than hypothesize on the basis of a future forecast growth.

The consultancy itself concludes that there is no one "magic solution" or sectoral opportunity that will satisfy the desire to derive economic benefits from the CA. Rather a series of small niche market options that are:

- sustainable financially, socially, culturally and environmentally
- compatible with the current situation
- acceptable to the communities
- support the objectives of the project,
- generally do not require high entry costs (investment).

The consultancy has in conjunction with the target communities identified a number of opportunities, and basic pre-feasibility outlines have been performed on each of them. In particular, the consultancy has identified one particular community based opportunity that is acceptable to the communities, provides for village wide income benefits, and has a high degree of environmental compatibility. A project design document has been prepared for this activity.

The Huvalu CA project itself must place more emphasis on providing strategic policies, structures and support that enhance natural resource based income generation. Paramount is the need to have strategic structures and policies to ensure future **economic backlinking** to the village communities from activities within the Huvalu CA.

*It is recommended that SPREP allocate financial and manpower resources to implement a comprehensive integrated economic backlinking strategy on Niue as detailed on Page 28-29 of this report, and that subject to results, that economic backlinking features as a common regional strategy within the 17 Conservation Areas where there is a natural resource based income generating component to the PDD.*



## Factors To Be Considered For Income Generating Options

Income generating options within the Huvalu conservation area must be assessed against three over-riding criteria which are:

- 1.Environmental sustainability
- 2.Social and cultural sustainability
- 3.Financial sustainability

### Environmental Considerations

Relative to the tourism sector, the main consideration is one of **ecological and biophysical carrying capacity** (i.e. capacity is attained when the number and characteristics of visitor use starts to affect the wildlife and degrade the ecosystem). Coupled to this is the **aesthetic capacity** which relates to the visitor experience beyond which visitor satisfaction drops unacceptably through overcrowding. At present, there is no need for concern within the Huvalu Conservation Area, although future planning should remain conscious of this.

Within the agricultural sector, concern exists regarding practices such as the use of paraquat, and the possible further encroachment on the forest area by land clearing to accommodate plantings of taro for export.

### Social And Cultural Considerations

Within the tourism sector **sociocultural capacity** is a consideration, and relates primarily to the impact of tourism on the host population and its culture. Capacity is reached once tourism starts to exert an adverse impact upon the society, economy and culture of the area.

It is noted that at village level, as residential population has declined, more demands on time are placed on those remaining to support activities such as village council, women's committees, church activities and ground maintenance of properties whose owners have left to reside in New Zealand. When combined with the fact that 92% of food supplies are obtained through production in the bush garden or traditional hunting of uga or fishing, most Niueans at rural level have limited surplus time, irrespective of whether or not they are gainfully employed in an income generating or wage earning activity.

There is some delineation of roles by gender, such as uga hunting or fishing beyond the reef, both of which are performed by males. Other activities within the household such as cooking the evening meal can be interchangeable.

Women also have high time demands placed on them including through involvement with organizations such as the Womens Committee which meets weekly.

Issues of land tenure are complicated and can become divisive both within the community and among members of the family. Land ownership is determined by genealogy rather than use and application. Fragmentation of lands was controlled through the selective

inheritance mechanisms as dictated by pule magafaoa and later the Leveki Magafaoa.<sup>1</sup> (A representative from the family who acts as caretaker looking after the interest of the family in relation to land issues).

The large number of Niueans residing overseas accentuates land disputes.

Income generating activities must be designed with flexibility in mind to accommodate social responsibilities of Niueans at village level, and the complexities of Niueans land tenure.

## Financial Considerations

The longer term guardianship of the conservation area lies with the community. Conservation requires the development of activities founded upon the sustainable use of natural resources.<sup>2</sup>

A major consideration for income generating relates to **market capacity** and **management capability**.

Any income generating option pre-supposes the existence of a market. The declining resident population base (2,000 +/-), and small tourist numbers (810 tourists plus 534 business & conference delegates for the 1997 year<sup>3</sup>) contrives to produce a highly limited in country market. There is no formal private sector structure in place to assist local producers to access overseas markets<sup>4</sup>, and this is complicated by the individuality of business operations that have limited production capacity.

Since the major downsizing in the Public Service a number of years ago, more Niueans have become reliant on part time income generating options for cash generation. Unfortunately this move has generally not been supported by basic business training and a number of previous income generating options such as the passionfruit industry at least in part failed due to this lack of basic business savvy when it came to borrowing to expand plantations. Management capability even at the most basic level of costing does not exist in a consistent manner.

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<sup>1</sup> R.Crocombe "Land Tenure in Niue", 1977

<sup>2</sup> Huvalu Forest Conservation Area - Project Preparation Document 1995

<sup>3</sup> Statistics Niue

<sup>4</sup> With the possible exception of Moui Faka Niue (MFN) taro scheme

## An Analysis Of Industry Successes And Failures

	PASSIONFRUIT	LIME	HONEY
Year Established	1970's	1970's	1967
Initial Structure	Operated as joint NZ/UNDP project.	Operated as joint NZ/UNDP project.	Niue Government (Niue Dev. Board) & J.Mackisack
Subsequent Structure	Management transfer to local Niuean 1980's.	Management transfer to local Niuean 1980's.	Taken over by NDB in 1973 then part-privatized in 1991 (Tim Magaoa). Currently in default of loan and no capital to continue <sup>5</sup>
Maximum Output			75 tonnes honey (1975)
Current Output	nil	nil	4,600 ltrs <sup>6</sup>
Main Product	Frozen Passionfruit	Lime juice	Processed honey
Main Market	New Zealand	New Zealand	New Zealand
Main Reasons Cited For Failure (or lack of development)	<p>Growers debt servicing costs associated with expanding from "home plot" into more substantial 1-2 acre plots.(return dropped from .30c to .15c)</p> <p>Vines only lasting 3-4 years instead of projected 5 years.</p> <p>Cyclone devastation</p> <p>Depopulation</p>	<p>Shorter life span of lime trees because of poor soil condition.</p> <p>Neglect by growers.</p> <p>Stiff competition ex West Indies entering New Zealand market</p> <p>Cyclone devastation</p> <p>Depopulation</p>	<p>Lack of good hive management practices</p> <p>Lack of business skills</p> <p>Inadequate levels of working capital</p>

<sup>5</sup> Niue Honey Industry Assessment April 1998 Paul Bolger

<sup>6</sup> Stats Niue 1998 provisional year to date

	<b>PASSIONFRUIT</b>	<b>LIME</b>	<b>HONEY</b>
Conditions under which industry could be revitalized	Not feasible due to high labour input requirements and low population base	Not feasible due to high labour input requirements and low population base. Also soil conditions produce a short life tree.	Buy out under j/v agreement funded under PIIDS equity with expatriate bee-keeper as manager. Either total operation owned & managed under j/v or with hives individually owned by village members.  Require min.600 hives with 50kg output/hive p.a.  Require minimum return of \$2.00/kg  Require training input for good hive management practices

• Table 1 Industry Successes and Failures

	<b>HANDICRAFT</b>
Year Established	1980's
Initial Structure	Operated under grant funding from Niue Government
Subsequent Structure	Women's Handicraft Centre run as cooperative under the Niue National Council of Women. Approx. 100 producers/members affiliated through village womens handicraft group
Maximum Output	Approximately \$80,000 p.a.
Current Output	minimal
Main Products	Woven handicraft
Main Market(s)	New Zealand
Reasons Cited for Collapse	<p>Marginal Profitability</p> <p>Poor stock purchasing decisions</p> <p>Default of buyer on payment for 1 container product destined for Hawaii via Fiji.</p> <p>Management Issues</p> <p>Internal competition from direct sales ex members and externally from expatriate Niueans based in New Zealand</p>
Conditions under which industry could be revitalized	<p>Resolving price expectations</p> <p>Revitalizing the industry and particularly external markets</p> <p>Rebuild capacity within the industry (fewer weavers and mostly part time now)</p> <p>Address quality issues</p> <p>Appoint marketing and management coordinator with industry specific knowledge</p>

### Current Huvalu Bound Tourist Activities

	<b>MISA KULATEA</b>	<b>HELENS TOURS</b>	<b>TALI'S TOURS</b>	<b>F.I.T.'S<sup>7</sup></b>
Location of Operation	Within Huvalu CA forest on family owned land and south east Niue. Tours commence from Alofi NTO & include transportation	Within Huvalu CA and Hakupu village. Tours commence from Alofi NTO or hotel pick up and include transportation	On family owned property adjacent to CA. Tours commence from Alofi and include transportation NTO	Throughout CA
Description of product(s)	<p>½ day bush walk focusing on traditional survival in the bush (food, hunting, medicines etc;)</p> <p>Coastal wilderness walk for more adventurous (6 hours) adjacent to CA.</p>	<p>Huvalu forest walk and Togo (3 hours)</p> <p>Hakupu village fiafia night (5:00 - 8:00p.m.)</p> <p>Vaikona Chasm 5 hours - hard adventure tour</p>	Ulapaka and Anatoloa cave tours 1 - 1 ½ hours - soft adventure	<p>Women Handicraft days</p> <p>Togo and Vaikona</p> <p>Village home stays (rental accommodation)</p> <p>Liku Country Club</p> <p>Tahiono Arts</p> <p>Tui'na Health Clinic</p> <p>Vinivini Track</p> <p>Sculpture Park</p> <p>Hakupu &amp; Liku villages</p>

<sup>7</sup> FIT (free independent travellers)

	<b>MISA KULATEA</b>	<b>HELENS TOURS</b>	<b>TALI'S TOURS</b>	<b>F.I.T.'S</b>
Volume of Activity	1997 estimate of between 100 to 150 people @ \$25/head.	Not identified	Less than 100 people 1997	
Marketing strategies	Direct orders or through NIC	Direct orders. Doesn't normally work with NIC	Director orders, NIC and works with Niue Hotel	
Sales Support Material	Basic black on green flyer	Two colour brochure. No photos	Coloured brochure with photos. Promoted to Aspac, Go Pacific at road show	Minimal apart from Jason's map
Level of Direct Benefit Spread to Huvalu CA	Minimal	FiaFia night provides benefit spread to village	Minimal	None to minimal

• Table 2 Huvalu based Tourist Activities

## Brief Analysis Of Ecotourism Potential And Limitations For Huvalu CA

### Potential

PATA's<sup>8</sup> study of ecotourism operators throughout the Pacific island region found that the most popular type of ecosystem was the rain forest (62% of consumer interest). These in addition to the marine ecosystems, comprise the primary attractions for visitors to the Asia-Pacific region. Indigenous culture also serves as a basis for a number of existing and developing ecotourism attractions in the Pacific.

The Huvalu conservation area possesses natural attractions and resources around which a further range of ecotourism products could be developed. The major limitation is the market, which currently stands at 810 bone fide tourists for 1997.

1997 total visitor arrivals to Niue increased by 30% over the previous twelve month period. Most of this was attributed to buyers and their spouses arriving in Niue for the purchase of alpacas from the quarantine station. *It is recommended that products and services be designed to specifically capture more from such markets (including consultants and business people) who are otherwise committed during daytime hours.*

The island has an adequate infrastructure to support tourism growth, and there is a surplus of accommodation capacity being experienced. *It is recommended therefore that no further expansion of accommodation be encouraged other than in niche areas that do not currently exist (i.e. camping sites).*

The Huvalu CA currently lacks adequate promotional material of its own. The main initial point of contact and information for tourists is the Niue Information Centre which is open six days a week. *It is recommended that in consultation with Niue Tourism Office the project commits to the production of professional quality informative brochures and interpretive information boards for both the NIC, gateway advertising at the airport, and distribution throughout the accommodation providers around Niue. It is also recommended that the project invest in interpretive signage in key areas throughout the Huvalu CA, and that input be sought from Tourism Resource Consultants.*

Tour operators are experiencing continued difficulties because of the small size of the tourist market at present. Copy cat tours will only further fragment and weaken the existing base, and will lead to reduced quality of service. There are however a number of potential new ecotourism products that could be developed. These include:

1. Night time bush walks and traditional uga hunting using lighted coconut torches
2. Formalize visits to women's handicraft days (Liku on Monday, Hakupu on Tuesday). Note that because Liku is currently fragmented into two groups, Hakupu might be the better alternative. The tour should focus on active participation including lessons.
3. Revitalize the coastal walk originally undertaken by JJ Tours.

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<sup>8</sup> Pacific Area Travel Association



4. Consider the building of a canopy walkway through the primary forest treetops. This can be built in conjunction with a bird watching hive for photography of wildlife.
5. Participating in traditional umu (traditional oven) preparation and cooking
6. Tourist participation in resource surveys (such as flying fox surveys)

*It is recommended that until market capacity increases, encouragement be given only to new ecotourism initiatives that expands the total market and complements existing operations, and that such initiatives be developed in consultation with Niue Tourism Office. Training in tour guide and interpretation skills, and basic first aid and safety should be given to support all new ventures.*

Flight scheduling creates a captive market for at least seven days confined within a relatively small geographic area. More aggressive promoting of the forest and associated activities will further support existing and future income generating ventures

## Limitations

Increased economic benefits from tourism to the two communities within the Huvalu CA are dependent on an increase in tourist arrivals. This is currently limited by:

1. Accessibility issues due to the high cost of travel to Niue and the limited seat allocation on Royal Tongan Airlines weekly service out of Auckland.
2. Limited awareness among travel agents about what Niue has to offer<sup>9</sup>

Early forecasts of 10,000 visitors by the year 2,000<sup>10</sup> have proven ambitious and revised forecasts are for between 4,100 and 5,700 total visitors to Niue by the year 2,000, of which approximately 2,800 visitors are classified as bone fide tourists<sup>11</sup>

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<sup>9</sup> Tourism and Private Sector Development Programme - Niue UNDP/WTO 1997

<sup>10</sup> Hoskins, 1989

<sup>11</sup> Tourism and Private Sector Development Programme Niue UNDP/WTO 1997

	Holiday Vacation	Business Official Conference	Visit Friends Relatives	Other Purposes	Total
1990	169	154	283	43	649
1991	252	251	438	52	993
1992	668	366	479	155	1,668
1993	1,334	299	1,352	373	3,358
1994	1,527	334	851	90	2,802
1995	1,021	503	514	123	2,161
1996	733	364	327	98	1,522
1997	810	534	317	159	1,820
• 1998	257	157	114	24	552

Table 3 Tourist Arrivals by Year/Month and Purpose (Stats Niue)

Economic “backlinkages” to local village communities is the primary tool for distributing benefits. Currently little economic backlinking exists among existing tour operators other than Helen’s Tours (fiafia night), with the situation having changed little since the project was first conceived in 1995.<sup>12</sup> Economic returns to the villages should occur both through product development (fees and profits from sale of products) and employment in the wider tourism sector (wages).

Tourists visiting villages have an in built expectation of seeing traditional thatched “bure” or “fale” type buildings. Neither village has any building that would satisfy visitor expectation at present. *It is recommended that a “focal point building” be developed in each village to support economic backlinkages and that this facility be used as departure points for locally guided tours, sale of handicraft, and a basic information point. The building should be developed along traditional lines of construction.*

**Economic backlinking must become an integral strategic aspect of all future project activities if benefit expectations to the target community are to be realized.**

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<sup>12</sup> Huvalu Forest Conservation Area Project Preparation Document 1995

**Existing Nature Based Income Generating Activities in Huvalu CA**

NAME OF BUSINESS	TYPE OF BUSINESS	LOCATION	NUMBER EMPLOYED	COMMENTS
Misa's Bushwalk	Nature based bushwalk	Huvalu CA	2 part time (incl.driver). Gross \$25 p.p.	Operates off family owned land. No benefit spread at present. Looking at further eco-tourism products based around coastal track on family land which will have an access charge for FIT's.
Helen's Tours	Eco-tourism bush walks. Fiafia night.	Huvalu CA - Hakupu	1 part time + women's committee. Generates \$35p.p. gross to operator and \$23p.p. to village from fiafia night . Normally requires min. 6 participants.	Working well in conjunction with village. Operator should be encouraged to add further products.
Tali's Tour	Eco-tourism cave walk	Lakepa Village adjacent to Huvalu CA	1 part time worker grossing \$30 p.p.	Also operates Taoko prints.Restrictions on capacity because of commitment to bus route
Niue Honey	Honey production.	Total of 380 live hives throughout Niue. 7 sites within CA returning \$25/site p.a. rental to owners <sup>13</sup>	2-3 part time based in Alofi.	Business poorly managed.

<sup>13</sup> List of sites and owners in appendix

NAME OF BUSINESS	TYPE OF BUSINESS	LOCATION	NUMBER EMPLOYED	COMMENTS
Niue Timber	Timber sawmill and value adding	Prev. operated within Huvalu CA (ViniVini Bush Rd)	6 fulltime. Last year totalled 109CuM logged timber (outside CA)	Business recently linked in with Tauranga based market for furn. Components
Liku Womens Handicraft	Handicraft production	Liku village (2 units)	Most village women (part time)	Major constraint is market and price expectation. Main resource used is pandanus. Outlets include direct sales and Hinapoto H/crafts
Hakupu Womens Handicraft	Handicraft production	Hakupu village	50 members village women (part time)	Major constraint is market and price expectation. Main resource used is pandanus. Main outlet is sales to tourists. Reporting only \$50/week sales between the whole group
Pita Tanaki	Catering/piggery	Hakupu	2 part time	Operating 5 yrs. Not main source of income
Tui'Na Health Clinic	Traditional and chinese health/therapeutic massage	Liku	1 part time	Both local and tourist market. Uses some traditional medicine plants
Tahiono Arts	Art cooperative	Liku/Alofi	2 part time + artists	Both tourist and export markets. Some local timber and pandanus used.
MNF Taro	Growing of taro for export	Liku and Hakupu	Most households	Currently achieving \$1.60/kg through A/Samoa (John Kruse). Volume demand is 10 FCL/mth

NAME OF BUSINESS	TYPE OF BUSINESS	LOCATION	NUMBER EMPLOYED	COMMENTS
Hinapoto Handicrafts	High end quality handicrafts	Alofi commercial centre but with purchases from both villages	1 plus producers	Undertaking some limited export. Prices based on WHS price list.
Titania Handicrafts	Handicraft and fabrics	Hakupu	2 part time	Buying mainly from women in Hakupu. Turnover \$50 week. Main constraint is market.
Womens Handicraft Shop	Handicraft	Aolfi	2 part time volunteers. Minimal activity at village levels	Operated one day week. Lacks visibility.
Vanilla Producers	Small scale vanilla plantings	Throughout Niue total of 65 growers.	7part time growers between Liku and Hakupu <sup>14</sup>	Current production island wide is less than 300kg p.a.with 72% produced by two growers

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<sup>14</sup> as of Dec; 97. An additional 4 have indicated their intention to start shortly (refer Appendix VI for full details)

## Summary of Responses From Businesses Operating Within Huvalu CA

Analysis of business responses from survey are as follows:

- 90% of businesses cite lack of sales as the major constraint to business growth
- All businesses describe their present position as either static or declining
- Most businesses have no or little sales promotional material
- Those in MFN taro production do not recognize it as a business activity!
- The majority of business activities are generating income of less than \$100/week (averaged over the year)

## Workshop on Natural Resource Based Income Generating

### Attendance

The workshop which was held on Friday 3 July 1998 at Huanaki Cultural Centre was attended by a total of 18 as follows: <sup>15</sup>

	LIKU	HAKUPU	C.A.STAFF & OTHER
Male	1	4	4
Female	2	6	1
TOTAL	3	10	5

• Table 4 Workshop participants analyzed by gender and village

The workshop was conducted with an emphasis on total participation by all attendees. Conservation staff assisted in facilitating group workshops, but otherwise remained neutral to allow village members to have their say.

### Case Studies

Attendees were split into three groups and presented with three case studies from the Biodiversity Conservation Network which they were encouraged to analyse and present back to the workshop. The three case studies were:

1. Oil Nuts and Tourism in the Forests of Makira Island
2. Butterflies in the Rain Forest of Irian Jaya
3. Scientific and Adventure Tourism in the Forests of Lakekamu Basin

Their analysis from the case studies were as follows:

*Reasons Why The Projects Succeeded.*

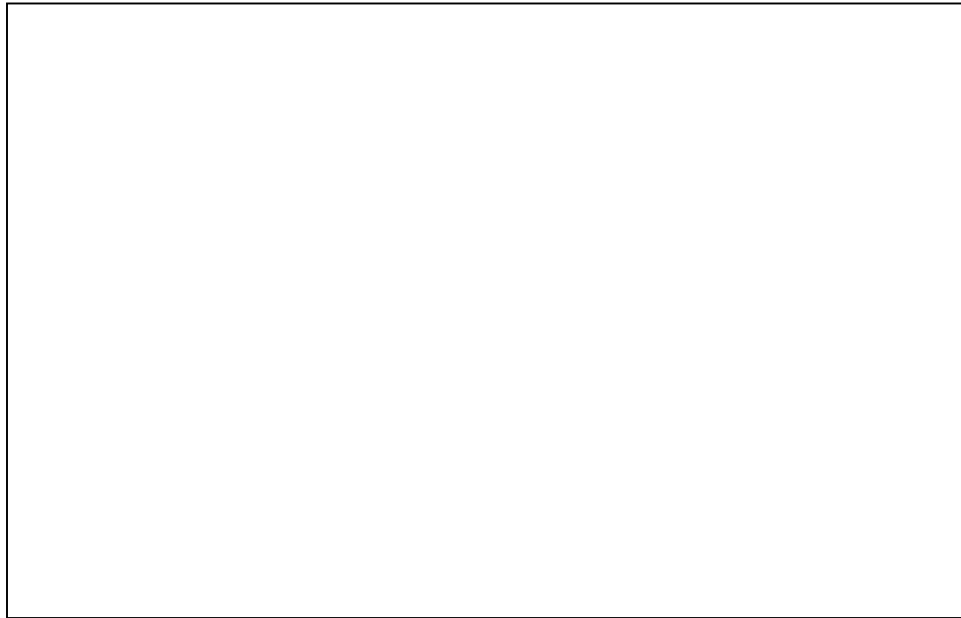
- Run by the community
- Training workshops were carried out to provide basic skills
- Project was monitored by outside people
- Support was given by way of funding

<sup>15</sup> List of Attendees Contained in Appendix

- Government supported the project activity
- Adequate supplies of resources
- Good number of tourists

*How Can We Apply The Lessons To Niue?*

- Businesses can be successfully run by the community provided it can be guided by a project committee
- External training is an essential element



• Figure 1 Participation of Villagers During Case Study at Workshop



## Identification Of All Potential Income Generating Options For Huvalu

### Methodology

A series of participatory think tank meetings were held with both the CA staff, and during the workshop. Basic training was given to demonstrate that to generate an income, two essential elements needed to be present:

1. The existence of something to sell (product or service)
2. The existence of someone to buy it (the market)

Examples were given as to how the economic value of a resource can be altered through the concept of value adding. Examples included the use of leaves and foliage (in themselves valueless) which, once dried and pressed, could produce gift cards or works of art.

### Resources, Sites and Activities

It was agreed to categorize the Huvalu conservation area under three headings:

1. Naturally occurring resources which could serve as raw materials
2. Sites to which people could be taken
3. Existing activities in which people could participate

Results of the brainstorming are detailed below:

RESOURCES	SITES	ACTIVITIES
Pandanus Luku Uga Taro Herbal & Medicinal Plants Coconut Products Timber Products Natural Dyes Lime Leaves Foliage Nonu Vanilla Lime	Anapala Cave Togo Caves Vaopala Cave Vaikona Chasm Maselulu Vehokaho Puhi Halavai Cave Pool Tautu Tahikula Vaouhi Vinivini Bush Track Hikurangi	Women's H/craft Group Uga hunting Umu making FiaFia night Bush walking Show Days Pig hunting Traditional Fishing Bird Watching Starch Preparation
Passionfruit PawPaw Fragrance producers Ginger Yams Bananas Mushrooms Arrowroot Cassava & starch	Suicide Site Ancient Umu Cooking pits	

• Table 5 Resources, sites and activities identified by workshop

### Income Generating Options Identified

From the above list, a range of income generating options were identified by the group. All ideas came from the villagers without assistance from either the consultant or conservation area staff.

ECO-TOURISM BASED	PRODUCT/PRODUCER BASED
<ul style="list-style-type: none"> <li>• Bird watching</li> <li>• Uga farm (guaranteed sighting...)</li> <li>• Night time butterfly hunts</li> <li>• Handicraft lessons</li> <li>• Hair cutting/ear piercing ceremonies</li> </ul>	<ul style="list-style-type: none"> <li>• Traditional medicines</li> <li>• Luku cultivating</li> <li>• Coconut oil, cream and soap production</li> <li>• Spiders (making fishing lures)</li> <li>• Vanilla farming</li> <li>• Honey bees for honey production</li> <li>• Nonu growing</li> <li>• Handicraft production</li> <li>• Fruit jams</li> </ul>

• Table 6 Income Generating Options Identified by Workshop

Additionally, the consultant together with CA staff have identified further income generating options that would not place unfair pressure on existing products.

ECO-TOURISM BASED	PRODUCT/PRODUCER BASED
<ul style="list-style-type: none"> <li>• Canopy walkway</li> <li>• Revival of JJ's bush and coastal track walk</li> <li>• Night time bush walks using trad. Coconut torches</li> <li>• Taro ecology tours</li> <li>• Participation in scientific surveys</li> </ul>	<ul style="list-style-type: none"> <li>• Nursery shrubs for local market</li> <li>• Dried and fresh chillies</li> <li>• Books, tee-shirts and videos based around the Huvalu CA</li> <li>• Hydroponics flower and vegetable gardening</li> <li>• Products based around "loofa" plant (pulu)</li> </ul>

• Table 7 Other Income Generating Options Identified

### Income Generating Activities To Be Pursued

As a result of the workshop, the participants identified and agreed on five activities which they consider as having the highest potential for both short term and longer term income streams. The income generating activities to be investigated further are:

1. Coconut Oil Processing
2. Handicraft production and associated activities
3. Vanilla Farming
4. Uga Farm (defined as an area set aside where tourists can be guaranteed to see uga in their natural habitat)
5. Bee Keeping

With the possible exception of bee keeping, none of the five require any substantial capital investment (entry cost).

## Economic Backlinking - Strategies for Huvalu

### Identifying The Problems

Limitations on the development of natural resource based income generation for the communities within the Huvalu conservation area in particular (and by implication Niue in general) can be identified as follows:

1. Low residential population base which inhibits growth of product and service opportunity into that sector
2. Land tenure issues which creates a high level of individuality among locals
3. Low numbers of tourist arrivals to Niue thereby inhibiting opportunity
4. Economic benefit spread from tourists using the Huvalu CA only occasionally reaches down to the villages of Liku and Hakupu
5. Difficulties in accessing external markets because of individuality of producers, isolation and individual productive capacity and capability not matching market demand

It is beyond the scope of this consultancy to resolve issues (1) through (3).

### Defining Economic Backlinking

Economic backlinking recognizes that the most appropriate tool to obtain economic benefit spread in a village community is to resolve issues that prevent communities from obtaining fees and profits (from sale of product and services) and direct employment (wages) from tourism and other activities.

In its purest form, economic backlinking should encourage the market (tourists) to come into direct contact with the villagers or their products, thereby presenting the maximum potential for the host communities to derive income opportunities from this contact.

### Recommended Economic Backlinking Strategies For Huvalu CA to Promote Income Generating

1. Have the communities define a Code of Environmental Business/Community Standards for businesses wishing to operate within the Huvalu CA. The code includes issues of environmental "friendliness", and spreading benefits to the whole community (such as through agreeing to take guests through the village).
2. A logo is to be designed to create a common "theme" around the conservation area, and this logo to be used on all promotional and interpretive signage within the park. Any business complying with the Code of Environmental/Community Business Standards should be allowed (and encouraged) to use the logo on his/her signage or advertising. A promotional fund should be made available for initial awareness advertising.

3. Consumers should be educated to make their own distinction on products and services offered based on the logo. The logo will provide the necessary distinction between businesses providing economic benefits to the Huvalu CA communities and those “free-riding”.
4. The logo should become the intellectual property of a Huvalu Conservation Area Trust, who “audits” the compliance of businesses using the logo. By year two, businesses should be deriving sufficient benefit from the perceived value of the logo to be charged an annual “royalty” fee. Income derived from the royalty should be applied to further promoting the logo, as well as associated promotional materials for the park.
5. Huvalu CA commit to the production of professionally produced promotional and educational brochures in consultation with NTO. These promotional brochures should highlight features within the CA, as well as co-promoting businesses who use the logo and comply with the code. As far as possible, maps should point F.I.T.’s towards either of the two village focal points (detailed below).
6. Gateway advertising at the airport by way of information boards should be designed.
7. Huvalu CA needs to be aware that the major initial point of contact for tourists is the Niue Information Centre in Afoli and through accommodation providers. As such, promotional materials and information boards should be easily accessible within the centre and hotel compendiums..
8. New or improved signage within the CA to include more interpretive signs and associated support material. Specific direction signs should point towards Liku and Hakupu using internationally accepted visual signs for refreshments, toilet facilities, food, barbecue areas etc: to draw tourists to the two villages.
9. A point of initial contact booth should be established in a prominent position in each village. Ideally this should be built using traditional methods of construction. The focal point to be manned as required by village community members when/as tourists arrive. The focal point to serve as an initial contact point for tourists arriving at the village, and for villagers who can then direct the guests to specific services (tour guide, ice cream parlour, handicraft sales etc;). It should also provide basic information.
10. Toilet and rest area facilities to be made available in each village, and also at the site of the proposed information centre.
11. The Trust to comprise of the village council of both villages, with advisory input from a CACC member who is independent of the villages.
12. The “Trust” can hold and manage assets “in trust” for the benefit of the community. For example, the proposed coconut oil processing equipment should be held in trust as a community asset, as opposed to being held by a specific village.
13. The Trust will act as a focal point in the longer term for directing inputs (donor funding requests, consultants, training) into the CA project.
14. The Trust should serve as a marketing arm to promote goods and services to external markets on behalf of the members. It should be able to operate as a trading entity in its own right directly or in cooperation with other NGO’s and support

organizations. Profits from the sale can be used for a range of activities including but not restricted to:

Improving community shared facilities

Specific conservation initiatives

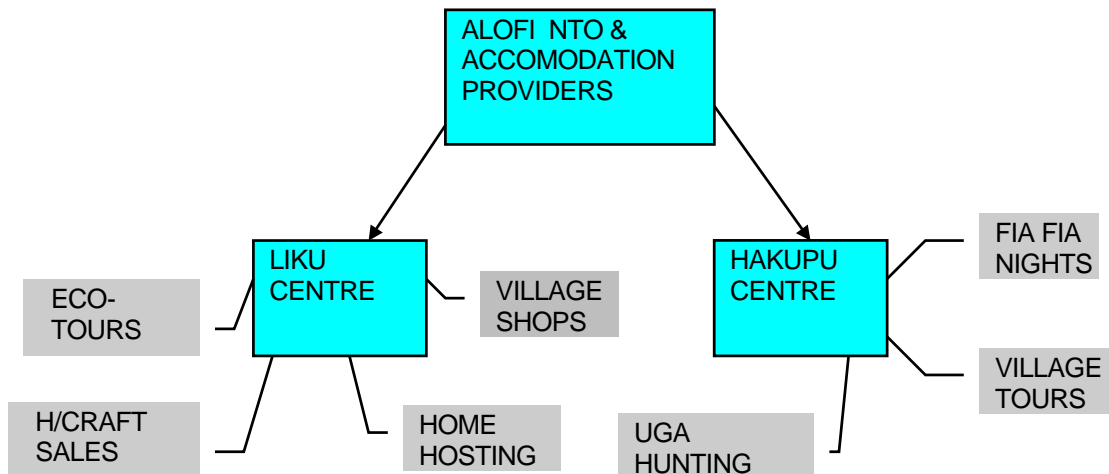
Provision of research and product development inputs

Profit sharing distribution among members

Purchase of further assets for income generation

15. The Trust invests in, and markets a range of products of its own, specifically informative, educational and promotional videos and books on the CA area as well as a monthly newsletter paid for by subscription.
16. Economic backlinkages be encouraged through the display of handicraft from the two villages in strategic locations (NTO, Tali's Tours shop etc;)
17. Economic development be further supported through the provision of basic business training in areas including costing and pricing, marketing, product development and basic cash flow management.
18. Huvalu CA strengthens its strategic relationship with key NGO's and others integral to the income generating capacity of the CA. These include but are not limited to NTO, NDB, Chamber of Commerce and DAFF.
19. A new funded one year position be created - that of village motivator who will provide specific focus for villagers relating to income generating options. They will also be the conduit for coordinating inputs such as training etc: (note: this could be a combined position with the project manager)
20. Specific task forces be established to assist with providing practical support to income generating activities, with members seconded from NGO's, the private and public sector on a "mix and match" basis.

• Figure 2 Example Of Economic Backlinking Model Proposed For Huvalu CA



## Proposed Income Generating Options - Pre-Feasibility Assessments

### Uga (coconut crab) Farming

#### Project Description

The idea was to set aside an area of conservation area for the introduction of higher density populations of coconut crab. The area would be protected from hunting and predators, and would be specifically aimed at tourists wanting a guaranteed sighting of uga.

#### Resources Used

The main natural resource used would be the uga. Although they are recognized as an endangered species, they will be held in a protected area, free from predators. Harvesting will be selective and only outside of breeding season.

#### Target Market

The market would specifically be overseas tourists wanting to see uga in their natural habitat. 1997 tourist statistics show a total of 810 bone fide tourists with a further 500+/- potential non-Niueans here on business and conference. Of this total market, it is anticipated that approximately 10-15% of the market would participate. (130+ per annum).

Growth within the market has been erratic, although UNDP forecasts estimate approximately 5,000 visitors to Niue by the year 2,000.

#### Competition

As the activity would be a night time activity, there are no current competing eco-tourism operations. This product is expected to expand the total market.

#### Environmental Considerations

The proposal is generally environmentally compatible and does not produce any refuse or effluent. No chemicals or harmful toxins are introduced to the CA. Lighting will be by way of traditional coconut torch, which in times of severe drought may represent a fire hazard potential. This risk will be managed by using battery powered torches during high risk periods, and imposing a "no smoking" rule on guests.

Because the activity will be centred around a specific location, too a high a density of guests might be detrimental to the forest area. Regular monitoring in conjunction with CA staff to measure changes on the environment or wildlife will occur.

The need to protect the area from predators (pigs, dogs and possible poaching by other villagers) will require the use of barbed wire which is aesthetically inappropriate to the area's image.



### Product Description

The product will basically be uga sightings. It will start from either of the two villages (for FIT's) or from Alofi, with transport provided for the latter. The product will be a night time activity and will commence with a bush walk describing the sights and sounds of the forest in the evening. The culmination will be the sighting of the uga in their natural habitat, followed by an "uga" supper at the village. The tour is expected to take a total of 1 ½ hours, commencing at 6:30p.m.

### Pricing

It is anticipated that a price of \$20.00 p.p. for FIT's and \$25.00 p.p. with pick up ex Alofi will be acceptable and in line with consumer expectations. The activity will only run with a minimum of 4 people.

### Marketing

Main marketing emphasis will be placed on the NIC, who will be supported by brochures. The trip will be timetabled twice weekly on fixed departure days or on demand for a minimum of 4 parties.

Additional promotional materials will be distributed to each hotel and accommodation centre. Owners of all accommodation centres will be offered a complimentary trip to ensure personal recommendation.

### Start Up Costs

Main start up costs will consist of:

Brochures (500) .....	\$300
Printed guides tee-shirts (2) .....	\$60
Torch and batteries .....	\$50
Barbed wire (300 mtr) .....	\$500
	_____
	TOTAL \$910

### Projected Sales

Projected sales per quarter are as follows:

4 <sup>th</sup> quarter 1998 (1.5 per mth/4pax)	\$360
1 <sup>st</sup> quarter 1999 (2 per mth/4 pax)	\$480
2 <sup>nd</sup> quarter 1999 (4 per mth/6 pax)	\$1440
3 <sup>rd</sup> quarter 1999 (4 per mth/4 pax)	\$720
	_____
	TOTAL \$3,000

Recommendation

The impact of barbed wire in the area will detract the tourist from the experience in the bush, and will also encourage interest from other villagers possibly for unlawful taking of uga from the property. There is also a high initial setup cost.

It is recommended that this scheme NOT progress in its present form, but instead be replaced with a night time "uga hunting" activity in their natural habitat, involving the tourist in a learning exchange. Such hunting be undertaken on a "catch and release" basis. Projected sales can remain the same for the revised venture. Revised start up costs as follows:

Brochures (500) .....	\$300
Printed guides tee-shirts (2) .....	\$60
Torch and batteries .....	\$50
First aid kit .....	\$150
	_____
	\$560

## Coconut Oil Processing

### Description of Project

The project will be using dry mature coconuts which are plentiful throughout the CA on privately owned land. Currently the coconut has no commercial or economic value other than in small numbers for drinking coconuts. Hence most of the coconuts remain unharvested.

The project will be a community (village) based operation processing the coconuts using the DME process with equipment sourced from Australia.

### Resources Used

The only natural resource to be used will be mature coconuts.

### Resource Availability

Most land owners in Liku and Hakupu own small coconut plantations. Households use approximately 6 nuts per week for home consumption, the balance being fed to pigs or more likely left to rot on the ground.

There are 23 resident landowners in Liku and 64 in Hakupu. A crude estimate of an average 200 trees per land owner has been used for calculating the resource available. An average tree produced between 30 - 60 nuts p.a. A conservative estimate of 40 nuts has been used.

Total number of nuts per annum available are estimated as follows (based on only using coconuts from resident owners);

Liku	184,000
Hakupu	512,000
TOTAL AVAILABLE	696,000

### Productive Capacity

Information to hand suggests a yield of 25 ltrs of pure oil per 500 nuts<sup>16</sup> for Fiji coconuts with a high protein residue able to be used for stock feed. The equipment is capable of processing 600 nuts/day (30 ltrs). (*see later comments in Project Design Document*)

Based on 240 work days p.a. it is calculated that each unit process 144,000 nuts into 7,200 ltrs of oil.

On an assumed near dry weight of 400g per husk, each unit will also produce 57m/t shredded coconut husk per annum.

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<sup>16</sup> Based on Fiji coconut trials. An initial assessment suggests a higher yield for Niue due to the larger size of coconut.

## End Products

The end product is pure virgin coconut oil which is odourless and colourless. It is the only oil capable of being used as a fuel oil, either as a replacement in kerosine lamps or diesel. It has excellent cooking characteristics, is low fat and low in cholesterol.

By products from this activity are produced that have a potential economic value including high protein coconut meat residue as a stock feed, shells for charcoal, and husks. It is recommended that husks be shredded into a dried mulch and that this mulch be used firstly to improve agricultural land quality within the two villages (weed control, moisture retention) and for sale to other villages. To facilitate this, the project should supply one shredder/mulching machine to be shared between the two villages.

## Target Markets

The target market is defined by the packaging of the end product. It can be used as cooking oil (domestic market import substitute), fuel oils, or as a massage oil base either in its natural form, or with added fragrance. The initial market for the coconut oil will be domestic, and will attempt to reduce Niue's reliance on imported cooking oil.

Mulched coconut husk has an initial target market in other local villages as well as basic soil improvement medium within the target villages.

Markets will be developed offshore using assistance from the South Pacific Trade Commission. It is known that Samoa has been able to develop an export market with an initial trial shipment of 10,000ltrs to be shipped shortly.

## Technical Aspects of The Project

Dry nuts are collected from the plantations and brought into the centre in each village. The nuts are dehusked manually and split in half. An electric grater is used to fine grate the coconut meat, which is then solar dried in a solar drier. The dried grated meat is then put into the press and the oil is extracted by hydraulic pressing. The oil is then filtered, producing a clear, odourless pure virgin coconut oil. Depending on the end market, the oil will either be bottled into retail bottles, or bulk packed.

Dried husks are fed into a petrol driven mulching machine, which shreds the husks. The resulting mulch is further dried in a shelter, prior to bagging for sale or storage.

To facilitate this project we will eventually require in each village:

1 set of DME equipment including press, grater, filters, scales, hopper and cylinders.

1 solar thermal drier

Shared access to a mulcher

Training

Land & building for the operation

Electric power supply

## Social and Community Context

Both villages have in recent years suffered from migration loss. There are increasing numbers of young people who despite being well educated, find it difficult to obtain paid employment.

Land is family owned and controlled. The economy is basically agricultural subsistence based, although there are still good numbers of households who derive an income from paid work within the government.

Villages are managed by the village council, who have multi-purpose roles in raising funds, helping improvement of services, act as a link between the village and government and economic wellbeing. Other groups within the village (women's handicraft etc;) are under the umbrella of the village council.

In each village, village council have been consulted regarding the project. It is likely that from an operational viewpoint, motivating the community will be undertaken by the village council.

In consultation with the whole village, the V.C. will maintain records of contribution of nuts per family. Quarterly payouts on purchases of nuts will be made. Determination of profit distribution will be by the decision of the majority of the community.

Where possible, any possible profit distribution will be spread equally for the benefit of the community (for example, upgrading community facilities), to avoid any detrimental impact through individual profit distribution. It is proposed that these issues be dealt with ahead of commencement of the operation.

## Legal Aspects

Land and resources used are principally family owned. Families will supply coconuts for processing and will receive payment once a sale is made, relative to the amount contributed. Some profit will be retained for working capital requirements, and also for subsequent community benefits.

Any new buildings will be placed on land with a legal lease agreement to provide security. The equipment will be held "in trust".

The business will be community owned and run along co-operative lines. Initial capital will be obtained through the community donating 3,600 nuts. Villages will be additionally expected to provide free labour for the building of solar dryers.

There will be legally constituted constitution and Trust. The trust will comprise of the village council plus a representative from the CACC.

There are no EIA reports required on Niue for this project. The business is a "green" business and environmentally compatible.

We will need to obtain a business licence and be registered. There are no VAGST issues in Niue.

### Trial Operation

It is recognized that the coconuts on Niue will give a different yield to those quoted in Fiji. As such, it is prudent to undertake a full trial operation before committing both villages to the building of a solar drier.

It is therefore recommended that an initial trial operation take place in Hakupu, for the purpose of establishing technical production data, costs of production, training and market research using one set of equipment, and that subject to satisfactory outcomes, that production be extended to Liku. *(noted that the CA staff had requested two sets be purchased from the start, but because of the initial entry cost, and the requirement to confirm the feasibility of the project, the recommendation to proceed initially with one set until proven remains).*

### Financial Aspects

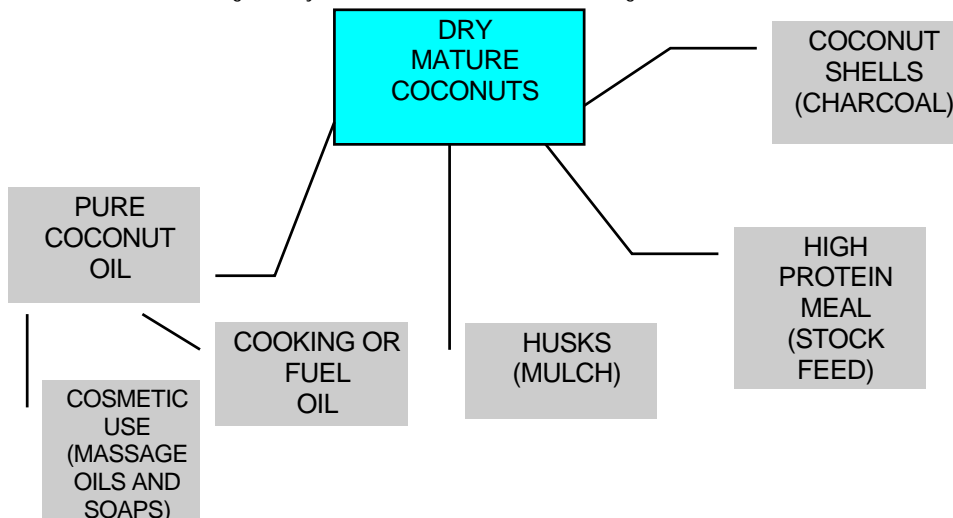
See Project design document for full details.

### Benefits to The Environment

The business has significant benefits to the environment.

1. Access tracks to coconut plantations will remain clear and people will once again start using existing resources sensibly.
2. Mulch from the husks can be used to improve soil composition & support the vanilla industry
3. The project is using a resource that is currently wasted
4. All by products are biodegradable. They also have an economic value (high protein meal for pig food, shells for conversion to charcoal).
5. No chemicals are used in any part of the process.

• Figure 3 By Products from DME Process Having Economic Value Potential



## Handicraft

### The Project

The production of handicraft is a part time activity for most women in the village of Hakupu. Skills are normally passed down from mother to daughter, and within the Women's handicraft group. Most women will spend at least one part day each week producing handicraft, not only as a means of generating income but also as a social activity.

In recent years the opportunity for deriving an income from handicraft has declined principally because of a lack of tourists coming to Niue, and the collapse of previous marketing structures (such as the Niue Handicraft Centre).

Products which continue to be made regularly include:

- Woven hats
- Floor mats
- Table Mats
- Fans
- Trays and bowls
- Bags
- Shell necklaces

The handicraft is made from pandanus leaf, coconut leaf and spines, coconut shells and seeds.

The activity should focus mainly on addressing issues of access to external markets, as the local market size is insufficient to support the industry.

Background of the Business Project:

Most women are handicraft workers in their spare time, and regularly join in with the women's group on Tuesdays. Previously the industry provided good income for the families during the time that the Women's Handicraft Cooperative was operating successfully. Tourists still remark on the quality of Niuean handicraft which is the best in the Pacific.

Key considerations include:

1. There already is a good number of trained women

2. There is sufficient pandanus and coconut leaf, and more can be easily planted if required.

It has potential because:

1. It previously worked well under a structure that accessed overseas markets
2. There is also a domestic market available

Natural Resources Used;

The main resources used for the production of handicraft will be:

Pandanus leaf - we can harvest and cultivate. There are already plantations existing

Coconut leaf - readily available throughout the island

The pandanus can sustain a harvest of 10 leaves per tree per quarter. Most households have 2-3 plantations of pandanus, with approximately 150 trees in total per h/hold. The DAFF originally provided 100 trees in a plantation for each h/hold.

There are 60 members in the Hakupu Women's handicraft group. A crude estimation suggests a total of 9,000 pandanus trees available, producing a sustainable yield of 30,000 leaves per month. Additionally there are wild pandanus available, although those leaves are not suitable during the dry season.

Market Base

The primary market for the products will be export based. The rationale being that only the export market can match the productive capacity of the women. However, the market will still remain a niche market, because of production limitations.

It is recognized that because there are already a significant number of Niuen women living in New Zealand also producing handicraft, marketing should concentrate more on the Australian and Japanese markets.

We recognise that there are a number of reasons people buy handicraft. Market characteristics for each are detailed below:

REASONS (NEED)	CHARACTERISTICS OF MARKET
Souvenirs	Generally small, low value items able to be packed in a suitcase to take home as a memento. Quality is not a major consideration.
Functional Use	People buy hats/place mats to serve a particular function. They generally look for reasonable quality at reasonable price.
Decorative Use	Usually medium to large size. Quality is more important than price. Market can sometimes be a fashion market, and change suddenly if using strong colours.



Cultural Value	Price is unimportant. The product should have a distinct cultural link. Quality is essential.
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REASONS (NEED)	CHARACTERISTICS OF MARKET
Art work	Generally "one off" items not easily duplicated. Often has crafts persons name on them. Quality essential. Price unimportant.

You should be aiming specifically at functional, decorative and cultural markets which require an emphasis on quality more so than price.

Main competition comes from other Niuean producers (such as in New Zealand) and other pandanus product from neighbouring Pacific islands. Most of them produce for the New Zealand market because of its ease of access. Rather than compete, you need to identify and develop a market in Japan and/or Australia.

To reach your market base you will:

1. Produce a photographic catalogue of our main product range, including details on size and dimensions etc:
2. You will create a "brand name" for the product and include printed swing tags on each product, which describes how the product is made, and the benefits to the community from purchasing this product
3. Produce a price list (FOB Niue) for either seafreight or airfreight.
4. You will work in conjunction with the South Pacific Trade Commission in Sydney and Japan to undertake basic market research.
5. You will supply a range of samples to SPTC.
6. You will form the women into a group for receiving, processing and coordinating orders from overseas.
7. You will appoint a voluntary coordinator who has phone and fax accessibility who can receive orders on your behalf.

You will expand your market base gradually using a range of exclusive distributors in each region who will manage the retail pricing to avoid any internal competition. You will also consider using TradeAid or other similar organizations as an alternate marketing strategy for a different range of products.

#### Technical Aspects

Pandanus leaf is harvested from the plantation and after cutting the thorns are removed and leaves are bundled together. They are boiled for 1 hour and then dry them for 1-2 weeks to give them the natural white colour.

The leaves are then coiled ready for use.

Young coconut leaves are cut and split down the middle lengthwise to separate the outside of the leaf from the inside. The spine is removed and the leaves soaked in rain water for one hour. They are then boiled, bundled and hung in the shade to dry for two weeks. The leaves are then ready to use.

Normal household items such as clothes lines etc: are used in the process and are readily available.

#### Legal Aspects

The pandanus is normally grown on your own land, so there are no ownership issues.

The legal entity will be a Co-operative with legally constitution, and members rules.

There is no requirement for an EIA<sup>17</sup> in Niue.

The products can enter New Zealand under SPARTICA, which is due to expire within a couple of years.

There is no VAGST<sup>18</sup> considerations.

#### Social And Community Context

The activity already is occurring as a community based activity on a weekly basis. The main difference will be the formation of a formal marketing entity. Community members have discussed this proposal and agree with it. There is largely an existing structure, comprising of a President, Vice President, Secretary and Treasurer and voting members. This structure is able to cope with profit making activities provided each member has previously agreed to issues such as use and distribution of profit (and sharing of any loss).

There will be no adverse affect from the distribution of profits, because all households in the village will be members.

#### Financial Aspects

Example of start up costs could include:

Photography	\$200
Production of limited number of brochures (albums)	\$400
Freight on samples to Australia/Japan	\$200
Communication costs	\$100
Legal constituting of Co-operative	\$500
Working Capital	\$1,500

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<sup>17</sup> Environmental Impact Assessment

<sup>18</sup> Value Added Goods and Services Tax

START UP COSTS \$2,900

You would finance this through a request for a small grants fund from New Zealand High Commission.

The Co-operative would buy from the members on the basis of making an average 25% mark up to cover costs.

Projected first years financials could be::

Income	\$20,000
Expenses:	
Cost of Products sold (purchases ex members)	\$16,000
Communication costs	\$300
Printing (swing tags & brochures)	\$1,100
Office supplies	\$200
Business licence	\$50
Transport	\$100
General Expenses	\$250
	<b>TOTAL EXPENSES \$18,000</b>
<b>PROFIT</b>	<b>\$2,000</b>

The Benefits To The Environment

New plantings of pandanus will be made as required to complement the market demand. No chemical pesticides are used in the plantation, and no chemicals are used in any of the processes. Any waste production is biodegradable. Pandanus is harvested in rotation.

The regular harvesting of the pandanus will encourage the women to keep areas around the plantation tidy and free from weed and rubbish.

Recommendation

It is noted that a UNDP funded two year project supporting the Niue handicraft sector is due to start by early August. A local coordinator is to be appointed and s/he will work closely with an external consultant. The appointment is to be made through the Department of Community Affairs.

It is therefore recommended that the Huvalu CA does not duplicate efforts directed at the handicraft sector, but rather supplies support of the UNDP project with specific emphasis on the villages of Liku and Hakupu. The handicraft activity is compatible with the Huvalu CA.

*Assistance instead be given to design a weekly tour to the handicraft group by tourists and this activity be a combined "participatory" activity, and a morning tea. This will enable a higher volume of direct from village sales to occur.*

## Vanilla Growing

### The Project

The proposed project involves the planting, tending and harvesting of vanilla pods. The particular specie that is the focus of DAFF attention is *Vanilla Tahitiensis* which is being marketed overseas at a nett return of \$40 to growers. The growing of vanilla is highly labour intensive, due to the hand pollination required. It is suited for home garden growing, and often uses host trees for the vines.

### Background to the Business Idea

The growing of vanilla has been occurring in Niue since 1992 following encouragement by DAFF, although the annual number of vines dropped from 1600/yr to 311/yr between 1993 to 1996. A total of 528 vines were abandoned for various reasons, including the owner passing away, land titled to a different owner, owners departing for New Zealand and other reasons.

There has been a resurgence of interest in vanilla growing, with 66 growers currently with vines planted and another 36 currently planting or awaiting assistance from DAFF.<sup>19</sup> More recently a vanilla growers committee has been established to assist the development of the industry.

DAFF continue to provide technical assistance to the industry as well as the processing and marketing functions on a full cost recovery basis.

### Natural Resources Used

The vine often uses pine or fiki trees planted in rows as stock trees for the vine. The coconut plantations are not ideal for three reasons:

1. Coconut roots take up most of the nutrients and moisture
2. Falling coconut leaves damage the vanilla
3. Coconuts produce too much shade, causing the pine to grow slowly.

A more recent system is to plant pine in rows into a young taro plantation.

### Market Base

The entire production is currently being sold into Auckland, with Tahitian Vanilla and Marsanta being the two principal purchasers. DAFF are looking at selling through Tonga to obtain a better market price. At present, the level of production is insufficient for Niue to become a market force.

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<sup>19</sup> As at 30 September 1997. Data supplied by DAFF.

### Technical Considerations

Vanilla is a labour intensive activity that can provide good returns in the longer term provided minimum economic plots are planted. It is normally 4 full seasons before first year harvest with the highest annual yield occurring in years 7 through 9, when 70, 93 and 70 beans respectively are forecast per vine. Some vines can with proper cultivation produce in year 3.

The lifespan of the vanilla vine under Niuean conditions is not known although DAFF are hoping for 15-20 years.

Vanilla labour operations are as follows:

OPERATION	TIMING	FREQUENCY
Land preparation	Any time of year	
Planting	Any time of year	On going as necessary
Mulching	Any time of year	Enough to keep trees well mulched
Weeding	Any time of year	Every 3 months or when needed
Looping	Primarily Oct-March	Every 2 mths or when needed
Pruning	Light pruning in summer	
(pine & fiki)	Heavy pruning in winter	
Hanging stem	March-May	Once per year
Pollination	Primarily May-Sept	4-5 times/week
Harvesting	Primarily Apr-Oct	2-3 time/week

To maximize yields and reduce labour inputs emphasis is now being placed on the use of trellises. Wire is stretched 1.25 mtrs above ground between strong trees which are 3-4 mtrs apart. Kafika or cement poles are used to provide support between trees that are more than 6 mtrs apart.

Current harvest figures suggest a yield of .25kg/vine per annum.

Niue has one primary flowering season from May to September, although flowering is known to be stimulated by drier weather.

On average, grade A beans weigh 12.0g, B 7.5g, and C 5.0g/bean Typically the proportion of beans by grade has been 55% A, 30% B, 10% C and 5% split.

Expected yield per annum is as follows per vine:<sup>20</sup>

YEAR	1	2	3	4	5	6	7	8	9	10	11	12
YIELD (kg)	0	0	0	.02	.135	.504	.63	.837	.63	.297	.126	.081

<sup>20</sup> Based on a Model by DAFF

### Financial Data

Based on the above yields, and assuming a constant average market price of \$40 nett to the growers per kg, the following income can be anticipated **per 100 vines** planted at the beginning of the cycle.

YEAR	1	2	3	4	5	6	7	8	9	10	11	12
INCOME	\$0	\$0	\$0	\$80	\$540	\$2016	\$2520	\$3348	\$2520	\$1118	\$504	\$324

It can be seen from the above table that vanilla will not provide a short term income stream. It will furthermore require careful planned replantings throughout the life of the vine to maintain a reasonable level of income from new vines as older vine yields reduce.

Cash expenses are minimal based on there being no hired labour cost. Repayments on loans to purchase trellis work could substantially reduce any contributions made.

### Legal Considerations

It is most likely that plantings will occur on family owned land. There will therefore be no lease documents required for the operation. Agricultural activities are exempt from income tax and therefore no business license is required *Logo...please confirm this is correct*

### Environmental Considerations

The vanilla planting is environmentally compatible with existing agricultural practices. However, a market position is being taken by DAFF which will see vanilla promoted as organically grown. As such, the use of pesticides for weed control is to be discouraged.

Vanilla plantings improves the economic returns of land to the landowner. Vanilla vines can be grown concurrent with other cash crops.

There is no requirement for an EIA report.

### Community and Social Implications

The growing of vanilla is more likely to be individual based operations rather than community based. As such, not all members within the community will participate.

The caring of this crop is labour intensive and is most suited to women, particularly relative to the pollination and harvesting of vanilla beans. Too heavy a commitment to a large plantation could cause some inter-exchange of roles within the family unit.

### Benefits to the Environment

The planting of vanilla as a cash crop will be beneficial to the environment. It will promote more environmentally friendly agro practices (such as the non-use of herbicides). Better land utilization will occur. There are no harmful residues that could be detrimental to the soil.



### Recommendation

DAFF are the appropriate body to coordinate and assist in the planned development of this industry. The returns are directly relative to the level of effort put into the industry. Labour efforts can be reduced through the use of trellises, but this would need to be weighed up against any financial debt servicing costs associated with the purchase of posts.

The activity is compatible with the Huvalu CA and should be encouraged. Any development should be coordinated by DAFF in the first instance rather than the project designing specific inputs of its own.

## Honey Production

### Project

Re-establishing the honey industry on Niue with a particular emphasis on increasing the number of productive (live) hives within the Huvalu CA. The venture to possibly operate as a joint venture with two divisions:

1. Production (hive management)
2. Processing and marketing

### Background to the Business Venture

The Niue Honey Company was established in 1967 with the Niue Government and a New Zealand beekeeper, J Mackisack as owners. Under the management of the New Zealand partner, the hives performed well and by 1971 numbers increased to 1250 and during this year a record 75 tonnes of honey was shipped to New Zealand.

Following the death of the N.Z. partner in 1973, the business was managed by the DAFF. In the late 1980's Niue supported by NZODA sought to encourage private sector development and withdrew from direct commercial operations themselves. An agreement to purchase the Niue Honey Company was entered into by Mr & Mrs Timothy Magaoa in October 1991 and the land and building were leased to them for five years. In 1992 an application was made by the Magaoa's to DFC for a loan to purchase equipment and working capital. Eventually \$50,000 was approved, to be disbursed as needed. The loan was suspended in 1994 following concerns regarding repayment on the part of NDB. Only \$37,000 was disbursed.

The land and buildings lease expired in October 1996, with the lessees remaining in occupation on a month by month basis.

The business is in danger of being abandoned.

An assessment commissioned last year<sup>21</sup> identified a number of options for revitalizing the industry including:

1. Outright purchase by a private purchaser
2. Donor funded if the operation was split up among a number of small producers
3. Joint venture under PIIDS

This pre-feasibility study will look at the potential under (3) above.

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<sup>21</sup> Niue Honey Industry Assessment. Paul Bolger April 1998

### Natural Resources Used

The proposed business would be based around the existing flora and fauna prevalent throughout Niue. Although the consultancy calls for natural resource based income generating options around the Huvalu conservation area, this particular project would require a more global perspective due principally to the fact that insufficient flora exists within the CA itself to support the number of hives proposed.

### Market Considerations

For the purpose of this exercise it is assumed that only 500kg of honey will be sold for local consumption, with the balance going to export.

New Zealand is a net exporter of honey, therefore prices at market are likely to remain low. It may be possible to develop an alternate retail market in the near Pacific islands such as Rarotonga. Such a market would require investment in retail packaging equipment but may provide an improved return on investment.

### Technical Considerations

An assessment of existing equipment recommended that new plant and equipment would be required at a cost of \$27,000, with a truck costing \$17,000 being the major single item of expenditure. Additionally, economies of scale would suggest an operation of at least 600 hives would be needed, requiring a further investment of \$18,000 in new hives.<sup>22</sup>

Current hive production is 30kg/hive/annum. The assessment concluded that a yield of up to 50kg/annum per hive could be expected with good hive management practices. This would include regular requeening of hives, intensive brood nest manipulation and harvesting of honey more than once per year from hives.

It is not possible at present to gain a higher return for the honey by way of organic certification because of the use of pesticide throughout Niue associated with the taro plantations.

Honey is produced by bees from nectar they gather from flowering plants. Any changes in vegetation will impact on honey production.

Niuean honey has been found to have a higher moisture content than desirable. New equipment that would improve the harvesting and quality of honey would include a hot room/dehumidifier, bee blower and filters. A lightening of the colour of the honey would produce favourable market reaction. This would be managed through a programme of regularly changing the wax combs.

### Financial Considerations

Under the PIIDS equity grant, a dollar for dollar grant is available up to a maximum of \$75,000 for a joint venture operation between New Zealand and Pacific island partner(s). Where the Pacific island partner has no capital of their own, a final shareholding of 25% minimum for the Pacific island partner is required after disbursement of PIIDS.

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<sup>22</sup> Paul Bolger - April 1998

Existing plant and equipment is priced at \$45,000, although the government of Niue have yet to nominate a price at which they will release the equipment.

On the basis of a PIIDS j/v being formed, the objective would be to place the hives under the management and ownership of the Pacific island partner, with the New Zealand partner taking overall responsibility for the operation, technical input and processing and marketing expertise.

A partnership could be financed as follows:

SOURCE OF FUNDS		APPLICATION OF FUNDS	
New Zealand partner - equity cont'n	\$60,000	Buy out existing operation	\$40,000
PIIDS contribution	\$60,000	New equipment	\$27,000
		New hives - 330	\$30,000
		Working capital	\$23,000
<b>TOTAL</b>	<b>\$120,000</b>	<b>TOTAL</b>	<b>\$120,000</b>

Shareholding before and following disbursement would be as follows:

BEFORE		AFTER	
New Zealand	\$60,000	New Zealand (75%)	\$90,000
Pacific Island partner	nil	Pacific Island (25%)	\$30,000
<b>TOTAL</b>	<b>\$60,000</b>	<b>TOTAL</b>	<b>\$120,000</b>

The existing 380 live hives plus a new purchase of 330 hives would be given over to the Pacific island partners for management. The proposal would call for them to receive income based on production of honey per hive.

Estimated profit based on first years production from 710 hives is as follows:

	BASED ON 45KG/HIVE	BASED ON 50KG/HIVE
<b>INCOME</b>		
Local sales 500kg @ \$6.00/kg	\$3,000	\$3,000
Balance to export @ \$2.00/kg nett	\$62,900	\$70,000
Wax @ 16kg/tonne honey	\$3,067	\$3,408
<b>TOTAL INCOME</b>	<b>\$68,967</b>	<b>\$76,408</b>
<b>EXPENSES</b>		
Manager	\$15,000	\$15,000
Purchase honey @ \$0.80/kg	\$25,560	\$28,400
Vehicle R & M	\$2,000	\$2,000
Vehicle running cost	\$2,000	\$2,000
Electricity	\$2,000	\$2,000
Rental factory	\$2,340	\$2,340
Site rentals	-	-
Hive R & M @ \$3.00/hive	\$2,130	\$2,130
Wax (3 sheets/hive/p.a.)	\$1,420	\$1,420

Protective clothing	\$600	\$600
Packaging export	\$1,276	\$1,420
Packaging local	\$1,000	\$1,000
Queen rearing supplies	\$400	\$400
FREIGHT		
Honey Niue-NZ (\$153/M3)	\$4,811	\$5,355
Supplies NZ-Niue (\$205/M3)	\$1,289	\$1,435
EXPENSES	\$61,826	\$65,500
<b>PROFIT BEFORE TAX</b>	<b>\$7,140</b>	<b>\$10,408</b>

Note that the project is highly sensitive to production yields, hence a strong focus needs to be placed on good management hive practices. Freight costs are significant, so the proposal calls for shipping of tapering opened top drums from New Zealand, thereby obtaining substantial freight savings compared to the earlier method of shipping 200ltr drums.

The project is based on a "semi-community based" focus, with production occurring at community level. Each community unit will hold and manage approximately 50 hives (14 units) that will provide a return between \$1,800 to \$2,000 to each unit dependent on yield rates.

Because of the limited level of profitability forecast at present, it is most advantageous for the venture to be adequately capitalized without any debt servicing costs. PIIDS and a New Zealand equity partner would be the most appropriate vehicle to achieve this.

#### Legal Considerations

The project will require the formation of a joint venture operation between a New Zealand equity partner (\$60,000 equity contribution) and a Pacific Island partner. It is proposed that the Pacific island partner be the Huvalu Conservation Trust (as recommended earlier in this report). Community "units" be granted use of the hives subject to continued management of the hives, and the direct income generated by way of honey production be purchased from the units by the joint venture company.

Profits from the j/v operation will be reinvested in new hives and equipment to improve performance and productivity.

The project will require the formation of a legally constituted company, with paid up share certificates issued to each partner.

#### Environmental Considerations

There are no known adverse effects from the production of honey. All processes are achieved without the use of chemicals or the production of harmful residue.

If it is possible to eliminate the use of paraquet on the island, then the honey could potentially gain organic certification, which would command a premium price on the market.

### Benefits to the Community

The community will gain direct benefit from income streams as a result of the honey production at a rate of approximately \$38.00 p.a. per hive. It is proposed that there be approximately 14 community units each of 50 hives which should produce \$1,900 per unit per year.

Revitalizing the honey industry will open up downstream industries such as the making of bee hives as an alternative to purchasing ex New Zealand, thus providing further benefit spread among the communities.

It is planned that as technical skills improve, a small number of community units may focus on the breeding of queen bees for sale. This is providing that quarantine concerns regarding mite infestation can be resolved.

### Recommendation

The formation of a joint venture will require a feasibility study to address all of the requirements under the PIIDS Equity scheme, as well as addressing issues such as identification of potential New Zealand joint venture partners, negotiating with the Government of Niue regarding the purchase price of the business assets, and a full commercial assessment of the viability of the proposal. 50% of approved costs associated with the feasibility study can be met by PIIDS providing a prior application has been approved. The balance would be met by the Pacific Island partner.

It is recommended therefore that this project be further investigated, and a full feasibility study completed.

## Example of a Project Design Document - Coconut Processing

### Description of Project

Community operated income generating project based around the value added processing of coconut into a range of salable products for both local and export markets utilizing low technology equipment developed by Australian National University during the early 1990's. The trial will differ from previous attempts in other Pacific islands in that it will focus on creating an economic value from the by-products of the production of pure coconut oil - initially mulch, but subsequently other by-products including coconut shell and coconut meal.

### Recommendation for Funding

It is proposed that a *trial production* using one unit in the village of Hakupu be funded with assistance from SPREP through to full commercial feasibility stage, but that the village be asked to donate an initial 3,600 husks (approximately 10 production days),. Provide free labour to clear access roads to coconut plantations and build a solar dryer prior to commencement.

SPREP coordinate the funding requests for assistance from a range of agencies to facilitate this trial as detailed in the project budget below, but the ownership of the concept and project remains with the community.

Funding will be channeled into four main areas:

- Capital equipment costs
- Working capital requirements
- Technical training costs
- Feasibility and monitoring costs

### Length of Feasibility Study

It is recommended that the trial feasibility study be funded for an initial six month period, during which time production and marketing issues will be addressed and a full commercial feasibility study be undertaken at the completion of the trial.

### Inputs Required

The following inputs will be required during the trial production:

- Technical training input for the production of pure coconut oil (*recommend Women in Business Foundation - Samoa funded through UNDP Small Grants scheme*) Input approximately 2 weeks.

- Technical backup from Australian National University - Dan Etherington. (*recommend initially remote assistance via e-mail concurrent with commercial consultant detailed below*)
- Laboratory analysis testing of oil for cholesterol, free fatty acids etc: and testing mulch for water retention and nutrient properties (*recommend funded through Forum Secretariat*)
- Local staff for daily supervision of production and village motivational issues (*recommend CASO assisted by CA - Hakupu*)
- Commercial consultant for assistance with market identification, project administration, liaison with ANU staff, and undertaking full feasibility study post trial period. Approximate estimate 28 days over six months comprising 3 x 7 days on island at commencement, midterm and completion of trial period, 5 off island support days plus 2 days feasibility study report completion. (*recommend funded through SPREP consultants fund, NZODA PIIDS advisory mission or possibly Niue Development Bank*)
- Potential product development assistance for by-products of production (*recommend funded through UNDP Small Grants Scheme*)
- Basic Business Training directed at village members to assist them in understanding market forces, costs of production and fair returns on opportunity labour costs. Estimate 7 - 10 training days (*Recommend provided through Development Bank*)

### Rationale for Trial Production

The yield for Niuean coconuts is recognized to be substantially different to that of Fiji (estimated @ 1ltr oil per 12 nuts vs 1ltr per 25 nuts from Fiji). Market prices for the products have yet to be determined and this will be dependent on a number of factor including:

1. Acceptance of the oil in the local market as a substitute for imported cooking oils
2. The ability to get "closer" to the end users in the pharmaceutical industry to obtain a fairer price and eliminate middle men.
3. Market determination of the value of by-products such as mulch and stock meal.

Because of the local community's expectation of a high return, it will be important to confirm all costs of production and market price acceptability before placing and "economic value" on the coconut.

Given the relatively high entry cost, limited availability of funding and the associated "risks" of the project proving unfeasible, risks are to be limited to the village of Hakupu initially.

### Management of Project

It is recommended that overall coordination throughout the trial be the responsibility of SPREP with assistance from a commercial consultant, but that daily operational management and implementation be under the control of the CASO assisted by the CA of the Hakupu village. Additionally, a task force comprising CASO, commercial consultant,



and representatives from Niue Tourist Office, Development Bank and National Planning be formed to provide assistance and support to the project.

### Project Start Up Budget (NZ\$)

APPLICATION OF FUNDS		SUGGESTED SOURCE OF FUNDS	
Complete set of equipment ex Australia	\$7,000	NZ High Commission Small Project Fund or UNDP Small Grants scheme	\$7,000
Bio60 Mulcher ex NZ	\$2,500	“ “	\$2,500
Freight on above	\$400	“ “	\$400
Building solar dryer to specifications	\$2,000	Hakupu village community contribution	\$2,000
Labour cost of clearing access to coconut plantations	\$1,440	Hakupu village community contribution labour supplied free	\$1,440
Technical input - Women in Business trainer 2 weeks (incl: airfare/fee & accommodation) *estimate only	\$7,000	UNDP Small Grants Scheme funding ( <i>requires minimum 30% contribution of total cost ex community</i> )	\$7,000
Technical input - by-product development costs	\$5,000	UNDP Small Grants Scheme funding	\$5,000
Laboratory testing/product development & packaging costs	\$1,500	Forum Secretariat Marketing Grants scheme	\$1,500
Working Capital Requirements	\$6,000	SPREP - revolving fund (repayable from proceeds)	\$6,000
Commercial Feasibility costs 28 days over six months	\$24,600	SPREP or PIIDS Advisory	\$24,600
Initial supply of coconuts (3,600 nuts) <i>estimate only</i>	\$900	Hakupu village community contribution	\$900
Basic Business training by Development Bank <i>material &amp; resource costs only</i>	\$1,000	SPREP	\$1,000
TOTAL	\$59,340	TOTAL	\$59,340

### Community Responsibility

The community of Hakupu will be expected to contribute the following to the project:

1. An initial stock of 3,600 coconuts to facilitate technical training trials
2. Suitable land secured by lease for the placement of the solar dryer, and other equipment. Ideally the land should include existing storage facilities (such as a disused house).
3. Provision of free labour to clear access roads to plantations.
4. Labour and basic materials to build the solar dryer.

5. A commitment from the community that each of the sixty households agrees to provide approximately 720 mature coconuts during the term of the trial, on the understanding that payment will be made to each household on the sale of the production and that such payment will be made after deduction of direct recurrent operating expenses (this is to give the community a picture of the economic return of the coconut).

Once the commercial viability is proven, it is understood that it becomes the responsibility of the community to accept commercial risk, including future funding requirements achieved through commercial borrowings from the likes of the Niue Development Bank.

## Pricing

For the purpose of this exercise it has been assumed a sales price average of \$4.00 per ltr for pure virgin coconut oil can be achieved. It is noted that cooking oil imported from overseas is selling between \$4.50 - \$5.00 per litre, but has poorer qualities than the oil to be produced.

## Estimate of Direct Operating Budget

	<b>TOTAL</b>
Income - oil	11,700
- mulch	4,500
TOTAL	16,200
<b>EXPENSES</b>	
Wages 1 person	3,120
Electricity	1,200
Fuel - mulcher	420
R & M	300
General	600
TOTAL	5,640
<b>SURPLUS AVAILABLE FOR DISTRIBUTION</b>	<b>10,560</b>
Number of Nuts processed	46,800
Average Estimated return per nut	0.225c

The cashflow is assumed to incur all expenses monthly from month 1 through 6, with sale income and income to the community derived from the production trial to be realized in month 6. Initial working capital of \$5,600 (say \$6,000) will be required to fund direct operational expenses during the six months production trial. It is recommended that this be funded by SPREP on the basis of making available a revolving fund to this production trial.

**Note:** The above figures are only estimates by example based on key assumptions which require proving through the production trial. Final figures may vary substantially and can be affected by:

1. Yield per nut
2. Market realization price for the oil
3. Market realization price for the mulch
4. Potential to increase value of contribution based on ability to gain an economic value from other byproducts (specifically coconut shell and meat)

### Other Potential Products

During the six month trial period it is recommended that the following production trials occur based around the use of other byproducts from this process:

1. Scented massage oils in consumer packs
2. Pure handmade coconut soap production
3. Hanging basket liners based around the coconut coir attached to webbed nylon backing
4. High protein feed supplement using coconut meal (may require plastic bag sealer to prevent rancidity and oxidation of the meal)
5. Production of coconut shell charcoal (not only for barbecue use but also activated charcoal for possible medicinal use)

### Other Recommendations

1. It is recommended that the project subscribe to the International Community Monthly magazine that details advances in coconut byproduct processing at village level and provides monthly commodity pricing for charcoal and other oil products ex coconut.
2. It is recommended that the project establishes a close working relationship with Women in Business Foundation (Samoa), United Nations Development Program Suva, and Dr. Dan Etherington of National University of Australia.
3. It is further recommended during the initial trials that the community form a Trust that owns the assets of the project in perpetuity for the benefit of the community as a whole.
4. The community should resolve from the projects inception the following issues (note: this is not meant to be a comprehensive list but rather by way f example)
  - a) Distribution of surplus profits in excess of direct payment for nuts back into a Community Development Trust Fund (*suggestions: use for developing further range of products from byproducts, use for improving shared community facilities, reinvest in the project for purchase of additional micro-expelling equipment etc;*)  
**See also point 14 page 29.**
  - b) Use of a portion of surplus profits for support of CACC conservation efforts

- c) Establishing a separate "trading" bank account with a minimum of two signatures required for withdrawals. All proceeds from sale to be initially banked to maintain a proper audit trail.
- d) Establishing proper book-keeping records to avoid any potential for disagreement over quantity of nuts supplied by families etc:
- e) Decision making processes for the project which allows the desires of the community as a whole to be taken into consideration.
- f) Spreading the benefit from the project (*i.e. rotating "paid employment" opportunity among the young people every six months providing quality can be maintained*)
- g) How to "add value" to the project. (*i.e. at what price can members of the community buy the oil if they want to value add to it by way of making fragrant massage oil, pure soaps etc;*)

## Appendix I Terms of Reference

### TERMS OF REFERENCE

#### A pre-feasibility study of natural resource-based income-generating activities for the Huvalu Forest CA

##### **Background**

The Huvalu Forest Conservation Area covers the south eastern portion of Niue island. The total area of approximately 60 km<sup>2</sup> (6,000 hectares) completely encloses the Huvalu Forest, the largest remaining primary rainforest on the island, and is split between the two villages of Liku and Hakupu. The conservation area boundary stretches down to the coast and out to the seaward edge of the coral platform and include the last remaining traditional tapu forest: the Fagafue Tapu Forest of Hakupu village. The primary rainforest area covers 2,500 hectares and is considered the core of the conservation area. This forest contains significant populations of birds, bats, endangered coconut crabs and other wildlife.

The project commenced in 1996, and is managed by the Department of Community Affairs under their Environment Division. The Environment Division is assisted by a Huvalu Forest Conservation Area Coordinating Committee (CACC), chaired by the Secretary to Government and comprising representatives of the two villages of Liku and Hakupu and key government ministries and departments.

The objective of the Huvalu Forest Conservation Area project and the activities to be carried out thereunder are set out in the Huvalu Forest Conservation Area Project Preparation Document (PPD), which was completed in May 1995. This document stipulates the overall goal is to conserve the biodiversity of the Huvalu Forest Conservation Area through the development of village and magafaoa-managed activities founded upon the sustainable use of natural resources and for the benefit of the village communities and their descendants. To achieve the project goal one of the main objective is to develop sustainable income generating activities.

At this early stage in the project only a vague outline of potential income generating projects is available. More village discussions and PRA exercises are needed to refine the choice of income generating projects. The PPD planned for special issue task forces to be appointed by the CACC to research the viability and appropriateness of proposed initiatives and to develop workplans for their implementation. Although some Task Force teams were set-up, to date no new income-generating activities have been initiated under the project and there is a need for a systematic feasibility study of alternative options for sustainable income generation, leading to support being provided this year for at least one or two new income-generating activities. It is this activity which this consultancy is designed to address.

A number of suitable income generating projects have been identified in village workshops, including some that have already begun to be developed, and other initiatives in the recent past which have been abandoned but could be resuscitated.

Biodiversity-based income-generating activities which may be appropriate for Huvalu Forest include ecotourism (trails, village accommodation, wildlife, tours, archeological sites), handicrafts, small plant-based extraction (nuts, ferns, leaves, arrowroot, etc.), reforestation and agricultural development including re-establishment of orchards for lime, passion fruit and possibly vanilla and nonu plantations. As far as tourism related development is concerned, a number of suggestions have already been put forward in village meetings. Some villagers want to develop bush trails on their land and charge tourists to be taken on guided walks through the forest or to scenic sites such as caves. Since the inception of the project, several initiatives using the CA land area have been developed. Among them, Misa's Bush Walk (supported and assisted by the Niue Tourism Office) has become a regular day tour for tourists and Misa Kulutea, the tour operator, is now designing a new tour to an abandoned coastal village site and caves. NZODA is supporting the development of nature tourism in Niue and Tourism Consultant Resources of New Zealand act as the Management Services Agent for the project but there is a need to strengthen the linkages between the Tourism Office and the Huvalu Forest Conservation Area project to optimise the development of eco-tourism in the CAP.

The purpose of this consultancy is to undertake a feasibility study for the identification and development of natural resource-based activities to generate income to local communities and families of Liku and Hakupu villages. The consultancy will also strengthen the capacity of the CASO, in consultation with village communities, to identify and develop income-generating ventures following sustainable business, environmental and community management practices. The review would include considerations related to motivation and skill levels of communities and individuals, past experiences in the communities, funding requirements and market demand, as well as the establishment of suitable management structures.

### **Tasks**

The consultant is to perform the following tasks:

1. Conduct basic research and contact resource-persons with experience of income-generating activities on the island of Niue, this includes but is not restricted to, Dick Hubbard of Hubbard Cereals (fruit processing of lime and passion fruit), Paul Bolger consultant (Niue Honey), Tourism Resource Consultants (Eco-Tourism and NZODA MSA). Draw information on issues, constraints and opportunities related to early attempts at development of income generated activities from natural resources on Niue.
2. Collect, with the assistance of CA staff and in consultation with village communities of Liku and Hakupu, information on all existing nature-based income-generating activities and products, including leisure and nature tours, handicrafts, honey production, timber, plants and wildlife harvesting and agricultural crops, currently operating in the Huvalu Forest CA.
3. Document and analyse, in collaboration with DAFF, NTO and other Departments, early income-generating projects directed to local communities in Niue and reasons behind the abandoning or success of these ventures. These would include fruit processing of lime and passion-fruit, coconut cream, development of handicrafts sector. Identify, if appropriate, under which conditions these projects could be re-established.
4. Visit tourism-related organisations such as the Niue Tourism Office and key in-bound tour operators in Huvalu Forest area including, Helen's Tours, Misa's Tours, Tasi's Tours, JJ Poumale and others to:

- collect information on Huvalu Forest-bound tourism, existing tourist and eco-tourist products as well as existing and potential tourist markets;
  - assess the potential and limitations of the Huvalu Forest and by extension Niue for the development of profitable eco-tourism initiatives.
5. Conduct a "case history" presentation to the CAP staff and local communities on other successful biodiversity & natural resources income generating projects in selected countries of the tropics, not unlike Niue, as a means of encouraging more awareness (and therefore input) from the communities into the types of opportunities that could exist within the Conservation Area.
  6. Identify in consultation with CAP staff and local communities, income-generating initiatives based on natural resources and habitats with any wildlife, cultural, archeological and other ecotourism opportunities that are not currently exploited within the Huvalu Forest CA with a potential to benefit local communities and operators. Of particular interest, investigate the potential for village nurseries for ornamental plants.
  7. Undertake a pre-feasibility study for the development of income-generating initiatives in Huvalu Forest CA by providing detailed coverage of the business development process, including
    - identifying the full range of natural resource-based business ventures that might be suitable for the Huvalu Forest Conservation Area
    - gathering basic information on the raw materials, capital and skills required to operate such businesses, the market potential and the economics of the proposed venture.
    - identify which factors, whether covered above or otherwise, are the key constraints limiting the development of income-generating activities for the Huvalu Forest CA.
    - identify the government and non-government organisations and individuals who have the initiative, the skills or the resources needed to assist with the development of the venture
    - assessment of the relative suitability of the various options, on a range of criteria including potential profitability, social acceptability, risk, and environmental impact
    - selection of a limited number of preferred ventures for trial development. The objective of the selection would be to direct the project to support a few initiatives with high potential for success that provide increased and/or more stable income to those in the community who are sustainably using the biodiversity of Huvalu Forest.
    - develop a sample business plan (or project design document) for one venture by way of example. This would include a start-up budget and basic income & expense forecast in order to provide a positive motivator for the community beyond just discussing a selection of preferred ventures.
  7. Discuss in the form of a debriefing the outcomes of the feasibility study with members of the CA staff, and produce a report incorporating the findings of the above tasks with appropriate recommendations.

### **Time Schedule and Itinerary:**

The consultancy should be conducted in Niue over a period of 22 days. The consultant time in Niue should be from Thursday June 25 to Thursday July 9 (depending on final flight schedule) with the following work and time allocation:

- 2 days relevant preparation /research in New Zealand
- 1 day case history presentation on income-generating activities to local communities
- 13 days pre-feasibility study with CASO and communities in Niue
- 1 day CACC and CAP staff debriefing and action planning.

- 5 days report writing in New Zealand

**Reporting schedule**

A draft report should be provided to the Huvalu CA project and the SPBCP for comments within one month of the completion of the consultancy in Niue.

A final report incorporating comments from both the CA staff and SPBCP staff should be provided. The document should be provided in 5 copies to the project in Niue and 2 copies for the SPBCP no later than 3 weeks following the return of comments from SPREP.



## Appendix II Workplan

DAY	TIME	ACTIVITY	COMMENT
Friday 26 June	a.m.	Discussions with Environment Unit Meeting with Acting Director	
	p.m.	Orientation of Niue	
Saturday 27 June	a.m.	Misa's Tour - bushwalk	Familiarization with Huvalu potential
	p.m.	Meetings with tour operators Misa -Helen Tali's	Collect information on Forest bound tourism Potential and limitations
Sunday 28 June	day	Desk study UNDP Tourism Strategy paper & other reports	
Monday 29 June	a.m.	Meetings Min. Environment " Min. Tourism " Min. Lands " Min. Agriculture	Courtesy & protocol (allow max. 3/4 hour each)
	p.m.	Niue Tourism Office	Analyse early income generating projects. Also general tourism trends
Tuesday 30 June	a.m.	DAFF	Analyse early income generating projects (need access to any reports on passionfruit, coconut cream etc)
	11:00a.m.	Doug Sonnett./Gaylene	Info on vanilla project
	p.m.	Niue Dev. Bank Dept; of Planning	Info on loan support and honey project Planning issues
	a.m.	Liku village community	Collecting info on all existing nature based income generating (one on one)
	p.m evening	Hakupu village community Hakupu Fiafia	"
	a.m.	Working with CA staff in Alofi	Full gathering of resource info and internal "brainstorming"
Thursday 2 July	p.m.	Niue Timber Land Mapping	Logging in Huvalu CA Info gathering
	8.30a.m.	Case study and income generating brainstorming for ideas with villages (combined meeting)	Need resource material such as whiteboard, newsprint and felt pens
Friday 3 July	2:00p.m. 3:30p.m.	Mike Pointer (NZHC) Brad Puno (if avail;)	Courtesy call

DAY	TIME	ACTIVITY	COMMENT
Saturday 4 July		CA staff at Alofi	Prepare a preferred "hit" list of trial businesses
Sunday 5 July		Report updating. Collating and verifying information gaps	
Monday 6 July	a.m.	Gathering further info required to support preparation of business development processes	Work in conjunction with CA staff
	p.m.	Prepare business plan by way of example include start up costs, P & L, cashflows etc:	Work in conjunction with CA staff
Tuesday 7 July	a.m.	Hakupu Womens h/craft group. Finalize recommended hit list.	
	p.m.	Final discussions and workshop with villages (presentation of recommended business ideas)	
Wednesday 8 July	a.m.	CA staff & CACC - final briefing and recommendations	
	p.m. evening	Niue Tourist Office Chamber of Commerce	
Thursday 9 July	a.m.	Depart New Zealand	

**Appendix III Honey Sites in Huvalu CA <sup>23</sup>**

SITE NO:	LANDOWNER	NO:LIVE HIVES	NO:DEAD HIVES
13	Sipeli	20	2
16	Penisione	12	2
12	Folomu	14	10
11	Samusu	18	2
10	Harry Salekiu	19	4
8	Magaoa	26	3

• Table 8 Number of Hives and Location in Huvalu CA

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<sup>23</sup> Paul Bolger - Niue Honey Industry Assessment April 1998

## Appendix IV Persons Consulted

NAME	POSITION	ORGANIZATION
Jackie Frizelle		MFAT
Ward Komo	DPM, Niue	MFAT
Ben King	PIIDS Manager	MFAT
Michael Mullins	SME Economic specialist	Forum Secretariat, Suva
Teresa Ngau Chun	Manager-Research & Statistics	Tourism Council South Pacific
Dave Bamford	Senior Consultant	Tourism Resource Consultants
Dick Hubbard	Managing Director	Hubbards Foods
Paul Bolger	Agricultural Advisory Officer	MAF Quality Management
Parmesh Chand	Trade Commissioner	S.P.T.C.
Ioane Mamaia	Conservation Officer-	Environmental Unit
Masani Togiama	Conservation Officer-	" "
Logopati Seumanu	Conservation Area Support Officer	" "
Mohamed Bereteh	UN Advisor Biodiversity	" "
Jenna Jackson	Acting Director - Dept; Community Affairs	
Misa Kulatea	Misas Tours	
Christine Hipa	Manager	Helens Tours
Russell Kars	Manager	I.H.V. & Matavai Resort
Tali Magatogia	Manager	Tali's Tours Niue
Hon. Aokuso Pavihi	Min. Finance, Tourism	Gov't of Niue
Hon: O'Love Jacobsen	Acting Premier	" "
Hon: Jack Willie	Acting Minister	
Lofa Rex	Assistant Director	Niue Tourism Office
Ida Talagi-Hekesi		Niue Information Centre
Crossley Tatui	Director-Dept. Community Affairs	
Doug Sonnett	US Peace Corp Volunteer	DAFF
Gaylene Mitikulena	Vanilla Project Officer	DAFF
Sauni Togatule	Director	DAFF
Kathy Sofaea	Operations Manager	NDB
Kerry	Economist	Dept. Planning
Rita	Small Business Advisor	NDB
H.E. Michael Pointer	High Commissioner	NZ High Commission
Maria Rimaati	Dep. High Commissioner	NZ High Commission
Harry	Manager	Niue Timber
Matt McIntyre	Advisor	Land Mapping
Coral Pasi	Environment Planner	Land Mapping
Bradley Punu	Chairman - CACC	Secretary to Government
Francois Martel	SPREP	Consultant
Ernest Nemaia	Vanilla Project - DAFF	Research Officer

## Appendix V Reports Referenced

Huvalu Forest Conservation Area Project Preparation Document Environment Unit, Community Affairs Dept	May 1995
Botanical Survey of the Huvalu Conservation Area Art Whistler and James Atherton	December 1997
Niue Ecotourism Training Project Tourism Resource Consultants	October 1996
Niue Honey Industry Assessment Paul Bolger, MAF Quality Management	April 1998
NZODA Niue PIIDS Training Report Tourism Resource Consultants	January 1998
Niue Tourism, Dvelopment Planning & Marketing Tourism Resource Consultants	August 1995
Tourism & Private Sector Development Programme - Niue Final Report UNDP NIU/95/001	January 1997
Niue Tourist Statistics Statistics - Niue	May 1998
Primary Export Statistics Statistics - Niue	May 1998
Niue Economic Review (various) Stafford Guest	June 1998
Towards Sustainable Livelihood; The Koroyanitu Development Programme Mr. Jale Baba, Timber Resource Manager	January 1997
Development of Ecotourism Enterprises in Gunung Halimun Park Mr Rinaldi Joy, National Park Project, Indonesia	January 1997
Background on the Foreign Investment Regime Forum Secretariat, Fiji	
Biodiversity, Conservation and Ecotourism: An Investigation of Linkages & Mutual Benefits Government of Australia	
Policy Statements & Sector Lending Policies Niue Development Bank	June 1977

Revised Programme Support Document Tourism & Private Sector  
UNDP NIU/95/001 (handicraft Support)

Excerpts from Niue Development Bank  
Annual Report

30 June 1996

Capacity Building for Environmental Management in the Pacific  
Niue Country Report Ms Coral Pasis

April 1998

## Appendix VI Vanilla Growers in Hakupu and Liku

GROWER NAME	VILLAGE	TOTAL NO;VINES	AREA M3
Winnie Taleni	Hakupu	110	1932
Esi Sipeli	Liku	65	775
Tiva Toeono	Hakupu	48	225
Saligi Akeimo	Liku	44	375
Malua Jackson	Hakupu	29	588
Tiki Alapaki	Hakupu	24	252
Sally Liuvaie	Hakupu	20	60
Pauline Lupeiki	Hakupu	18	30

• Table 9 Vanilla Vine Growers in Liku and Hakupu

## Appendix VII List of Attendees At Workshop

NAME	VILLAGE		GENDER	
P. Tanaki	Hakupu		M	
Taleni Seu	Hakupu		M	
Lafetu Sepeli		Liku	M	
H.Jackson	Hakupu		M	
E. Jackson	Hakupu			F
Ligi Misikea	Hakupu			F
E. Togamana	Hakupu		M	
Pau Lupeiki	Hakupu			F
Winnie Taleni	Hakupu			F
T. Ikinepule	Hakupu			F
A. Cross		Liku		F
E. Kaiuha		Liku		F
Tiki Alapaki	Hakupu			F
Misa Kulatea	Alofi		M	
Mohammed Bereteh	(staff)		M	

• Table 10 Attendees at village workshop



## Appendix VIII DME Coconut Oil Processing Information Sheet<sup>24</sup>

### Direct Micro Expelling

#### Introduction

The purpose of this information sheet is to introduce you to what we consider to be a breakthrough in developing world agro-industry. This tells of a simple system which provides the opportunity for a really sustainable smallholder industry, using coconuts, an immensely abundant fruit, often growing in regions where poverty is rife.

#### Coconut Abundance

A wide area of the tropical world is covered with over one billion coconut palm trees, producing over 50 billion coconuts each year.

Because of the low income earned on the world market from coconut products, coconut groves are being allowed to run down, with nuts and old trees lying where they fall, encouraging plant diseases and insect pests.

#### The Copra Problem

The traditional method of extracting oil from dried coconut flesh, called copra, requires sophisticated and expensive equipment, which needs a great deal of energy to operate.

Copra is normally dried over a smoky fire, then shipped to Europe, where the major part of the processing and the major share of the profits are made.

Because of the shipping time and distance, the resultant oil is normally of low quality, requiring considerable refining, filtering, deodorising and bleaching to create a commercially acceptable product.

#### The DME Solution

Researchers at ANU (the Australian National University) in Canberra have developed a system to extract clear, aromatic, virgin coconut oil. The DME (Direct Micro Expelling) system uses a simple, eco-friendly, manually operated press to extract the fresh coconut oil, at the place where the coconuts actually grow.

This processing is done at the village or smallholder level, from fresh materials which have not been contaminated, producing far superior products.

#### Field Trials

Extensive field trials have been carried out on the Solomon Islands and in Fiji, where UNIDO (United Nations Industrial Development Organisation), in co-operation with ILO

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<sup>24</sup> Copied from Australian National University

(International Labour Organisation), recently conducting a one week regional training course.

#### The System and Equipment

Instead of producing large batches, taking many weeks to ship and process, the DME system concentrates on small, manageable, daily batches.

The DME process is based on a system of Manual extraction of oil from finely grated, fresh, semi-dry coconut, and depends upon simple, easily learned skills, rather than sophisticated equipment.

The equipment required consists of a manual press, motorised grating, and drying equipment that is built on site. If the site has electricity, the total cost of the system should be in the range of US\$3,000 to \$4,000.

The system is eco friendly, creating little waste and using a minimum of energy to operate.

#### Production Quantity

Depending on local conditions and the options chosen, throughput is between 100 and 500 nuts per day, producing 5 to 25 litres of oil.

The oil is of very high quality and is produced within one and a half hours of opening the nut.

#### Uses for Oil

The oil is generally sold and used locally as:

- Body and hair lotion

- For cooking

- Lamp fuel

- Basis for soap, etc

- Diesel substitute

The residue meal is edible and makes excellent animal feed

#### Economic aspects

The price of copra fluctuates wildly, but is gradually falling, while the price of imported oil rises to unaffordable levels for poor rural people. Producers of copra today are paid a quarter of what they were at the end of the Second World War.

Locally produced, high quality oil enables smallholders and village communities to generate a steady income, while providing their customers with a valued and much needed commodity.

## Conclusion

The DME system enables smallholders to gain ready access to their own oil in a pure form, raising rural incomes through this abundant, existing, sustainable resource.

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