

NONI PROCESSING, MARKETING AND FIELD TRAINING FOR YAP

JUNE 25 - 29, 2007

WORKSHOP REPORT



BY

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NONI PROCESSING, MARKETING AND FIELD TRAINING FOR YAP

JUNE 25 - 29, 2007

REPORT OF THE TRAINING WORKSHOP

ORGANIZED BY

**AGRICULTURAL EXPERIMENT STATION
COLLEGE OF MICRONESIA-FSM
YAP CAMPUS**

IN COLLABORATION WITH

**DIVISION OF AGRICULTURE
DEPARTMENT OF RESOURCES AND DEVELOPMENT
STATE OF YAP**

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PERFORMING ORGANIZATION

COLLEGE OF MICRONESIA-FSM



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EXECUTIVE SUMMARY

This report summarizes the presentations, discussions and conclusions of a training workshop on Noni Processing, Marketing and Field Training conducted in Yap between June 25 and 29, 2007. This workshop was organized by Agricultural Experiment Station of College of Micronesia-FSM, Yap Campus in collaboration with Division of Agriculture and Forestry, State of Yap.

In 2006, Agricultural Experiment Station embarked on a project entitled “Production agriculture of Noni (*Morinda citrifolia* L.) to promote commercialization and small-scale private sector development on Yap.” One of the principal components of this project is to implement a comprehensive training program for local populace including farmers in all aspects of noni cultivation, processing and marketing. Overall project goal is to create an environment for the local population to begin small scale enterprises based on noni products to improve local economy.

As part of this project, a five-day workshop was organized at Division of Agriculture. Dr. Scot Nelson from University of Hawaii and Craig Elevitch from Permanent Agriculture Resources, Hawaii served as lead instructors. About 25 enthusiastic people actively participated during this workshop and received training in all aspects of noni production, processing and marketing. At the end of the each session, time was allocated for detailed discussions. Participants evaluated overall functioning of workshop sessions based on a set questionnaire. At the end of the workshop all participants received certificate of participation.

**“If you have an apple and
I have an apple
and we exchange these
apples,
then you and I will still each
have one apple.**

**But if you have an idea and
I have an idea
and we exchange these
ideas,
then each of us will
have two ideas”**

- George Bernard Shaw

INTRODUCTION

Background

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

Yap State boasts a lush tropical environment with an average 140 inches of rain per annum. Soil quality varies across the region. Yap's traditional farming method intersperses different crops together in an agroforestry set up. This, together with restrictions of land ownership, suggests that small-scale ventures have greater sustainability than large-scale agriculture projects. Noni is an ideal crop to go with agroforestry system or alone in backyards and waste (d) lands. Rural people could improve their livelihoods by taking advantage of identified agricultural opportunities by increasing traditional tree crop exports to Pacific islands and other Asian markets and by exporting new products like noni in which they have a comparative advantage. Being an indigenous crop known for centuries, farmers can easily make use of its potential, given the right training and support on all aspects of cultivation, harvesting, processing and marketing. With this background, Agricultural Experiment Station began this project in 2006 to tap the potential of noni in local and regional market. In the past, commercial agriculture has had some success in the FSM, especially in niche export markets, e.g., kava (Pohnpei), betelnut (Yap) and banana (Kosrae). The common feature of these products is that their markets were developed and operated entirely by the private sector. The private sector can alleviate poverty by contributing economic growth, job creation and poor peoples' income. It can also empower poor people by providing broad range of products. The private sector in the Pacific is already central to lives of the poor and has the power to make those lives better.

Objectives

Objectives of the workshop were threefold:

- 1) to promote greater understanding of noni products and their range of marketing potentials
- 2) to train participants in all aspects of noni cultivation, processing and marketing

3) to provide better insight into business aspects of noni products

The content of workshop sessions was made intentionally flexible to accommodate comprehensive treatment of the topics and participant discussion. All the planned workshop subject matter was covered during the workshop.

Participants

Participants to the workshop composed of right mixture – about equal numbers of homeowners, farmers, government servants and self-employed.

Workshop norms

The following norms were set for the participants to guide them in the 5 days of the workshop.

- Full participation in all workshop sessions and activities
- Cooperation among participants
- Punctuality and time keeping
- Respecting everyone’s contributions
- Keeping alert all the time

The overwhelming interest in noni products expressed and shown by the participants is considered one of the major factors responsible for the consistent attendance of almost all participants in all sessions right up until very successful concluding session of this workshop. Participants exchanged their views very freely during the discussion periods and the enthusiasm on their part clearly showed that the workshop as a whole had at least achieved its aim.

Methodology

The training was facilitated by Dr Scot Nelson of University of Hawaii and Craig Elevitch of Permanent Agriculture Resources, Hawaii. A number of learning methods such as facilitator presentations, brainstorming, discussions, questions and answers, group exercises and presentations, and field training were used to impart adequate knowledge about the subject. In addition, participants were provided with a comprehensive training manual and a book authored by the facilitators.



Opening ceremony

The Chief of Agriculture Mr. Tamdad Sulog, who was the Master of Ceremony, welcomed the guests. He briefed about the project and collaborative effort of the Division of Agriculture and Cooperative Research and Extension Program of the College of Micronesia-FSM to address agriculture issues of Yap State. Dr. Muru extended warm wel-

come to instructors, invited guests, participants and other members of the audience.

Mr Jesse Tamel Gadjusek, Deputy Director of Department of Resources and Development, State of Yap inaugurated the event. During the inaugural address, he stressed the importance of private sector development and the role of agriculture produce for the well being of State.

This was followed by brief inspirational messages from workshop facilitators (Scot Nelson and Craig Elevitch) and Jim Currie (Vice President, Cooperative Research and Extension, College of Micronesia-FSM). Stan Fal'mngar (Assistant Director, Cooperative Extension Service, College of Micronesia-FSM, Yap Campus) in his closing remarks narrated a poetic legend about a medicine man and patient and depicted workshop facilitators as medicine men from Hawaii who have come all the way to help people on Yap. As a token of appreciation he gave traditional shell money to each of these 'medicine men.'

The dazzling display of a wide range of noni products attracted special attention of participants and audience alike. Assorted products that could be made out of this medicinal plant alone or in combination with other plant products were indeed amazing and the result was a welcome "wow" from one and all.



Noni Products on display

WORKSHOP PROCEEDINGS

Monday June 25, 2007

The entire training program was divided into different sessions, each one focused on one topic or activity (Annexure 2).

Session 1: Participant Introduction

This was a kind of an ice breaker meant to enable participants to know each other better, though many faces were quite familiar. Dr Muru gave a brief overview of the workshop and planned logistics. Facilitators gave an introductory presentation about their expertise in the field as a sort of trust building exercise. Dr Scot Nelson works for University of Hawaii, and he has more than 10 years experience in the field of noni cultivation, processing and marketing. He served as a consultant for noni growers and producers throughout the world. Craig Elevitch is an Agroforestry expert, specialized in agroforestry design, management and education. Currently he manages Agroforestry Net, Inc., a nonprofit organization dedicated to providing educational resources about agroforestry, trees, and sustainable stewardship of land and water.

The workshop logistics was also outlined during this early session, where participants had a better understanding about workshop objectives, structure, expectations and activities to be performed. This session gave an overview of planned activities of each session of training workshop.

Session 2: Field exercise

This session focused on field activity. After a brief introduction about the activities to be performed in the field, participants were arranged into different groups, each group comprised a 'recorder' to record the field data, a 'gatherer' to gather fruits, a 'measurer' to collect data, and a 'plant doctor' to evaluate plant health. Each group collected relevant data about habitat and environment, soil types and conditions, tree size and age, leaf characteristics, fruit characteristics, plant health observations and also collected fruits. After the field session, participants were returned to training room for data analysis.

Session 3: Analysis and presentation

At the training room, each group analyzed and finalized their data for presentation. Team leader of each group presented their data about their field activity and evaluation. Surprisingly, participants made some interesting observations about overall health of trees, environment and tree characteristics.

Tuesday June 26, 2007

Session 1: Noni Tasting Exercise

In this session, participants tasted the flavor and quality of noni juice, and tested some noni products from around the world. They graded noni juice based on its aroma,

color, clarity, taste and overall effect and scored their remarks on a recording sheet. Display and testing of a wide range of products such as noni skin cream, pain balm, noni concentrate, puree, fruit leather, noni tea, noni soap, noni tonic, noni powder, noni lotion and noni juice blends was an enriching experience for participants.

Session 2: Pests, diseases, cropping systems

Diseases and pests of noni plants common in Pacific and Yap were detailed during a presentation in this session. Advantages and disadvantages of different cropping systems to contain pest and disease problems were presented. During field exercise, participants were acquainted with some of the disease/pest problems.

After a brief review of noni propagation techniques, choice of suitable cropping system for noni plantation was presented. Three cropping systems – monoculture, polyculture and agroforestry – with advantages and disadvantages of each one were explained wherein participants gained a wealth of information about noni planting methods and requirements.

Session 3: Design your own garden

Based on the information gathered in the previous session, participants were given hands on exercise to design their own garden for planting noni. They divided into three groups and each team was collectively assigned a task to visualize and design a garden based on one of the three environmental settings of Yap – agroforests, secondary forests and degraded savannah. Each group presented information about their concept design encompassing the model of cropping systems discussed earlier.

Session 4: Yap noni juice tasting exercise

Prior to the training workshop, Agricultural Experiment Station made some noni juice by drip extraction method from locally available fruits to test its quality and to compare its taste with juice available from other countries. It was also possible to calculate the



One of the participants compare the color of fermented noni juice

volume of juice that could be extracted using drip extraction method, since noni fruits contain approximately 65 percent extractable juice by weight. Participants tested four batches of juice made since March 2007 and unanimously opined a bitter taste for local juice when compared to the ones tasted in Session 1. It needs a detailed laboratory analysis to see if bitterness is related to any chemical content(s). An upcoming project will explore

this subject further.

Wednesday June 27, 2007

Session 1: Cropping systems

This session explored importance of agro forests versus polyculture type of cropping systems for noni cultivation in Yap. Since agro forests are part of Yap Island's traditional setting, being an indigenous plant noni could go well with this system and will be sustainable. Noni farming in Yap is related to several factors which include availability of land area, number of plants available, type of cropping system used and processing techniques, among others.

Selection of best noni plants and fruits is central to begin any commercial noni venture in Yap. Two types of commonly used propagation methods were described for the production of elite noni plants. Agricultural Experiment Station maintains such elite plants established from cuttings and seeds for free distribution to interested individuals. Presentation on harvesting focused on the age and characteristics of fruits for making quality juice and other products.

Session 2: Marketing Noni products - brainstorming

This session was a sort of brainstorming exercise to discuss some advantages and disadvantages of processing and marketing noni juice and other noni products for Yap. Different scale of operations for the production of noni juice discussed each with specific characteristic of production method and marketing strategy. Drip extraction method using a five gallon bucket would be a nice idea to start noni juice production in small scale.

Session 3: Doing business with noni products – imagination time

Doing business with various noni products was highlighted in 'imagination session.' Participants came up with ideas of some innovative products that could be tried out of noni in combination with other local produce. Altogether, 36 product ideas were tossed around, at least some of which looks promising and worth trying.

Session 4: Noni tea tasting, nursery visit

It was time for tea break and participants had a chance to enjoy a refreshing drink, tea made of out noni leaves. Two participants brought local noni tea, and thus could compare its taste



with that of other brands from Hawaii and Palau.

Inspecting pest problem in nursery



Since tea provided some energy, it was decided to have some field exercise and thus a visit to the Agricultural Experiment Station nursery was arranged. Participants observed nursery operations, growth characteristics of seedlings/cuttings, and pests and disease problems. One of the curious participants noted stem boring insects in some nursery plants. This seems to be a new pest problem for noni and not reported elsewhere.

Thursday June 28, 2007

Session 1: Yap pest review

Pests and disease problems encountered on noni plants in Yap were reviewed in this session. Major pests came across are: scale insect, Croton caterpillar, horn worm, root-knot nematode and anthracnose disease. Pest problems are usually severe and catastrophic in monoculture, hence adoption of methods such as polyculture or agro forestry system would be viable to alleviate pests and disease problems.

To commemorate this training event, a noni planting ceremony was also arranged. On behalf of the participants, Robert Ruecho' planted one noni sapling at the Division of Agriculture premises. This was also an opportunity for other participants to learn planting techniques.

Session 2: Commercial production of noni powder

Various stages in noni powder production and encapsulation on a commercial scale was presented in this session. Some producers prefer to market noni fruit powder that is made from whole fruit or from noni fruit pulp. Noni fruit powder is usually sold in capsules or in bulk form for variety of uses. Fruit leather made from pulp is another product currently available in market. Participants tasted and evaluated noni powder and fruit leather brought from Hawaii. Noni powder made from whole green fruits at AES laboratory was also sampled and evaluated.

Session 3: Marketing strategies for Yap

This was yet another brainstorming session for participants to devise suitable marketing strategies for noni products in Yap. Assessing strengths, weaknesses, opportunities and threats is crucial to any marketing strategy. What is so special for Yap that could be promoted as a marketing tool? Participants put forward several creative ideas such as tropical pristine and biodiverse environment, traditional island setting with agro forests, stone money as a symbol of prosperity and power etc. to attract Asian markets and high end tourists. Several marketing options for Yap, each with advantages and

disadvantages, were discussed.

Session 4: Noni puree/powder production

Earlier, fruits collected during the field work on the first day of the workshop were kept in 5 gallon plastic buckets for ripening. These fruits became softened by fourth day, which were used for noni puree/powder making demonstration. Pulp was later kept overnight in fruit dehydrator trays for drying. Some frozen and unfrozen yet softened fruits were used to squeeze out juice and calculate yield.

Friday June 29, 2007

Session 1: Noni powder making/tasting



First session of the last day of workshop began with sampling fruit powder made from Yap noni fruits. *Mmmmm... Yummy!* was expression of many who tasted local noni fruit powder. Noni pulp which was kept for drying overnight in a food dehydrator turned into a thin sheet. This was later crushed into small flakes and powdered using a kitchen blender. When large volume of flakes is to be powdered, high speed kitchen grinders or hammer mills are used.

Session 2: Designing product labels

Creating a label for a marketing product is one of the important steps in product development. An attractive yet unique label depicting the essence of the product will be a marketing tool and also a medium to develop customers' faith to recognize the product.

The U.S. Food and Drug Administration (FDA) develops and administers labeling regulations under authority granted by laws passed by Congress that apply to food, drugs, cosmetics etc. Labeling regulations pertaining to various products are found in the Code of Federal Regulations (CFR). A brief overview about information needed in labels of products such as noni fruit juice, noni capsules, noni as dietary supplement, nutrition labeling was presented. Later, participants were given a task to design a label based on their imaginations and ideas incorporating Yap's theme. Once again, artistic talents of many participants were visible during presentation of label themes. *Bravo!*

Session 3: Role of Yap Small Business Development Center

In this session, James Limar, Director of Yap Small Business Development Center (YSBDC) gave an overview of SBDC in developing small scale business enterprises in Yap. Assistance available from the State center and a network of other Pacific Island partner centers was explained. The SBDC provides free one-on-one confidential counseling and low cost business training workshops. Business counseling is offered in the areas of financial management, marketing, human resources, operations, and information technology. They also conduct periodic workshops on topics such as how to start business, business plans, creating business financial projections, marketing products or services, understanding financial statements, managing a business, legal issues, selling and salesmanship, new product development, HR issues and accessing financing through federal procurement.

The importance of noni products in the regional market and in Asian markets like Taiwan, China, Korea and Japan was also highlighted. Federated States of Micronesia recently opened its embassy in the Republic of China which will open new doors of trade relations with China.

Session 4: Closing remarks/evaluation

During this last session, the essence of five days workshop was discussed. Participants evaluated the entire workshop sessions based on a set of questionnaire prepared (Annexure 3).

Session 5: Closing ceremony

The workshop was officially closed by Dr Muru. On behalf of the organizing committee, he thanked all participants for the great enthusiasm shown during the course of the workshop. He also thanked facilitators for their great contribution in this workshop. Jesse Tamel Gadjusek, Deputy Director, Department of Resources and Development thanked the committee for organizing such an important practicum. On behalf of participants, Robert Ruecho' conveyed his deep appreciation to the organizing committee and facilitators for arranging this important workshop for the people of Yap. Later, workshop facilitators and Vice President of Cooperative Research and Extension presented the participants with their certificates. Dinner that followed was dominated by local cuisine. One of the participants tried out a mixture of soy sauce and noni juice concentrate in one of the curry dishes prepared. *Good innovation!*

Lessons learnt and steps ahead

- Evaluation of the training made by the participants on almost all points ranged from excellent to very good. Discussion with participants revealed that more such training workshops are needed as interest in noni products develop along with its popularity in the local market.
- As a follow-up of this workshop a Business Meeting was arranged on Saturday,

June 30, with a particular focus on production and marketing (see details on Annexure 4).

- Potential of noni products in Yap is gaining rapid momentum following this training workshop. During this event, participants felt that there are desirable forms of noni within *Morinda citrifolia* var. *citrifolia* that calls for detailed evaluation for potential exploitation of their medicinal advantages over similar varieties elsewhere in the Pacific. Traditional healers and people at large identify three forms of noni in Yap based on their leaf morphology. They consider a varietal form of noni with narrow leaves as more potent without knowledge of their potential medicinal advantages, if any. This information has been at large, is a traditional knowledge without any scientific validation. The fact that leaves do seem to vary implies that traditional healers and other observers of plants, are indeed recognizing a feature that needs scientific scrutiny. Since noni is making its transition from wild-harvested to commercial cultivation in Yap, farmers look for desirable forms and to improve the crop. Therefore, it is important to study the diversity within varieties and its close relatives. Any unrecognized diversity and chemical difference will be a potential marketing tool. This diversity needs to be examined for a number of reasons that all relate to increasing the market of the product through improved quality. Agricultural Experiment Station has already submitted a proposal to study these aspects.

ANNEXURE 1

List of participants

	<u>Name</u>	<u>Address</u>
1.	Christo Fugmow	Waloy, Maap
2.	John Muguy	Waloy, Maap
3.	Bernie Tiningmow	Worwoo, Rull
4.	Christina M. Spish	Fedor, Dalipebinaw
5.	Simeon Waathan	Ngolog, Rull
6.	Lorenzo Futumai	Ablul, Gargey
7.	Marchellus Wag	Keng, Weloy
8.	Peter Garamfel	Giman
9.	Tina Garayol	Ganelay, Weloy
10.	Stan Fal'mngar	Nimar, Weloy
11.	Jim Currie	Pohnpei
12.	Emmanuel Tithinfal	Ngariy, Rull
13.	Robert Ruecho'	Maa, Tomil
14.	Kathy Peckalabe	Taneyboch, Rull
15.	Patrick Peckalabe	Taneyboch, Rull
16.	Joel Lukan	Amun, Gagil
17.	John Tamngin	Maap
18.	Mathius Kugumgar	Thol, Tamil
19.	Dr. Margie Falanruw	Talguw, Weloy
20.	George Chuwmai	Ablul, Gargey
21.	Gabriel Garmanang	Doomchuy, Tomil
22.	Jesse Faimaw	Maa, Tomil
23.	Katherine Cho'	Balabat, Rull
24.	Romanis Yangereliut	Council of Tamol

ANNEXURE 2

Workshop schedule

	Session 1	Session 2	Session 3
Monday June 25	<ul style="list-style-type: none"> - <u>Inauguration</u> - <u>Introductions</u> - <u>Workshop Outline, Resources</u> 	<u>Noni Products Sampling:</u> <ul style="list-style-type: none"> - Display and Sensory Evaluation, Tasting - Field trip preparation 	<u>Field trip:</u> <ul style="list-style-type: none"> - Collect noni fruits and related yield data - See farming situation - Look for superior landraces
Tuesday June 26	<u>Noni cultivation</u> – Cropping systems, importance of superior planting stock, propagation, seedlings and planting, plant spacing, weeds, care after planting, plant nutrition, composting, pests and diseases, harvesting	<ul style="list-style-type: none"> - Discuss field trip from previous day - How noni is grown in Hawaii <p><u>Activity:</u> design your own farm layout and cropping system</p>	<u>Field trip:</u> Visit more noni farms or planting areas <ul style="list-style-type: none"> - “Pest and diseases survey” (nematodes, nutritional problems, insect pests, leaf spot diseases). - collect more fruit and yield data
Wednesday June 27	<u>Making noni products</u> <ul style="list-style-type: none"> - General information, scales of operation, types of products, safe handling, flow diagrams <p><u>Activity:</u> Discuss previous day’s field trip, count and weigh noni fruits from yesterday, calculate typical juice yield</p>	<u>Types of equipment used in noni operations, types of buildings used, etc.</u> <ul style="list-style-type: none"> - Cost of production, cost of operation at different scales <p><u>Activity:</u> given today’s market prices, calculate value of juice made from 200 pounds of fruit</p>	<p><u>Activity:</u> Group brainstorming on advantages and disadvantages of commercial noni in Yap</p>
Thursday June 28	<u>Making noni Products:</u> <ul style="list-style-type: none"> - Juices <p><u>Activity:</u> tasting local fresh juice</p>	<u>Making noni Products</u> <ul style="list-style-type: none"> - Puree and Powders - How to dry things <p><u>Activity:</u> make a noni puree and powder</p>	<p><u>Activity:</u> Group brainstorming on advantages and disadvantages of commercial noni in Yap</p> <p><u>Making noni Products</u></p> <ul style="list-style-type: none"> - Finished products, bottling, etc. <p><u>Activity:</u> Pasteurization, bottling</p>
Friday June 29	<u>Making Noni Products:</u> <ul style="list-style-type: none"> - Teas, dried fruit slices, soaps, cosmetics <p><u>Activity:</u> tea tasting from local leaves, and:</p> <ul style="list-style-type: none"> - Fruit leather - Smoothies 	<u>Product safety and testing</u> <p><u>Activity:</u> test pH or various liquids, including noni juices</p> <ul style="list-style-type: none"> - Lab testing for harmful bacteria, sanitation - HACCP procedures 	<u>Marketing Noni:</u> <ul style="list-style-type: none"> - Wholesale - Retail - Marketing resources <p><u>Role of YSBDC in Small Scale Business Development</u></p> <p><u>Graduation and closing</u></p>
<p>Note: Session were swapped or modified to suit participants’ requirements or to make it adaptable</p>			

ANNEXURE 3

Evaluation responses

Note: *This evaluation summary is based on 19 responses*

1. Please rate the overall quality of the workshop

Excellent	Very good	Good	Fair	Poor
78.9 %	21.1 %	-	-	-

2. Please rate the balance between presentations and hands-on activities

Good ratio	Not enough presentations	Not enough hands on	Too many presentations	Too many hands on
100 %	-	-	-	-

3. How useful were the printed handouts?

Very useful	Somewhat useful	Uncertain	Not useful
89.5 %	10.5 %	-	-

4. Has this workshop given you new information?

To a great degree	To a moderate degree	Somewhat	Hardly at all
100 %	-	-	-

5. What did you like most about the workshop?

Few responses:

- *Very clear presentations*
- *Good refreshments*
- *Hands on activities*
- *Various uses of noni products*
- *Computer presentation*
- *General mix of participants by age, sex and background*
- *Processing noni juice*
- *Field trips*
- *Tasting noni products*

6. What was least useful about the workshop?

Responses:

- *None*
- *Venue was bit crowded*
- *May be more information on field production systems*

7. What would you suggest to improve the workshop?

Responses:

- *Venue: a bit more spacious and better access to washrooms*
- *Bigger space would improve presentations and activities*
- *Invite noni industry representatives from Pacific region*
- *Do more research on Yap noni*
- *Conduct more workshops*
- *Make it little longer*
- *Longer time frame, may be two weeks*
- *More hands on activities*
- *Do a follow-up workshop*

ANNEXURE 4

Business Meeting

Agricultural Experiment Station organized a Business Meeting on Saturday, June 30, as a follow-up of the training workshop, to carry out a focused discussion on issues of production and marketing noni products in Yap and regional market. Dr Muru was moderator of this meeting. Besides Dr Scot Nelson and Craig Elevitch as subject experts, representatives from local government, Yap Small Business Development Center, local media (Yap Networker), Department of Resources and Development, Vice President of Cooperative Research and Extension, College of Micronesia-FSM, and Director of College of Micronesia-FSM, Yap Campus served as expert panel. A core group of workshop participants attended this meeting and raised some important concerns about their future plan of action.

Yap Island has some uniqueness as well as many challenges in terms of noni cultivation, production and marketing. Some of the questions raised during the meeting and response from panel of experts are given below.

1. How suitable is Yap's climate, soil and environmental setting for a large scale cultivation of noni?

Yap Island's age old traditional agroforestry system is perfectly suitable for medicinal plant cultivation. Being an indigenous crop for centuries, noni grows well in the agroforestry system as well as in secondary forests and open savannah. However, it is important to find the superior line of native varieties and propagate them in large numbers for field establishment. It is equally important to protect local noni varieties and promote their cultivation and usage and to sell a unique brand of Yapese noni. At least three varietal forms of noni are recognized in Yap, therefore, it is important to characterize them further. A qualitative and quantitative assay of active principles is central to product development.

Action needed: Study Yap noni varieties and identify and quantify their active principles.

Action taken: Agricultural Experiment Station has compiled a research proposal to study the intra-varietal diversity in Yapese noni and to analyze their chemical constituents. This proposal has been submitted to USDA under Hatch Program. Additional funding for matching will be sought from State Government of other agencies.

2. What is most viable option of production and marketing system for noni products in Yap?

Presently, Yap does not have the quantity of trees or products to initiate wholesale production and marketing. There is a need to consider several options before planning to

produce and market noni products. Quality control is the key to success and is the most important aspect of noni production and marketing. Quality of the product, consistency of its standard, reliability, and uniqueness are very important elements that play key role in the success of the business. All these tasks could be accomplished by forming a centralized production, processing and marketing facility. Considering the smallness of the island, this would be the most available option.

Action needed: Establish a cooperative and collectively begin a venture to tap noni products and other agricultural produce.

Action taken: Enthusiastic workshop participants formed core group to chalk out strategy for establishing a farmers' cooperative in Yap. After two rounds of initial meeting they formed *Yap Farmers Group*, a non-profit entity to commence business of noni products and other agricultural produce. Office bearers are selected and by-laws finalized for registration.

3. How Yap Small Business Development Center assist public in setting up micro-enterprises?

YSBDC provides free one-on-one confidential counseling and low cost business training workshops. Business counseling is offered in the areas of financial management, marketing, human resources, operations, and information technology. Workshop topics include starting a business, business plans, creating business financial projections, marketing your products or services, understanding financial statements, managing a business, legal issues, selling and salesmanship, new product development, human resources issues, and accessing financing through federal procurement. YSBDC will assist in preparing the proper documents and a business plan and direct to specific lending institutions like Farm Service Agency of US Department of Agriculture or FSM Development Bank that can assist you in obtaining a small business loan.

Action needed: Seek seed money for Yap Farmers Group to set up its office and begin activities.

Action taken: Sub-committee assigned to draft charter of Yap Farmers Group has submitted relevant documents to Department of Resources and Development for review. This will be forwarded to Registrar of Corporation for finalizing registration process.

Summary

Many critical thoughts were emerged and discussed during the meeting to elucidate, *how to do business with noni in Yap?* Popularity of noni products in the world market is ever increasing as new chemical components are identified. Consumption of this fruit is currently high, not only in the producing countries, but also in the United States, Asia and Europe. The stimulation in marketing opportunities and profit potential has resulted rapid increase in noni products market around the Pacific and elsewhere in the world. The market upsurge in Asian countries is indeed a panacea for several ailing small island economies. Commercial interest in noni has tremendously in-

creased in recent years, as provided by the number of patents registered. In the United States 19 patents have been registered by the US Patent and Trademark Office since 1976. Noni juice has been recently accepted in the European Union as a novel food. A concerted effort is needed to begin and maintain noni business enterprise, which will reap benefits in the days ahead.

For more information, please contact:

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