

STRENGTHENING THE SOUTH PACIFIC SUB-NETWORK OF COGENT

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Characteristics of the Region

The Countries of the Pacific

Coconuts are important for household food security and the many uses of coconuts that make them an essential part of life in the Pacific. The environmental benefits of coconuts are very important in the fragile ecologies of the Pacific Islands. These benefits include prevention of soil and beach erosion, nutrient recycling, windbreaks to prevent wind erosion, provide shade to reduce soil temperatures and conserve soil moisture.

The COGENT member countries include the major coconut exporting countries of the region i.e. Papua New Guinea, Solomon Islands and Vanuatu. A second group of countries have a strong local coconut industry and exports i.e. Fiji, Samoa and Tonga. The third group of countries is the small atoll countries that have few other crops besides coconuts for local use and export i.e. Cook Islands, Kiribati, Marshall Islands and Tuvalu.

The Pacific Island coconut producing countries are small, geographically isolated, transportation costs are high, and there is limited capacity for coconut research and development.

Regional and International Organizations

Because of the small and isolated nature of the Pacific Island countries there is a strong rationale for regional organizations. There are a variety of regional organizations that cover a wide range of technical and policy areas. International organizations such as are also represented in the Pacific. The Secretariat of the Pacific Community (SPC) is a regional technical organization with programmes in agriculture, forestry social services and fisheries. In the agriculture sector SPC is the focal point for many networks in the region including plant protection and quarantine, animal health, bananas, yams, and taro, just to name a few. The Agriculture Advise of the Crop Improvement Service of the SPC Agriculture Programme is one of the representatives to the COGENT Steering Committee for the South Pacific. There is a strong rationale for a collective regional approach to coconut development through SPC, COGENT, CIRAD, APCC, and BUROTROP. The South Pacific sub-network has much to be gained from the coconut networks of the world.

The Coconut Industry Overview

The South Pacific Island nations are collectively one of the major producers and exporters of copra. Copra and coconut products continue to be an important on the local market and for export earnings. However the coconut industry is undergoing rapid change due to competition from other edible oils and more profitable crops. The coconut paradigm must change with the times and that is the challenge that faces us today. Historically, coconuts have played an important role in the economic development of the region. The early trade and investment in the region was largely based on coconuts. However, the coconut boom ended with the decline in the copra prices. The decline in copra prices has lead to the neglect of coconuts. Many coconut plantations have not been maintained and senile trees have not been replanted in many places because of low returns. In addition, the high cost of transport from remote islands to export markets increases costs for exporters. The low price of copra compared to the past is the greatest threat to coconuts in a global marketplace where farmers have to plant crop that provide the greatest return. Coconuts have been removed to make way for higher value agriculture. In some remote islands coconuts are one of the few sources of cash income and copra production has continued and resulted in declining incomes and living standards.

Building a Strong Sub network

National Level

Policy

The decline in copra prices has created a crisis with the marketing boards in many countries since farmers don't want to produce copra at current price levels. Most countries subsidize the price of copra but with the current low prices the subsidies are not enough to entice farmers to produce copra. The coconut industry is significant in most countries and does receive attention from government policy makers. However declining copra prices are making it difficult to revive the industry or to get farmers interested in copra production. On the policy side there has been two effects.

- There has been the move in several countries to deregulate the industry and to reduce the role of the government to regulation and policy and not coconut marketing.
- This has renewed the interest in various form of value adding either at the community or national level. Interest is high in local oil extraction and other forms of value adding such assoap and other products. Renewed interest in Direct Micro Expeller (DME) for family and community level extraction. Though the DME is a useful technology a variety of small-scale extraction technologies need to be identified and tested.

Research and Development

On the technical side there is limited manpower devoted to coconut development on coconut research and extension. There is also lack of training and support to the coconut industry development. Budgets for agriculture are shrinking, trained staff are difficult to recruit and motivation for agriculture is lacking. These factors have put agriculture and coconut industry development into a downward spiral. Nevertheless coconuts are widely acknowledged as one of the pillars of agriculture in the Pacific.

National Highlights

Fiji: All coconut development (industry, research development and extension) are being transferred to the newly formed Coconut Industry Development Authority (CIDA), which purchased the copra mill and is issuing licenses for copra buying. It is not clear if this will enhance coconut industry development. Replanting /rehabilitation activities have covered 4,000 HA in the last 15 years through production of 1 million nuts produced and distributed of which 60% are hybrids. There is a review underway of the replanting strategy and there may be a shift in focus to income generation through value adding at the local and national level.

PNG: The coconut marketing board collapsed last year due to the fall in copra prices and the resulting financial problems. New legislation was passed by the parliament in April 2002 to deregulate the coconut industry and the formation of the Coconut Industry Corporation that will have a policy and regulatory role with the private sector playing the marketing role. However it is too early to assess the effect of the deregulation. Coconut and Cocoa Research Institute (CCRI) as well as Coconut and Cocoa Extension Agency (CCEA) continue to be active. The ICG is located in PNG at the Stewart Research Station in Madang and the transfer of coconut germplasm from the region has started. At the Stewarts Research Station there is ongoing research on coconut agronomy, coconut-based farming systems, breeding & production of coconut hybrids, and entomology of coconut pests.

Tonga: In 2000 a survey revealed a high percentage of senile trees and cutting of palms for wood or planting of other crops. The government emphasizes the importance of coconuts and the need to replant. As a result a coconut replanting scheme was undertaken with local funding. Thus far 20,000 hybrid seednuts have been sown in the nursery for distribution to farmers. In January 2002 cyclone Waga destroyed more than 50% of the coconut palms in the Vava'u group of island and 7,000 coconut seedlings have been provided for rehabilitation. Small scale production of coconut products such as scented oil, handicrafts and the export of husked nut continues.

Vanuatu: The Vanuatu Copra Marketing Board has suffered a down turn in copra production and has purchased a soap factory as it continues develop a coconut value adding strategy. VARTC (Vanuatu Agricultural Research and Training Centre) is now under local management and the research programme is under review. The

coconut research programme is being conducted with strong collaboration from CIRAD. The research includes assessment of coconut diversity and *in situ* conservation, breeding and dissemination of high yield planting materials such as the Vanautu Tall x Rennell Tall, coconut based farming systems, regional hybrid trials, and assessment of carbon sequestration by coconuts. A biofuels project is being considered.

In conclusion national level coconut industries can help build a strong sub network with the following actions.

- National coconut industries need to adapt to the emerging new coconut paradigm where export of copra cannot be the basis of the industry.
- Increase the commitment to coconut industry to policy reform.
- Commitment of staff and resources to coconut research development and extension.
- Increasing incomes for farmers through coconut based farming systems, replanting of coconut, and exploring and promoting value adding at local and national level.
- Overcome the isolation by increased information exchange with other coconut producing countries so that the Pacific Island countries can learn from each other.

Regional Level

Coordination and Management: The SPC Agriculture programme is the logical choice to handle the coordination of a Pacific Coconut research and development network. However there needs to be addition staff to focus strictly on coconuts and to provide a support role for the network. Possibly this could be done through a regional coconut project. Additional staffing for the duration of 3-5 years would help to establish and strengthen the network to the level that it could be sustained through stronger national coconut R&D programmes.

Training and Technical Advice: With the training contribution of COGENT and previous efforts of the national governments, there is a core of trained staff in coconut R&D that can help their Pacific neighbours. In addition through CIRAD and our Asian COGENT colleagues appropriate assistance for short-term training and technical advice can be obtained. Philippines Coconut Authority has been quite helpful in the past and CIRAD continues to have an active role in the Pacific.

Information Exchange: The COGENT IFAD/ADB projects sponsored a regional meeting in 2000. This was a very significant occasion for the South Pacific sub network. In addition COGENT sponsored workshops brought together coconut national coordinators. Periodic meeting at a technical level for workshops and trainings and higher levels for policy discussions is important for coconut industry and necessary for the information exchange to make a network sustainable. Meetings

don't have to be exclusively for coconuts but coconut discussion can be piggybacked on other meetings. The problem is that such meetings in the Pacific are expensive because of the costs of transportation and infrequent flights between islands. Email, websites, publications, and CD Rom publications are important but it does not substitute for direct personal contact on a periodic basis. SPC will continue to pursue coconuts during country visits and during meeting on other topics and act as a regional communications link on coconuts.

The COGENT IFAD/ADB projects in the South Pacific made a significant contribution to the characterization and documentation of coconut germplasm, coconut products and coconut-based farming systems. The information from these initiatives needs to be held in the Pacific and further contributions made by the countries. This can be accomplished in several ways.

- The PAPGREN (Pacific Agricultural Plant Genetic Resources Network) is new formed under SPC. One of the roles of the network is to make available the results of PGR work in the region. We will be establishing websites with databases, CD Roms and publication for the region concerning coconut PGR.
- Documentation and publications will be make available on the website and on CD ROM for a wide range of topics

Projects & Activities

ICG Coconut Embryo Collection & Movement

As has been previously reported coconut germplasm was collected and partially described in the small island atoll countries of Cook Islands, Kiribati, Marshall Islands and Tuvalu by Jean-Pierre Lambouisse and Dr. Roland Bourdeix of CIRAD. This innovative regional activity was carried out with the ADB funded, CGRNAP project of COGENT. It was initiated during 2000 and it continued in 2001. The coconut embryo cylinders were excised and transferred to the Regional Germplasm Centre of SPC. The coconut embryos were grown *in vitro* and then transferred to the International Coconut Genebank in Papua New Guinea in December and February 2001. The losses were considerable for a variety of reasons but the lessons learned from this activity will help in the future movement of coconut germplasm in the Pacific region.

A **Coconut Embryo Culture Training Course** was held at the SPC Regional Germplasm Centre in Fiji 26-28th February 2001 with funding support from COGENT. There were participants from Fiji, Samoa and Tonga with instruction provided by Alfred Kemu of the Stewarts Coconut Research Centre in PNG and Dr. Mary Taylor of the SPC Regional Germplasm Centre. The objective of the training was to equip all participating countries with the capability to send and receive, and successfully grow seedlings from coconut embryos from the International Coconut Genebank for the South Pacific, and from other COGENT member countries.

This year with support from SPC, COGENT, CCRI, and Ministry of Agriculture in Fiji, additional test shipment were made between Fiji and PNG to determine the best method form to use in vitro plant, embryo plugs or embryos. The recent results are promising though the problem is the speed and efficiency of the courier companies to deliver the shipment without delay.

Biofuels Projects:

The SPC Rural energy programme has worked with CIRAD, Ministry of Agriculture, Pacific Power Association with funding support from the French Embassy for the development and implementation of coconut biofuel projects in isolated island communities. Projects have been successfully installed in New Caledonia and Fiji. Energy is used for other value adding activities as well as lighting for the community. With the decreasing prices of coconuts and the high price of fossil fuels there is considerable interest in this area. Results have been encouraging however these have been pilot activities and the long-term sustainability is still being studied. A CIRAD team is in Federated States of Micronesia determining if a pilot facility could be installed there.

Coconut publications:

Coconut Oil : A booklet is being developed by SPC, with technical input by a consulting nutritionist. The booklet will be a resource and information source across the Pacific region on the nutritional and health aspects of coconut.

Objectives:

- Nutritional content of mature and young coconut
- Comparisons of coconut milk and coconut cream (nutritionally)
- Balanced view of latest research in relation to coconuts and heart disease
- Balanced view of latest research in relation to coconuts and health overall

Coconut Technologies: SPC is in the process of editing a Coconut Technologies Manual produced by PCA for the Pacific. This project has been delayed but it is still being pursued.

Project development:

In the Pacific a network can not function with support for activities. In consultation with the network member countries a project proposal is being developed to help coconut research and development in the Pacific.

The potential components for a regional coconut project consist of the following:

- Value adding

- Coconut-based farming systems
- Germplasm conservation and exchange
- Indigenous coconut germplasm
- Hybrid trials
- Synthetic varieties

In conclusion the strengthening of the regional level of the sub network requires the following:

- Coordination can be provided by SPC but additional staff are needed to provide training, technical advice and management of a regional coconut network.
- Communication network established to facilitate information exchange between members on germplasm, exchange of germplasm, coconut technologies and coconut based farming systems.
- Regional coconut project to support Coconut Research and Development
- Facilitate participation of the SP in the CORDPRO
- Continue to assist in the movement of germplasm to the ICG SP
- Represent the region on COGENT Steering Committee and BUROTROP.

Conclusions and Recommendations

There is a strong interest in coconuts by all the Pacific Island countries. There is a high level of national activities on coconuts that include seednut production, processing, local marketing of coconut products, and export of coconut products. Coconuts are one of the mainstays of the Pacific Islands. Regional organization such as the Secretariat of the Pacific Community and the Asia Pacific Coconut Community are interested and committed to strengthening coconut development in the South Pacific. There are international organizations that share an interest and commitment to assist the Pacific i.e. COGENT, CIRAD and BUROTROP in coconut development.

The coconut industry is changing that that requires the farmers and the private sector to change with it. It also means that the Pacific Island countries will need assistance in learning and adapting to the change.

The 3-pronged strategy for coconut development is needed in the Pacific:

1. Increasing coconut yield with selected local varieties and hybrids.
2. Increased income and food security with coconut based farming systems.

3. Increased income by production and marketing a variety of coconut products not just copra.

Value adding and the producing a multitude of products from coconuts had strong roots in the Pacific. More attention need to be focused on how the tradition products that coconut producer know how to make can be better adapted for tourist and export markets. At the same time new products that are adapted to local condition need to be adapted from other coconut producing areas.

Research and development capacity is very weak in the Pacific. Training and technical assistance at the national and regional level is needed to work with the countries to develop appropriate efforts to foster the development of the coconut industry. A full time regional coordinator would be a great boost to the region to move forward in this area. Through strengthening national and regional efforts a more sustainable South Pacific Sub-network could be created. Regional organizations are overburdened with too many activities and a focus on coconuts is needed. Through a stronger sub-network the ICG in PNG could become a central focus of activity for the exchange of useful germplasm for the region.

The elements for a sustainable sub-network for coconuts exist in the South Pacific. The COGENT projects in the region in collaboration with CIRAD, APCC, and BUROTROP and funding by IFAD and ADB have complimented and strengthened national coconut programmes. Though many countries have continued to work individually on coconuts, the COGENT projects with technical assistance, training and project support have been vital for providing Ministries of Agriculture with funding and support that would not otherwise be available. This support has been a catalyst for action on coconuts in the region that is much appreciated.