THE PNG COCONUT INDUSTRY IN THE NEW MILLENIUM

Robinson W. Namaliu[1], LLB, LLM.

1. INTRODUCTION

The coconut industry is the oldest agricultural industry in Papua New Guinea (PNG) and since the 1950s has played a pivotal role in fostering economic development in the lowland areas of the country. The coconut itself, is a major daily source of food and income for the coastal people and an important feed source for village livestock. On many atoll islands and remote areas of the mainland, coconut is the ony source of income for the rural population that exists there.

Economically, coconut is the third most important agricultural export commodity of the PNG lowlands. It provides an excellent choice of dual cropping with cocoa and other high value cash crops (e.g. spices, essential oils), and has provided grazing areas for cattle (beef) production.

The crop is grown along the coastal fringes of the mainland and on all islands extending from the Bismarck Archipelago to the South Solomon Sea. The total area under coconut cultivation is estimated to be about 260,000 hectares, 40 percent of which are large plantations, and the rest consist of samllholder plantings and village plots.

This paper highlights the present situation of the industry and the role coconut as a cash crop is playing in the agricultural economy, and outlines its future development needs, for the consideration of this Conference and the National Agricultural Council (NAC). It emphasizes the relative importance of the coconut as an export commodity, and the increasing role it has as a food source. It is the tree of life since time immemorial, and will remain an important source of economic wealth for the resource-poor people in PNG.

2. PRESENT STATUS OF THE INDUSTRY

2.1 Annual Production

Information on annual coconut production in PNG is limited to copra exports. Over the last 30 years, annual copra production has averaged 137,000 tonnes. Fluctuations in production are very much related to growers' response to the world price. An analysis of the price elasticity of copra supply in PNG has shown that when copra prices increase by 10 percent, this results in a 2 percent increase in production, and vice-versa (Yabro 1993).

Table 1 indicates that the total copra and coconut oil exports in 1998 were worth K 108 million, or equivalent to 10 percent of the total agricultural exports (QEB, 1999). In 1999, with the depreciating Kina, the total revenue from coconut products increased to K 128.5 million or constituting 12 percent of the total agricultural exports.

It is however estimated that an additional 60,000 tonnes of copra or 300 million nuts equivalent, are consumed domestically in daily diets (CCRI, 2000). The importance of coconut as a food source has also spread to the highlands of PNG, where it has become an integral part of daily food trade. To go by the prices of nuts at Port Moresby urban markets, which range from 20-50 toea per nut, the additional crop consumed locally as food would be worth between K 60-150 million annually.

2.2 Production constraints

The major constraints to coconut production in

[1] Chairman, Copra Marketing Board, Rabaul.

Table 1. **Copra and Cocout Oil Exports 1992 - 99**

YEAR	COPRA EXPORTS '000 tonnes	CNO EXPORTS 000' tonnes	COPRA PRICE K/ton/FOB	CNOPRICE K/ton/FOB	COPRA EXPORT VALUE Kmillion FOB	CNO EXPORT VALUE Kmillion FOB	TOTAL COCONUT EXPORTS Kmillion FOB
1992	47.5	34.8	247	625	11.8	24.1	36.0
1993	59.0	45.5	251	441	14.2	19.6	33.8
1994	50.3	34.7	292	579	14.7	20.1	34.8
1995	64.2	33.1	427	897	27.4	29.7	51.1
1996	99.2	49.6	494	1036	49.0	51.4	100.4
1997	90.3	48.6	523	1051	47.2	51.1	98.3
1998@	58.1	53.2	668	1010	38.8	69.7	108.5
1999@	81.3	42.0	765	1578	62.2	66.2	128.5

Source: QEB, Central Bank of PNG (@ 1998 Agric. Exports = K1020 mill., #Estimated 1999 Agric. Exports = K1070 mill.

PNG are: the senility of existing palms, and the severity of beetle pest infestations that has prevented replanting with improved hybrid seed nuts. The beetle problem is quite serious in the Islands region, and has halted several redevelopment initiatives in East New Britain and New Ireland provinces.

The government has promoted the importance of producing quality copra by setting a price differential between "hot air" as the top grade copra and "smoke" as the lowest grade. A recent survey revealed that "smoke" copra is still a serious problem in at least four provinces, and must be addressed promptly.

One of the recent development in agriculture which has forced coconut areas, and hence production, to dwindle, is the establishment of oil palm in place of coconut plantations. This is most notable in Milne Bay and New Ireland provinces, on previously alienated land.

2.3 Corporate issues

2.3.1 Copra marketing

The Copra Marketing Board (CMB) is the statutory organisation solely responsible for the purchase and export of copra in PNG. It allows other private operators to export coconut oil and other coconut products and by-products under permit.

The Board has recently upgraded its management structure with the view to improve efficiency and accountability of its operations. The SCMCA and the Parliamentary SRC have already approved the new Board Management structure and the remuneration levels for senior managers.

CMB is required by law to maintain a marketing network of deports and sub-depots, and presently operates 9 main depots and 25 sub-depots and agencies throughout PNG. The Board has been criticised by some sectors of the industry for operating in this manner. Hence, recently, many have called for the deregulation of copra marketing in PNG. What cannot be guaranteed however, is whether private operators can sustain the current marketing network of CMB, and make a profit. Because, without this network, copra producers in many remote areas of PNG would be deprived of their constitutional right to their only source of income. This would be a direct consequence of a deregulated marketing system.

Because of the Board's concern on improving the farm gate price for farmers, it has commenced a freight study to ascertain the profitability of domestic shipping routes, and to establish a realistic basis for freight negotiations with ship owners. The analysis so far indicates that the copra freight rates currently being charged on

some routes are well beyond the allowed legal limits. The new tenders for copra shipping contracts will be based on the facts and information that has been assembled under this study.

One other issue that the Board will address is the review of the current copra price formula. A funding proposal to undertake this study has been submitted to the Government through the Stabex Committee.

2.3.2 Corporatisation

The CMB has now adopted a new 5-year Corporate Plan which sets out the vision and strategies for the future development of the coconut industry. Its fundamental objective is to increase production through the use of improved technological packages, and increased plantings and replantings throughout the PNG lowlands. The overall goal is to double the current annual copra production by 2010.

In line with the Government policy directive (NEC Dec. No. 15/99), the Board has also carried out an internal review of its corporate functions to determine what are the options for CMB and the Government to consider in a process of corporatising the industry. The final recommendations from this review would be presented to the Government's Committee on Privatisation of Public Bodies.

2.3.3 Research and Extension

CMB supports a comprehensive coconut research and extension programme in PNG through its shared-ownership with the Cocoa Board of PNG, of the Cocoa and Coconut Research Institute (CCRI) and the Cocoa and Coconut Extension Agency (CCEA). The two technical subsidiaries of the Board are funded through levies on copra and coconut oil exports, and presently CMB provides K 2 million anually to finance coconut research and extension work.

Based on the Board's new Corporate Plan, the strategic objectives for the sub-sector would be formulated intonew coconut research and development (R&D) agendas for CCRI and CCEA. The latest research results indicate that CCRI has made a break-through in the control of the most serious beetle pests of coconuts, and by the end of the year, recommendations of new coconut hybrids would be available to the industry. CMB has also embarked on a study to identify future coconut R & D thrusts and to set development priorities for promoting coconut as a viable industry in years ahead.

2.3.4 Downstream processing

In accordance with the Government policy on the promotion of on-shore downstream processing of primary produce, CMB approved the establishment of a coconut mill in Madang. The mill, which was established in 1996, is operated by a separate subsidiary of the Board, the PNG Coconut Commodities Ltd. The plant was a second-hand purchase from Tonga, which unfortunately rquired substantial refurbishment during its assembly in Madang. The annual crushing capacity of the mill has now been upgraded from 20,000 tonnes to 50,000 tonnes, which will vastly improve its viability as a business.

The first coconut oil mill in PNG is operated by the Carpenters Group in Rabaul. It has the capacity to crush 80,000 tonnes of copra annually. It is estimated that unless annual copra production increases significantly over 130,000 tonnes mark, copra exports could cease from 2001 onwards, as the two oil mills have the capacity to crush the current volume of cora produced in PNG. The Board does support such an eventuality, as it would generate more revenue for the country. However, how this is reflected in the copra price to primary producers is yet to be determined.

The Board has also established a small food processing facility at the CCRI Stewart Research Station in Madang to research and develop simple recipes for food items produced from the coconut. It is anticipated that a technical cooperation with an overseas University and the PNG University of Technology would be forged to undertake more detail work in this area.

3. THE WORLD DEMAND FOR COCONUT PRODUCTS

3.1 Coconut oil

The most important coconut product to world consumers is coconut oil (CNO). However, as another tropical vegetable oil, CNO competes very much with other oils such as palm oil, for its share in the global market. Traditionally, CNO has been used in the soaps and cosmetic industry because of its high lauric acid content.

More recently, lauric acid has been recognised for its unique properties in food use, which are related to its antiviral, antibacterial, and antiprotozoal properties (Enig. 1999). Now, capric acid, another of coconut's fatty acids has been added to the list of coconut's antimicrobial components. Also, recently published medical research has shown that natural coconut fat in the diet leads to a normalisation of body lipids, protects against alcohol damage to the liver, and improves the immune system's anti-inflammatory response (Enig, loc. cit.).

Clearly, there has been an increasing recognition of health-supporting functions of the fatty acids found in coconut. This can only be good news for copra producers, because it would put CNO in a more competitive position against other sources of lauric oils. Development of genetically modified plants as cheap sources of these oils, does pose a potential threat to tropical vegetable oils. However, the biosafety concerns over the use of such plants still remain debatable in the scientific world. The obvious competition to CNO comes from the palm kernel oil, but on a hectare basis, coconut growers would produce more lauric oils per hectare than palm oil growers would.

3.2 Other coconut products and by-products

The versatility of coconut tree is demonstrated in numerous other products and by-products that can be derived from this tree of life. In the Asia-Pacific region, many other products are being processed for domestic and export markets. These include desiccated coconut, coconut charcoal and coconut activated carbon, coconut coir and fibre dust, and coconut lumber.

The CMB has considered options to promote the commercialisation of many of these products, but requires financial resources to evaluate the suitability of related technologies and the economics of their production under the PNG situation. Given the depreciating Kina and the rising costs of imports, the opportunities of producing coconut products and by-products for domestic use must be explored in earnest.

4. THE FUTURE

4.1 The expansion of coconut plantings

The majority of coconut stands in PNG are over 50 years old, and with increasing hectarages of senile palms. Plantations have not had any replanting programme since the 1970s, and recent new plantings have occurred only in the smallholder sector. There is therefore a need to rehabilitate and replant existing coconut plantings throughout the country, as a first step to lift production levels.

This requires improved planting material and improved pest control measures. CCRI is presently planning for the establishment of four regional hybrid seednut production centres, which will supply material required for replanting. It is estimated that when the four seedgardens are established and in production by 2003, they will have the capacity to produce 800-900,000 seednuts a year. This would enable a replanting programme of 10-12,000 hectares annually.

The Board is proposing a coconut redevelopment project for the Government to consider funding in the 2001 Budget. The Board estimates that from the four seedgardens, a total of 50-60,000 hectares can be replanted over 5 years to high yielding hybrid coconuts. Potentially, this should result in an additional 75-90,000 tonnes of copra. If this programme is rigourously

supported, the Board's projection of doubling the current production by 2010 is highly achievable.

4.2 The promotion of downstream processing

The prospects of value adding for coconut products must be explored to the full as a matter of priority. The various items that can be produced have been researched elsewhere, and PNG industry should evaluate the potential of available techniques and technologies to suit local conditions and farmers' socio-economic circumstances.

The Government must support the Board's plans to enhance coconut oil processing on-shore. The domestic shipping freight would make this move inevitable, and Provincial Governments should be encouraged to promote joint-venture opportunities with interested investors for CNO production and export.

The ***CMB*** *Act* 1983, would need to be revised to allow the promotion and monitoring of business activities involving coconut products other than copra.

4.3 The participation of growers in industry development

The experiences over the last two years indicate that a greater formalisation of the growers' movement is in the good interest of the industry. To this end, the Government approved the establishment of a National Copra Producers Association (NCPA) in March 1999, and directed the Board to facilitate its establishment.

The Deputy Prime Minister and Minister for Agriculture and Livestock launched the NCPA on the 21th July 2000, after approval of its incorporation by the Registrar of Companies. The NCPA has established branches in East New Britain, Bougainville, New Ireland, West New Britain, North Solomons, Madang and Milne Bay Provnces.

It is anticipated that by December 2000, all provincial branches in the coastal and island provinces would be established.

4.4 The support of the Government

The industry is grateful of the Government's support through its Agricultural Price Support Schemes of the late 1980s and early 1990s for its sustainability. The industry currently owes the State K 5 million, and this arrears will be fully paid by December 2000. The Board had previously rquested that this loan is written off by the Government as it has done with the coffee and oil palm loans, but this was not supported by the key central agencies.

The Government has also supported the coconut research and development programmes of the Board since 1992. This support has largely been channeled through the Stabex programme of the European Union.

While this support has greatly enhanced research and development in coconuts, the requirement to rehabilitate and expand coconut areas remain as the most urgent need of the industry.

It is therefore proposed that the Government, commencing in 2001, provide a budgetary support to the coconut industry of K 5 million a year for five years to achieve the following:

- Develop improved technologies (hybrid seed nuts, pest control);
- Enhance extension to support district programmes;
- Rehabilitate and increase coconut plantings by 60,000 hectares;
- Promote the development of quality products and by-products of coconuts;
- Maintain an efficient marketing network for producers; and
- Overall, improve the rural livelihood of coconut growers.

5. RECOMMENDATIONS

It is recommended that the Conference and the NAC take note of the recent developments in the coconut industry, and support the CMB in its endeavour to improve the productivity of the sub-sector, and its contribution to the national economy. Specifically, the NAC should support the CMB in its endeavour to:

a) Improve its corporate functions, its efficiency and accountability;
b) Strengthen coconut research and development in PNG
c) Promote coconut downstream processing, and coconut product and by-product utilisation;
d) Promote participation of growers and producers in industry affairs; and
e) Seek and secure government budgetary support for a national coconut rehabilitation and redevelopment programme in 2001.

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