Vanuatu Coconut sector development from the SFs perspectives
Vanuatu

Vanuatu archipelago = 83 islands and islets

Population = 246 000 hab

70% in rural and plant coconut

Average area/household=5 hectares

Localisation: Torba, Sanma, Penama and Malampa are the only Provinces that are producing copra

Wharf export localisation: Export wharf for commodities is in Luganville on the Island of Santo
Coconut production main uses

- Total number of nuts = 778,934,080 equivalent to 9,736,676 coconut trees equivalent to 119,384 ha
- Number of nuts used for copra = 329,600,000 equivalent to 4,120,000 coconut trees equivalent to 32,000 ha
- Number of nuts for Human consumption = 647,348
- Number of nuts for Animal feed = 1,157,277 (VNSO, 2007)
Number of coconut trees according to age

- 5647460, 58%
- 194740, 2%
- 1752660, 18%
- 2142140, 22%

(Source: VSO Agriculture census 2007)
Country situation analysis

- The Vanuatu Coconut Industry is regulated by the Vanuatu Commodities Marketing Board (VCMB)

- 2 copra crushing mills operational in Luganville (Santo Island, Sanma Province), exporting crude coconut Oil (CNO), coconut meal and manufacturing CNO products (Oils/soaps) and together have the capacity to handle all the copra produced in Vanuatu.

- Copra is still being exported
Country situation analysis (cont.)

- Weight of: copra produced; copra, crude oil and coconut meal exported for the last 5 years.

<table>
<thead>
<tr>
<th>Year</th>
<th>Copra produced (tons)</th>
<th>Copra exported (tons)</th>
<th>Crude oil exported (tons)</th>
<th>Coconut meal exported (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>23,167</td>
<td>15,107</td>
<td>5,385</td>
<td>12</td>
</tr>
<tr>
<td>2010</td>
<td>36,066</td>
<td>12,133</td>
<td>10,325</td>
<td>5,222</td>
</tr>
<tr>
<td>2011</td>
<td>40,320</td>
<td>13,596</td>
<td>12,000</td>
<td>6,917</td>
</tr>
<tr>
<td>2012</td>
<td>35,834</td>
<td>16,846</td>
<td>10,011</td>
<td>6,082</td>
</tr>
<tr>
<td>2013 (June)</td>
<td>8,151</td>
<td>6,460</td>
<td>2,527</td>
<td>2,822</td>
</tr>
<tr>
<td>Means</td>
<td>31,897</td>
<td>10,510</td>
<td>8,944</td>
<td>4,679</td>
</tr>
</tbody>
</table>

- (Source: VNSO, 2013)
Country situation analysis (cont.)

- Weight and Values of: copra produced; copra, crude oil and coconut meal exported for the last 5 years.

(source: VSO 2013)
Since the end of the 19th century, the economy of Vanuatu has largely depended on the production of copra and coconut oil, two coconut products that still amounted to 43% of export earnings in 2007. Coconut plantations were once limited to the island coasts, but have gradually spread to more fertile zones where they compete with food crop production. This situation jeopardizes the country’s food self-sufficiency.

Use of coconut oil as a biofuel in diesel vehicles and for electricity production has developed in recent years and has revived interest in a declining copra industry. Nationwide use of coconut products would also make it possible to escape the volatility of world copra prices.

Preference should be given to replanting senescent coconut plantations located in low-fertility zones, such as coral coastal terraces, in order to maintain the current production level. By using early-bearing and high-yielding coconut varieties, it will be possible to ensure high production on a

Coconut genetic improvement: a lengthy business

Since 1962, on the island of Santo, research has been underway at the Saraoutou station, now known as the Vanuatu Agricultural Research and Technical Centre (VARTC), to improve the productivity of coconut plantations through modern management techniques in nurseries and plantations, and by selecting new coconut varieties.

Two varieties perform much better than the unselected Vanuatu Tall: the Elite Vanuatu Tall (Elite VTT) and the hybrid between the Vanuatu Tall and the Rennell Island Tall (VTT × RIT). They are well suited to the local ecology and particularly display total resistance to coconut foliar decay, a viral disease endemic to Vanuatu, which decimates varieties introduced from other countries.
The Elite VTT was obtained through selection, over 4 generations, of the best parents from coconut populations collected on the east coast of Santo. Under good soil and growing conditions, it starts flowering very early and gives its first harvest 4 years after planting. The amount of copra per nut has been improved by 50% and yield (2.8 tons of copra per hectare) by 56% compared to the unselected VTT.
Hybrid
Vanuatu Tall × Rennell Island Tall

Crossing the Vanuatu Tall with the Rennell Island Tall (a variety with very large nuts originating from the Solomon Islands) has given an early-bearing hybrid variety producing a large number of large nuts (120 nuts per palm and per year). On good soil, without fertilizer, copra yield is remarkable with an average 3.7 tons per hectare, i.e. double the yield of the unselected VTT.
Performance of improved coconut varieties compared to unselected Vanuatu Tall

Yield per hectare

<table>
<thead>
<tr>
<th>Metric tonnes/ha</th>
<th>VTT</th>
<th>Elite VTT</th>
<th>Hybrid VTT x RIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copra/ha (t)</td>
<td>1.8</td>
<td>2.8</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Weight of copra per nut

<table>
<thead>
<tr>
<th>Grammes</th>
<th>VTT</th>
<th>Elite VTT</th>
<th>Hybrid VTT x RIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copra/nut (g)</td>
<td>139.2</td>
<td>208.9</td>
<td>217.9</td>
</tr>
</tbody>
</table>

Conclusion

The hybrid performs remarkably well but it has to be produced in centralized seed gardens using a pollination technique requiring qualified staff. It cannot be propagated from seednuts by farmers.

Consequently, the Elite Vanuatu Tall is the most suitable planting material for carrying out a large-scale planting programme under the conditions in Vanuatu. It is a variety that is inexpensive to propagate and can be reproduced by farmers using seednuts collected from under their own Elite VTT coconut palms.

For both varieties, the optimum performance in terms of early bearing and yields, such as obtained on-station, depends on the care provided in the nursery (notably the elimination of seednuts that germinate late), at the time of planting (good holing) and in the first 3 years after planting.
Country situation analysis (cont.)

• Distribution of improved planting materials from 2009 to 2013:
  – Number of Improved Vanuatu Tall distributed: 32 674 (228 ha)
  – Number of Vanuatu Tall x Rennell Island Tall distributed: 35 337 (247 ha)
Country situation analysis (cont.)

• Pest and Disease:
  
  – The main pest of coconut palms is *Brondispa logissima* that cause damage at the early development stage. It is not a treat to coconut production.

  – Coconut Decay Foliar Disease (viral disease; vector = *mindus tafini*) is only affecting exotic varieties.
Gaps/obstacles in coconut production and utilization for Vanuatu

- Difficulties in distributing planting materials because of very high transportation cost
- Poor quality of copra due to high cost of copra pipes
- Low copra price/cost of production (from kernel extraction, drying, transportation to buyer) induced low copra production
  - 18% of coconut palms have more than 50 years, need to be replaced with improved planting materials that are available at VARTC
  - No regular shipping services in some areas like Torba Province
- Poor Infrastructure (Roads, storages, dryers) all around Vanuatu induced low copra production
- Coconut palms in vanuatu are growing very fast
Possible solutions and suggestions

• Suggestions:
  – Organise copra farmer into cooperatives or associations in order to limit the cost of:
    • copra drying, transportation, obtain organic certification and sustain copra production
  – Subsidize copra dryer
  – Find a new technology to dry copra
  – Coconut timber as value adding for ageing plantation
Recommendations

• Need to search for new technics and technology for copra production

• Close cooperation with Asia and South East Asia for new technology and by product development
• Thankyou!