CocoVeneer: Estate planning

Guide to community development of Estate Coconut Renewal Plans
• Community and family estates as a source of log supply.
• Estate Coconut Renewal Guide
  – Section 1: Developing an estate plan for coconuts.
  – Section 2: Resource information.
  – Section 3: Support worksheets.
Community estates and log supply

Estates and communities:
• Own most coconut stands.
• Control coconut plantation renewal.
They can:
• Keep their senile coconuts.
• Replace them with new productive palms.
• Replace the coconuts completely and move to another crop.
• Any combination of these.
• A regular coconut log supply for wood processing can result from communities deciding to renew their coconut plantations, and sell logs.

• To make informed decisions, communities need to develop and adopt an estate coconut renewal plan.
  – Once agreed, it can then be implemented.
The guide proves a structured but achievable, 6-step process for a community to assess the impact of estate renewal and decide on actions.

Step 1: Assemble the planning team
Step 2: Map the estate
Step 3: Assess coconut production
Step 4: Estimate impacts of renewal
Step 5: Establish community priorities
Step 6: Planning any harvest
Guide structure

**Section 1:** Developing an estate plan for coconuts.

**Section 2:** Resource information.

**Section 3:** Worksheets and checklists.
Trend of coconut nut productivity yields with palm age. Source: Forstreuter, SPC 2013
20 ha plantation with 60% senility addressed over 50 years in a continuing 60 year coconut palm rotation – matches Fiji.
### Section 2: Resource information

<table>
<thead>
<tr>
<th>Period</th>
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<tbody>
<tr>
<td></td>
<td>50 year replacement</td>
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</tr>
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<td>Current est. production</td>
<td>1.00</td>
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</tr>
<tr>
<td>After initial harvest</td>
<td>0.97</td>
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</tr>
<tr>
<td>After harvest: Year 5</td>
<td>0.95</td>
<td>0.92</td>
</tr>
<tr>
<td>After harvest: Year 10</td>
<td>0.94</td>
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</tr>
<tr>
<td>After harvest: Year 15</td>
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<td>1.13</td>
</tr>
<tr>
<td>After harvest: Year 20</td>
<td>1.22</td>
<td>1.50</td>
</tr>
<tr>
<td>After harvest: Year 25</td>
<td>1.52</td>
<td>2.01</td>
</tr>
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<td>After harvest: Year 30</td>
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</tr>
<tr>
<td>After harvest: Year 50</td>
<td>2.38</td>
<td>2.76</td>
</tr>
<tr>
<td>After harvest: Year 55</td>
<td>2.45</td>
<td>2.37</td>
</tr>
<tr>
<td>After harvest: Year 60</td>
<td>2.46</td>
<td>1.96</td>
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Change factors for nut production and harvest volume – 60% senile estate, 50 & 25 year replacement
Section 1: Develop a coconuts estate plan
Step 1: Assemble the team

• Assemble the planning team
  – With diverse age and range of skills
  – Appoint ‘job captains’.

• Establish deadlines
  – Realistic, reviewed regularly, and if needs be, flexible

• Collect available resource information
  – Government agencies, community members and others may all have useful information about the estate.
Step 2: Mapping the current estate

- A drawn map is the most effective tool for estate planning.
- One needs to be prepared to identify:
  - The blocks of coconut palms.
  - Areas of other crops, pasture and forest.
  - The locations of roads, electricity lines and other service infrastructure.
  - Areas important to the community for social and other reasons.
Step 2: Preparing the map

• Measure the estate and drawing the results.
• Adapt a hard-copy lands or similar map of the area
• Capturing the screen image of the estate on Google maps.
  – This can be traced to provide a base map.
• Using geographic information system (GIS) software packages.
Step 2: Preparing the map
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• General map inclusions:
  – Legal boundaries and reserved areas.
  – Plantation and other cropping areas.
  – Waterways, roads, tracks and footpaths.
  – Buildings, yards, services and other infrastructure.
  – Other areas important to the community.

• Check the map against conditions on the ground.

• Protect the map.
  – It is very valuable
Step 3: Assessing coconut production
Step 3: Assessing coconut production

• The condition of estate coconut palms needs to be assessed for age and current productivity. This is to identify:
  – The number of healthy and unproductive palms.
  – Their distribution.
  – Current nut productivity.
  – Areas of pest or disease.

• Those who live near the stand may know:
  – When the stand was planted (its age).
  – The total nuts collected (its productivity)
Step 3: Assessing coconut production

Before the assessment:

• Have copies of the plantation assessment form and draft maps.

• Confirm the detail of the stand match the map.
  – Note things to correct on the map.

• Establish:
  – The initial plant-out dimension and palm arrangement of the block.
  – A start point and an assessment pattern.
Palms can be assessed as either.

- **A productive palm**: a growing or mature palm, producing more than 20 coconuts every year.
- **An aging palm**: a mature palm, producing between 5 and 20 coconuts every year.
- **A senile palm**: a very mature palm producing 5 coconut or less every year.
- **A fallen palm** is a damaged, broken or completely missing palm.
Step 3: Assessing coconut production

Trend of coconut nut productivity yields with palm age *Source: Forstreuter, SPC 2013*
Step 3: Assessing coconut production

- The assessments can be summarised and provide the information needed to define the profile of low productive palms in stands and the estate.

<table>
<thead>
<tr>
<th>Palm type</th>
<th>% Palms in the estate</th>
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<tr>
<td>Percentage senile palms</td>
<td>Divide the number of senile palms in Table 1 by the total number of palms then multiply by 100.</td>
</tr>
<tr>
<td>Percentage aging palms</td>
<td>Divide the number of aging palms in Table 1 by the total number of palms, then multiply by 100.</td>
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<tr>
<td>Total % low productive palms standing</td>
<td>Add the percentage of senile, and aging palms together.</td>
</tr>
<tr>
<td>Percentage fallen palms</td>
<td>Divide the number of fallen palms in Table 1 by the total number of palms, then multiply by 100.</td>
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<tr>
<td>Total % of low productive palms</td>
<td>Add the percentage of senile, aging and fallen palms together.</td>
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Table 2: Percentage of low productive coconut palms on the estate
Step 4: Impact of coconut renewal

Percentage of low productive palms → Change factors for nut production and harvest volume → Current nut production and palm number = Change in nut and log production

Current nut production and palm number = \( \text{Percentage of low productive palms} \times \text{Preferred replacement period} \times \text{Change factors for nut production and harvest volume} \)
Step 4: Impact of coconut renewal

Change factors included for:

- 60% senile, replaced in 50 and 25 years.
  - Matching Fiji
- 40% senile, replaced in 40 and 20 years.
- 20% senile, replaced in 30 and 15 years.
  - Matching the Solomon Islands
- 16% senile, replaced in 30 and 15 years.
  - Matching Samoa
An estate, 1500 stems, 60% senile, producing 20,000 nuts a year, senile replacement in 25 years with partial harvest every 5 years.

What will happened to nut and log production at 20 and 40 years.
## Section 2: Resource information

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Change factors for nut production and harvest volume – 60% senile estate, 50 & 25 year replacement
Impact example

- At 20 years, it can produce:
  - ~ 20,000 x 1.5 = 30,000 nuts
  - ~ 1500 x 0.15 = 225 logs.
- At 40 years, it can produce
  - ~ 20,000 x 3.16 = 63,200 nuts
  - ~ 1500 x 0.03 = 45 logs.
Step 4: Impact of coconut renewal

Community estate nut productivity with senile palm replacements over 25 years (60% senile)
Community priorities for their coconut plantations needs to be established and accommodated in an agreed renewal plan.

• Inform the discussion with estimates of nut and log production.
• Agree on the key points.
• Appoint those responsible for action.
• Recording the decisions.
Step 6: Planning the harvest

• With decision, a draft harvesting and renewal schedule can be developed and implemented.
Aim: Regular coconut log supply
Summary

• Community plantation renewal is a source of coconut log supply.

• Communities need to develop and adopt an *estate coconut renewal plan*.

• The guide proves a structured but achievable, 6-step process for a community to assess the impact of estate renewal and decide on actions.

• This is supported with resource information and worksheets.
Questions