Objective 2

Develop protocols and capacity for sustainable low-impact coconut wood harvesting, plantation rehabilitation, and log grading, handling and transport.
Project objectives

Identify markets

Forestry: stem harvesting

Peeling in S. Pacific

Peeling trials

Assemble and test products

By-product utilisation

Advanced veneer and other product from coconut wood
Objective 2 – CocoVeneer forestry practices

Identify markets → Forestry: stem harvesting → Peeling in S. Pacific → Peeling trials → Assemble and test products → By-product utilisation

Advanced veneer and other product from coconut wood
Objective 2 - Develop protocols and capacity for sustainable low-impact coconut wood harvesting, plantation rehabilitation, and log grading, handling and transport

2.1 - Local resource assessment and harvesting

2.2 - Development and training in harvesting and handling protocols – Agroforestry operations.
2.1 Local Resource Assessment and Harvesting

- Material for Trial 1 collected from a representative Fijian site.
  - Dispatched to ENSAM, France.

- Trial 2 material sourced from an Australian site.
  - Sourced material was not sufficiently dense to be representative.

- Hollow high-density Fijian stems sourced for Trial 2 through Pacific Green.
  - These satisfied Australian Customs import requirement but were unsuccessful trial specimens.
Objective 2 – CocoVeneer Agroforestry

2.2 Agroforestry Operations

- **2.2.1 Harvest selections**
- **2.2.2 Felling**
- **2.2.3 Log handling transportation**
- **2.2.4 Site rehabilitation**

Advanced veneer and other product from coconut wood
2.2.1 - Harvest Selections

- Log demand
  - Log demand resulting from veneer product sales
- Possible selections?
  - Assess and identify the best palm selection options to meet the log demand
- Partial harvest?
  - Log volume and coupe location will determine the harvesting strategy
- Complete harvest?
  - Stakeholder and community approval
  - A review of environmental, social and commercial considerations
- Harvesting Plan
  - Details the harvesting in accordance with the local Forest Harvesting Code of Practice
2.2.1 - Harvest selections

Mapping can assist in identifying harvest selections

Collaboration has started with Wolf Forstreuter and his SOPAC team

A well defined Harvesting Plan must exist for larger scale clearances
2.2.2 - Felling operations

Likely controlled by Forestry regulations

Chainsaw operators must:

- Have morning briefing meetings to discuss the Harvesting Plan, any safety issues and the day’s operations.
- Be trained and fell palms using only recommended local Forest Harvesting Code of Practice felling techniques.
- Work in pairs - one feller, one assistant both with the appropriate safety equipment.
- Fell as close to the ground as practicable (unless defects or buttress exists) using directional felling methods.
2.2.3 - Log handling and transportation

Log volume from felling to Harvesting Plan requirements

Coupe location will determine accessibility for forwarding/loading equipment and trucks

Log volume and site type will determine if peeler billets will be graded and cut-to-length at the stump or the landing

The scale of the harvesting will influence the machinery types and haulage trucks used

Billets will be cleaned and stored in dry and dust free area above the ground surface
2.2.3 - Log handling and transportation

- Logs can be cut to length and graded at the stump or the landing.
- Cutting peeler billets to length at the stump for loading will have cost advantages.
- On more difficult sites, logs may be hauled or skidded full length to the landing.
- Similar to native logging, peeler billets will be graded and identified with the grade and stem position.
2.2.3 - Log handling and transportation

The scale of log handling and transportation will depend on:

- The volume of logs required, site location and accessibility, whether individual selections are taken, or the site is partially or wholly harvested.
2.2.4 - Site rehabilitation

- Site clearance
  - Coconut replanting
  - Coconut and inter-row crops
  - Mono-crop conversion

Residue potential options:
- On-site burning (ash nutrients)
- Biochar
- In-field chipping – composting growing mediums

Project Objective 6
- Potential residue by-products

Advanced veneer and other product from coconut wood
2.2.4 - Site rehabilitation

Efficient burning provides nutrient rich ash to the site

Replanting with new and productive varieties

Future multi-crop use of a site

Advanced veneer and other product from coconut wood
Objective 2 – CocoVeneer Agroforestry

Summary

- Forestry and Agriculture authorities need to agree on scope of regulatory control.
- Peeler log demand and/or coupe clearances will determine the scale of harvesting operations.
- All relevant stakeholders and community groups will need to be consulted about proposed harvesting.
- Local Forest Codes of Practice will need to be amended to include an appendix detailing palm harvesting.
- A harvesting plan with maps will be necessary for site clearance, but may not be appropriate for smaller volumes.
  - An approval mechanism is recommended for individual palm selections.
Summary

- All personnel engaged in harvesting operations will need to be adequately competent and certified.
- Harvesting and transportation must be coordinated with peeling operations.
- Log volumes will strongly influence the types of equipment and machinery used for log handling and transportation.
  - Native forest equipment may be used for larger site clearances.
- Peeler billets will be graded, identified and stored above ground in a dry dirt free environment.
- Future use of cleared sites should be included in the Harvesting Plan.
**Objective 2 – CocoVeneer forestry practices**

**Key completion dates** –

<table>
<thead>
<tr>
<th>Activity</th>
<th>Planned</th>
<th>Actual</th>
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<tbody>
<tr>
<td>Local resources assessed and obtained for peeling trial 1</td>
<td>August 2012</td>
<td>March 2013</td>
</tr>
<tr>
<td>Local resources assessed and obtained for peeling trial 3</td>
<td>November 2013</td>
<td>August 2014</td>
</tr>
<tr>
<td>Draft harvesting and handling protocols developed</td>
<td>August 2014</td>
<td>August 2014</td>
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## Objective 2 – CocoVeneer forestry practices

### Key activities next 12 months –

<table>
<thead>
<tr>
<th>Activity</th>
<th>Anticipated completion</th>
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<tbody>
<tr>
<td>Obtain stems for Trial 3.2</td>
<td>November 2014</td>
</tr>
<tr>
<td>Obtain stems for Trial 4</td>
<td>March 2015</td>
</tr>
<tr>
<td>Document procedures for harvesting</td>
<td>May 2015</td>
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