Objective 1

Identify the most promising product options for the veneer from coconut stem.
Project Objectives

1. Identify markets
2. Forestry: stem harvesting
3. Peeling in S. Pacific
4. Peeling trials
5. Assemble and test products

By-product utilisation

Advanced veneer and other product from coconut wood
Objective 1 – Identify the most promising product options for the veneer from coconut stem

1.1 – Market assessment and product development
1.2 – Value-chain analysis
1.3 – Stakeholder engagement
Objective 1 – Identify Markets
1.1 – Market assessment and product development

- Engagement with building designers, builders, producers and industry bodies in local and export markets
- Determine suite of appearance and structural products to develop all-cocoveneer and composite products
1.1 Market Assessment...
1.1 Market Assessment...

- Cocoveneer samples ‘graded’
- Samples sent to designers and EWP manufacturers
- Questionnaire accompanied samples
1.1 Market Assessment...

- Feedback received for interior products:
  - Architects
  - Interior designers
  - Joiner/furniture designer

- Feedback received for structural products:
  - Wholesaler
  - Manufacturers
  - Industry association
1.1 Designer market assessment

ACIAR CocoVeneer project: Market assessment for appearance applications

Dear Colleague,

This questionnaire seeks to determine key market opportunities and requirements for coconut veneer in appearance applications in Australia.

It is part of an international R&D project to develop techniques to produce and supply veneer from coconut palm stems in the South Pacific. Potentially, the veneer could be used as veneer itself or as the appearance face of a board.

The veneer from a palm stem can be carved into three broad groups. A sample and image of each is provided. The groups are:

1. High-density and dark tone veneer. See Figure 1 and Sample 1.
2. Medium-density and mid tone veneer. See Figure 2 and Sample 2.
3. Low-density and light tone veneer. See Figure 3 and Sample 3.

Please inspect each sample carefully and consider the questions on the following pages.

Associate Professor Gregory Nien
Centre for Sustainable Architecture with Wood
School of Architecture & Design
University of Tasmania

Respondent information

Name: 
Position: 
Company: 
Activities: 

Sample No.1: High-density and dark tone veneer

Figure 1: High-density and dark tone veneer

After looking at Figure 1 and Sample 1, please rate each of the aspects below on a 1-5 scale where 1 is not useful or unimportant, and 5 is very useful and very important.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td></td>
</tr>
<tr>
<td>Potential for design</td>
<td></td>
</tr>
<tr>
<td>Suitability for joinery</td>
<td></td>
</tr>
<tr>
<td>Suitability for wall or ceiling lining</td>
<td></td>
</tr>
<tr>
<td>Suitability for engineered flooring</td>
<td></td>
</tr>
<tr>
<td>Availability of solids that match the veneer</td>
<td></td>
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</tbody>
</table>

If this dark tone face material is used for joinery or lining, what is:

The acceptable hardness / density: kN / kgf

The acceptable thickness: mm

The preferred sheet size:

Nominal price range: $
# 1.1 Designer market assessment

<table>
<thead>
<tr>
<th>Sample</th>
<th>Appearance</th>
<th>Design potential</th>
<th>Joinery suitability</th>
<th>Lining suitability</th>
<th>Engineered flooring suitability</th>
<th>Availability of solids that match the veneer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample 1-dark</td>
<td>3.8</td>
<td>4.0</td>
<td>3.4</td>
<td>3.0</td>
<td>3.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Sample 2-mid</td>
<td>3.4</td>
<td>3.8</td>
<td>3.6</td>
<td>3.2</td>
<td>3.5</td>
<td>3.4</td>
</tr>
<tr>
<td>Sample 3-light</td>
<td>3.6</td>
<td>3.6</td>
<td>3.6</td>
<td>3.4</td>
<td>3.6</td>
<td>3.6</td>
</tr>
</tbody>
</table>

1 = Low  
5 = High

Data from ‘designer’ feedback
1.1 Designer feedback/comments

High contrast may not be desirable
Consistent grain and colour is key

Cost equiv. to AA grade birch plywood
0.6 to 1mm thick
Sheets > 1.2 x 2.4m

ALL – machining with traditional tools (saws) if very difficult. Splinter, bursting edges.

Cost equiv. to AA grade birch plywood
0.6 to 1mm thick
Sheets > 1.2 x 2.4m

Suitable for large areas such as ceilings and walls
Possible alternative to Tas Oak

Cost equiv. to AA grade birch plywood
0.6 to 1mm thick
Sheets > 1.2 x 2.4m
1.1 Designer market assessment

Initial conclusions:

- Material base colour and tone needs to be consistent across a sheet
- High contrast ‘flecking’ may be an issue for some applications
- Veneer potentially equivalent to ‘select’ appearance grade which is high value
- Peeled veneer will be thicker than standard appearance veneers usually <1mm thick – products developed need to consider this. It may be that appearance board products are developed rather than individual veneers sold
- Dark, mid and light (high, medium and low density) equally desirable for different appearance products
1.1 Structural market assessment
1.1 Structural market assessment

Summary
• Difficult to penetrate structural markets with ‘new’ product
• Environmental credentials could be advantage
• Need to determine other benefits through product trials:
  – Formply
  – Bracing ply
  – Lightweight ply

Upcoming activities
• Develop product suite in accordance with industry feedback
• Product manufacturing and testing
• Second market assessment based on full-sized panels
Objective 1 – Identify Markets

1.2 – Value-chain analysis

- Analysis performed in association with ACIAR’s PARDI network
- Costs and recoveries of each stage of production determined
  - This work runs in parallel with technical program
- Explore potential production models.
1.2 Value Chain Analysis

- Value chain mapped
- Critical procedures identified
- Detail of critical procedures collected as project progresses
- Project team met with PARDI and value chain mapping discussed
1.2 Value Chain Analysis
1.2 Value Chain Analysis

- Key variables for each point in the process identified
- Technical considerations/ issues highlighted
- Key procedures identified
- Information collected to populate the value chain document
Objective 1 – Identify Markets

1.3 – Stakeholder engagement

- Regular stakeholder engagement meetings.
  - Impact in partner countries is fundamental to the project
- Website and resource packages
- Training days organised
1.3 Stakeholder Engagement

Trips to PCs by Australian project team:

- Initial fact-finding visit to Fiji, Samoa, and Solomon Islands
- Inception meeting 2012
- Annual meeting in Fiji 2013
- Visit to Taveuni 2013
1.3 Stakeholder Engagement

Website:

- Cocowod.net redesigned to include cocoveneer project information
- Videos hosted from inception meeting
- Cocowood high value flooring project information remains available
1.3 Stakeholder Engagement

Training:

• UTAS Graduate Certificate Timber (Processing and Building) is a four unit online course
• Ms. Moana Masau has enrolled on the GradCert
• There is opportunity for other enrollments
1.3 Stakeholder Engagement

Publications:

• Abstract submitted for World Conference on Timber Engineering 2014 co-authored by UTas, QDAFF, SPC

• If abstract accepted, presentation will be given in Quebec in 2014
Summary

- Veneer samples positively received and reviewed by designers
- Product development needs to carefully address designer’s expectations for typical appearance veneer: thickness, handling etc.
- Value chain mapped and discussed with PARDI
- Key value chain points, processes and required information identified
- Cocowood.net website updated and feedback, questions and comments being addressed from website
- Enrollment on to the online GradCert Timber: Processing and Building. More enrollments in future.
## Objective 1 – Identify Markets

### Key completion dates –

<table>
<thead>
<tr>
<th>Activity</th>
<th>Planned</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial markets and products defined</td>
<td>Jan 2013</td>
<td>August 2013</td>
</tr>
<tr>
<td>Interim value chain analysis</td>
<td>January 2014</td>
<td>Commenced</td>
</tr>
<tr>
<td>Final value chain analysis</td>
<td>October 2015</td>
<td></td>
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<tr>
<td>Cocowood website updated</td>
<td>October 2012</td>
<td>November 2012</td>
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<tr>
<td>Stakeholder meetings</td>
<td>July 2013</td>
<td>August 2013</td>
</tr>
<tr>
<td></td>
<td>May 2014</td>
<td></td>
</tr>
<tr>
<td></td>
<td>May 2015</td>
<td></td>
</tr>
</tbody>
</table>
### Objective 1 – Identify Markets

#### Key activities next 12 months –

<table>
<thead>
<tr>
<th>Activity</th>
<th>Anticipated completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete market assessment</td>
<td>November 2013</td>
</tr>
<tr>
<td>Define initial product suite</td>
<td>January 2014</td>
</tr>
<tr>
<td>Write and deliver paper for WCTE event</td>
<td>July 2014</td>
</tr>
<tr>
<td>Collect value chain data</td>
<td>ongoing</td>
</tr>
</tbody>
</table>

Advanced veneer and other product from coconut wood
Questions