ACIAR project

FST/2009/062
Development of advanced veneer and other product from coconut wood to enhance livelihoods in South Pacific communities
Project organisations

Advanced veneer and other product from coconut wood
Project team

Australia based

**Project Leader**
Associate Professor Greg Nolan
Director CSAW
University of Tasmania

**Project Manager**
Dr Jon Shanks
Project Research Fellow
University of Tasmania

**Collaborating Scientist**
Dr Henri Bailleres
Team Leader
Department of Employment, Economic Development and Innovation (DEEDI)

Partner country based

Sairusi Bulai
Coordinator
Forest and Trees Group SPC

Mr Sevanaia Tawake
Principal Utilisation Officer
Fiji Department of Forestry

Anae Aokuso Leavasa
Forestry Department, MNRE Samoa

Reeves Moveni
Commissioner of Forestry
Ministry of Forests
Solomon Islands

+ industry collaborators from Australia and South Pacific communities
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
Objective 1 – Identify Markets

1. Identify markets
2. Forestry: stem harvesting
3. Peeling in S. Pacific
4. 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
Objective 2 – Forestry

- Identify markets
- Forestry: stem harvesting
- Peeling in S. Pacific
- Assemble and test products

By-product utilisation

Advanced veneer and other product from coconut wood
Objective 2 – Forestry

Identify markets → Forestry: stem harvesting → Peeling in S. Pacific → 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
Objective 2 – Forestry

- 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 – Forestry

Identify markets

Forestry: stem harvesting

Peeling in S. Pacific

Peeling trials

Assemble and test products

By-product utilisation

Material collected for peeling trials:
- Below grade stems
- Fronds

Advanced veneer and other product from coconut wood
Objective 2 – Forestry

- 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 – Forestry

Identify markets

Forestry: stem harvesting

Peeling in S. Pacific

Peeling trials

Assemble and test products

By-product utilisation

Material collected for trials of residue uses:
- Discs
- Stems

Advanced veneer and other product from coconut wood
Objective 2 – Forestry

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

By-product utilisation

Advanced veneer and other product from coconut wood
Objectives 3 & 4 - Peeling

Identify markets → Forestry: stem harvesting → Peeling in S. Pacific → Assemble and test products

By-product utilisation

Advanced veneer and other product from coconut wood
Objectives 3 & 4 - Peeling

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

By-product utilisation

Advanced veneer and other product from coconut wood
Objectives 3 & 4 - Peeling

Peeling in S. Pacific

Peeling trials

Advanced veneer and other product from coconut wood
Objective 3 – Establish experimental veneer-peeling capacity in the South Pacific

3.1 – Commissioning a spindleless lathe equipment

3.2 – Assessing the potential of a regional trial and demonstration program
Objective 4 – Peeling trials

Peeling in S. Pacific

Peeling trials

Advanced veneer and other product from coconut wood
Objective 4 – Determine the optimum processing parameters & protocols for peeling coconut stems & the properties of the recovered veneer

4.1 – Assessing veneer processing parameters from cocowood disks
4.2 – Calibrating processing parameters at DEEDI in Queensland
4.3 – Initial compact experimental peeling trial in Fiji
4.4 – Compact commercial peeling trial in Fiji
4.5 – Broad industrial peeling trial in Fiji
4.6 – Properties and recovery assessment
Objectives 3 & 4 - Peeling

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
Objectives 3 & 4 - Peeling

- 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
Objectives 3 & 4 - Peeling

Identify markets

Forestry: stem harvesting

Peeling in S. Pacific

Peeling trials

Assemble and test products

By-product utilisation

Recovered veneer used to assemble product suite

- plywood
- LVL etc
Objectives 3 & 4 - Peeling

- Identify markets
- Forestry: stem harvesting
- Peeling in S. Pacific
- Assemble and test products

By-product utilisation

Advanced veneer and other product from coconut wood
Objectives 3 & 4 - Peeling

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

By-product utilisation

Material collected for residue trials
- Outer material
- Core
- Below grade veneer

Advanced veneer and other product from coconut wood
Objective 5 - Products

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

By-product utilisation

Advanced veneer and other product from coconut wood
Objective 5 - Products

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 5 – Assemble the product suite and establish its characteristics and in-service performance

5.1 – Experimental product assembly

5.2 – Product characterisation and testing

5.3 – Product assessment in-service
Objective 5 - Products

- 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 5 - Products

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

By-product utilisation

Advanced veneer and other product from coconut wood
Objective 5 - Products

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

By-product utilisation

Material collected for residue trials
- Assembly residues
Objective 6 – By-product utilisation

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 6 – By-product utilisation

- Identify markets
- Forestry: stem harvesting
- Peeling in S. Pacific
- Assemble and test products

By-product utilisation

Advanced veneer and other product from coconut wood
Objective 6 – By-product utilisation

Objective 6 - Determine the costs and benefits of using the residual cortex and soft, central cores for bio-char and other agricultural products

6.1 – Collaboration with agricultural projects

6.2 – Biochar trials
This is a four-year, collaborative project with 6 specific objectives:

1. Identify the most promising product options for the veneer from coconut stem.
2. Develop protocols and capacity for sustainable low-impact coconut wood harvesting, plantation rehabilitation, and log grading, handling and transport.
3. Establish experimental veneer-peeling capacity in the South Pacific.
4. Determine the optimum processing parameters and protocols for peeling coconut stems and the properties of the recovered veneer.
5. Assemble the product suite and establish its characteristics and in-service performance. Characterisation would be to local and export performance standards.
6. Determine the costs and benefits of using the residual cortex and soft, central cores for bio-char and other agricultural products.