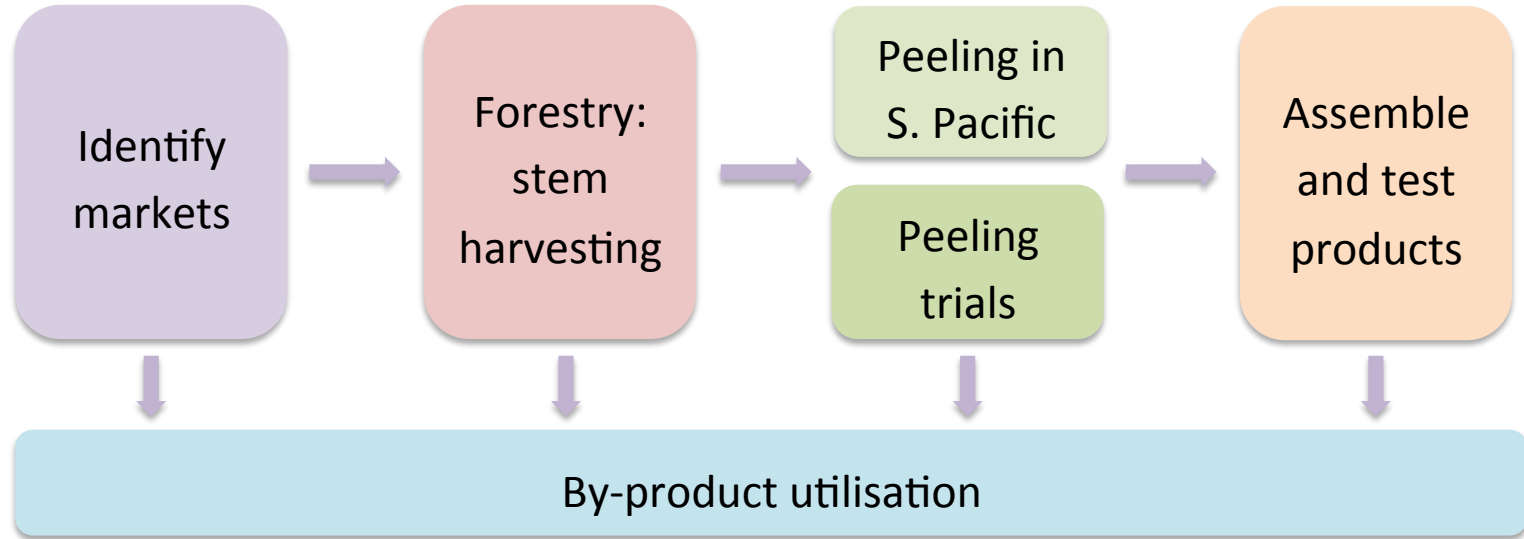


Objective 2

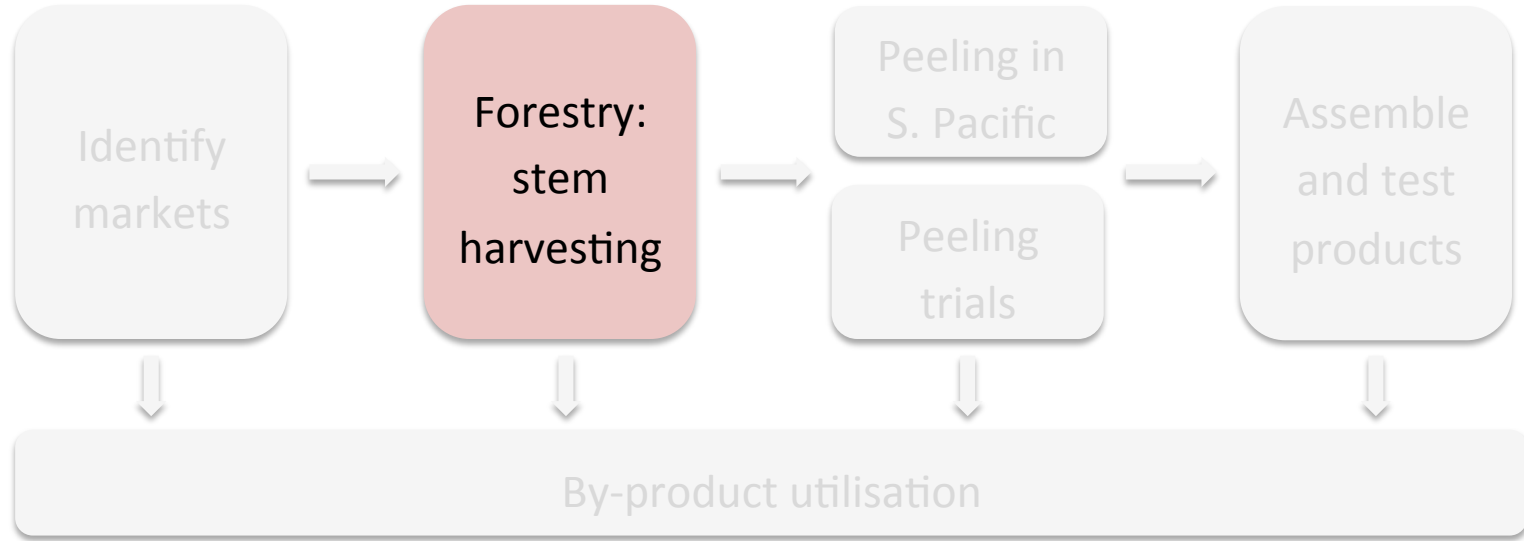


Develop protocols and capacity for sustainable low-impact coconut wood harvesting, plantation rehabilitation, and log grading, handling and transport

Project objectives



Objective 2 – CocoVeneer forestry practices



Objective 2 – CocoVeneer forestry practices

Forestry:
stem
harvesting

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.
 - Not sufficiently dense to be representative.
- Hollow high-density Fijian stems sourced for Trial 2 through Pacific Green.
 - Needed for Australian Customs but were unsuccessful trial specimens.
- Fijian stems sourced for Trial 3.1 & 3.2 through Pacific Green.
 - Supplied to TUD Nasinu, Fiji



2.1 Local Resource Assessment and Harvesting



A total of 96 x 6 m peeler quality logs were felled.

Trial 4 log supply

Harvesting and agroforestry trial near
Savusavu, Fiji - June 2015

2.2 Harvesting and agroforestry

Agroforestry trial
near Savusavu, Fiji.
June 2015



Harvest selections → Felling → Log handling & transportation → Site rehabilitation

2.2 Harvesting and agroforestry

Agroforestry trial
Harvest selection



Log specifications:

- Lower diameter range of 29 – 35 cm
- Log sweep less than 3 cm in any 2.5 m length.
- No presence or evidence of termites.

2.2 Harvesting and agroforestry

Agroforestry trial
Harvest selection

Log Specifications:

Lower diameters were measured
before felling

Log sweep was estimated before
felling then measured after
felling



2.2 Harvesting and agroforestry

Agroforestry trial Log recovery

Log recovery:

- Approximately 60% of standing palms would produce a peeler log to the required specification
- Remaining stems were too large (mainly) or had excessive sweep (only about 5%)
- Palms had to be cut at approximately 1 m above ground to avoid butt-sweep
- Palms stems were about 35-40 m high



2.2 Harvesting and agroforestry

Agroforestry trial Log handling

Log handling:

A landing was cleared for the harvested logs at a well drained location.

A tractor front-end loader was used to forward logs to the landing and load logs on the truck.



2.2 Harvesting and agroforestry

Agroforestry trial
Log supply

Log supply:

Logs forwarded to the
vener peeling mill at Labasa
in northern Vanua Levu and
stacked on bearers



2.2 Agroforestry protocols

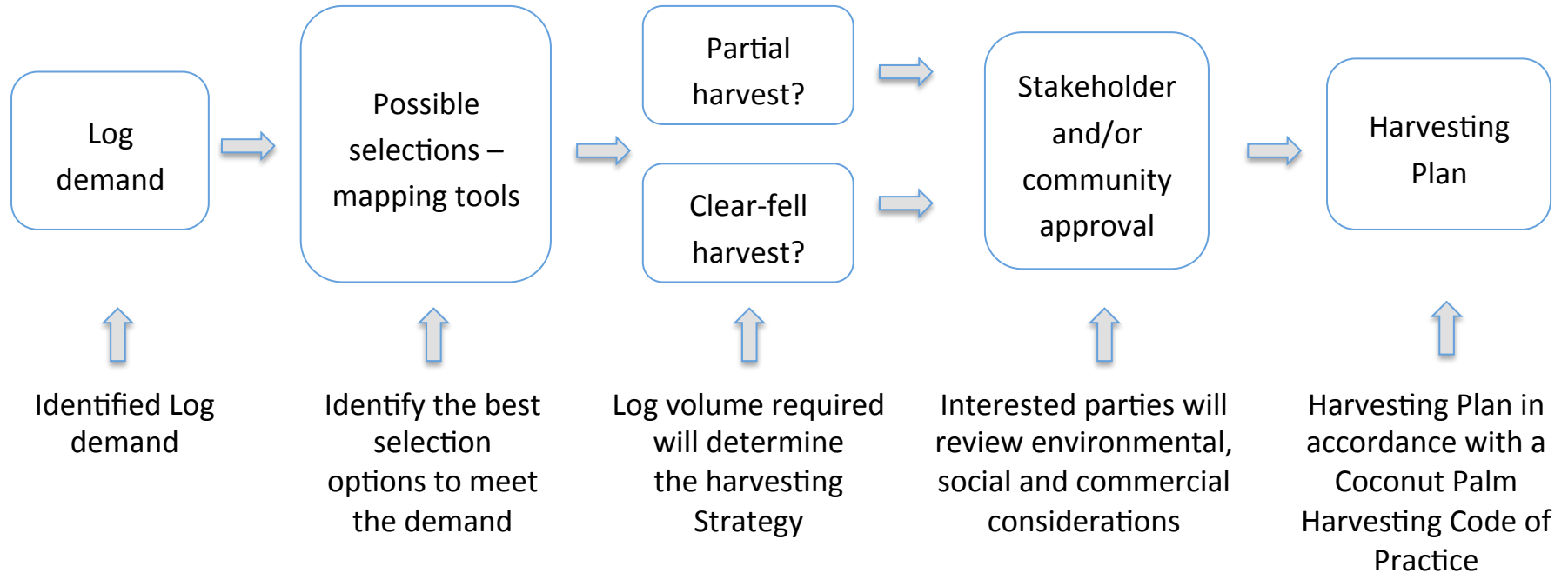
Code of Practice for Harvesting Senile Coconut Palms in the South Pacific Islands Region

Sections in the draft Code of Practice includes:

- LEGAL COMPLIANCE
- PRE-HARVESTING ARRANGEMENTS
- THE HARVESTING PLAN
- HARVESTING PERSONNEL ACCREDITATION
- HARVESTING OPERATIONS
- PLANTATION HYGIENE
- WEATHER RESTRICTIONS
- RESTORATION OF HARVESTED AREA
- REHABILITATION OF THE HARVESTED AREA

2.2 Agroforestry protocols

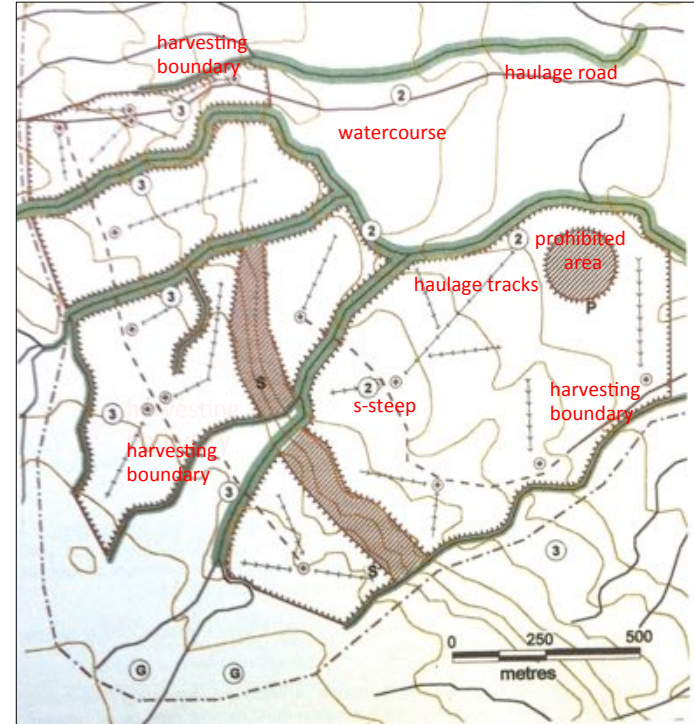
Code of Practice for Harvesting Senile Coconut Palms – PRE-HARVESTING ARRANGEMENTS



2.2 Agroforestry protocols



GIS software can assist in identifying harvest selections and developing Harvesting Maps



2.2 Agroforestry protocols

Code of practice: HARVESTING PERSONNEL

Harvesting Personnel Accreditation



Code of Practice includes certification requirements for:

- Harvest Supervisor
- Chainsaw Operators
- Harvest Machine Operators



2.2 Agroforestry protocols

Code of practice: HARVESTING OPERATIONS



Harvesting Operations



Code of Practice establishes required standards for:

- Harvesting machines
- Safety equipment
- Construction of roads, tracks and landings
- Felling
- Log handling and transportation
- Salvaging windblown palms

2.2 Agroforestry protocols

Code of practice: PLANTATION HYGIENE & SAFETY



Plantation hygiene and safety during harvesting operations



Code of Practice establishes required standards for the management of:

- Harvest site rubbish
- Fuel spillage
- Camp fires
- Fire precautions

2.2 Agroforestry protocols

Code of practice: WEATHER RESTRICTIONS

Operation	Stop guidelines	Start guidelines
Felling	Wind prevents accurate directional felling. Ground conditions are too slippery to allow the chainsaw operator to move safely	Wind drops and accurate directional felling is possible The ground dries to allow the operator to move without slipping.
Forwarding	Water flows on road or track.	Soil surface becomes solid enough to operate on without causing rutting deeper than 30 cm.
Landings	Water starts to pond on the surface of the landing	The soil is no longer saturated. This can be seen as the soil surface becomes solid enough to operate on without causing rutting.
Log Haulage	Trucks cannot move unassisted along the road because of slippery conditions, or muddy water is running in wheel ruts which are more than 10 cm below the road surface for a distance greater than 50 m.	The surface dries and trucks can move without assistance along the road and water is no longer running in wheel ruts.

2.2 Agroforestry protocols

Code of practice: REHABILITATION of HARVESTED AREAS

Site clearance and rehabilitation options:

The Stakeholders should decide which cropping system will replace the harvested coconuts stems before harvesting.

Rehabilitation cropping options include:

- Site clearance for the replanting of coconut palms
- Site clearance for a single crop or stock pasture
- Site clearance for inter-row or multi-cropping systems



Mucuna Bean as a Cover Crop. Photo- Geoff Dean, Taveuni.

2.2 Agroforestry protocols

Code of practice: – HARVESTING RESIDUES

Several options for using coconut log harvesting residues are being investigated

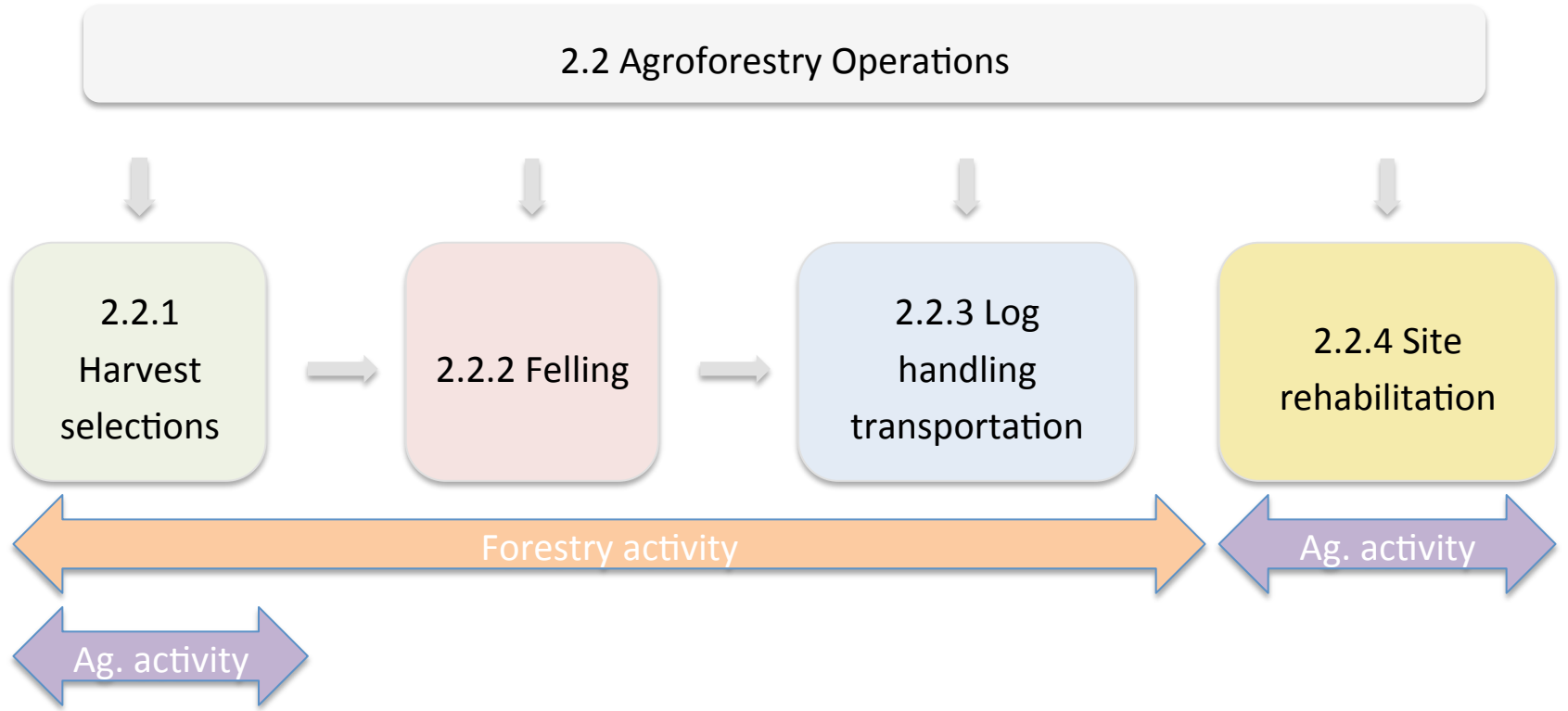


Biochar from coconut wood pyrolysis



Wood chipping for compost production

2.2 Adoption of Agroforestry protocols



2.2 Adoption of Agroforestry protocols



- Barriers exist to the practical acceptance of coconut harvesting codes of practice.
- Community and estate stand owners view their rights differently to forest owners or operators.
- Coconut stem owners are used to acting independently, and this is likely to carry over to coconut harvesting.

2.2 Adoption of Agroforestry protocols

- Estates or communities own most coconut stands, and will control harvesting.
- Regular log supply will likely result from:
 - Offer of logs for sale at an agreed price at a set collection point.
 - Direct negotiation with the community land-owners.



Objective 2 – CocoVeneer forestry practices

Forestry:
Stem
harvesting

Key completion dates –

Activity	Planned	Actual
2.1 Local resources assessed and obtained for peeling trial 1	August 2012	March 2013
2.1 Local resources assessed and obtained for peeling trial 3	November 2013	August 2014
Draft harvesting and handling protocols developed	August 2014	August 2014
Stems for Trial 3.2	November 2014	May 2015
Obtain stems for Trial 4	March 2015	May 2015
Code of practice distributed for comment	May, 2015	August 2015

Questions



Australian Government
Australian Centre for
International Agricultural Research



Queensland
Government



SPC
Secretariat
of the Pacific
Community



centre for sustainable
architecture with wood

