

Uses of Farm Forests

Technical Information Sheet No. 25 Level 2

Farm Forestry

Many Uses, Many Products

Farmforests, whether native forests, special species woodlots, shelterbelts, sawlog or fibre plantations have many uses, current and potential. Uses may be considered products of the forest and include shelter, tourism, aesthetics. Products grown in the forest include non-wood products (bush foods, native plants, seed, landscape material, game) and wood products (from posts and poles, firewood, pulpwood, to sawlogs and veneer logs). These products, log categories and their multiple subsets provide a broad range of options for the private forest owner. The range will be limited if you have entered some form of forest lease or joint venture, however, if you are the owner of the plantation or native forest the range of options is much greater. Market availability will restrict the commercial reality of what is profitable to produce for off-farm sale, however, for on farm use the options may be greater.

The more traditional products of firewood, pulpwood and the various sawlog categories have specifications that are usually generated by Forestry Tasmania or the larger companies. Export pine logs tend to have more lenient specification for knots and have turned otherwise unmarketable overmature shelter-belts into saleable products.

On-Farm Production

Very few Tasmanian farmers undertake their own logging and/or processing operations. Some owners have undertaken the silvicultural management:– pruning and thinning in sawlog plantations. A number of growers have profitably used their thinnings for on-farm posts requiring off-farm preservation treatment. One grower has progressively thinned a eucalypt plantation providing hop poles for a local market. While there are examples of on farm use and owner

operator production and value adding, they are limited.

Farmers performing their own timber harvest is common in Scandinavian countries. Nearly one third of wood produced for large companies comes from part-time logger/farmers. Logging their own timber provides Scandinavian farmers with additional income.¹

There are many issues of equipment, safety, training and legal requirements (Forest Practices Act & Code, Work Place Safety) to consider. However, the Australian national push to increase commercial trees on farms will create an increasingly diverse resource, much of it in smaller woodlots requiring a different approach to harvesting. A lower capital, farm tractor based logging system with roadside or forest pickup may be a more appropriate way of scheduling and harvesting this new resource. Large plantations will still be the aim to provide economies of scale required for modern mechanised harvesting operations.

New Markets/Products

With the wine industry expanding rapidly in Tasmania, there is an opportunity to identify and grow ground durable post species for this post consuming industry. The use of non-treated posts could have a competitive advantage both to the post producer and the vigneron. Ground durable posts could be purpose grown or form part of vineyard shelter.

Round timber for building construction (other than poles) is a new area of research to provide an alternative use for thinnings.

Purpose grown firewood species plantations, e.g. *Casuarina* species near urban areas may become a

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financial reality as merchants travel further for native forest firewood. This would present the opportunity for on-site sales, provide a cleaner product with identifiable burning characteristics.

Highly figured eucalypt from the lower rainfall forests, traditionally chipped or mechanically split for firewood, is an emerging special timber resource. Appearance grade material does not require the strength characteristics of framing timber and with the sustainable selective logging of dry forests, the *character* timber has many marketable features.

Non-wood product markets for foliage, bush foods, seed and landscape material already exist. Anyone serious about entering any of these markets would need to develop an appropriate business plan that took account of the available resource, both product and finance, current and future demand and the costs of production and infrastructure. Often what commences as a good idea grows out of all proportion and if a basic planning exercise is done at the beginning many of the pitfalls can be avoided.

Seed

The market for a large variety of plant seed is continually expanding. Many native forest species are now being grown in gardens and the need for a variety of plants in rehabilitation work requires an increasing volume of seed. Direct seeding techniques use larger quantities of seed, this increased demand can make seed collection from your native forest a more financially attractive proposition.

Minimum capital is required to commence seed collection and non-destructive seed collection is a sustainable forest enterprise. Basic collecting equipment consists of secateurs, loppers, a pruning saw on an extendable pole, a ladder, which may be secured to a trailer or flat tray and collecting bags, e.g. wool bales. Good records must be kept and may provide a competitive advantage and include, species, date, location, grid reference, altitude, tree or shrub description (height, diameter at breast height over bark, shape and vigour). This information is especially important for commercial tree species as shape, form, vigour altitude and frost tolerance are important criteria.

Seed extraction methods can vary from the most basic sun drying to kiln drying. Seed cleaning will also add value to the product as will an indication

of germination potential. Seed is best stored dry in sealed containers, protected from fungal attack, kept at a constant 2°C and correctly labeled.²

Seed can vary in value from \$100's/kg to \$1,000's/kg. It is a product worth considering, especially as a product of sustainable native forest management.

Posts

Traditionally spilt eucalypt posts have been used on farms. While these have greater strength characteristics, the trend is to use treated pine posts with durability rating of 40 years. Treated posts provide an alternative use for thinnings of eucalypt and pine plantations. This may be especially important where a pulp market is unavailable and may provide farm post requirements. Posts are usually produced from thinnings of plantations for sawlog. Management regimes may be developed to purpose grow posts in lower rainfall areas, where plantation species usually are slower growing, producing smaller knots and good form. Post processors require uniform material of little taper with few small knots. Posts that are slower grown are usually stronger, with fewer breakages during post driving.³

A recent Tasmanian example is provided in the table on next page³. Ian Dickenson, from "Elverton", Blessington, has thinned his radiata pine plantations for post material and had it contract pressure treated. As the pines have been slower growing in that environment they have provided stronger posts, so as well as a significant price advantage there was less breakage during post driving.

On Site Milling

The use of portable sawmills to produce timber on farms has increased in popularity. There are a number of options from chainsaw mills to sophisticated twin saw sawmills and horizontal bandsaws. The capital cost varies from a few hundred dollars for some chainsaw attachments to nearly \$100,000 for a sophisticated high production machine. A thorough study undertaken by Stewart & Hanson⁶ provides some very useful information.

Increased Value

With hardwood sawlog stumpages averaging \$25/m³ and green sawn prices from \$300/m³ to \$400/m³ and kiln dried prices ranging upwards from \$540/m³, there are clear opportunities for landowners to increase their returns from on-site processing.

Contract Treated Farm Grown Posts: A Cost Comparison

Length metres	Diameter mm	Treatment Cost \$/post	Total delivered cost/post \$/post	Retail Diameter Classes mm	Retail price Ex tax delivered \$/post	Saving \$/post
1.8	127	2.04	3.84	100-125 125-150	7.00 11.85	3.16 8.01
2.1	150	3.32	5.43	150-200	18.75	13.32
2.4	175	5.16	7.40	150-200	24.75	17.35
3.0	200	8.43	11.10	200-250	35.00	>23.90

Note : Average costs of transport have been used and the greatest use of posts is the 1.8m length.

Log Grade & Price Table

Log Category	Small End Diameter (SED)	Length	Basic Criteria Abbreviated ⁴	Sawlog \$/ m ³ Pulp \$/t Average	Approx. recovery for Good logs	Royalty Equivalent of 1 m ³ sawn timber
Eucalypt sawlog 1&3	30cm	3.6m	Mature euc. & regrowth, 1 limb or bump/3m little allowable defect	\$29.50/m ³	30% 1/4 sawn, 50% back sawn	\$98.33 \$59.00
Eucalypt sawlog 2	30cm	2.4m	Mature euc. 2 limbs or bumps/2.4m, greater defect than category 1 & 3	\$18.61/m ³	20% 1/4 sawn, 40% back sawn	\$93.05 \$46.53
Eucalypt sawlog 8	30cm	2.4m	No restrictions on defects on 1 side	\$18.61/m ³	Highly variable	
4 Special Timber	30cm	3.1m	3/4 faces clear in 3.1m other as for category 1	\$46.86/m ³	30% 1/4 sawn, 50% back sawn	\$156.20 \$93.73
Firewood	various	various	No set specification, often salvage material / negotiated	\$5-\$12/t		
Pulpwood Native Forest	10-15cm underbark	2.4m	Variations between companies No charcoal, no wet rot	\$13.63/t State Forest \$10/t Private		
Pulpwood Euc. Plantation	10-15cm underbark	2.4m	Solid, debarked	\$20		
Pine Pulpwood	10cm underbark	2.4m	No rot, no charcoal	\$2-\$12		
Pine Sawlog Knotty Domestic	20cm underbark	4.0m various	Logs >35cm Sweep 3-5cm, Green knots <7cm unlimited Dead knots, 5cm unlimited No blue stain, rot or splits	Mill door Price \$65-\$80/ m ³	50%	\$130-\$160
Pine sawlog K grade export	20cm underbark	2.4m	Sweep 1/2 SED, knots 7-14cm, no rot fungus or flared butts	Mill door Price \$50-\$55/ m ³	NA	NA

Stumpages are from Forestry Tasmania's annual report⁵. Prices received will vary with distance to market, quality of forest, terrain, season and volumes available.

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Timber Type	Costs of production \$/m ³	Green \$/m ³ sawn	Costs of kiln drying \$/m ³	Kiln Dry \$/m ³ sawn
Special Species e.g. Blackwood	227	900-1200	40-\$90/m ³	2000
Select grade euc.	215 @ 30% 189 @ 50%		40-\$90/m ³	1200 (75x25) 1700 (200x50)
Utility grade euc.	418 @ 20% 209 @ 40%	300-400	40-90/m ³	450 (75x25) 650 (150x50)
Framing grade euc.	418 @ 20% 418 @ 40%	300-400	40-\$90/m ³	700 (90x35)

Note: Prices and recoveries are indicative only and will vary with log qualities cutting schedule, type of machinery and operator skill. An average milling cost of \$65/m³ of log has been used.

Production Costs

Production costs = royalty/recovery+milling costs/recovery but **does not include the labour** of handling racking etc.

Well-managed native forests can produce small volumes of high value material, as with blackwood. For example from Mt Arthur in Northern Tasmania, Alfred Buchinger a local cabinet maker recently milled some logs including a large blackwood. The table provides an indication of the value added to the log and the value to this owner.

Blackwood Value

Log Vol m ³	Log Value \$	Sawn Wood m ³	Timber Green \$/m ³	Timber Kiln dry \$/m ³	Timber In product \$/m ³
1.8	144	1	\$900	\$2000	\$2,800

Prices used are relative to the example and are used for comparison. Also 1m³ of blackwood produces \$8,000 of finished product as coffee tables.



Frank Stries' modified Lucas saw, cutting a low grade eucalypt log for maximum recovery with high quality blackwood in the foreground.

Safety

It is most important in any operation or process involving machinery or chemicals that operators are appropriately trained, wear the correct safety equipment/clothing, maintain a safe workplace and are familiar with their legal obligations, e.g. Occupational Health and Safety.

References

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