

Many Uses - Many Products

Farm forests, 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 and aesthetics. Products grown in the forest include non-wood products (bush foods, native plants, seed, landscape material and 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 Sustainable Timber Tasmania (formerly Forestry Tasmania) or the larger companies. Export pine logs tend to have more lenient specification for knots and have turned otherwise unmarketable, over mature shelterbelts into saleable products.

Traditionally the uses/products from plantations have been limited to either pulpwood, treated posts, sawlog and veneer log from softwood plantations and pulpwood from the more recent hardwood plantings as well as stock shelter and some limited grazing opportunities. While these, along with hardwood sawlogs, will remain the main product categories from both industrial plantations on farms and farmer invested plantations, the range of products and manufacturing processes continues to increase.

Native forests on farms vary from the low volume, highly biodiverse dry forests to high volume, less diverse wet forests. Native forests have a tradition of farm use providing the on-farm needs for stock shelter, fencing, building and heating.

Low Value - High Value

Another way of thinking about use or product options is the concept of low value, high volume and high value, low volume. Pulpwood plantings of Blue Gum Species aim for high returns. These will often be planted on your land under a joint venture or lease arrangement with an industrial or investment company. Profits could be used to establish and intensively manage the high value, lower volume forests e.g., thinned and high pruned Radiata pine, *Cupressus macrocarpa* or *Acacia melanoxylon*. There is a place for both concepts depending on your objectives and level of interest in farm forestry.

Any commercial venture requires detailed research and planning. Markets, risks, costs and returns, cash flows and land suitability need to be understood. Obviously you need to determine whether it is cheaper to produce wood products for your own use or buy it from

your local sawmill. This applies to all the products mentioned below and any others you may think of.

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 loggers/farmers. Logging their own timber provides Scandinavian farmers with additional income.

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 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.

The bioeconomy is expanding globally leading to the production of fuels, cosmetic, pharmaceuticals, industrial chemicals and has the potential to displace all petroleum based products. The market for such materials in Tasmania will depend on access to a processing plant and the return to landowners.

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 vigor). This information is especially important for commercial tree species as shape, form, vigor 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.

Seed can vary in value from \$100's/kg to \$1,000's/kg and greater. 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.

A Tasmanian example is Ian Dickenson, from "Elverton" at Blessington, who thinned his radiata pine plantations for post material and had it contract pressure treated. As the pines had been slower growing in that environment they 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 around \$100,000 for a sophisticated high production machine. A thorough study undertaken by Stewart & Hanson provides some very useful information.

Increased Value

With hardwood sawlog stumpages averaging \$35/m³ and green sawn prices from \$600/m³ and kiln dried prices ranging upwards from \$800/m³ (rough values and proportion for 2017) there are clear opportunities for landowners to increase their returns from on-site processing.

Production Costs

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

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.

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