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Trees working in Western Australia

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Despite the air of inevitability of farm forestry there is also the impressive irony that it was the removal of trees in the first place which triggered the landscape problems - farm forestry is potential grease for turning the wheel full circle.

But despite these portents for the large-scale return of the erect, woody plants with the pump-like root systems and inestimable trillions of carbon dioxide absorbing leaves, so critical for the health of the planet, tree plantings on farms in Australia are not going as fast as many would like.

Western Australia’s hardwood plantation effort is impressive by Australian standards, according to Agriculture WA’s Peter Eckersley who drives the agency’s push for agroforestry in the south-west.

“WA plantings are charging along with over 80,000 hectares of bluegums planted over the past 10 years. But in terms of individual farmers’ plantings we had hoped for more,” he says.

The reason for the hesitancy by most farmers is complex. It does not appear that financial returns are a major problem. The signs are that profits from farm forestry will hold up over time. Certainly, timber prices have their ups and downs but what rural commodity doesn’t?

The image of farm forestry is blurred by its variety of form, at times dominated by bluegum plantations. Active farmers don’t want their traditional enterprises displaced by tree crops. The barrier to farm plantings is more a “cultural issue” says Mr Eckersley. “Farm forestry is still a strange concept to many - long lead times and very different husbandry and marketing skills. But despite this, the momentum is definitely gathering and farm forestry is here to stay,” he says.

The new pioneers such as David and Dianne Jenkins have shown that “trees work”. In the space of 10 years the Jenkins’ renowned 26 hectare agroforest has lowered groundwater by 4 metres and yielded 1700 tonnes of marketable logs.

The future for farm forestry looks healthy, but many farmers still have reservations about tree farming. Firstly, they are unfamiliar with how to plan, grow and market tree crops. Then there’s the cash-flow question. Instead of cash in the bank at harvest or shearing time it might take anything from 10 to 30 years for the bank coffers to swell.
Important marketing questions flow from the lead-time issue - how secure will the market be in 10 years time? There is no cut and dried answer - the risks seem a lot higher!

**Forestry share farming**

Bridgetown farmer Jim Frith took much of the risk out of farm forestry when he signed a pine share-farming contract with the Department of Conservation and Land Management in 1986. It was the first joint venture of its type in the State. The Frith's 800 acre farm sits on the banks of the Blackwood River with about half the area committed to the share farming project.

Next year sees the first harvest - thinning of a 30 hectare block of radiata pine. But Jim hasn’t had to wait 12 years for the first cheque. Under the contract he’s been paid an annuity which is indexed to the CPI and calculated on anticipated prices and yields for the trees at thinning and at clear-felling (25 to 30 years). His only inputs under the contract are to provide the land and pay the rates. Everything else is the responsibility of the contractor.

As bonus sides, Jim is offered first option on some of the piecemeal contract work associated with the plantations and is also allowed to run some sheep on the area (about two and a half per hectare).

“I’m getting about half of the gross returns from the trees, after costs,” he says. “This equates to $120 gross per hectare, per year. If you are lucky, in this area you might get $50-100 per hectare for running sheep.

“sheep and cattle are like going to the races in comparison,” he says. “And unlike share cropping, my returns are not dependent on the crop yield. Bluegum timberbelt share-farming would have been ideal, but wasn’t available in 1986”.

Jim concedes that share-farming trees can be a “colourless” existence. He now finds it more rewarding to grow and manage his own trees.

Jim feels that today integrated agroforestry might be just as good a prospect - mixing agriculture with forestry instead of block plantations. He says today he would go for a mixed portfolio of pines and bluegums. “Bluegums now seem a good investment, although prices could be even better.”

**The environment**

On the environment front Jim Frith says agroforestry is an imperative, and he uses the Blackwood River at his doorstep to illustrate the point. “The river was fresh in 1916. Now it is 4000 parts per million salt. Even if maximum cooperation and effort by farmers with tree planting was secured tomorrow, by 2030 the Blackwood will still be 4000 parts per million - it is going to get worse before it gets better.”

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**Farm Forestry Task Force**

Farm forestry received a major kick along with the release of the Farm Forestry Task Force report in December 1995. The Task Force was convened by the State in response to community interest in farm forestry and its role in sustainable rural development. It investigated the opportunities for farm forestry, and consulted widely to find out what changes were needed to encourage its expansion.

The Task Force learnt that new bluegum plantations were spreading rapidly in high rainfall areas as investors and forestry companies realised the potential of tree farming, and bought or leased farms to plant large blocks of trees. However, few farmers were seizing the chance to include farm forestry as part of their farming business. So the Task Force looked at what farmers needed to encourage them to grow trees, to reap the benefits of diversified farm income, a healthier environment, and prosperous communities.

The Task Force report contains 30 recommendations to stimulate farm forestry, including the formation of a Farm Forestry Development Group and a Farm Forestry Advisory Service. Both were implemented - the former is an industry-wide group for promoting and overseeing industry development, and the latter an amalgam of the forestry advisory services of CALM and Agriculture Western Australia, to provide farmers with advice and know-how on tree farming.

The advisory service is demystifying farm forestry by providing farmers with information about site and species selection, tree establishment and management, likely tree growth rates, interactions between trees and other farm enterprises, and market opportunities, trends and outlooks.
The sentiment is echoed by the Task Force report: “Recent research indicates that the potential impacts of dryland salinity and waterlogging have been grossly underestimated and that up to 40 per cent of the lower regions of some catchments will be severely affected during the next 20 years. The loss of this land could have profound economic, social and environmental implications for the State,” the report stated.

**Integrated agroforestry**

It was environmental issues which first attracted Peter Coffey to agroforestry. Rising salinity was threatening 30 per cent of one of his properties.

In the early 1990s commercial trees were introduced to his farms at Kojonup (500 millimetres average annual rainfall) and Kulikup (550 millimetres), initially with plantations and more recently alley farming and commercial shelter belts. All up the Coffeys have about 130 hectares of timber amongst their conventional mixed farming pursuits of sheep and various grains and oilseeds.

“The most significant development recently has been the realisation that bluegums can be grown for sawlogs - they now stack up pretty well, especially from alley farming, where ‘edge trees’ enjoy good diameter growth,” he says.

He is now pursuing these options with some vigour and putting his experience with both agroforestry and farming to good use in the process.

Plantations can give you trees with good form but are subject to windthrow after thinning. The vigorous growth occurs on the plantation edges, adjacent to the pastures where they get the extra sunlight, nutrients and moisture. Peter is trying to capture these benefits by planting 2-row belts where all trees are edge trees.

And how much are these extra benefits worth? “The precise answers aren’t there - on top of the extra growth there is shade and shelter for livestock - difficult to put figures on,” he says. But he sees it as inevitable that sawlog returns will get better as the world’s wild timber resources dry up.

“The talk at the moment is $60 per cubic metre for sawlogs and around $20 for woodchip timber.”

But surely on that basis you’d be a mug to pursue anything other than sawlogs, wouldn’t you? Not necessarily so, says Peter.

“Woodchips give you a return in 10 years. With sawlogs you have to wait 25 years before you get your money. On that basis many farmers might just as well stick to woodchips,” he said.

![De-liming and thinning for posts from 5-year-old bluegums at Peter Coffey’s, Kojonup.](image)

Another imponderable on the negative side is that edge trees undermine pasture growth. “They compete strongly for moisture out to the equivalent of one tree height and shading of pastures can also be significant,” he says.

On balance Peter has decided that integrating forestry with farming is the way to go.

“If you are only interested in trees then it’s plantations, but from a farmer’s point of view, if the trees are well integrated they can be treated as another crop which offers the added benefits of lowering water tables and providing shade and shelter - you can have your cake and eat it too,” he says.

But Peter’s not content to leave it there. He’s also angling to claw back some of the value-added benefits which millers and processors currently get from his timber. He’s contemplating buying his own small mobile mill: “They handle bluegum very well - they can minimise the effect of growth stresses which can cause the timber to move as it is sawn, down-valuing it in the process.”
Another on-farm value-adding project already underway is production of fencing timber. As part of the plantation thinning process the Coffeys are currently taking posts from a ten hectare lot. They will be treated with copper-chrome-arsenic at Bridgetown and sold locally.

**Developing silvicultural skills**

Peter Coffey’s confidence in sawlogs comes in part from visits to New Zealand and Victoria, analysis of results from the pioneering alley farming trials at Bridgetown on David Jenkins’ property, and his own Graduate Certificate in Farm Forestry.

Data from trials set up in the early 1980s by CALM scientist Richard Moore at Vasse, McAllinden and Dinninup confirm that production of sawlogs by farmers is a practical option.

Richard Moore’s main focus today is on education and training to build a network of skilled advisers and growers. So far he has led two groups of Western Australians through the Graduate Certificate course run by Melbourne University.

The Australian Master Tree Grower program, another Melbourne University initiative, is coordinated locally by David Jenkins. The Program provides support, encouragement and education to leading treegrowers, while building links between participants and leading forestry and farm forestry professionals, researchers, industry representatives and extension agents.

Unfortunately, the reluctance of farmers to move into agroforestry is strongest in drier regions (less than 600 millimetre rainfall), areas where sound commercial options are lacking, but which have an urgent environmental need for more trees. But the worm is turning. Maritime pine is being planted on deep sands in areas with rainfall as low as 400 millimetres.

While the State Government’s Salinity Action Plan set a target of 15,000 hectares by the year 2000, independent private plantings have not taken off, yet. In their absence, CALM, through its Maritime Pine Project is establishing joint venture plantations with farmers in three key areas: Albany; Kojonup to Williams; and Willams to Dandaragan (the Perth Cell).

Peter Coffey, Kojonup, with posts from his blue gum thinning. Selected remaining trees will grow on for sawlogs.

Richard Moore, Calm Farm Forestry Unit, Busselton, demonstrates the benefits of pruning to participants in a Master Tree Growers course.
Gary Hartnett from CALM’s Perth Cell says the response from interested farmers is now “excellent” after several cautious years - “they needed to see them in the ground,” he said.

In July last year CALM reported a total of 2000 hectares of maritime pine planted through the project. Now it is 2600 hectares.

“Our target by the end of winter this year is a further 2800 hectares, half of which has already been achieved with farmers making firm commitments to proceed.”

An added incentive was the introduction last year of the innovative Supplementary Landcare Trees option which allows farmers to choose, from a range of 30 native varieties, the type of trees for planting on 10% of the contract area. “We’ll plant them wherever they want - we’ve even committed to planting lemon scented gums around shearing sheds,” Mr Hartnett said.

**Pulp and paper mill**

The decision by Wesfarmers Bunnings in May 1996 not to proceed with its $1.9 billion integrated pulp-wood, pulp and paper mill proposal, has not turned investors off tree growing. The company’s feasibility study found that wood and power costs were too high and there was still low market acceptance of pulp from the BCTMP process chosen to match the volume of pulpslogs available.

In a review of the decision in late 1997 for the Department of Resources Development, consultants Beca Simons agreed with the assessment. “Until the south-west can generate, as a minimum, a sustainable availability of 2 million cubic metres of pulp wood annually from plantations, such a project is unlikely to justify re-evaluation.”

Beca Simons went on to say that woodchips remained attractive in the short to medium term. It predicted that by 2005, at current rates of planting including blue gums at 15,000 hectares annually, around 3 million cubic metres of plantation hardwood roundwood will be available for harvest each year. “Some is committed for woodchip. Most would be available for processing into reconstituted wood products such as MDF, particle board and into pulp and paper.”

Wesfarmers Bunnings and overseas investors facilitated by CALM account for two thirds of all new bluegum plantings. Prospectus companies and private investors account for most of the rest.

For tree growers the good news in the feasibility study is the strong export market for woodchips. The feasibility study assumed a price of $60/tonne (green metric tonnes, bark off) at Kemerton, which translates to a stumpage of more than $30/tonne within 100 kilometres of Bunbury.

**Potential**

Australia exports and imports forest products, but has an annual trade deficit in the area of about $2 billion. Australia is unique in the world - it is a net exporter in volume terms, because of woodchips, while remaining a net importer in terms of value.

In terms of sawn timber Western Australia is self sufficient. Export of hardwood chips from plantations grew from 5600 tonnes in 1993-94 to close to 40,000
tonnes in 1994-95 plus an additional 20,400 tonnes of softwood woodchips.

By the year 2010, there is expected to be a global shortage of industrial wood of some 533 million cubic metres annually.

The 1995 Farm Forestry Task Force reported that the State was in an "excellent position" to take commercial advantage of this situation - it has the climate, land and skills required, and estimated that farm forestry could be worth more than $500 million each year to WA by early next century, a prediction based on a solid global demand outlook.

Commonwealth and State Ministers responsible for forests agreed in 1996 to a national forest goal of trebling Australia's plantations estate by 2020. It is a very challenging assignment, attainable only if farm forestry plays a significant role. Presently, Australia has about one million hectares of plantation in total.

Industry-based groups like Albany Timber 2002 and Trees South West provide a meeting point for millers, local governments, farmers, contractors and representatives of State Government agencies to develop regional strategies.

Cooperatives
It's been suggested that cooperatives are a way for stimulating interest by way of providing small time operators with the economies of scale which the big (and currently dominant) corporate interests in WA have long enjoyed.

South East Agroforestry Cooperative is managing the integration of bluegums into the Esperance sandplain to address land degradation and build a 12,000 hectare industry. Alliances have been forged with investors and wood processors to underpin this new style cooperative. As chairman Rob Johnstone puts it, "Farmers weren't only going to be producers".

Jim Frith from Bridgetown is a prime mover in Western Timber Cooperative, which will focus first on exporting bluegum woodchips from Bunbury and Albany.

A limited liability company has been formed and data collected on the timber stands held by 100 tree farmers interested in participating either as future members and shareholders or as suppliers of timber. All up, the cooperative's inventory represents 5000 hectares of uncommitted bluegums and 1000 hectares of uncommitted pine, which Jim describes as "a good start."

He is optimistic that many of the 140 listed farmers will take membership. "The better returns which the cooperative will offer will make sure of that."

"We'll be able to offer up to twice what is now offered at the stump," How? - "the cooperative is not for profit, we will have market clout by being able to supply sizeable quantities, and we'll cut out a few middlemen."

While prices of that ilk would guarantee the 'cultural' revolution across rural Western Australia which some say is required, indications are that with or without a bonanza the State's farms are going to be a lot greener in the future.

For further information contact Peter Eckersley on (08) 9780 6204