



## Innovation makes money grow on trees

It's stinking hot in the former watermelon packing shed on the outskirts of Kununurra in northern Western Australia. The scene couldn't be more different to the urban buzz of a fintech startup or innovation hub. Forget open plan. Try open air in 40 degree temperature, fanned by a melting wind blowing over a few blokes in shorts and work boots. What happens here is unlikely to feature in Malcolm Turnbull's innovation statement next week.

Yet innovation comes in many forms. This remote spot is key to the sophisticated techniques, scientific research and Australian skills and teamwork creating a pioneering industry at global scale for new export markets. The company behind this version of innovation, TFS Corporation, has spent years experimenting with how to grow high-quality Indian sandalwood and develop its impressive properties. As a result, TFS already runs the world's biggest Indian sandalwood plantation business with 10,500 hectares planted and operations in Western Australia and more recently the Northern Territory and Queensland.

Work in the shed focuses on efficiently extracting the valuable centre or heartwood from mature trunks to be used for sandalwood oil or specialised wood products. Stuck on the small office window are drawings of the design of a new machine to develop the equivalent of a giant apple corer for tree trunks. The machine is being built by an Italian company but many details are being designed and adapted by the TFS head of production, Johan Nortier. It's like a permanent bush hackathon where such home-grown skills add to those of the TFS agronomists, foresters, chemists, entymologists, engineers – and even statisticians.

Sandalwood is used for a lot more than aromatic incense sticks in China and India. Its "heartwood" is prized for making fine furniture, for perfumes, for skin-care products, for traditional medicine, and, increasingly, for its pharmaceutical properties and potential treatments ranging from cancer to acne. It is why the oil distilled from heartwood sells globally for \$US4500 a kilogram. As wood, the best processed heartwood sells for up to \$US250,000 a tonne and TFS expects to achieve an average of about \$US180,000 a tonne. Australian varieties of sandalwood do exist in limited amounts but Indian sandalwood is regarded more highly. That is a big deal in a world where the wood is increasingly scarce in its original homes of India, Indonesia and Timor.

So TFS efforts in plantation are an example of "innovative" businesses developing new industries to help fill the economic hole left by the collapse in commodity prices. It also fits the global popularity of natural, self sustaining products. Not that it comes easy. The business has so far required nearly two decades of effort, including frustrations, false starts and about \$800 million worth of investment by TFS and partners. It's a case study in aiming for long term success rather than a quick payoff.

A sandalwood plantation includes the need to plant different "host" trees to grow alongside and feed each "parasite" sandalwood tree for 15 years before it is mature enough. Then there's constant innovation and improvement in tree species, irrigation methods, soil types, canopy management and weed and pest control in the harsh if beautiful environment of the North. A WA government decision on TFS' bid for more land in the Ord River Irrigation Area is due next week. After the first planting in

1999, TFS has learned each year, often the hard way, about how to increase yield. There is no model to follow other than accumulated experience and intensive research. Its Kununurra nursery of hundreds of thousands of seedlings is guarded by high fences, cameras and sensors.

Last year was the first commercial harvest. This year produced 30 tonnes of heartwood. Next year should be 300 tonnes – to be split between oil and wood markets. Tonnage will rapidly escalate in future. It's why TFS has international backing ranging from Harvard University's Endowment Fund to the Church of England to the Abu Dhabi Investment Fund. Last week it went back to the US bond market for another \$US25 million to total \$US200 million in borrowing. But the company struggles to get support from Australian institutions.

Chief executive Frank Wilson suggests much of this is due to scepticism about the company's start as a managed investment scheme in the late 1990s. At the time, he says, such schemes were the only way to raise capital for agriculture. He was a Perth tax lawyer with family timber connections when a client approached him about Indian sandalwood. Wilson did his research and became a passionate believer. Even the fact sandalwood was so difficult to grow made it more attractive because, he says, it meant there would be big barriers to entry for others despite a large, broad market to supply.

Not that he anticipated how tough it would be. TFS became a public company in 2004. Although long unloved, TFS joined the ranks of the ASX 300 last year and now has a market cap of about \$600 million and about 500 employees, full or part time. Along the way, it acquired a distilling business originally used for WA sandalwood oil and a small US drug development company, Santalis, whose products are currently in clinical trials for international pharmaceutical businesses. It has an agreement to supply oil to Galderma, owned by Nestle, for use in acne treatments.

Wilson is in China this week talking to potential customers for the amount of sandalwood products he is finally starting to have available. Wilson says he is about to prove TFS can sell increased volumes and maintain high pricing. "I love a challenge and I am persistent when I set my mind to it." Innovative too.

Read more: <http://www.afr.com/opinion/innovation-makes-money-grow-on-trees-20151130-glbfe>

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