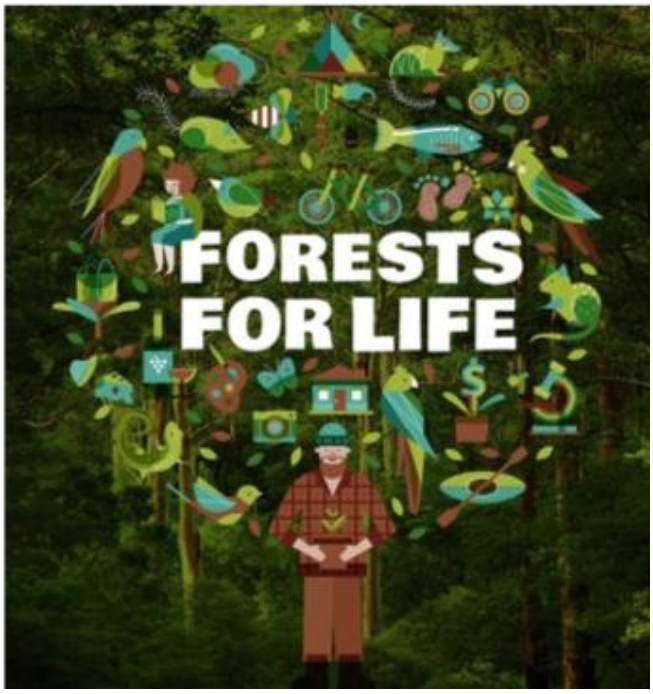
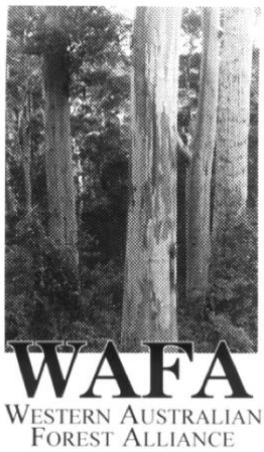


Forests for Life

Farm Forestry and Landcare Program

Strategy, model and business plan

The Forests For Life Farm Forestry and Landcare Plan is an initiative of the WA Forest Alliance's Forests For Life Program. The Plan has been developed with the support of the Warren Catchment Council and Gondwana Link.



WARREN CATCHMENTS COUNCIL

This Plan has been developed for Forests for Life by Impact Seed

impactseed
Western Australia's peak capacity builder for impact investment and social enterprise development

This plan's development was supported by funding from the Western Australian Government's State NRM Program

GOVERNMENT OF WESTERN AUSTRALIA

natural resource management program

Our team acknowledges that we meet and work on the land of the Nyoongar people. We pay respect to their Elders - past, present, and future - and acknowledge the important role all Aboriginal and Torres Strait Islander people continue to play in advancing a more sustainable Western Australia.

Table of Contents

Strategic overview

Introduction

The following document establishes the planning and strategic framework for initiating and implementing the Forests for Life Farm Forestry and Landcare program. It is separated into three sections:

- Strategic overview: The background, mission and underpinning approach of the initiative.
- Business model: The model for implementing the plan based on the known challenges and opportunities.
- Business plan 2019 – 2022: The Plan sets out the approach and activities for the program through to the end of 2022.

This is intended as a public document to form the basis of engagement with government, organisations, the forestry industry, potential participants, and prospective funders. We welcome comment and feedback on any aspects of the plan.

Purpose

"Forests for Life aims to bring together stakeholders and interests across the South West in a combined planting and investment program that delivers timber, conservation, culture, and economic development"

Landscape level transition is the underlying objective of the Forests for Life Farm Forestry and Landcare program.

The transition we seek is holistic, in that it includes economic, environmental and social considerations. Economic and environmental pressures are only going to increase in the coming decades as climate change, rising demand and increasing population all factor into the management of our forests and demand for timber.

The FFL Farm Forestry and Landcare program seeks to ease that pressure by simultaneously increasing the environmental and economic resource provided by trees. The guiding principles have been developed to that end, favouring a planning and implementation structure that incorporates economic concerns and environmental outcomes in a landscape level planning framework.

FFL also acknowledges the industry drive for increased pine plantation and believes that the two can be integrated. Approaching this integration at a landscape scale, with community cross-sectoral leadership is at the heart of the FFL approach. We believe that an aggregated blended finance model that aligns economic incentives and activities can bring together a range of interests to achieve mutually beneficial aims.

Objectives

The goal of the Forests for Life (FFL) Farm Forestry and Landcare Program is to produce a substantial volume of sustainably grown, high-value timber while delivering maximum ecological benefits at the local and regional scale. The Program will be carried out in two zones, one in the South West centring on Greenbushes and the other in the Great Southern centreing on Albany. It aims to achieve a total of 40,000 hectares of trees planted

for sawn timber production and a minimum of 4,000 hectares of Landcare work carried out on participating farms.

- Achieve a minimum of 4000 hectares of Landcare work carried out on participating farms.
- Achieve a total of 40,000 hectares of trees planted for sawn timber production.
- Contribute to the sequestration of an additional 500,000 ton of carbon in the South West by 2050.
- Directly and indirectly contribute $1b to the local economy through value adding and processing by 2050.

Guiding assumptions

Our vision and strategic thinking is predicated on a few core assumptions and our own understanding of innovation:

- Pressure is increasing; both supply chain demand and environmental pressures. *We need to be thinking about 2050 to future-proof the industry, the land, and the environment.*
- Yes, large scale hardwood timber sawn log plantations/farm forestry is a complex proposition. *We need to be innovative.*
- Financial feasibility is possible under particular parameters. *The conditions are changing, and we can create those parameters with innovation.*
- Innovation *= Cross sector partnerships, forward thinking, and leveraging emerging approaches to investment*

Who we are

Western Australian Forest Alliance http://waforestalliance.org/

Partnership aim: Forest protection and equitable, ecologically beneficial transition through farm forestry

Gondwana Link (GL) http://www.gondwanalink.org/

Partnership Aim: Ecological connectivity supported through farm forestry

Warren Catchment Council (WCC) http://www.warrencc.org.au/

Partnership aim: Community Engagement and Natural Resource Management through farm forestry

South West Agroforestry Network (SWAN) https://www.swagroforestrynetwork.com.au/

Partnership aim: Benefitting Landowners through Farm Forestry

Potential supporting organisations engaged in the development of this plan

Impact Seed – https://www.impactseed.org

Partnership Aim: Growing opportunities for impact *investment in WA*

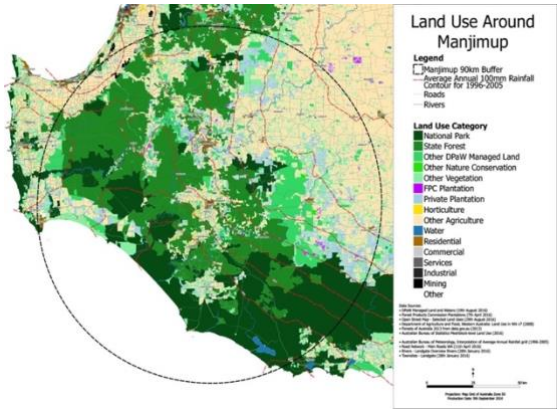
Regen WA - https://www.perthnrm.com/programs/sustainable-agriculture/west-australian-regenerative-farmers-network

Partnership aim: Integrating *agroforestry into regenerative agriculture.*

Regional profile

The farm forestry component of the FFL Campaign is focused on two areas.

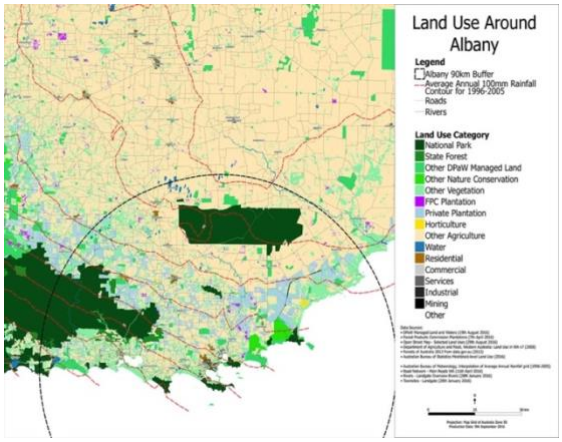
The South West Zone encompasses the area within a 100km radius from the Greenbushes / Manjimup area. The Great Southern Zone is within a 90km radius of Albany.



The two areas encompass a broad range of environmental conditions, including different rainfall zones and soil types. Environmentally, the region is within one of the world's 36 Global Biodiversity Hotspots.

The areas overlap the three distinct industry sectors, differentiated in their focus and geography[1]:

"South West region: This region, extending from just south of Perth to Manjimup and Boyup Brook in the South, includes almost all native forest-based industry (including around 90% of the WA Regional Forest Agreement area) and also contains a large proportion of the softwood and hardwood plantation-based forest industry activity."



"Great Southern and Esperance region: This region, extending from just west of Albany through to Esperance and extending inland to Plantagenet and Kojonup, is dominated by hardwood plantations, with a smaller area of softwood plantations, and a very small area of native forest harvested in the western part of the region."

"Wheatbelt plantation region: This region extends north and east of the South West, and the forest industry is predominantly based on softwood plantations, with major softwood processing facilities located in the region as well as

[1] Schirmer, J, Mylek, M, Magnusson, A, Yabsley, B & Morison, J 2017, Socio-economic impacts of the forest industry Western Australia. Forest and Wood Products Australia. (pg 5-6)6) http://www.fwpa.com.au/images/WA_Report_Dec2017_Final.pdf

significant areas of softwood plantation. The region also has a small amount of native forest harvesting."

The two regions are situated within the *Gnaala Karla Booja* and *Wagyl Kaip* Indigenous Land Use Agreement (ILUA) regions. Further information can be found here: http://www.noongar.org.au/ and http://www.swnrmstrategy.org.au/sub-regions/aboriginal-system/

Guiding Principles and Guidelines

We have developed a set of guiding principles and guidelines to provide structure to the way that FFL approaches project identification and implementation. The guidelines are loosely based on the Forest Stewardship Council approach which follows a hierarchical structure. Utilising a hierarchical structure for the Farm Forestry and Landcare components of the *Forests for Life* program provides the following benefits:

- Provides a structure for combining, balancing and articulating the different goals of the FFL partners, project participants, and stakeholders.
- Moving forward it helps set out clear parameters for managing the expectations of potential program participants.
- Helps to develop a set of supporting materials and toolkits that participants can use, regardless of differences in circumstances.
- It can provide a firm basis for future marketing and promotion of the program, providing a clear outline of the program's approach and impact measurement.

The three guiding principles are:

Guiding Principle 1: Landscape level coordination.

The FFL Farm Forestry Program incorporates landscape level partnerships, goals and information to ensure optimal ecological, social and economic benefit.

Guiding Principle 2: Landowner engagement, benefits and economic viability

Landowners are engaged to ensure they can experience as many of the possible economic, social and environmental benefits.

Guiding Principle 3: Protection and restoration of environmental values.

Projects shall maintain, conserve and/or restore ecosystem services and environmental values of the Management Unit, and shall avoid, repair or mitigate negative environmental impacts.

The full principles and guidelines is provided in Appendix 1.

Business Model

Introduction

A simple search for the benefits of farm forestry across the internet yields an abundance of results espousing the potential triple bottom line benefits. However, delving a little deeper tells a very different story. A frequent issue in discussions with stakeholders and reviews of the literature reveals a concept with great promise with a history of underachievement. As one stakeholder put it,

"If everything adds up as it is supposed to, why aren't there successful examples all over the south-west?"

Speaking with stakeholders and experts reveals an interesting mix of optimism and pessimism at the prospect of FFL's proposed program. The optimism is often underpinned by a shared understanding of the social, environmental and economic benefits to be reaped if successful. Pessimism from a clear-eyed understanding of the on ground challenges, their scope and complexity as well as the figurative 'planetary alignment' required.

The FFL Farm Forestry and Landcare business model and approach has been structured around an acknowledgement of the challenges it seeks to overcome.

Challenges and Opportunities

The competitive landscape for Forests For Life's farm forestry project is multi-faceted, including various competing land uses, investor alternatives and markets:

- Non-complimentary agricultural land use (ie, farming that does not lend itself to sharing space with trees)
- 'Higher value' agricultural land uses with shorter pay-back periods
- Industry focus on soft wood plantation establishment, or hardwood for pulp
- Other options for buyers seeking to purchase carbon credits (eg renewable energy).

We have broken down the challenges into three broad categories:

- Investment
- Landowners
- Supply chain

Challenge 1: Investment

Forest plantations, as an investment class, have typically struggled to attract large-scale private investment without some form of Government intervention or subsidy. This is primarily because of the time value of money with high upfront establishment costs and the extended period until harvest returns; resulting in a lower rate of return for plantations compared with other investments excepting where there is additional comparative advantage (e.g. high product prices, low transport costs, high yields etc.).

In 2018, a review of the financial feasibility of 40,000ha of hardwood timbers was conducted to understand its financial potential. Following the development of a model that would allow variable inputs based on a range of assumptions such as CPI, discount rates, program costs, yields and preferred rates of return; the evaluation

indicated the Forests for Life Farm Forestry and Landcare program is economically viable under certain conditions and to targeted investors groups.

Three Discounts Rates were modelled 1) Risk free 3.7% 2) Comparable asset class rate 5% 3) Private sector expected rate 10%	NPV	NPV Per Hectare	Farm Forestry and Landcare Program IRR*	Timber Impact finds worldwide 1997-2014 N = 55	Conventional Timber Global Investment funds (e.g. not necessarily sustainable timber focused) 19997-2014
Discount Rate @ 3.7%	$175,458,306	$4,386	8.6%	5.9%	3.3%
Discount Rate @ 5%	$78,939,256	$1,973	7%		
Discount Rate @ 10%	-$38,692,616	-$967	4.2%		

The Net Present Value (NPV) of the project cash flows is positive for two of the three discount rates over the 42-year timeframe, with the Internal Rate of Return also positive and above benchmark Global Timber Impact Funds and comparable to plantation assets class benchmarks across Australia. Moreover, an IRR of 8.6% at the risk-free discount rate is competitive Global Timber Impact Funds and superior to the benchmark average of conventional timber fund returns.

For more information on the assumptions and modelling you can view the original assessment, which includes explanations and scenarios, at: https://forestsforlife.org.au/wp-content/uploads/FFL-Financial-Assesment-August-2018-compressed.pdf or contact Forests for Life.

Response: Blend with other impact investments/funding (conservation, carbon, regen ag)

In forestry and conservation investments, blended finance may increase investments into emerging and different regions as well as into landscape management, conservation, and restoration – activities that typically come at a cost to businesses but that deliver positive environmental and social impacts. Blended finance can complement forestry investment in several ways:

- De-risking investments into new geographies or technologies
- Catalysing private investment
- Addressing pre-commercial barriers to investment
- Underwriting additional impact outcomes within investments.

Challenge 2: LANDOWNERS

"Uncertainty relating to factors affecting growth (e.g. drought, pests, frosts, fire, species suitability) and uncertainty about future timber demand including domestic and global market outlooks. Regulatory and legislative uncertainty was also a concern, e.g. changes to harvesting guidelines, issues with the use of roads."[2]

Master tree grower Rowan Reid [3] wrote in 2017 that failure of farm forestry to achieve its promise could be easily understood in the context of entirely rational decision-making processes by farmers and land managers. Economic incentives offered to farmers resulted in plantings and arrangements whose primary value to the

2 "Research Report: New Generation Plantations: Integrating trees in rural landscapes", Next Generation Plantations, Melbourne University, https://cpb-ap-se2.wpmucdn.com/blogs.unimelb.edu.au/dist/d/279/files/2017/10/Research-report_Integrating-trees-in-rural-landscapes-1gsha0z.pdf

3 Reid, R. 2017, "Agroforestry – where did we go wrong?", The Forester, Institute of Foresters Australia, April 2017. Pp 26-28

farmer came from the incentive paid, rather than the other range of economic and environmental benefits they were expected to deliver. Other farmers watching on, predictably put off planting trees unless they too would receive such an incentive. When the money ran out, tree plantings stopped.

Response:

- *Pay them sooner (see blended finance/impact investment approach above and below)*
- *Provide better (transparent) information re markets/costs*
- *Flexibility of options*

Challenge 3: Industry and Supply chain Scepticism

The Forests for Life Farm Forestry and Landcare program has two main challenges in gaining industry support and engagement:

1. Sensitivity/contention regarding the 'transition' aspiration of some partners and the political relationships - ie the political backdrop.
2. Scepticism regarding the proposition of native hardwood plantations for sawn logs.

The political backdrop

A key part of the motivation to start the Forests for Life program was the desire of WAFA to advocate for a positive plan to transition the timber industry from native forest logging to a plantation and farm forestry industry. As such the public identity of Forests for Life is closely associated with the 'no native forest logging' message. This does put the FFL brand at odds with proponents of native forest logging in the industry.

We are keen to develop connections and partnerships focused on the common ground of increasing the entire resource, creating economic value for other forestry activities such as biodiversity, restoration, and carbon sequestration. We want to create a space where those who do not advocate for a transition of the industry away from native forest logging logging can still participate.

To this end we are exploring the following strategies for overcoming this:

- *Building diverse industry representation into the program's governance and strategic oversight*
- *Ensuring the strategic and messaging focus of the Farm Forestry and Landcare program focuses on the goal of expanding tree plantings and restoration.*

Scepticism

The lack of success to date on developing a scaled resource of hardwood timber plantations for sawlogs is understood, and we fully appreciate any scepticism regarding viability. We understand the need to demonstrate a resource that is:

- Of consistent quality and type
- Of suitable scale to give mills and processors confidence to market and specify such timbers in the supply chain.

It is for this reason that the FFL Is seeking to:

- *Diversify the economic value proposition of the program beyond just timber to include carbon, biodiversity, and regenerative agriculture.*

While still approaching all timber plantings with a view to scale, proximity, consistency, and quality by:

- *Keeping the specified species to a small number that are suited to multiple conditions*
- *Including a database of the resource to record management regime and regular sampling/measurement to give buyers assurance.*
- *Designing the program to include FSC and PEFC certifications.*
- *Take a whole of supply chain marketing approach*

Appendix 5 contains the suggested species mix.

Opportunities

Two emerging market opportunities that should continue to gain traction, and are of high value for the FFL proposal:

Engineered wood products: Examples include cross-laminated timber and veneer. (see Appendix 2)

Carbon: Accessing markets for carbon abatement through offsets is a required component if the FFL Farm Forestry proposal is to be successful. Two key pathways will be pursued: The Emissions Reduction Fund and the Gold Standard certification scheme. (See Appendix 3)

This is coupled with other emerging drivers that can be harnessed by the FFL proposal:

Increasing demand for timber:

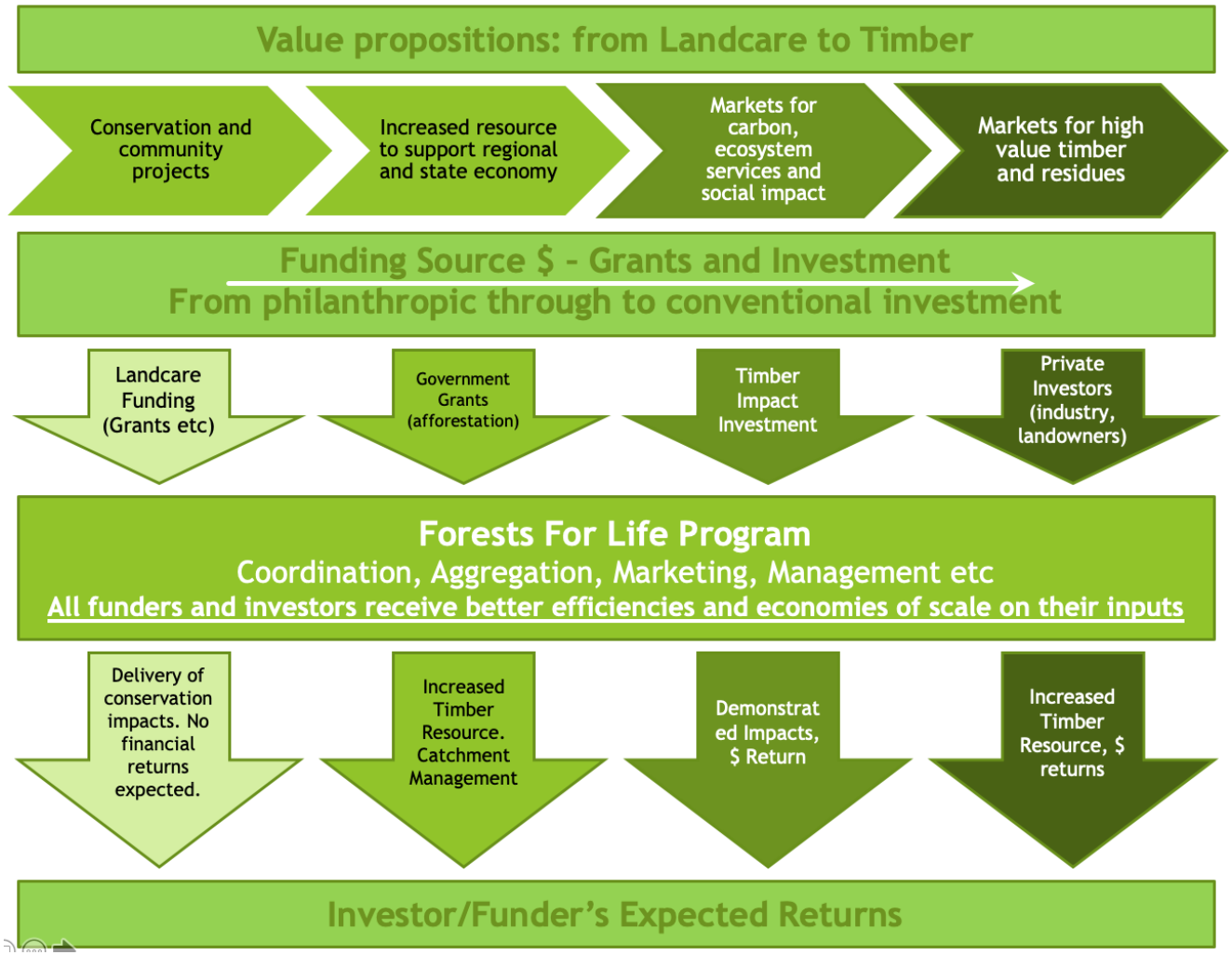
- WA Government's Wood Encouragement policy
- Certified timber demand
- Growing markets in Asia

Impact Investor interest in:

- Timber impact investment
- Regenerative agriculture
- Carbon
- Ecosystem services

In the supply chain, engineered wood products, construction timbers and biomaterials offer a vast range of low-carbon products and materials that substitute for higher-carbon and less renewable materials. Investors can promote the shift toward higher productivity plantations, enhanced productivity, and innovation in the supply chain that will generate emissions reductions and move toward a low-carbon future.

Delivering value and returns to multiple stakeholders through coordination and aggregation



Investment/Funding Approach

Blended Finance

The Forests for Life farm forestry and Landcare program is being developed as a blended finance model that seeks to harness various streams of funding to deliver a range of returns:

Blended finance combines capital with different levels of risk tolerance to catalyse risk-adjusted, market-rate-seeking capital into impact investments. Such blended finance does not need to be purely deployed for the purpose of de-risking, however… Given the significant social and environmental impact potential of sustainable and impact forestry and the existing activity of foundations and government agencies around the world intent on conserving forests, blended finance could be integral to the growth, development, and impact of the market.[4]

The FFL Farm Forestry and Landcare Program has the potential to function as a coordinating and aggregating body that brings together a range of stakeholders from farmers, conservation groups and the forestry industry. Facilitating access to a variety

[4] *Scaling Impact Investment in Forestry* – The Global Impact Investment Network

of potential funding sources will be an essential part of this. The project as a whole is an opportunity to demonstrate the kind of collaboration possible when different groups of interests are aligned.

Impact Investment

Impact investment is patient capital

> *"Impact investments are defined as investments that seek to create positive, measurable social and environmental impact alongside a financial return. Impact investments seek financial returns ranging from competitive, risk-adjusted market-rate returns to capital preservation and can be made across asset classes and geographies."* (GIIN)

What defines 'impact forestry'? (from GIIN)

- *Selecting and managing investments with the intention to create positive, measurable social and environmental impact;*
- *In addition to adhering to commonly accepted certifications for sustainable forestry practices, such as FSC regularly tracking and reporting on key impact metrics aligned to the specific social and environmental goals of the investment;*
- *Managing the results of those impact metrics; and*
- *Including investment terms reflective of the investment's social and environmental goals, such as a longer-term horizon and impact targets.*

Common revenue strategies (from GIIN):

- *leasing of land and/or land rights*
- *timber sales*
- *sales of carbon offsets*
- *sales of other forest products*
- *sales of land rights for permanent conservation*
- *leasing of land and/or land rights*

Based on reviews of the forestry impact investment globally, the Global Impact Investment Network (GIIN) has identified the following impact measurement areas as part of its Navigating Impact project[5]:

- *Increasing production of sustainable timber*
- *Increasing production of sustainable tree-based products*
- *Increasing sustainability of local economies and communities*
- *Improving the Sustainable management of natural resources in forests*
- *Increasing carbon sequestration through forestry*

Impact Investment in Forestry Snapshot:

- *Altogether, 34 vehicles manage USD 9.4 billion in forestry and related assets.2 At the fund level, size varies significantly, ranging from USD 5 million to USD 1 billion, with a median size of USD 176 million. This variance reflects the range of fund investment strategies, wherein fund sizes vary by region of investment, nature of the target forest assets, and impact strategy. For example, the median fund size of organizations allocating to only developed markets was USD 210 million, whereas the median fund size of those focused on emerging markets was USD 144 million.[6]*

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[5] [5] *Scaling Impact Investment in Forestry* – The Global Impact Investment Network

[ii]bid

Implementation

Structure

We believe that a co-operative structure would be a good fit for the Forests for Life Farm Forestry Program. Giving landowners, partners and farmers ownership over the program while gaining economies of scale across a range of inputs and outputs will help to ensure the program's success.

- Farmer buy-in is supercritical – giving farmers the opportunity of membership where they have an equal vote to industry and investors will be essential given previous experience and current perception.
- Allows farmers to own the trees and be business owners; they also still have the option of a leased arrangement or to market their products through the co-op as a supplier.
- Opportunities for vertical integration as the co-operative grows.
- Provides opportunities for genuine multi-stakeholder governance and engagement.

The overall implementation approach is based on last year's feasibility report. This report reviewed literature and research that articulated and analysed farm forestry and conservation planning principles, silvicultural approaches, and growth data for potential species. The overall timelines for the potential farm forestry resource is based on some basic assumptions regarding rates of planting, growth, and rotation timing. These were necessarily simplified given the complexity of the different variables of the task, but it still gives an overall understanding of what financial, environmental and operation conditions are required for the plan to be successful.

A separate discussion paper has been prepared for feedback, regarding the options for a cooperative, or similar, organisation, it also included as an appendix to this report. Some of the questions that need to be answered in the process of formation:

- What is the organisation’s relationship with the trees whose planting it is trying to facilitate?
    - Does it own them?
    - Does it subsidise them?
    - Is it just paid to market them?
- What is the organisation’s core activity?
- Is the organisation a formal co-op, or should it be ‘co-op like’?

Broadly, the options for a co-op or similar structure may exist somewhere on the spectrum between the two models in the table below.

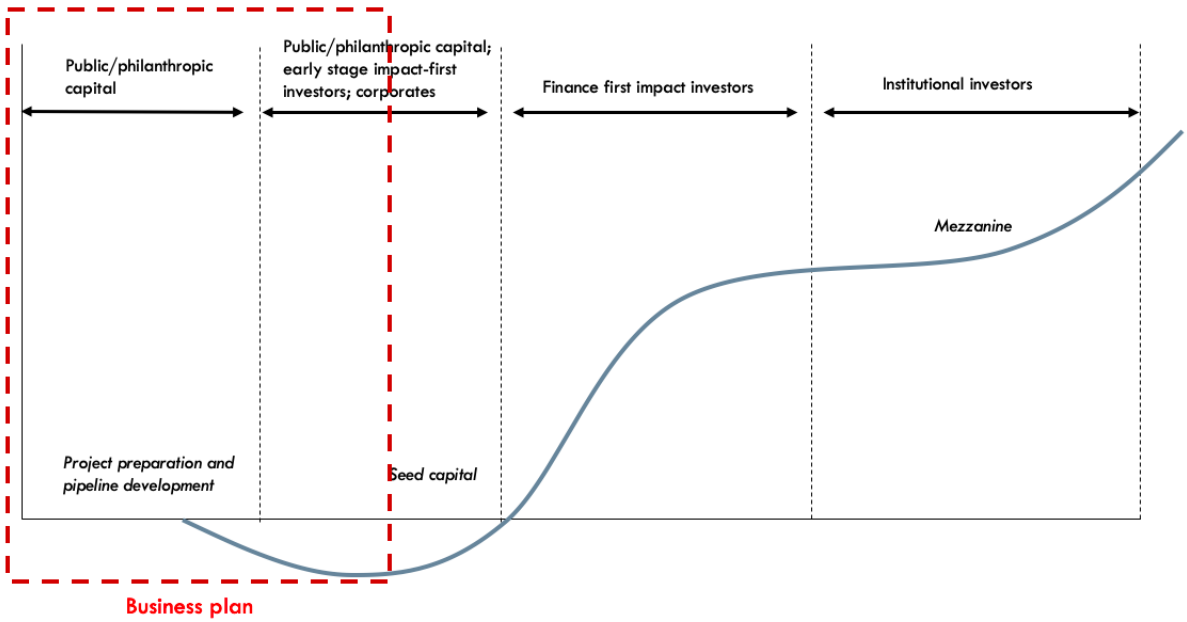
	Service model		Investor model
Description	• Doesn't own resource • Mainly owns brand and IP		• Owns or part owns resource • Manages resource or contracts managers • May own or lease the land
Revenue:	1. Levy on log sales. (Aggregation of logs by species and grade. Negotiate best price) 2. Levy on carbon/biodiversity aggregation and marketing 3. Annual membership fees 4. Contracting for planting and other management work 5. GPS service and site mapping service 6. Consulting (mainly on silviculture, i.e. forest management plan development) 7. Harvesting contracting and overseeing	*From a lean service delivery model to established equity and resource owner*	1. Timber sales 2. Thinnings/biomass sales 3. Carbon/biodiversity offset credits 4. Land sales for conservation or harvesting 5. Member fees
Project relationship	1. Facilitates projects as independent entities through contracts (syndicates, businesses, etc)		• Owns

Sequence

The timeline of implementation in the context of the blended finance model is based on a sustainable land use (SLU) venture capital financing cycle[7] in the next figure. The red ring-fenced section above represents the part of the process covered in the business plan in the following section. This period will have the following objectives:

- Organisation established
- First projects identified
- Investment pathways established

[7] Guamaschelli, S et al, 2018, *Financing Sustainable Land Use: Unlocking opportunities in sustainable land use with blended finance,* Published collaboration with the Business & Sustainable Development Commission and the Blended Finance Taskforce, Kois Invest, http://businesscommission.org/our-work/blended-finance-taskforce-commissioned-papers



The business plan goes into further detail regarding the activities intended to meet these objectives. On the projects side, the types of activities expected over the whole of life of the program can be divided into three phases:

Years 0 – 10 Establishment and engagement	• Formation and engagement • Farmer recruitment • Mentoring and training • Investment attraction • Monitoring • Maintenance support and coordination • Establishment support and coordination
Years 11 – 20 Maintenance and monitoring	• Mentoring and training • Investment attraction • Monitoring • Maintenance support and coordination • Market program
Years 21 – 42 Marketing	• Mentoring and training • Investment attraction • Monitoring • Harvest support and coordination • Market program

This can be broadly broken down into four functions:

- Identification and mapping of combined timber/conservation opportunities
- Community and market engagement
- Project co-ordination and support
- Facilitating investment and funding

The section below outlines the various project scenarios that are considered under the program, with the role of partners and members being crucial:

- Defining member and partner roles and/or commitments will be a key first stage in the ‘seed’ phase.

- It is envisaged that members and partners roles will be specific to their own existing interests. That is, different interest types will have their own value proposition for participation. As such, their relationship to the FFL program should be mutually reinforcing whenever possible. Success for FFL should bring success to each member's own unique mission.

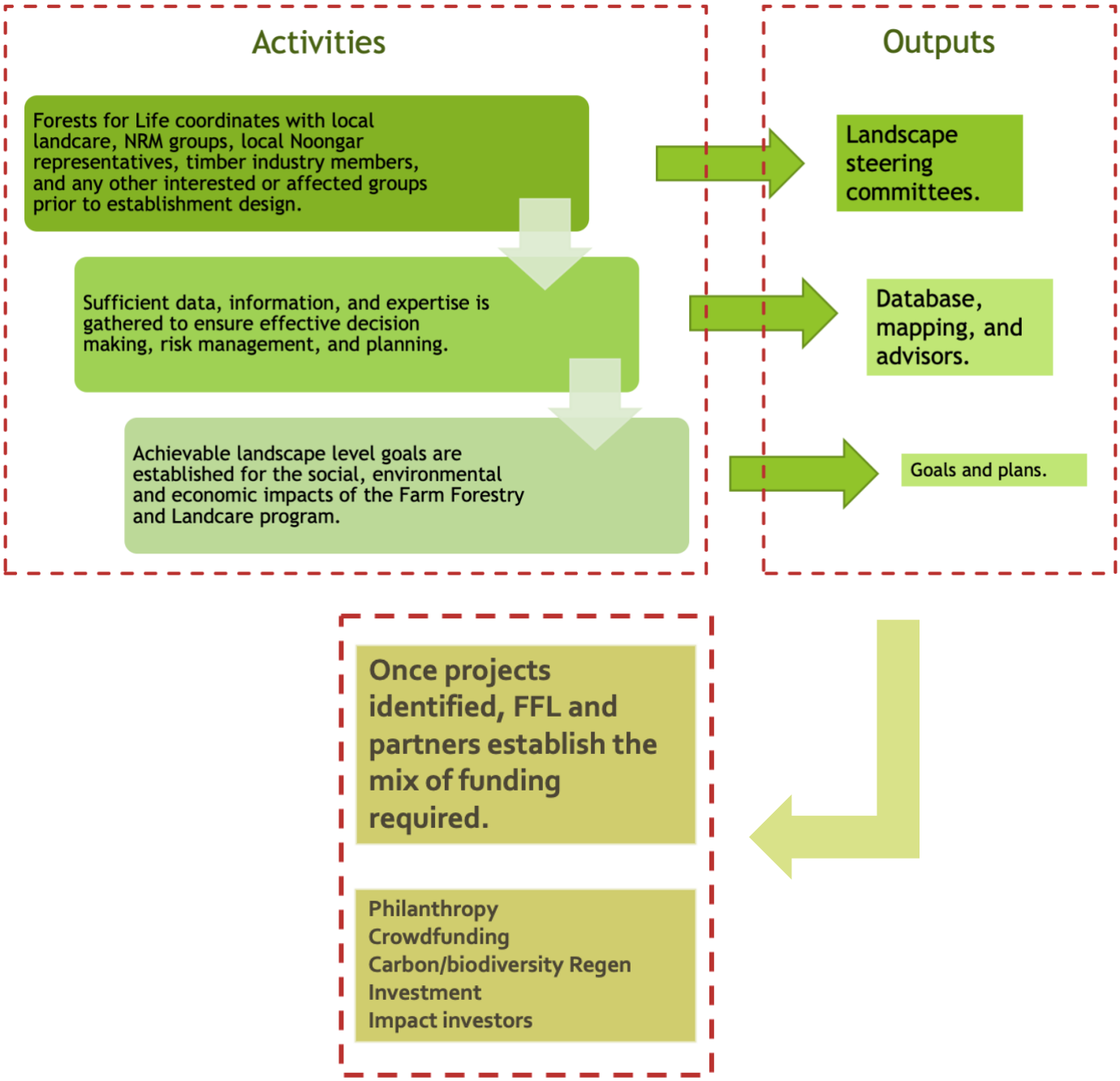
This is a key aspect of the FFL model, the facilitation of levered outcomes for its stakeholders. It is important however, that these value propositions and commitments are clearly stated and agreed in action plans.

A stakeholder map is included in the business plan below that charts out the different stakeholder involvement. However, a key stakeholder in the project is the State Government. Engaging the government will be fundamental throughout the entire life of the project. Included in this engagement will be advocacy for the potential ways that it might support the program. The government can play a number of roles throughout, from funding support, resources, advisory, partner and customer. To this end, we have outlined a number of possible roles.

- **Financial** – Government as:
    - *Catalytic funder* - grants for afforestation & env/soc benefits, grants for capacity building
    - *Customer* - Commit through FPC, Water Corp and other agencies to wood offtakes and ecosystem outcomes at reasonable market rates. This will help to encourage impact first investors get involved in the early stages of the program.
- **Allocate land** – make public land available for mixed plantings of catchment & biodiversity restoration and high value hardwood timber.
- **Support water requirements for ERF** – through DEWR and Water Corp support project eligibility requirements in areas over the 600mm rainfall cap.
- ***Djarlma plan (regulatory):*** review of barriers to investment under plan implementation should include whole of government considerations affecting property owners, such as land clearing processes.

Project Identification and Scenarios

The Guiding Principles referred to in the Strategic Overview above (also provided in full as an appendix) highlight the importance of community and stakeholder participation in landscape goal definition, project identification, and ultimately program ownership. This process is mapped out in the chart below.



The Rural Industries Research and Development Corporation, on the basis of landholder surveys and discussion with forestry experts, has previously identified six farm forestry options in common use in Australia.[8]

These options may be briefly described as follows:

1. ***An approximation of the value of current versus alternative land-use***: This scenario is based on assumptions about 'typical' land-uses and provides a baseline against which the others are measured. For an

[8] 2008, Rural Industries Research and Development Corporation, " Agroforestry and Farm Forestry – Support systems to assess the viability of whole-farm and regional agroforestry enterprises"

alternative land-use to be financially viable, it must perform better or at least as well financially as the current land-use.

2. *High-priority salinity prevention*: This option involves identifying saline and at-risk areas in the catchment. Forestry activity is designed for the groundwater recharge zones in the upper catchment.

3. *Commercial plantations (with corporate land ownership):* This option is based on a medium scale corporate investment in purchase of land and establishment of forestry in the higher rainfall areas of the region.

5. *Commercial plantations (with leased land):* As in (3), except that the corporation leases land from landholders.

6. *Agroforestry (plantations and grazing):* This would involve establishing wide-spaced plantations, in conjunction with improved or native pasture or even fodder crop strips in more fertile areas.

These six farm forestry options are not necessarily an exhaustive list, but they would appear to be the most commonly utilised categories of farm forestry in Australia at the present time.

In order to provide the 'flexibility of options' discussed in the *challenges* section above the program will consider all as potential opportunities. Ultimately, the goal is facilitation of plantings. At a project implementation level the different scenarios are envisaged as potentials are laid out in the table below.

Scenario description	Approach	Challenges	Requirements
Total ownership (land investment etc)	In this scenario projects, including the land, may come under part or full ownership by Forests for Life for management. In this case FFL is responsible, along with its partners, for raising the necessary capital for purchase, establishment, and management and is therefore the recipient of revenue for carbon, biodiversity credits, thinnings, and eventually timber.	Longer time horizons Significant capital required	Land Capital
Supports investment on others land	Where landowners (new and existing) have identified that they wish to engage in a mix of carbon, timber and biodiversity plantings, but: • want to remain land owners, and • require additional capital Forests for life can assist in planning, raising funds, maintenance, and marketing.	Complexity in agreements/roles	Capital Agreements with landowners/investors regarding investment/costs/revenue
Project advisor/ facilitator (total investment)	Where projects already have the requisite source of funding and land but require expertise and guidance to achieve a desired mix of social, environmental and economic value, where there is a desire to include timber in that mix, FFL can provide or facilitate services on a fee for service or similar model.	Reduces FFL influence over the life of project	Network of expertise Contracts for marketing, planning, maintenance etc

Project advisor/ facilitator (just the forestry)	Where carbon/regen/biodiversity projects are already in the planning or establishment phases, but would like to include timber FFL can provide or facilitate expertise and services.	Reduces FFL influence over the life of project	Network of expertise Contracts for marketing, planning, maintenance etc

Business Plan 2019-2022

Scope

This business plan covers the first phase of the program and centres around the initial formation, engagement, and establishment activities. This plan has been prepared based on the Feasibility and Analysis undertaken in 2018. It sets out the steps required to begin the program including, the formation of a dedicated organisation, an engagement plan, approach to funding and key outcomes for the first three years.

This business plan covers the first 3-5 years of the Forests for Life, with an activity focus on the next 3 years, the "seed stage". The plan is divided into two streams of work: program and project.

Program operations: Covering the operational activities, budget, and approach**.**

Project management: Some indicative costs and the management approach to implementing identified project opportunities.

Objectives:

Key objectives of the seed stage 2019-2021:

1. Organisation established
2. First projects identified
3. Investment pathways established

Activities

Objective 1: Organisation established

Establishing the organisation requires the following outcomes:

- Established as a legal entity
- Operational funding confirmed
- Key skill requirements filled

Entity established

Key steps:

- **Founding members:** Identifying the founding members for incorporation and involvement. Establishing commitments and expectations of committee members and partners will be key. (see skills section below)
- **Interim Formation**: A co-operative, or similar, organisation is being put forward as the long-term vehicle for driving investment, co-ordination, and impact. However, the process of forming and organizing this type of structure can take some time. For this reason, forming a legal entity quickly, as an interim body, to get the process started will be important. An incorporated association (registered federally) with DGR status is the probable pathway. (An alternative would be to have the organisation's activities auspiced as an interim step).

- **Long-term formation:** Getting a long-term model right will be vital to the long-term scalability of the program. The exact form will no doubt be influenced by the results of engagement and the responses to the structural discussion paper.
- **Partner commitments**: Mutually beneficial relationships and activities (ie. “win-wins”) is at the heart of the program’s approach and will be the underpinning factor in its long-term sustainability and success. Defined member and partner roles must be specific to their own existing interests. That is, different interest types will have their own value proposition for participation. ***Success for FFL should bring success to each member's own unique mission.***

Key skills acquired

Team: As an initiative that is intended to bring together a diverse array of interests to a common end, the makeup of skills and experience that will be necessary to help get the program off the ground is incredibly important. At different stages the program and projects will require:

- environmental management,
- forest and wood products,
- marketing,
- finance, and
- governance

However, these skills will be provided by the governing committee and a core group of advisors. The budget and approach is structured on the following basis:

- **Founding committee:** key representatives from forestry, Aboriginal, conservation, carbon, and NRM backgrounds chosen for:
    - Commitment to FFL’s farm forestry mission, and ability to provide some operational support through first 2-3 years
    - Networks
    - Mix of skills (fundraising, governance, finance and marketing.)
- **Project coordinator**: responsible for day to day operations. Key skill requirements: project management and stakeholder engagement.
- **Consultants/contractors:** The intention is that this is mixed with in-kind/cash co-contributions for the coordination and design of specific projects in their early stages.

Objective 2: Funding established

The business model section above demonstrates the blended finance approach and its optimal contribution over the length of the project. As it noted, the core funding of the program and projects over the initial few years is expected to be a mix of public/philanthropic capital and early stage impact (first) investors[9].

Type	Appetite	Potential capacity for financing
Public and philanthropic capital	Strong field- building mandate	Very early stage grants for pipeline development and project preparation in non-mainstream asset classes Concessional and de-risking instruments (i.e., guarantees) Can have narrow focus on programmatic priorities (e.g., sectors, geographies)
Early stage impact investors	Good field- building appetite and strong impact focus	Mission-aligned early-stage investments; patient capital Minority investments, typically in earlier stages, alongside public and philanthropic capital More flexible in terms of sectors/ geographies
Finance first impact investors	Less catalytic/ lower risk for innovation and risk	Large, more mature portfolios in a broad mix of assets Potential legal challenges
Institutional	Minimal appetite for risk; capital preservation	Not as many direct investments (mostly through funds)

Funding focus for seed stage operations budget

[9] [9] Guamaschelli, S et al, 2018, *Financing Sustainable Land Use: Unlocking opportunities in sustainable land use with blended finance,* Published collaboration with the Business & Sustainable Development Commission and the Blended Finance Taskforce, Kois Invest, http://businesscommission.org/our-work/blended-finance-taskforce-commissioned-papers

Fundraising will be high priority in the first 3-6 months and requires a strong strategic base. The first actions/outputs in the business plan's activity timeline will be aimed at this outcome:

1. Formation (see interim formation above)
2. Establishing a fundraising committee
3. Gaining letters of support and commitments regarding cash/in-kind co-contributions (see partner commitments below)
4. Engaging funders and grant makers

The final business plan and supporting documents (strategy/business model/feasibility) will also for the document basis for funding, along with:

- Pitch deck
- Funder memorandums
- Project documents (see below)

Objective 2: First projects identified

Figure i: South West Agroforestry Network

Project identification is THE core business of the Farm Forestry and Landcare program's first 5 years. It will contain a number of recurring activities, including:

- Stakeholder engagement and marketing
- Mapping of opportunities
- Community and network coordination
- Project design and implementation

Stakeholder engagement and marketing

Key outputs/activities:

1. Network database development and identification:
    a. Working with FFL partners and aligned stakeholders to develop a contact list through surveys, existing channels (partner newsletters etc), and nurturing new channels.
    b. Surveying broader network for interest.

2. Targeted engagement:
    a. Working with FFL partners to identify higher probability opportunities.
    b. Focused field visits/meetings with identified opportunities.
3. Workshops and presentations:
    a. Finding opportunities to have focused workshops in the key areas. (budget of 2 per zone per year).
    b. Identifying opportunities to present in existing forums/meetings.

Supply chain engagement: We know that plantations for hardwood sawn timber have not been a thoroughly successful endeavour in Australia to date. Of the 46% plantation estate (896,000 hectares) that is hardwood, less than a quarter is devoted to sawlogs. This is even more acute in WA, where over 90% of hardwood plantations is made up of Tasmanian Bluegum, which is predominantly managed for pulp.

However, we view this as a long-term proposition that requires consistent engagement to:

- Ensure supply chain input into the program's implementation and strategy
- Build confidence in supply through demonstrated success.

An indicative stakeholder map has been developed below.

Category	Value Proposition / relationship	Engagement Strategy
Noongar Community	Express connection to Country and responsibility to care for country Traditional Owners with knowledge and cultural responsibility	Solidify ongoing role in governance and strategic direction of the initiative Explicit objectives and parameters relevant to their responsibilities and interests to be included in planning and project design.
Agroforestry community	Benefitting Landowners through Farm Forestry Mentoring and expertise Services and contracting	Invite SWAN to be founding member Existing agroforestry network to be included in first round of engagement.
Local Government	Key stakeholders for unlocking community engagement and project collaboration.	Partner for identifying local conservation projects for potential partnership. Partner for engaging local associations, businesses and leaders.
State Government	Engaging government at multiple levels through the beginning and the life of the program will be a key activity. The government can play a number of roles throughout, from funding support, resources, advisory, partner and customer. (see business model notes)	Frequent ongoing engagement at multiple levels.
Forest and forest products industry	Increased supply Introduction of ecosystem service market pathways	Solidify ongoing role in governance and strategic direction of the initiative (also see business model notes)
Conservation groups	Ecological connectivity and restoration supported through farm forestry and landcare	Solidify ongoing role in governance and strategic direction of the initiative
Land owners	Facilitating and streamlining farm forestry benefits, diversification, and environmental benefits	Early network engagement Facilitating agroforestry education opportunities
Carbon aggregators and markets	Markets for carbon credits and biodiversity offsets	Solidify ongoing role in governance and strategic direction of the initiative

Regenerative Agriculture	Agroforestry for regeneration is a key strategy in regenerative agriculture The FFL network includes key agroforestry expertise and experience	Early network engagement Facilitating agroforestry education opportunities

Mapping of opportunities

Analysis conducted for Forests for Life used the following criteria for identifying suitable land for both farm forestry and revegetation using Multi-criteria spatial analysis software:

- Only on cleared land
- Not on existing private or public plantation or farm forestry
- Within 90km – 100km of a future processing centre (Albany Fig 2 or Greenbushes Fig 1)
- Acceptable Rainfall (projected >450mm annual rainfall by 2030 under a severe future climate)

Other criteria for consideration included:

- Farm Forestry
    - In sub-catchments where salinity is likely to be an issue in future
    - In areas where farm forestry will do well
    - On properties of a reasonable minimum size
- Revegetation
    - Not on the best farming land
    - In areas where salinity is likely to be an issue in future
    - Along landscape linkages
    - Near water bodies

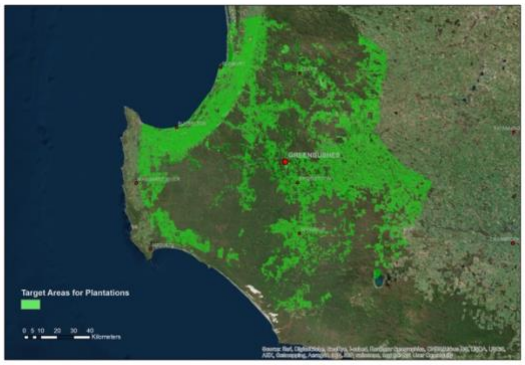


Figure ii Greenbushes 744,579ha

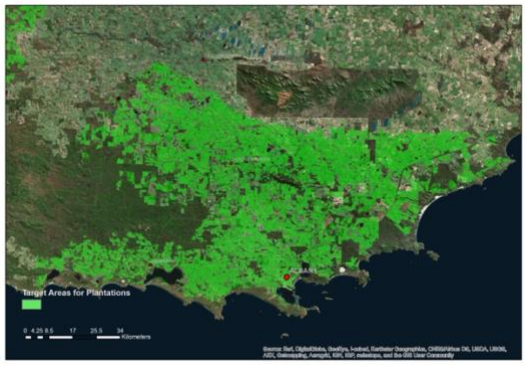


Figure iii : Albany - 384,901ha

A breakdown of the numbers and methodology is provided in Appendix 5

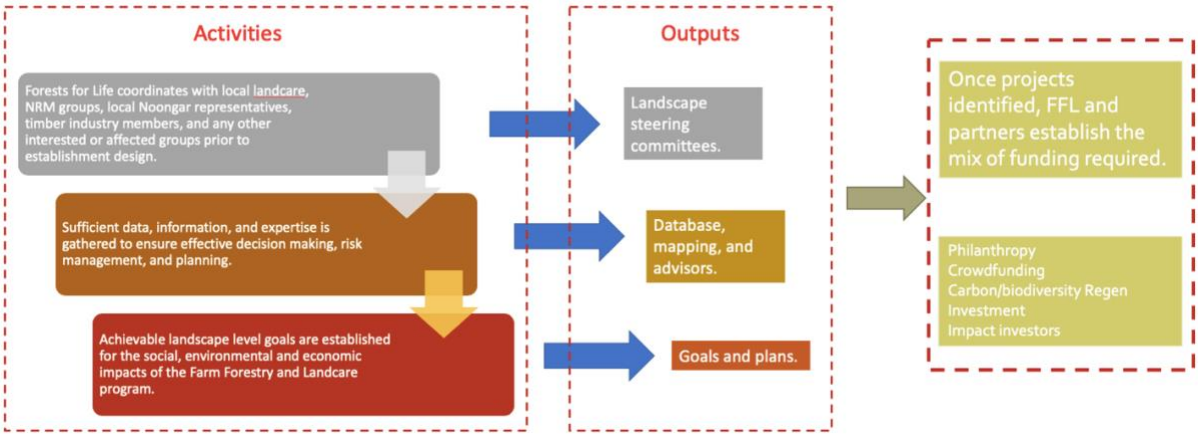
Community and Network Coordination/Project Design and Implementation

The Principles and Guidelines outline the importance of community coordination to the program's approach:

> **Guiding Principle 1: Landscape level coordination. The FFL Farm Forestry Program incorporates landscape level partnerships, goals and information to ensure optimal ecological, social and economic benefit.**

Criteria 1.1: Forests for Life coordinates with local landcare, NRM groups, local Noongar representatives, timber industry members, and any other interested or affected groups prior to establishment design.

Workshops and organisational governance have already been mentioned above, in addition to these the ability to coordinate with interested parties to design and implement will be key.



Notes on responsibility and resourcing for this activity: The indicative program budget outlined below provides for consultants/contractors. The intention is that this is mixed with in-kind/cash co-contributions for the coordination and design of specific projects in their early stages. Furthermore, the project budget costs estimated below includes a per hectare planning cost. This should be factored into the investment/funding attraction once specific projects have been identified and have been moved through scoping.

Relationship between project identification/funding pathways: There is an inescapable 'chicken-egg' relationship where unlocking one helps to unlock the other. Engagement on these two fronts will necessarily run parallel. The strategy of engaging emerging markets in carbon and sustainable agriculture is designed to find 'quick wins' that can help build confidence on both the project identification and funding pathway fronts.

Objective 3: Investment/funding pathways established

Occurring in tandem with project identification will be the identification of investment/funding pathways (note: the fundraising section above is specific to the operational needs of the first 2-3 years. With project identification and design, as well as the long-term formation of a commercial entity, program funding beyond the seed stage should be generated as much as possible by the work, facilitating service provision and membership fees.

The blended finance approach being taken does require consistent engagement given the multipronged nature of the strategy. Fostering long-term relationships with potential funders. The following activities/outputs will form the basis for pathway establishment:

- Documentation (funder, donor, government information packs)
    - Impact measurement (converting the principles/guidelines into credible impact measurement metrics)
- Engagement (pitching, networking, field visits etc)

The nature of the initial investment asks will depend on the emerging project scenarios (see business model):

- Total ownership (land investment etc)

- Supports investment on others land
- Project advisor/ facilitator (total investment)
- Project advisor/ facilitator (just the forestry)

Documentation

The following documents have been developed:

- Project information form: Key documentation covering funding mix, revenue strategies, physical characteristics and responsibilities.
- Funder/donor memorandums: Core information providing 'overview' of funding opportunities.

An electronic CRM and project database will be required for:

- Network/project management
- Public/internal 'dashboards' with investment and impact metrics.

Engagement

Similar to the fundraising approach above, finding core advisors/partners with the experience and networks is at the heart of this strategy in its early days. Building a coalition is important for developing investor confidence.

Budget

Costs

We have broken the budget costs into two categories:

- Program costs: the 'non-planting' specific operational costs of engagement, marketing, and co-ordination.
- Project costs: Costs related identified physical planting programs.

Program Costs

For details see project identification section.

Program costs	2020	2021	2022
Workshops (2 per region @ 7.5k each)	$30,000.00	$30,000.00	$30,000.00
Field Days (2 per region @ 2.5k each)	$10,000.00	$10,000.00	$10,000.00
Admin costs (phone etc, web hosting etc)	$5,000.00	$5,000.00	$5,000.00
Staff – Project Manager	$85,000.00	$85,000.00	$85,000.00
Travel costs	$10,000.00	$10,000.00	$10,000.00
Contractors (GIS, Advisors)	$100,000.00	$100,000.00	$100,000.00
Board Meetings (4 per year @ 2k each)	$8,000.00	$8,000.00	$8,000.00
Program Total	**$248,000.00**	**$248,000.00**	**$248,000.00**

Project Costs

The forests for life project costs are based on the Financial Feasibility study undertaken in 2018, and relate specifically to the cost of the trees (not including land), in the following table.

Establishment costs – Years -1 - 0 ($/ha)			
Year -1	**Planning**	**-$4.56**	**Total: - $327.85**
	Fencing & rabbit control	**-$57.00***	
	Ripping and mounding	**-$182.59**	
	Annual management	**-$30.43**	
	Annual maintenance	**-$53.26**	
Year 0	**Weed control**	**-$98.91**	**Total: - $961.67**
	Seedlings	**-$479.31**	
	Planting @ 1000 stems/ha	**-$159.77**	
	Fertiliser	**-$70.00***	
	Insect control	**-$70.00***	
	Annual management	**-$30.43**	
	Annual maintenance	**-$53.26**	
Operational costs - Years 1 – 6 ($/ha)			
Year 1	**Parrot control**	**-$76.08**	**Total: - $291.06**
	Post plant weed control	**-$91.30**	
	Infill Planting	**-$40.00***	
	Annual management	**-$30.43**	
	Annual maintenance	**-$53.26**	
Year 2 & 3	**Parrot Control (per year)**	**-$76.08**	**Total: - $159.77 (per year)**
	Annual management	**-$30.43**	
	Annual maintenance	**-$53.26**	
Year 4	**Parrot control**	**-$76.08**	**Total: - $1,127.38**
	Culling 700spha	**-$440.00**	
	Pruning 300spha	**-$350.00**	
	Coppice control	**-$170.00**	
	Heaping debris	**-$7.61**	
	Annual management	**-$30.43**	
	Annual maintenance	**-$53.26**	
Year 5	**Pruning 180spha**	**-$342.36**	**Total: - $426.05**
	Annual management	**-$30.43**	
	Annual maintenance	**-$53.26**	
Year 6	**Culling 120spha**	**-$114.12**	**Total: - $692.33**
	Pruning 180spha	-$410.84	
	Coppice control	-$60.86	
	Heaping debris	-$22.82	
	Annual management	-$30.43	
	Annual maintenance	-$53.26	

These costs are known to be higher when applied on the ground. However, advice received indicated that these were not always necessary at all sites. As such they have been reduced to be averaged out across the entire program.

Action plan

	2019	2020				2021				2022	
	Oct-Dec	Jan-Mar	Apr–Jun	Jul–Sep	Oct-Dec	Jan-Mar	Apr–Jun	Jul–Sep	Oct-Dec	Jan-Mar	Apr–Jun
Organisation Established											
Founding members/team											
Interim org											
Long term org design/form											
Fundraising											
Projects Identified											
Surveys/network											
Intro Workshops Etc											
Targeted engagement											
Coordinate/implement											
Investment Pathways											
Documentation											
Engagement											
Impact measurement											

Risk Management

The risk management assessment and approach outlined below utilises a traditional risk management approach as outlined in appendix x.

Two risk lists are provided below. The first is specific to the scope of this business plan while the second is an overarching one based on last year's feasibility assessment.

Risk management: 2019 – 2022

The risk categories for the stages covered in this business plan includes the following categories, frequently covered in the start-up phase of an organization:

- Market risk: whether or not a market exists or is accessible
- People risk: risks to finding and attracting the right people
- Financial risk: likelihood and impact of not generating necessary cashflow and investment
- Competitive risk: risk of losing out to competing service, program, or product

Market Risk: The diversified impact/value model being pursued is intended to ensure opportunistic targeting of markets in order to subsidise and support where other markets are slow to be captured.

Financial risk: As with the Market Risk above, the approach of combining mutually reinforcing work across multiple stakeholders is intended to give the program some scope to rely on in-kind support for the initial period if fundraising proves difficult. However, the activities outlined as required steps/activities on pages 21-24 are designed to reduce probability of this risk.

People risk: The program has already been successful in attracting interest from high quality experienced stakeholders**.** This is not considered to be a high risk.

Competitive Risk: See Market Risk above

For other risks such as investment/land owner attraction see the Farm Forestry program risks below

Farm Forestry Risks

Risk Description	Risk Assessment	Mitigation Measures or Risk Management Plan
Natural disasters, bushfires, insect pests and plant pathogens affect forest growth and quality	High	Risk management in accordance with the Code of Practice for Timber Plantations in Western Australia[10] Liaising with relevant authorities and ensuring farmers are provided up to date and relevant information or training.
Slow planting rates not achieving the 40,000ha goal.	Medium	The fundamental factor in lower than expected planting rates is the level of farmer/landowner adoption.

[10] Forest Industries Federation WA Inc (FIFWA), 2014, *Code of Practice for Timber Plantations in Western Australia 2nd Edition*, available at: http://www.fpc.wa.gov.au/file/2292/download

		Ensuring farmers are not presented with a one-size-fits all approach will be key, along with the effective and transparent engagement. The *Guiding Principles* have been developed explicitly to ensure this is at the heart of the program.
Drought	High	The guiding principles designed above require that establishment design and implementation account for forecasted climatic conditions. This includes selection of species based on tolerance to lower rainfall and other environmental issues.
Lower than expected stumpage prices.	Medium	Strategically taking advantage of economies of scale and program investment in value adding is required.
Lower than expected carbon prices.	Low	The financial assessment carried out in the report has taken a conservative approach to the carbon price forecasts. Given the overwhelming shift globally to pricing carbon it is difficult to see it going below those included here. Different planting areas within the program may achieve higher rates than others based on rainfall and other factors. The following is recommended as measure for mitigation: Carbon verification and trading for the program is aggregated across the whole of program to achieve better economies of scale and access wider markets. The incorporation of co-benefits into the program's carbon market value proposition.

Appendices

Appendix 1: Forests for Life - Farm Forestry Guidelines

Guiding Principle 1: Landscape level coordination.

The FFL Farm Forestry Program incorporates landscape level partnerships, goals and information to ensure optimal ecological, social and economic benefit.

Criteria 1.1: Forests for Life coordinates with local landcare, NRM groups, local Noongar representatives, timber industry members, and any other interested or affected groups prior to establishment design.

Guidance:

One of the first steps in the overall program implementation will be to establish appropriate boundaries for planning.

The FFL program is situated within the South West Boojarah, Gnaala Karla Booja and Wagyl Kaip Indigenous Land Use Agreement (ILUA) regions. Further information can be found here: http://www.noongar.org.au/ *and* http://www.swnrmstrategy.org.au/sub-regions/aboriginal-system/

A database of relevant catchment councils, NRM organisations and other Landcare groups can be found here: http://www.swnrmstrategy.org.au/sub-regions/

Criteria 1.2: Sufficient data, information, and expertise is gathered to ensure effective decision making, risk management, and planning.

Criteria 1.3: Achievable landscape level goals are established for the social, environmental and economic impacts of the Farm Forestry and Landcare program.

Guidance:

Environmental landscape level goals could include measures to maintain, conserve, restore and/or enhance:

1) Identified High Conservation Values (HCVs)[11], including:
    i) Species Diversity
    ii) Landscape level ecosystems and mosaics
    iii) Ecosystems and Habitats
    iv) Ecosystem Services
    v) Community Needs
    vi) Cultural Values
2) Hydrological benefits for water bodies and riparian zones;
3) Ecological connectivity, such as wildlife corridors;
4) Soil health and integrity

[11] For more information and guidance on HCVs the *Common Guidance for the HIGH CONSERVATION VALUES* by the HCV Network is valuable resource, available at www.hcvnetwork.org. Participants should also contact to FSC Australia for the most up to date information on Australian approaches www.au.fsc.org

Economic landscape level goals could include:

1) Supporting local industries through provision of products (eg firewood, fence posts).
2) Ensuring utilisation of local service providers, such as nurseries, weed management, silviculture, transport etc.
3) Supporting non-timber-forest products such as honey/bee keeping,
4) Ensuring program alignment and integration with other local land use, such as tourism in the area.

Social landscape level goals could include:

1) Opportunities for co-management, employment and business creation with local Noongar communities.
2) Activities that contribute to community cohesion and support local organisations.
3) Ensuring the welfare of program participants is adequately planned for.

These goals need not be onerous in scope or development. Rather, they present an opportunity to ensure that FFL Farm Forestry and Landcare activities take advantage of opportunities to align with the existing goals and aspirations of local organisations and communities.

Forest Management Plans typically include many of these elements. This is, in essence, an opportunity for community developed and owned landscape level forest management plans.

Criteria 1.4: Economic viability: Consistent with program objectives the range of farm forest products and ecosystem services that could strengthen and diversify the local economy are identified.

Guidance:

Planning and establishment occurs within the prescribed distance from the relevant hubs. The two zones are 100 km radius around Greenbushes and a 90 km radius around Albany. See mapping in Appendix 1.

Species and locations are selected based on the program's recommendations, with input from local experts and stakeholders with a knowledge, understanding, or interest in:

1) Existing and/or previous agroforestry ventures in the area, their success rates and related learnings.
2) Local capacity for processing or value adding, and their likelihood of future viability.
3) Species provenance is selected based on best available information and demonstrated applicability.

Guiding Principle 2: Landowner engagement, benefits and economic viability

Landowners are engaged to ensure they can experience as many of the possible economic, social and environmental benefits.

Criteria 2.1: Landowners should be provided with suitable information for them to fully appraise the risks and opportunities of program participation.

Guidance:

Information for landowners should include:

1) A realistic breakdown of a costs related to the program.
2) The opportunities and benefits arising from program participation including:

a) Increased income from farm forestry
b) Improved sustainability of and increased profitability for current practices on the property
c) Potential access to cheaper finance through demonstrating management approaches that reduce risk
d) Access to funding for environmental works
e) Enhanced property amenity and value
f) Improvements in lifestyle and well-being

3) The range of risks involved, including:
a) Markets
b) Fire
c) Pests and diseases
d) Species invasiveness
e) Effects on other productive land uses
f) Silvicultural prescriptions

Criteria 2.2: Support services in the form of mentoring, training, field days, or any other are to be included in the ongoing costs of the program along with management and maintenance costs.

Criteria 2.3: Species and provenance are selected for timber production on the basis of up to date and locally relevant knowledge and data regarding growth rates, yields, optimal planting configurations, soil types and market opportunities in order to optimise economic return, including opportunities for diversification of end uses and the full utilisation of harvested trees.

Guidance:

Locally relevant information regarding potential growth rates, yields and benefits should include data relevant to the ongoing impacts of climate change on the South West of WA. (see: https://www.agric.wa.gov.au/climate-change/climate-projections-western-australia*)*

1) Species tolerance and performance for current and projected rainfall for the area, including, annual totals and seasonal variances.
2) Species tolerance to frosts.
3) Tolerances to temperature extremes.
4) Tolerance of wind and benefits of planting.

Criteria 2.4: Local processing and distribution capacity and access to ports and markets are taken into consideration for the selection of species and silvicultural methods.

Criteria 2.5: Wherever possible species selection, design and silviculture positively contribute to, or compliment the landowners other activities.

Guiding Principle 3: Protection and restoration of environmental values.

The Organisation shall maintain, conserve and/or restore ecosystem services and environmental values of the Management Unit, and shall avoid, repair or mitigate negative environmental impacts.

Criteria 3.1: Preference for local species and justification for non-local species.

Guidance:

As a general outline for comparison, the following has been taken from the FSC Standards as a list of possible justifications for using non-local species:

1) Growth rates not meeting management objectives;
2) Yields not being viable for the local species;
3) Native species and/or local genotypes becoming extinct;
4) Native species and/or local genotypes not being resistant to disease and pests;
5) Site stresses, such as water;
6) Afforestation of degraded agriculture and range lands;
7) Climate change adaptation; or
8) Capacity to sequester carbon and maintain carbon stocks over time.

Criteria 3.2: Species, silviculture approach and site selection should, where appropriate, contribute to the protection or restoration of natural watercourses, water bodies, riparian zones and their connectivity.

Guidance:

Considerations may include:

1) Slope; soil type and erodibility; seasonality and intensity of flows; extreme weather events; in stream and stream dependent biota.
2) Catchment health, land use and vegetation cover.
3) Catchment water yield, interception and use.
4) Catchment level groundwater assessments.
5) The potential impacts of management activities on nutrient and sediment loads, sediment deposition and erosion, stream temperature, and in-stream and stream dependent biota.
6) Relevant regulations, guidelines and codes of practice.
7) Assessments of hydrological flows.
8) Catchment management plans and objectives.

Criteria 3.3: Species, site location, site arrangement and area size should seek to restore a more balanced hydrological regime that reduces waterlogging and salinisation.

Guidance:

Approach to species selection:

1) Plant deep-rooted species appropriate to soil conditions.
2) Plant salt tolerant and/or waterlogging tolerant trees in discharge areas
3) Plant species that perform well locally.

The following has been adapted from Planting Trees to Reduce Waterlogging and Salinity

There are four factors that can be manipulated when designing revegetation systems for controlling dryland salinity. These are:

1) The area planted with trees as a percentage of the catchment;
2) The arrangement of trees within the catchment (alleys, blocks, wide spaced, etc);
3) The location of trees within the catchment (soil type, recharge or discharge area, low or high in the landscape, etc);
4) The tree species selected (water use, leaf area index, growth habit, etc).

The effectiveness of a revegetation strategy to control salinity will depend on the processes occurring within the catchment as indicated by the:

1) Discharge capacity of the aquifer;
2) Size of the groundwater systems (local, intermediate or regional);
3) Spatial distribution of recharge (localised to particular sites or covering a wide area);
4) Salinity levels in the groundwater;
5) Frequency and timing of recharge events (seasonal or only after particular rainfall events).

For further details regarding the extent of waterlogging and dryland salinity in South West WA: https://www.agric.wa.gov.au/waterlogging/waterlogging-western-australia, https://www.agric.wa.gov.au/soil-salinity/dryland-salinity-extent-and-impact *and* https://www.agric.wa.gov.au/resource-assessment/interactive-groundwater-and-salinity-map-south-west-agricultural-region

Criteria 3.4: Species, silvicultural approach and site selection aim, where appropriate, to support habitat and connectivity, protecting rare species and threatened species and their habitats through design, monitoring and adaptive management.

Guidance:

Landscape level coordination with the FFL Farm Forestry and Landcare program will provide landscape level goals for environmental management. Working with landowners, plantings will seek to allow for a mix of purely production, ecological plantings and/or a mix of both.

The below guidelines are intended for all scenarios. However, where patches are established for purely economic reasons it is up to landowners and supporting experts to work out which aspects of these guidelines may be achievable.

Existing remnant native vegetation is not to be removed for new tree plantings. *The following factors should be considered to ensure optimal outcomes for biodiversity and habitat:*

1) Location - Plantings should complement and/or protect existing native remnant vegetation, exploiting opportunities for adjacency or connectivity.
2) Configuration - Opportunities for the size and shape of the plantings to contribute to biodiversity should be explored. For example, minimising 'edge to area ratio'.
3) Composition - Where possible:
    a) select native species rather than exotic species;
    b) select native species from the local area rather than native trees from different regions;
    c) use more than one tree species;
    d) establish understorey with native shrubs and/or native grasses.
4) Complexity - Guidelines on complexity
    a) Establish understorey with native shrubs.
    b) Retain existing physical structures (logs, stumps, boulders, windrows) in the area being planted.
    c) Include patches of remnant vegetation within a planting.
    d) Retain remnant trees in or near the area being planted.
    e) Plant trees with variable spacings and leave gaps and spaces.
    f) Leave prunings on the ground.
    g) Add complexity to the stand by removing trees randomly.
    h) Add complexity to the stand by opening up irregular spaces when thinning.
    i) Add nest boxes and artificial substrates such as woodpiles.
    j) When harvesting, leave some trees standing to allow for the presence of older and larger trees through successive rotations (to form hollows and provide other structure that serve as habitat).
    k) When harvesting, leave debris, branches and some trunks to add structural complexity in successive rotations.
5) Management -
    a) Establish a routine that allows the periodic assessment of how management is enhancing biodiversity on and around a plantation. It is important to be realistic about what can be achieved and be consistent over time.

b) Assess how effective each management approach is compared to another.
c) Implement programs (where possible, as a group of farms) to control environmental weeds and pests.
d) Think about innovative approaches to weed control, such as using native understory to out compete weeds.

Criteria 3.5: Carbon - species selection and silviculture should preference opportunities for optimal carbon sequestration and storage.

Criteria 3.6: Species and silvicultural methods selected are appropriate to current and forecasted environmental conditions, including rainfall, soil, and other land uses.

***Guidance*:**

Rainfall:

The geographic scope of the FFL farm forestry program has a significant range in annual rainfall, from approximately 400mm to 1,200mm. Climate change has produced a drying effect in the region over the past 40 years, and this is projected to continue.

Soil:

Farms across the south west typically have a mix/mosaic of soils, involving sands, loams, clays and laterites. Both surface and sub-surface soils and their relative depth, and depth to any hardpans or rock, are critical to tree growth. Mechanical augering to determine these factors is important.

Appendix 2: Hardwood Timber Opportunities

International Market Trends and Opportunities

Worldwide, the forest and wood products industry is in a state of transition. The wood and pulp and paper industries in Scandinavia and North America cannot compete with the emerging economies of Latin America and Asia, which have modern plants and wood and labour costs advantages. There is a need to innovate and redefine business models and culture and shift from timber and pulp processing towards energy production and bio-based products [12]

The global demand for forest products such as paper and timber is expected to grow, but this is mainly fuelled by the growth in China, India, Brazil and other developing countries. [13] In Europe and North America, the digitalization of media has decreased the need for paper, but in the developing countries the demand is expected to grow along with the GDP. However, the growth in 'traditional' product domains is modest compared to new applications. According to the Forest Products Association of Canada (2011), the market potential for new bioproducts and biomass-based energy is predicted to grow from AUD $680 billion USD to $1800 billion USD by the year 2030, whereas the growth in traditional forestry products is expected to be more modest from AUD$680 billion USD to AUD$720 billion USD.

China – 'Too Big to Ignore'

Sawnwood now amounts to 37 per cent of China's total timber product imports. China imported an all-time high of 45 million m3 RWE of sawnwood in 2016 (valued at US$8.1 billion) – a growth of 420 per cent by volume over the past decade, and by 19 per cent in the past year alone. Russia and Canada are China's largest suppliers of softwood sawnwood, while Canada and the US supply the majority of hardwood sawnwood.

[12] Näyhä, A. 2012a. Towards bioeconomy: A three-phase Delphi study on forest biorefinery diffusion in Scandinavia and North America. University of Jyväskylä.
[13] Jonsson, R. 2015. Trends and Possible Future Developments in Global Forest-Product Markets – Implications for the Swedish Forest Sector. *Forests* 2(1), pp. 147-167.

Figure iv: China Hardwood Log & Sawn Wood Imports - Once a net hardwood log importer China now imports more hardwood sawn wood than logs

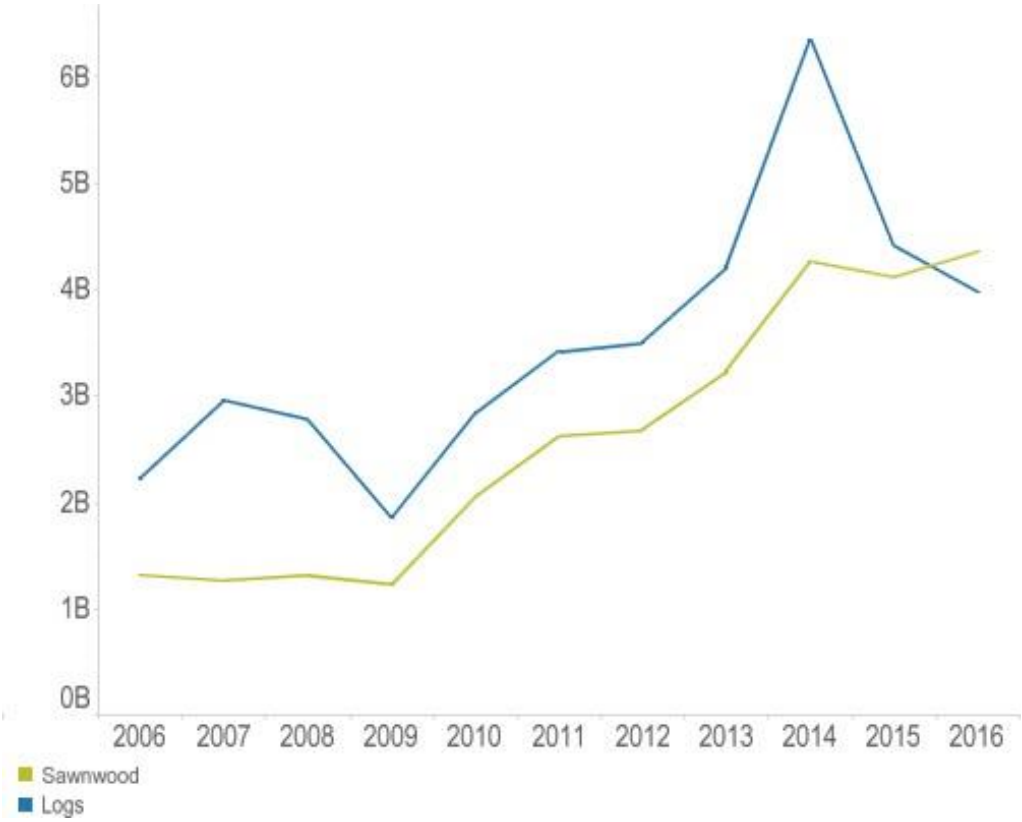
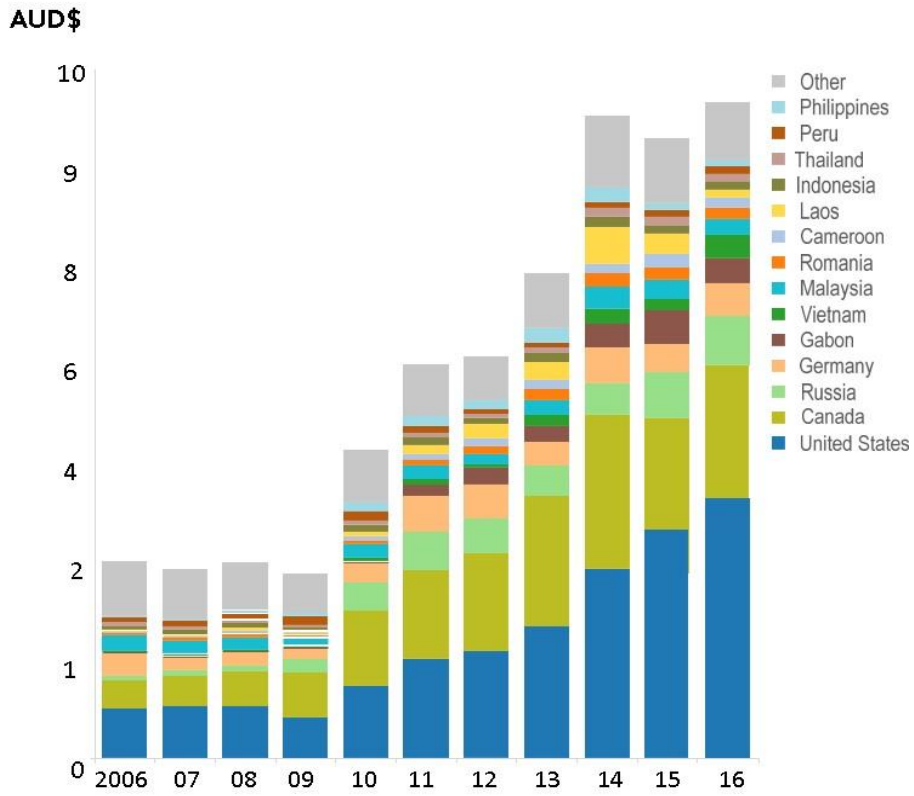


Figure v: Chinese Hardwood Sawnwood Imports by Source Country (2006-2016)



Source: Forest Trends Global: China's Forest Product Imports and Export 2006-2016:

The three countries with the highest hardwood sawn wood export value to China; are 1, the USA with over $2Billion in 2016, Canada $1.2 Billion, and Russia $400 million do not illegally log, and their exports carry FSC or some level of certification.

This trend towards high value certified timber imports is driven by China's re-export of processed timber products, panels, furniture and others to those same developed countries that require imported wood products be produced by certified wood.

In contrast to the highly successful export performance of countries with a similar cost of product structures to Australia. In 2016 exported only AUS$ 19 million worth of hardwood sawnwood to China in 2016 and has never surpassed AUS23 of hardwood sawn wood exports to China since 1993.

Drivers for wood consumption in China

High-level drivers continue to create demand for wood in the China market—including urbanisation, the increasing use of engineered wood in Chinese high rise construction, the growing middle class, and escalating environmental concerns are underpinning. Year-over-year sawlog imports in China increased by 21% in 2017.

The Chinese government has given official support to different initiatives and concepts that may affect the construction industry and positively affect the use of wood in the medium term. During 2016/17 the following policy announcements were made:

- The State Forest Agency announced an extension of commercial logging bans to all-natural forests which will support increased lumber imports.
- The Minister responsible for the national Ministry of Housing and Urban-Rural Development (MOHURD) publicly advocated for wood construction.
- The 2016 Guideline on Promotion of Prefabricated Construction included wood construction.
- The 13th Five-Year Action Plan for Prefabricated Construction included a special focus on mid- to high-rise wood construction.
- The 13th Five-Year Plan for the Construction Industry encouraged the adoption of modern wood construction for tourism/resort applications and applications in rural areas.
- The Technical Standard for Multi-Story and High-Rise Timber Buildings, which took effect in October 2017, provides for wood structures in tier-two and tier-three cities to have a height allowance of five-storeys.
- A tall wood building code was introduced at the national level and took effect on October 1, 2017. [14]

Attractive market segments

1-The mainstream construction industry. There is an increased priority on finding applications for wood use in hybrid construction (e.g., using concrete and steel combined with wood in mid- to high-rise buildings). Also, finding ways to use wood to support construction industrialisation (prefabrication) and expanding the green building. Potential applications include substituting wood for other materials in partition walls, floors, exterior walls and in added storeys.

2-Hybrid and heavy timber/glulam construction represent another growth opportunity. A large number of projects using these products have been completed over the previous five years, and public appreciation of

[14] 2018, McKinsey and Company – Future Challenges & Opportunities in the Global Forest Products Markets

the natural beauty and aesthetic appeal of wood in structural and visible applications in larger buildings has worked to increase the consumption of wood in these projects.

3-Cross-laminated timber (CLT)—CLT continues to capture the imagination of architects, owners and industry in China. Chinese imports of CLT in 2017 was estimated at 450,000 m3, of which about 90% was produced in Europe.

David Brand, Managing Director New Forests Australia, March 2012 – Speaking of the opportunities for hardwood processing exports. At the time the AUD was $10.5 to US$1

"Now with the AUD back to its long-term historical average, Australian hardwood saw logs and processed timber are significantly more competitive making them cost-competitive with US, Canadian and even Russian exports to China.

The other approach is to develop domestic hardwood lumber or veneer capacity and engineered wood products. We sent 190 containers of blue gum to China last year; the Chinese said that they would happily take it and as much more as we could provide. Blue Gum is valued for its fibre density making it an ideal cost effective (at the current Dollar to RMB exchange rate) hardwood for use in Engineered Wood Products – Cross Laminated Timer, Glulam among others.

It would be interesting to see if there would be a way to establish hardwood processing alongside some of our softwood mills or put some hardwood processing in some of the areas further from Ports like the area midway between Albany and Bunbury in WA. Collective industry development work is needed plantations growers can encourage processing by offering long-term resource security."

2018-NSW Case Study – High-Quality Veneer logs harvested from a single farm exported to China

NSW dairy farmer Rowan Reid established a 300 Ha Eucalypt forest on degraded land on his dairy farm. Sawing studies suggested selective harvesting was viable when the tree diameter was over 55cm DBH. We are now regularly harvesting high-quality eucalypt logs from the Landcare planting for export to sent to China for veneer production with the product returned to Australia for sale

Source – 2017 Agroforestry Australia submission to the Forest Industry Advisory Council Discussion Paper Meeting Future Dem

Upstream High Value Engineered Wood Products

Advances in product development and manufacturing technology which have led to the introduction of several new engineered wood products (EWPs). EWPs are high-tech, high-performance products that offer consistency of structural performance, dimensional stability and freedom from defects, making it possible to integrate them successfully with other construction materials on large and complex projects.

Environmentally, the benefits of EWPs are significant. All engineered wood products utilise small dimension lumber, veneers or wood fibres that help to maximize the potential of the worlds' arguably most renewable construction material.[15]

[15] 2018, British Columbia, Strategic Product Plan 2018-2022

The broader EWP category includes products such as cross-laminated timber (CLT), nailed-laminated timber (NLT), glued-laminated timber (GLT), laminated strand lumber (LSL), laminated veneer lumber (LVL) and other large-dimensioned structural composite lumber (SCL) products.

They can be formed by mechanically fastening and/or bonding with adhesive smaller wood components such as dimension lumber or wood veneers, strands or fibres to form large pre-fabricated wood elements used as beams, columns, arches, walls, floors and roofs. Mass timber products have sufficient volume and cross-sectional dimensions to offer significant benefits in terms of fire, acoustics and structural performance, in addition to providing construction efficiency.

There are several positive drivers affecting the engineered wood products market in Australia including;

- Government policies and Green building Council Australia are actively promoting sustainability in the construction business (GBCA 2013)
- Australia is currently a leading player in the green building arena (GRESB 2012)
- Sustainability accreditation programs (e.g. LEED and Green Star) are in use. (GBCA 2013)
- The need to reduce greenhouse gas emissions
- Renovation of existing homes drive the demand for engineered wood products

New residential construction

Of all engineered product types and their use, by far the fastest growing application is in the use of cross-laminated timber for the construction of high structural load bearing applications, such as high-rise residential and office buildings.

Hardwood Cross Laminated Timber (CLT) – Australian Case Studies

High rise timber buildings are now a reality thanks to Cross Laminated Timber (CLT). The Forte building in Melbourne, Australia at 10 storeys and just over 32 metres, it was the world's tallest modern wooden building. The Forte Building has since been surpassed by the University of British Columbia's Brock Commons Tallwood House at 18 storeys, or 53 metres, and completed in 2016

Case Study1– Hermal Group to Build a Hardwood CLT Mill in Tasmania

April 18th, 2018 Australian Financial Review - Spurred by fast-growing demand in Australian and internationally for cross-laminated structural timber, for building construction; the Hermal Group is building a $190 million hardwood sawmill and hardwood cross-laminated timber complex in Burnie, Tasmania.

The group has invested in research to develop methods utilising juvenile plantation hardwood, specifically eucalyptus nitens, as a kiln-dried lumber in value-add products manufacturing.
Its' objective is to convert juvenile eucalyptus into the high-value structural timber to take advantage of multi-story mass timber construction. E. Nitens can attain a higher fibre content in a short period.

Moreover, the firm's research has shown the use of juvenile plantation hardwood enhances the structural properties of the end products compared to pine.

The Tasmanian Government has committed $13 million in grant and training support funding for the project. Once complete, the facility will employ 200 FTEs. The facility will process more than 300,000 m3 of sustainable plantation hardwood logs each year.

Forestry Tasmania grows two main eucalyptus species, eucalyptus globulus (Tasmanian blue gum) and eucalyptus nitens (shining gum). Both species have been selected for high growth rates and desirable

Appendix 3: Carbon Opportunities

The 2018 FFL Feasibility Study along with more recent conversations and developments has identified two main pathways for accessing carbon markets: Australia's Emissions Reduction Fund (ERF)

Emissions Reduction Fund:

The Australian Federal Government's Emissions Reduction Fund (ERF) was created in 2014 to provide incentives for the adoption of practices and technologies aimed at reducing emissions. Eligible activities earn Australian Carbon Credit Units (ACCUs).

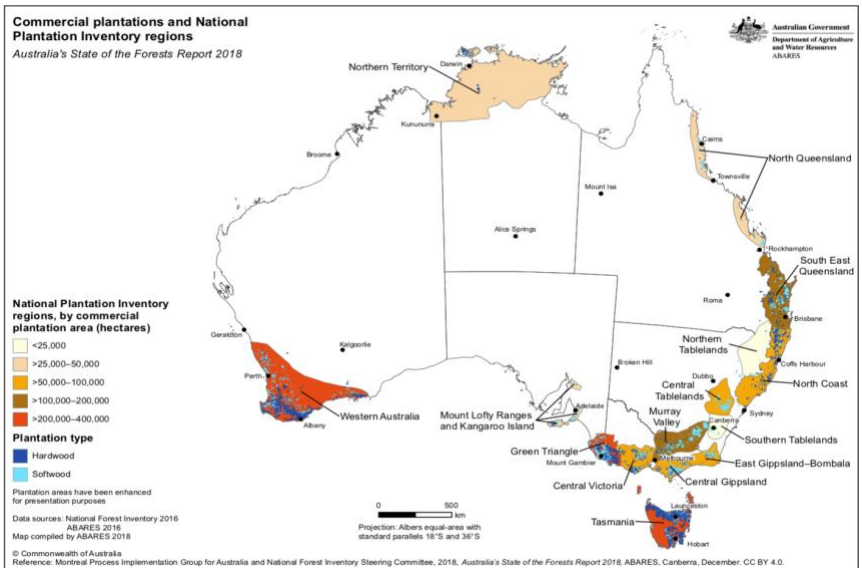
The Emissions Reduction Fund provides incentives for Australian businesses, farmers, land holders and others to adopt new practices and technologies to reduce Australia's greenhouse gas emissions. In 2017 the *Carbon Credits (Carbon Farming Initiative - Plantation Forestry) Methodology Determination* was released opening up the possibility for eligible forestry to access the process. Operations in areas above 600mm average annual rainfall are not eligible. However, there appears to room to move here.

> *On 25 February 2019 the Australian Government announced the Climate Solutions Fund, providing an additional $2 billion to continue the momentum towards reaching Australia's 2030 emissions reduction target. This will bring the total investment in the Emissions Reduction Fund to $4.55 billion and deliver around another 100 million tonnes of emissions reductions by 2030.16*

Emissions Reduction Fund Eligibility

Plantations

Projects can only be conducted within regions defined under the Australian Government's National Plantation Inventory. **Yes**



Projects to establish new plantations must be on land where there has been no plantation forest for the previous seven years. Land exists, however, the 7 year rule needs to established on a case by case basis.

[16] https://www.environment.gov.au/climate-change/government/emissions-reduction-fund/about

Certain types of plantation forest projects likely to occur in the ordinary course of events (African mahogany in the Northern Territory National Plantation Inventory region and Indian sandalwood in any region) are not eligible. Yes

Projects must not be an excluded offsets project as defined in sections 3.36 and 3.37 of the Carbon Credits (Carbon Farming Initiative) Regulations 2011. For example, projects in locations where average annual rainfall exceeds 600 millimetres need to meet conditions designed to help manage the effects of commercial tree plantings on water availability. Projects can meet the conditions if they either:

- have a suitable water access entitlement (will require case by case review)
- are in a region where the Department of Agriculture determines the relevant state or territory government is adequately implementing National Water Initiative commitments to manage water interception by plantations are in a region where a water access entitlement cannot be obtained, and they can be demonstrated (supported by advice from a state or territory agency) to not have a material impact on water availability or water access entitlements (confidential discussion has indicated this is possible)
- can be shown to help manage dryland salinity (yes, would need written support from Water Corp on this)

Farm Forestry

Projects need to meet the following requirements to be eligible under this method:

Trees must be planted and grown as either a permanent planting (no harvest) or a farm forestry plantation (commercial harvesting is permitted). Both of these are potentially applicable. Greater ACCUs may be available for permanent plantings.

The project land must have been predominantly used for grazing or cropping for at least five years prior to the project commencing. Yes

The plantings must have the potential to reach forest cover (20 per cent crown cover consisting of trees that are at least two metres tall). The silviculture method that formed the basis of the FFL report (2018) would deliver this.

Where annual rainfall is greater than 400 mm, projects must be no bigger than 100 hectares or 30 per cent of farm area, whichever is smaller. Case by case

Where annual rainfall is less than 400 mm, projects must no bigger than 300 hectares or 30 per cent of farm area, whichever is smaller. Case by case

If the land has been lawfully cleared in the past, it must have occurred more than seven years ago, or five years ago if the land was cleared by previous holders. As above

Projects cannot be established on land that has been cleared unlawfully. Case by case

Gold Standard

The Gold Standard is a voluntary market-based approach to certifying and verifying carbon credits to ensure their validity and impact:

"A collaborative approach is required to catalyse more ambitious action for climate security and sustainable development. Our Gold Standard Platform aims to mobilize partnerships and facilitate structured programmes to create concrete outcomes. Join the platform and convene with corporate leaders and stakeholders to pioneer innovative solutions that help meet the ambition of the Paris Agreement and the Sustainable Development Goals."[17]

The Gold Standard approach contains several different standards covering methodologies, co-benefits, market claims, and auditing. These include standards and procedures for afforestation and reforestation activities. However, in 2017 land use and forest focused projects only made up only 1% of Gold Standard projects. The scope of eligible projects includes:

- Planting trees
- Single-species plantations
- All silvicultural systems. Such as:
    - Conservation forests (no use of timber)
    - Forests with selective harvesting
    - Rotation forestry
- Agroforestry or silvopasture

Carbon Neutral

In Australia the first Gold Standard verified project in in Western Australia is a reforestation project in the wheatbelt covering over 10,000ha delivering a range of benefits, including[1]:

- increased wildlife habitat and connectivity
- carbon removal (sequestration) and climate change action,
- improved soil erosion control, and
- provision of opportunities for
    - scientific research,
    - eco-tourism and
    - community education.

The project is managed by WA based organization *Carbon Neutral:*

Carbon Neutral services include carbon accounting and sustainability consulting, energy reduction strategies, carbon calculators, carbon neutral certification, carbon offsets, vehicle fleet offsetting, biodiverse reforestation projects, our Plant-a-Tree Program, carbon neutral events, green marketing support, workshops and seminars (from their website).

[17] https://www.goldstandard.org/get-involved/join-platform

Appendix 4: Indicative Species Mix

A mix of *Eucalyptus saligna, Eucalyptus. cladocalyx, Eucalyptus tricarpa and Corymbia maculata* have been chosen for the purposes of modelling. The silviculture approach undertaken in the modelling is based on demonstrated approaches, as outlined in the financial feasibility report.

Sydney Blue Gum - *Eucalyptus saligna*

Based on available information and discussions with experts, *E. Saligna* has been included as a recommended species. It has been included in the modelling for growing in the high and medium rainfall zones. **(Images:** https://en.wikipedia.org/wiki/Eucalyptus_saligna *& http://www.floorboardsonline.com.au/solid-sydney-blue-gum.html)*

Tasmanian Blue gum - *Eucalyptus globulus*

While we have not included *E. Globulus* in the modelling we do consider this a potential species to be included in the program. Its emerging use in laminated timber presents and opportunity. (Images: https://en.wikipedia.org/wiki/Eucalyptus_globulus & https://www.wood-database.com/blue-gum/)

Sugar Gum - *Eucalyptus. Cladocalyx*

Based on available information and discussions with experts, *E. Cladocalyx* has been included as a recommended species. It has been included in the modelling for growing in the low rainfall zones. (Images: https://www.outdoordesign.com.au/news-info/sugar-gum-timber-a-sweet-alternative/6292.htm & https://selectree.calpoly.edu/tree-detail/eucalyptus-cladocalyx)

Red Ironbark - *Eucalyptus. tricarpa*

Based on available information and discussions with experts, *E. Tricarpa* has been included as a recommended species. It has been included in the modelling for growing in the low rainfall zone (Images: https://www.woodsolutions.com.au/wood-species/ironbark-red & https://castlemaineflora.org.au/pic/e/eucal/eutri/eutri.htm)

Spotted Gum - *Corymbia maculata*

Based on available information and discussions with experts, *C. Maculata* has been included as a recommended species. It has been included in the modelling for growing in the high and medium rainfall zones. (Images: https://www.daleysfruit.com.au/buy/corymbia-maculata-spotted-gum-tree.htm & http://www.ddfloors.com.au/flooring-range/spotted-gum-eucalyptus-maculata)

Based on a review of the different species characteristics (see species matrix below) the following mix is currently the basis for modelling:

	Total Ha
Eucalyptus Saligna, 800-1000 mm	1,333
Eucalyptus Saligna, 600-800 mm	4,000
Corymbia Maculata, 800-1000 mm	1,333
Corymbia Maculata, 600-800 mm	4,000
Eucalyptus Cladocalyx, < 600 mm	5,333
Eucalyptus tricarpa, < 600 mm	5,333
Total Manjimup:	**21,333**
Eucalyptus Saligna, 800-1000 mm	0
Eucalyptus Saligna, 600-800 mm	4,000
Corymbia Maculata, 800-1000 mm	0
Corymbia Maculata, 600-800 mm	4,000
Eucalyptus Cladocalyx, < 600 mm	5,333
Eucalyptus tricarpa, < 600 mm	5,333
Total Albany:	**18,667**

Species Details Matrix

	Sydney Blue Gum *Eucalyptus saligna*[18]	***Tasmanian Blue gum*** *Eucalyptus globulus labill*	***Sugar Gum*** *E. cladocalyx*	***Red Ironbark*** *E. tricarpa*	***Spotted Gum*** *Corymbia maculata*

[18] http://www.florabank.org.au/lucid/key/Species%20Navigator/Media/Html/Eucalyptus_saligna.htm

	Sydney Blue Gum *Eucalyptus saligna*[18]	***Tasmanian Blue gum*** *Eucalyptus globulus labill*	***Sugar Gum*** *E. cladocalyx*	***Red Ironbark*** *E. tricarpa*	***Spotted Gum*** *Corymbia maculata*
Farm related risks: (fires, pests, species invasiveness, and effect on farming)	Considered invasive in other areas. TBC for WA	Tasmanian blue gum (Eucalyptus globulus) has also spread from plantings into native eucalypt woodlands, wetlands and riverine flats in the southern parts of Western Australia.	Foliage: cases of stock poisoning have been reported Weediness: high potential based on its biology and considered invasive.		
Rainfall Zones	700-2300 mm	600-1500 mm	400-650mm (Depending on provenance)	550-1000 mm	**600-1700 mm**
Growth rates and Yields	Good growth from > 700mm RF, fast growth above 900mm Best performer at 550mm trial, behind viminalis and close to globulus at 1200mm. 40cm DBHUB in medium to high rainfall "will produce consistent log quality across a range of sites in Western Australia"	Fast growing above 600mm RF. Generally planted as a short rotation species. Best performing Eucalypt in trial above 900mm. Performs well at 1200mm trial (closest to saligna)	Evidence of good performance in Kangaroo Island trials. Good performance at 450-500mm RF[19]	Slow to medium growth rate.	**Rainfall** Moderately drought tolerant, 600-900mm **Yield** Longer rotation required
Tolerance Temperature/Climate extremes and variability	Drought: known to be drought sensitive or known to be moderately drought tolerant Fire: regenerates foliage after damaging fire Frost: tolerates frosts in the 0° to -5°C range or tolerates heavy frosts colder than -5°C Wind: tolerates salt-laden coastal winds	Drought: known to be drought sensitive Fire: regenerates foliage after damaging fire Frost: tolerates frosts in the 0° to -5°C range or tolerates heavy frosts colder than -5°C Wind: tolerates salt-laden coastal winds	Drought: known to be moderately drought tolerant or known to be tolerant of protracted droughts Frost: tolerates frosts in the 0° to -5°C range Wind: known or has attributes to make an excellent windbreak or tolerates salt-laden coastal winds	Drought: known to be tolerant of protracted droughts Fire: regenerates foliage after damaging fire Frost: tolerates frosts in the 0° to -5°C range	Drought: known to be moderately drought tolerant Fire: regenerates foliage after damaging fire Frost: tolerates frosts in the 0° to -5°C range Wind: tolerates salt-laden coastal winds

19 http://pir.sa.gov.au/__data/assets/pdf_file/0007/234088/Kangaroo_Island_Species_Performance_Report_2009.pdf

	Sydney Blue Gum *Eucalyptus saligna*[18]	***Tasmanian Blue gum*** *Eucalyptus globulus labill*	***Sugar Gum*** *E. cladocalyx*	***Red Ironbark*** *E. tricarpa*	***Spotted Gum*** *Corymbia maculata*
Diversification of end products	Sydney blue gum timber is an important general construction timber, particularly in New South Wales. It is widely used for flooring, cladding, fencing, panelling and boat building. Other common applications include landscaping (as garden sleepers), furniture and joinery.	Utility lumber, pallets, paper (pulpwood), fence posts, flooring, veneer, and turned objects.	It is particularly suited to situations requiring high strength where appearance is also important, such as flooring and joinery. Sugar gum polishes to a superb finish making it highly sought after for decorative applications. The timber can exhibit desirable grain features such as a bee's wing and fiddle-back figure, suitable for the production of high quality furniture and flooring. Its durability also makes it a valuable timber for exterior applications such as cladding, decking, outdoor furniture and pickets.	Red Ironbark is an excellent timber and highly regarded for almost every purpose from firewood and landscaping through to high value appearance grade timber.[20]	Spotted gum is used in engineering applications such as wharf and bridge construction, railway sleepers, cross-arms and mining timbers. It is suitable for a range of building applications, such as posts and poles, framing, flooring, lining, decking and cladding. Spotted gum is also used in the manufacture of veneer and plywood. Other applications include boatbuilding, tool and implement handles, polo sticks and diving boards. Compared to other Australian hardwoods, spotted gum is a minimal staining timber as it is less prone to bleed-through of tannins than other species. Spotted gum is also a good timber for carving and woodturning.
Plant deep-rooted species	Root system: moderate to deep	Root system: moderate to deep	Root system: moderate to deep	Root system: moderate to deep or shallow and spreading	Root system: moderate to deep, shallow and spreading

20

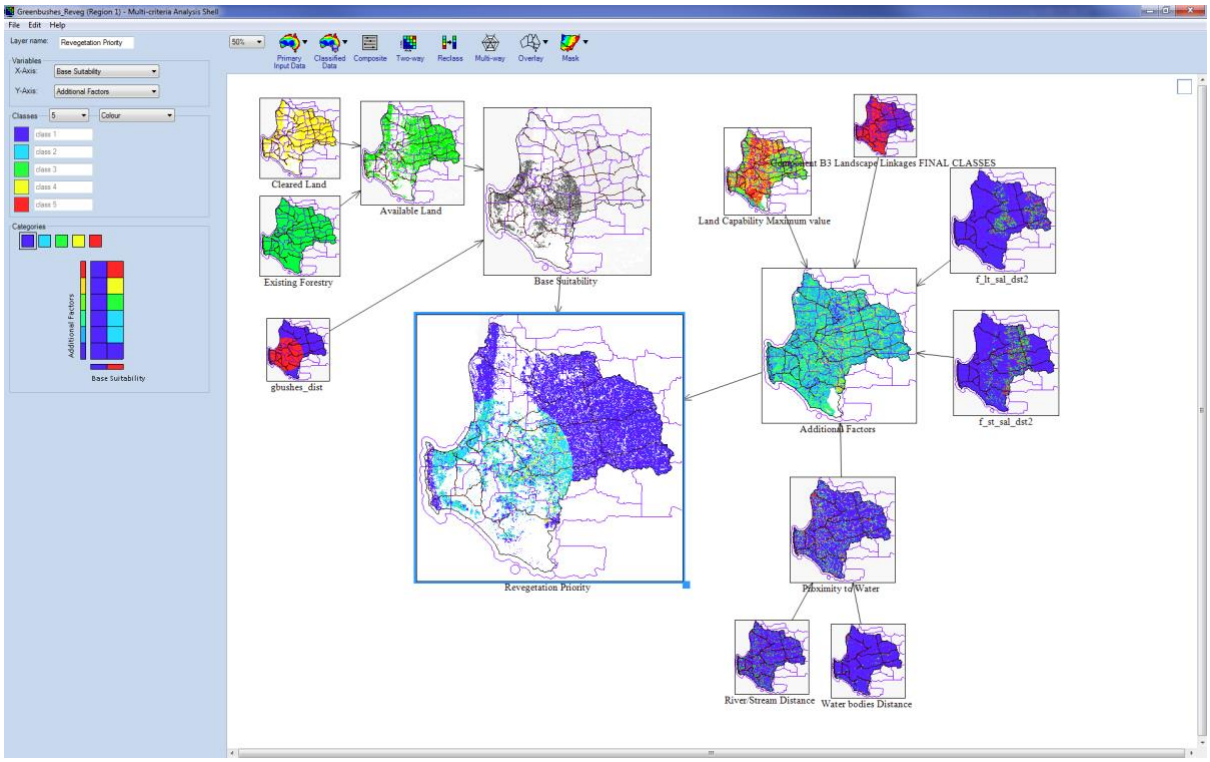
	Sydney Blue Gum *Eucalyptus saligna*[18]	***Tasmanian Blue gum*** *Eucalyptus globulus labill*	***Sugar Gum*** *E. cladocalyx*	***Red Ironbark*** *E. tricarpa*	***Spotted Gum*** *Corymbia maculata*
Appropriate to soil conditions.[21]	Soil factors Texture: clay loam, heavy clay (greater than 50% clay), light to medium clay (35-50% clay), loam, sandy loam, sandy clay loam or sand	Soil factors Texture: clay loam, light to medium clay (35-50% clay) or loam, sandy loam, sandy clay loam	Soil factors Texture: clay loam, duplex texture contrast soils, heavy clay (greater than 50% clay), light to medium clay (35-50% clay), loam, sandy loam, sandy clay loam or sand	Soil factors Texture: clay loam, heavy clay (greater than 50% clay), light to medium clay (35-50% clay), loam, sandy loam, sandy clay loam or sand	Soil factors Texture: clay loam, heavy clay (greater than 50% clay), light to medium clay (35-50% clay), loam, sandy loam, sandy clay loam or sand
Plant salt tolerant and/or waterlogging tolerant trees in discharge areas.	Salinity: slightly to moderately saline or non-saline Soil waterlogging tolerance: nil - sensitive to waterlogged soils. Does not do well on waterlogged sites. Tolerance of adverse soils Extremes in pH: acidity Extremes in texture: clayey Salinity: nil - sensitive to saline soils or slight (2-4 dS m-1)	Salinity: non-saline Soil waterlogging tolerance: nil - sensitive to waterlogged soils Tolerance of adverse soils Extremes in pH: acidity Salinity: nil - sensitive to saline soils or slight (2-4 dS m-1)	Salinity: slightly to moderately saline or non-saline Soil waterlogging tolerance: nil - sensitive to waterlogged soils Tolerance of adverse soils Extremes in pH: acidity or alkalinity Salinity: moderate (-8 dS m-1) or slight (2-4 dS m-1)	Salinity: slightly to moderately saline or non-saline Soil waterlogging tolerance: nil - sensitive to waterlogged soils Tolerance of adverse soils Extremes in pH: alkalinity Extremes in texture: clayey or sand Salinity: nil - sensitive to saline soils or slight (2-4 dS m-1)	Salinity: non-saline Soil waterlogging tolerance: nil - sensitive to waterlogged soils Tolerance of adverse soils Extremes in pH: acidity or alkalinity Extremes in texture: clayey or sand Salinity: nil - sensitive to saline soils or slight (2-4 dS m-1)
3.6 Carbon	Carbon sequestration potential: high	Carbon sequestration potential: high	Carbon sequestration potential: moderate	Carbon sequestration potential: moderate to high	Carbon sequestration potential: high

[21] http://www.soilquality.org.au/au/wa/wa-south-west

Appendix 5: Land Identification

- Farm forestry AND revegetation
- One approach to identify places where farm forestry could be integrated with farming
- A modified approach to identify places where re-vegetation could assist environmental values.

Multi-criteria spatial analysis software – MCAS-S – to combine spatial criteria (spatial datasets)



Based on:

- Data in the public domain
- Some data is slightly dated (eg 2012)

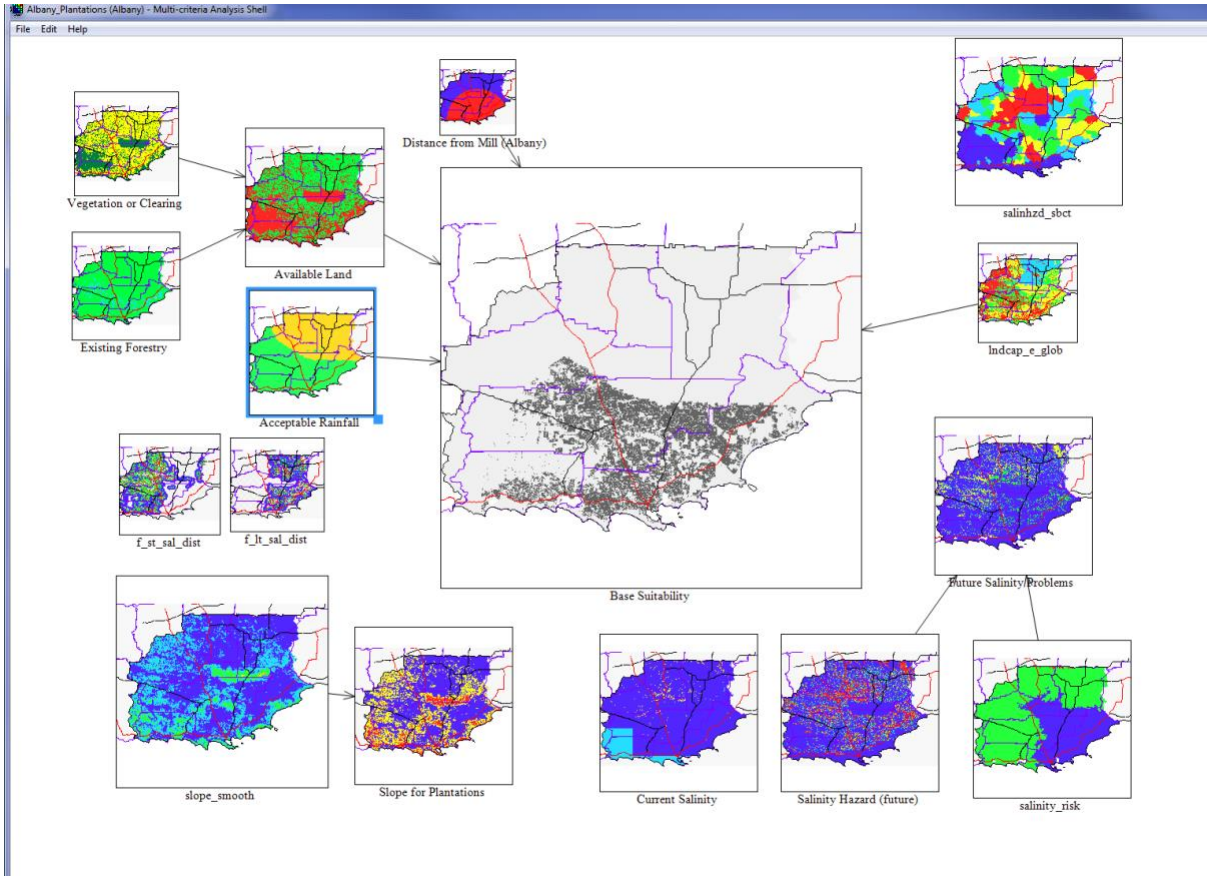
Base suitability: Four Basic Criteria

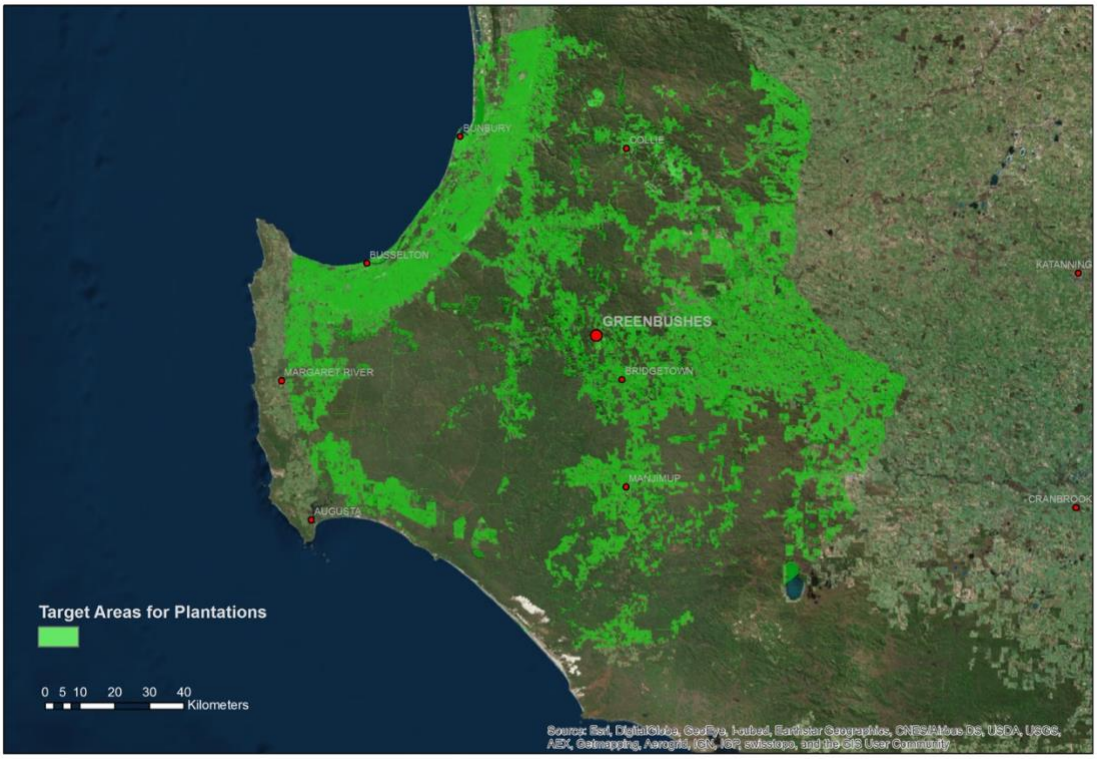
"Suitability" for both farm forestry and revegetation

- Only on cleared land
- Not on existing private or public plantation or farm forestry
- Within 90km – 100km of a future processing centre (Albany or Greenbushes)
- Acceptable Rainfall (projected >450mm annual rainfall by 2030 under a severe future climate)

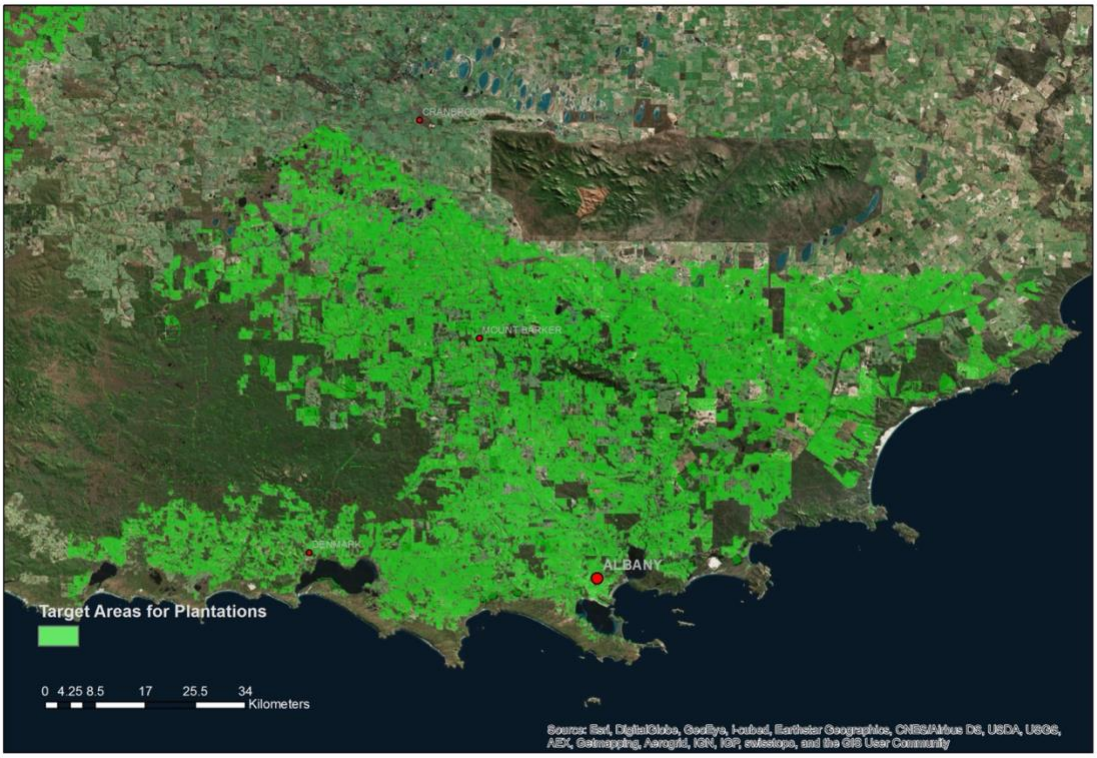
Priority: possible additional Criteria

- Farm Forestry
  - In sub-catchments where salinity is likely to be an issue in future
  - In areas where farm forestry will do well
  - On properties of a reasonable minimum size
- Revegetation
  - Not on the best farming land
  - In areas where salinity is likely to be an issue in future
  - Along landscape linkages
  - Near water bodies


Albany_Plantations (Albany) - Multi-criteria Analysis Shell
File Edit Help
Vegetation or Clearing
Distance from Mill (Albany)
salinhzd_sbct
Available Land
Existing Forestry
Acceptable Rainfall
lndcap_e_glob
f_st_sal_dist
f_lt_sal_dist
Base Suitability
Future Salinity Problems
slope_smooth
Slope for Plantations
Current Salinity
Salinity Hazard (future)
salinity_risk

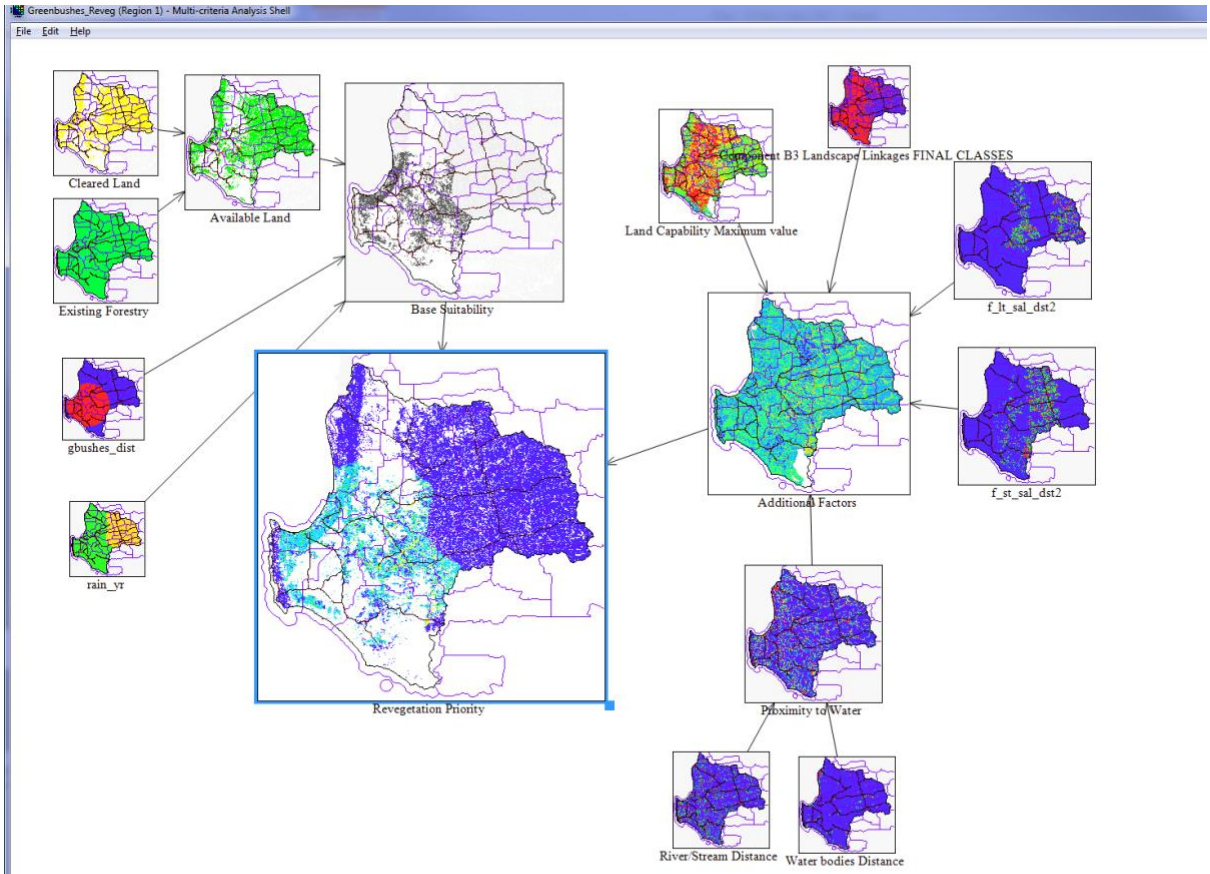

BUNBURY
COLLIE
BUSSELTON
GREENBUSHES
MARGARET RIVER
BRIDGETOWN
MANJIMUP
AUGUSTA
KATANNING
CRANBROOK
Target Areas for Plantations
0 5 10 20 30 40
Kilometers

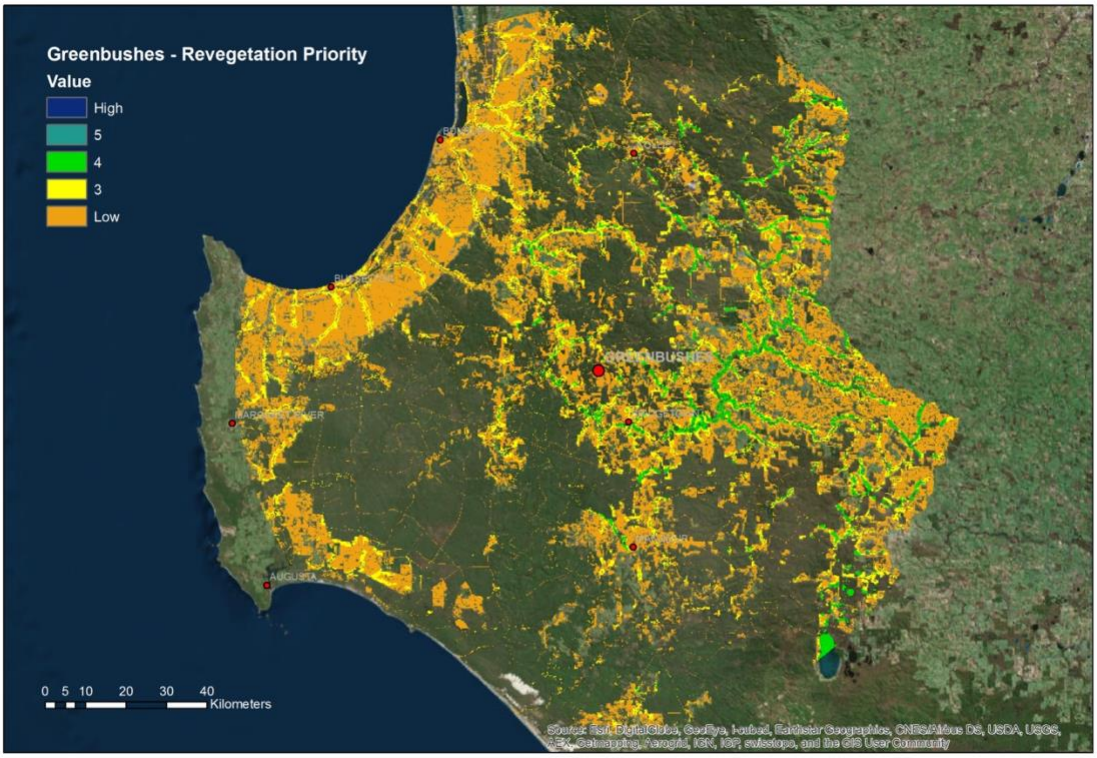
Region - LGA	Fails Base Criteria	Suitable (ha)
Augusta-Margaret River (S	35,462	44,990
Boyup Brook (S)	18,172	138,592
Bridgetown-Greenbushes (S	7,519	52,977
Bunbury (C)	47	4,869
Busselton (S)	15,744	68,716
Capel (S)	1,186	35,358
Collie (S)	1,705	26,983
Cranbrook (S)	8,677	8,031
Dardanup (S)	1,495	25,649
Donnybrook-Balingup (S)	9,608	57,828
Harvey (S)	31,804	52,140
Kojonup (S)	133,610	40,998
Manjimup (S)	27,661	83,207
Nannup (S)	8,218	39,982
West Arthur (S)	141,841	53,207
Williams (S)	137,912	11,052
		744,579

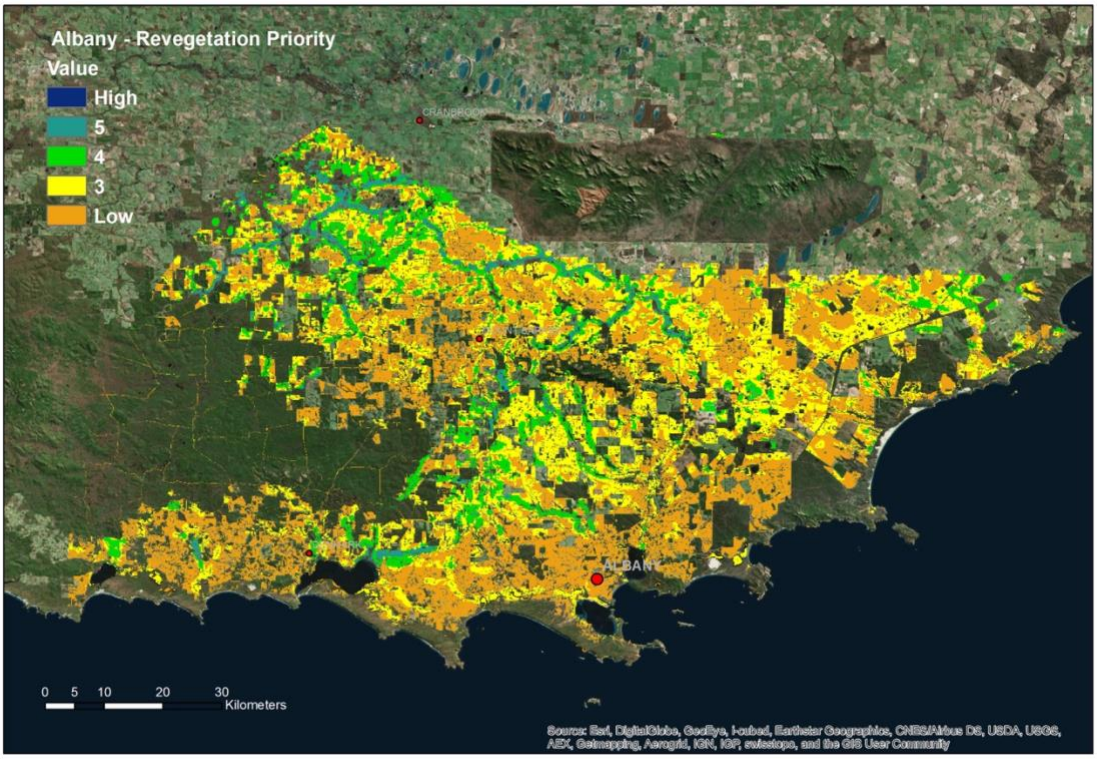


Region - LGA	Fails Base Criteria	Suitable (ha)
Albany (C)	263,699	160,333
Boyup Brook (S)	536	-
Broomehill-Tambellup	259,832	-
Cranbrook (S)	307,809	18,075
Denmark (S)	152,257	30,915
Gnowangerup (S)	418,669	75
Jerramungup (S)	17,716	-
Kojonup (S)	64,980	-
Manjimup (S)	38,004	-

Plantagenet (S)	312,077	175,503
	1,835,579	384,901




Greenbushes - Revegetation Priority
Value
High
5
4
3
Low
0 5 10 20 30 40
Kilometers
Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community


Albany - Revegetation Priority
Value
High
5
4
3
Low
ALBANY
0 5 10 20 30
Kilometers
Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Appendix 6: Co-operative Structure Discussion

The following paper has been prepared to generate feedback and discussion for the purposes of designing the form and operations of the Forests for Life Farm Forestry and Landcare program.

This paper maps out some of the considerations that will go into the design of our long-term structure. As community led collaboration is an important part of FFL's long-term philosophy it is important that the structure of the organisation and the way it delivers its core functions reflects that philosophy.

Paper structure

This paper utilises the *Cooperative and Mutual Enterprise (CME) Business Model Canvas* developed by Mazzarol, Clark *et al.*[22] The canvas has been developed to "help formulate the business model design when establishing a new co-operative or mutual enterprise"[23] given certain unique aspects of CMEs. The canvas is made up of 9 key building blocks, as captured in Figure 1, four of particular interest (ring fenced in red):

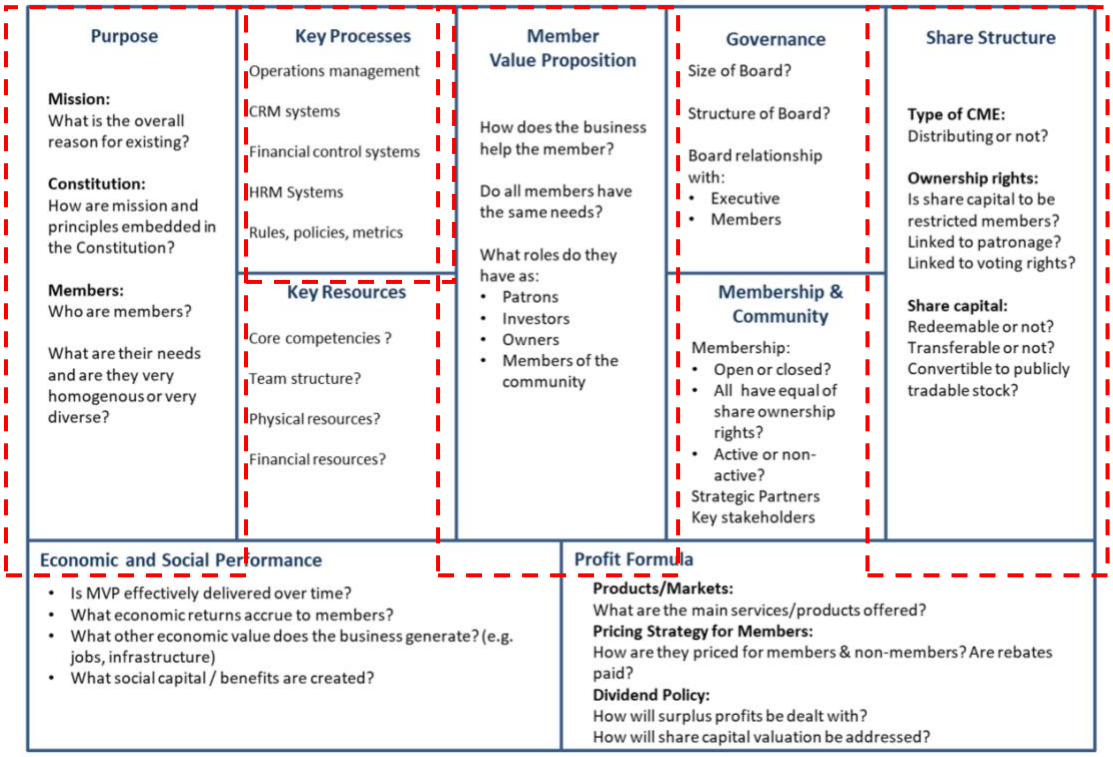


Figure 6 CMEs Business Model Framework canvas

The objective of this paper is to gather feedback to help the group make some decisions regarding the scope, size and function of the Forests for Life Farm Forestry and Landcare Program. Some of the questions that need to be answered in the process of formation are:

- What is the organisation's relationship to the timber trees planted under the Program?

[22] 2018, T. Mazzarol, D. Clark, S. Reboud§ & E. Mamouni Limnios, "Developing a conceptual framework for the co-operative and mutual enterprisebusiness model", in *Journal of Management & Organization,* Cambridge University Press,
[23] *Ibid,* pg 22

    - Does it own them?
    - Does it subsidise them?
    - Is it just paid to market them?
- What is the organisation's core activity?
- Is the organisation a formal co-op, or should it be 'co-op like'?

Below are some discussion points that look at the organisation's purpose, services, processes, value proposition and corporate structure.

We are seeking feedback on these discussion points below, as well as any general feedback, suggestions or concerns interested stakeholders and potential participants may have.

Why a co-operative?

A feasibility study in 2018 (https://forestsforlife.org.au/wp-content/uploads/FFL-Financial-Assesment-August-2018-compressed.pdf) highlighted the value that cooperative like structure could contribute to the proposal's aims and objectives, saying that such as structure:

Gives landowners and farmers ownership over the program while gaining economies of scale across a range of inputs and outputs will help to ensure the program's success.

- Farmer buy-in is supercritical – giving farmers the opportunity of membership where they have an equal vote to industry and investors will be essential given previous experience and current perception.
- Allows farmers to own the trees and be business owners; they also still have the option of a leased arrangement or to market their products through the co-op as a supplier.
- Opportunities for vertical integration as the co-operative grows.
- Provides opportunities for genuine multi-stakeholder governance and engagement.

From a forestry specific standpoint the benefits often listed of co-operatives include[24]:

- Improving the return of farm forestry resources, through resource aggregation, coordinated harvesting and marketing of the timber.
- Lowers transaction costs for both the grower and processor, giving the grower increased market power. This also applies to grower interaction with government schemes and incentive programs.
- Sharing equipment and infrastructure costs.
- Coordinated timing of silvicultural activities to improve efficiencies and increase profitability.
- Better access to advice and expertise from within their membership.
- Provide peer group mentoring to enhance knowledge and skills as well as build relationships in local communities.

[24] http://www.afg.asn.au/images/News_Bulletins/IFA_and_AFG_Magazine__Apr_2017_reduced.pdf page 30

Purpose

Farm forestry and Landcare Program's mission

"Forests for Life aims to bring together stakeholders and interests across the South West in a combined planting and investment program that delivers timber, conservation, culture, and economic development"

Landscape level transition is the underlying objective of the Forests for Life Farm Forestry and Landcare program. Transition in both the economic, environmental and social sense. Economic and environmental pressures are only going to increase in the coming decades as climate change, rising demand and increasing population all factor into the management of our forests and supply of timber. Underlying assumptions:

- Pressure is increasing: both supply chain demand and environmental pressure. *We need to be thinking about 2050 to future-proof the industry, the land, and the environment.*
- Yes, large scale hardwood timber saw log plantations/farm forestry is a complex proposition. *We need to be innovative.*
- Financial feasibility is possible under particular parameters. The conditions are changing, and we can create those parameters with innovation.
- Innovation = *Cross sector partnerships, forward thinking, and leveraging emerging approaches to investment/organising*

This mission is reflected in the following objectives:

1. Achieve a total of 40,000 hectares of trees planted for sawn timber production.
2. Achieve a minimum of 4000 hectares of Landcare work carried out on participating farms.
3. Contribute to the sequestration of an additional 500,000 tonnes of carbon in the South West by 2050.
4. Directly and indirectly contribute $1b to the local economy through value adding and processing by 2050.

Discussion: Purpose

The above description of the Program's mission and objectives highlights the broad scope of benefits it seeks to deliver in the South West. However, its core purpose is the timber plantings. The broad remit of co-benefits reflects the nature of collaboration and mutually reinforcing activities required to unlock potential investment, contribute to the forestry sector's social license and recognise the broad environmental and social benefits of a sustainable timber industry.

Question:

FFL Purpose:

"Forests for Life aims to bring together stakeholders and interests across the South West in a combined planting and investment program that delivers timber, conservation, culture, and economic development"

Does this purpose work for potential members and partners? Or should the cooperative's purpose focus specifically on one or two of the following objectives:

1. Achieve a total of 40,000 hectares of trees planted for sawn timber production.
2. Achieve a minimum of 4000 hectares of Landcare work carried out on participating farms.
3. Contribute to the sequestration of an additional 500,000 ton of carbon in the South West by 2050
4. Directly and indirectly contribute $1b to the local economy through value adding and processing by 2050.

Member Value Proposition

The value proposition for CME membership sits at the heart of its distinction from traditional for-profit models. Creating value for members is at the heart of a CME's reason for existing. Value can be derived through a number of pathways[25]:

- Economic value (e.g., better pricing, shareholder returns);
- Functional value (e.g., reliability, quality of service);
- Emotional value (e.g., sense of ownership);
- Social value (e.g., shared identity and mutual purpose)

Resulting in four different potential member roles:

1. Patron,
2. Investor,
3. Owner, and
4. Member of a community of purpose

The prospective membership of FFL is multi-stakeholder and cross sectoral. As such the individual value proposition for each member will differ. The 2018 report outlined a number of potential member benefits:

- Reduced input costs and better stumpage: Opportunities to achieve economies of scale on the factors affecting stumpage, such as transport and processing will improve profitability and the overall investor proposition.
- Governance and community cohesion: An important but too often overlooked point within forestry and Landcare planning is the challenge of engagement and competing visions/priorities. Well-structured and governed co-ops have the potential to align the incentives of a range of groups behind

[25] Pg 13

a similar vision. They are, after all, in business together and share in each other's successes and failures.

- Facilitating Carbon Aggregation and Marketing: Given there will most likely be a need to rely on voluntary markets for carbon offsets there will be a need to coordinate and market the program and its co-benefits. Bringing the group together as a co-op will help the group to reduce the compliance cost. It may also scale up the measurement and communication of the social and environmental co-benefits.
- Better Returns from Thinning Operations: Coordinated harvesting, delivery and marketing will help ensure maximum returns.
- Improved Impact of Government Programs and Extension,
- Value adding: Many co-operatives benefit their members through the ability to purchase and operate value adding machinery or infrastructure. They can also offer services to other growers as they absorb additional functions.

For different stakeholder interests specific value derived from any of these would no doubt differ as well. For example, the value derived from a mixed planting of timber and restoration focused species will represent different values for landowner, conservation organisations, and local communities.

However, the overall value proposition for members of the co-operative should be articulated in one statement. A singular MVP could therefore focus on the economic value derived from economies of scale, aggregation of resource, and reduction of transaction costs in delivering the various individual propositions.

Member Value Proposition Question

What do you believe should be the predominant member value proposition, and why?

- Economic value (e.g., better pricing, shareholder returns);
- functional value (e.g., reliability, quality of service);
- emotional value (e.g., sense of ownership);
- social value (e.g., shared identity and mutual purpose)

Key resources/processes

Key resources, in delivering member value, include:

- Core competencies
- Team structure
- Physical resources
- Financial resources

Key processes, in delivering member value, include:

- Structures
- Systems
- Services
- Activities

Within the broader 'purpose' discussed above there are a range of specific activities, services and structures that will be deployed at various times. There are also a range of ownership roles. Furthermore, given the timescales involved an organisation may evolve or completely change its corporate character over time.

There are a number of possible project scenarios that might occur, and we hope to have the flexibility to support (Table 1)

Table 1: Project Scenarios

Scenario description	Approach
Total ownership (land investment etc)	In this scenario projects, including the land, may come under part or full ownership by Forests for Life for management. In this case FFL is responsible, along with its partners, for raising the necessary capital for purchase, establishment, and management and is therefore the recipient of revenue for carbon, biodiversity credits, thinnings, and timber.
Supports investment on others land	Where landowners (new and existing) have identified that they wish to engage in a mix of carbon, timber and biodiversity plantings, but: • want to remain land owners, and • require additional capital Forests for life can assist in planning, raising funds, maintenance, and marketing.
Project advisor/ facilitator (total investment)	Where projects already have the requisite source of funding and land but require expertise and guidance to achieve a desired mix of social, environmental and economic value, where there is a desire to include timber in that mix, FFL can provide or facilitate services on a fee for service or similar model.
Project advisor/ facilitator (just the forestry)	Where carbon/regen/biodiversity projects are already in the planning or establishment phases, but would like to include timber FFL can provide or facilitate expertise and services.

In considering the best approach we have looked at a number of examples, including two Australian co-operatives of interest:

The Organic & Regenerative Investment Co-operative (ORICOOP)

" ORICoop aims to enable investment, management, education and growth opportunities across the Australian organic, regenerative, biodynamic and agroecological farming and food sectors. ORICoop works to acquire and preserve certified organic farmland in perpetuity for long-term, local and regenerative farming use. Investment criteria must be met by each property for its ongoing management, including practices that embrace agroecology principles and international organic standards as well as preserve soil resources, biodiversity and waterways. ORICoop also grants businesses across the organic supply chain the opportunity to seek funding to support regional economies, refugees and indigenous land managers through the preservation and growth of local food ecosystems throughout Australia."26

[26] https://sustainablefoodtrust.org/articles/protecting-australias-diverse-soils-and-landscapes/

Oricoop's primary activities laid out in its constitution are:

1. Investing into the organic, agroecology and regenerative farming & business sector.
2. Investing, managing and or participating in local initiatives that build supply and/or community in organic & regenerative farming/business sector.
3. Offer collaboration with other entities, Co-operatives and community to build a stronger and more resilient food production mechanism.

For more details:
https://organicinvestmentcooperative.com.au

SMARTimbers

"SMARTimbers Cooperative is based in south-west and central Victoria, centred on Ballarat. Formally launched as a trading cooperative in 2002, SMARTimbers has about 40 members and currently has about 500 tonnes of logs milled into various building products annually. These products have earned the investing SMARTimbers members a gross return of about $130,000 over each of the last two financial years (2005/06 and 2006/07)

The cooperative itself owns no equipment or resource. It 'owns' a logo, some registered names, and considerable intellectual property. It oversees timber processing, markets timber for members, and manages some research projects in the interests of the members and the wider farm forestry sector. It is essentially a 'single-desk' marketing body." Note: SMARTimbers wound up in 2013.

Based on these two examples we have developed two generalised co-op models to help guide discussion, captured in the table below.

	Service model	**Investor model**
Description	• Doesn't own resource • Mainly owns brand and IP	• Owns or part owns resource • Manages resource or contracts managers • May own or lease the land

Revenue:	8. Levy on log sales. (Aggregation of logs by species and grade. Negotiate best price) 9. Levy on carbon/biodiversity aggregation and marketing 10. Annual membership fees 11. Contracting for planting and other management work 12. GPS service and site mapping service 13. Consulting (mainly on silviculture, i.e. forest management plan development) 14. Harvesting contracting and overseeing	*From a lean service delivery to established equity and resource owner*	6. Timber sales 7. Thinnings/biomass sales 8. Carbon/biodiversity offset credits 9. Land sales for conservation or harvesting 10. Member fees
Project relationship	2. Facilitates projects as independent entities through contracts (syndicates, businesses, etc)		• Owns or part owns the resource.

Share/Corporate Structure

Co-operatives are divided into distributing and non-distributing, essentially profit or non-profit. The table below outlines some of the key distinctions.

	Distributing Co-op	Non-distributing Co-op
Additional capital from members	Members may have to purchase more shares or provide loans.	Members cannot be required to acquire more shares but may be required to lend to the co-operative.
Active member	Member must support an activity associated with the co-operative's primary activity.	Member must maintain relationship with co-operative's primary activity or pay a regular subscription.
Aim	Maximise returns to individual members; undertake commercial activities beyond the means of an individual person; members share in asset growth.	Undertake activities collectively, reducing the costs and increasing services to individuals.
Sectors	Usually economic. Includes wholesale, retail, transport, agriculture, manufacturing, property services, fish marketing, forestry services, community enterprises.	Usually social. Includes agricultural produce handling, consumer, cultural or sporting clubs, professional organisations, child care, community services.

Surplus	Maintain proportion to build capital of co-operative and share any remaining surplus among members depending on use.	Cannot make distributions to members; surplus used to further the activities of the co-operative and/or donated to a charitable organisation.
Shares	Shares may be issued at a premium.	Shares may not be issued at a premium.
Bonus shares	Bonus shares may be issued to members from profits or on revaluation or sale of asset.	Bonus shares cannot be issued from asset revaluation or sale, or from profits.
Benefits to members	Dividends, rebates, reduced costs, enhanced services.	Lower charges for, or access to, services or products, shared equipment and business services.

The final design of a share structure will come down to the primary member value that is derived. Another key consideration is the role of the cooperative in project implementation. A number of scenarios are possible, such as the ones listed in the table above. *For more details on the project scenarios see the strategic overview and business planning document.*

Services and Corporate Structure Questions

- Which potential services and functions should the organisation focus on?
- Should the co-operative be investable, that is should it generate a profit with dividends for members?
- Or, should it be a non-distributing cooperative that facilitates services and coordination of investable projects that sit as independent entities?