

**Farming for the Future &
National Farmers' Federation
Natural Capital Summit:**

Quantifying the value of natural capital
for Australian agriculture

Farm Level Findings of the *Farming for the Future* Research

Dr Sue Ogilvy

Program Director, *Farming for the Future*

The logo features a square divided into three horizontal sections: a blue top section representing the sky, a green middle section representing a field, and a dark brown bottom section representing soil with several grey circles of varying sizes representing seeds or soil particles.

FARMING FOR THE FUTURE

A financially prosperous,
climate-resilient and
decarbonising agriculture
sector for Australia.



What is it?

Farming for the Future seeks to build the business case for **producers** to improve natural capital on productive landscapes, at scale



How we'll achieve it



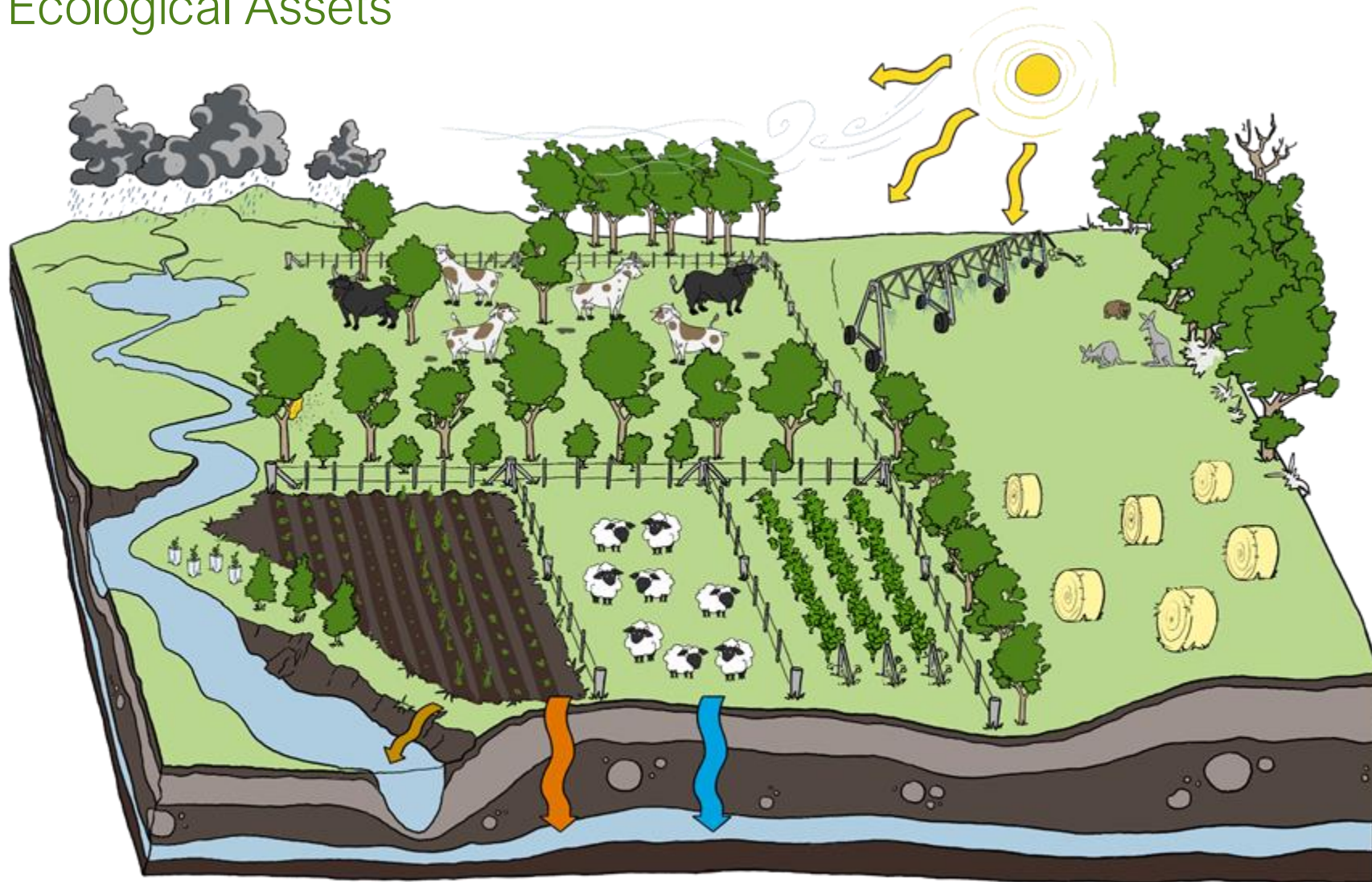
The outcome

Natural capital is a **factor of production** and part of **mainstream** farm management

The Impact

- Less variability and **increased profitability in core production**
- Improved natural capital condition** on productive landscapes
- Resilient, transparent, and **responsible supply chains**
- Agriculture is a **nature-based solution**
- Govt and industry meet **environmental and other strategic goals**
- A **just transition** for rural and regional producers
- Improved levels of prosperity and wellbeing** in rural communities

Natural Capital in Agriculture: Biological & Ecological Assets



Landholder motivations

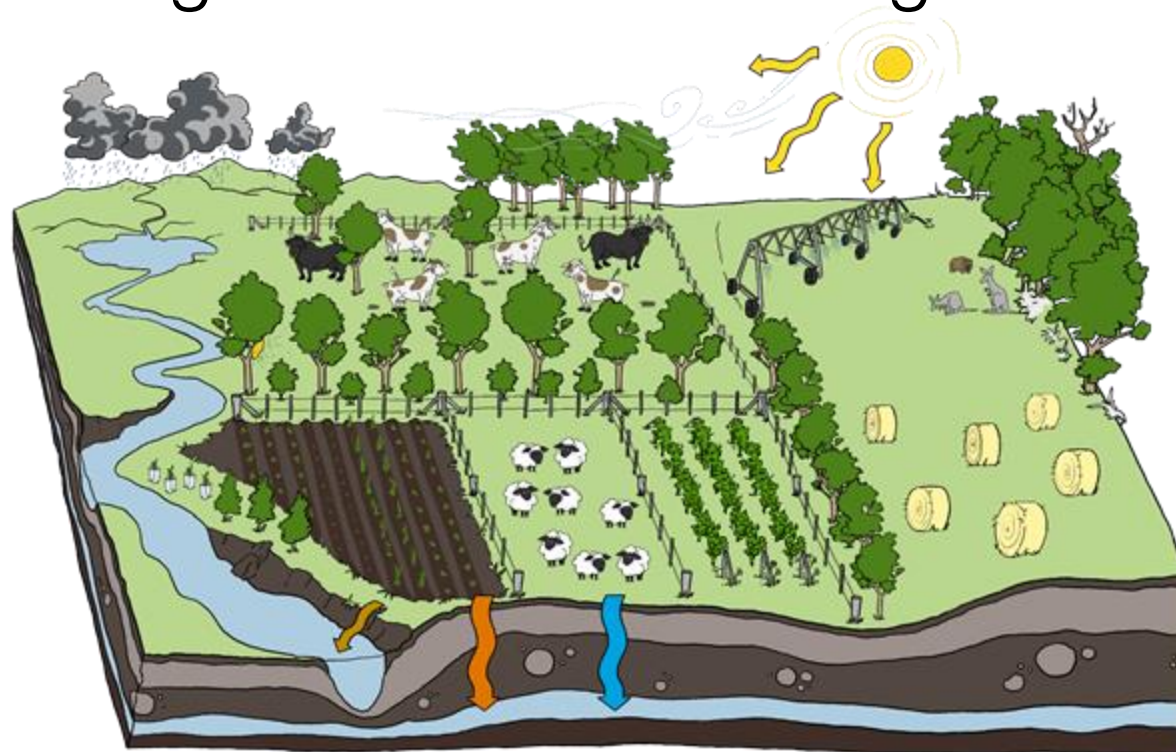
Rank the following potential benefits of natural capital in terms of how compelling you think they might be for encouraging farmers to improve natural capital



Landholder motivations



Farming for the Future: Large-scale Evidence

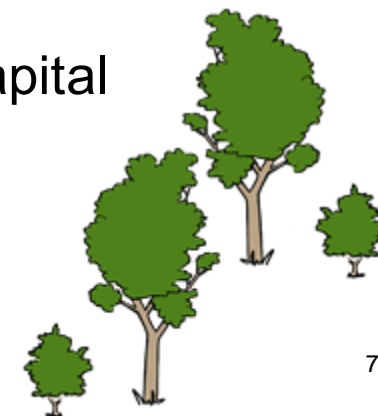


Questions:

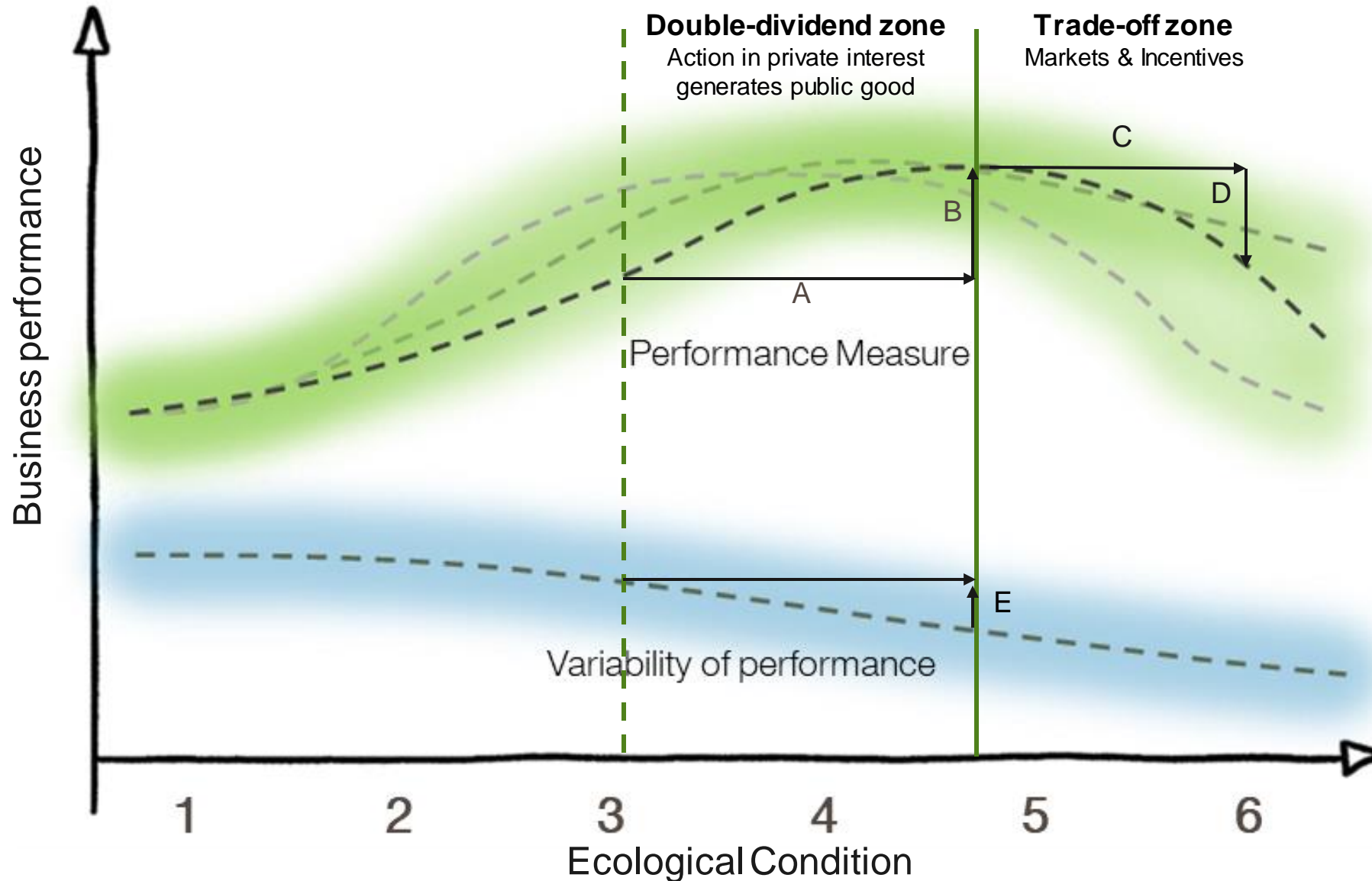
- Will changes to the natural capital of my farm be in my best interests?
- Will they help me meet my business, personal and social goals more easily?
- If so, what changes would I make?

Research Program Aims:

- Provide information about associations between different 'levels' of natural capital with differences in farm business performance and other benefits for farmers.
- Equip farmers and their advice networks with tools to use this information to prepare a 'business case' for investment in natural capital.



Natural Capital Farm Benefits Diagnostic Platform – Impact Elements



This Information Enables

Farmer: improved business performance – how to use nature to improve productivity. Evidence of Trade-off zones to use in negotiations.

Bank: improved business performance – how to reduce lending risk

Supply Chain: improved business performance – how to identify dependable producers

Government: increased public good (carbon, biodiversity, healthy landscapes and rural communities) at greatest efficiency.

Reporting on the research

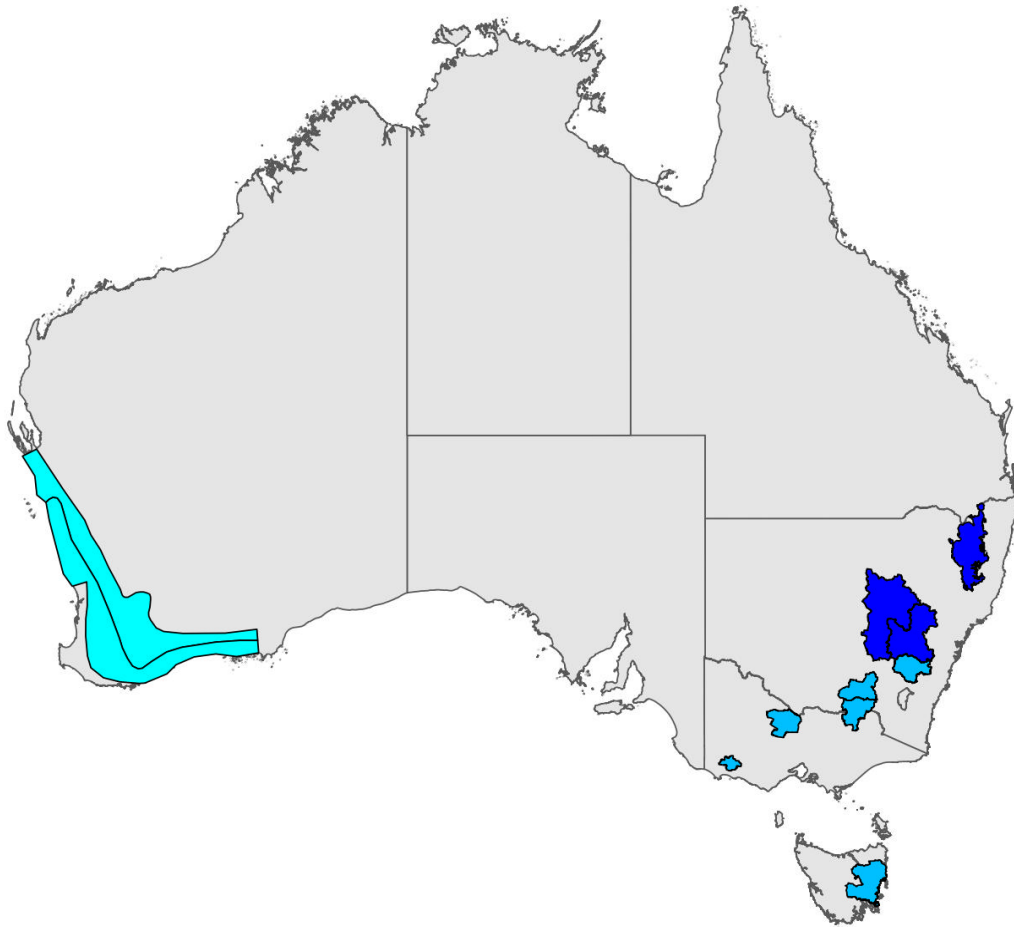
- Methods
 - Overview of the people involved
 - Farm sampling design
 - Overview of data collected
- Preliminary findings – focus on economic analysis
- Making the research useable by farmers
- Questions



01 Methods

Interdisciplinary teamwork





Region  Central and Tablelands  South-east  Western

Farm selection criteria:

- Livestock production - should be sheep and/or cattle operations.
- Farms to be 600 – 5000 ha in size
- Farms to have > 50% livestock production by size.

Regions selected based on agri-climatic zones

Data collected



Five-years of financial and production data



Detailed, fine-scale natural capital data



Farm and business management and practice information



Farmer wellbeing



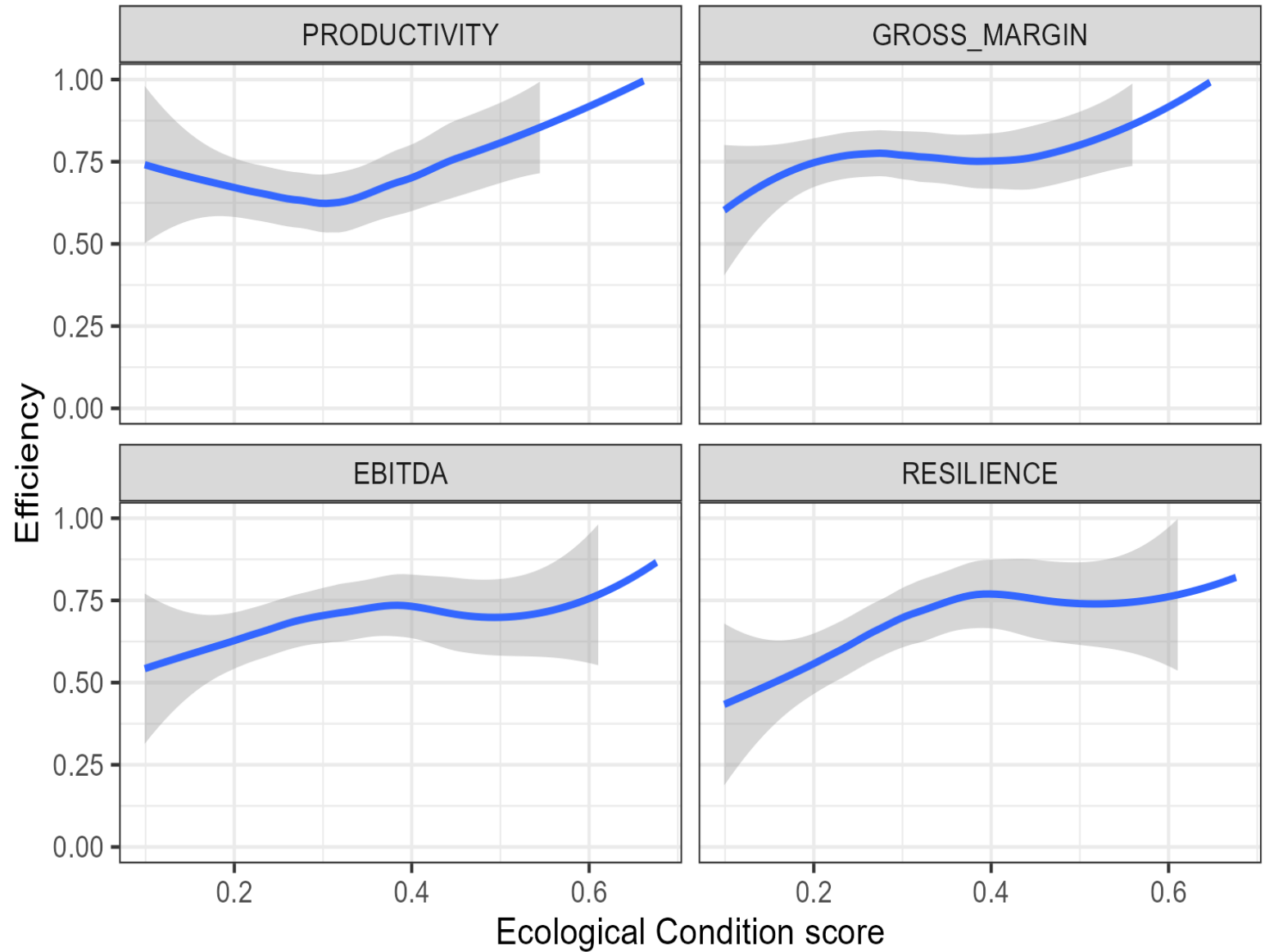
Findings

Phase 2 Pilot

Natural capital can be included in economic analysis.

Natural capital is positively correlated with farm business performance

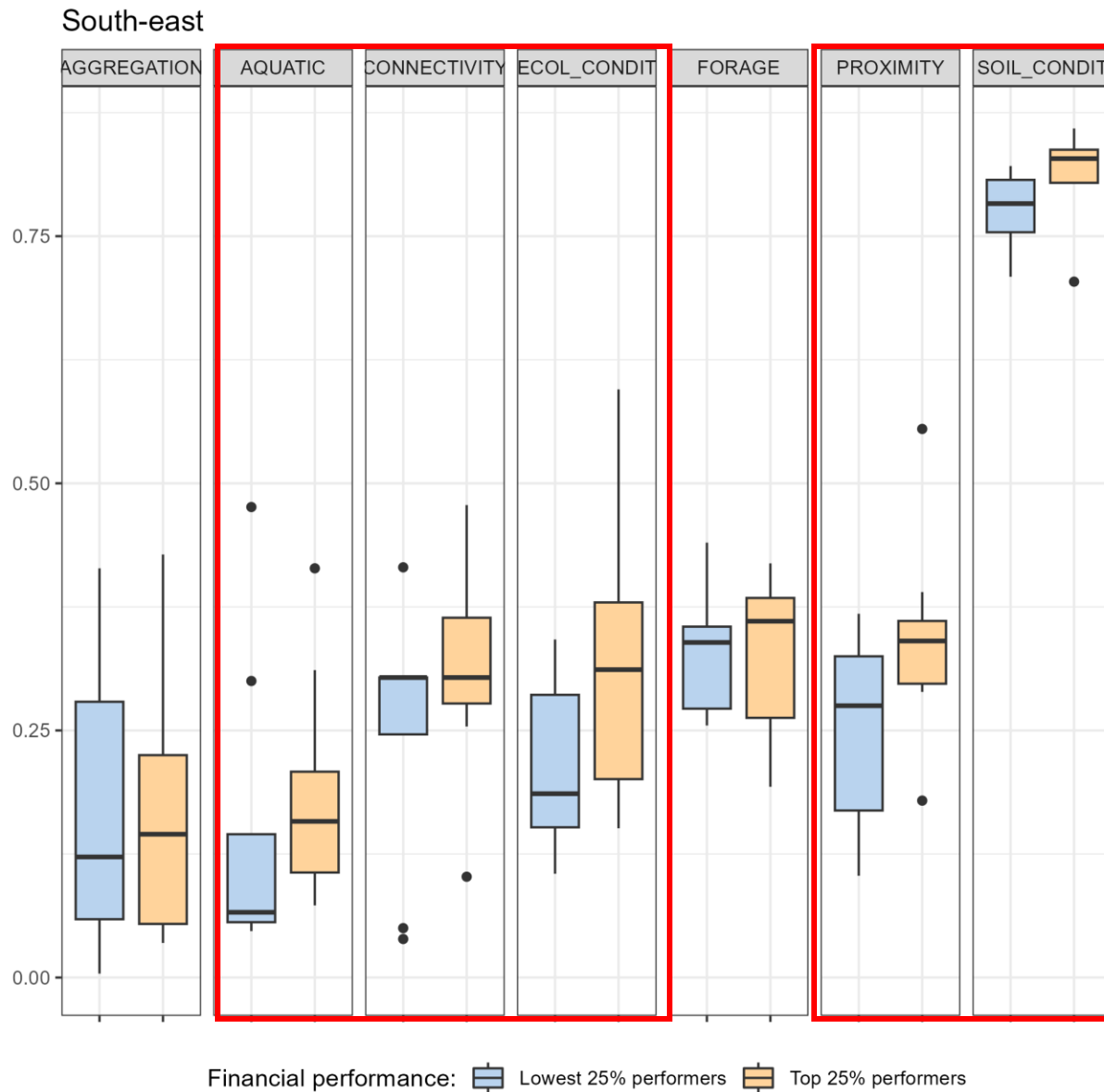
The natural capital curve

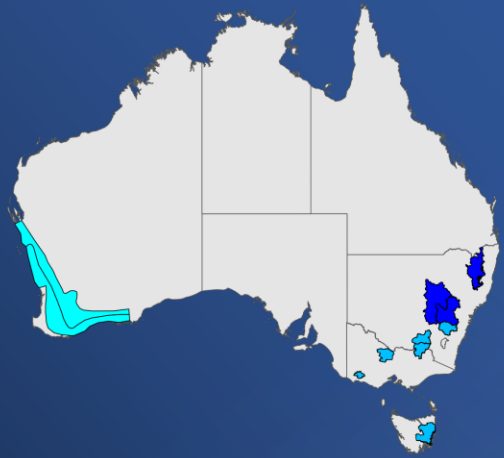


All regions combined



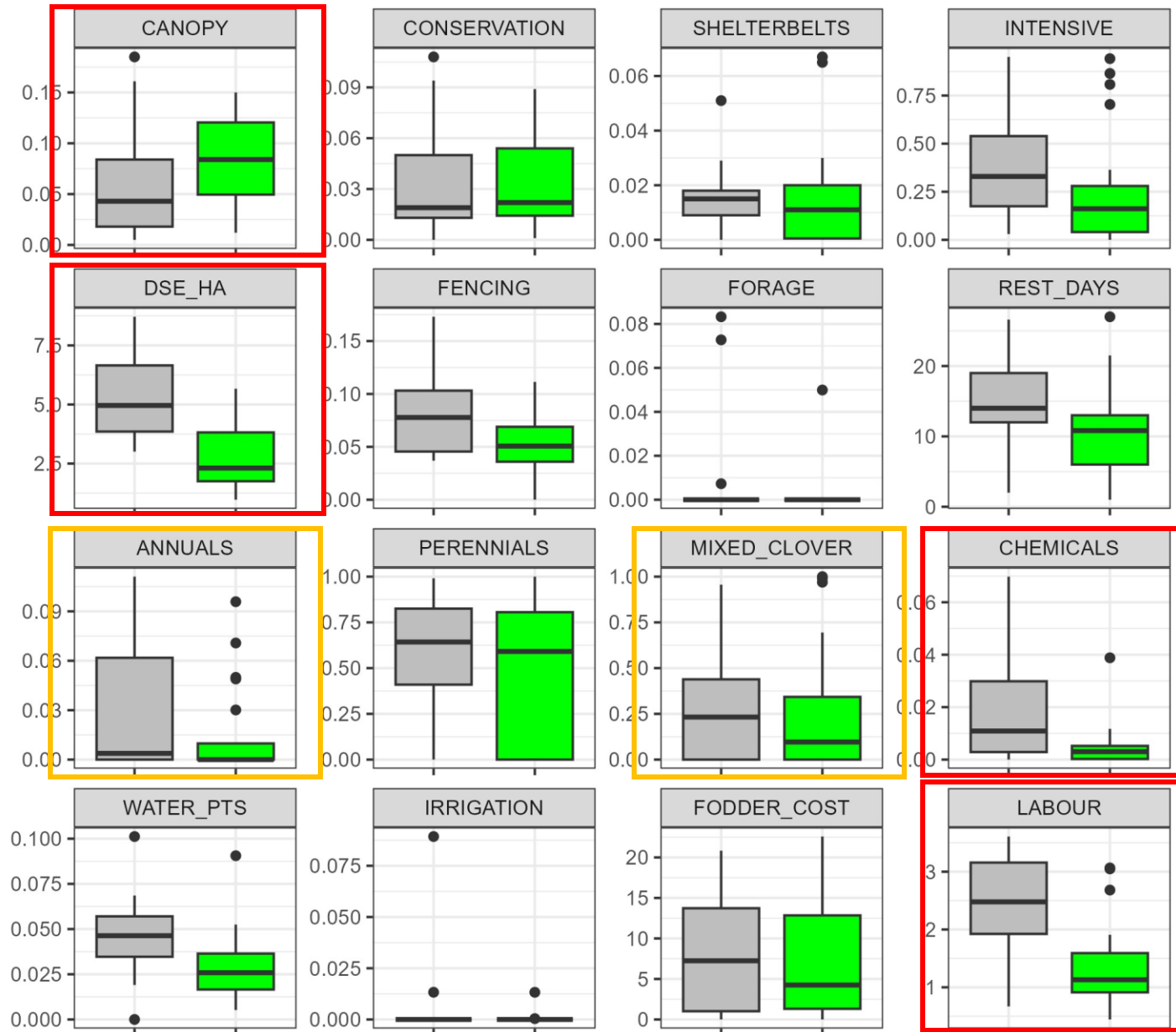
What elements of NC relate to business outcomes?





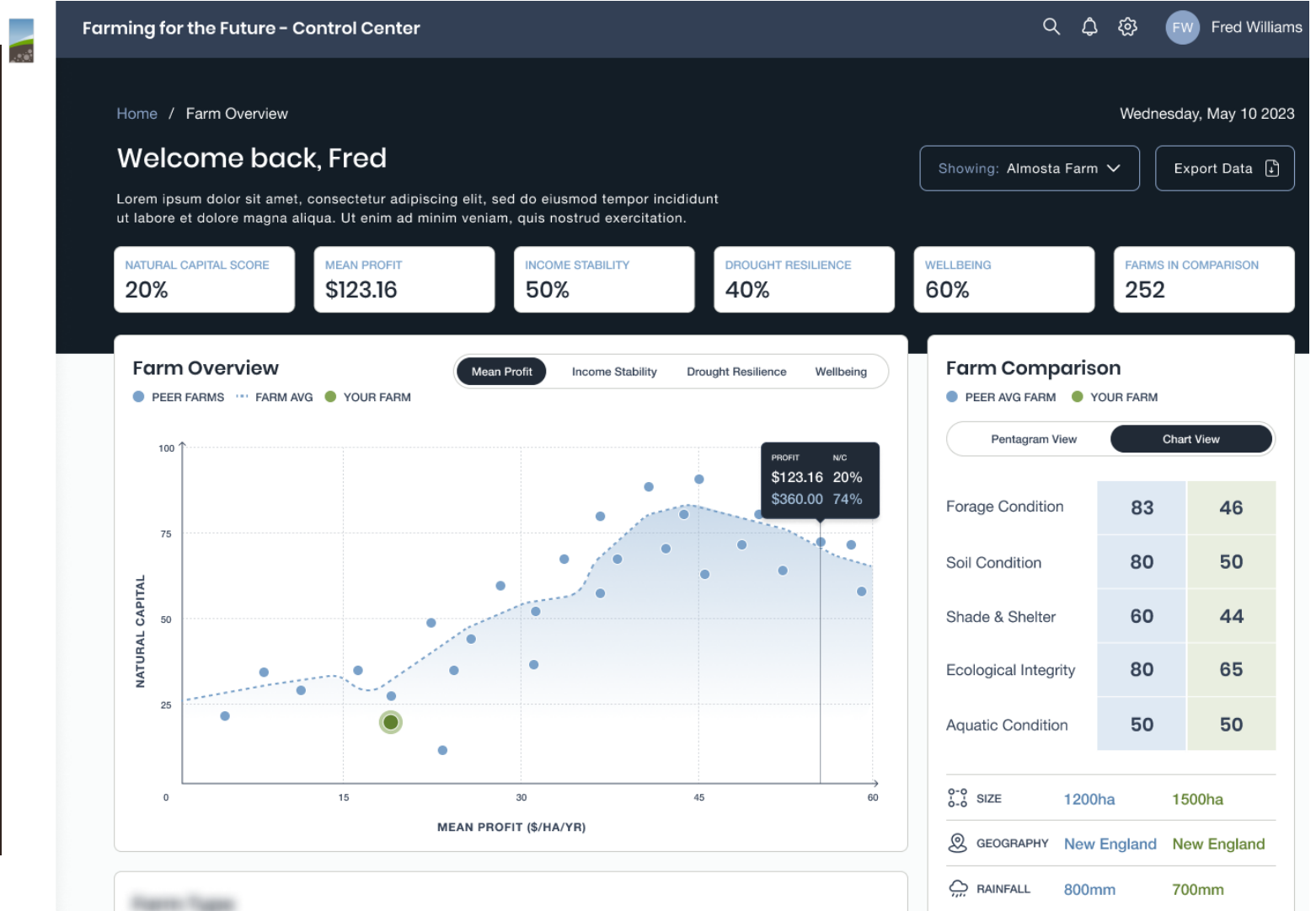
How does natural capital management contribute?

All regions combined



Financial performance: Lowest 25% performers Top 25% performers

Making the findings actionable



Showcase farm report

- About
- Summary
- Definitions
- Benchmarking: Livestock enterprise
- Benchmarking: Farming systems
- Natural Capital
- Natural Capital outcomes
- Natural capital and farm performance

About

In this short report you will be provided with a range of outcomes. The analysis is based on up to the last five years of data.

Data used

Your business was analysed in the years 2020, 2021 and 2022 by you and/or your advisor.

report focus

The focus enterprise of this report is your LIVESTOCK enterprise. Other enterprises (e.g. cropping) separately. However, we provide some insight into how well your overall farm enterprises/systems has performed.

Overall efficiency results

Your farm report shows that you have Moderate efficiency. Models estimated and across the years that your business confidence in this performance estimate is Low.

Overall natural capital rank

Your natural capital rank for your region is 1 out of 5. In the Farming for the Future database your natural capital level is Low indicating you natural capital achieved alongside business performance improvement.

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About

The barplot below shows your farm natural capital scores against other farms in the database. The six different natural capital types are summarised in the barplot below.

- Model: AGGREGATION
- Model: AQUATIC_CONDITION
- Model: CONNECTIVITY
- Model: ECOL_INTEGRITY
- Model: PROXIMITY
- Model: SOIL_CONDITION

CONNECTIVITY

Category	Value
Farm score	0.3
Region maximum	0.3
FTF maximum	0.6

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About

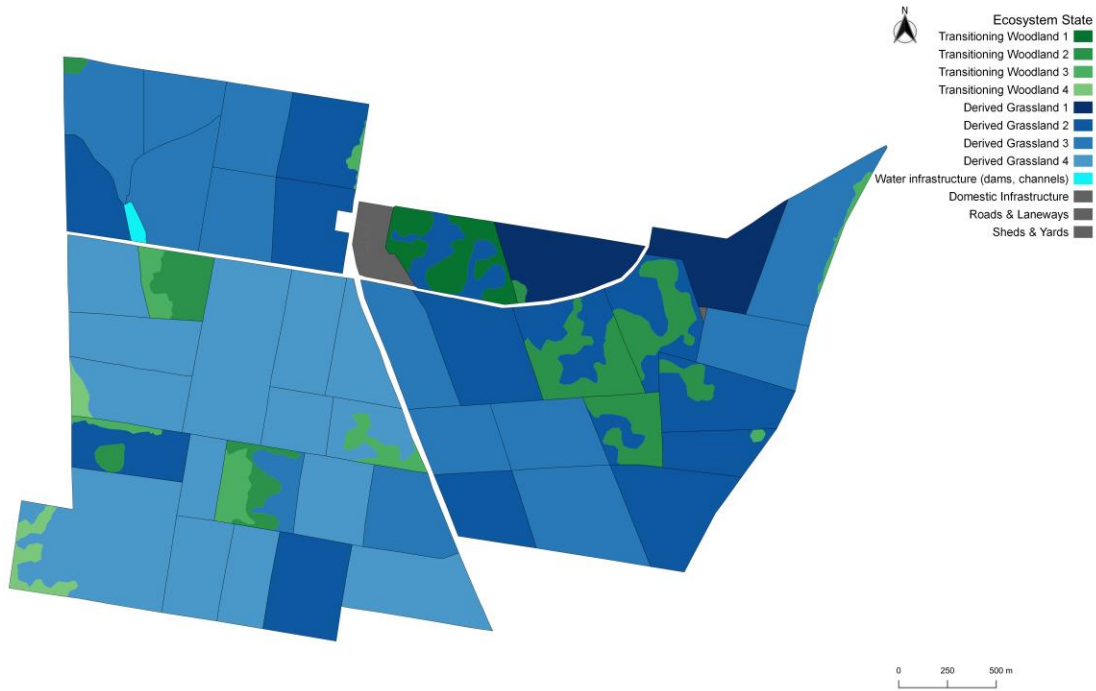
In this section we dive into how natural capital relates to farm performance. The plots shown below (use the tabs to explore different plots) represent the different benchmarking models described earlier. The curve has been estimated using all FTF farms. It describes the relationship between farm Ecological Condition and farm efficiency. You can see where your farm is located against the 'average' performance by examining the black dot on the graph.

- Model: business_EBITDA
- Model: business_ROAM
- Model: livestock_EBIT
- Model: livestock_GROSS_MARGIN
- Model: livestock_PRODUCTIVITY

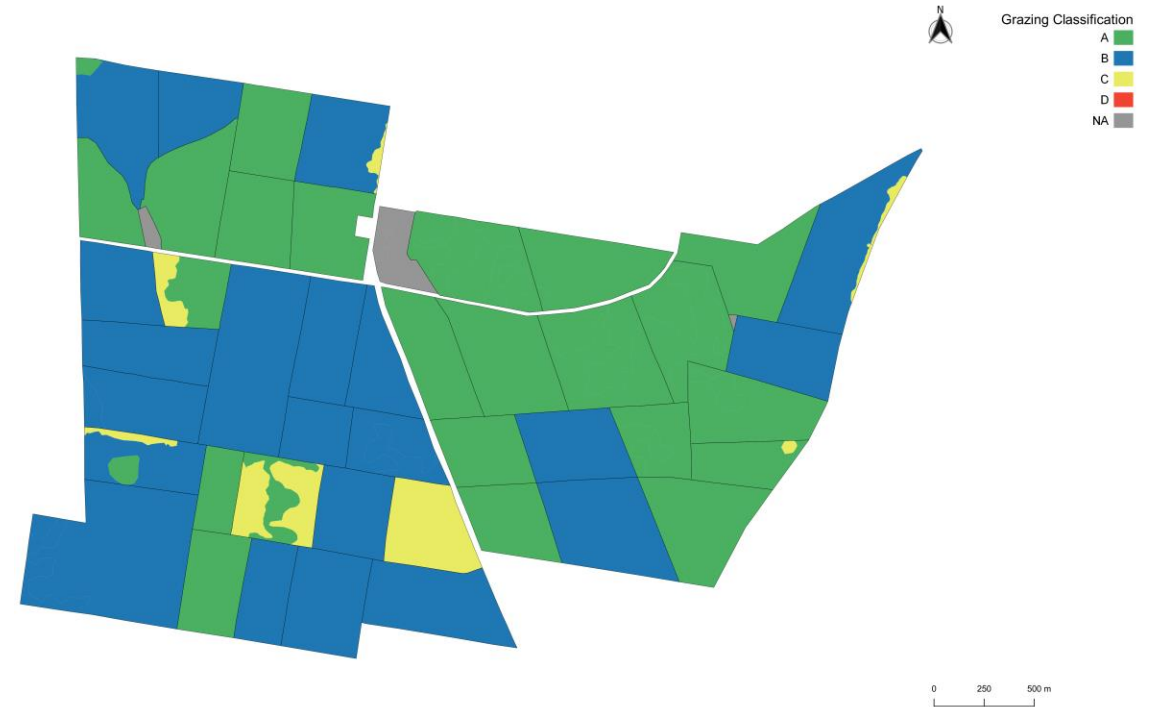
Natural capital and farm performance

'Double-clicking' into detail

Ecological Condition map

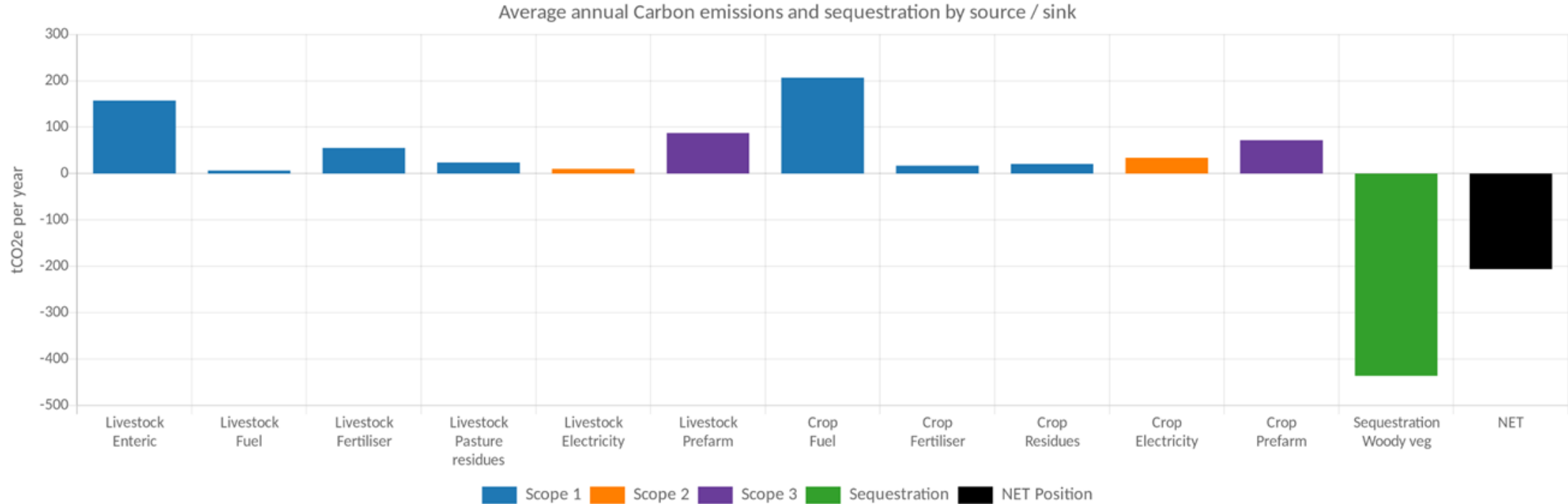


Forage Condition map



SEEA-coherent, management-useful tables of ecosystem extent and condition

Environmental Performance reports

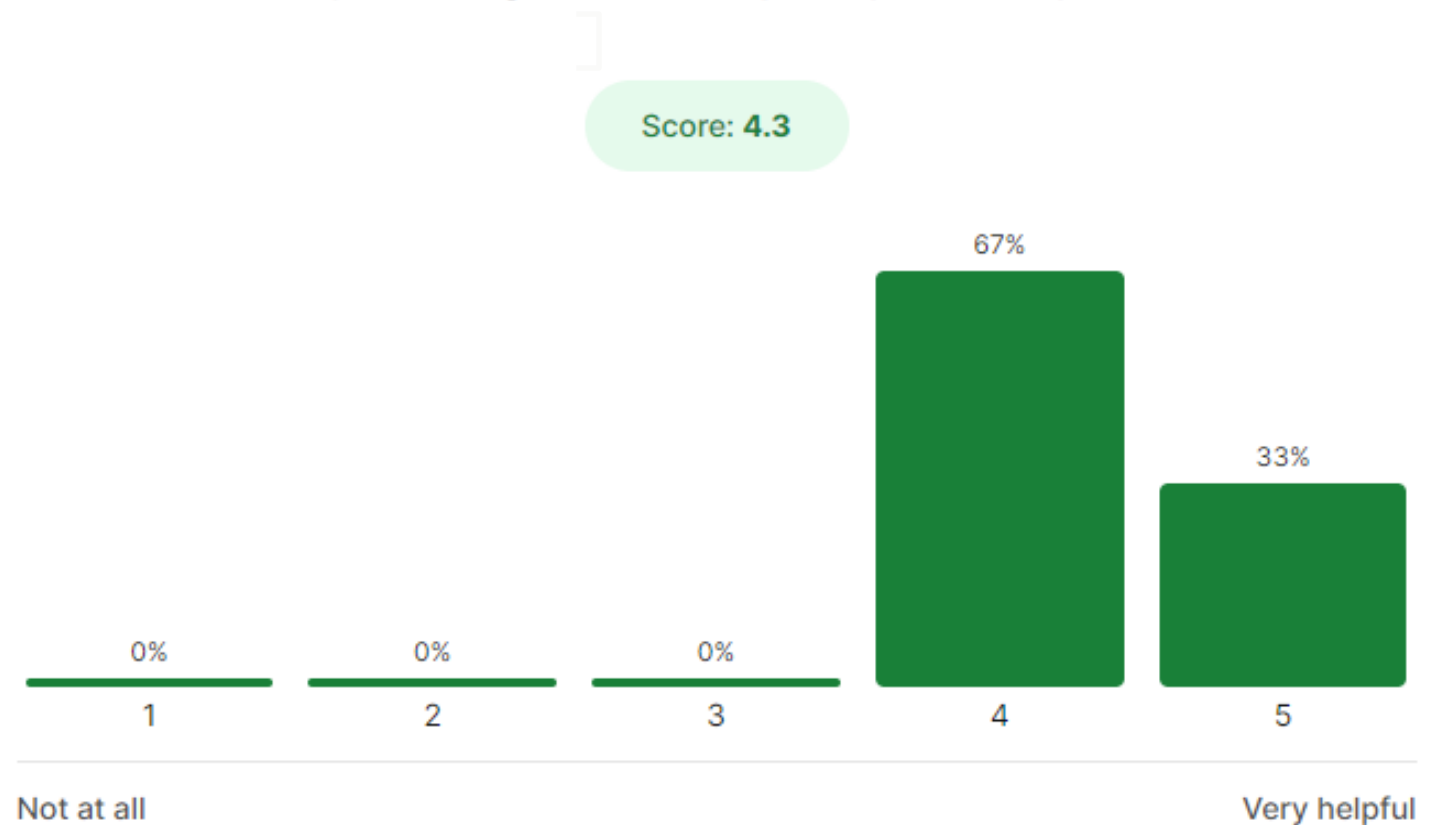


Detailed environmental performance management and reporting information.

Making the findings actionable



How helpful do you think this information would be in helping your client consider natural capital management as a way to improve their performance?



“

Farming for the Future is an unbelievable opportunity to have the natural capital on our property scientifically measured, rather than just working with gut feel. Having the natural capital figures of our property is beyond exciting

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National Farmers' Federation
Natural Capital Summit:**

Quantifying the value of natural capital
for Australian agriculture

Revealing the Value of Natural Capital to Agriculture

Quantifying the Private Benefits of Investment in
Natural Capital and the Public Good

Dr Elizabeth Heagney

Research Director, *Farming for the Future*

Prof David Pannell

University of Western Australia



Australian Government

AUSTRALIA'S LONG-TERM EMISSIONS REDUCTION PLAN

A whole-of-economy Plan to achieve net zero emissions by 2050



Australian Government

Department of Climate Change, Energy, the Environment and Water

Nature Positive Plan: *better for the environment, better for business*

December 2022



Australian Government

AUSTRALIA'S NATIONALLY DETERMINED CONTRIBUTION

COMMUNICATION 2022

Australia's emissions projections 2022

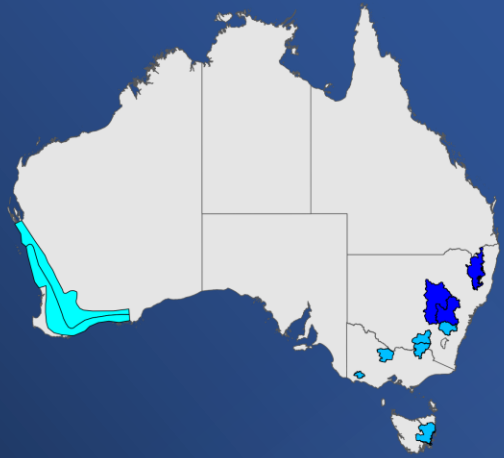
December 2022



Landholder motivations

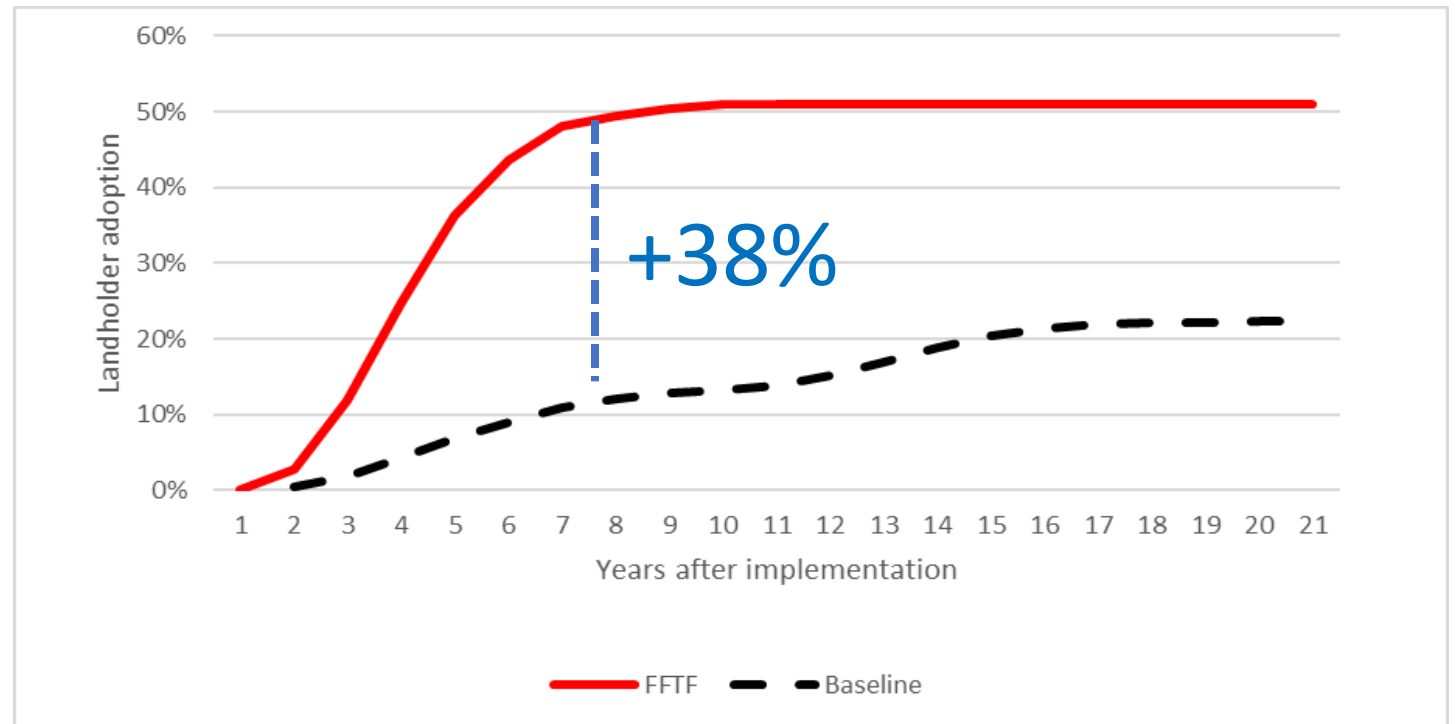
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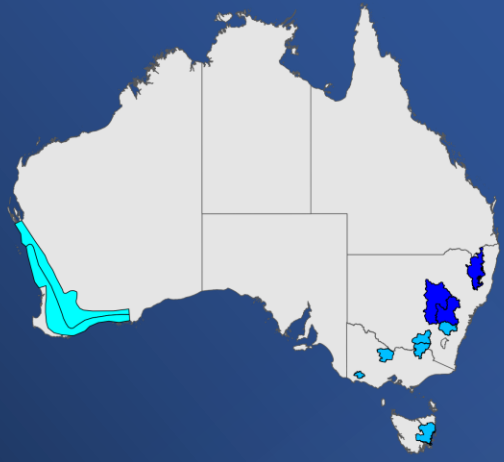
Achieving
industry-scale
adoption

Modelling adoption



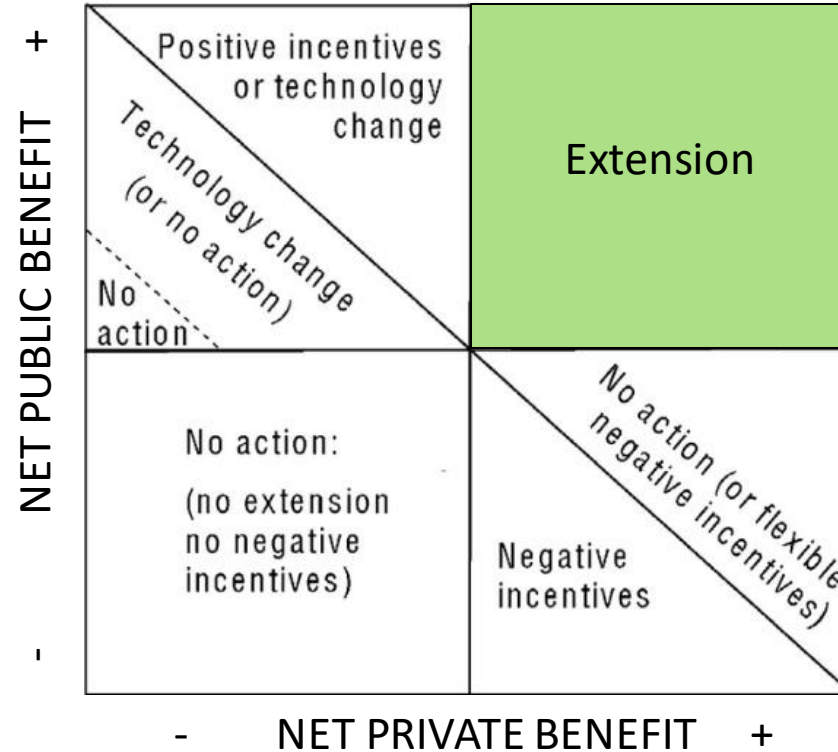
ADOPT model: CSIRO, UWA, GRDC, ACIAR, WA
& VIC govts, Future Farm Industries CRC

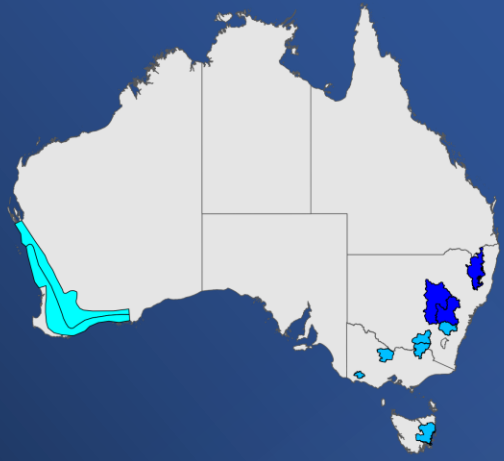




Achieving
industry-scale
adoption

Investing efficiently





Achieving
industry-scale
adoption

Investing efficiently

Farming for the Future research + system activation activities means that data collection on 1,500 farms provides uptake by a much larger number of farms (~19,000).

This means we are achieving industry-scale transition at a cost of:

- \$2,500 per farm
- \$1-2 per hectare