River red gum (*Eucalyptus camaldulensis*) forest, Murray River, New South Wales
Claire Howell

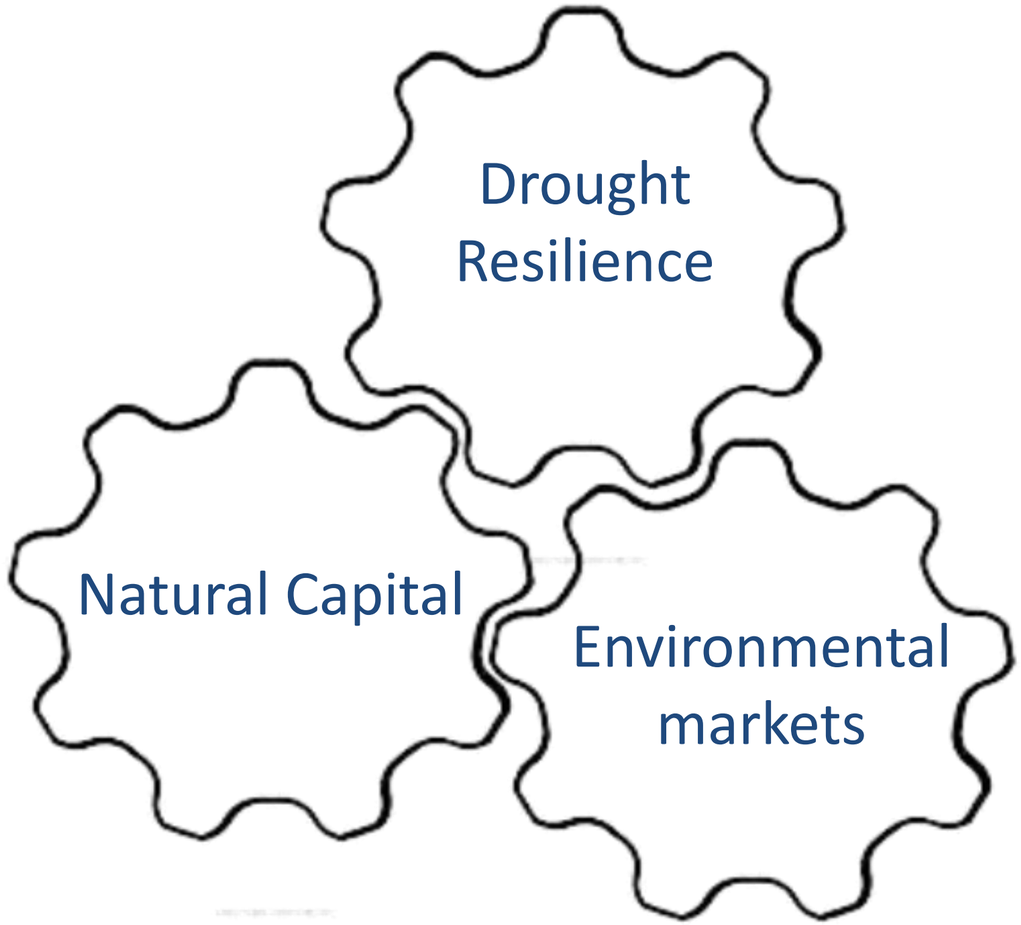
Maximising Drought Resilience with Natural Capital Opportunities

Co-design Day 1
11 April 2024

Western Murray
Land Improvement Group

What is today about?

Today is day 1 of a **co-design** project where you will **design a tool** to support you to **engage in environmental markets** to improve **drought resilience** and maximise our **natural capital**.



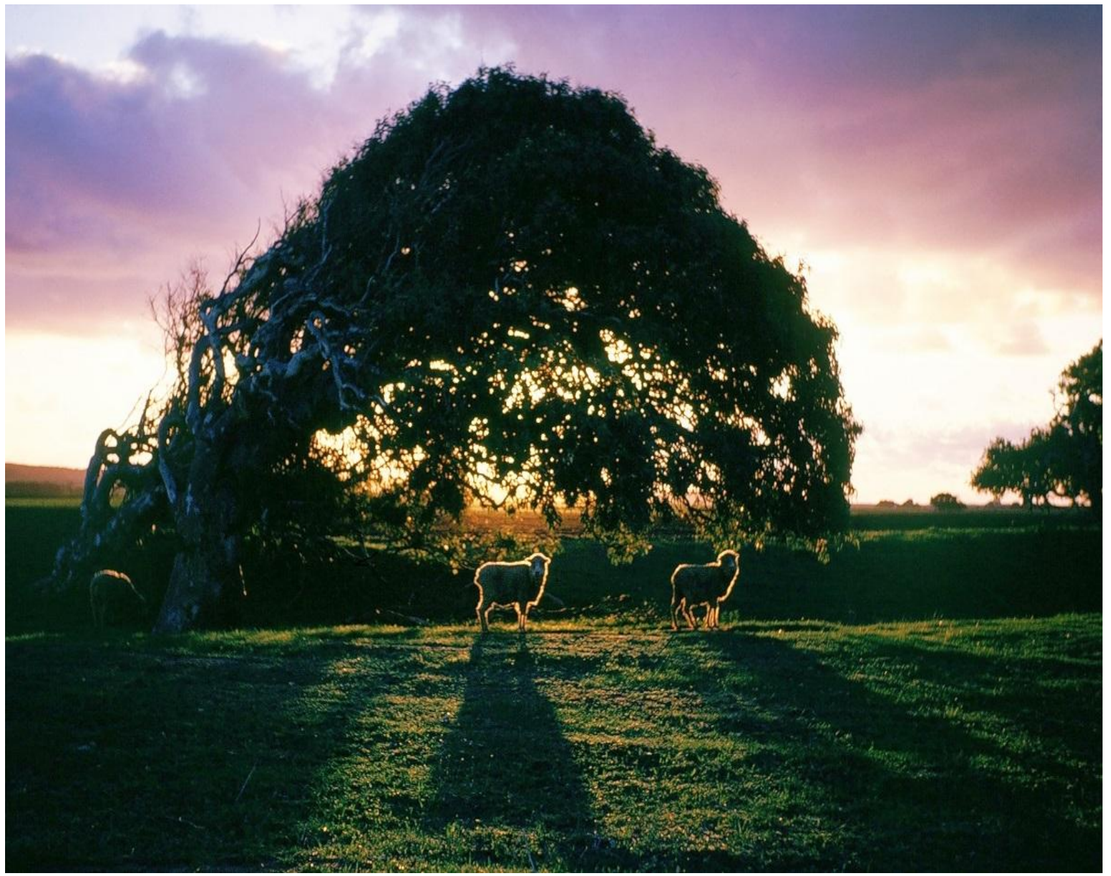
Outline for the day

9:30am – 10:00am	Welcome. What's in today?
10am – 10:45am	Drought resilience. What does it look like? What does it take?
10:45am – 11:45am	Our natural capital advantage. What do we have? How can it help us?
11:45am – 12:00pm	**Break !!!**
12:00 – 1:30pm	ESG, Environmental markets, Supply chains… What is it about? Why does it matter? How can it help or hinder us?
1:30pm – 2:00pm	Wrap-up
2pm	**Lunch !!!**

What’s in it for you today?

1. **Information**
    - Learn about your region and about environmental markets – what do those buzzwords mean – ESG, supply chain changes, nature repair…?
    - Share what you know or are doing with others
    - Learn about what others are doing

2. Have Hour Say
    - This co-design, means you are doing the work and engaging with your community – enjoy the time



Codesign at a glance

1. **Discuss:** Identify and talk about what's going on and support people to ideally see what they'd like to see happen. See if issues / topics / opportunities of shared interest emerge.
2. **Discover:** Name the issue / topic / opportunity and unpack it to the extent that you have a true understanding of it and its impact.

3. **Define:** Be creative and work together to see and define the issue / topic / opportunity in a new way.
4. **Design:** Create a draft prototype. A model of what you propose. Keep it simple
5. **Develop:** Seek further inspiration. Design with others and ensure it gives answers to the defined problem, issue or opportunity.
6. **Deliver:** Test out solutions. Keep it small scale for now. Make decisions about what will and won't work and which solutions to improve

Rules of engagement and expectations

- Plenty of thinking and doing from you – engage !
- Lots of information and context (LOTS!)
- Not a lot of certainty – both process and topic are very fluid
- Ask questions – plenty of experts around the table but you’re not expected to know everything
- Share your expertise freely and your opinions respectfully
- Focus on the region and the community as well as meeting your own needs and your concrete reality

Drought Resilience Introduction

Angus Dunne

Program Manager

Southern NSW
Innovation Hub

Drought Resilience Brainstorming

20’

Break into 3 groups each for a category in the DRSat tool, and go to one station with a Drought Resilience canvas on it (1 goes to Personal and Social, 2 goes to Financial, 3 goes to Environmental).

Thinking about our own case preferably, or your neighbours, or your community, and being very concrete, then brainstorm in your group:

- **What does good Drought Resilience mean to you for the particular aspect at your station** – what does your business, attitude, farm would look like if it were perfectly drought resilient
- And what do you think are the ingredients, the actions, to make that happen?
  For example, you need cash reserves, but what are the ways you can think of to make that happen – or better still what have you already put in place.
- Record any thoughts in the ‘other’ category if they don’t fit in either

Then at the end you will report back your findings to the rest of the group.

Drought resilience example of output

Topic	What good DR look like	What does it need
Personal and Social	A supportive community A personal support network A resilient attitude	Getting to know each other Openness to sharing concerns Time to work on oneself mental health Some sense of security / safety net
Financial	Reserves Continuous minimum income Supplier relationships Access to critical items (feed, supplements)	Stockpiling in the good times Other sources of revenue that can supplement or create reserves A clear business plan that addresses drought
Environmental	Infrastructure drought ready (additional dams…) Resilient land (moisture retention) Running with a margin Spillway areas	Foresight, planning, execution resources > 90% cover in normal times – needs the tools to measure it easily (cibo labs?)
Other	A plan for all of the above	

Natural Capital Introduction

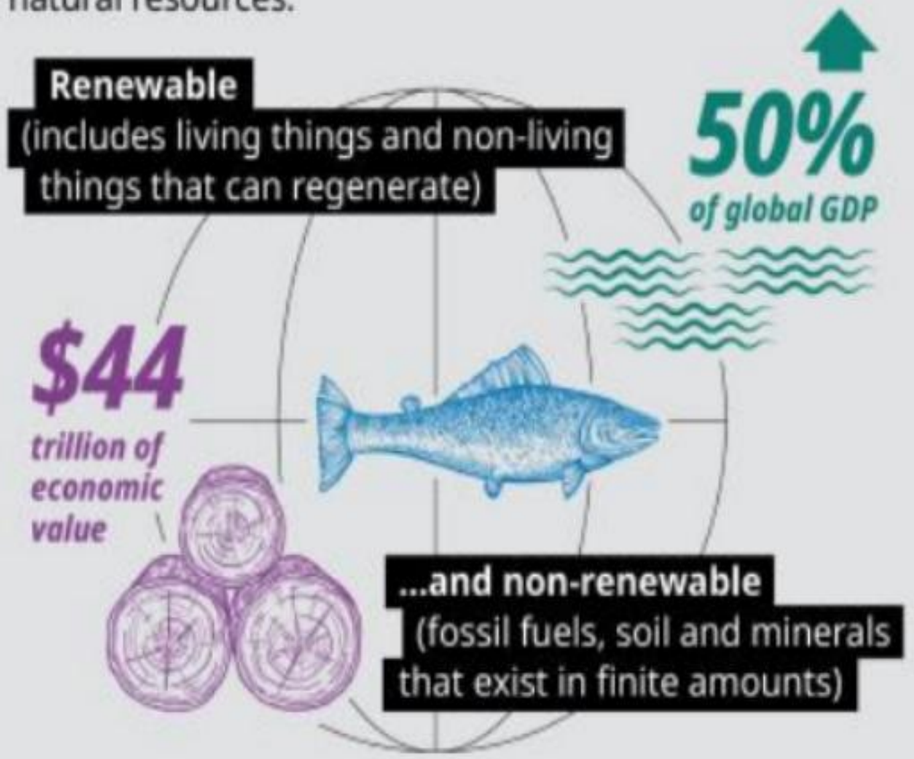
Jac McArthur

Environmental markets project officer

Western Murray Land Improvement Group

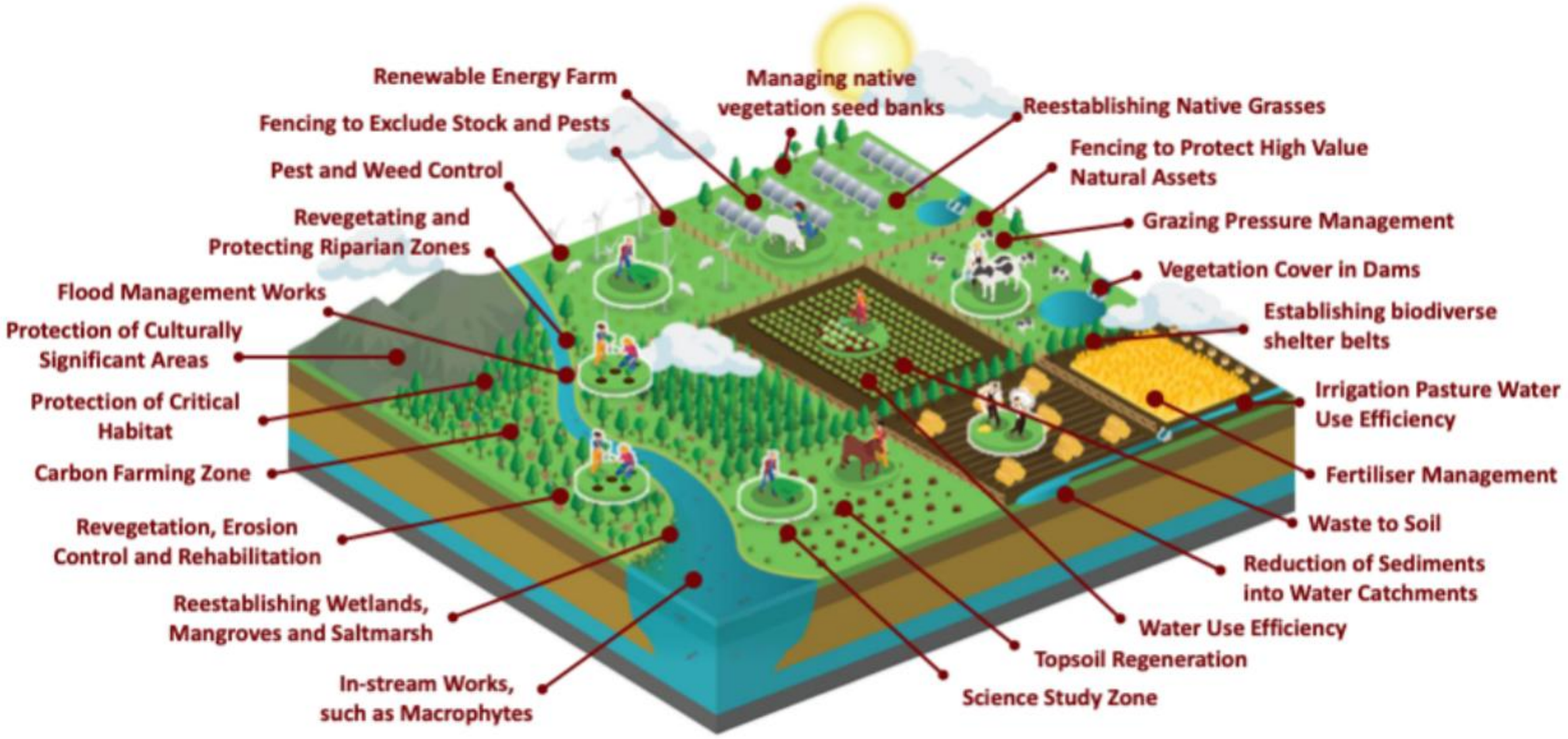
WHAT IS NATURAL CAPITAL?

Nature's assets. More than 50% of global GDP, $44 trillion of economic value, depends on natural resources.

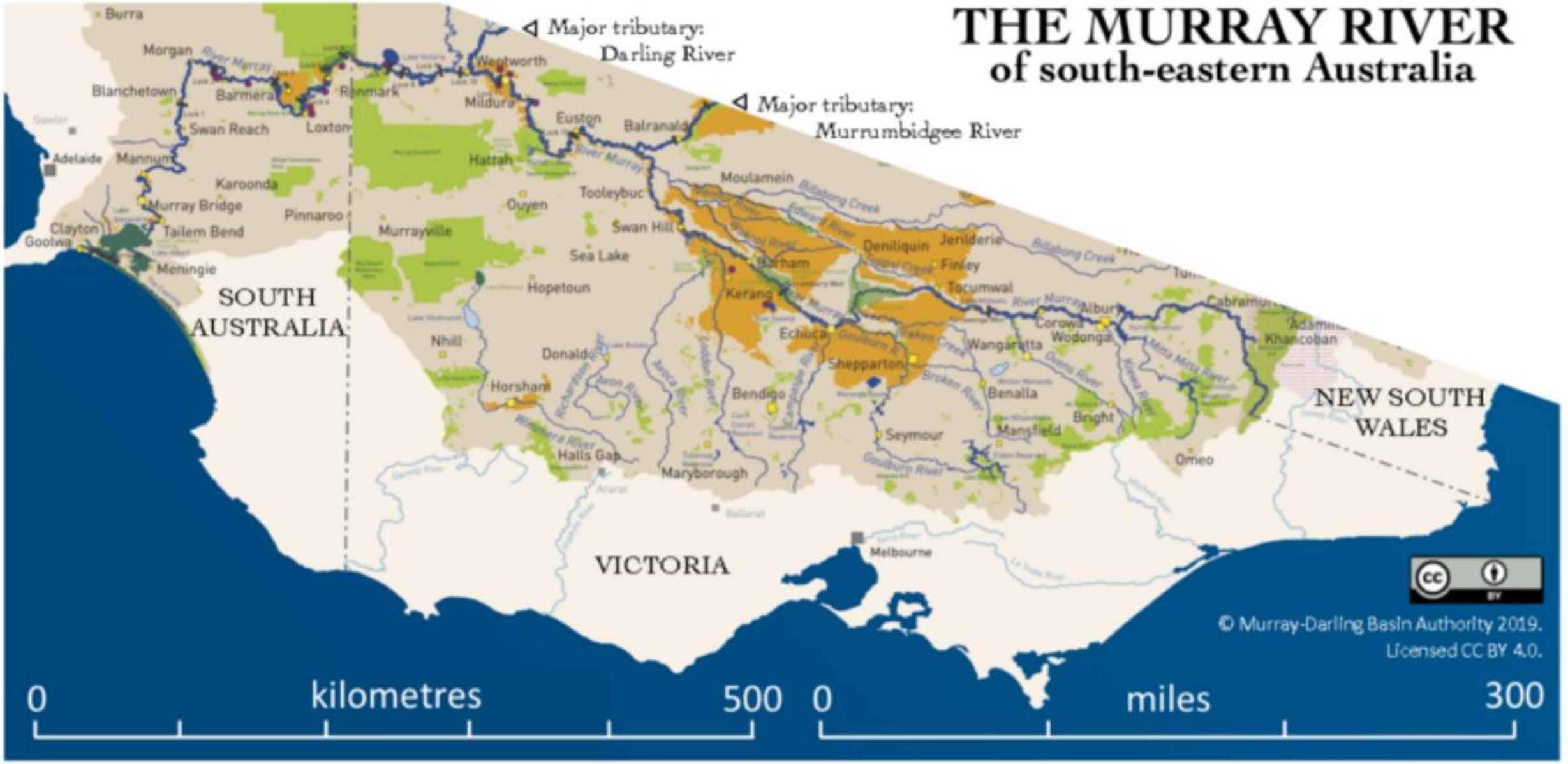


Nature's important benefits are called "**ecosystem services**". They include:

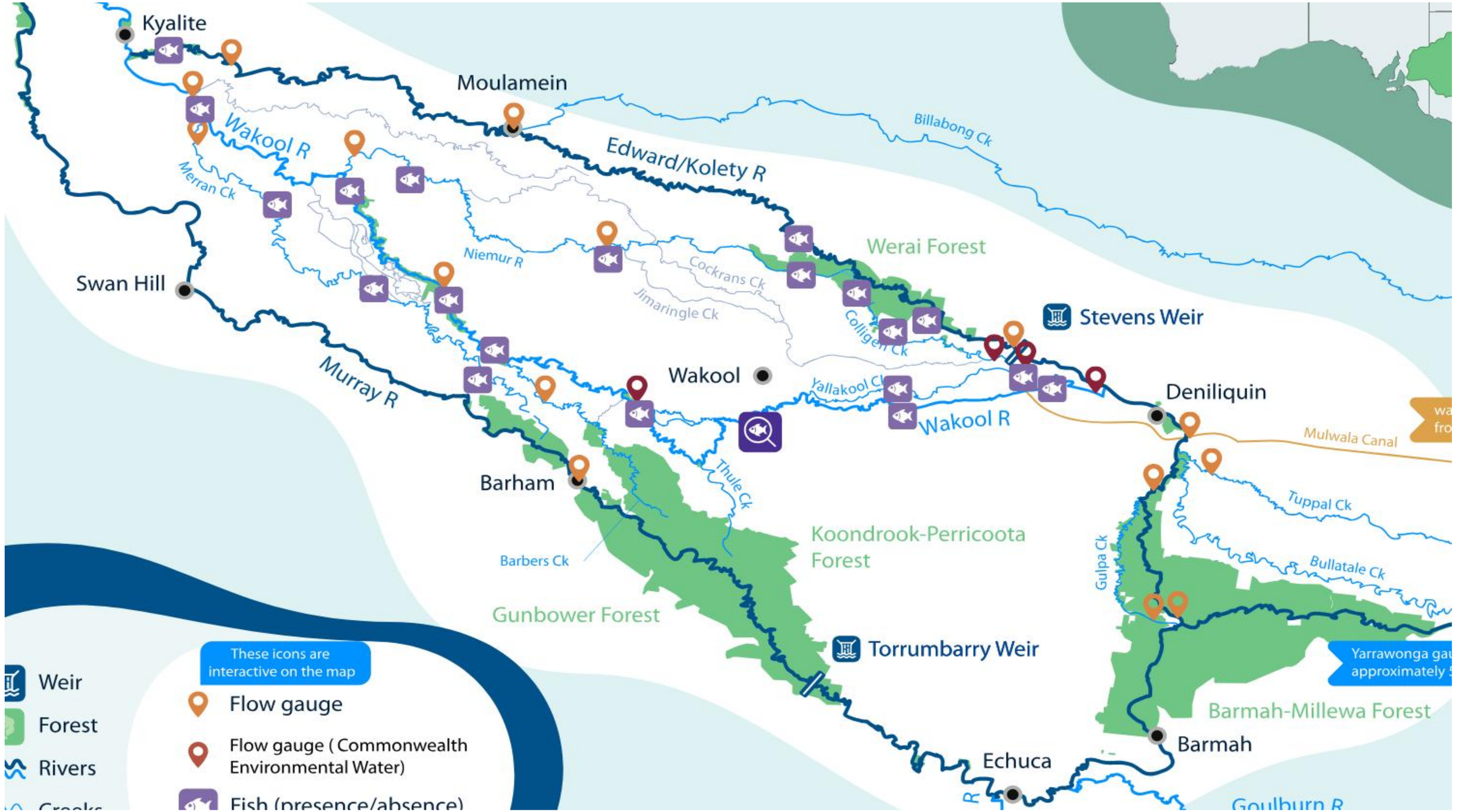
Sources: World Economic Forum; Foresight Future of the Sea from the UK's Government Office for Science; Organisation for Economic Co-operation and Development; The Economics of Biodiversity: the Dasgupta Review. CS3164.



ENVIRONMENTAL SERVICES



Source: Murray–Darling Basin Authority (https://www.mdba.gov.au/sites/default/files/pubs/1269-Murray-Darling-Basin-Map-Poster-A1_0.pdf).


Kyalite
Moulamein
Wakool R
Merran Ck
Edward/Kolety R
Billabong Ck
Niemur R
Cockrans Ck
Jimaringle Ck
Werai Forest
Colligen Ck
Stevens Weir
Swan Hill
Murray R
Wakool
Yallakool Ck
Wakool R
Deniliquin
Mulwala Canal
Barham
Thule Ck
Barbers Ck
Koondrook-Perricoota Forest
Gunbower Forest
Tuppal Ck
Gulpa Ck
Bullatale Ck
Torrumbarry Weir
Barmah-Millewa Forest
Barmah
Echuca
Goulburn R
These icons are interactive on the map
Weir
Forest
Rivers
Flow gauge
Flow gauge (Commonwealth Environmental Water)
Fish (presence/absence)

Our story - water communities, river and forest keepers, land stewards

This part of Australia functions as an inland delta and biodiversity hotspot, massive natural carbon sink already, plus one of the world's most sophistacted gravity fed irrigation systems and with farmers who hold generations of hydrology knowledge - is this the place for large investment - if we are the very few who **keep projects viable in 4th year of drought?**

We can demonstrate the **efficiency of each drop** of water - multi-purpose use - teal carbon, food growing, methane reduction, forest carbon sinks, connectivity to world class natural assets, migratory bird refuge

Un-stranding these world class natural assets

- Only the farmers providing on-farm refugia/biolinks/wetland complexes wil reconnect these stranded assets.

Natural Capital Gallery Walk

30’
Break into 3 groups and each group go to your assigned Gallery station (1 goes to Environmental and Cultural, 2 goes to Man-made, 3 goes to Situational)

The facilitator at the station will introduce the items presented in the Gallery as examples of what our region has to offer.
Then in group discuss and list other assets in the same category that you think are important assets, and what role they could play in environmental markets.

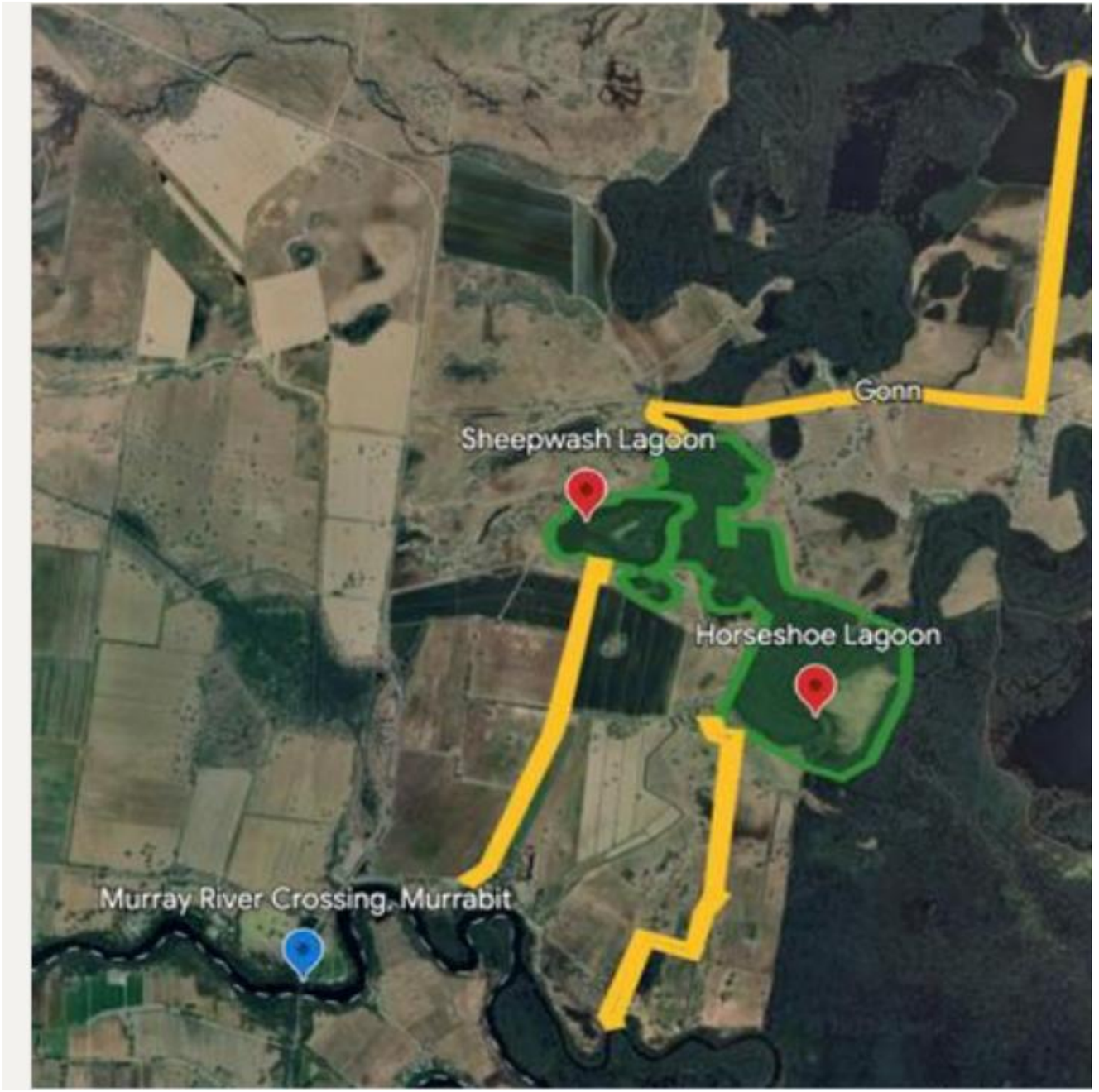
The previous groups will have already listed some ideas – either find new ones or enrich the ones already there.

Then rotate to the next station

When you have done the three stations, short report and discussions as to what you think are the top 3 or 4 more important assets at each station

River Country Hydrated Biolink - product concept

Co-designing a hydrated biolink connecting the Wakool River with the Murray River and the Murray Valley National Park at Noorong and Campbell's Island State Forest (with lagoons at the heart of it)



Environmental markets – what they are and how can they help us

Information on environmental markets from one of our experts

Prioritising questions for the panel

Q&A with the panel

Brainstorm how this can work for us in our context

Environmental Markets – a crash course

Rohan Clarke - RFM

Environmental markets

Markets are evolving to incentivise farmers to deliver better environmental & economic returns:

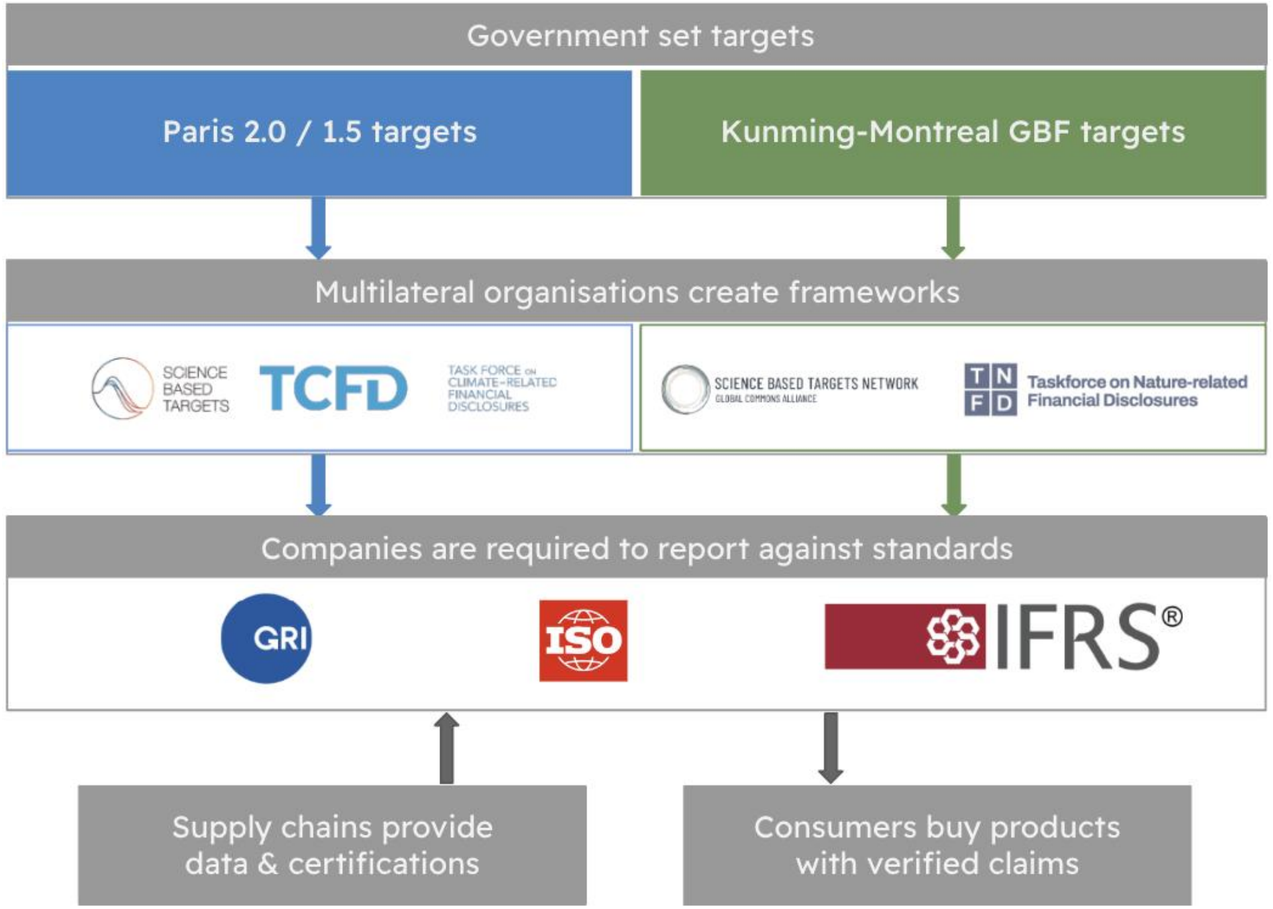
- Green loans and insurance
- Farm productivity and valuation impacts
- Certification of produce
- Carbon and biodiversity markets
- Grants and tax incentives

REGEN

What is driving demand from buyers?

Governments have signed up to targets that flow down through corporates to farmers.

- From January 2024, IFRS will require companies to report sustainability & climate risks, and performance against targets.
- From January 2024, ESRS requires European companies to report.
- From July 2024, ASRS will be applied to Australian companies, though voluntary.



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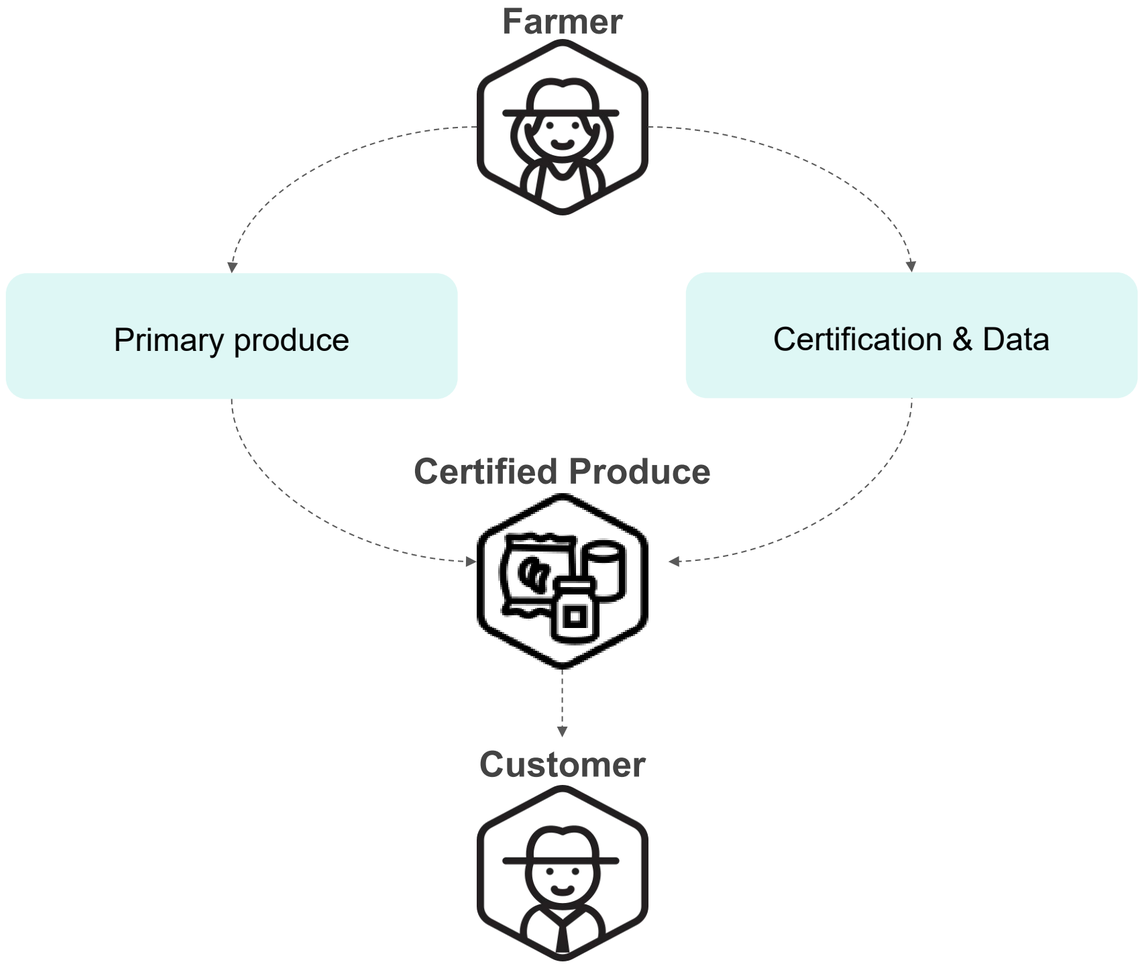
What does that mean for farmers?

Farmers will not only sell what they produce, but how they produce it.

Supply chains, financials, governments will incentivise ‘good’ practices.

They also need high integrity claims and auditable data to support impact reporting.



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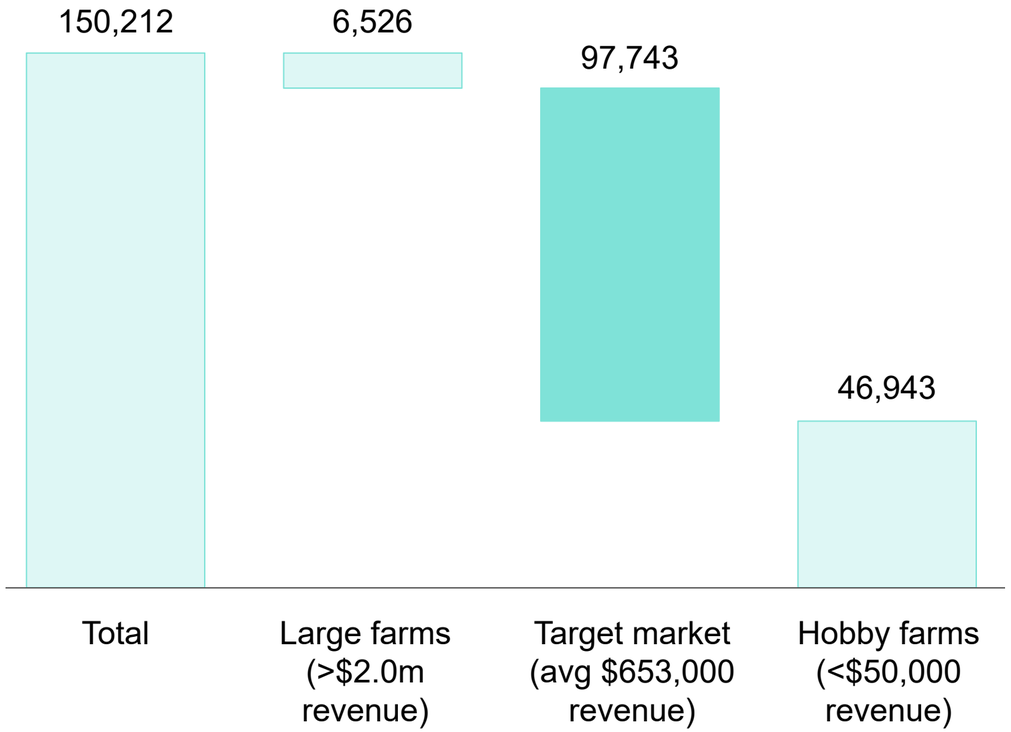
What is impact on supply chains?

All agricultural produce will be certified against buyers reporting needs.

Creates market demand for certification of outcomes by trusted counterparties.

Across the 150,000 farm businesses in Australia, that's over $100bn in revenue that will require verified claims.

Number of Australian farm businesses, by size



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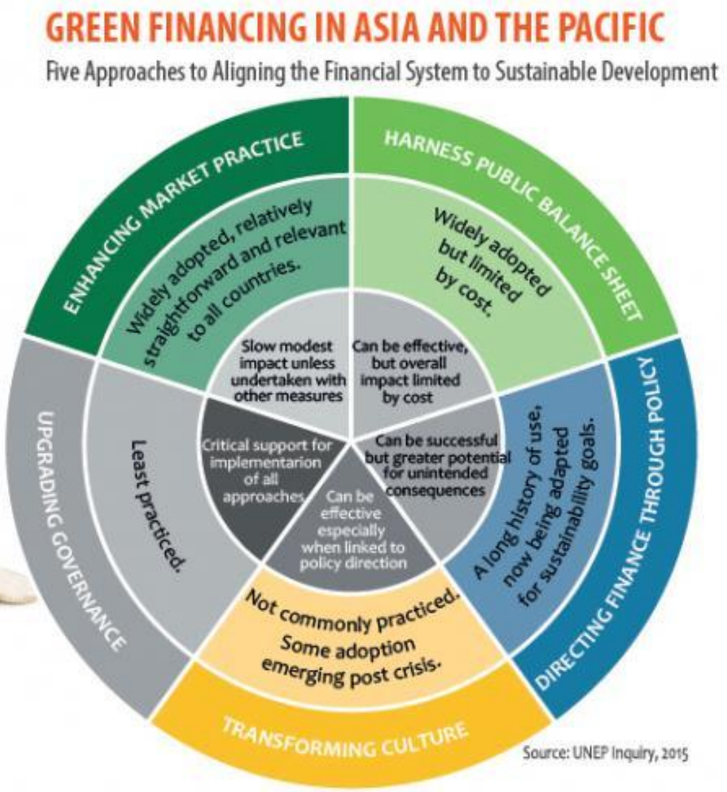
What is impact on financials?

Banks looking for data to:

1. Manage their risks - access
2. Compete for your business - pricing

Given they need farm data, opportunity to engage banks through verified claims.

Ultimately, all farm debt will be ‘green’.



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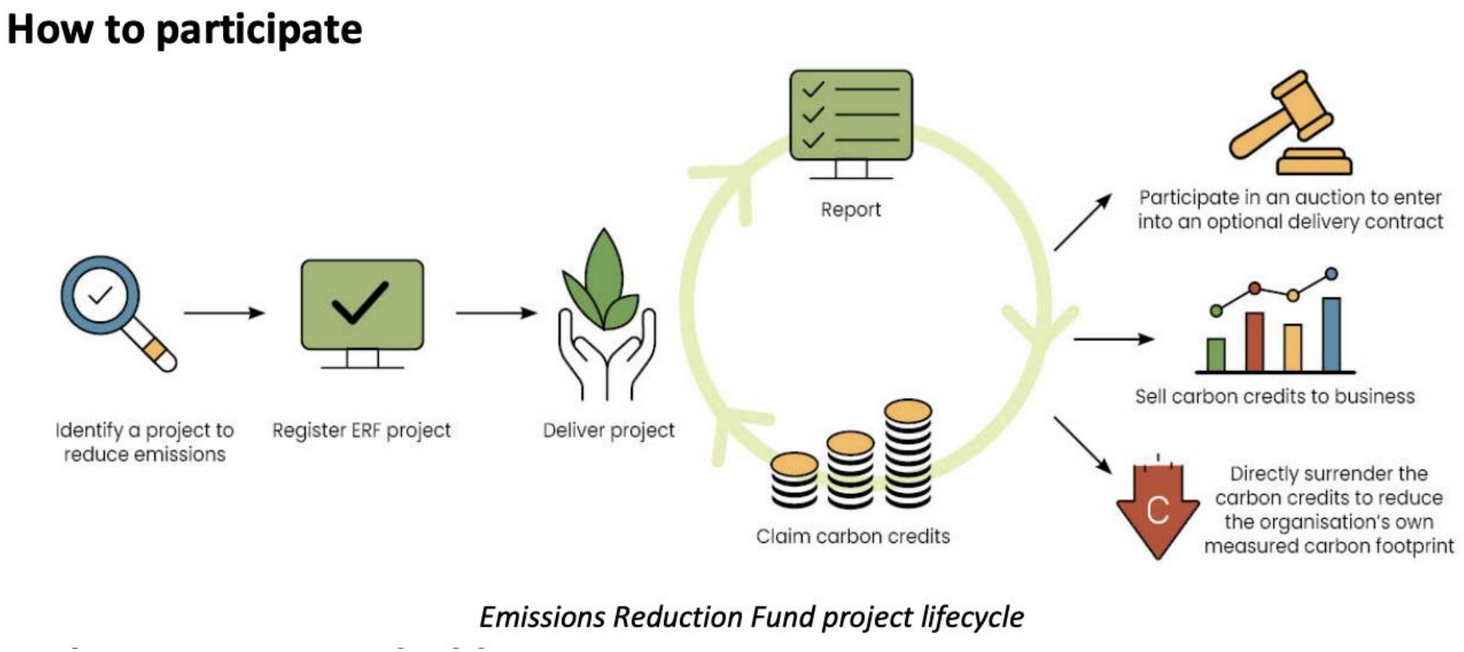
What is impact on government?

Government has key roles:

- Buyer of public good
- Overcoming early adoption costs
- Promoting fair & safe markets



Emissions Reduction Fund project lifecycle

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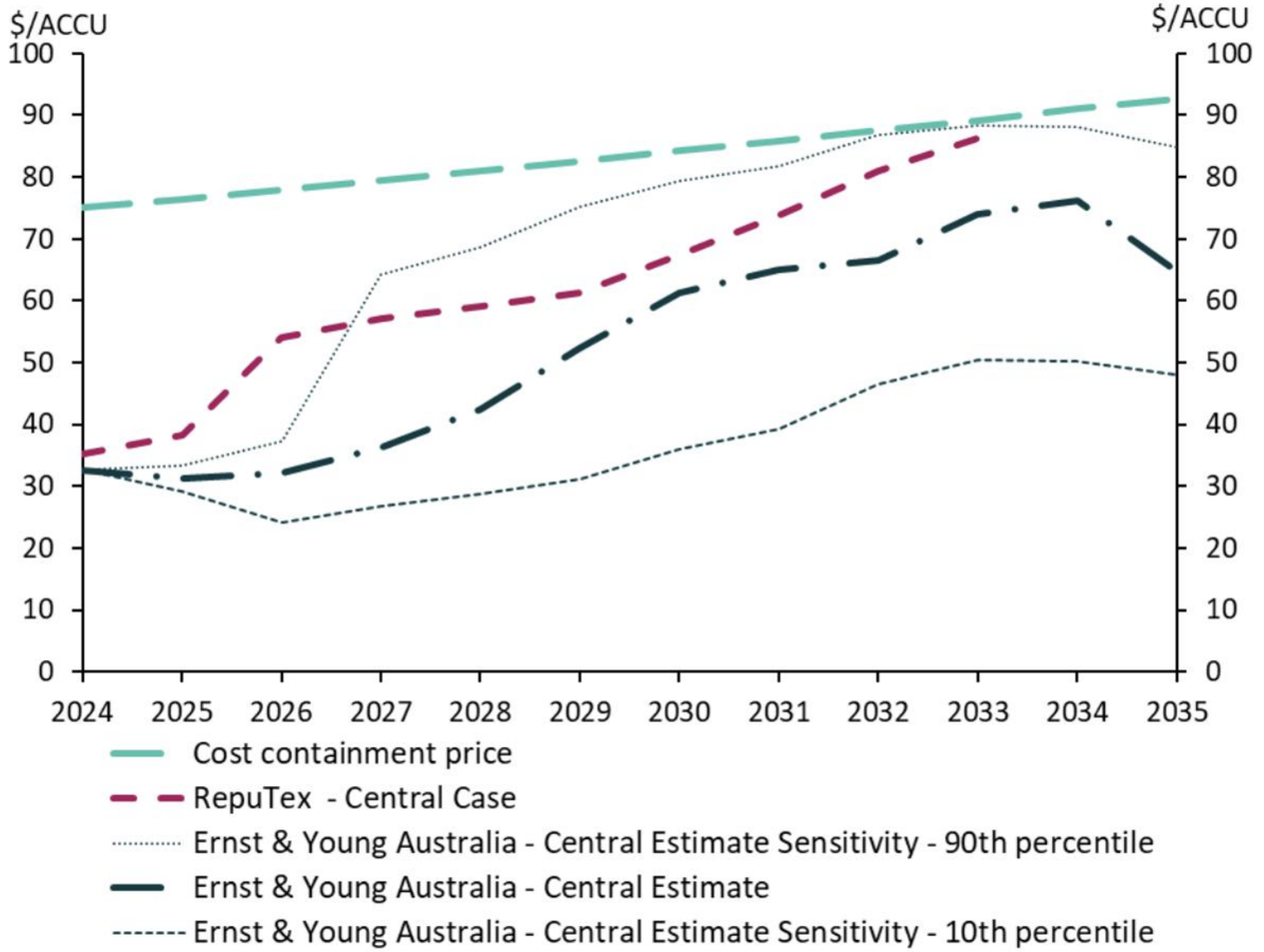
Australia's carbon markets

Compliance markets transitioning to the new requirements under the Safeguard Mechanism. Forecasting higher prices to catalyse reforestation & land-based supply.

Voluntary markets are small - with buyers typically paying A$2 - A$10 per tCO_2e for international credits.

Figure 17 Forecast ACCU Prices by Market Analysts, 2024 to 2035, real 2024 $A per ACCU



Source: DCCEEW Australia's emissions projections 2023

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Australia's biodiversity markets

Biodiversity compliance markets (offsets) are active in each state.

Voluntary markets are embryonic at best. Nature Repair Market aiming to create the infrastructure. Global initiatives underway to foster markets based on corporate demand (eg. WEF Biodiversity Credit Auction).

PWC potential future financial flows into biodiversity

Benefit category	Benefit type	Specific benefit description	Estimated value in 2050
Direct value (Financial flows to biodiversity)	Investment	Private biodiversity, conservation and natural capital investments	$78 bn
		Sustainable commodities	$5 bn
	Expenditure	Conservation NGOs and environmental charities	$11 bn
		Government expenditure and subsidies	$8.5 bn
	Market-based instrument transactions	Environmental water trading	$1.6 bn
		Forest carbon offsets	$24 bn
		Biodiversity offsets	$9 bn
Indirect-use values		Carbon co-benefits	
		Nutrient cycling	
		Flood prevention	
		Water cycle	
		Pollination by bees	
		Prevention of soil erosion	
		Air purification	
Non-use values		Existence values	
		Bequest values	

Note ^ The direct value of financial flows to biodiversity is represented by financial flows to biodiversity, appropriated from the OECD's Global Biodiversity Finance estimation methodology (2020). This has been measured using the OECD framework for the value of biodiversity and the OECD's Global Biodiversity Finance estimation methodology.

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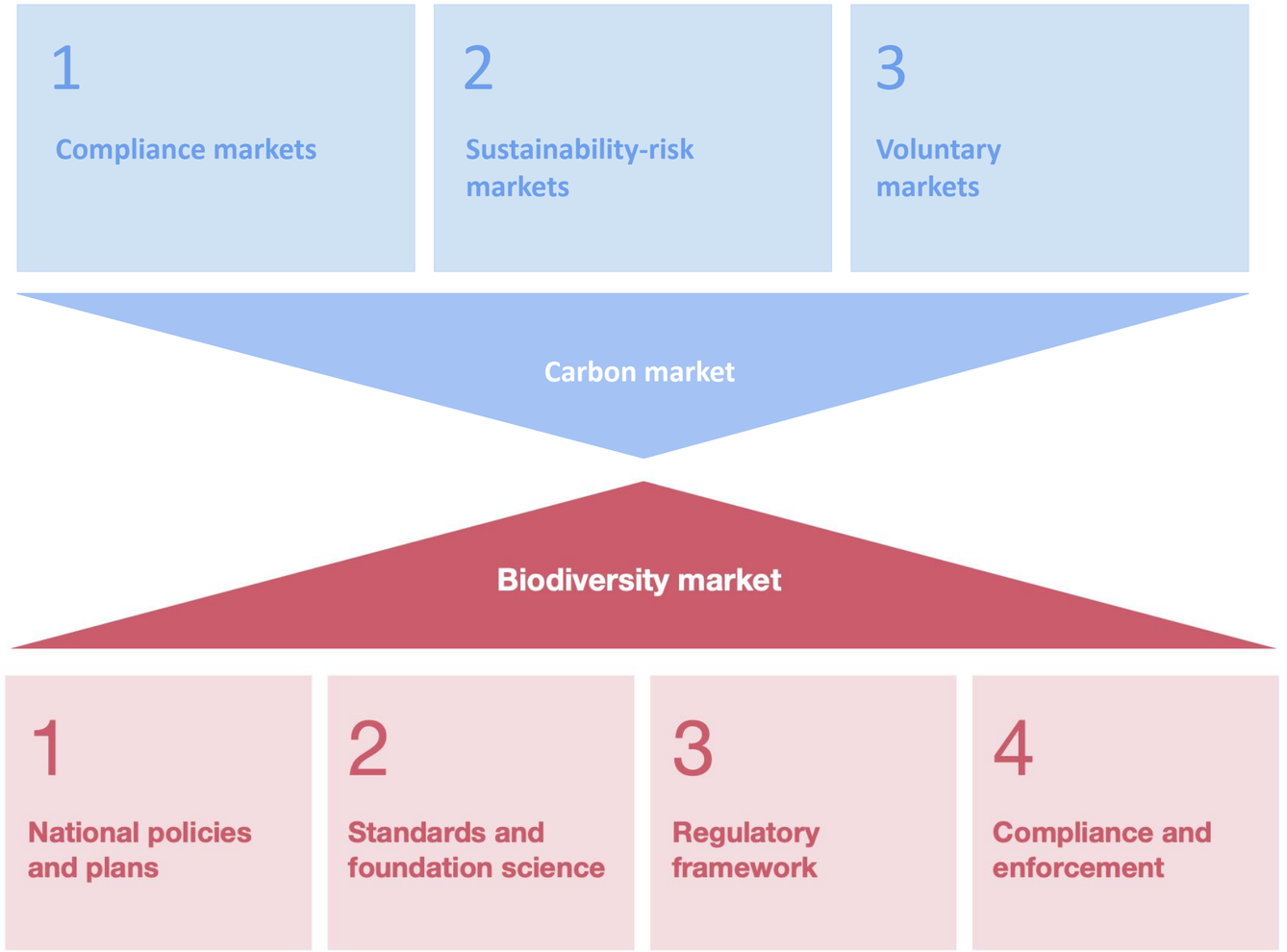
Key takeaways - markets are evolving

Carbon splitting into compliance (ACCU) and sustainability-risk (SBTi) markets, with voluntary credits remaining peripheral.

Biodiversity markets are emergent. Nearest term opportunities leverage SBTi / SBTN. Methodologies under development.



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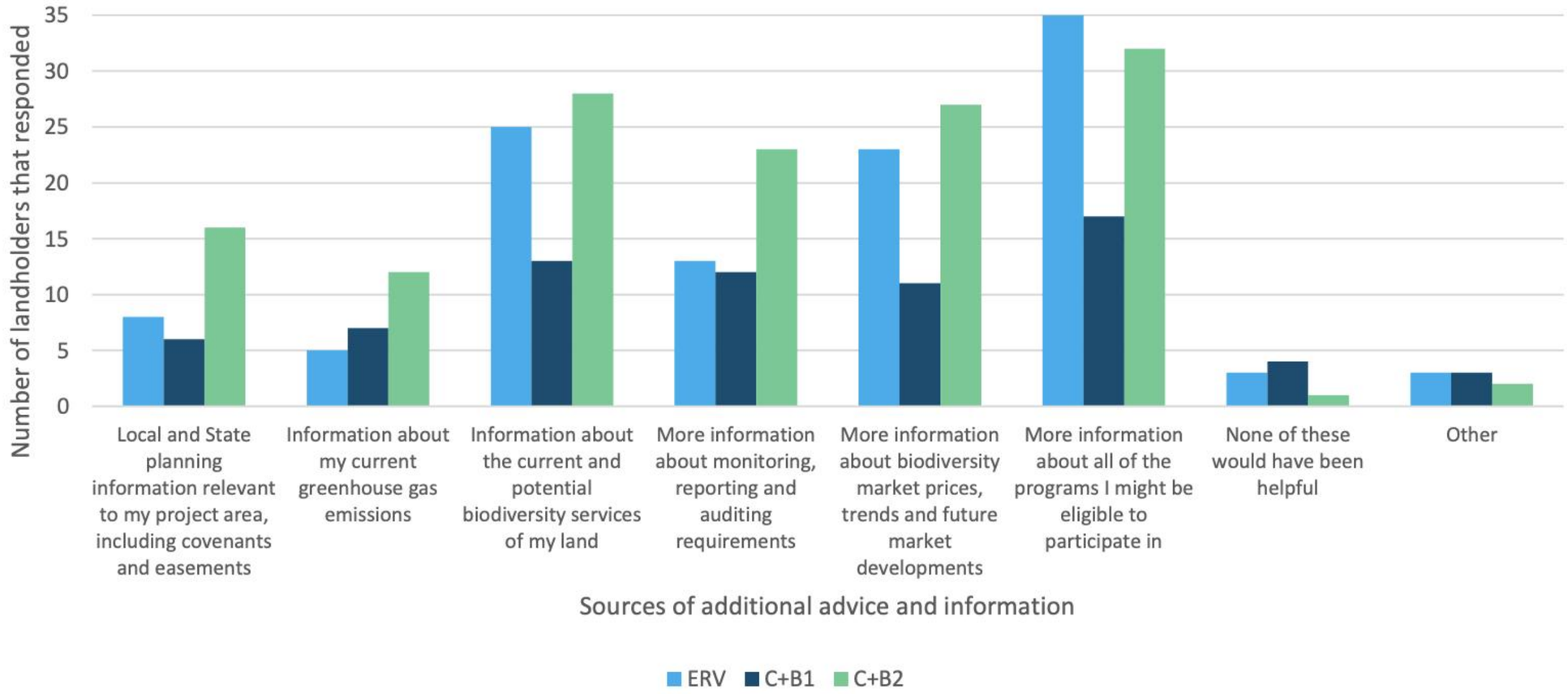
What information do farmers need?

Figure 27: Additional information that may have helped landholders apply



Source: Marsden Jacob review of C + B pilots

What do we want from the panel?

10’

Step 1

Write all the questions that you have in mind about environmental markets – anything from simple to detailed questions on post it notes.

Go to the board and put your questions there – preferably next to similar questions but anywhere if you can’t find similar questions

Read through the questions and if more come to mind, add them on.

Step 2

When we’re finished listing the questions take three voting stickers and vote on the board

We may not answer all the questions today but we’ll use them in the design phase.

THE EXPERTS

Kathleen Barlett

Kathleen is the Natural Capital Adviser for Murray Local Land Services. She is working to build capacity within the Murray Region to support landholders in understanding and confidently participating in environmental markets and realising the value of natural capital from their land.

Dale Stringer

Dale has worked in a wide range of roles with government agencies and Landcare/farming systems groups in the agriculture and natural resource management sectors across Southern NSW and Vic with an emphasis on landholder and community engagement, agricultural extension, program management, leadership and developing partnerships.

Rohan Clarke

Working with farmers and their customers to build regenerative agricultural landscapes. Rohan's expertise is in financial markets, stakeholder engagement and distributed ownership. Co-founder of Regen Farmers Mutual, Rohan is developing the technology platform to enable participation in environmental markets through Regen Digital.

Nicole Killen

Regionlal Manager Agribusness NSW.- Rural Bank

How can these markets help us?

25’
Break into 4 groups.

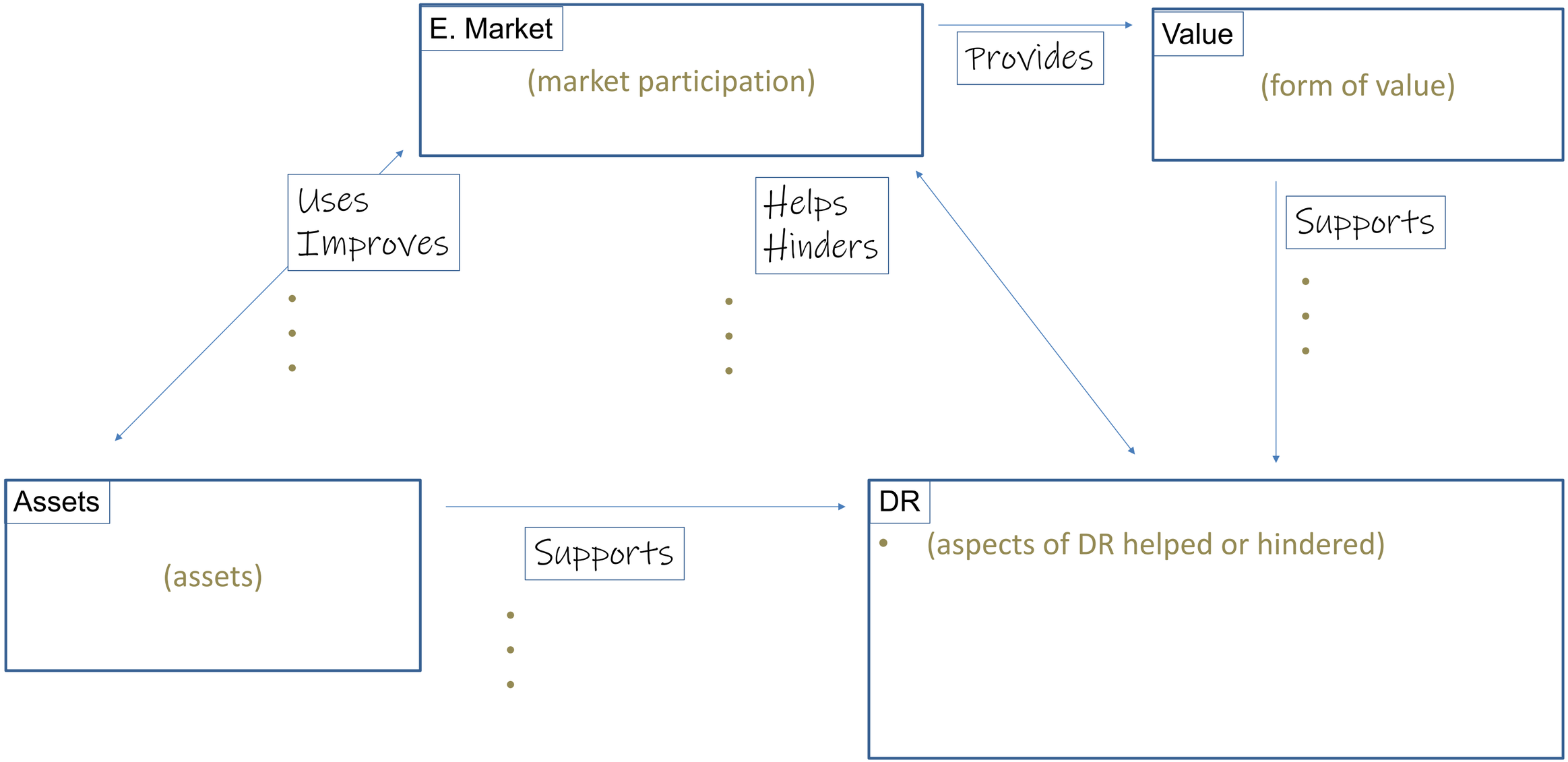
Pick a project/market participation that you think as a group would be interesting to develop, in your own farms, or in the region. Or start from an asset – or an outcome.

Pick a De Bono color for yourself (there should be at least one of each colour in each group) and stick it on yourself.

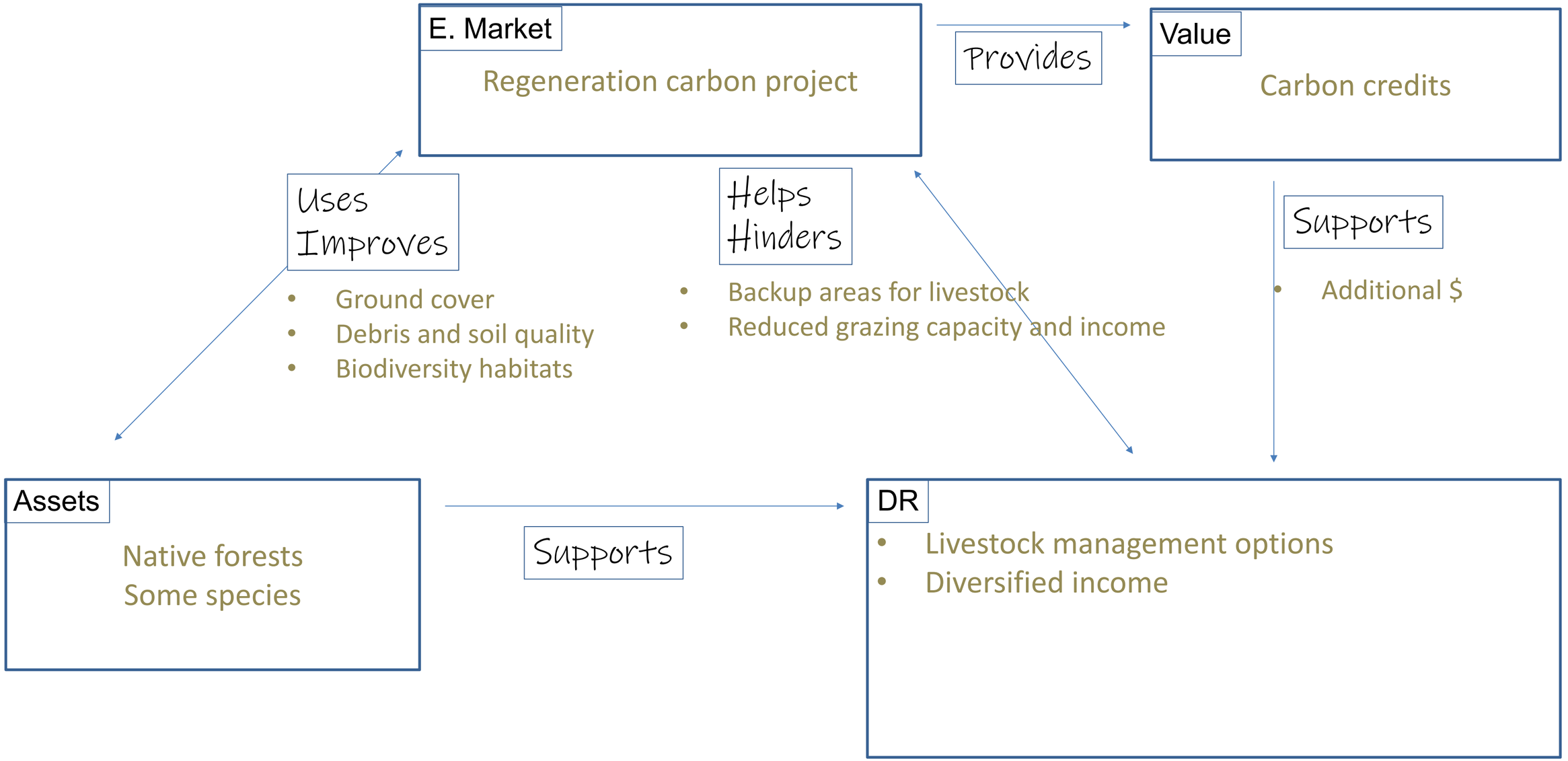
As a group, fill in the template as best as you can - or add to it if you want !
If you get stuck, ask for someone to come help you.

The idea is not to get the perfect answer but to understand how the three topics of today work together – **list all the things you feel you need (technology) or need to know**

Environmental markets blank canvas



Vegetation restoration project example



Possible Environmental Market participations / projects

A Vegetation Restoration project across multiple adjoining properties

A planting project on your own farm

A Soil Carbon project on your own farm

Group-negotiated supply chain agreement

A certified sustainable outlet to supply to Melbourne’s top restaurants

Creating the Western Murray sustainable certification scheme to stamp all products in the region

How do we use our irrigation system in a market

How do we reinforce community links with EM

That’s it !

- Thinking time – take notes, scribble draw… What has been important, what you need to remember? What are you going to do?
- Questions and exchange
- Next steps

Acronyms

ACCU: Australian Carbon Credit Unit
AfN: Accounting for Nature
ANREU: Australian National Register of Emissions Units
CBAM: Carbon Border Adjustment Mechanism
CEA: Carbon Accounting Area
CER: Clean Energy Regulator
CH4: Methane
CO2: Carbon dioxide
CO2e: Carbon dioxide equivalent
CSP: Carbon Service Provider
EIH: Eligible Interest Holder
EPBC: Environment Protection and Biodiversity Conservation Act
ERF: Emissions Reduction Fund
ESG: Environmental, Social and Governance
GHG: Greenhouse gas
GIS: Geographic Information System
GWP: Global warming potential
LMS: Land Management Strategy
LRF: Land Restoration Fund (QLD)
MNES: Matters of National Environment Significance
MSES: Matters of State Environment Significance
N2O: Nitrous Oxide
OR: Offset Report
RVM: Regulated Vegetation Management
SOC: Soil Organic Carbon
VCU: Verified Carbon Units (from Verra)

Prework instructions

1 – DR

Do a DR Sat
Read the report and make notes on it
what you think are priorities for you
where community actions / linkage can mean 1+1 > 2 (for example using Jeffrey's paddock for Fraser and I, if he helps me with fences)
Bring the report with you
Send 3 words when you think about DR

2 – Natural Capital

The region natural capital: using a map of the region, locate the asset closest to you, and prepare a short presentation on it (1-2 min) as if you were presenting it to a visitor.
Send 3 words that represent our Nat Cap for you

3 – EM

Environmental markets: the 3 LLS factsheets and link to the website – please note questions, we'll use them in workshops
Send 3 words that represent what you feel or think about environmental markets

Drought resilience exercise canva

Prepare butchers papers but only ne category for one ‘ financial, one ‘Envi ‘personal and social’

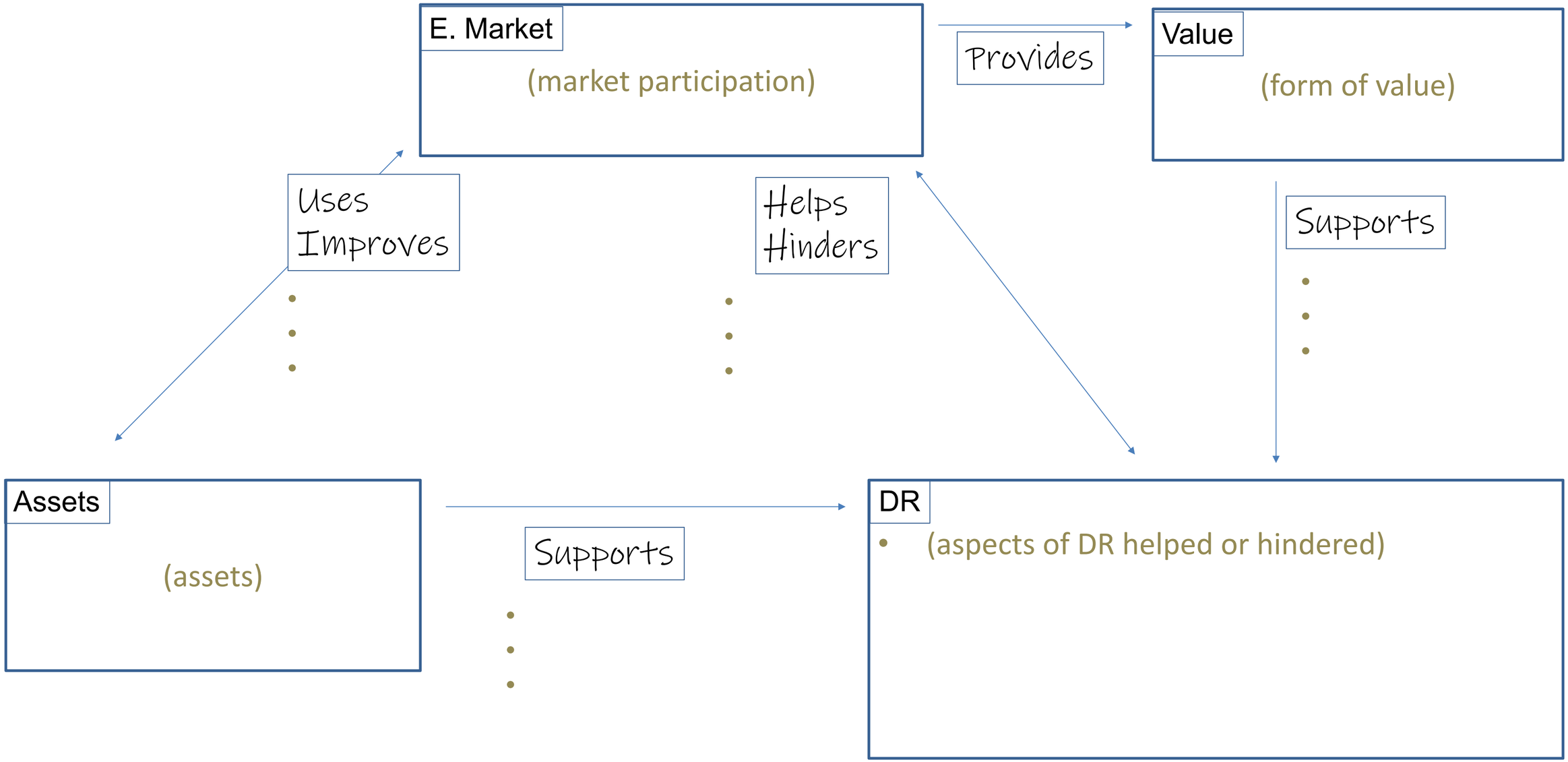
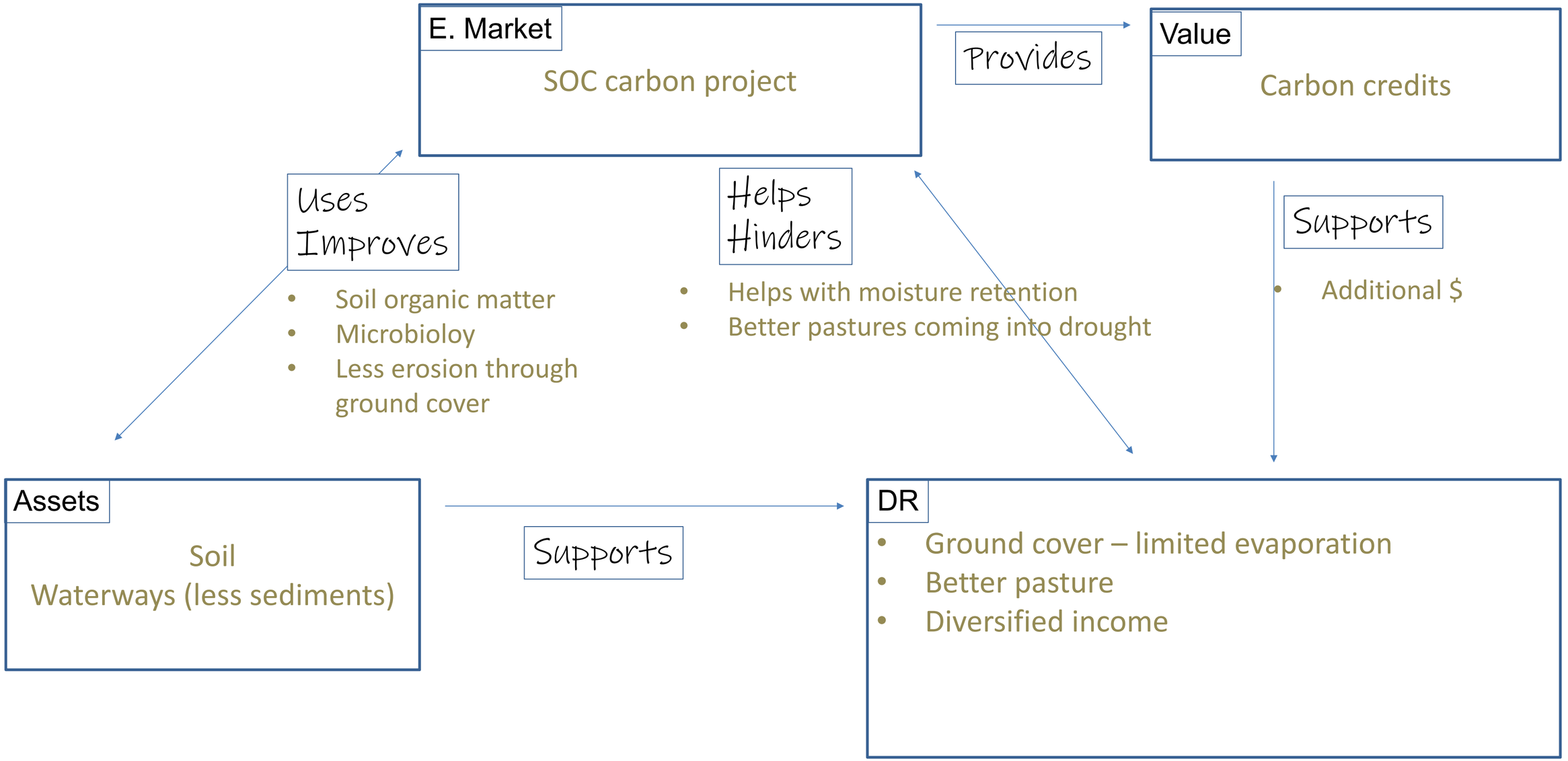
Topic	What good DR look like	What does it need
Personal and Social		

Our natural advantage canvas

Prepare butchers papers but only ne category for one ‘ Natural’, one ‘man ‘situational’

	What we have	Drought resilience +/-	Enviromarkets ideas +/-
Natural			

Environmental markets blank canvas



SOC project example