



SUSTAINABLE, REGENERATIVE AND HOLISTIC

Farming for the Future

Why now, Why here, Why me?

01

2018 Sustainable
Agriculture
Scholarship –
Agricultural Bureau of
SA and PIRSA

02

South Australia is a
tough place to farm.
Need our farms,
farmers & landscape
to be resilient & future
focused

03

Ecologist with 17 years
research experience in
improving
sustainability and
profitability in
agriculture

Sustainable Agriculture

“Agriculture that is future focused”

Meeting society's food and textile needs in the present without compromising the ability of future generations to meet their own needs.

Based on an understanding of ecosystem services and the relationships between organisms (including ourselves) and their environment.”

Regenerative Agriculture

“ Regenerative Agriculture is management that leads to increasing biodiversity and soil carbon”

David Marsh, 2018 National Individual Landcarer of the Year.

“A conservation and rehabilitation approach to food and farming systems”

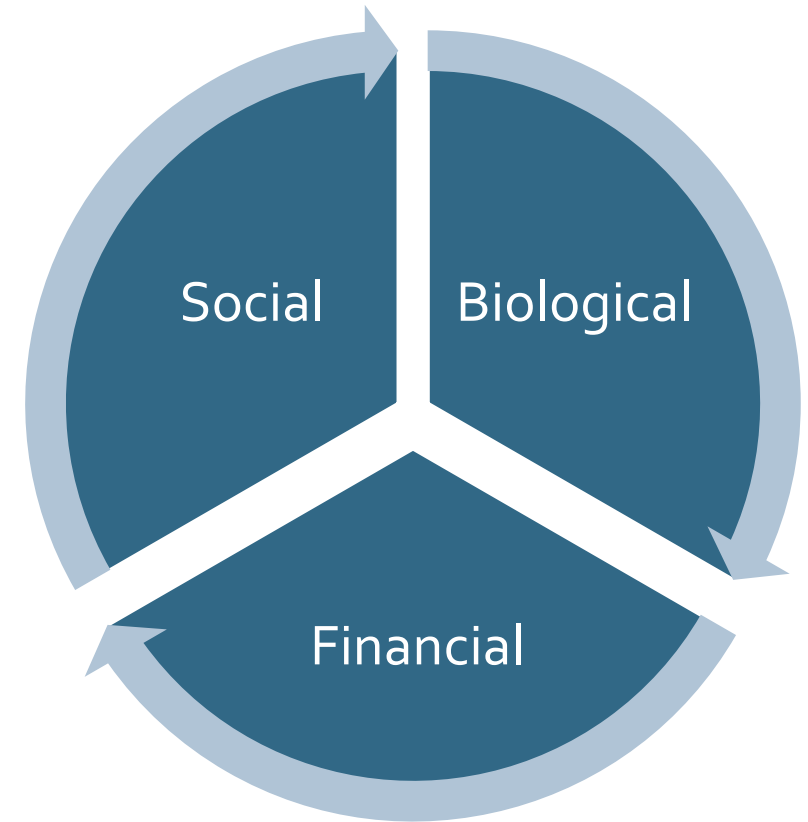
Farming focused on improving the health of the landscape and the quality of the food and fibre produced to ensure healthy people, communities and landscapes.

Holistic Farm Management

Holistic Decision Making: *the world functions in wholes.*

The more complex and diverse communities become, the more stable populations tend to be.

Acknowledging that a farming enterprise doesn't operate in isolation, it is made up of a landscape and resources, with people and an economy...all of which need to be supported and developed to be the best they can be.



Sustainability in Farming – A Choice

- A decision to do it better
- A perspective of management that considers the whole not just its parts
- More than a business
- Not just for your generation
- Not just impacting your land
- A decision to look at root causes and long term outcomes, not symptoms and short term gains.

Looking Back

- Colonial View Point – “to tame and conquer a land”
- Seek to control the landscape – “a tidy and managed farm”
- A Factory, Industrial approach to a Biological Process – “controlled inputs for desired outputs”
- Monocultures to meet markets – “industrialised supply chains and commodity markets”
- Farm size growth – “less people managing more land”
- Economies of Scale – “efficiency gains required”



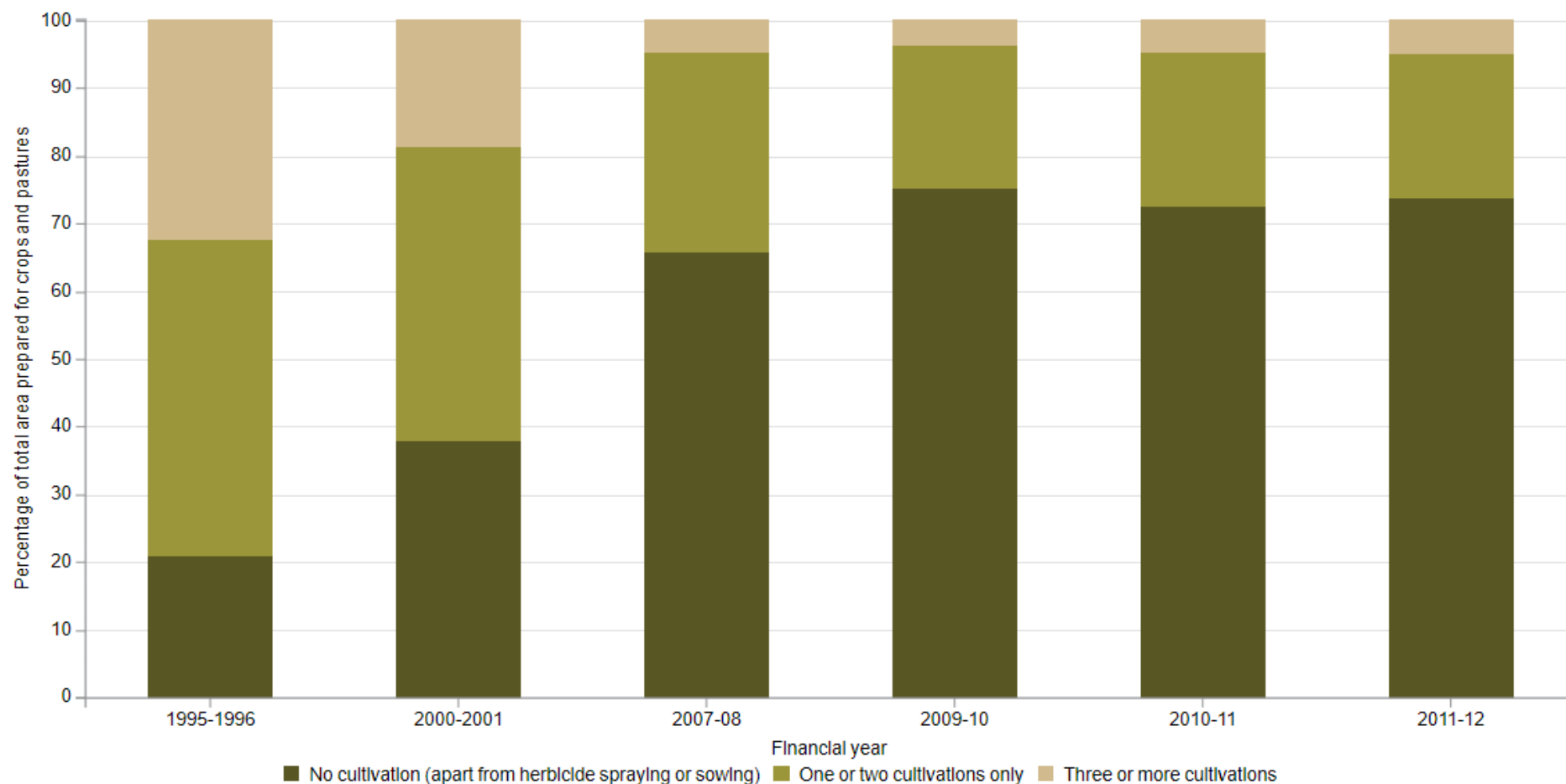
Where do we stand as land managers today?



State and trends of soil erosion by water and wind

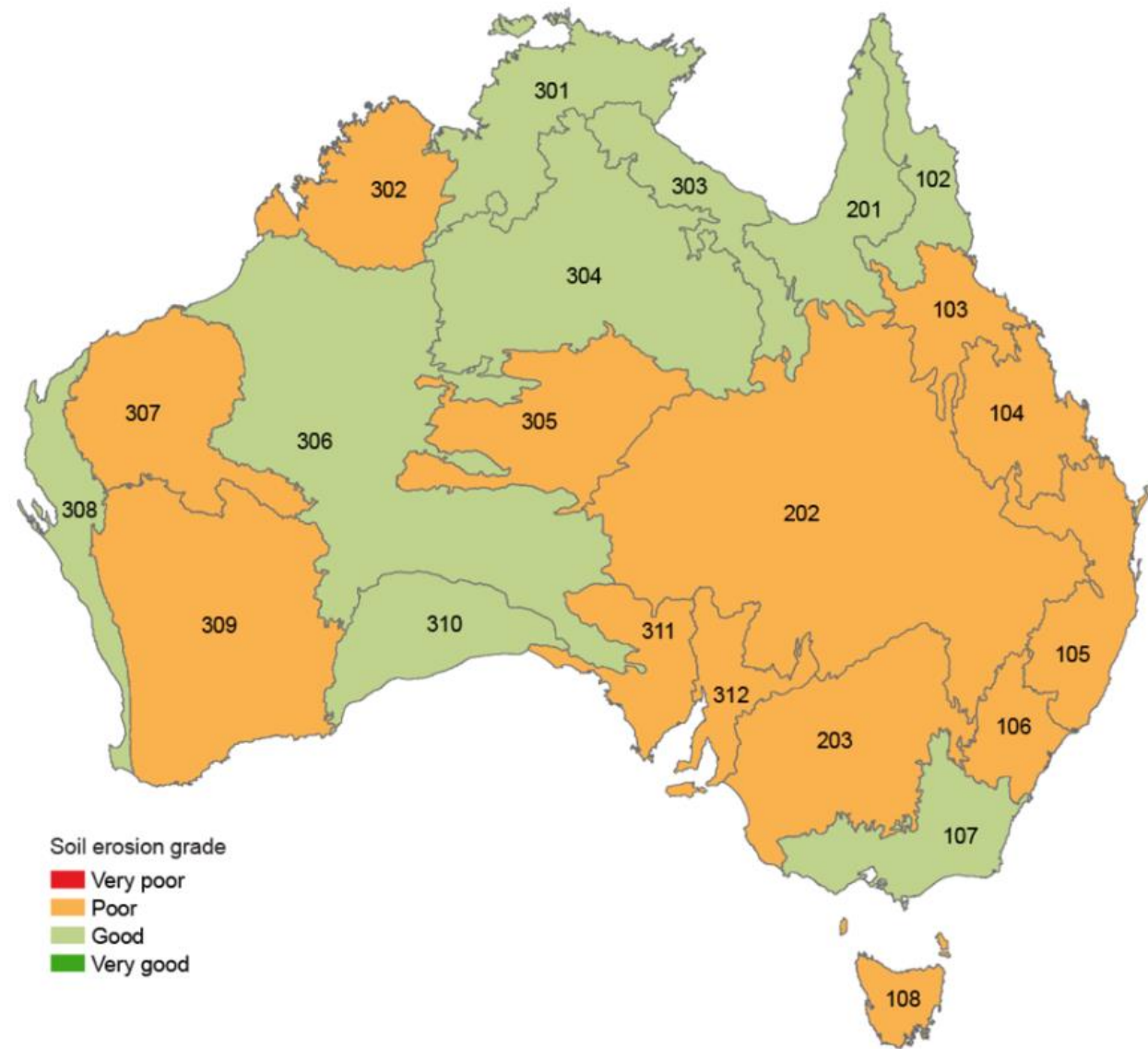
Land (2016, 2011)

- a pattern of more careful grazing and maintenance of effective land cover at critical times of the year
- improved adoption of conservation practices, especially across the cropping lands of southern Australia
- an associated large decline in the amount of tillage in farming systems ([Figure LAN21](#)).



Assessment of state and trends of soil erosion across Australia

Figure LAN25 and assessment summary 6 provide an assessment of soil erosion by wind and water across Australia. The assessment draws from the SoE reports for Western Australia, South Australia and New South Wales (NLWRA 2003, Bastin & the ACRIS Management Committee 2008, Bui et al. 2010, McTainsh et al. 2011, Chappell et al. 2012, Butler et al. 2013, Bartley et al. 2015, Teng et al. 2016).



Soil erosion grade

- Very poor
- Poor
- Good
- Very good

Assessment Summary Key

Grades

Very good

Current management is adequate, and a low level of monitoring is required

Good

Significant erosion at the time of clearing (>5 tonnes/hectare/year). Rates are 1–5 tonnes/hectare/year. Needs management and monitoring, or the system of land use will be threatened in the long term

Poor

Majority of landscape has been eroded to the extent that plant growth has been affected and, in agricultural systems, yields and returns are compromised. Erosion rates are unsustainable (>5 tonnes/hectare/year)

Very poor

Current rates of erosion are unsustainable; large areas will reach exhaustion within 50 years

Component	Summary	Grade				Confidence		Comparability
		Very poor	Poor	Good	Very good	In Grade	In Trend	
	<div>cover due to grazing or</div> <div>more Topics</div>							
311, 312 Eyre Peninsula and Gulfs Ranges Provinces	<div>Diverse land uses, with a history of unsustainable rates of wind and water erosion, but improving under sustainable land management practices such as no-till agriculture</div> <div>less</div> <div>Supporting information</div> <div>Topics</div>	2016	<div><div></div><div></div><div></div><div></div></div>					
	<div>Diverse lands with a history of unsustainable rates of wind and water erosion. Land management practices are improving</div> <div>less</div> <div>Topics</div>	2011	<div><div></div><div></div><div></div><div></div></div>					

5 t/ha per year...

- 10-12 t/ha soil = 1mm topsoil
- ~ 1mm/2 years
- 1mm topsoil loss = 1-6% potential yield loss
- 3-5cm of topsoil loss per 100 years.
- About 25% of OC in top 2 cm
(Implications for N)
- About 40% of P in top 2 cm
- No-till more stratified than cultivated

Source: Dr Sean Mason, Agronomy Solutions



Spalding Soil Composition Example

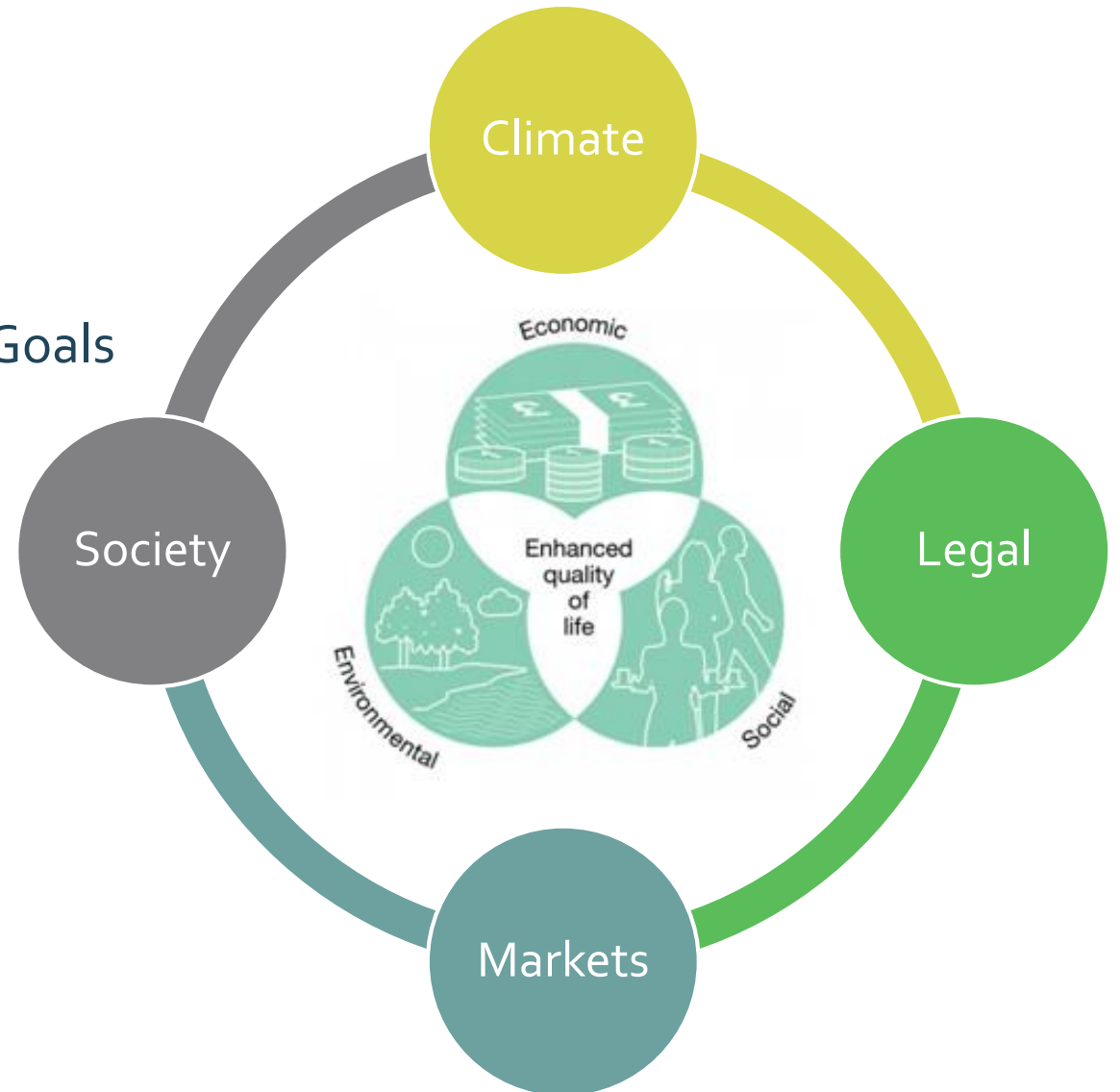
	0-10cm	10-60cm		0-10cm	10-60cm
Texture	3.0	3.0	Gravel	5	5
Colour	BRGR	GRBR	Boron (Hot CaCl ₂)	1.69	2.52
Nitrate Nitrogen	26	2	Copper (DTPA Cu)	0.92	1.44
Ammonium Nitrogen	4	< 1	Reactive Iron (DTPA Fe)	12.30	7.20
Phosphorous (Colwell)	24	5	Manganese (DTPA Mg)	42.38	6.52
Potassium (K) (Colwell)	471	103	Zinc – DTPA	7.70	0.56
Sulphur	9.5	14.4	Exchangeable Al	0.030	0.040
Organic Carbon	1.77	0.52	Exchangeable Ca	13.60	14.30
Conductivity (EC)	0.209	0.168	Exchangeable K	0.87	0.24
pH (water)	8.2	9.0	Exchangeable Mg	1.70	2.77
pH (CaCl ₂)	7.4	8.0	Exchangeable Na	0.30	1.49

Where do we stand as land managers today?



Management Drivers

- Economic Position
- Personal taste and Personalities – Viewpoint & Goals
- Landscape and its Health
- Climatic Influences
- Legal Frameworks
- Market Factors
- Community and Social Pressure



Your View, Your Perspective

- Family History
- Crisis Events – Drought, Flood, Fire, Death, Injury or Disfunction
- Landscape
- Community
- Education
- Family Goals

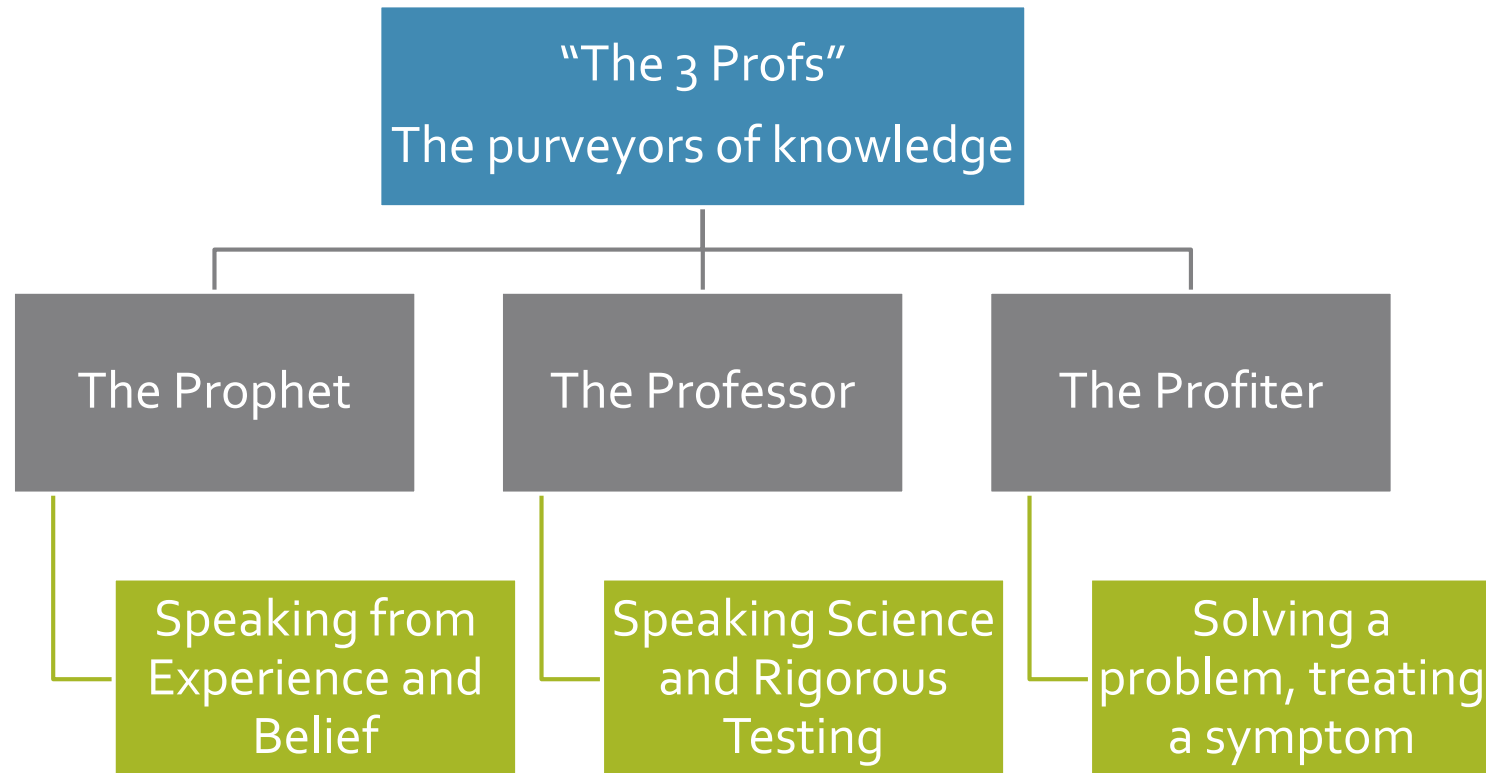
**Can I change
my perspective?**



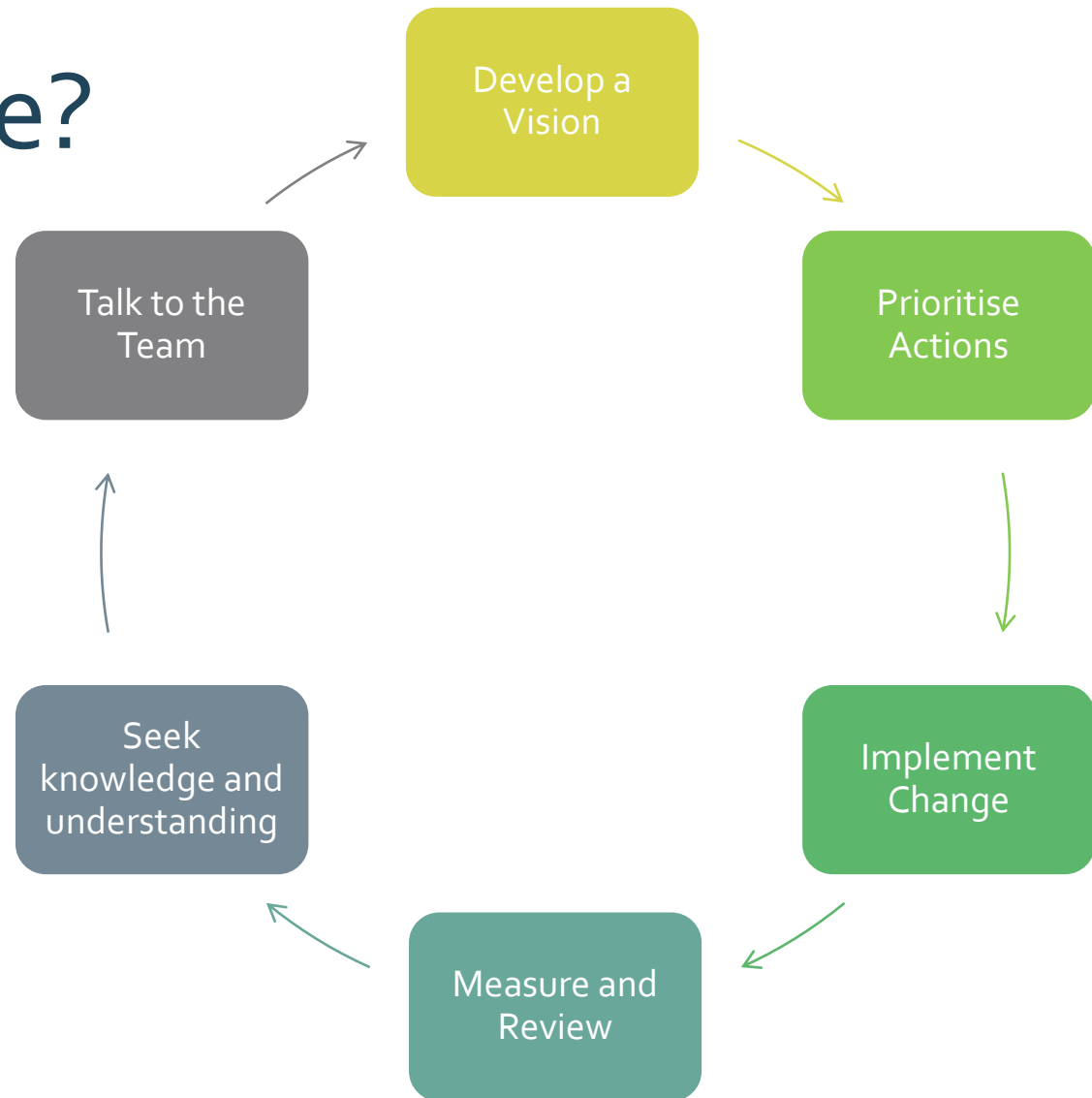
“The door for change can not be unlocked from the outside” (*Unknown*)

Information Sources

Understand where the information you are basing your decisions on is coming from and seek multiple sources.

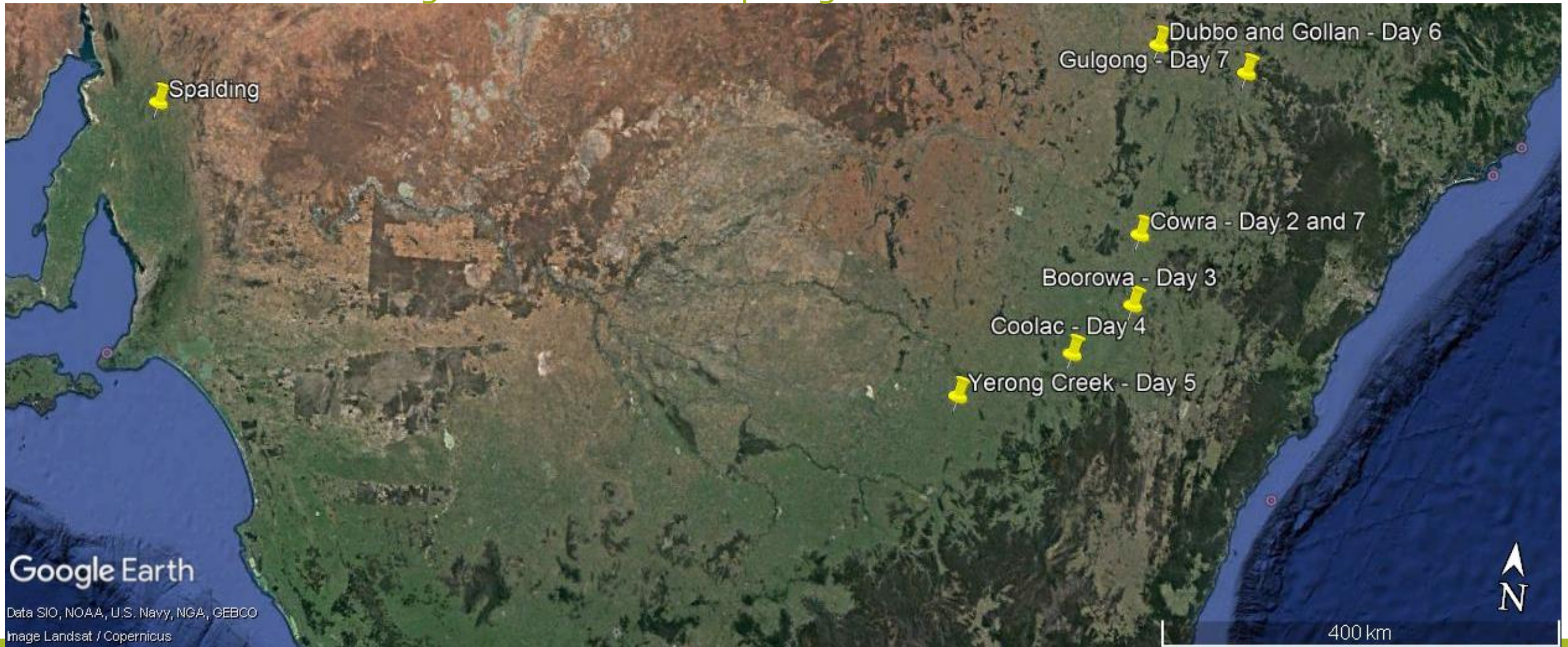


Where to from here?



What Sustainable, Regenerative & Holistic can look like...

2018 Sustainable Agriculture Scholarship – Agricultural Bureau of SA and PIRSA





Case Study 1 – David Marsh, Boorowa NSW

- Personal Crisis led to a desire to be less stressed and put less stress on the landscape.
- Cover is King
- Regenerative Grazing
- Adaptive system – 100% cattle agistment enables destocking or increased stocking as rainfall and feed dictates.
- Zero Chemical Use



Case Study 2 – Colin Seis, Gulgong NSW



- Father of “Pasture Cropping”
- A native grass pasture system with cropping to supplement feed his Merino Sheep Stud – 100% destocking is never an option.
- Selective chemical and fertiliser use to establish crops
- A system derived out of necessity

Case Study 3 – Maurice Family, Gollon NSW

- Holistic Farm Management
- Stacked Enterprise – Cropping, Pastures, Sheep Stud Agistment, Pasture Raised Eggs
- Profitability, Sustainable Family Dynamics and Regenerative Land Management focus.



Case Study 4 – Warwick Holding, Yerong Creek NSW

- Continuous cropper no livestock for 18 years. CTF for 10yrs on 12m, inter row sowing and stubble retention.
- Started from scratch, contractor and lease whilst growing the enterprise.
- Focused on Soil Health and addressing limiting factors.
- Using in-crop mixed species brown manure crops to improve soil structure and function
- Tillage Radish Purple top Turnip Field Peas Kittyhawk winter wheat.
- @Pontaragrain on Twitter.





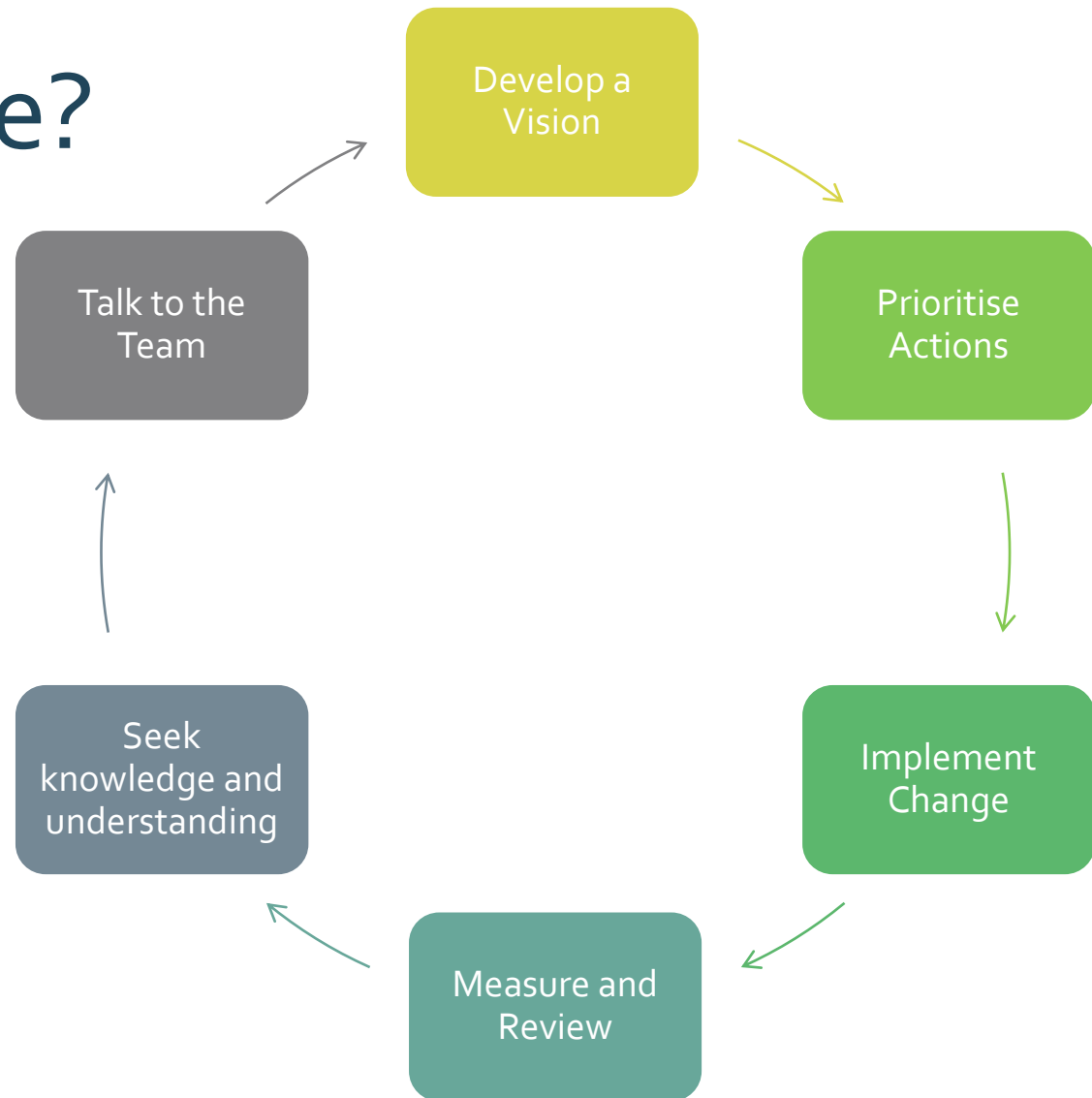


Sommerville's @ Spalding & Burra

- 2300 ha
- Cropping enterprise
- Wheat, Barley, Canola and Hay
- Utilise agisted sheep as a stubble management tool
- Spray Contracting Business
- A values-based approach to farming;
 - Profitability
 - Landscape
 - People
 - Community



Where to from here?



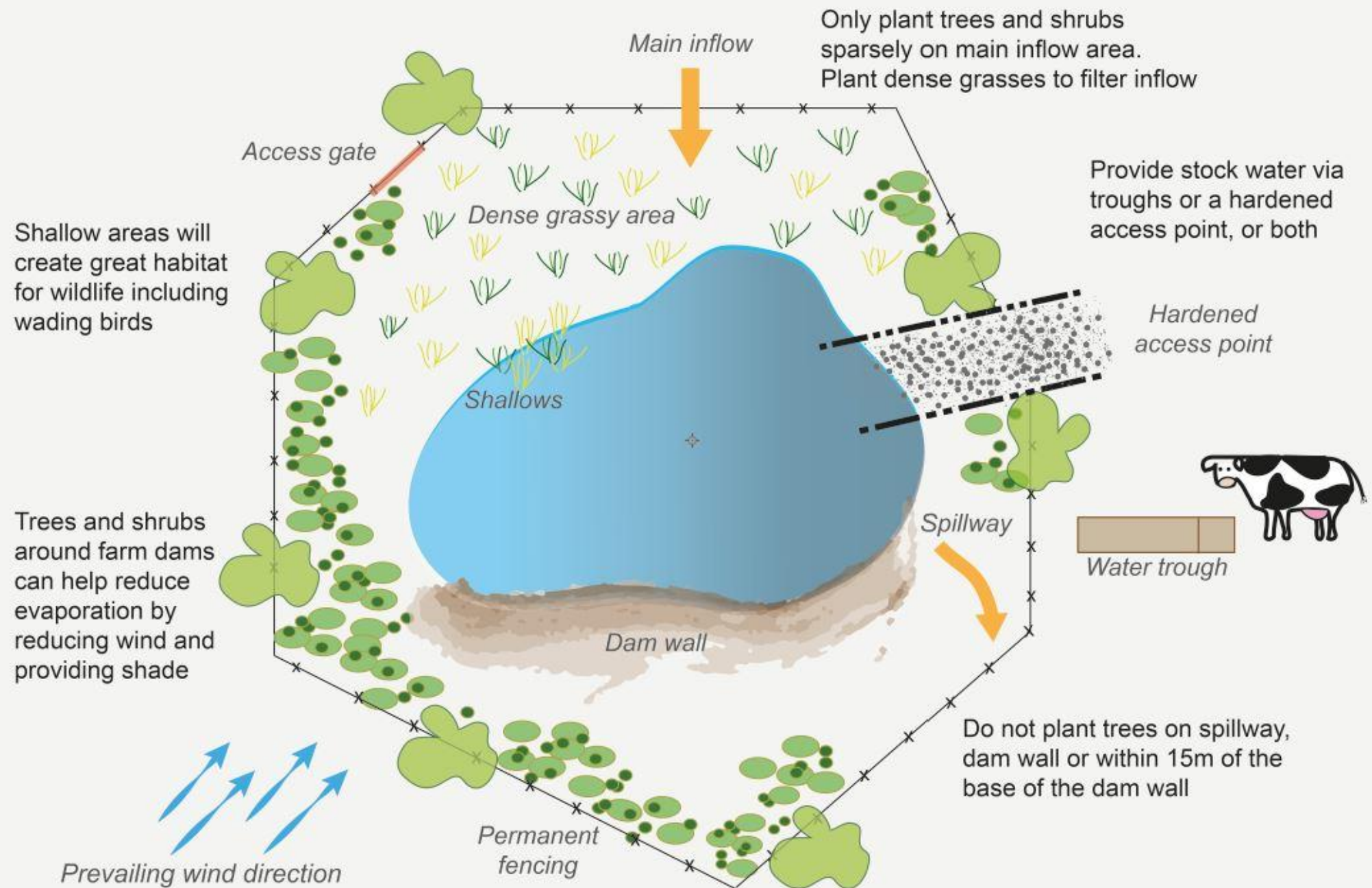
The Scientists – Sustainable Farms - ANU



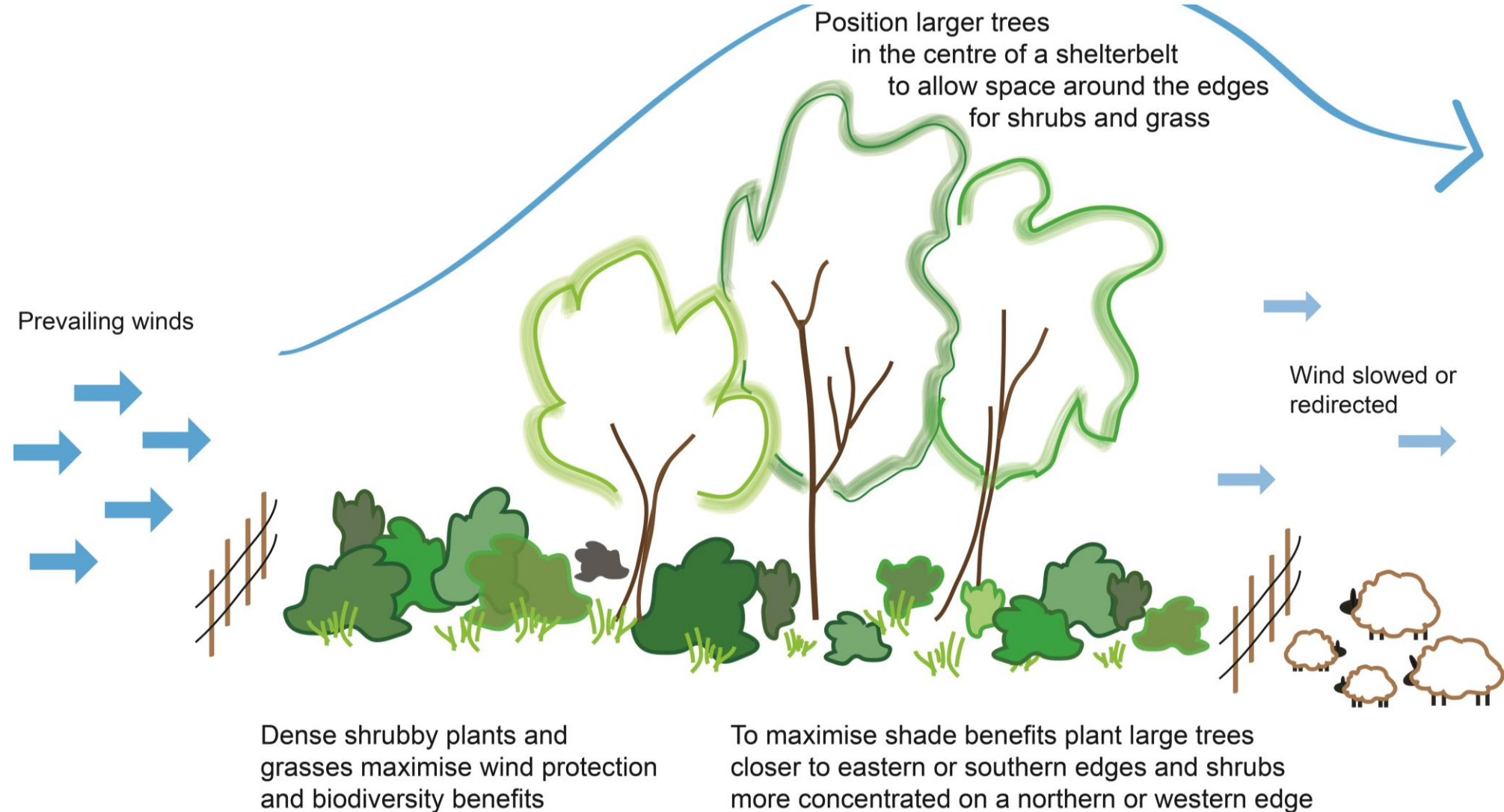
- Farm Dam Enhancement
- Planting for Biodiversity
- Shelterbelts
- Rocky Outcrops
- Scattered Paddock Trees
- Riparian Restoration - Watercourses



Farm Dam Enhancement



Shelter Belts and Paddock Trees



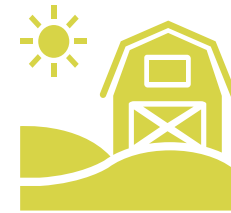
All About How You Approach Farming



**Sustainable & Regenerative
Agriculture is future
focused, ensuring the land
is healthy, productive &
profitable for future
generations**



**Sustainable and
Regenerative Agriculture
looks at the causes not just
the symptoms**

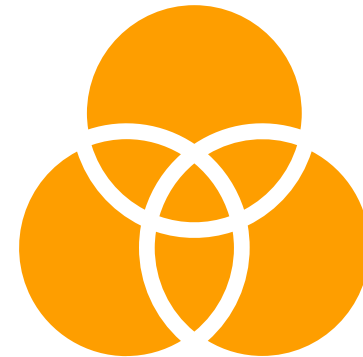


**Sustainable & Regenerative
Agriculture is shown to be
significantly better for the
mental health of the
farmer, the family & the
community**

How will you farm tomorrow?



Sustainable and Regenerative Agriculture is focussed on improving profitability and resilience across the enterprise.

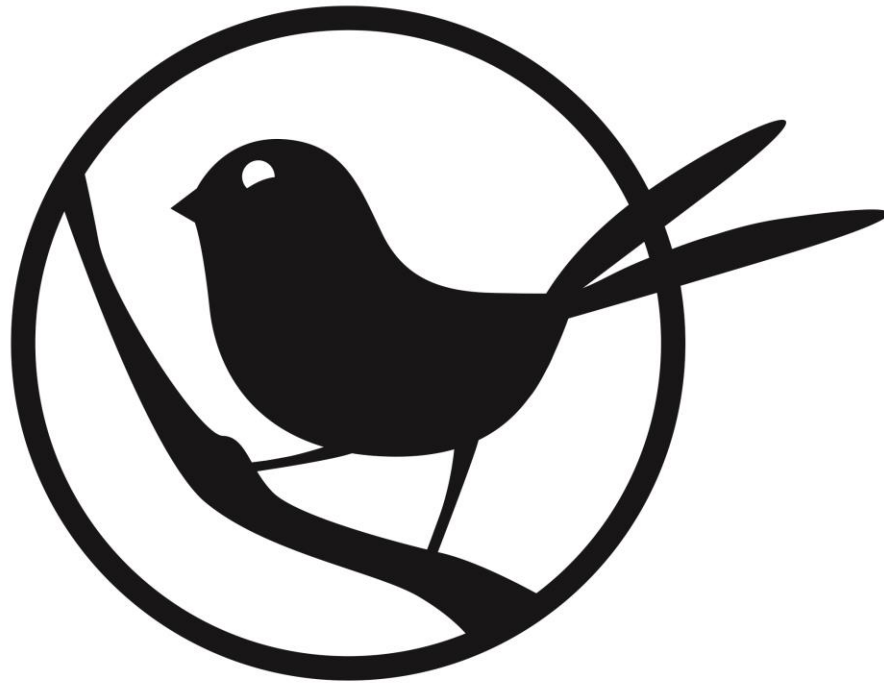


Sustainable and Regenerative Agriculture is a decision, a choice to manage the whole enterprise, valuing the people, the place and the profits.

How will you farm tomorrow?



What can you do to change your management, your perspective to implement a sustainable, regenerative & holistic management system to your enterprise today?



RUFOUS & CO

Thank You

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