A wide-angle photograph of a vast field of yellow canola flowers in full bloom. The field stretches to the horizon under a sky filled with soft, grey clouds. The foreground shows the intricate details of the flower stalks and leaves.

AgEx Forum

'A Climate of Opportunity in Ag'

9th August 2021

A grain producer's perspective
Adrian McCabe

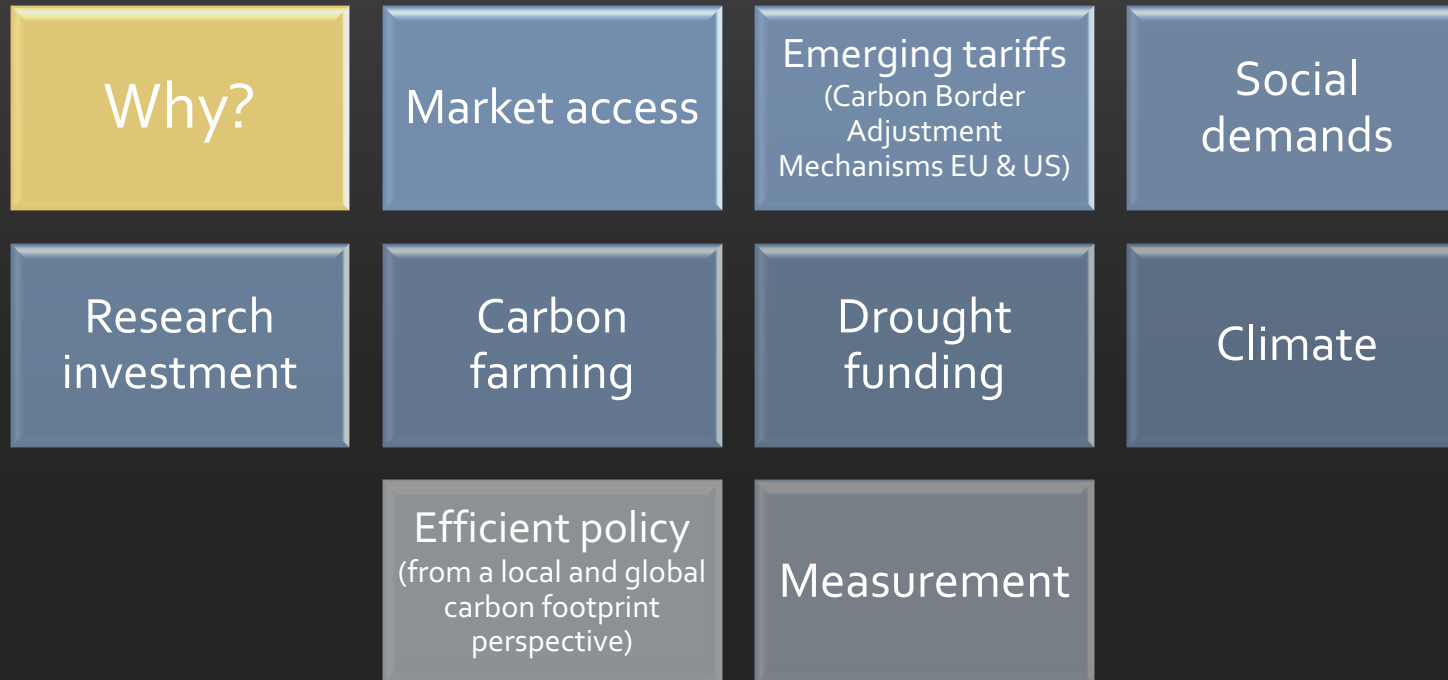
Grain Producers SA – Sustainability Taskforce

FG McCabe & Sons – Resilient Farming Project

A Climate of Opportunity in Ag | 9th August 2021



Grain Producers SA – Sustainability Taskforce

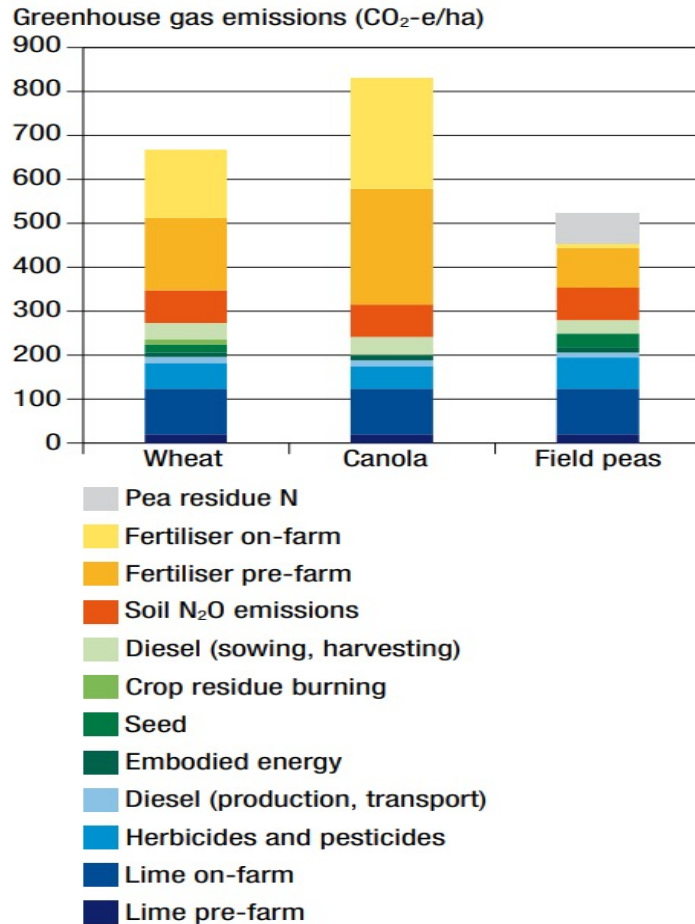


A Climate of Opportunity in Ag | 9th August 2021



Grain Producers SA – Sustainability Taskforce

FIGURE 1 Inventory of greenhouse gas emissions associated with the production of N-fertilised wheat and canola and N-fixing field peas in the Wagga Wagga region of NSW.



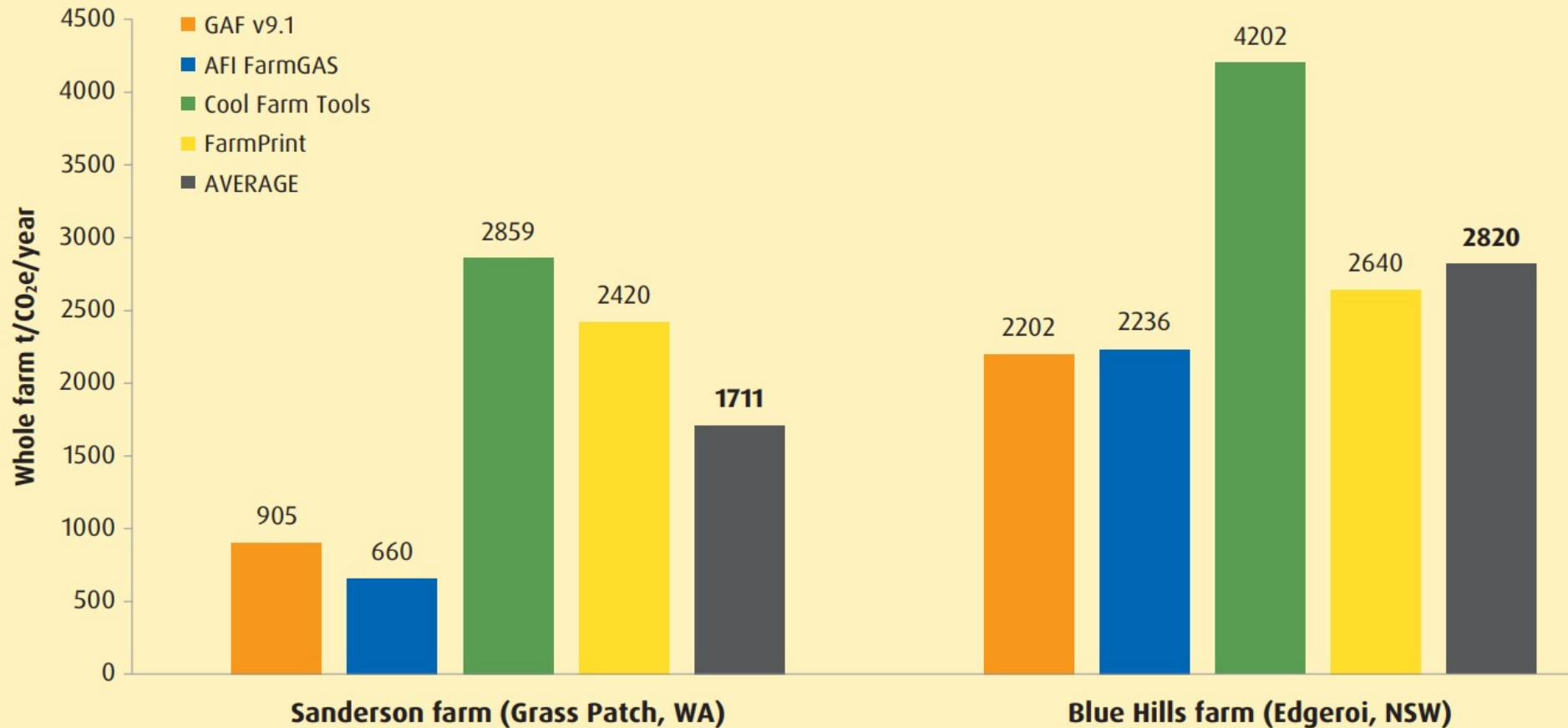
Efficient policy – how to promote emissions abatement policy and strategies that are efficient and make real change

A Climate of Opportunity in Ag | 9th August 2021

Grain Producers SA – Sustainability Taskforce

Measurement – current challenges in existing tools

Figure 2: Calculated t/CO₂e/year for two Australian farms using a range of carbon calculators with farmer collated data



Source: Kondinin Group 2020

Ag | 9th August 2021

Grain Producers SA – Sustainability Taskforce

Composition			Role
GPSA: Adrian McCabe, Dion Woolford, Nick Hillier, Professor Wendy Umberger and Dr Steve Jefferies	GGL - Fiona McCredie	GRDC - Justin Crosby	Not to replicate work of other bodies

A Climate of Opportunity in Ag | 9th August 2021



Grain Producers SA – Sustainability Taskforce

How? Initial steps

Environmental scan

What can be unique to SA grain growers - Our soils, PH levels, climate, markets, certifications

Ensure sustainability and resilience strategies are adaptable and flexible depending on regional conditions (ie not one size fits all eg. Summer cover cropping not an option in SA)

Educate our membership

Dispelling myths or wrong information.

Be a conduit for good information out to growers from other bodies

Ensure we have strong links with R&D bodies, our national advocacy groups and other groups working in the sustainability space (Farmers for Climate Change, regenerative ag)

A Climate of Opportunity in Ag | 9th August 2021



A large, gnarled tree with thick branches and dense green foliage dominates the left side of the frame. Its branches spread out across the top and right. In the background, a soft sunset or sunrise sky transitions from a pale blue at the top to a warm orange and yellow near the horizon. Below the sky, a rolling green landscape is visible, with several smaller trees and a few white sheep grazing in the distance. The overall mood is peaceful and natural.

FG McCabe & Sons Resilient Farming Project

Improving environmental and financial sustainability in a changing climate

FG McCabe & Sons - Resilient Farming Project

Why?

Herbicide resistance
to Group A & B
chemical groups and
glyphosate

Reduce carbon
footprint

Gradual reduction in
soil pH

Market access
opportunities
(reducing carbon
footprint)

Rooting depth

Evidence of higher
variability in our
weather systems

A Climate of Opportunity in Ag | 9th August 2021












FG McCabe & Sons - Resilient Farming Project

Summary of climate change trends

South Australia has already become hotter and drier with more variable and extreme weather and these trends are projected to continue over this century and beyond. Table 0-1 summarises state-wide trends projected to 2050.

Table 0-1 Summary of climate trends projected for South Australia to 2050

	Higher temperatures	Maximum, minimum and average temperatures will increase.
	Warmer spring temperatures	Warming in spring is likely to be greater than in any other season.
	Hotter and more frequent hot days	The frequency of very hot days will continue to increase, and periods of hot weather will get longer and hotter.
	Fewer frosts	The frequency of frost events will remain comparable until 2030. In the longer-term, frosts are expected to decrease as the climate warms.
	Declining rainfall	Average annual rainfall will decline.
	Lower spring rainfall	Spring rainfall declines will be greater than any other season.
	More drought	Time spent in drought will increase.
	More intense heavy rainfall events	The number and intensity of heavy rainfall events will increase.
	Increased potential evapotranspiration	Potential evapotranspiration is projected to increase across all seasons.
	Wind	Wind speeds will remain comparable until 2030. In the longer-term, a pattern of winter wind speed decrease is likely.
	More dangerous fire weather	Harsher fire weather will be experienced, and fuels will be drier and more ready to burn.
	Rising sea levels	Sea levels will continue to rise.
	Warmer and more acidic ocean waters	Sea surface temperatures will continue to rise, and acidity will continue to increase.

Source: Department for Environment and Water. 2020. *Guide to climate projections for risk assessment and planning in South Australia*

Climate considerations

A Climate of Opportunity in Ag | 9th August 2021

FG McCabe & Sons - Resilient Farming Project

How?

Med-high winter rainfall fallow, currently 10% of property

APSIM modelling (yields, carbon)

Employed a PhD student

Soil testing

Natural fertilisers

Cover crop comparison

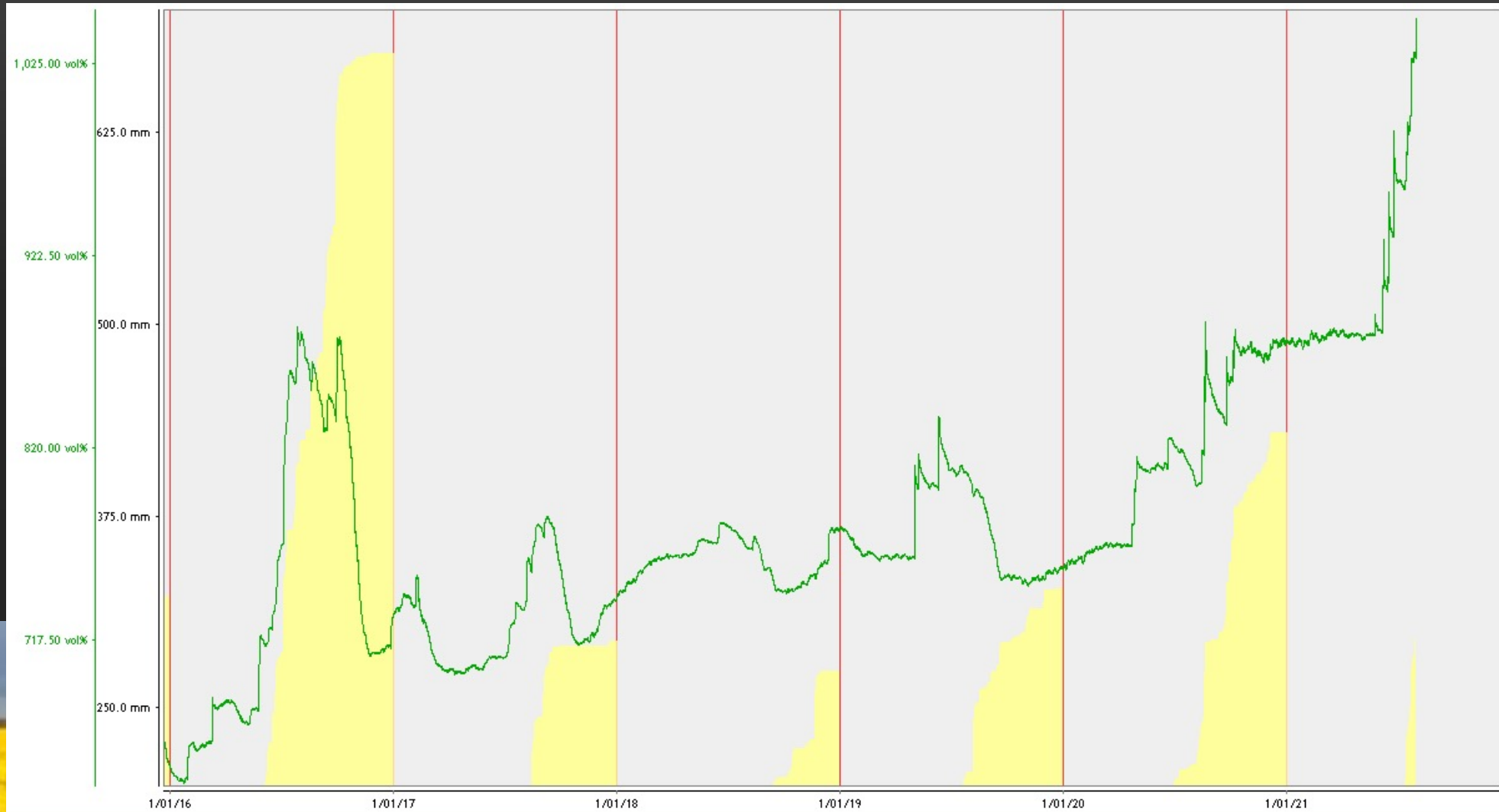
Moisture probes

A Climate of Opportunity in Ag | 9th August 2021



FG McCabe & Sons - Resilient Farming Project

Moisture probe – Alma 2016 to 2021 – fallow in 2020



Ag | 9th August 2021