

Challenges for reducing and reporting GHG emissions in the Australian grain supply chain

Mrs. Jocelyn Hordern-Smith¹, Dr. Cassandra Scheffe², Dr. Alice Melland³

¹Collaborative Sustainability Systems, Sydney, NSW

²AgriSci Pty Ltd, Rutherglen, VIC

³University of Southern Queensland, Toowoomba, QLD



Cool Soil

INITIATIVE



Overview



- The Cool Soil Initiative
- The CSI approach to reducing emissions
- The CSI approach to reporting emissions
- Learnings and Challenges

Supply Chain Challenge



A grid of logos and text for various standards and frameworks. From left to right: GRI logo with a photo of a farmer and the text 'Sector Standard for Agriculture, Aquaculture, and Fishing' and 'The Standard for these sectors published in June 2022, and comes into effect for reporting in January 2024'; IFRS logo; Net-Zero Banking Alliance logo with 'Industry-led, UN-convened'; Greenhouse Gas Protocol logo; TNFD logo with 'Taskforce on Nature-related Financial Disclosures'; Gold Standard logo; Science Based Targets logo with 'DRIVING AMBITIOUS CORPORATE CLIMATE ACTION'; Sustainable Development Goals logo; TCFD logo with 'TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES'; Behind Australian Grain logo; Australian Agricultural Sustainability Framework logo with 'Communicating the Australian agricultural industry's sustainability status and goals to markets and to the community'; and CDP logo with 'DISCLOSURE INSIGHT ACTION'.

A grid of logos for various industry and retail organizations. From left to right: the Australian Coat of Arms; nab logo; Macquarie logo; Coles logo; National Farmers Federation logo; Pepsico logo; Nestle logo; ANZ logo; Aldi logo; MARS logo; Manildra Group logo with '100% AUSTRALIAN OWNED'; Allied Pinnacle logo; Unilever logo; Grain Growers logo; Kellogg's logo; and Corson logo.

Challenge Common approach to measure AND reduce emissions that is scientifically valid and widely accepted in the grain supply chain.



Cool Soil
INITIATIVE

Evolution

2018

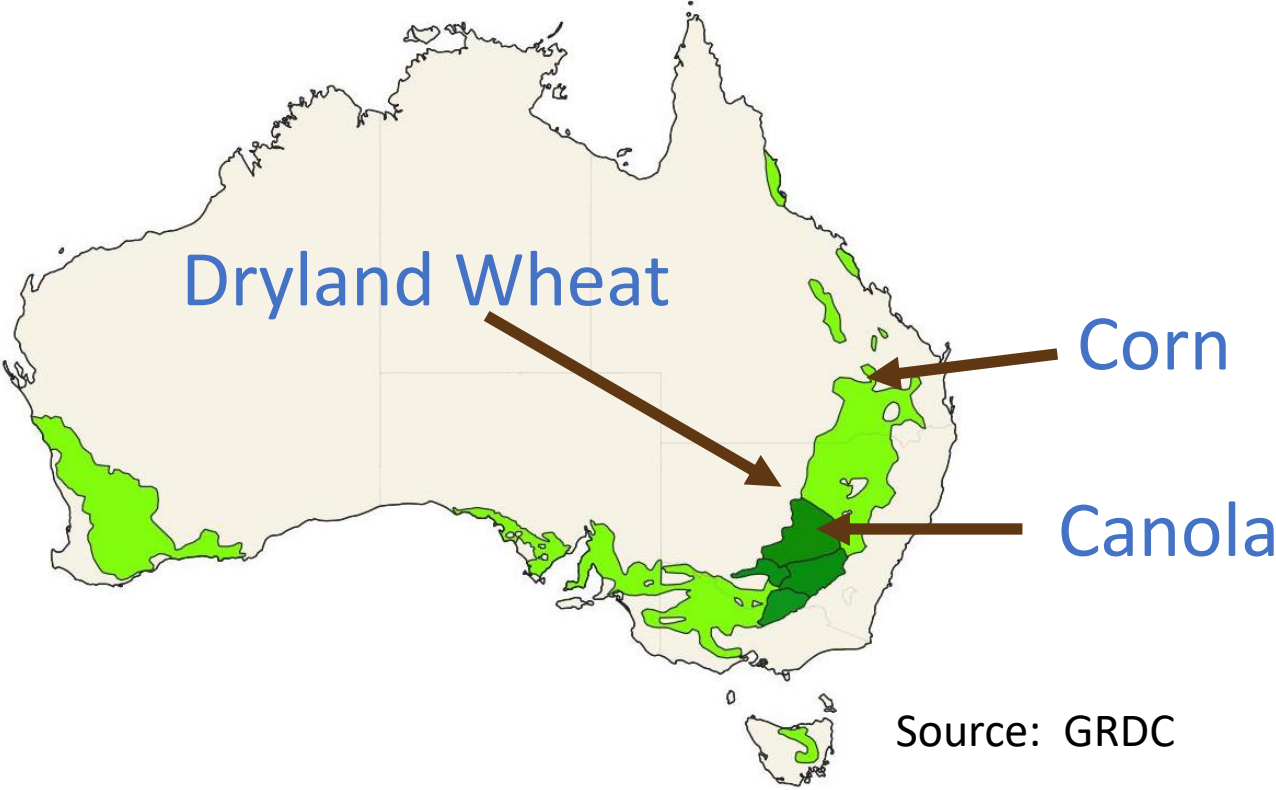
Founding of the Initiative

2020

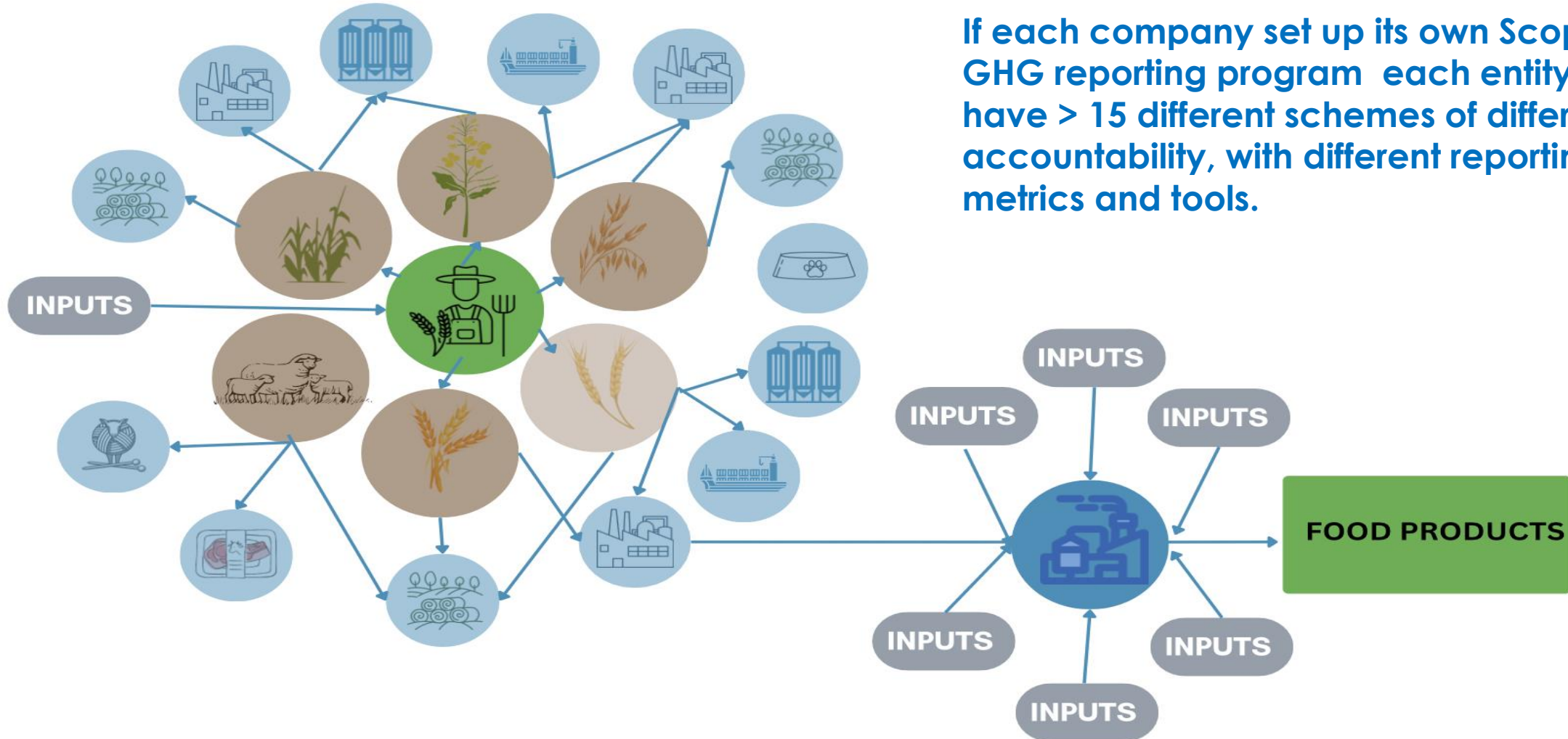
Addition of partners

2021 to Present

Expansion of Area and new partners

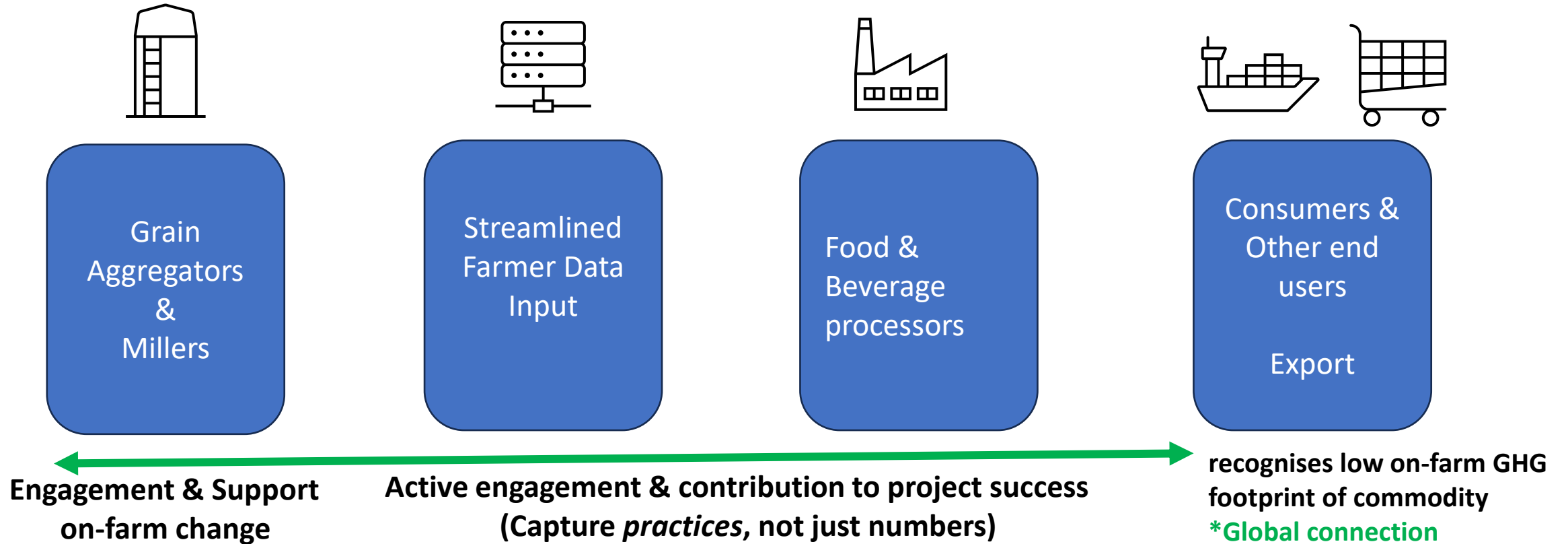


Complex Supply Chains



If each company set up its own Scope 3 GHG reporting program each entity could have > 15 different schemes of differing accountability, with different reporting metrics and tools.

Reducing Emissions

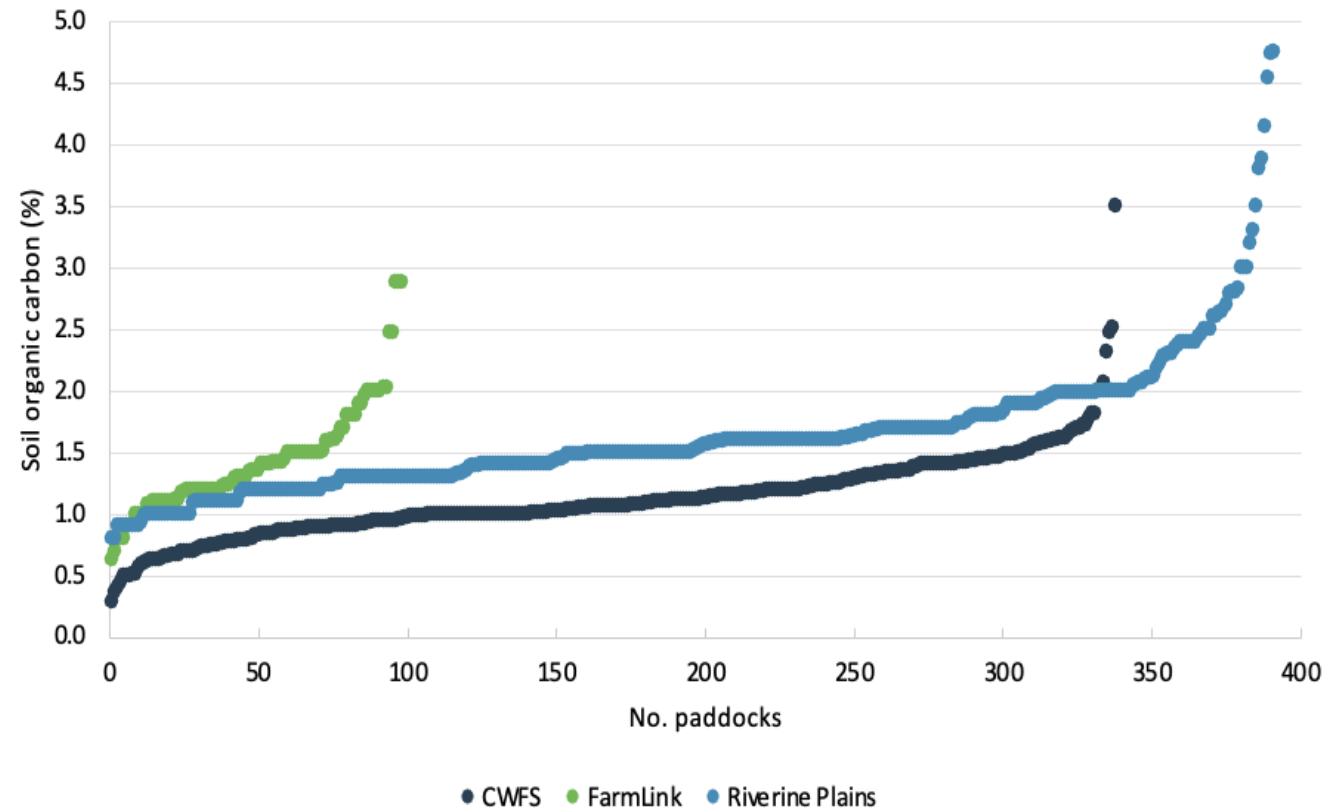


Emission Reduction Strategies



Cool Soil
INITIATIVE

- Data capture / GHG reports
- Soil testing /Soil pits/paddock walks
- Innovation paddock program



Strong connection between background soil fertility, SOC and yields.

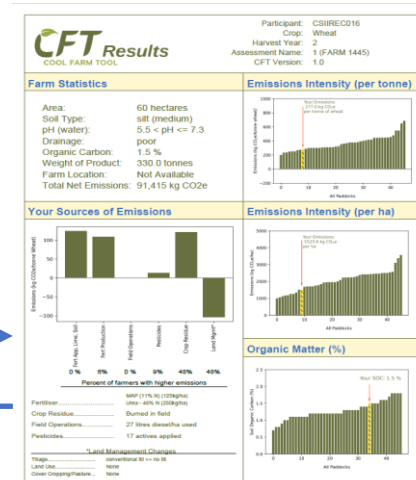
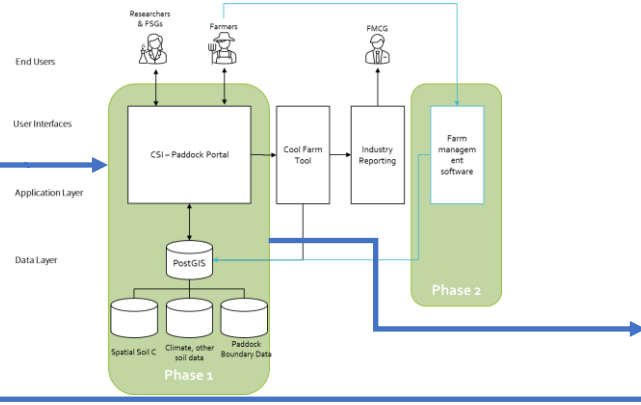
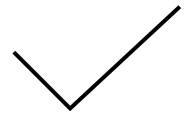
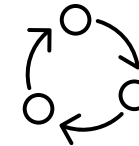
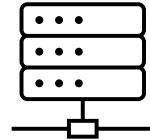
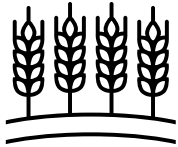
SOC and GHG intensity footprints are the *products* of the system, not the drivers thereof.

Soil organic carbon (SOC) (%) values (0-10cm depth) from 827 paddocks across three regions, sampled from 2018 – 2021. Median values for each region are: Riverine Plains SOC = 1.51%, FarmLink SOC = 1.36%, Central West Farming Systems (CWFS) SOC = 1.07%.

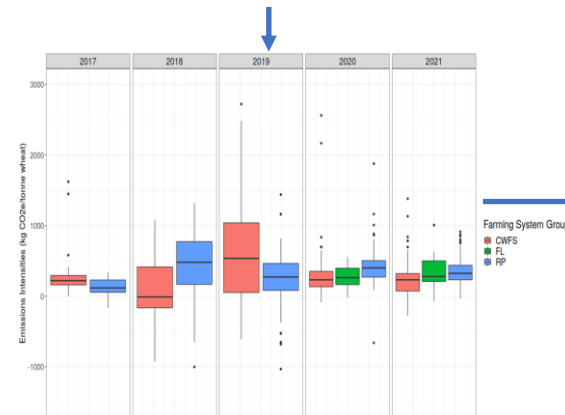
Reporting Process



Cool Soil
INITIATIVE



Gold Standard





[The Cool Farm Tool](#) ▾

[Cool Farm Alliance](#) ▾

[Research](#) ▾

[News & Resources](#)

[Contact](#)

[Go to CFT](#)



The Cool Farm Tool

An online greenhouse gas, water, and biodiversity calculator for farming

FREE FOR GROWERS

(consumers/export reporting)

Choose your metric below and start using the Cool Farm Tool Today.



Greenhouse Gases

Field level assessment including nutrients, energy, and land use. Start using the Cool Farm Tool to measure carbon.



Biodiversity

Quantitative scoring of whole farm management. Start using the Cool Farm Tool to measure biodiversity management.



Water

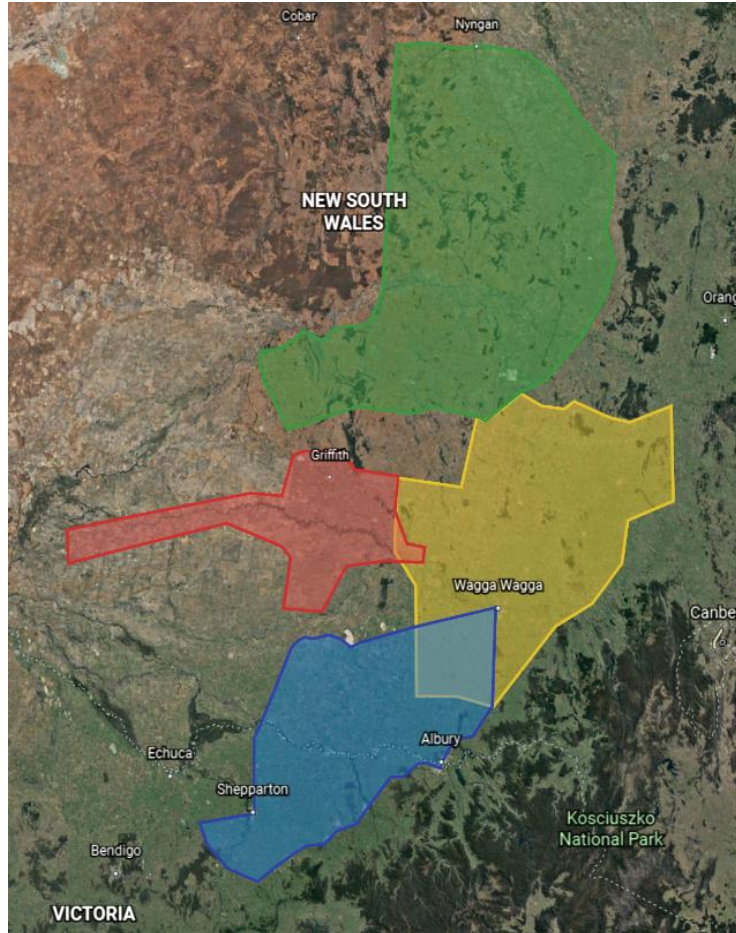
Crop irrigation requirements and blue and green water footprints. Start using the Cool Farm Tool to measure water.

Cool Farm Tool



- CFT 1.0 was not well aligned with national greenhouse gas inventory
- CFT 2.0 improves alignment with national greenhouse gas inventory
- CFT 2.0 + Regionalisation for key emission source factors

Value Chain Reporting



ALLIED
PINNACLE



PEPSICO

Corporate Use



MARS

"The Cool Soil Initiative was conceived by Mars and the Sustainable Food Lab as a pilot program to use data to inform soil health, with a long-term goal of reducing our reliance on fertilizers and their associated emissions"

The Cool Soil Initiative will help Kellogg deliver its Better Days promise and sustainability commitment to reduce the environmental impact of the Australian business by reducing Greenhouse Gas emissions from the farms that produce its raw ingredients and throughout Kellogg's supply chain.



Manildra Group is proud to be involved with the Cool Soil Initiative, supporting wheat farming families to enhance sustainable practices and procedures, whilst providing opportunities to reduce greenhouse gas emissions.

The Cool Soil Initiative is a credible scientific and industry-orientated program that delivers tangible results around benchmarking and subsequent productivity improvements for growers while also contributing to our wider ESG strategy,



As a participant in the grains industry value chain from grower to consumer, Cool Soil Initiative will play a major role in delivering Allied Pinnacle's Sustainability Strategy

The partnership will allow PepsiCo to support farmers in future-proofing their systems, ensuring the company can continue to source sustainably-produced canola.



PEPSICO

Learnings: On Farm Emission Intensity Reduction



Streamlined data collection process required



Long-term process requiring ongoing support for implementation



Good farmer engagement and trust is critical for practice change

Future Challenges



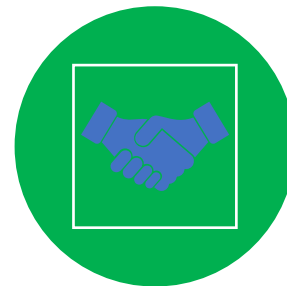
Manage Growth:



Data Systems



Value across the Supply Chain



Maintain Trust and Credibility

Further information



www.csu.edu.au/cool-soil-initiative

Dr Cassandra Schefe, Project Leader
cassandra@agrisci.com.au