Cool Soil
INITIATIVE

Cool Soil Vision

Helping to future-proof the Aussie grains industry against a changing climate and evolving marketplace.

Photo: Jane McInnes

How Are We Going To Get There?

The Cool Soil Initiative is a paddock to product partnership, working with grain growers through regional farming systems groups (**FSGs**) to test and validate management practices which can then mitigate greenhouse gas (**GHG**) emissions on-farm, to support the ongoing sustainability, productivity, and profitability of farming enterprises.

Examples include:

On-farm demonstration projects that validate the soil and GHG impacts/benefits from different practices

Peer-to-peer learning to increase uptake on leading practices across the regions

Effective, validated tool to measure GHG emissions from Australian cropping farmers that is connected into global grain production, commodity markets and food manufacturing.

Why This Project?

- Private-public partnership – ability to demonstrate value and impact across the whole value chain.
- Proactive approach to emission reporting for grain export, to align with tightening international requirements for low emission grain.
- Cool Farm Tool – credible international measurement tool validated to measure GHG specifically for Australian growing conditions.
- Farmer-led program – this is a ground-up initiative, working alongside farmers. It's not business or government telling farmers what to do.
- Peer-to-peer learning opportunities – new innovation, technology and practices to benefit soil health within a range of different farming practices and environmental conditions.
- Credible science-based framework that other sectors could ultimately adopt and replicate.
- 100 farmers already engaged – with a target to double by 2023 and projections of increased scale and reach across the cropping sector over time.

Photo: The Graham Centre

Benefits For Farmers

Mitigating risk by proactively working to reduce GHG on farm and improve sustainability of farming practices

- Inform better decisions on farm around climate variability for Australian farmers as we continue to experience challenges from a changing climate.
  "The continued success of the Australian agriculture sector will depend on our ability to innovate and adapt to best manage future climatic risks and to reduce the emissions intensity of our production systems." *(National Farmers Federation, Climate Change Policy, August 2020)*
- International and local food manufacturers have made commitments to sustainably source their key ingredients and will be actively seeking suppliers that help deliver on this commitment.
- Help farmers stay ahead of the curve in their agricultural practices so they can continue to access premium domestic and international markets.
- The world's investment sector is also embracing industries that are clearly demonstrating defined sustainable practices.

Access to financial support for innovation and trials of new practices

- On-farm demonstration (innovation trials) of new or refined practices are very important as a starting point for adoption of practice change within regions, as farmers learn best practice from each other's experiences.
- CSI can support these innovation trials through funding baseline sampling, spectral assessment of changes to plant growth through the season and capture of yield data to determine relative productivity benefits.
- These innovation trials can focus on a range of relevant practices based on increased soil health, and may include:
  - Increased system diversity (rotations, multispecies for in-crop grazing, cover cropping)
  - Removal of soil constraints (liming, gypsum, organic materials)
  - Testing of brown/green manures
  - Summer fallow/stubble management options
  - Other related innovative practices

Benefits For Farmers (cont.)

Data to support on-farm decision making – improve productivity and profitability

- By understanding the relationships between GHG emissions and farm practices, it provides another opportunity for farmers to find efficiencies on farm. For example, if nitrogen (N) fertiliser is one of the biggest drivers of emissions, that provides an opportunity for review of N application practices for enhanced efficiency, for both GHG emissions and productivity.
- The collection of GHG emissions data over time provides confidence of the likely variance within the system across different seasonal conditions, and what that means in terms of relative importance of different drivers (and how to reduce the associated emissions).
- All of the soil data collected from on-farm sampling is provided to the participating farmers to assist with their decision making.

Support and engagement from FSGs and soil scientists

- Providing soil testing and supporting on-ground practice change.
- Engagement/peer-to-peer learning opportunities with soil science specialists.
- Cool Soil Initiative participants receive free soil testing on up to five paddocks as part of the program.

Access to research project findings to support practice

- A suite of research projects has also been funded to address some of the underlying constraints to practice change. These findings will be shared with participants and can again help to strengthen and future-proof farming systems in Australia.
- These include:
    - Review and refine the Cool Farm Tool for relevance to Australian conditions
    - Increase capacity for GIS spatial information to inform soil sampling and understanding of in-paddock variability.
    - Economic value of practice change across the systems to help inform business strategy.

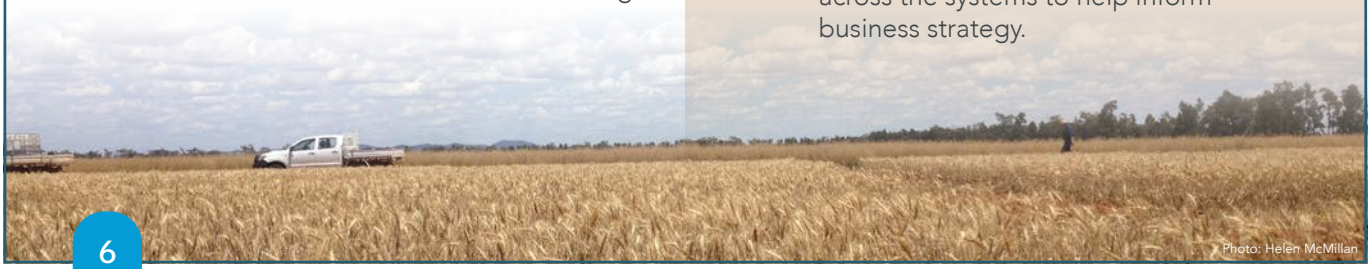

Photo: Helen McMillan

Reduced on-farm GHG

- Increasing farmers' agency and participation in the GHG debate will be achieved through better quantification of GHG emissions at regional and industry levels. This will help inform national strategies and government policies around the importance and context of agriculture in national greenhouse gas accounting.
- Many farmers see value in understanding and recording their GHG emissions, in the expectation that on-farm GHG reporting may be required in future.
- Through various management strategies to reduce and sequester GHG emissions, farmers can realise substantial benefits. Benefits can include improved soil fertility, increased water retention, reduced erosion, increased efficiency of inputs resulting in increased productivity and profitability.


Photo: Damian Jones


Photo: Kath Harley

Use of Cool Farm Tool to measure and validate on-farm GHG emissions reductions

- The Cool Farm Tool enables farmers to easily assess the impacts of different farming management options specific to their farm so they can make more informed on-farm decisions that reduce their environmental impact.
- The revised farmer portal will include all CFT calculations without additional inputs or effort, reducing the time requirement of data input for the project.

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For more information or to register your interest to get involved please scan code to the right.

Front page photo: Jane McInnes. This page photo: The Graham Centre