



Cool Soil INITIATIVE

A farmer-focused approach to Scope 3 emissions & sustainable practice reporting through the supply chain

MARS

 **Charles Sturt
University**

 **PEPSICO**
Australia & New Zealand

Kellanova

 **MANILDRA GROUP**
100% AUSTRALIAN OWNED


ALLIED PINNACLE

 **CORSON**
INNOVATIVE
INGREDIENTS
with *confidence in our hearts*

 **FarmLink**
change • adapt • prosper

 **CWFS**
Central West Farming Systems Inc.

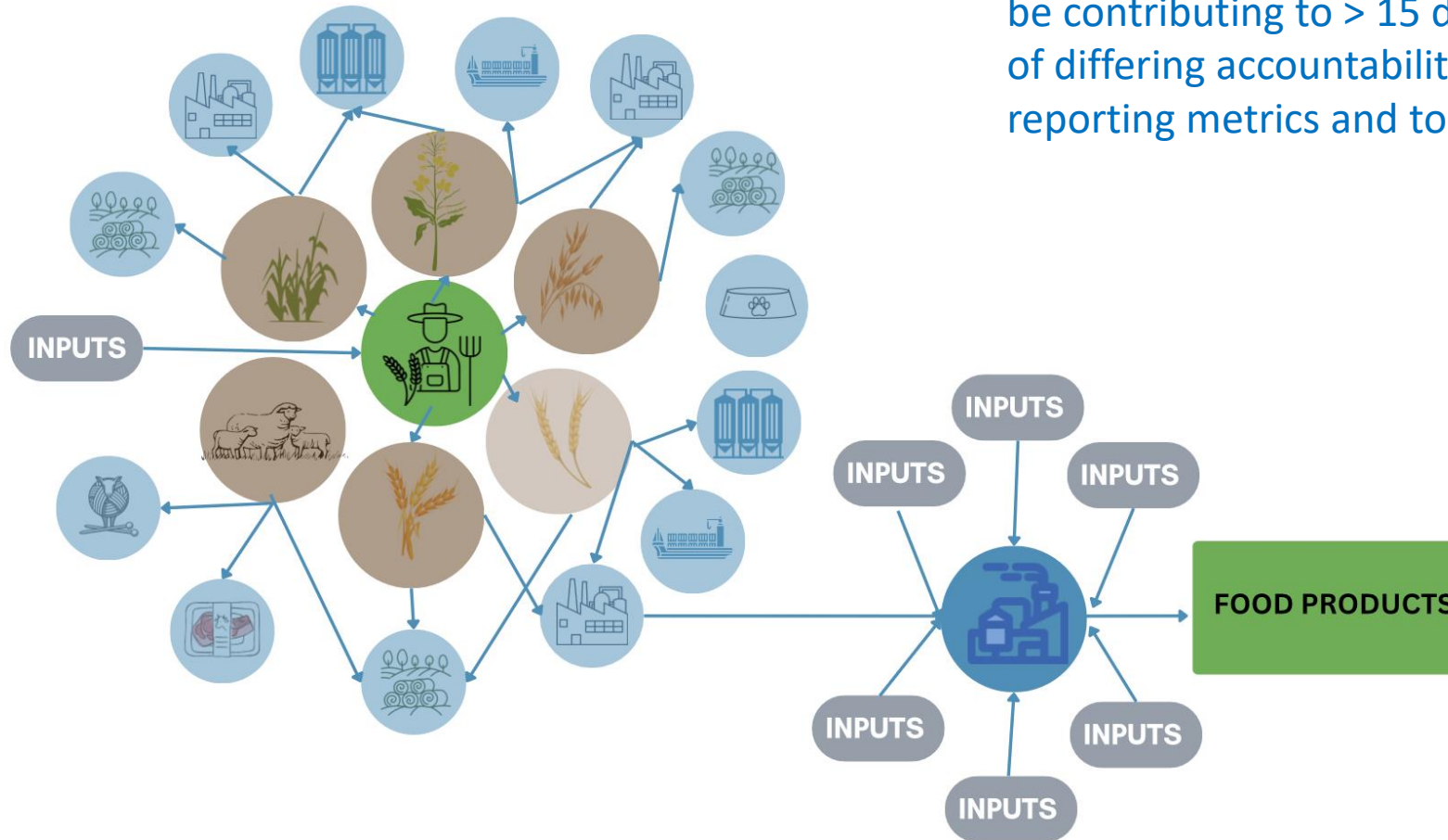
 **Irrigation Research &
Extension Committee**


**SUSTAINABLE
FOOD LAB**



THE PROBLEM: COMPLEX SUPPLY CHAINS

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



Each company could be sourcing raw product from 100s of suppliers, each potentially with a different GHG footprint accounting system, which they can't align and clearly report against.

Legislative reporting requirements: scope 1,2 &3

The Cool Soil Initiative delivers...



Farmer focused (DSA)



**Underpinned by good science
(and reality)**



**Credible and relevant to
industry**



**Australian relevant,
globally aligned**

CSI has demonstrated impact on farm...

200 farmers
>350,000 ha

CSI is the largest project of its kind, using real farm data to measure performance, practice & impact.

95% farmers say they now understand more about soil health & how to maintain/improve it.

With 82% saying that they understand more about the type and amount of emissions on farm.

Initiated 2 new research projects to address industry gaps

*CSU / Food Agility CRC – Sustainability reporting
GRDC – Dough quality project*

50% farmers say they have / may change practice as result of CSI

With 68% saying CSI emission baseline & reporting is useful for making decisions on farm

World 1st Australian Cool Farm Tool for grains

CSI research resulted in a version of global Cool Farm Tool being developed for Australian cropping

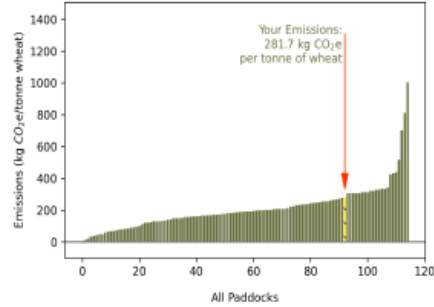
Scalable framework for food & fibre

*CSI has established a track record with major food companies, to be scaled into new regions & new commodities from 2024.
Strong industry engagement with RDC's, state govts and companies*

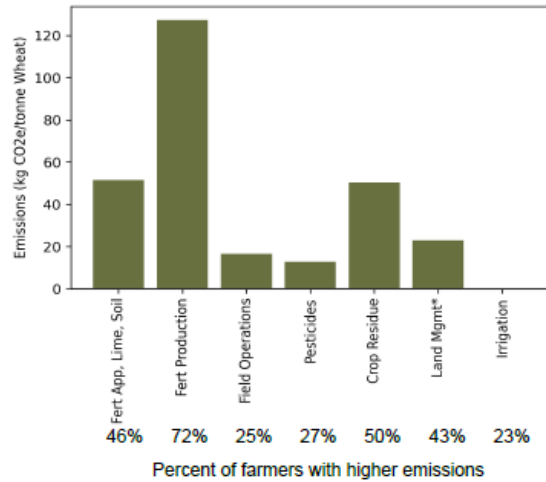
Farm Statistics

Area: 51 hectares
Soil Type: silt (medium)
pH (water): 5.5 < pH <= 7.3
Drainage: good
Organic Carbon: 1.60 %
Weight of Product: 193.8 tonnes
Territory: New South Wales
Total Net Emissions: 54,602 kg CO₂e

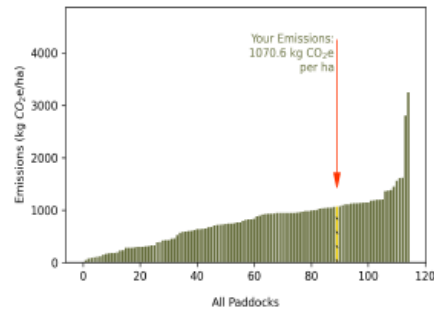
Emissions Intensity (per tonne)



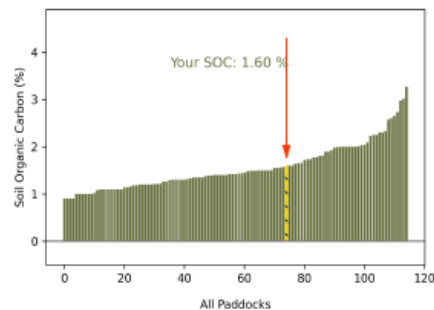
Your Sources of Emissions



Emissions Intensity (per ha)



Organic Matter (%)



Fertiliser.....	MAP (11% N) (50 kg/ha) Urea - 46% N (230 kg/ha)
Crop Residue.....	Left in field or mulched
Field Operations.....	19 litres diesel/ha used
Pesticides.....	11.0 actives applied
*Land Management Changes	
Tillage.....	None
Land Use.....	None
Cover Cropping/Pasture...	medium biomass input » high biomass input

Every farmer receives a benchmarked report showing:

- Sources of emissions
 - % farmers with higher emissions
- Emissions intensity (per tonne)
 - For commodity reporting
- Emissions intensity (per ha)
 - For farm input assessment
- Organic matter – SOC% values
- Summary of practices / land management

Know your #

Why

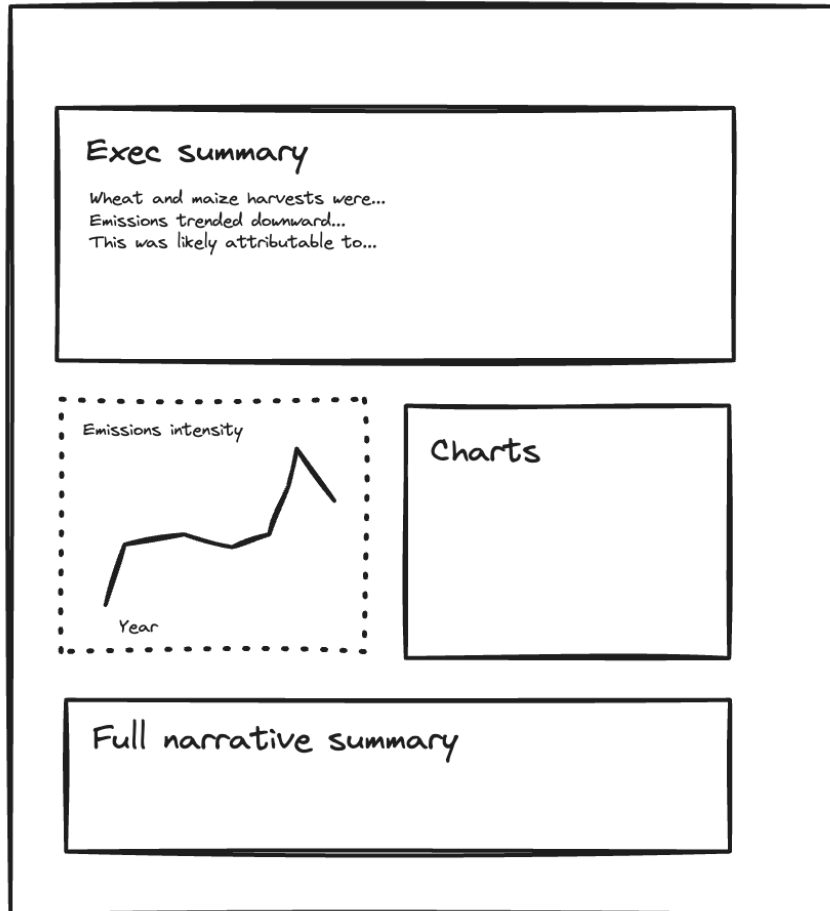
What can I do

Likely Impact



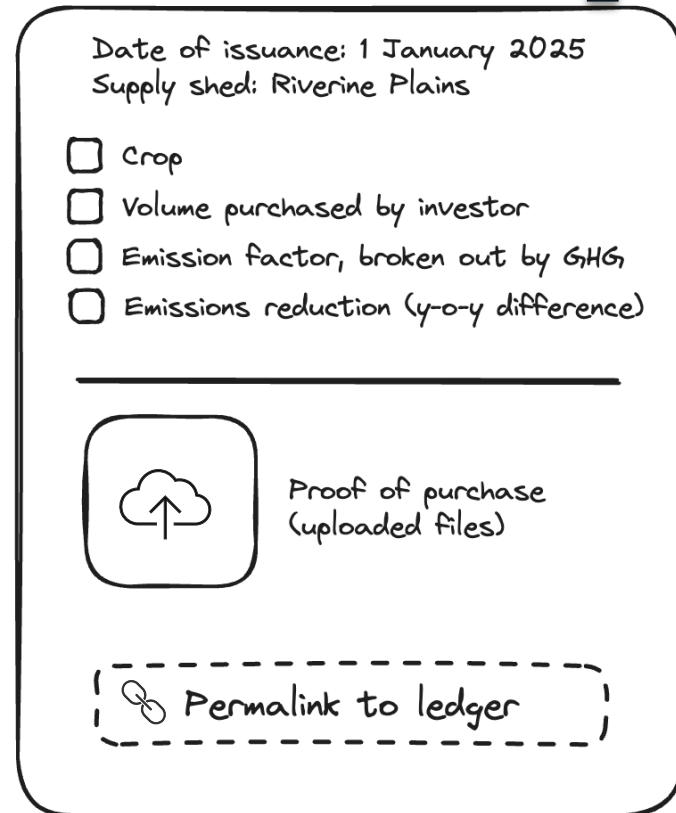
The Cool Soil Initiative provides companies with multi-layered ESG reporting and impact assurance

CSI Impact Report

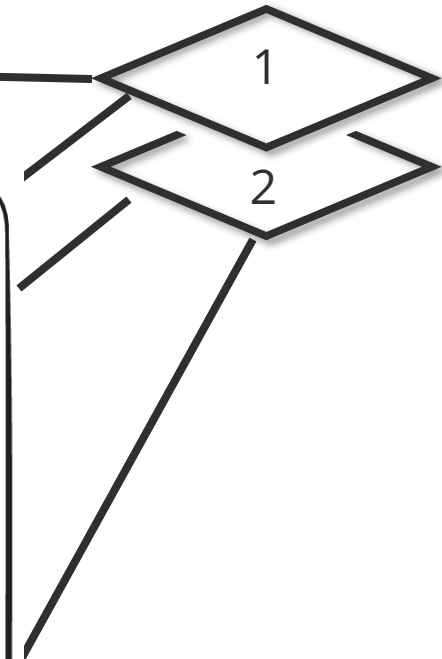


In-depth synopsis of seasonal trends
(shared resource)

Verified CSI Certificate



Unique, solely owned proof of impact
(investor-specific)

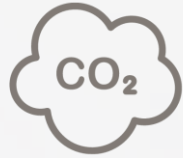


Cool Soil
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Aug 2024

Cool Soil Initiative in 2024: Impact

WHEAT DATA FOR CROP SOWN IN 2023 (unless otherwise noted)



kg CO2e /
tonne wheat



kg CO2e /
tonne wheat



legume hectares
2020-2023



211

-20

+18%

+50%

98.88% *

Emissions Intensity
(Land management
excluded)

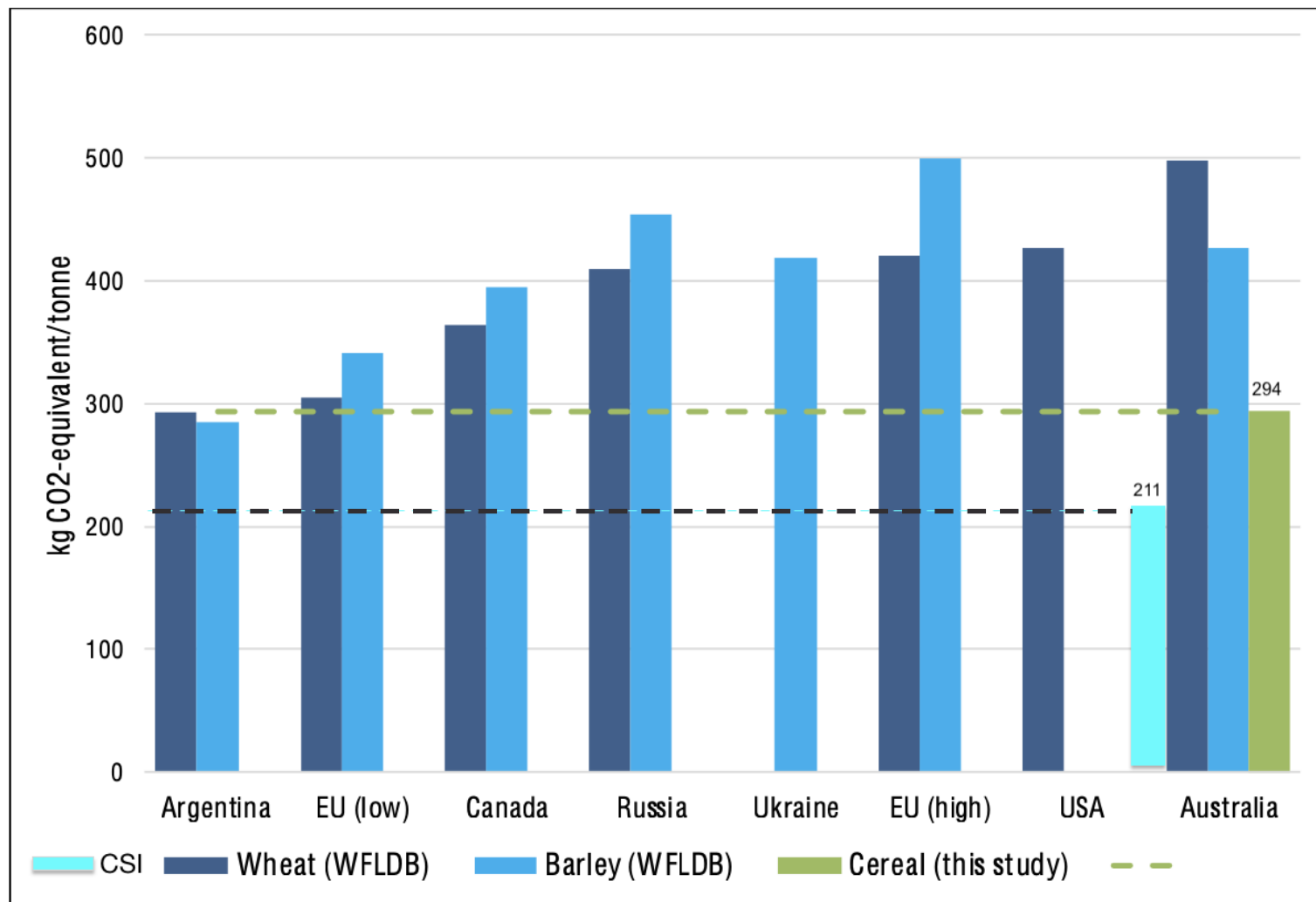
Emissions Trendline
2017-2023

Legumes: % total reported
hectares with legumes in rotation
Liming: % of limed paddocks with
lime incorporated

Low or no till
% total reported
hectares

**Excludes IREC*

CSI and Australian grain is low-emission vs. global averages



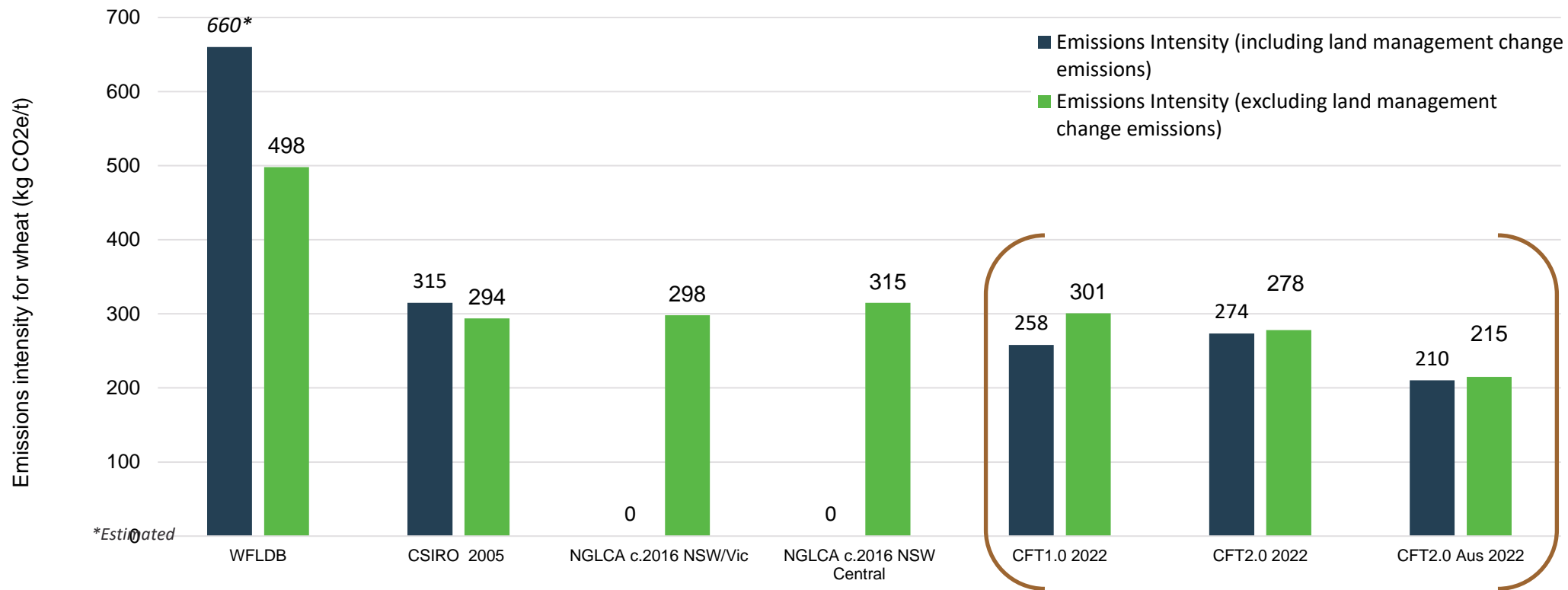
...With land management included, CSI wheat in 2023 showed an emissions intensity (EI) of 0.207 kg CO₂e / kg, or **207 kg CO₂e / tonne...**

...With land excluded, wheat EI was 0.211 kg CO₂e / kg, or **211 kg CO₂e / tonne...**

Source: CSIRO: Sevenster, M. et al (2022). Australian Grains Baseline and Mitigation Assessment. Main Report.

...Well below the CSIRO AU baseline of 315 (land incl.) and 294 (land excl.)

CSI emissions are improvements over industry benchmarks



Source: WFLDB and CSIRO: Sevenster, M. et al (2022). Australian Grains Baseline and Mitigation Assessment. Main Report. CSIRO. Simmons et al (2019) for NGLCA values

Even prior to introducing Cool Farm Tool 2.0 Australia, emissions intensity in 2022 and 2023 in the Cool Soil Initiative was lower than both global (World Food LCA Database - WFLDB) and national (CSIRO, NGLCA) defaults. An additional ~20% improvement in the precision of emissions factors was gained in the transition to CFT 2.0 Australia.



Australian relevant
globally aligned





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CSI is expanding into new regions, commodities and natural capital reporting, and welcomes new farmers (it's free for farmers) and supply chain companies to join the Initiative.

Fiona McCredie
fmccredie@csu.edu.au
0459 339 021

