

# MLA – CN30 and Trees *2023 ANZIF Conference*

*Presented by* Dr Margaret Jewell

**CN30** | Carbon Neutral  
2030

CN30

Need for trees?

Coordinated action

2

**CN30** | Carbon Neutral  
2030

INTERNAL



**mla**  
MEAT & LIVESTOCK AUSTRALIA

# CN30

3

**CN30** | Carbon Neutral  
2030

INTERNAL



## Vision

Together, we will double the value of Australian red meat sales as the trusted source of the highest quality protein.

**DOUBLE THE VALUE**  
of sales of Australian red meat

**HALVE THE COST**  
of regulatory and industry compliance

**REDUCE  
THE COST**  
of trade barriers  
of \$1 billion

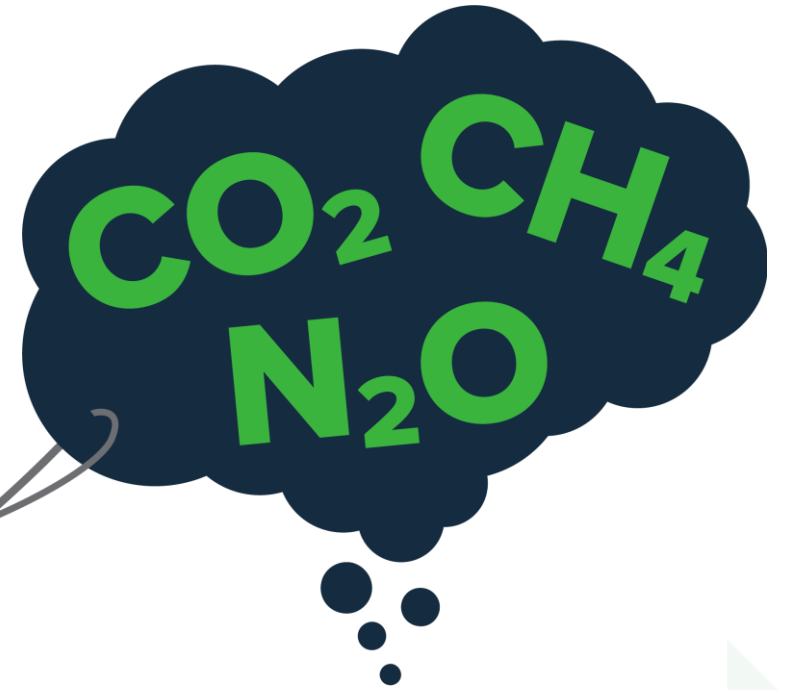
**ACHIEVE**  
carbon neutrality

**TRIPLE**  
the value of capital accessed

**DOUBLE  
THE %**  
of project funding for  
extension for red meat

Target – for the Australian red meat industry to achieve net-zero greenhouse gas (GHG) emissions by 2030

Coordinated RD&A effort



**GHG emissions**  $-$  **emissions captured and/or offset**  $=$  **0 CO<sub>2e</sub> emissions p.a.**

GHG emissions are measured and reported by the National Greenhouse Gas Inventory accounts under Agricultural Emissions and Land Use Land Use Change categories

# Ambitious, achievable



Goal was set in 2017



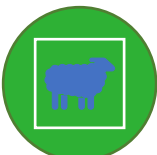
355 m ha



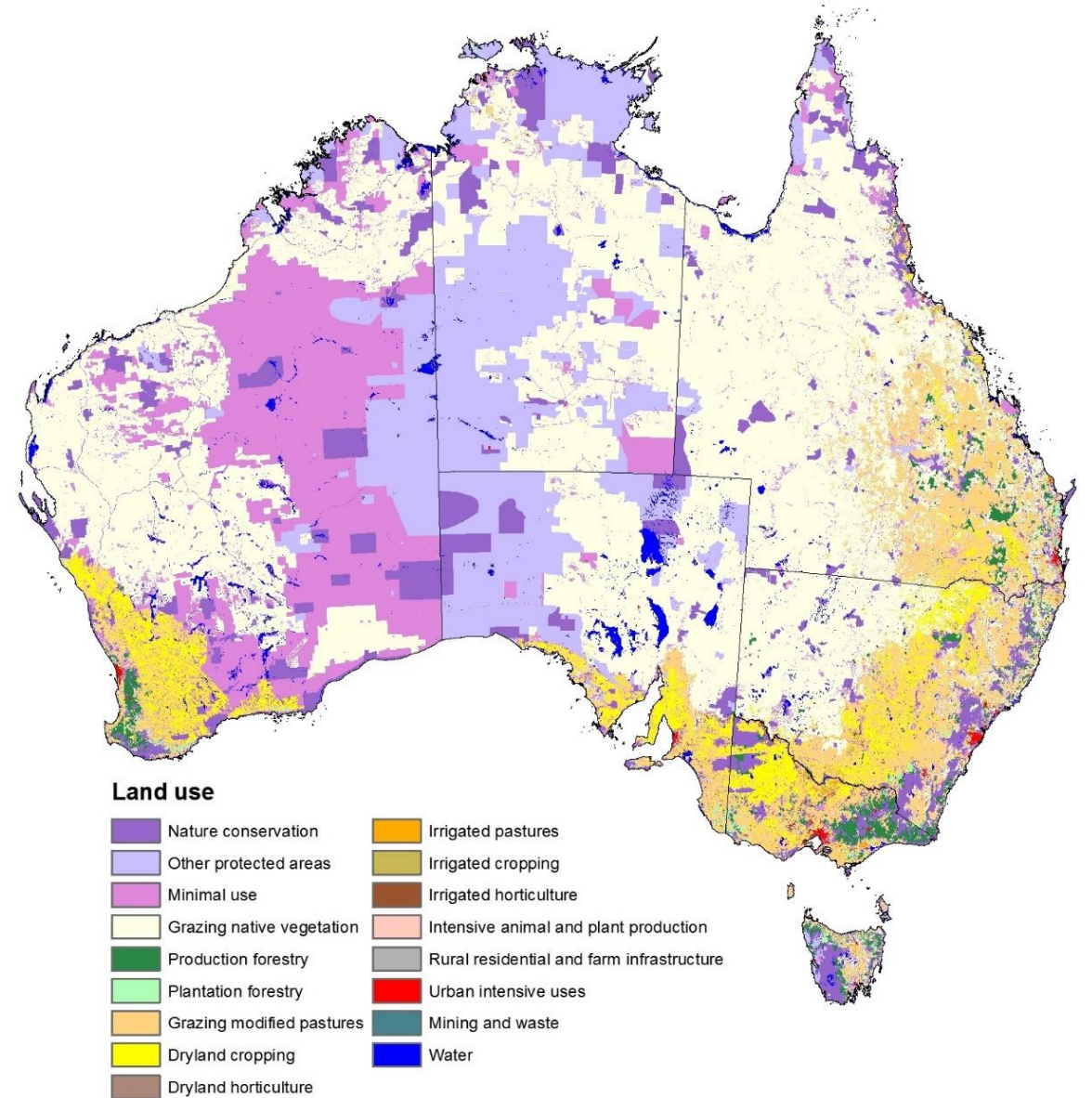
<8% landmass suitable for crops



<1% intensive



25 m cattle, 68 m sheep, 4 m goats



# The Australian red meat industry:

LOWERED  
it's greenhouse  
emissions by  
**64.8%**  
since 2005

EMITS  
**51.3Mt**  
CO<sub>2</sub>-e per year  
down from  
**145.8Mt CO<sub>2</sub>-e pa**

CONTRIBUTES  
**10.3%**  
of national emissions  
down from  
**22% in 2005**

>\$140 million invested since 2017

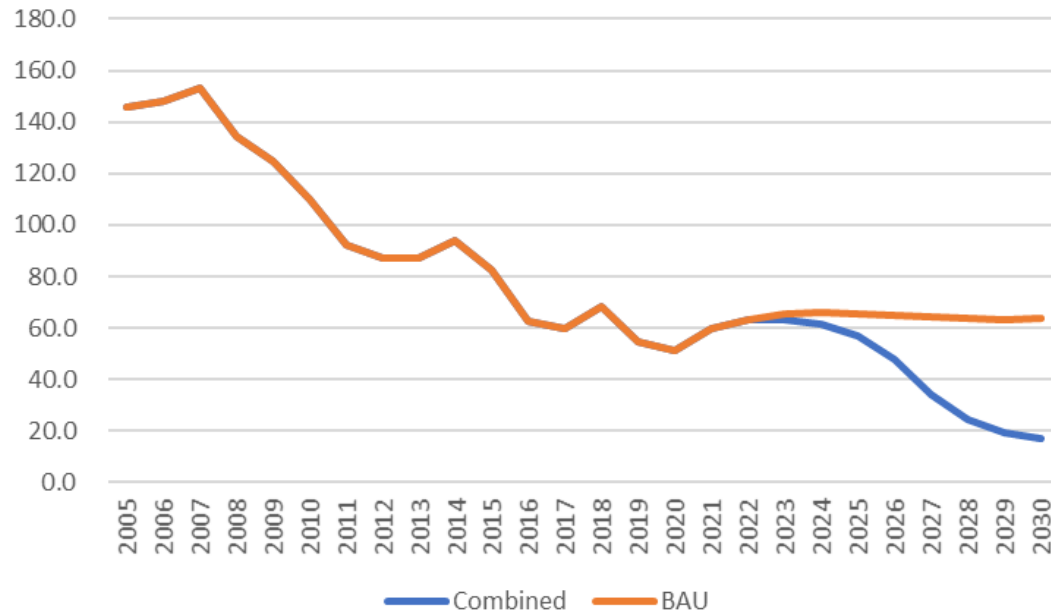
# Need for trees?





# Carbon neutral vs Climate neutral

**Carbon neutral:**  
No net release of GHG's; metric is **GWP100**

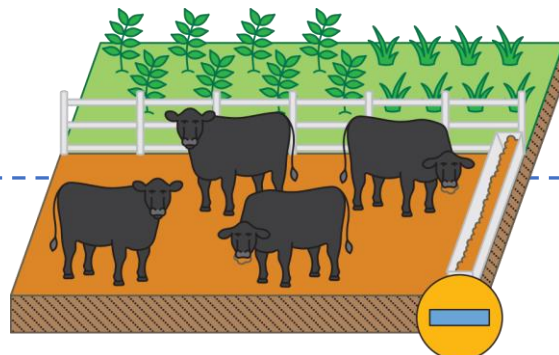


	Contribution to net GHG emissions reduction %
Trees on farm	44.0
Savannah burning management	23.2
Soil carbon storage	16.9
Improved herd management	8.9
Feed additives – beef cattle pasture	2.4
Feed additives – beef cattle feedlot	2.0
Improved flock management	1.0
Forage crops	0.9
Feed additives – sheep pasture	0.7
Breeding for lower enteric methane emissions	<0.1

# CN30 roadmap

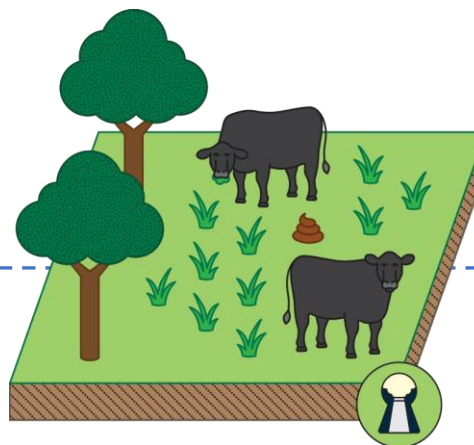


## Industry leadership



## GHG emissions avoidance

Grazing properties  
Feedlots  
Processing facilities



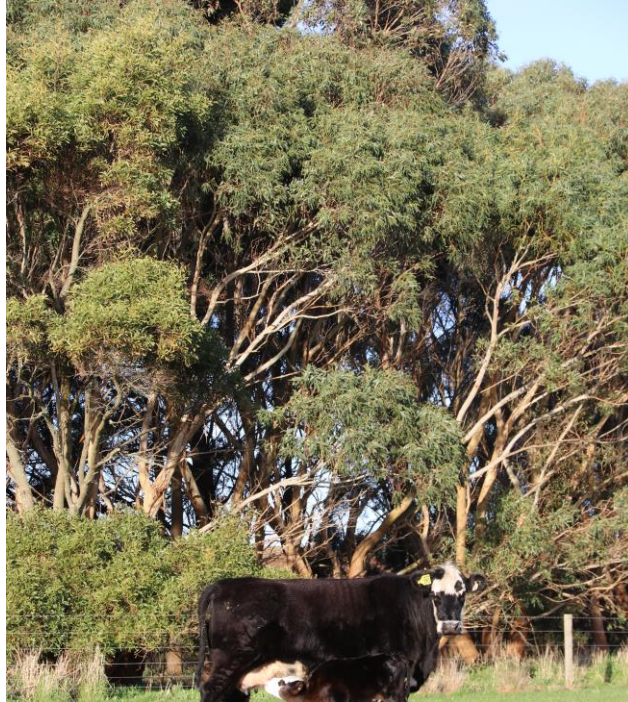
## Carbon storage

Grazing properties

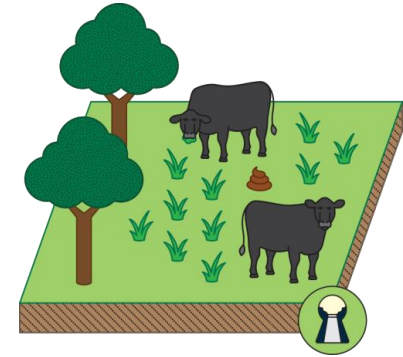


## Integrated management systems

Rapid adoption  
Carbon accounting  
Measurement and reporting



# Carbon storage



- Next generation soil carbon measurement
- Mixed species pastures and legumes
- Grazing management
- Trees on-farm (shelterbelts and paddock trees)
- Silvopasture
- Dung beetles
- Best practice



# Trees on Farms

- Improving access to information needed to make decisions about tree planting on farm
- Framework to assess impacts:
  - Pasture availability and carrying capacity
  - Shade and shelter
  - Water availability - reduced evaporation
- Advantages: offset emissions, improve lamb production up to 9.2%, market access, co-benefits (ecosystem services, soil health/stabilization, social factors)
- Disadvantages: trade-offs (e.g., costs of taking pastures out of production), dependent on carbon price

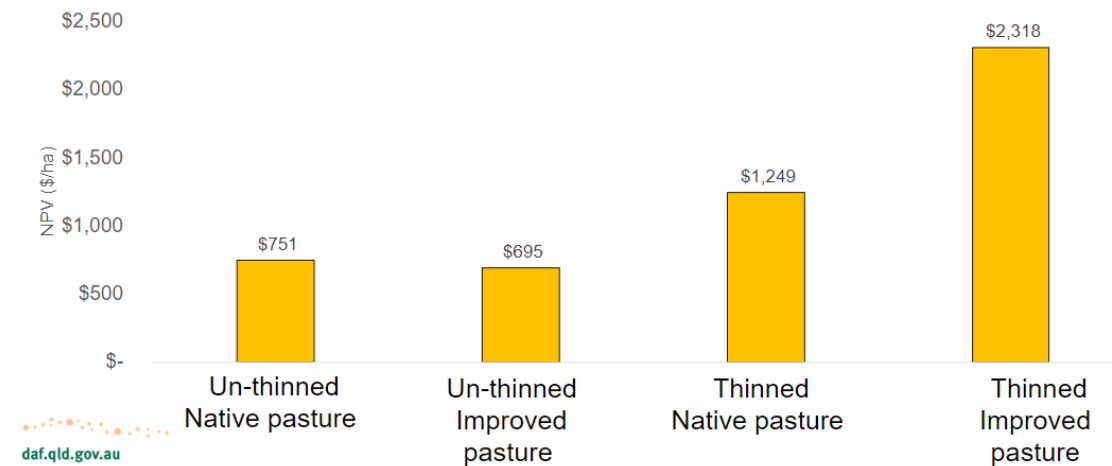


# Steak n Wood: demonstrating livestock productivity and environmental service benefits of trees on farm in northern systems


- Examining potential of SPS to: Mitigate GHG, Diversify income, Improve productivity, Rehabilitate land, Improve animal welfare
  - Improve biodiversity and other ecosystem services
- To date:
  - 6 sites within private native forests (814 ha)
  - 7 sites within hardwood plantations (82 ha)
- Sustainable management (right density), increases productivity of pastures and timber
- Need to plant the right trees, at the right sites, in the right configurations



## Financial result (Net present value)




# Environmental Credentials for Grassfed Beef



**Tier 1: Aware**  
Acquired

Gained knowledge and understanding of sustainable farming principles and practices, covering carbon management, biodiversity stewardship and drought resilience.


[View details](#)



**Tier 2: Actioned**  
Acquired

Conducted on-farm GHG assessment and biodiversity practices self assessment. Planned changes that will reduce total emissions/emissions intensity and support biodiversity on-farm.

[View details](#)



**Tier 3: Advanced**  
Acquired

Benchmarked against like businesses; trend of continuous improvement or top 25% of benchmark over previous 5 years (net GHG emissions and intensity kgCO<sub>2</sub>e/kg product, biodiversity stewardship practices rating).

[View details](#)

ECIT Environmental Credentials Information Technology
Logged in as username@example.com

- Home
- Learning Library
- Credentials
- My Properties
- FAQ
- Resources
- My Profile
- Logout

## Welcome to your learning library

Learn about sustainable beef farming through 5 key themes: carbon balance, biodiversity stewardship, groundcover, treecover and drought resilience. There are different learning modules under each theme you can explore. Each module has a practical focus on benefits for your farm business.

**Overall Learning Progress (80%)**

■ Carbon Balance (40%) 
 ■ Biodiversity Stewardship (5%) 
 ■ Ground Cover (10%) 
 ■ Tree Cover (15%) 
 ■ Drought Resilience (10%)

**Sustainability Themes**

**Carbon Balance** 2/5 modules completed

Build an understanding of benefits of carbon farming, science of global warming & farm operation (GHG) emissions and sequestration amongst beef producers.

[See learning modules](#)

**Biodiversity Stewardship** 0/4 modules completed

Build an understanding of benefits of carbon farming, science of global warming & farm operation (GHG) emissions and sequestration amongst beef producers.

[See learning modules](#)

**Modules in progress**

**TIER 1, GROUND COVER**  
Healthy ground cover levels using imagery

20%

**TIER 3, CARBON BALANCE**  
Carbon friendly practices

20%

[View all in progress](#)

**Bookmarked Modules**

EC Environmental Credentials

- Home
- Learning Library
- My Credentials
- My Properties
- Shared Credentials
- FAQ
- Resources coming soon
- Login as Georelle
- Logout

**Forest Carbon**


The results provide an indication of the potential forest carbon stock changes based on FLNRSiC that replicates the Australian Government's FVICAM model and using Australian Government data. The results are indicative only and more accurate estimates could be made by applying carbon density values from on-ground assessment across the remotely sensed data.

**Carbon Stock Net Change**  
**16 t**  
CO<sub>2</sub>e equivalent  
From 2009 to 2019

**Carbon Movement Median**  
**1 t**  
CO<sub>2</sub>e equivalent  
From 2009 to 2019

**Overall Net Carbon Stock & Movement**

The results presented in this section are for carbon in the living trees in forest. This consists of Aboveground Biomass (AGB) which is the biomass of the above ground parts of living trees and Belowground Biomass (BGB) which is the biomass of the roots of living trees. Dead organic matter (logs, stumps, leaf litter) and soil carbon have not been included as detailed data is required to provide an adequate representation of their carbon stocks and changes.




**Carbon Balance**

At the farm business scale, Carbon balance is achieved when emissions produced from beef production approximate carbon sequestered in soil and vegetation due to deliberate activities on farm.

**Beef production emissions**  
**733 t**  
CO<sub>2</sub>e (incl sq)


**Emissions Intensity**  
**14.13**  
kgCO<sub>2</sub>e/kgLW

Typical Emission Intensity Range




**Emission category breakdown**

Greenhouse gas accounting methods typically use three levels of emissions. The share of Scope 1, 2 and 3 level emissions is shown here.



**GHG Breakdown (Scope 1)**

Scope 1 includes emissions generated from activities on-farm that are under the direct control of the farm manager, e.g. from fuel use, enteric fermentation in the rumen, fertiliser use. The proportion of three main GHG gases is shown here.



INTERNAL

# Coordinated Action

15

**CN30** | Carbon Neutral  
2030

INTERNAL



**mla**  
MEAT & LIVESTOCK AUSTRALIA

## Coordinated actions

- Addressing a global challenge requires a coordinated approach
- Synergies between red meat and forestry mean huge opportunities through targeted collaboration
- Possible actions?
  - Progress data sharing/demonstration platforms
  - Benefits to livestock production of strategic timber plantations/trees on farm
  - Geographic mapping of opportunities and potential carbon storage
  - Cost/benefits of integrating forests into red meat production areas



Thank you 😊