Carbon Farming
An overview

Carbon Market Institute

What is it and what benefits can it deliver?

In Australia, carbon farming is an established and growing industry which is making a significant contribution to Australia's climate crisis response. Carbon farming refers to practices that increase carbon storage in our landscapes, or avoid the release of greenhouse gases such as methane and nitrous oxide, through active management of vegetation, fire, soil or livestock. Carbon farming also delivers important environmental, economic, social and cultural benefits. This includes the potential to create new job opportunities and economic benefits in rural and regional areas, including in remote Indigenous communities.

Carbon farming activities

Carbon farming activities can generate Australian Carbon Credit Units (ACCUs) when done in compliance with an emissions reduction method under a project registered with the Clean Energy Regulator (CER). An emissions reduction method is a regulatory instrument (known as a methodology determination) that sets out rules for calculating how carbon is avoided or stored. The CER is a federal government statutory body responsible for administering Australia's emissions reduction framework for renewable energy and ACCUs.

Under the Australian Government framework known as the Emissions Reduction Fund (ERF), there are currently three broad categories of carbon farming or land sector approved methods:

- **Agricultural methods**
  - Storing carbon in soils; avoiding carbon emissions by minimising methane emissions from piggeries and livestock; avoiding nitrogen emissions from fertiliser use in irrigated cotton.
- **Vegetation methods**
  - Storing carbon in vegetation through reforestation, revegetation; protecting native forest and vegetation that is at imminent risk of clearing.
- **Savanna burning methods**
  - Fire management practices that reduce greenhouse gas emissions and enable more carbon to be sequestered in dead organic matter.

Co benefits

Co benefits are direct positive outcomes associated with carbon projects, additional to the emissions avoided or carbon stored. They include the social and cultural, economic (including jobs) and environmental benefits that would not have otherwise occurred in the absence of the carbon farming project.

For example, modifying existing land management practices for carbon outcomes can positively benefit the natural environment and improve agricultural productivity. Carbon farming activities can increase the level of Soil Organic Carbon (SOC), support land revegetation and avert clearing. Projects can reduce agricultural demand for fertilisers, improve water quality and promote biodiversity and wildlife habitat protection for native species.

Co benefits are increasingly a focus in carbon markets and often, where they can be demonstrated, increase the value of the carbon credit to which they are attached.

Understanding the value of these co benefits is important for all Australian governments when assessing the role of carbon farming as part of emission reduction and offsetting strategies and sustainable land management policies.

Importantly, carbon farming has the potential to create new job opportunities and economic benefits in rural and regional areas, including in remote Indigenous communities.

Table: Carbon Farming Co Benefits

Environmental	Social & Cultural	Economic
• Improved air quality • Improved water quality • Improved soil quality • Biodiversity conservation • Sustainable pest and weed management • Sustainable land use and management • Protection or rehabilitation of coastal mangroves, sea grasses and coral reefs	• Increased social capital • Knowledge sharing and education • Protection of Indigenous sacred sites • Improved physical and mental health • Strengthened livelihoods and community cohesion • Indigenous community empowerment and economic development	• Increased farm productivity • Job creation in regional areas • Career development opportunities • Improved risk management • Investment in regions and rural communities • Diversified revenue streams for farmers and landholders

Queensland Spotlight

Queensland is Australia's largest net source of emissions from the land and agriculture sectors, it also has significant carbon farming potential.

Queensland is a carbon industry leader and innovator amongst Australia's states and territories, with robust policy, significant direct investment, integration of co benefits and support for research, innovation and market development[1] .

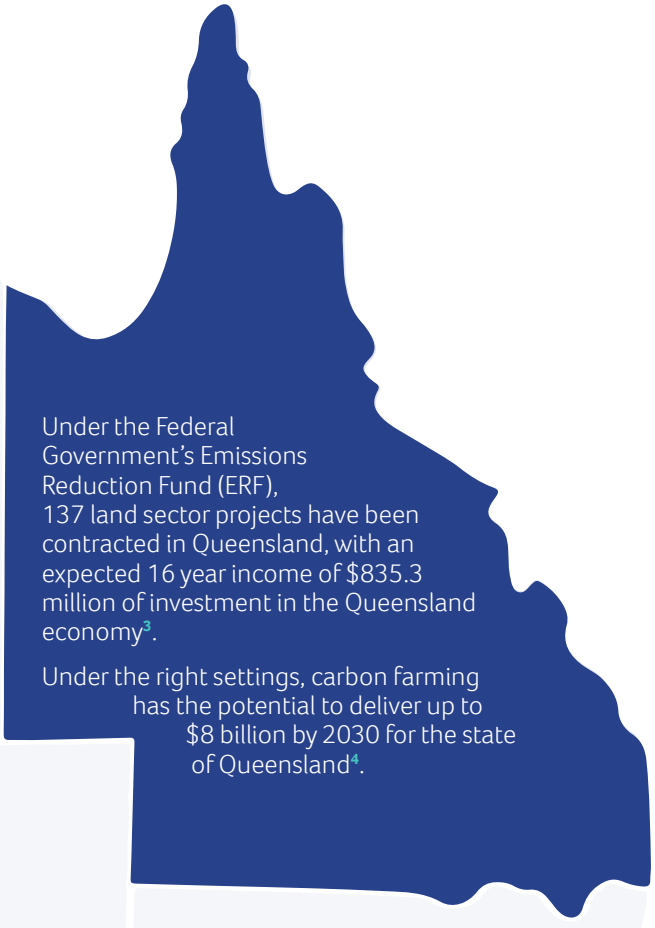
The $500m Land Restoration Fund (LRF), announced in 2017, is Queensland's chief carbon farming policy. In addition to supporting research, innovation, and market development, the associated self-sustaining Land Restoration Fund Trust serves to expand carbon farming in the state by contracting projects that deliver carbon credits and co benefits. $87m was invested in 2020, and $25m will be available through a second investment round in 2022.

The LRF is sourcing projects that support:

- healthy wetlands and coastal ecosystems, including the Great Barrier Reef (GBR),
- more habitat for threatened species and increasing spatial coverage of threatened ecosystems,
- social and economic sustainability.

Co benefits can be delivered through scaling up carbon farming and developing new carbon farming methods. Examples include:

- Blue Carbon, which refers to methods of sequestering carbon through protecting and conserving coastal ecosystems in mangroves, tidal marshes and sea grasses.
- The established Reef Credit Scheme[2] that offers a new way to deliver improvement in water quality in the GBR catchment areas. It may strengthen the resilience of the GBR to climate change impacts such as water temperature increases, protecting biodiversity and ensuring ecosystem restoration and connectivity in areas impacted by agricultural production. Reef Credits are an environmental commodity – like a carbon credit – offering a revenue stream for landowners and managers.



Under the Federal Government's Emissions Reduction Fund (ERF), 137 land sector projects have been contracted in Queensland, with an expected 16 year income of $835.3 million of investment in the Queensland economy[3].

Under the right settings, carbon farming has the potential to deliver up to $8 billion by 2030 for the state of Queensland[4].

[1] Carbon Farming Scorecard Report, April 2022, Carbon Market Institute https://carbonmarketinstitute.org/app/uploads/2022/04/Carbon-Farming-Scorecard-Report.pdf

[2] Reef Credit Scheme www.reefcredit.org

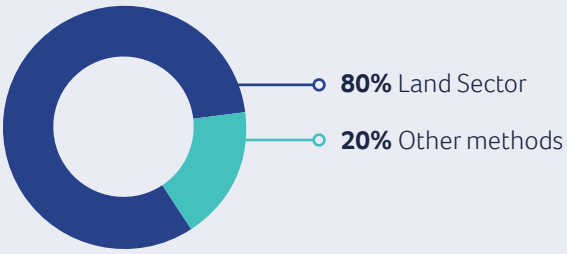
[3] Data has been estimated from the Clean Energy Regulator's Emissions Reduction Fund Project Register and Carbon Abatement Contract Register, accessed in April 2020.

[4] Unlocking value for the Queensland economy with land and agriculture offsets, Energetics www.qld.gov.au/__data/assets/pdf_file/0017/67310/unlocking-value-qld-from-offsets.pdf

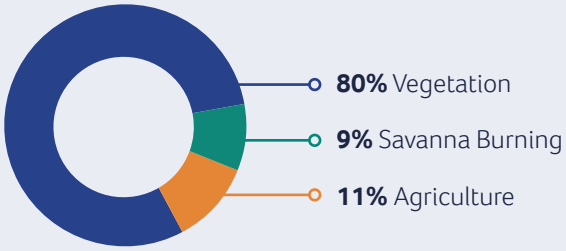
Emissions reductions achieved through carbon farming

The ERF has been in operation since 2014, when the former Carbon Farming Initiative (CFI) was transitioned into the ERF. Through the crediting and purchasing of emissions reductions by the Government, the ERF has to-date delivered 77 million tonnes of greenhouse gas abatement from a total 217 million tonnes contracted for delivery[5]. 80% of this abatement has been from carbon farming methods in the land sector.

ERF Contracted Abatement (Total)



ERF Contracted Abatement (Land Sector Methods)



Contributing to Australia's emissions reduction target

The land sector has a significant role to play in achieving Australia's current and future emissions reduction targets and contributing to economic growth. In 2022, Australia's new Labor government has committed to reducing greenhouse gas emissions by 43% below 2005 levels, an increase from the former government's target of 26-28% below 2005 levels by 2030. Carbon farming is critically important for achieving this target and even stronger targets required over time.

AUSTRALIA'S DOMESTIC CARBON FARMING INDUSTRY HAS THE POTENTIAL TO DELIVER THE FOLLOWING BY 2030[7]

Land Sector Abatement
360 – 480 $MtCO_2e$

Assumes land sector contributes 30-40% to Australia's 2020-2030 abatement task

Carbon Income
$10.8b – $24b

Assumes 360-480 $MtCO_2e$ abated and an average carbon price of A$30-$50/tonne

Employment
10,500 – 21,000 jobs

Assumes 420 $MtCO_2e$ abated and jobs growth of 25-50 jobs per $MtCO_2e$ abated

More Information

Carbon Farming Industry Roadmap carbonmarketinstitute.org/roadmap

Emissions Reduction Fund www.cleanenergyregulator.gov.au/ERF/Pages/default.aspx

Carbon Farming Eligible Activities www.environment.gov.au/climate-change/government/emissions-reduction-fund/methods

[5] April 2022 ERF auction results https://www.cleanenergyregulator.gov.au/ERF/auctions-results/april-2022

[6] Powering Australia, Australian Labor Government https://www.alp.org.au/policies/powering-australia

[7] Carbon Farming Industry Roadmap - under a 2°C scenario where Australia over-achieves its NDC attaining 1200$MtCO_2e$ between 2020-2030.