

Carbon Farming

An overview



What is it and what benefits can it deliver?

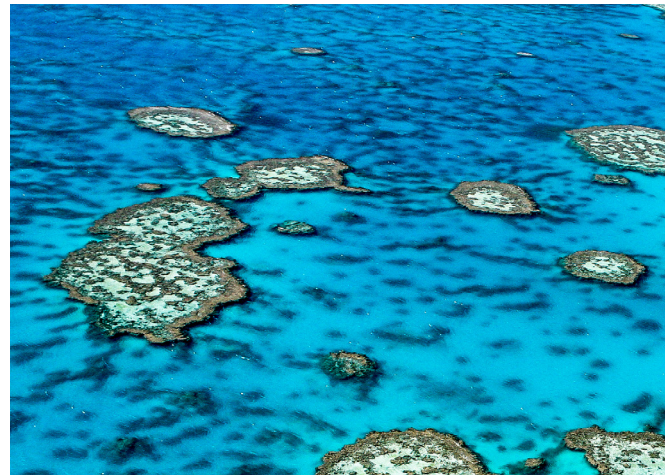
In Australia, carbon farming is a growing industry that is making an important contribution to Australia's emission reduction task. At its simplest, carbon farming involves managing vegetation, fire, soil or livestock to increase storage of carbon in our landscapes, or to avoid the release of damaging greenhouse gases, particularly methane and nitrous oxide. Importantly, carbon farming activities can make a significant contribution to our climate change response whilst also delivering other important environmental, economic, social and cultural benefits.

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. An emissions reduction method is a regulatory instrument (known as a methodology determination) that sets out the rules for how to calculate the carbon that is avoided or stored. The Clean Energy Regulator is a federal government statutory body responsible for administering Australia's emissions reduction framework for renewable energy and carbon credits – 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 farming 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, among other outcomes, increase the level of Soil Organic Carbon (SOC), support land revegetation and avert clearing. Positive outcomes can include reducing agricultural demand for fertilisers, improving water quality and promoting 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 climate change and sustainable land management policy action. Importantly, carbon farming as a new industry 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, seagrasses 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 biophysical potential for carbon farming. To date, Queensland-based projects represent approximately 42% of the contracted abatement under the Australian Government's ERF¹; making it the largest state contributor to projects under the ERF.

Building on this existing strong start, the Queensland Government has established a \$500 million Land Restoration Fund. The purpose of this new initiative is to contract for the supply of ACCUs with demonstrable and verifiable co-benefits.

The first funding round will source up to \$100 million worth of projects with priority investments being for those 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 potentially be delivered through scaling up carbon farming in Queensland and developing the potential for new carbon farming methods to be approved. Examples of the types of co-benefits that projects can seek to demonstrate include:

- Blue Carbon, which refers to methods of sequestering carbon through protecting and conserving coastal ecosystems in mangroves, tidal marshes and seagrasses.
- The established Reef Credit Scheme² that offers a new way to deliver improvement in water quality in the GBR catchment areas. It may additionally 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), 150 projects have been contracted in Queensland, which equates to over 99 million tonnes of carbon abatement committed and an estimated \$924 million of investment in the Queensland economy³.

Under the right settings, carbon farming has the potential to deliver up to \$8 billion by 2030 for the state of Queensland⁴.

¹ Data has been estimated from the Clean Energy Regulator's [Emissions Reduction Fund Project Register](#) and [Carbon Abatement Contract Register](#), accessed in April 2020.

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.

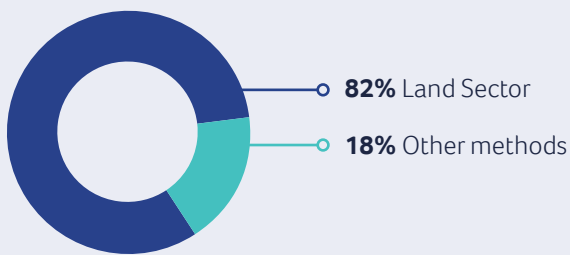
⁴ [Unlocking value for the Queensland economy with the land and agriculture offsets](#), Energetics www.qld.gov.au/_data/assets/pdf_file/0017/67310/unlocking-value-qld-from-offsets.pdf

Emissions reductions achieved through carbon farming

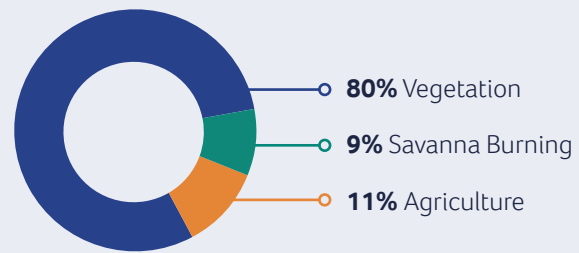
The ERF has been in operation since 2014, when the former Carbon Farming Initiative (CFI) was transitioned into the ERF. Through the crediting and purchasing of emissions reductions by the Government, the ERF has to date delivered 52.7 million tonnes of greenhouse gas abatement of the total 193 million tonnes of abatement contracted for delivery⁵. Over 80% of this contracted 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 future emissions reduction targets and contributing to economic growth. As a signatory to the Paris Agreement⁶, Australia currently has a national emissions reduction commitment to reduce emissions by 26–28% below 2005 levels by 2030, and carbon farming is critically important for achieving this target and stronger targets required over time.

AUSTRALIA'S DOMESTIC CARBON FARMING INDUSTRY HAS THE POTENTIAL TO DELIVER THE FOLLOWING BY 2030⁷



Land Sector Abatement

360 – 480 MtCO₂e

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



Carbon Income

\$10.8b – \$24b

Assumes 360–480 MtCO₂e abated and an average carbon price of A\$30–\$50/tonne



Employment

10,500 – 21,000 jobs

Assumes 420 MtCO₂e abated and jobs growth of 25–50 jobs per MtCO₂e 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 Emissions Reduction Fund contract portfolio as at ERF tenth auction in March 2020

⁶ The Paris Agreement was reached in December 2015 and is a global agreement which aims to limit global average temperature increase to “well below 2°C above preindustrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels”. It is based on voluntary emission reduction commitments made by each country in the form of Nationally Determined Contributions (NDCs).

⁷ Carbon Farming Industry Roadmap - under a 2°C scenario where Australia over-achieves its NDC attaining 1200MtCO₂e between 2020–2030.