



Country Noosa

PROMOTING A SUSTAINABLE RURAL FUTURE



Rural Enterprise Project

CONCEPT PAPER

Carbon farming

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Introduction

Carbon Farming is the process of managing soil, water, vegetation and animals to increase carbon sequestration (carbon storage and capture) and to reduce greenhouse gas emissions. Carbon Farming can range from changing or introducing a single land use practice or incorporating several land use practices together that are designed to reduce greenhouse gas emissions.

This paper provides an overview of carbon farming practices and the current status of government policies within Australia. It also informs of local programs that can assist landowners with environmental management, creating wildlife corridors, protecting habitat while also creating financial revenue opportunities.

Why choose carbon farming?

The main environmental benefits of Carbon Farming include:

- increased carbon storage in the soil and vegetation
- improved soil quality through reduced soil salinity and increased soil fertility
- improved water infiltration of rainfall into the soil resulting in better soil hydration and lessening the effect of drought
- reduced soil and creek erosion
- more productive land
- improved wildlife habitat.

Concepts and ideas to get you started

Agricultural production depends on plant photosynthesis, whereby plants remove carbon from the atmosphere through biological processes converting it to carbohydrate for plant growth, while also building the quality of the soil around them. Some common agricultural practices such as tilling and overgrazing can remove carbon from the soil and return carbon to the atmosphere (see Figure 1).

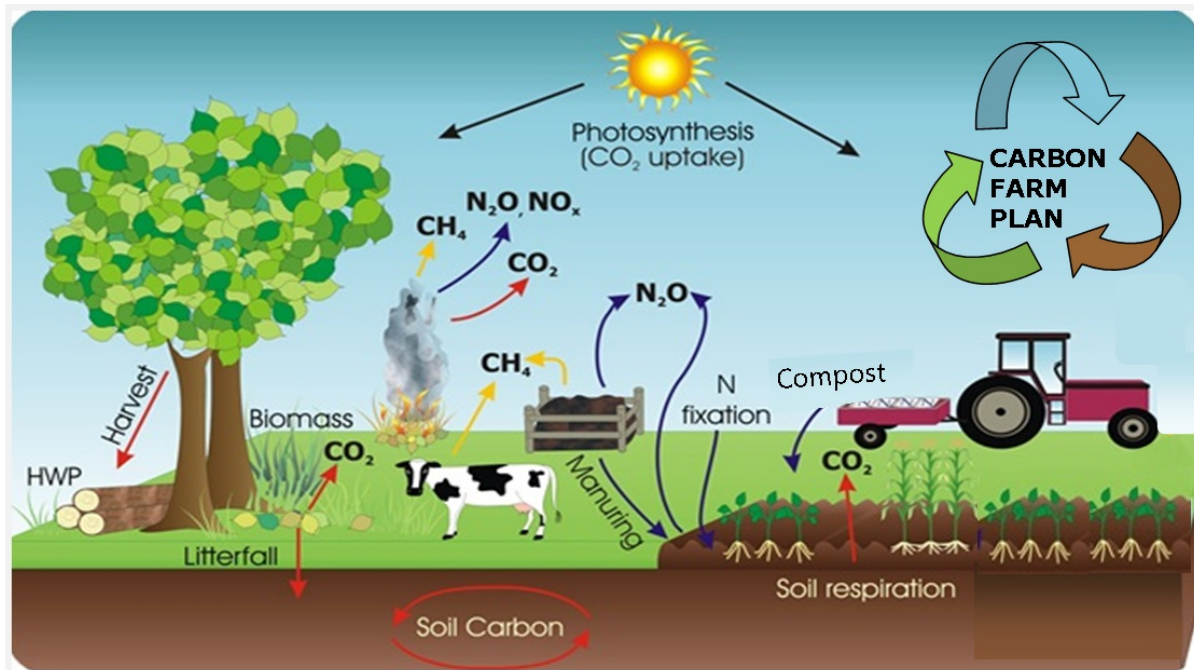


Figure 1 Source: Intergovernmental Panel for Climate Change (IPCC)

On the other hand, there are many agricultural practices that can help enhance carbon sequestration, such as:

- maximum groundcover (reducing bare soil)
- no crop tilling
- cover cropping
- natural fertilizers
- 'green manure'
- mulching
- composting
- soil stimulants
- soil inoculants (probiotics)
- biodynamics
- permaculture
- water spreading.

Opportunities and constraints

In 2015, a global agreement on climate change was reached under the United Nations Framework Convention on Climate Change (UNFCCC) in Paris. The Paris Agreement aims to 'strengthen the global response to the threat of climate change' and to limit average global temperature rise to 2°C while pursuing efforts to keep warming below 1.5°C. It is based on voluntary emissions reduction agreements signed by individual countries. Under the Paris Agreement, Australia has committed to reduced greenhouse gas emissions by 26 to 28 per cent on 2005 levels by 2030.

The Emissions Reduction Fund (ERF) has been established by the Australian Government with the aim of reducing Australia's greenhouse gas emissions. The ERF is a voluntary scheme that provides financial incentives to organisations and individuals to adopt new practices and methods to reduce greenhouse gas emissions. The Department of Energy and

Environment and the Clean Energy Regulator are the two government agencies that manage the ERF. The Clean Energy Regulator administers the ERF, this includes project assessments through to the issuing of carbon credits.

Participants in the scheme can earn Australian carbon credit units (ACCU). One ACCU is earned for every tonne of carbon dioxide equivalent stored or avoided. ACCU's can then be sold to generate income. The price at which the carbon is traded is determined by supply and demand. Applications for the ERF need to be made through the Clean Energy Regulator. To be successful in participating in the ERF, an approved methodology needs to be followed. Some examples of the approved methodologies under the ERF are:

- Vegetation
 - regenerating forest on previously cleared land
 - planting trees to grow carbon stocks
 - protecting native forest by avoiding land clearing.
- Agriculture
 - sequestering soil carbon in agricultural systems
 - sequestering soil carbon through grazing systems
 - capturing methane waste from piggeries.

A sequestration decision tree is available to assist in choosing a project type and lists the approved methodologies (see Figure 2, p 7). Eligibility criteria also need to be considered such as 'newness'. For example, the project must not have commenced prior to being registered with the Clean Energy Regulator.

For carbon farming projects to be economically viable, economies of scale need to be considered. Economies of scale vary with geographical region and the impacts that climate has on growth rates of vegetation. For small farmers, there is an option to 'aggregate' or join together with other farmers to participate under the ERF as a single project. Carbon Service Providers are available to investigate project feasibility and help navigate the aggregation rules and guidelines. Carbon Service Providers are private companies that can assist landowners and individuals also with the possibility of creating carbon credits for the secondary or voluntary carbon markets.

Outside of generating carbon credits under the ERF scheme, carbon farming projects can also generate ACCUs for sale into secondary and voluntary Australian carbon markets. For example, the Aviation sector purchases carbon credits for their passenger flight offset programs.

Outside of the carbon market, there are opportunities for landowners to receive support on a local level for environmental management on their property which also helps with reduction of greenhouse gas emissions.

Local support

Noosa Council can offer assistance with the Land for Wildlife Program and Voluntary Conservation Agreement Program.

The [Land for Wildlife Program](#) is a free, voluntary program that can assist landowners in managing environmental aspects of their property. The activities of the program have broader environmental benefits of connecting areas of bushland to create wildlife corridors, improvement of habitat, soil quality and creek quality. Noosa Council can provide free onsite

management advice and members receive access to information and resources. Currently in south-east Queensland there are over 3,900 landowners managing 50,000 hectares of wildlife habitat.

The program welcomes landowners that:

- a property of at least 1 hectare of native vegetation,
- are interested in integrating environmental conservation with other land uses, and
- manage a part or all of their property as habitat for native plant and animals.

Another environmental protection program is Noosa Council's Voluntary Conservation Agreement (VCA), funded by Noosa Council's Environment Levy. This involves the permanent protection of environmentally significant areas of private land. A statutory protection can be placed on the land through a conservation covenant. A conservation covenant places conditions on the title of the land, these conditions permanently protect vegetation and wildlife and remain on the title of the land. Council can assist landowners with determining the area and can provide financial assistance with initial set-up and the management of the Environmental Management Plan for an initial five-year period.

Currently the highest level of protection on private land is administered by the State Government and is the Nature Refuge program. A nature refuge is a class of protected area under the Nature Conservation Act 1992. At times a grant program is offered to Nature Refuge land holders.

[Noosa and District Landcare](#), established in 1990, is a highly awarded not-for-profit organisation based in Noosa Shire Queensland. Noosa Landcare works with landholders, industry and government to promote sustainable natural resource management and conservation through education and implementation of best practice environmental restoration. Currently Noosa Landcare is offering up to 1,000 native trees for Land for Wildlife members for financial year 2018/19. Property owners can receive up to 50 trees per property.

The Noosa Landcare 'Trees for Tourism' Program commenced in 2017 as a means for Noosa's local tourism industry to make contribution to protecting and enhancing the local environment and to contribute towards carbon sequestration activities. To date Peppers Noosa Resort, Ironman Noosa Triathlon and the Tourism Noosa-supported 'Noosa Food and Wine Festival' have joined the program – all providing financial contributions to undertake work at chosen sites in the Noosa Shire. In 2017, Peppers Noosa Resort chose to support creek line revegetation activities within Kin Kin Entrance Bushland Reserve. Whilst the chosen sites by contributors to date have been within Council reserve, the option to include private property exists and private property sites have included in the sites available for investment. Noosa Landcare can assist private landowners with further information on how to participate.

New funding opportunities

The Queensland Government's \$500 million Land Restoration Fund aims to expand carbon farming in the state by supporting land-sector projects that deliver clear environmental and economic co-benefits. Co-benefits are direct positive outcomes associated with carbon farming projects. These benefits are in addition to the carbon emissions avoided or carbon stored.

The Land Restoration Fund will support projects that:

- sequester carbon in land and soil to reduce Queensland's carbon emissions
- boost revenue sources for farmers and other landholders in regional and rural Queensland
- deliver social and community benefits especially for Traditional Owners
- strengthen critical habitat protection
- restore ecosystems and degraded land.

Land Restoration Fund has announced two new funding programs for 2019. Noosa Landcare can assist with information on new and upcoming grant and funding opportunities.

Constraints

The current carbon credit market system is not robust; prices of carbon credits are highly volatile and based on supply and demand. Currently the ERF methodologies are only economically viable for large parcels of land. For those entering into the carbon market there are many aspects and risks to consider; for example, the length of the project, as some projects have a 10 or 25-year timeframe. To help navigate the carbon market it is recommended to seek the guidance of an accredited Carbon Service Provider and gain independent legal advice.

Under the ERF, landowners can experience the following constraints:

- methodologies will require a level of data collection outside the scope of normal farming practices
- methodologies will require sampling, measurement and statistical techniques that are specialised
- methodologies generally require auditing and reporting of project results.

Along with an initial set-up cost there will be the ongoing cost of engaging external services for monitoring, measurement, auditing and reporting and marketing any credits earned.

Case Study: Noosa and District Landcare 20 Million Trees Program

In May 2018, Noosa and District Landcare completed their largest tree planting project to date. Over the last 2 years, 340,000 native trees were propagated in Noosa Landcare's nurseries in Pomona and planted on 34 hectares of ex-grazing land within the Great Sandy National Park at Elanda Plains. The site is a wetland and delivered many challenges to the project including periods of excessive waterlogging.

The project, which helped support the direct employment of local residents and youth, was funded through the Federal Department of Environment's 20 Million Trees Program in partnership with the Carbon Service Provider CO2 Australia. The Australian Government's 20 Million Trees Program is part of the National Landcare Program and has the following key objectives: 20 million trees planted by 2020, carbon reduction by contributing to Australia's reduction of greenhouse gas emissions, environmental conservation and community engagement.

The Elanda Plains site, acquired by Queensland Parks and Wildlife Service over 20 years ago, provides a vegetated corridor along the western border of Lake Cootharaba and forms part of the lower floodplains of Kin Kin Creek. The planted trees will not only help to sequester carbon, but will also reduce sediment and nutrients entering Lake Cootharaba in times of flood, and will improve the water quality of the Noosa River system.

Further information

The Paris Agreement

<https://unfccc.int/process/the-paris-agreement/what-is-the-paris-agreement>

Emissions Reduction Fund

<http://www.environment.gov.au/climate-change/government/emissions-reduction-fund>

Clean Energy Regulator

<http://www.cleanenergyregulator.gov.au/ERF/About-the-Emissions-Reduction-Fund/How-does-it-work>

Farm 'Aggregation' under the Emissions Reduction Fund

<http://www.cleanenergyregulator.gov.au/ERF/Want-to-participate-in-the-Emissions-Reduction-Fund/Planning-a-project/Aggregation-under-the-Emissions-Reduction-Fund>

Carbon Service Provider

CO2 Australia offers a carbon advisory service for landowners

<https://www.co2australia.com.au>

CO2 Australia has worked with Noosa Landcare on the 20 Million Trees Program at Elanda Plains (see Case Study).

Noosa Council Land for Wildlife and Voluntary Conservation Agreement Programs

For further information contact Council's Community Partnerships Officer on **0419 672 813**

Or email kylie.gordon@noosa.qld.gov.au

Noosa and District Landcare contact 07 5485 2468

<https://noosalandcare.org/>

Nature Refuge Information https://www.ehp.qld.gov.au/ecosystems/nature-refuges/the_nature_refuges_program.html

Land Restoration Fund

<https://www.qld.gov.au/environment/climate/climate-change/land-restoration-fund>

20 Million Trees Program <http://www.nrm.gov.au/national/20-million-trees - show>