



- Wool production. 1 kg of clean wool contains 45-50% of carbon.
 - the Urea oxidises producing N₂O, wrong time, such as before heavy rain, kilograms of Urea produces 50 kilograms applying fertiliser. For example 100 Nitrogen will also be lost when tilling soil and burning stubble.
 - Nitrogen and carbon loss occurs when and urine.
 - Livestock production, for example: ruminants such as sheep and cattle producing methane burped up from digestion and nitrous oxide from dung
- this 16% is made up from...**
- DAFF
DPI
MW.dpi.vic.gov.au
MW.daff.gov.au/climatechange/cfi/
DCCC
MW.climatechange.gov.au/cfi/
Clean Energy Future
MW.cleanenergyfuture.gov.au/
carbon-farming-initiative/
Farm Institute
MW.calculator.farminstitute.org.au
Project Platypus
MW.platypus.org.au

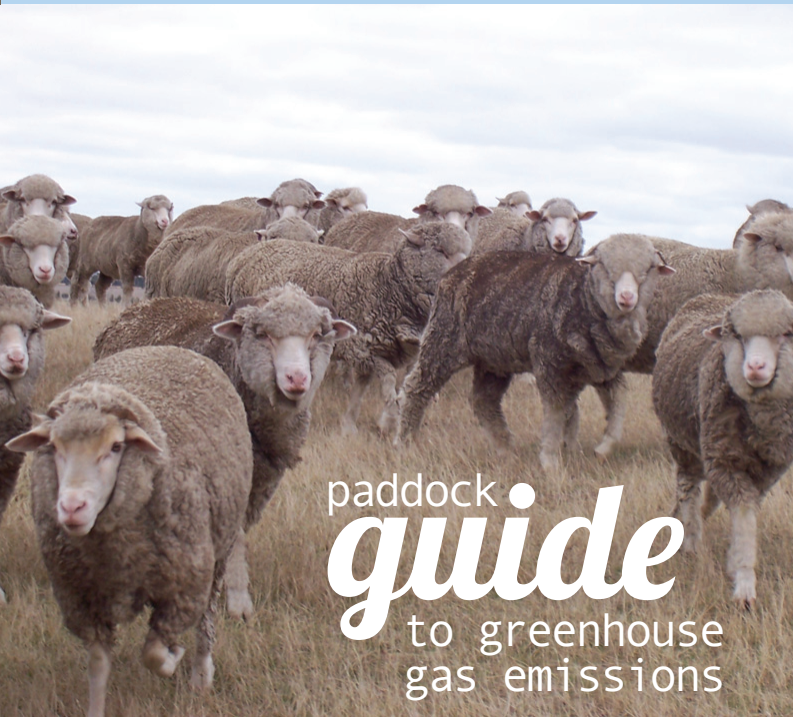


Carbon dioxide (CO₂) is a typical greenhouse gas

Methane (CH₄) is a greenhouse gas, which averaged out over 100 years is 25 times more potent than carbon dioxide

Nitrous oxide (N₂O) is 310 times more potent than carbon dioxide (CO₂) and remains in the atmosphere for over 100 years

Carbon in agriculture

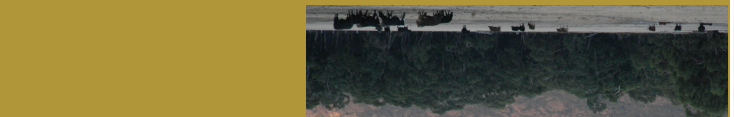


This guide is designed to help farmers begin to manage greenhouse gas emissions

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All greenhouse gases in this guide are expressed in 'carbon dioxide equivalents' or 'CO₂-e'. This is a 'common currency' in greenhouse gases.

for example...

1 tonne of methane (CH₄) equals 25 tonnes of CO₂-e

1 tonne of nitrous oxide (N₂O) equals 310 tonnes of CO₂-e

measuring carbon and greenhouse gases

emissions avoidance

Emissions avoidance is the process of reducing or avoiding emissions of greenhouse gases escaping into the atmosphere. Examples of this are removing under-productive animals from the herd, improving their diet, and optimising their health.

sheep

Depending upon diet, genetics and environmental conditions, one sheep can produce approximately 131 kilograms of CO₂-e per year.

100 sheep

= 13.1 tonnes of CO₂-e per year

cattle

Depending upon diet, genetics and environmental conditions, one cow produces approximately 1,200 kilograms of CO₂-e per year.

100 cattle

= 120 tonnes of CO₂-e per year

revegetation and agroforestry

When trees are young and actively growing (approximately 5 - 20 years) they absorb more carbon in their leaves, roots, trunk and branches, however as the growth rates of the trees slow down, so too does the amount of carbon they sequester.

A 1 hectare revegetation site in the Upper Wimmera that is 1 year old will sequester approximately 1.06 tonnes of CO₂-e in 1 year.

A 1 hectare revegetation site in the Upper Wimmera that is 10 years old will sequester approximately 3.45 tonnes of CO₂-e in 1 year.

A 1 hectare revegetation site in the Upper Wimmera that is 50 years old will sequester approximately 0.84 tonnes of CO₂-e in 1 year.



the farm utility

A 3.0-litre turbo diesel farm utility has a combined fuel consumption of 8.2 litres of diesel fuel per 100 kilometres.

This is a total of 0.217 kilograms of CO₂-e produced per kilometre. A total of 21.7 kilograms of CO₂-e is produced for every 100 kilometres travelled.

sequestration

Sequestration refers to the removal of carbon from the atmosphere in forms that are stable over a long period, such as trees and some kinds of soil. These are often referred to as a 'carbon sink'.

Because carbon dioxide molecules last for around 100 hundred years in the atmosphere, carbon needs to be 'locked up' for a century to ensure the sequestration is not 'reversed', the effort wasted, and the integrity of the carbon market undermined.



soils

There is currently extensive research being carried out in Australia to determine levels of carbon sequestration in soil. The results of carbon in the soil vary; this is due to the soil type, rainfall and moisture levels, persistence of drought and other variables.

There is not enough information available at this time, to be used effectively in this guide.

However minimum till farming is a recognised sustainable farming technique, it has great benefits to production, soil health and soil carbon. Permanent perennial pastures are a good way to build carbon in the soil.

The information in this brochure is to be used as a general guide, when making decisions about sequestration or emissions avoidance of greenhouse gases.

