

CARBON DIOXIDE (CO₂) IN THE ATMOSPHERE

Gross
New Zealand GHG
emissions 2007
75.6 MT CO₂
equivalent

0.2 t/ha OF
CARBON BURPED
AS METHANE,
EQUIVALENT TO
5.7 t OF CO₂

2.7 t/ha OF
CARBON
RETURNED AS
CO₂ THROUGH
BREATH

10 t/ha OF
CARBON
RETURNED AS CO₂
THROUGH PLANT
RESPIRATION

PASTURE AND
PLANTS TAKE
20 t/ha OF
CARBON AS CO₂
FROM THE
ATMOSPHERE,
EACH YEAR

10 t/ha OF
CARBON IS
RETAINED IN
PASTURE AND
PLANTS

0.5 tonne of CO₂ is
retained in the
milk and meat
of cows

5 t/ha OF CARBON
RELEASED IN THE
DECAY OF PLANT
ROOTS AND
LITTER

1.6 t/ha OF
CARBON
EXPELLED IN
WASTE

CARBON STORED
IN FOSSIL FUELS

5 t/ha OF CO₂ IN
PASTURE
CONSUMED BY
ANIMALS

CARBON IN SOILS

DID YOU KNOW?

Methane has a global warming potential 21x that of CO₂ making it a more damaging greenhouse gas. Almost half of New Zealand's GHG emissions come from agriculture.

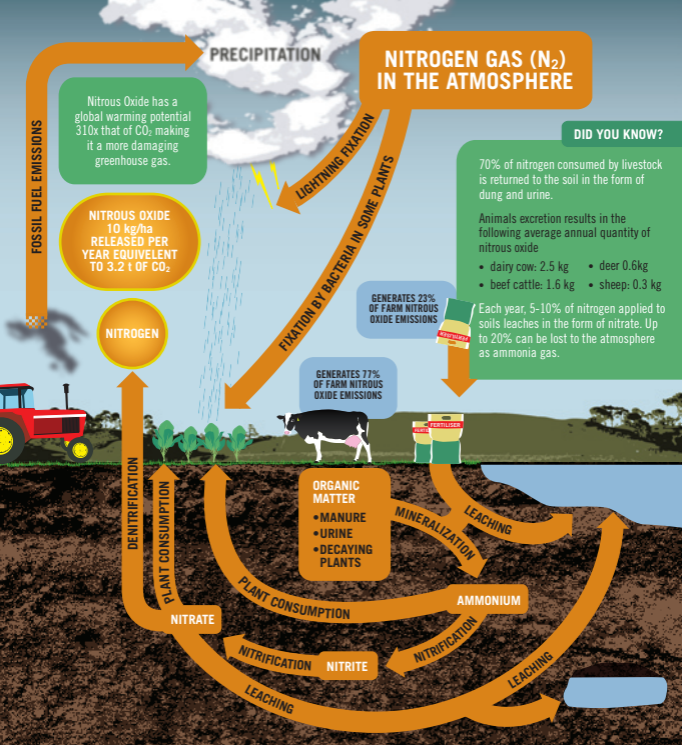
DID YOU KNOW?

Prices of carbon refer to its carbon dioxide equivalent – which is 3.7x the figures given in this diagram.

DID YOU KNOW?

New Zealand soils store 100-300 tonnes of carbon per hectare. Some soils are losing carbon while other soils are gaining it.

KEY
GHG - GREENHOUSE GASES
t - TONNE
MT - MILLION TONNE
t/ha - TONNE PER HECTARE



FIXATION

Where nitrogen gas is converted to ammonium by some plants and high-energy natural events such as lightning and forest fires.

MINERALISATION

When the decomposition of organic matter converts nitrogen to ammonium.

NITRIFICATION

Where ammonium in the soil is converted into nitrite and then nitrate.

DENITRIFICATION

The conversion of nitrate into nitrogen or nitrous oxide gas.

LEACHING

Ammonium is attached to clay particles whereas nitrate is not. Therefore nitrate leaches readily.