PROJECT PLATYPUS
UPPER WIMMERA LANDCARE

CO2 Farm Audits

FACT SHEET NO. 2

THE BIG PICTURE Improving our understanding of the Greenhouse Gas (GHG) emissions produced or sequestered (stored) by a range of farm activities will allow land managers to make important decisions on managing for the future. Although agricultural activities produce approximately 18% of Australia's GHG, farmers are not included in the 2011 Carbon Pollution Reduction Scheme and have at least 5 years before they may have to account for their emissions. By auditing your farming enterprise GHG emissions now you have the opportunity to farm pro-actively for carbon reductions.

To measure GHG emissions, the Australian government has developed a National GHG Inventory with the following categories:

- Stationary Energy – 48.7%
- Fugitive emissions – 4.8%
- Agriculture – 17.7%
- Transport – 14.5%
- Industrial processes - 5.9%

AUDITING YOUR FARM GHG EMISSIONS For auditing GHG emissions on farms, self assessing models have been developed (by DPI and Melbourne Uni) to audit a variety of farm enterprises including sheep and mixed farming. The boundary for the audit area is generally defined by areas where you have operational control over the activity/land i.e. your farm boundary. Activities that take place within the boundary can be GHG emissions and GHG removals/sequestering. The following snapshot is from the accounting program.

Sheep Greenhouse Accounting Tool State: VIC

Farm Name	Joe Bloggs					
Flock information	**Rams**	**Wethers**	**Maiden Breeding Ewes**	**Breeding Ewes**	**Other Ewes**	**Lambs and Hoggets**
Livestock Numbers	125	4875	1250	8375	0	3375
Liveweight	66.25	54.25	44	49	50	28.75 kg LWt
Live weight gain	-0.001	0.000	0.000	0.022	0.000	0.105 kg /day
Dry Matter Availability	1.93	1.38	1.93	2.18	1.80	2.00 t/ha
Lambing Rates				0.25		
Crude Protein	11.5	9.5	11.5	11.5	11.5	12.25 %
DMD	62.5	57.5	62.5	62.5	62.5	62.5 %

Note: Click on the links above to input sheep data

Area Improved Pasture	1400	ha
Area cropped	700	ha
Nitrogen Fertiliser Pastures	42000	kg N/ year
Nitrogen Fertiliser Crops	21000	kg N/ year

Note: Enter the farm areas here

Annual Diesel Consumption	50000	litres/year
Annual Electricity Use	43248	KWh
Power Source	Brown Coal-Victorian	

Note: Enter the energy use here

Area of Trees Planted after 1990	100	hectares
Type of Trees planted	Eucalyptus cladocalyx - Sugar gum	
Rainfall	Med (500 - 700)	

Carbon content of Wool	45.2	%
Clean Wool (t/year)	45.1	

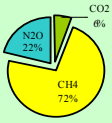
Note: Not currently counted.

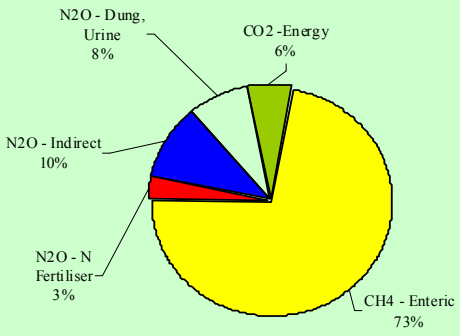
To view specific calculations, click one of the buttons below

Introduction | CH4-Enteric | N2O- Soil & N | N2O- Fecal | CO2-Power Use | Trees | Conversions | Definitions

Outputs	t CO2e/farm
CO_2 -Energy	198
CH_4 - Enteric	**2,496**
N_2O - N Fertiliser	112
N_2O - Indirect	357
N_2O - Dung, Urine	279
Tree plantings (after 1990)	-583
Net Farm Emissions	**2,860**
Carbon stored in Wool	-20
Net Farm Emissions incl wool	**2,839**

Summary	t CO2e/farm
CO_2	198
CH_4	2,496
N_2O	749





EMISSION GENERATION

Most agricultural emissions are generated from
Enteric Fermentation (Emissions from Rumen Livestock) - Methane
Manure Management – Methane and Nitrous oxide
Agricultural Soils – Nitrous oxide from fertiliser and crop residue decomposition
Field Burning of Agricultural Residues - Methane and Nitrous oxide

Agriculture also generates and sequesters GHG emissions that are included/accounted for in other sectors
Energy Sector – electricity use
Transport sector – machinery and vehicle fuel consumption
Land Use, Land Use Change and Forestry – Forestry activities






THE WAY FORWARD

There is considerable research in ways to reduce agricultural emissions and maintain productivity. The following summarize current best management practices.

- Reduce tillage, maintain ground cover to retain carbon in soils.
- Input crop residues into soil
- Improve pasture management
- Improve stock feed digestibility
- Minimise fertiliser inputs through improved timing of application
- Plant trees

MORE INFORMATION IS AVAILABLE:

www.amazingcarbon.com
-Dr Christine Jones on soil carbon, pasture cropping trials, trading of soil carbon
www.greenhouse.crc.org.au
-CRC Greenhouse Accounting
www.greenhouse.unimelbourne.edu.au
-Greenhouse in Agriculture program
www.carbonlink.com.au/about/index.htm
-Soil carbon
www.climatechange.gov.au
-Department of Climate Change
www.daff.gov.au/climatechange
-Climate change impacts from Dept. Agriculture Fisheries and Forestry
www.primecarbon.com.au/index.html
-Soil carbon
www.environment.gov.au
-list of climate change websites

CARING FOR OUR COUNTRY

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