final report

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Application and extension of FarmGAS decision support tool – trainer to trainer program

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1 Abstract

The free online FarmGAS Scenario Tool was developed with funding from the Reducing Emissions from Livestock Program (REFLP) to enable users to estimate greenhouse gas emissions at an enterprise and whole farm level. Additional functionality built into the Scenario Tool to enable assessment of mitigation and abatement options increased its complexity for users.

FarmGAS is a Tool that enables users to assess the implications of on farm greenhouse gas abatement strategies, assess the viability and potential outcome from Carbon Farming Initiative (CFI) projects and for the research community to model the affect of findings on whole farm and enterprise greenhouse gas emissions.

To increase awareness and capacity of advisor and extension specialists to use the FarmGAS Scenario Tool and encourage adoption amongst clients, train the trainer workshops were held in each Australian state, except Northern Territory during March to May 2012. Following training users would be sufficiently skilled to use the Scenario Tool with farmers, in research and policy applications.

Approximately 64 advisor and extension specialists were trained in use of FarmGAS with an additional three workshops planned.

2 Executive Summary

The FarmGAS Calculator allows Users to estimate enterprise and whole farm greenhouse gas emissions using a modified version of the *Australian Methodology for the Estimation of Greenhouse Gas Emissions and Sinks 2006 – Agriculture*. With funding from the Reducing Emissions from Livestock Program, FarmGAS was enhanced to enable Users to modify production and emission factors to investigate the effect of greenhouse gas mitigation options and alternative production scenarios on farm emissions. The FarmGAS Scenario Tool also allows the viability and potential outcome of Carbon Farming Initiative (CFI) projects to be evaluated.

To increase adoption of the FarmGAS Scenario Tool, a train the trainer program was established. The Program was targeted at advisors and extension professionals and aimed to increase their knowledge of the Tool and skills in assessing abatement options. At the end of training, it was intended that advisors and extension professionals would be suitable skilled to extend the Tool to their client network, include the Tool in their work program and encourage adoption.

During March to May 2012 advisor, extension, researcher and policy professionals were trained to use FarmGAS. Training included an explanation of the methodology FarmGAS is based upon, detailed explanation of each enterprise calculator, interpretation of results and reports and how to assess abatement options.

Evaluation indicated that the Tool will be valuable addition to the range of options professionals have to assess the affect of greenhouse gas abatement strategies and projects on farm greenhouse gas emission profiles. The Tool has immediate application for evaluation of carbon farming initiative project options and approved methodologies on whole farm emissions.

The Tool is currently available for free on the Australian Farm Institute website, www.farminstitute.org.au

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3 Background

The original FarmGAS Calculator was developed in 2008 and released for public use in 2009 with over 1200 people registering to use it. The FarmGAS Calculator utilized the greenhouse emission calculation methodologies and factors detailed in the *Australian Methodology for the Estimation of Greenhouse Gas Emissions and Sinks 2006 – Agriculture* published by the National Greenhouse Gas Inventory Committee.

Since the FarmGAS Calculator was developed, research into methane and nitrous oxide emission abatement in agricultural systems has developed significantly, facilitated by investment from the Department of Agriculture, Fisheries and Forestry Climate Change Research Program and by industry including Meat & Livestock Australia.

The FarmGAS Calculator has since been updated and enhanced to create the FarmGAS Scenario Tool, a free online greenhouse gas estimation tool which also incorporates the ability to investigate emission reduction options. Mitigation options incorporated into the Scenario Tool were selected by a project Technical Committee, and mean emission calculations and factors can depart from those detailed in the *Australian Methodology for the Estimation of Greenhouse Gas Emissions and Sinks 2006 – Agriculture*.

The mitigation options include allowing users to change the liveweight and liveweight gain of livestock, manipulate feed factors including dry matter digestibility, available feed and crude protein content; adjust manure management systems for intensive livestock enterprises, and amend the quantity of crop residuals (stubble management options). In terms of sequestration, the forestry enterprise allows the user to select one of 8 species of tree for the estimation of carbon sequestration, with up to 15 ‘plots’ able to be established.

To enable the Scenario Tool to be accessed by anyone at any time the tool was converted to an online format.

The rationale to enhance the FarmGAS Calculator was to enable farmers and their advisors to assess the greenhouse gas profiles of an enterprise or farm and investigate abatement strategies to reduce or sequester carbon. However, the improvements from the original Calculator including user defined options, and the rigidness of the underlying assumptions meant that a facilitated training program was required to increase the capacity of users to apply the tool and interpret results before they could be confident in extending the Tool to their client networks.

The project was designed to increase the capacity of farm advisory and extension professionals in use the FarmGAS Scenario Tool, to gain a greater understanding of greenhouse gas emissions in the context of local situations, assess potential greenhouse gas abatement options and encourage uptake. It is anticipated that trained users will then be sufficiently knowledgeable to train and transfer FarmGAS to new users.

4 Project Objectives

This project aimed to deliver practical information regarding the use of the FarmGAS Scenario Tool and mitigation options to farm advisory and extension officers, to

encourage greater uptake of the tool and understanding of farm emissions and mitigation opportunities among farmers. The specific project objectives were:

1. To support the use of research from the Reducing Emissions from Livestock Research Program to demonstration of practical commercial abatement applications.
2. To train (10-20 providers) in each of four states in the use of the FarmGAS Calculator hosted through each RELRP Demonstration site in Australia.

5 Methodology

The project used a facilitated workshop method to conduct training during March – May 2012. In one case training was conducted as a webinar.

To reach the target audience of farmer and their advisors, a National train the trainer program was established. A train the trainer approach was used to target key advisory and extension professionals with the intention that those trained would further transfer and encourage adoption of the Tool amongst their clients.

The purpose of the training was to communicate the availability of the Tool, demonstrate the functionality of the Scenario Tool and enable participants to experience the tool through a case study approach. Participants were given access to support information to enable them to communicate details of the Scenario Tool to their clients.

Training was conducted in Victoria, South Australia, Queensland and New South Wales. Western Australia and Tasmania have been approached to conduct training before the end of May. Although training wasn't conducted in the Northern Territory (NT) as the timing conflicted with pre arranged events, the NT Department of Agriculture has expressed interest in conducting training the second half of 2012.

Initial contact was made in each state with the co-ordinator of the Reducing Emissions from Livestock Program (REFLP) Demonstration sites to establish interest in conducting training sessions. In most states the co-ordinator was part of the Department of Agriculture and the request was forwarded either to the extension team or policy division.

The workshops were marketed to State Department extension officers, research scientists (agronomy, climate), policy staff, and to private extension officers and businesses. The information brief used to market the workshops is attached as Appendix 1.

Training workshops were staggered through the March – May period to work in with each of the states preferred timings. Workshops were conducted as half day participatory workshops with 8-10 participants being optimal for adequate interaction. Participants were requested to attend with a laptop and internet connection to enable hands on experience. In most cases, participants were able to access the internet and where this was not possible, sharing of machines sufficed.

The workshop structure was a presentation on background to FarmGAS development, contextualising FarmGAS in the current policy settings and providing participants with an understanding of the *Australian Methodology for the Estimation of Greenhouse Gas Emissions and Sinks 2006 – Agriculture* that FarmGAS is developed from. Following the presentation a detailed explanation and demonstration of each enterprise calculator, emission factors, reporting, and how to implement

abatement strategies and scenarios was provided. The majority of the workshop was participatory to enable Participants to obtain hands on experience with the Tool and seek clarification from the facilitator. Attached as Appendix 2 is the workshop plan, an example of the presentation and the scenario worked through.

Participants were provided with a scenario, appropriate to their region to work through during the workshop. All participants will be provided with access to a User Guide for the Tool that outlines clear instructions on how to establish farms and guidance on data required. For some of the more complex data requirements in the FarmGAS Scenario Tool, the User Guide provides estimates on typical values that the user can input. Case studies will also be made available to demonstrate how the Tool is used. Case studies include base farm data, with up to four scenarios to demonstrate various mitigation or production options and their impact on estimated emissions.

6 Results

6.1 Participation

Train the trainer workshops have been held or have been arranged for all states apart from the Northern Territory.

Table 1 outlines the number of workshops per state and the number of participants.

State	Number of workshops	Participants trained
Victoria	4	41
South Australia	2	12
Queensland	1	6
Western Australia	TBC	TBC
New South Wales	1	TBC
Tasmania	0	1
Total		**64**

The workshops attracted a range of participant types. A breakdown of participant types based on returned evaluation surveys, as at the time of reporting follows in Table 2.

Participant type	Number of Participants
Extension	22
Researcher	12
Policy	5
Agribusiness	1
Farmer	0
Other	2

6.2 FarmGAS Scenario Tool

At each workshop participants were requested to complete an evaluation survey (Appendix 2). The evaluation survey used a 7 point Lickert scale for responses, with 1 being strongly disagree and 7 being strongly agree.

Opportunity was provided for free form comments. 42 responses were received.

FarmGAS is intended for use by advisors and extension professionals to estimate greenhouse gas emissions from enterprises and whole farm and to explore how mitigation strategies affect on farm emission. Evaluation sought to understand whether participants at the train the trainer workshops would use FarmerGAS with producers and if so, how.

When participants were asked *'Is FarmGAS a tool you would use with famers?"* respondents gave an average response of 4.3 and when asked *'Do you think FarmGAS is easy to navigate?"* an average response of 4 was provided.

However, when asked *'Do you think the ability to modify emission and production factors is useful'* and *'Do you think the ability to conduct scenarios is useful?' an* average response of 6 was received for both questions.

Free form comments indicated participants would spend time following the workshop to develop scenarios and further evaluate the tool and its application with farmers.

The average score of 7 to the question *'Do you think the training will enable you to use the Scenario Tool in your role?'* suggests that the FarmGAS Tool will be valuable.

Anecdotal comments suggest that the value for extension practitioners and researchers is to develop scenarios to contextualise greenhouse gas emissions based on regional data, representative farms and mitigation options. Interpreted results and implications would then be presented producers. Those in policy roles also saw value in using the tool to assess the effect of new and emerging policies on whole farm emission profiles.

6.3 Workshop format

Evaluation responses indicate that the training met the participants' expectations (average score 6) and achieved its purposes (average score 6) of improving the capacity of participants to use the tool and providing knowledge and skills to enable participants to use the tool with clients, encouraging wider adoption.

Free form comments indicated that the facilitated training workshop format was useful. Many participants felt being guided through the Tool was valuable as it allowed complex areas of the model to be explained and questions answered.

7 Discussion / Conclusion

The train the trainer workshops have extended the FarmGAS Scenario Tool, enhanced with funding from the Reducing Emissions for Livestock Program (REFLP), to a variety of audiences.

The training workshops focussed on upskilling participants to understand the rigid methodology FarmGAS is developed on, to confidently use the Scenario Tool to calculate base emissions, interpret results and implement scenarios using real data.

Without the train the trainer program, awareness and adoption of the Scenario Tool is likely to have remained with those users who have been familiar with the original FarmGAS calculator and those involved in projects where FarmGAS is to be used to establish the effect of research outcomes on enterprise or whole farm emissions.

At the time of reporting approximately 64 professionals had been trained across 3 states with training to be delivered in an additional 3 states. Of the professionals trained so far, approximately 80% have been in either extension or research roles where there is a significant component of producer interaction.

Workshops in NSW, WA and Tasmania to be held before the end of May 2012 will target extension professionals with at least an additional 20 professionals to be trained.

While the original intention was to target advisory and extension staff a range of participant types were attracted to the workshops. Evaluation suggests that the workshops have been valuable to increase the knowledge and awareness of a range of participant types. Many participants indicated their knowledge of on farm greenhouse gas emissions was fair prior to training, and their ability to calculate greenhouse gas emissions as low. Following the training most were confident that their knowledge and confidence has increased.

The variety of participants has demonstrated that FarmGAS has application in not only investigating greenhouse gas abatement strategies on farm but also in research and policy that has flow on effects for producers.

Given the range of participants that have been upskilled, there is potential for FarmGAS to be built into multiple programs that reach producers. However the common message from extension professionals was that the tool would be used to contextualise greenhouse gas emissions from either a real or representative farm, assess possible mitigation scenarios and then discuss the implications with producer groups.

This message is supported by the evaluation which indicated the tool is too complex and not user friendly. One participant commented that in some areas FarmGAS requires highly precise information, while in others there is large margin for error. Participants recognised there short comings of the Tool are, generally, a function of the National Greenhouse Gas Inventory methodology, rather than Tool design.

The workshops were also valuable from the perspective of online Tool development and supporting resources. As participants were viewing the FarmGAS Scenario Tool from different professional perspectives and often for the first time, excellent feedback was provided to enhance the user friendless of the Tool, some great ideas were received for supporting resources and development on the next version.

Future research should focus on improving the user friendliness of the Tool, including the look and feel and incorporating more information boxes to assist users input data. It was also suggested that building compatibility with productivity models would enhance the effectively of the Scenario Tool for advisors and extension professionals.

8 Relevant Appendices

Australian Farm Institute

farm gas

FarmGAS Scenario Tool Train-the-Trainer workshops

Purpose:

To up-skill users in the new online FarmGAS Scenario Tool which estimates greenhouse emissions either at an enterprise(s) or whole farm level.

The workshop will provide participants with knowledge on:

i. How to establish case studies and navigate the tool
ii. How to establish and run emission reduction or sequestration scenarios
iii. How to modify the methodology FarmGAS is built upon to evaluate research developments
iv. How to interpret results

Participants will be provided with resources and presentation materials for use with producer or other user groups.

Workshop details:

The half day workshop will be a brief introduction, demonstration of the Tool and an interactive session designed to allow participants to have hands on use. Workshops will be limited to 7-10 participants per workshop.

Date: Tuesday 17th April

Time: TBA

Location: Brisbane (venue TBA)

***** Important note***: participants will require a laptop and internet access.

Who should attend:

The workshop is designed for public and private advisors, research scientists and agronomists as well as farmer group co-ordinators and leading farmers however anyone with an interest in using FarmGAS is encouraged to attend.

Background:

The FarmGAS Scenario Tool has been developed to enable farmers, advisors and researchers to determine the greenhouse gas emissions from an enterprise or whole farm. The Tool is built upon the national Greenhouse Gas Inventory (NGGI) 2006 methodology which is used to determine and report Australia's greenhouse gas emissions internationally.

With commencement of the Carbon Farming Initiative (CFI) the Tool can be used to estimate the emission potential of CFI projects.

The Scenario Tool has been developed to enable users to:

i. Establish baseline greenhouse gas emissions from an enterprise or farm

ii. Investigate options to reduce greenhouse gas emissions via a range of emission reduction and / or sequestration options
iii. Research the effect of modifications to the underlying methodology

More information & registration:

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Appendix 2

Using the FarmGAS Scenario Tool

1. Log onto www.farminstitute.org.au. Access the FarmGAS scenario tool through the green box on the left hand side of the site.

   - Previous users – you can use your old username & password
   - New users – register your details

2. **Establish a mixed farm (Give your scenario / case study any name you like)**

State:	Queensland
Location:	Maranoa Warrego
Farm Size:	2000ha
Arable area:	1700ha

3. **Establish enterprises**:

   - In setup select
     - Beef > Beef breeding
     - Sheep
     - Intensive > Feedlot
     - Cropping
     - Trees

   Pastures (dryland): Native perennial pastures – 15% legume – 1000ha

   A. Livestock:

   Flock details (500ha)

   The sheep flock is 2000 merino wethers producing 20 micron wool. It is assumed culls / replacements are sold / purchased in the same season.

   - Flocks details are on the next page.

NUMBERS ON HAND AVERAGE NUMBER DURING EACH SEASON

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Breeding Ewes	0	0	0	0	0	0	0	0	0	0	0	0
Maiden Ewes	0	0	0	0	0	0	0	0	0	0	0	0
Other Ewes	0	0	0	0	0	0	0	0	0	0	0	0

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Lambs/Hoggets	0	0	0	0	0	0	0	0	0	0	0	0
Rams	0	0	0	0	0	0	0	0	0	0	0	0
Wethers	2000	1960	1960	1960	1920	2200	2200	2100	2100	2050	2050	2050

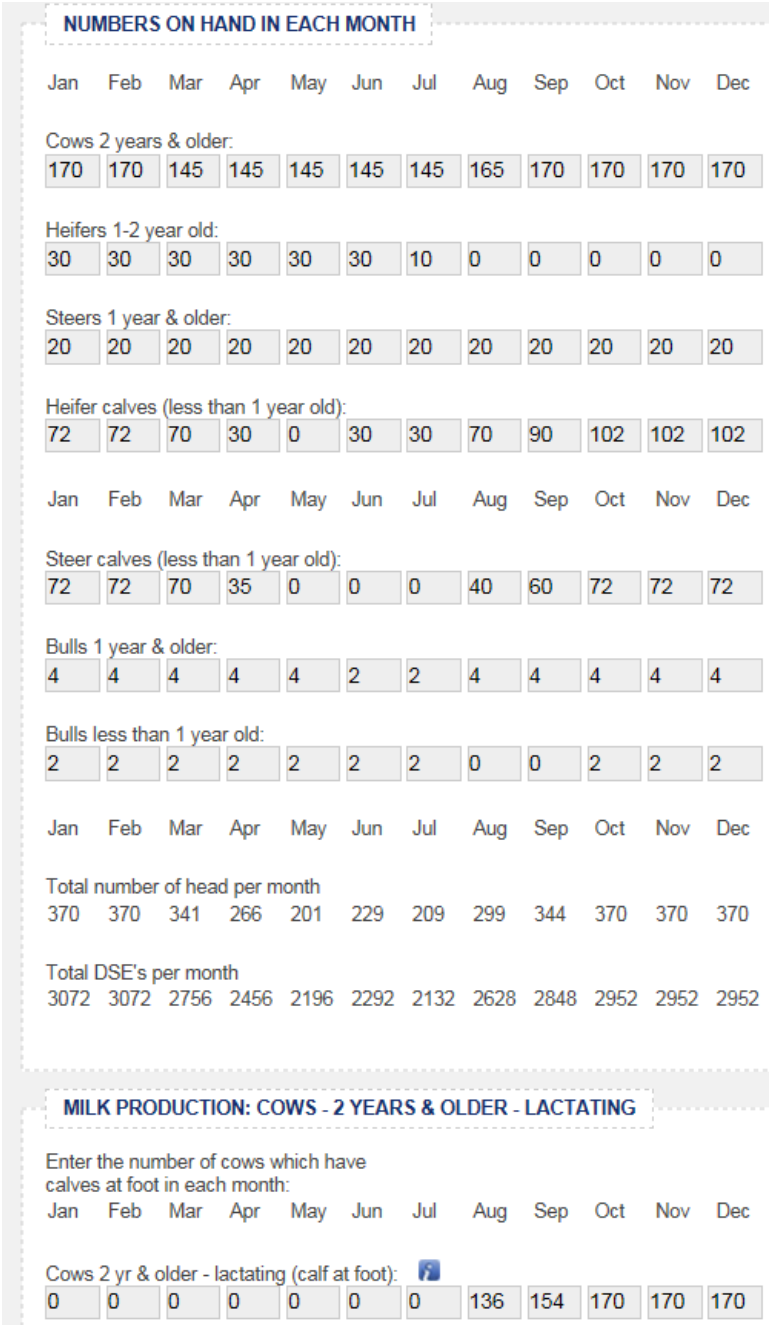
- Select 'Submit'

Cattle >Breeding – (500ha)

Herd details

170 cows calve in Spring. The majority of calves are born in August, with the remainder dropping in September and October. The majority of calves are sold as weaners the following Autumn. The 1-2yo heifers on hand at the start of the year (Jan) also calve in September. Cull cows are sold in Spring and 1-2yo heifers and steers are sold in the Autumn.

- Create a beef breeding enterprise. Herd details are on the next page.



NUMBERS ON HAND IN EACH MONTH

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cows 2 years & older:	170	170	145	145	145	145	145	165	170	170	170	170
Heifers 1-2 year old:	30	30	30	30	30	30	10	0	0	0	0	0
Steers 1 year & older:	20	20	20	20	20	20	20	20	20	20	20	20
Heifer calves (less than 1 year old):	72	72	70	30	0	30	30	70	90	102	102	102
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Steer calves (less than 1 year old):	72	72	70	35	0	0	0	40	60	72	72	72
Bulls 1 year & older:	4	4	4	4	4	2	2	4	4	4	4	4
Bulls less than 1 year old:	2	2	2	2	2	2	2	0	0	2	2	2
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total number of head per month	370	370	341	266	201	229	209	299	344	370	370	370
Total DSE's per month	3072	3072	2756	2456	2196	2292	2132	2628	2848	2952	2952	2952

MILK PRODUCTION: COWS - 2 YEARS & OLDER - LACTATING

Enter the number of cows which have calves at foot in each month:	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cows 2 yr & older - lactating (calf at foot):	0	0	0	0	0	0	0	136	154	170	170	170

4. Aligning the NGGI equations to your data (example Beef Breeding)

For the north east region of Vic, the NGGI equations assume that 85% of cows lactate in Winter and Autumn. However, the user inputted herd structure actually has a higher percentage lactating through Spring and Summer.

NB: If your cows require more feed because they are lactating, or are lactating in a different season or proportion to the NGGI, FarmGAS will not automatically update the equations. This applies across the Tool.

To do:

Navigate to the beef breeding enterprise and using the progeny tab, Select 'Yes' to use your data and press submit.

Use the Summary tab to assess the default vs. revised emissions of the breeding enterprise

Review the Liveweight and Feed tabs for other emission and production factors that can be changed. On the whole, each time you modify a factor in the progeny, liveweight or feed tabs your results are departing further away from the NGGI.

5. Cropping

The NGGI assumes (or calculates) certain emission and production values (co-efficients). As an example, the NGGI calculates for this region, that the production factor for stubble residue for a wheat crop will be 4.5 tonnes per hectare.

Crops > Add a crop

Wheat (dryland) – 400ha; 3.0t/ ha
Canola (dryland) – 300ha; 1.8t/ ha
Total: **700ha**

Fertiliser regime (100% of cropping area annually)
Wheat –
120kg/ha; 20% N at sowing
180kg/ha; 20% N in crop

Canola –
50kg/ha; 46% N at sowing
60kg/ha; 46% N in crop

Stubble Management

a. Navigate to the cropping enterprise > wheat and Stubble Management tab.

Revise the residue quantity to 6 tonnes per hectare.

The summary tab provides the default & revised results for your wheat crop. Then review the results for All crops.

Review the other Stubble Management options available. Each change is a further departure from the NGGI.

b. Navigate to the cropping enterprise > wheat and Stubble Management tab

Select 'No' to revising the amount of residue.

Select 'Yes' to burn a proportion of your residues. Insert 100%.

6. Beef Feedlot

Feedlots can be continuous, operational for 12 months of the year, or short term e.g. 180days. The "time on feed" is important for calculating emissions.

Continuous Feedlot
Feedlot area: 50ha
Average daily number: 100hd
Average days on feed: 120days

To do:

Switch to **short term feedlot**. Total emissions change, however per head/day doesn't change.

- **Manure Management Systems**

Using the continuous feedlot select to spread 100% of manure on pastures and crops from under the manure management tab.

- Allocate 100% of waste to pastures

7. Implementing a 'what if scenario' – Early steer turnoff

When conducting a 'what if' scenario that does not involve modifying the NGGI, you need to create a base farm and a scenario farm. If you only create a base farm and then apply your 'what if' scenario, you will lose your base data. Default & revised displays only work if you are revising the emission calculations.

With improved management you have been able to turn off your steers one month earlier.

To do:

Copy your farm and rename it. Keep handy a copy of the whole farm results for the base farm accessed from the Homepage under Summary Reports / FarmGAS Output Summary

Navigate to the beef breeding enterprise, and update the steer numbers in the copied farm.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Steer calves (less than 1 year old):	72	72	55	0	0	0	0	40	60	72	72	72

Using either the enterprise emissions summary or the whole farm FarmGAS report compare your base farm and the scenario.

8. Modifying Emission Factors

As well as production factors, the NGGI assumes certain emission factors (co-efficients). These are generally related to the behaviour of methane and nitrous oxide as they interact with for example, soil and air.

Emission Factors can be modified through the Emission Factors tab on the home page. Changing the Emission factors from the homepage will affect the whole scenario. For cropping enterprises, emission factors can be modified at the crop level e.g. to represent a paddock.

Emission Factor warning: modifying emission factors is mostly for researchers or for those with access to good data.

Example
FracWET, is the proportion of Nitrogen fertiliser or waste that is available for leaching and runoff. FracLEACH is the actual proportion that leaches. In this Vic region, FracWET is 1 i.e. the N fertiliser or waste is available for leaching, FracLEACH is 0.3.

To do:

Navigate to the wheat cropping enterprise in your base scenario. Ensure that you turn off the stubble management option.

Using the Emission Factors tab, change the FracWET value from 1 (i.e. it available for leaching) to 0 (i.e. not available for leaching).

Review the results through the enterprise summary tab

9. Add a Pulse crop

To do:

Copy you base farm and keep a copy of the All Crops results handy. (Ensure any stubble management or FracWET modifications have been returned to their default values)

In the copied farm, remove the canola crop and add in 200ha of chickpeas (pulse crop), fertilised at 100kg / ha; 5% N at sowing and yielding 4.5t/ha.

Compare & review the results from the base and scenario farms.

Although total fertiliser has decreased substantially the nitrogen fixed by the legume has substantially increased nitrous oxide results.

10. Savanna Grassland Burning

FarmGAS enables inclusion of emissions from burning of savanna grasslands and woodlands for relevant areas. Note the NGGI does not provide emission factors for savanna woodlands is Queensland.

To do:

In the setup page insert 200ha of savanna grasslands with 20ha burnt. Review results in the whole farm Summary report

In Emission factors> Burning revise the Fuel load for Savanna Grasslands to 3t/ha. Review results in the whole farm Summary repor

11. Add a tree lot

FarmGAS provide the option to include a Tree lot to offset farm emissions. The tree enterprise doesn't use the NGGI but rather access the National Carbon Accounting Toolbox (NCAT) tree data.

To do:

Navigate to the Set up page and select to add a tree lot.

Navigate to the tree enterprise and add in a tree lot:

Species: Environmental Planting
Soil: Duplex soils
Area: 200ha (10% farm)
Year planted: 2007

Review the results provided at the base of the Tree lot Details tab and in the Summary Tab

Using the Whole Farm Report and the emissions by type tab, review the effect on whole farm emissions.

12. Contacts

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Appendix 3

FarmGAS Train the Trainer Program

March 2012

Session	Time	Title	Description	Objectives	Resources
Session 1	8.30am	Introduction (45min)	1. Short introduction to ETS and CFI 2. UNFCCC and Kyoto Reporting & the NGGI 3. Role of FarmGAS & How FarmGAS be used? a. Manipulate NGGI calculations to understand implications b. Compare different management approaches	i. Understand the background situation to GHG reporting ii. Understand the basis of FarmGAS and its role with respect to CFI.	
Session 2	9.15am	FarmGAS Demonstration (2 hours)	Demonstrate FarmGAS a. Overview – what's a default production and emission factor? b. How to set up a farm? c. How to input data? d. Default /standard vs revised results e. Reporting f. How to manipulate production and emission factors g. Most important Emission Factors. What are they and what do they do. h. How to conduct a scenario based on enterprise or management change?	i. Understand how to a. Set up an enterprise / farm b. Input data c. Review & interpret results d. Manipulate emission factors e. What the emission factors are? ii. Understand how to conduct different scenarios	
10min Break					
Session 3	11.15am	FarmGAS – User participation (1.5hours)	Participants to work through a scenario	i. Working understanding of FarmGAS	Participants to bring a laptop & internet connection
Lunch / Close	1.00pm				

Appendix 4
FarmGAS Training Workshop
Evaluation Form

1. Your organisation type

Research	Consultancy / extension	Farm business	Agribusiness	NRM	Politics and policy	Other
☐	☐	☐	☐	☐	☐	☐

2. Your role

Research	Extension	Farmer	Agribusiness	Politics and policy	Other
☐	☐	☐	☐	☐	☐

For the following questions, please circle the number that corresponds to your rating.

3. FarmGAS Scenario Tool: The FarmGAS Scenario Tool has been developed to enable users to estimate enterprise and whole farm greenhouse gas emissions in line with international accounting rules, as well as test alternate scenarios.

A. Is FarmGAS a tool you would use with farmers?

Strongly Disagree			Average			Strongly Agree
1	2	3	4	5	6	7

B. Do you think the ability to modify the emission and production factors in the NGGI is useful?

Strongly Disagree			Average			Strongly Agree
1	2	3	4	5	6	7

C. Do you think the ability to conduct scenarios is useful?

Strongly Disagree			Average			Strongly Agree
1	2	3	4	5	6	7

D. Is FarmGAS easy to navigate?

Strongly Disagree			Average			Strongly Agree
1	2	3	4	5	6	7

Comments:

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Australian Farm Institute

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4. **FarmGAS Training:** The training workshops are designed to up-skill users in the Scenario Tool using practical information to enable participants to communicate outputs to their networks and clients encouraging further uptake.

   A. Did the training meet your expectations?

Strongly Disagree			Average			Strongly Agree
1	2	3	4	5	6	7

   B. Did the Training serve its purpose?

Strongly Disagree			Average			Strongly Agree
1	2	3	4	5	6	7

   C. Do you think the training will enable you to use the Scenario Tool in your role?

			Average			Strongly Agree
Strongly Disagree						
1	2	3	4	5	6	7

   D. Did the training provide you enough time to interact with your Trainer?

Strongly Disagree			Average			Strongly Agree
1	2	3	4	5	6	7

Suggestions for improvement & comments:

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5. **General comments:**

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Australian Farm Institute

Thank you for your feedback.