Soil Association

Farm carbon footprinting

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The Low Carbon Farming project is being carried our in partnership with Campden BRI and is part financed by the European Agricultural Fund for European Development 2007-2013: Europe investing in rural areas

Introduction

- Brief overview of the Low Carbon Farming Project's aims and activities
- Experience of existing carbon footprinting tools
- Outline of 'improvement monitoring' toolkit

Low Carbon Farming Project

Background

- Launched in Spring 2011, funded until June 2013
- Funded by SW RDPE and Ashden Trust
- SWARM knowledge hub project – coordinated by Duchy College

Aims

- Raise farmer awareness of on-farm greenhouse gases
- Encourage and promote practical change and continuous improvement
- Provide and disseminate high quality information and advice

Activities

- Information/factsheets
- On-farm training events
- Case studies
- Footprinting guidelines
- Toolkit – monitoring continuous improvement

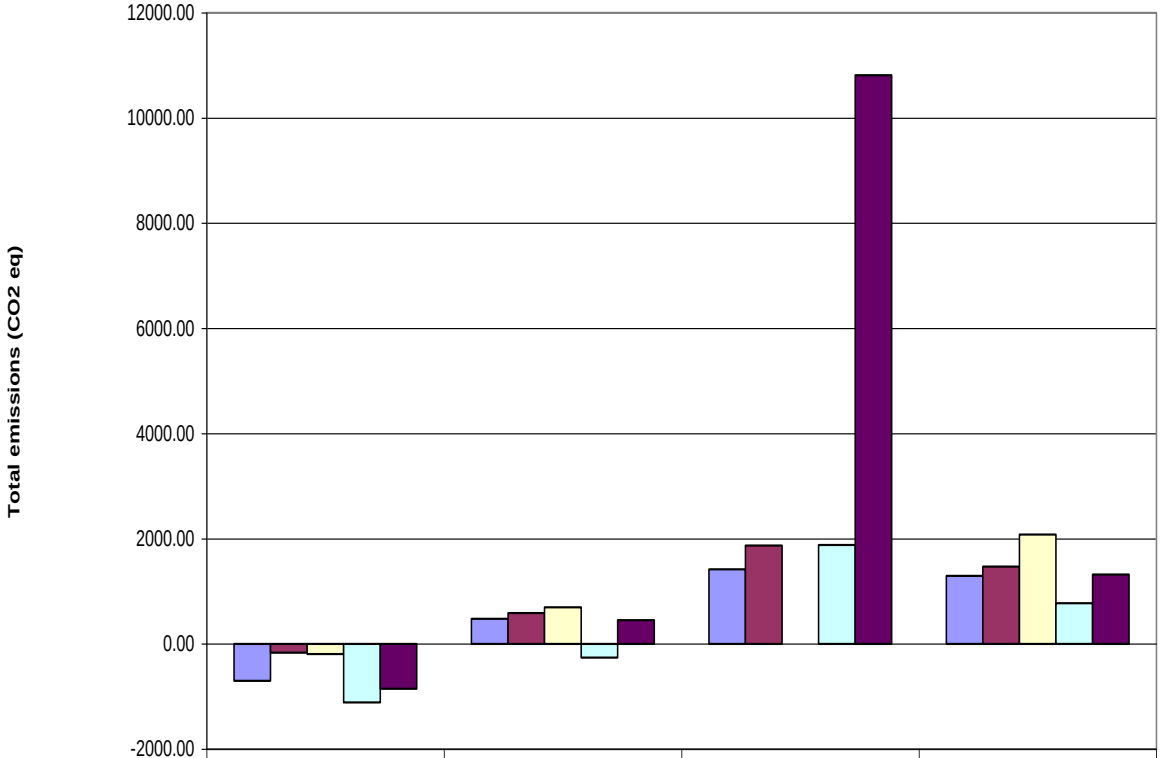
Experiences of farm carbon footprinting

- Review of existing tools using real farm data to illustrate and explain the differences between the tools and assess their suitability for monitoring improvements made.

- Tools used:
  - CALM
  - CFF carbon calculator
  - CPLAN v.0 and v.2

- These are all tools intended for general use on farm by farmers

Carbon balance results from tools reviewed



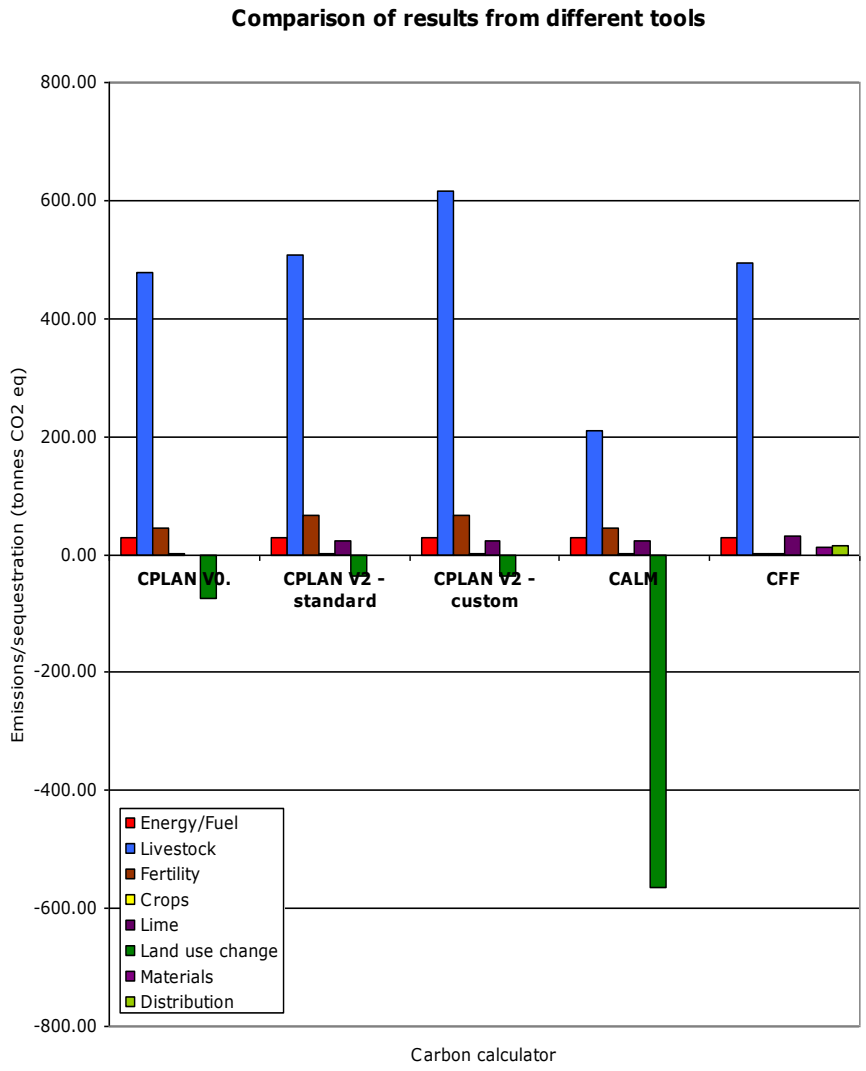
	Upland beef	Lowland beef	Veg/arable	Dairy
CPLAN V0.	-701.67	477.26	1420.18	1298.31
CPLAN V2 -standard	-164.60	587.32	1871.83	1473.13
CPLAN V2 - custom	-192.68	696.26		2078.55
CALM	-1110.48	-257.95	1882.37	774.38
CFF	-849.32	452.51	10816.63	1320.60

- Some major differences in carbon balance results produced by each tool

- Explained by several key differences between the tool's calculations:
  - inclusion/omission of source areas
  - emission conversion factors
  - assumptions/average data
  - global warming potentials

- Calculations do not take into account specific farming practices – these are assumed and average data is used – results should therefore be treated as a 'ball park figure'

A closer look at the results...



BUT the tool all show similar general trends in the proportion of <u>emissions</u> attributable to each area of the farm.

<u>Example – lowland beef</u>

All tools agree that

- Livestock = highest emissions
- Fertility
- Energy and fuel use
- Lime
- Crops = lowest emissions

Where they don't agree is with regards to sequestration

Conclusions from calculator review

- Useful to highlight 'hot spot' areas of emissions
- Not so useful for monitoring emission reductions
  - not 'farm specific' enough
  - not sensitive enough to detect changes in farming practice
  - only way to dramatically reduce footprint result from these tools for organic production is to reduce livestock numbers, reduce crop production, plant trees
- In order to monitor improvements in carbon emissions and sequestration made through changes in farm practice we need something different…

'Improvement monitoring' toolkit

- 4 key areas of assessment based on abatement potential and practical application on farm
  - carbon sequestration (soil, woodland, natural farm infrastructure)
  - nutrient management (nutrient and manure management)
  - livestock production (optimising production to reduce emission intensity)
  - energy and fuel use (audit of use on farm)

- Qualitative assessment of farm practices and their impact on GHG emissions and carbon sequestration
  - practice scored worst to best

- Some quantitative assessment where possible and where measurable improvement can be made
  - e.g. energy/fuel use audit, nutrient balance

- Results can be compared year or year to monitor progress made
  - an improved score will reflect adoption of 'better practice' and reduced emissions/increase sequestration on the farm.

- Toolkit supported by technical advice and information to help implement and encourage changes in farming practice

Conclusions

- Existing tools for general farm use are ok but only as an 'identifier' for potential emission hotspots – a 'ball park figure' to highlight areas with high emissions

- Organic farmers can reduce their contribution to UK GHG emissions through changes in farm practice which minimise emissions and more importantly promote carbon sequestration while optimising their particular system

- Watch this space for the creation of our 'improvement monitoring' toolkit coming later this year…

Thank you for your time!