

# **Moving beyond carbon: assessing the public goods from organic farming**

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# Development of tools at ORC

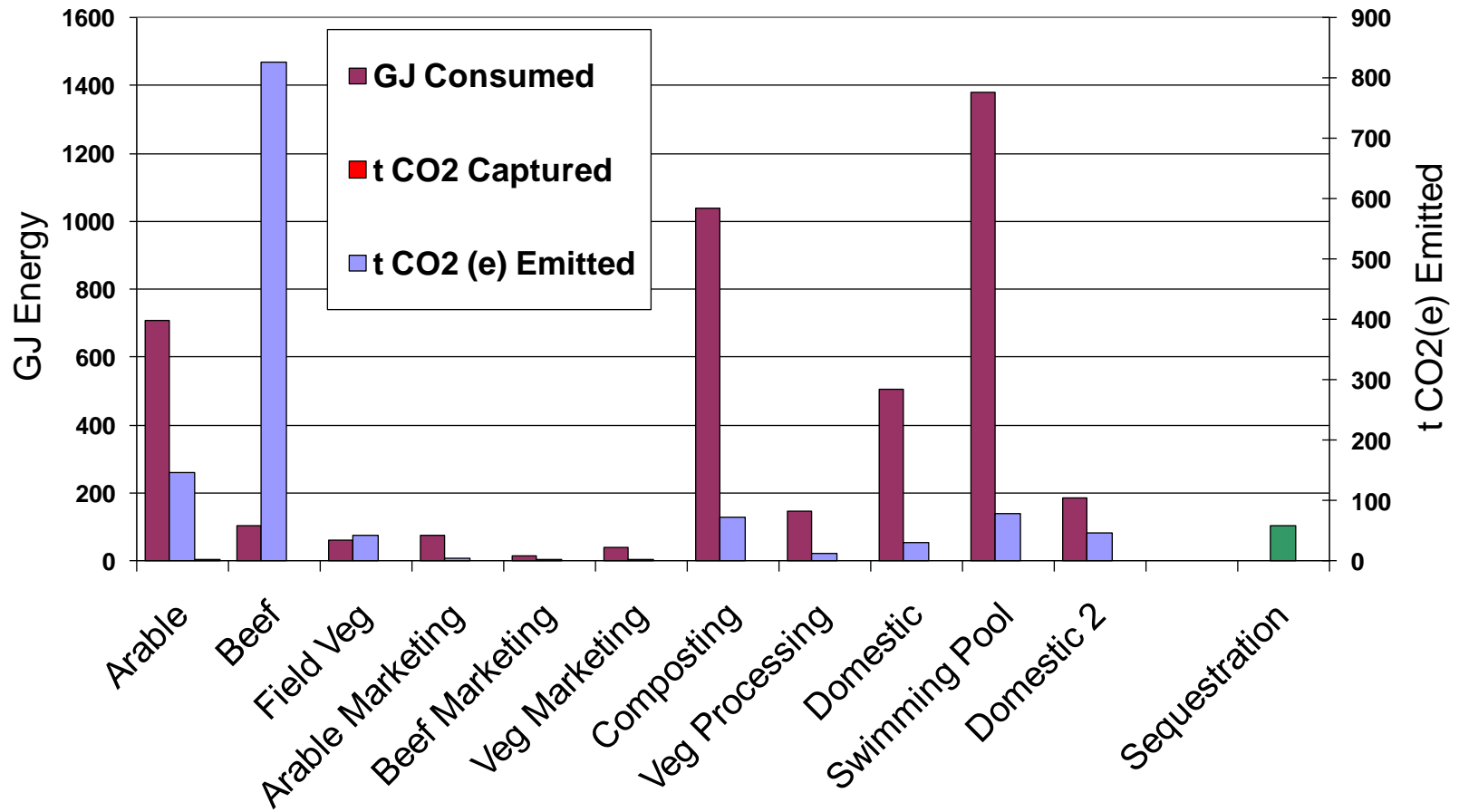
- OrgPlan
- Organic Systems Development Group Sustainability Audit (Measures, 2004)
- Quality and Environmental Benchmarking for Organic Agriculture (Defra project OF0348)
- EASI (Energy, Emissions and Agricultural Systems Integration)
- OCIS Public Goods Tool

## Measurements have been achieved by:

- Consultation with experts
- Literature search
- Comparing performance with industry benchmarks
- Comparing to each other in small groups



# Results of farm's greenhouse gases and carbon sequestration presented in an aggregated format:



# Development of the Public Goods tool

- Natural England project, funded as a part of the OCIS contract
- Aimed to assess the benefits that accrue from organic management and the addition of an OELS agreement
- 40 organic farms assessed throughout England
- 11 ‘Spurs’ chosen through consultation with experts (farmers, advisors and researchers)
- Performance against each spur measured on a 1-5 scale

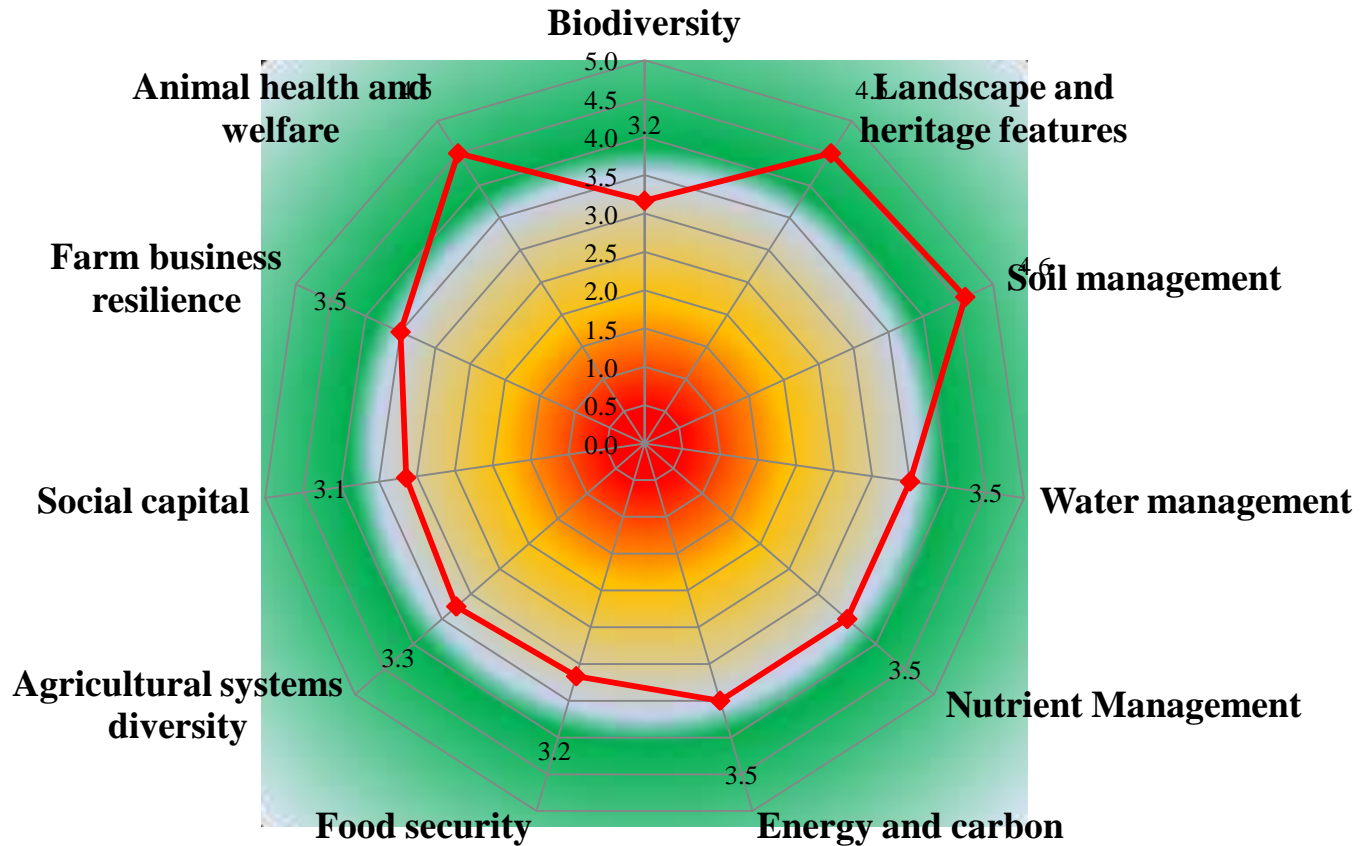


# Public Goods ‘Spurs’

- Soil Management
  - Biodiversity
  - Water Management
  - Manure Management and Nutrients
  - Energy and Carbon
  - Agricultural Systems Diversity
- ENVIRONMENT
- Landscape and Heritage
  - Social Capital
  - Animal Health and Welfare
- SOCIAL
- Food Security
  - Farm Business Resilience
- ECONOMIC



# Results presented in a spider web diagram:



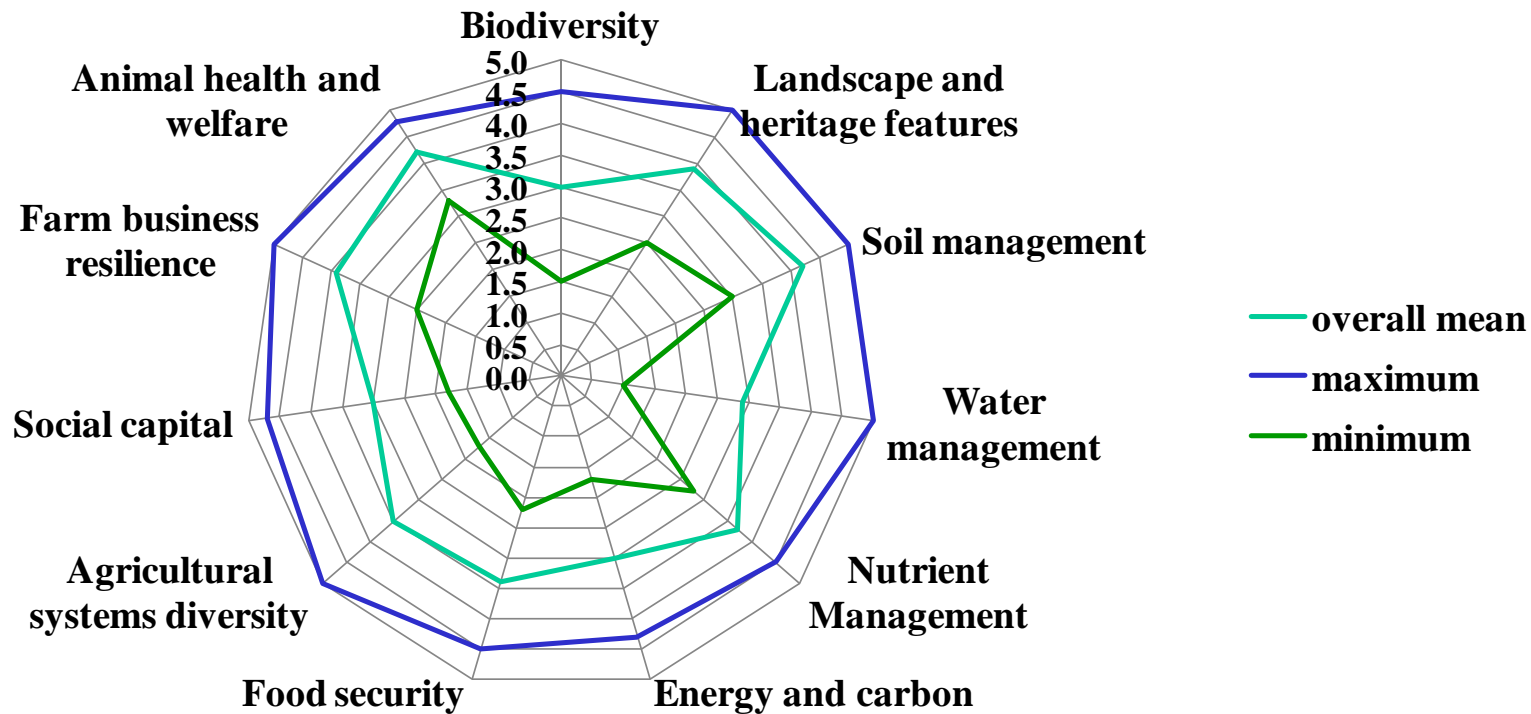
## Pilot run with 40 organic farms:

- The highest scoring spurs are animal health and welfare and soil management, the lowest being water management
- The highest scoring activities are food quality certification and erosion management. The lowest is biodiversity awards
- Tenancy/ownership status and length of time the farm as fully organic have less of an impact on the scores.
- Level of agri-environmental participation only had an impact on the biodiversity spur

# Pilot results 1

- For farm type and whether or not the farm was solely grassland, the same three spurs show significant results: energy and carbon, food security, and nutrient management
- Farm type, whether or not the farm is grassland, and advisor showed significant differences for more than one spur
- Arable farms compared favourably to conventional benchmarks in terms of energy use, livestock farms performed less well in this area

# Range of results from pilot



# Nutrient budget and energy benchmark results from pilot

Average kg/ha for NPK	Cereals	Dairy	General cropping	Beef and sheep	Mixed
Nitrogen	109	155	158	128	153
Phosphorus	5	0	12	-1	-5
Potassium	6	6	7	10	1
Energy (out of 5)	4	3	3	2	3



## Organic farms compare favourably to conventional benchmarks for energy use – results from EASI

Farm number	% of benchmark					
	Domestic	Diesel	DERV	Petrol	Grain drying	Electricity use
1	586%	75%	69%	81%	N/A	180%
2	189%	82%	92%	24%	N/A	154%
3	109%	147%	18%	41%	5%	10%
4	56%	51%	39%	10%	N/A	60%
5	79%	90%	180%	250%	80%	76%
6	370%	51%	7%	76%	269%	68%
<b>AVG:</b>	<b>232%</b>	<b>83%</b>	<b>115%</b>	<b>80%</b>	<b>118%</b>	<b>91%</b>

# Feedback on public goods tool

- Most farmers found useful to highlight public goods and boost understanding
- Opportunity to ask questions
- Some advisors want to separate off sections of it (such as the nutrient budget and the energy benchmarking)
- Further work required before we can make the tool more widely available, possibly as a web-based self assessment tool



# Future plans

- Make updates suggested by advisors
- Adapt to assess all farms and farming systems (not just organic)
- Add benchmarking
  - Compare to overall pilot results
  - Compare to similar farm-type
  - Use of median and/or range for comparative



Old adage:  
time is money!

Seeing the  
wood for the  
trees...



Public Goods  
tool has  
achieved a good  
balance

# Acknowledgments

We would like to thank:

- Natural England and Defra for funding the work
- Advisors for completing the pilot study
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