RBR Rural Business Research

Newcastle University

Farm Business Survey

2017/2018

A summary from

Organic Farming in England

Charles Scott

September 2019

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independent research, data and analysis

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Foreword to the Thirteenth Series

This series of reports on the economics of agriculture and horticulture in England from *Rural Business Research (RBR)* represents the thirteenth series of outputs that focus on providing independent data and analysis to the individual sectors of agriculture and horticulture. As the UK edges closer to an outcome following the EU referendum in June 2016, much uncertainty remains in the sector, the UK and across the EU. At the time of writing the political landscape remains uncertain with the three main outcomes still being possible: i) UK departure from the EU with a deal; ii) UK departure from the EU with no deal; iii) a delay in the UK's departure or a 'no Brexit' outcome. On the assumption that the UK will leave the EU, and that a new UK Agriculture Bill will be passed, then the direction of policy travel for UK agriculture and horticulture has become clearer. The seven year transition deal in subsidy payments based on the Basic Payment demonstrates the plan to transition support to farmers away from this broad land-area based payment structure to one which rewards farmers and land managers more for providing environmental public goods. Reflecting on the likely drivers of success for farm and horticultural business in the future, irrespective of the Brexit outcomes and the future trade deals that may follow, the fundamental business drivers of success remain unchanged. Successful businesses focus on margins by understanding their cost, revenue and market base and they undertake comparative analysis of their business performance against other businesses. These successful businesses look for new business opportunities, and are frequently more diversified in their business base than less successful businesses. Within our reports, RBR aims to provide businesses with the independent data, analysis and interpretation to help them identify their strengths and challenges.

For the 2017/18 year, average Farm Business Income (FBI), derived from our work on the Farm Business Survey (FBS), was £56,500, an increase of 49% on the previous year. While a number of factors led to this increase, the devaluation of the pound, leading to UK commodity prices increasing, played a key role in this income boost. Most farm types witnessed an increase in FBI, with the exception of pig farms who faced an increased cost base at the same time as a decreased closing valuations at the year end from a drop in pig prices at that point in time. Dairy farms witnessed the greatest percentage price increase from 2016/17, as they benefited from both increased milk output and improved milk prices. The influence of currency fluctuation on the performance of agriculture is well recognised. The output of the Brexit scenario on the strength or weakness of sterling alone will have a large influence on business profitability moving forward.

With this thirteenth series of reports on the performance of the different sectors of agriculture and horticulture, our core aim of helping inform agricultural and horticultural businesses about the economics in their sector remains unchanged, and is arguably of even greater importance at this historic point in time. This series of reports, and our work on the FBS more generally, would not be possible without the cooperation of the farmers and growers who participate in the FBS to ensure that the data we provide for policy making, and in our reports and free to use online data services at www.farmbusinesssurvey.co.uk, is truly representative of the sectors. Our sincere thanks therefore go to the farmers and growers for their most valuable contribution.

Professor Paul Wilson

Chief Executive Officer, Rural Business Research

February 2019

www.ruralbusinessresearch.co.uk

Executive Summary from Organic farming in England 2017/18

This report uses data from the 2017/18 Farm Business Survey of 1762 farms, of which 152 are organic. Several measures of performance have been used in this report and Farm Business Income (FBI) is used as the main measure. Farm Business Output (FBO) has been split into four sources; agriculture, agri-environment, diversification and the Basic Payment. Total costs have also been broken down into selected cost centres. Organic farms have been compared year-on-year using an identical sample and a full sample comparison of organic and non-organic farms is made for the current year. Gross margin data for individual organic crop and livestock enterprises is presented whenever enterprise sample size is 10 farms or more.

Four of the six farm types recorded higher farm profitability per hectare (FBI/ha) for the organic farms over their non-organic counterparts and these differences were statistically significant for two of these four farm types: cropping and LFA grazing. The differences in income were broadly similar when using Net Farm Income per hectare (NFI/ha). At the farm level only the LFA grazing farm group recorded a significantly higher FBI/farm and NFI/farm for organic farms over the non-organics. With the exception of the LFA grazing group the higher FBI is universally due to a lower expenditure on costs, and despite an overall lower farm output. The organic LFA grazing group has both a greater farm output and a greater expenditure on costs than the non-organic LFA grazing farms. On a year-on-year basis, FBI/farm and FBI/ha increased for all organic farm types.

Organic cropping farms earned on average an FBI of £574/ha, £236/ha more than the non-organic cropping farms, and equating to an FBI of £86335/farm. The difference was significant at the per hectare level but not at the farm level. The higher FBI/ha was due to a greater total farm output per hectare (£1,934 versus £1,623) and despite a higher expenditure on costs per hectare (£1,353/ha versus £1,290/ha). Net farm income was also significantly higher for organic cropping farms at per hectare level (£495/ha versus £226/ha). Organic cropping farms saw a 70% increase in FBI/ha of between 2016/17 and 2017/18. This increase in profitability was due to a 62% increase in total output and despite a 48% increase in total farm costs.

The FBI/ha for organic horticulture farms of £1,910/ha was higher than that of the non-organics by £301/ha (although not significant). Non-organic horticulture farms operated a much more intensive operation than organic horticulture farms; FBO being £13,636/ha for non-organics versus £5,722/ha for organic farms. The total costs for non-organic horticulture farms were £12,041/ha and only £3,818/ha for organic farms. The FBI/ha on an identical sample of 10 organic horticulture farms increased by 12% between 2016/17 and 2017/18. This was due to a 1% increase in total farm output and a 2% decrease in total costs. The small sample size of the identical sample means that some care must be taken in interpreting the year-on-year results.

Organic dairy farms recorded a significantly lower FBI/ha of £538/ha, £195/ha less than the non-organic dairy farms. Total farm output was £878/ha lower on the organic dairy farms, and their costs were £686/ha lower. There is a smaller, but also significant, difference in profitability (of £143/ha) at the NFI/ha level. Organic dairy farms have typically fewer stock (an average of 211 Grazing Livestock Units (GLU) compared to 287 GLU for the non-organics – both on an average size of 165ha.

Between 2016/17 and 2017/18 the FBI/ha on organic dairy farms rose by 36%; this due to a 8% increase in output and despite a 2% increase in costs.

As has been the case for some years organic LFA grazing farms continue to be more profitable than their non-organic counterparts. The average FBI/farm, of £61,204/farm, is £33,658 more than the non-organic farms and is significant at the farm level and at the per hectare level. When using NFI, the difference in profitability is also statistically significant at both the farm and per hectare level. Organic LFA grazing farms earned a greater output per hectare and incurred fewer costs per hectare than the non-organics. The average size of an organic LFA grazing farm is 201 adjusted hectares (adj. ha) carrying 141 GLU whereas a non-organic farm is typically 136 adj. ha and carrying 94 GLU. Organic LFA grazing farms saw a 24% increase in FBI/ha between 2016/17 and 2017/18 – down to a 13% reduction in costs per hectare and despite a 5% decrease in total output per hectare.

In 2017/18 organic lowland grazing farms recorded an average FBI/ha of £201/ha compared to their non-organic counterparts' of £233/ha – the income difference was not significant at either the farm or the per hectare level. The average FBO/ha for organic farms (of £959/ha) was £281/ha less than the FBO/ha for the non-organics, primarily due to a lower output from agriculture and despite the organic farms having considerably lower total costs (by £252/ha). The NFI/ha of the organic lowland grazing farms increased by 252% between 2016/17 and 2017/18. This was achieved with an 8% increase in total output per hectare while reducing total costs slightly to £760/ha.

Organic mixed farms earned an FBI/ha of £255/ha, a non-significant £18/ha more than their non-organic counterparts (of £236/ha). The NFI/ha was also higher, by £41/ha, but again not statistically significant. While organic mixed farms earned £384/ha less in total farm output (of £1,378/ha) they also spent £405/ha less in total costs (of £1,122/ha). Organic mixed farms saw a 31% rise in FBI from 2016/17 to 2017/18 to £202/ha. This was due to a 1% increase in FBO to £1,327/ha, and a 4% or £187/ha decrease in total costs to £1,125/ha.

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1 Organic farming in the United Kingdom

1.1 Area

Total UK land in organic food production was 474,016ha in 2018. The area in conversion in 2018 was 32,900ha. The area of organic farmland in England was 289,267ha in 2018. The area in conversions in 2018 was 20,307ha.
The organic share of the total utilised agricultural area (UAA) in the UK was 2.9% in 2017; this amounts to 4.0% of the EU organic area.

1.2 Producers

The number of organic producers and processors in the UK was 6,188 in 2018. Seventy-five per cent of the UK organic producers and processors are in England, 4,636 in 2018, and of these 2,440 are producers or producer/processors and 2,196 processors.

1.3 Output and sales

Sales of organic products in the UK increased by 5.3% in 2018 to a total sales value of £2.34bn (*Soil Association 2019*). Organic dairy and fruit and vegetables account for 53% of the organic market.

See the full report of Organic Farming in England 2017/18 for a more detailed breakdown of organic areas, producer & processor numbers and consumption trends of organic produce.

2 Methods

This report presents financial and physical farm data for the 2016/17 and 2017/18 financial years. Data were collected using the standard Farm Business Survey methodology for all farms[1] by the six Rural Business Research (RBR) Units in England; Newcastle University, Askham Bryan College, University of Nottingham, University of Cambridge, University of Reading, and Duchy College.

For the purpose of this report, an organic farm is defined as a farm business that has at least 70% of the Utilisable Agricultural Area (UAA) certified as organic in 2017/18. The organic farm data are presented as full and identical samples where applicable and sample size allows. The data are analysed for comparisons between years and with non-organic farms. Data from participating farms are used to compile a fully reconciled management profit and loss account. The surveyed farms had financial year-ends between 31st December 2017 and 5th April 2018 and consequently reflect the 2017 lamb crop and the 2017 arable harvest.

[1] Details of the data collection methodology for the farm accounting method used in England and Wales by DEFRA, are available from:
https://www.gov.uk/government/collections/farm-business-survey

2.1 Data sample: farm type and region

This report uses data from the Farm Business Survey of 1762 farms, 152 of which are organic. Of the 152 organic farms; 134 are entirely organic and 18 farms have some non-organic enterprises or land area. A further 17 farms have some organic enterprises but with less than 70% of their UAA being classified as organic, they are considered non-organic in this report. Therefore organic enterprises from "non-organic" farms may be included in the Gross margin analysis section of this report. The distribution of surveyed organic farms by type and region are presented in Table 1 and Table 2.

Table 1 The distribution of surveyed organic farms by farm type 2017/18

Robust farm type	No.	%
Cereals	10	7
General cropping	2	1
Horticulture	10	7
Pigs	1	1
Poultry	6	4
Dairy	36	24
LFA Grazing	21	14
Lowland Grazing	43	28
Mixed	23	15
All farms	**152**	**100**

Table 2 The distribution of surveyed organic farms by region 2017/18

Region	No	%
North East	18	12
North West	9	6
Yorks. & Humber	5	3
East Midlands	11	7
West Midlands	17	11
East of England	14	9
South East	19	13
South West	59	39
All farms	**152**	**100**

2.2 Data sample: farm type and size

The distribution of the sample by farm size is shown in Table 3. The farm size categories are based on the 2010SO (Standard Output) methodology used by DEFRA - see Appendix 5 – for more information. Farm area, unless specified as Utilisable Agricultural Area (UAA) is the total adjusted area (TAA) this includes: adjusted sole occupier rough grazing, adjusted shared grazing and short term rentals (less than 1 year).

The 2017/18 dataset was evenly distributed overall across the size bands with each band contributing approximately one third each, but within farm type groups the distribution was somewhat less even. Dairy and lowland grazing farm types made up the largest proportion of the data sample with 24% and 28% respectively.

Table 3 Organic sample distribution by size (2010 Standard Output)

Farm size band	Small (€2,500-100,000)	Medium (€100,000-250,000	Large (>€250,000)	All
All	50	55	47	152
% distribution	33	36	31	100

2.3 Data sample: Limitations

Due to the small sample size (2) of the organic general cropping farm type this farm type has been merged with organic cereals and the combined group is referred to as cropping farms in this report. Further, there is only one organic pig farm in the survey and insufficient poultry (6) farms to present their data.

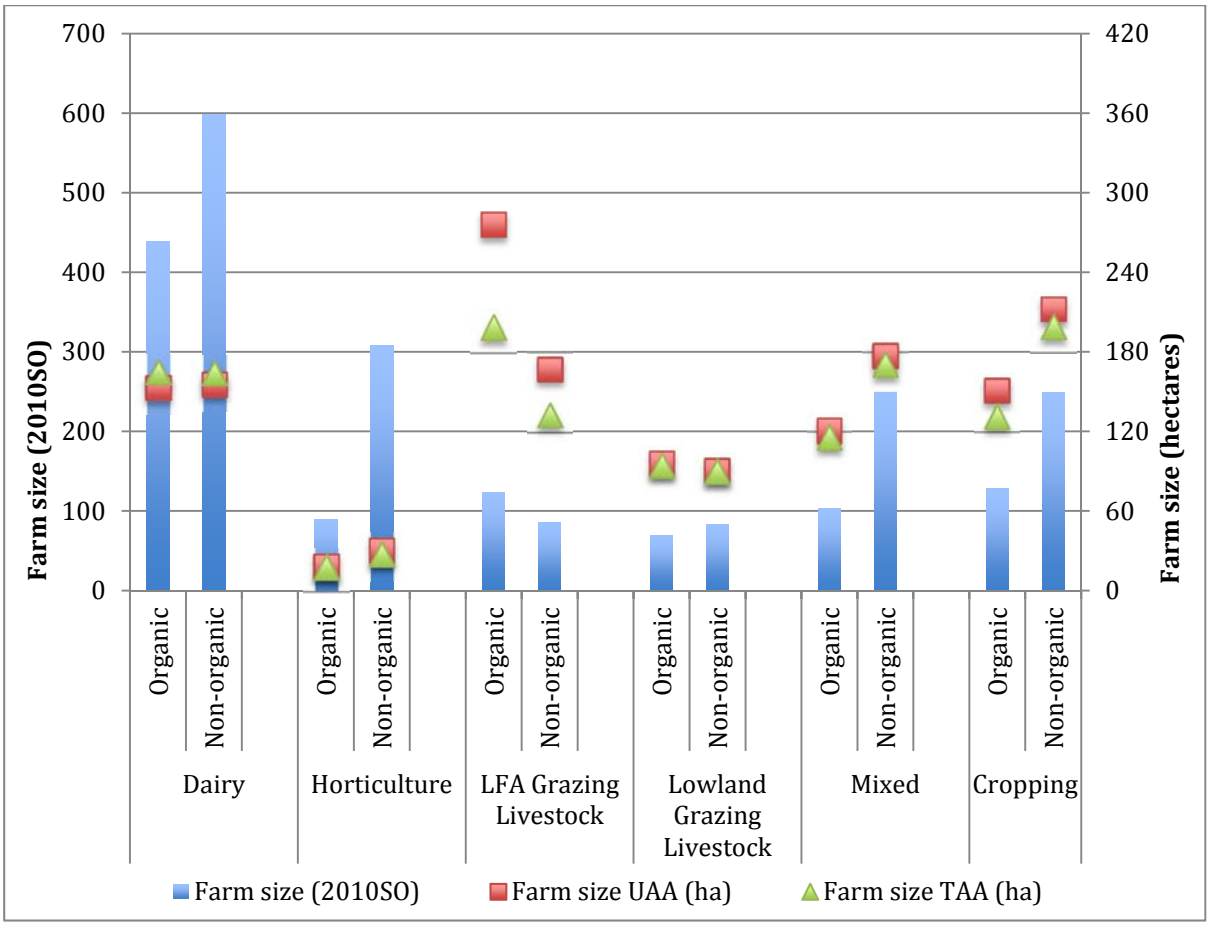
In the organic horticulture group some care must be taken in interpreting the results. The 2017/18 sample of 10 farms is composed of 3 subgroups: 2 specialist fruit, 2 specialist glass, and 6 other horticulture i.e. not a uniform group of producers. Furthermore the non-organic sample of 178 farms has a subgroup composition of: 46 specialist fruit, 53 specialist glass, 38 specialist hardy nursery stock and 41 other horticulture. The non-organic horticultural farms are clearly not perfectly comparable to the organic sample and hence the degree of caution advised above.

The identical sample of horticultural farms used to compare the 2016/17 and 2017/18 farming years is limited to 10 farms. These farms do have a consistent sub-group composition between the years, with no changes in subgroup, but the very small sample size means that great care must be taken in interpreting the identical sample results.

2.4 Farm size

The common measure of farm size of Standard Output (SO) represents a theoretical business size in terms of agricultural output generated. This measure allows for a comparison of business size across farms of varying types of farm but does not necessarily correspond to the area of land farmed. Figure 1 shows the weighted farm sizes for the 2017/18 sample measured by SO and two alternative measures of farm size by farm area; Utilisable Agricultural Area (UAA) and by total adjusted area (TAA). While there is little difference between the area measurements of UAA and TAA in most groups, in the case of LFA grazing farms there is a marked difference. The choice of farm size and area measurement is therefore critical when benchmarking and making comparisons across farm types. The measure of area used throughout this report is TAA.

Figure 1 Farm size by Standard Output and area (2017/18)



3 Whole-farm results

3.1 Presentation of results

The report focuses on two main income measures: Farm Business Income (FBI) and Net Farm Income (NFI). FBI has been the headline farm income measure since the mid 2000s; it represents the financial return to all unpaid labour (farmers and spouses, non-principal partners and directors, and their spouses and family workers) and on all their capital invested in the farm business, including land and buildings. However, FBI excludes imputed rental values for owner-occupied land and unpaid labour, both of which are included in NFI.

Net Farm Income allows individual farms of different tenure, business organisation and indebtedness to be compared directly with one another on a consistent basis and is thus an excellent farm benchmarking measure. However unlike FBI, interest payments, director's remuneration and ownership costs are not considered in NFI.

A further measure of Management and Investment Income (MII) has also been included in the farm type tables. MII, like NFI, provides a good benchmarking tool for farmers; it represents the return to the farm after the subtraction of the farmer and spouse's own manual labour. A definition of terms explaining the various income measures is included in Appendix 5 – Definition of termsAppendix 5 – .

The measure of Farm area used throughout this report, unless otherwise specified, is the total adjusted area (TAA). TAA includes adjusted common grazing and short term lets taken in (less than 1 year). The area measure of Utilisable Agricultural Area (UAA) differs from the total adjusted area in that it excludes common grazing, does not "adjust" the area of sole-occupier rough grazing, and excludes short term lets. See Appendix 5 – Definition of terms.

See the full report of Organic Farming in England 2017/18 for a statistical analysis by farm type, at the farm and per hectare level, between 2016/17 and 2017/18 and between organic and non-organic farms in 2017/18.

4 Detailed costs and returns by farm type

The following section provides a detailed breakdown by farm type on a per farm and per hectare basis, of revenue by cost centre and farm income measures for: an identical sample of organic farms year-on-year (2016/17 and 2017/18) and the full sample (2017/18) on an organic versus non-organic basis. This commentary focuses on the per hectare results, which, as discussed above, minimises the effect of farm size on the results. Year-on-year percentage changes are based on per hectare figures.

See the full report of Organic Farming in England 2017/18 for detailed physical and financial by farm type between 2016/17 and 2017/18 and between organic and non-organic farms in 2017/18.

5 Enterprise Gross Margins

5.1 Data sample

The distribution of available crop and livestock margin data by robust farm type and size for organic farms are shown in Table 4 and Table 6.

All data presented in the following gross margin tables are weighted. All variable costs to gross margin level are allocated through careful recording and in consultation with participating farmers.

Table 5 and Table 7 show the sample size of organic crop and livestock enterprises that have been analysed to gross margin level. Where sample numbers allowed, analyses for a premium group (top third by weighted numbers by: GM/litre, GM/head or GM/ha) are presented.

For livestock enterprises, forage areas and stocking rates are calculated on the basis of the total adjusted forage area including commons; see Appendix 5 – for more information. This is to allow the inclusion at the appropriate rate of all sole occupier rough grazing and all grazed common land. Unused commons are not included and the forage area figures are net of land let out and taken in. Stock sent away on agistment are excluded from the stocking rate calculations and monies spent on agistment is included in the figure for coarse fodder.

The dairy sample of 37 enterprises comprises 4 LFA and 33 lowland farms.

See the full report of Organic Farming in England 2017/18 for detailed physical and financial analysis of organic enterprises to gross margin level.

5.2 Organic cropping enterprises gross margins

Table 4 Sample distribution of organic crop margin data (>10 records) by robust farm type and size (2010SO)

Robust farm type	Small (€2,500-100,000)	Medium (€100,000-250,000	Large (>€250,000)	All
Cereals	10	20	0	30
General cropping	5	0	6	11
Horticulture	9	4	3	16
Pigs	0	0	0	0
Poultry	0	0	0	0
Dairy	0	0	17	17
LFA Grazing	3	4	5	12
Lowland Grazing	5	11	18	34
Mixed	3	28	6	37
All	**35**	**67**	**55**	**157**

Table 5 Sample size for organic crop gross margin analysis

Enterprise	Sample size	Weighted sample size	Average Crop area (ha)	Premium sample size	Weighted sample size	Average crop area (ha)
Winter wheat	18	186	23.1			
Spring wheat	12	154	15.5			
Spring barley	35	345	21.1	11	115	21.1
Winter oats	21	233	20.4			
Spring oats	27	257	16.0	13	86	17.5
Spring beans	13	90	22.7			

5.3 Organic livestock enterprises gross margins

Table 6 Sample distribution of organic livestock margin data (>10 records) by robust farm type and size (2010SO)

Robust farm type	Small (€2,500-100,000)	Medium (€100,000-250,000)	Large (>€250,000)	All
Cereals	0	2	3	5
General cropping	2	2	3	7
Horticulture	0	1	2	3
Pigs	0	1	0	1
Poultry	0	3	2	5
Dairy	2	16	53	71
LFA Grazing	18	23	12	53
Lowland Grazing	40	27	17	84
Mixed	10	18	7	35
All	**72**	**93**	**99**	**264**

Table 7 Sample size for organic livestock gross margin analysis

Enterprise	Sample		Premium	
	Sample size	Weighted sample size	Sample size	Weighted sample size
Dairy cows	37	300	11	99
LFA suckler cows	18	160	-	-
Lowland suckler cows	51	793	29	264
Dairy followers	29	245	9	83
Fat cattle from suckler bred calves or stores	40	530	15	195
Store cattle from suckler bred calves or stores	27	412	9	139
Lowland sheep	32	500	13	196
LFA sheep (upland)	14	106	-	-

6 Appendix 4 – Reports in this series

Crop Production in England

Dairy Farming in England

Hill Farming in England

Horticulture Production in England (Horticultural Business Data)

Lowland Grazing Livestock Production

Pig Production in England

Poultry Production in England

Details available at: www.ruralbusinessresearch.co.uk

7 Appendix 5 – Definition of terms

I. BUSINESS OUTPUTS, INPUTS, COSTS AND INCOME

1. ***Farm Business Income*** for sole traders and partnerships represents the financial return to all unpaid labour (farmers and spouses, non-principal partners and directors and their spouses and family workers) and on all their capital invested in the farm business, including land and buildings. For corporate businesses it represents the financial return on the shareholders capital invested in the farm business. It is used when assessing the impact of new policies or regulations on the individual farm business. Although Farm Business Income is equivalent to financial Net Profit, in practice they are likely to differ because Net Profit is derived from financial accounting principles whereas Farm Business Income is derived from management accounting principles. For example in financial accounting output stocks are usually valued at cost of production, whereas in management accounting they are usually valued at market price. In financial accounting depreciation is usually calculated at historic cost whereas in management accounting it is often calculated at replacement cost.

2. ***Farm Corporate Income (FCI)*** represents the return on own capital invested in the farm business, to risk and to entrepreneurship. It is derived by deducting unpaid labour, both manual and managerial, from Farm Business Income. This allows the profitability of sole traders and partnerships to be compared directly with that of companies. Currently we are able to deduct an estimate of unpaid manual labour but not of unpaid managerial labour and so the data are only approximate. However, we plan to undertake a research project to produce a method for deriving an estimate of unpaid managerial labour, so that we can produce better data for this measure in future.

3. ***Farm Investment Income (FII)*** represents the return on ***all*** capital invested in the farm business ***whether borrowed or not***, to risk and to entrepreneurship. It is a general measure of the profitability of farming as an activity rather than of a particular business. It is derived by adding net interest payments to Farm Corporate Income. Since currently the data for Farm Corporate income are only approximate, so too are the data for Farm Investment Income.

4. ***Net Farm Income (NFI)*** is intended as a consistent measure of the profitability of tenant-type farming[2] that allows farms of different business organisation, tenure

[2] Tenant-type farming was never conceived of as including non-agricultural activities on farm (using farm resources) except perhaps for value added activities such as small-scale food processing, e.g. sales of farm produced butter and cream and retail sales of farm produced liquid milk. However, recent research has revealed that many of the more varied non-agricultural activities which have been increasing on farms over the years have been inadvertently included in the calculation of NFI, with the

and indebtedness to be compared. It represents the return to the farmer and spouse alone for their manual and managerial labour and on the tenant-type capital[3] invested in the farm business.
To represent the return to farmer and spouse alone, a notional deduction is made for any unpaid labour provided by non-principal partners and directors, their spouses and by others; this unpaid labour is valued at average local market rates for manual agricultural work.

To confine the measure to the tenant-type activities and assets of the business, an imputed rent is deducted for owner-occupied land and buildings and for landlord-type improvements made by the tenant. No deduction is made for interest payments on any farming loans, overdrafts or mortgages; interest earned on financial assets is also excluded.

5. ***Cash income*** is the difference between total revenue and total expenditure. Revenue is: receipts adjusted for debtors; and expenditure is: purchases adjusted for creditors. It is assumed, therefore, that all end of year debtor and creditor payments are settled in full, even though this may happen beyond the end of the accounting year. Cash income represents the cash return to the group with an entrepreneurial interest in the business (farmers and spouses, non-principal partners and directors and their spouses and family workers) for their manual and managerial labour and on all their investment in the business.

6. ***Family farm income*** is a measure of farm income used by the European Commission. It is based upon actual tenure and indebtedness. However, it is a broader measure than net farm income in that it represents the return to all unpaid labour (farmers and spouses, non-principal partners and directors and their spouses and family workers). It also includes breeding livestock stock appreciation although it cannot be realised without reducing the productive capacity of the farm.

II. CROPPING, STOCKING AND LABOUR TABLES

7. ***Utilised agricultural area*** is the crop area, including fodder, set-aside land, temporary and permanent grass and rough grazing in sole occupation (but not shared

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result that about three-quarters of non-agricultural activities on farm by value are currently included and one-quarter excluded, without any clear basis for this division. Although this means that the definition of NFI has become untenable on the current basis, it has been decided to continue with historical practice for reasons of continuity, rather than to change the definition, pending the introduction of a wider measure to include all on-farm business activities.

[3] Tenant-type capital comprises livestock, machinery, crops in store, stocks of consumables, work in progress, orchards, other permanent crops, glasshouses, cash and other assets needed to run the business. It does not include land and buildings.

rough grazing) i.e. the agricultural area of the farm. It includes bare land and forage let out for less than one year.

8. ***Total area of farm*** is the utilised agricultural area plus woodland and other areas of the farm not used for agriculture (e.g. buildings, roads, water, household gardens).

9. ***Total tillage*** comprises the utilised agricultural area, plus bare land and forage hired in from others in the accounting period, minus temporary and permanent grass and rough grazing in sole occupation (but not shared rough grazing).

10. ***Total area farmed*** comprises the total area of the farm minus woodlands and buildings, etc. plus net land hired in.

11. ***Adjusted utilised agricultural area*** comprises the utilised agricultural area with rough grazing in sole occupation converted to a permanent pasture equivalent.

12. ***Stocking*** figures are the average annual level of stocking based on estimated average livestock numbers on the farm for the year, including fractions for livestock on the farm for less than a year.

13. ***Total livestock units*** are used as an approximate measure of stocking intensity and are based on the estimated energy requirements of different species and ages of livestock. The factors used are set out in Appendix 2 of *'Farm Incomes in the United Kingdom 1999/00'*.

14. ***Annual labour units (ALU)*** are the estimated number of full time worker equivalents of persons working on the holding during the year. Part-time workers are converted to full-time equivalents in proportion to their actual working time related to that of a full-time worker. One ALU represents one person employed for 2,200 hours. Standard labour requirements (SLR) are theoretical measures of representative labour requirements under typical conditions for enterprises of average size and performance. Used in the classification of farms by type and size there are 6 SLR size groups measured in Full Time Equivalents (FTE) where 1 FTE equals 1900 hours per year. Farms considered “Spare time” SLR band 1, less than 0.5 FTE or less than 949 imputed hours are excluded from the Farm Business Survey. The 6 SLR size groups are:

SLR band	Descriptive	FTE	Hours/year
1	Very small, Spare time	<0.5	1 - 949
2	Very small, Part time	0.5 to <1	950 – 1899
3	Small, Full time	1 to <2	1900 – 3799
4	Medium, Full time	2 to <3	3800 – 5699
5	Large, Full time	3 to <5	5700 – 9499
6	Very large, Full time	>5	>9500

III. OUTPUTS, INPUTS AND FARM BUSINESS INCOME TABLES

15. ***Agricultural output*** is the main measure of individual crop and livestock output. It comprises:

(a) ***Livestock enterprise output*** comprises the total sales of livestock and livestock products including *direct livestock subsidies* and production grants received, part of the valuation change (see below), produce consumed in the farmhouse and by labour and the value of milk and milk products fed on the farm (excluding direct suckling) adjusted for debtors at the beginning and end of the year (except for direct livestock subsidies) and transfers between enterprises; less purchases of livestock and livestock products from outside the farm business. Stock appreciation for breeding livestock (cattle, sheep and pigs) has been excluded from individual livestock enterprise outputs. However, changes in the numbers of breeding livestock between the opening and closing valuation and the total valuation change of trading livestock are included. Unlike crop enterprise output, livestock enterprise output is calculated on an accounting year basis.

(b) ***By-products, forage and cultivations***, which cover the value of output of the by-products of agricultural activity, sales of fodder, valuation changes for fodder and cultivations. It also covers revenue from the letting of bare land or forage on a short-term lease.

(c) C***rop enterprise output***, which is the total value of crops produced by the farm (other than losses in the field and in store). It includes crops used for feed and seed by the farm business and those consumed in the farmhouse and by farm labour. Crop enterprise output is calculated on a "harvest year" as distinct from an "accounting year" basis; that is, it refers only to those crops (with the exception of certain horticultural crops) wholly or partly harvested during the accounting year and excludes any crop carried over from the previous year. Thus valuation changes (between the previous and current crops) are not relevant and the total harvested yield of the crop is valued at market prices (plus any subsidies). However, any difference between the opening valuation of any stocks of previous crops and their ultimate disposal value (sales, used on farm and any end-year stocks) is included in total farm output.

(d) ***Miscellaneous output*** covers the value of output from those activities that are still within the agricultural cost centre but do not fall within either livestock or crop enterprise output. These will include revenue from wayleaves, agricultural hirework, sundry woodland sales, contract

farming rent, miscellaneous insurance receipts, and compensation payments.

16. ***Agricultural costs*** comprise payments and the estimated value of non-cash inputs, including home-grown feed and seed, adjusted for changes in stocks and creditors between the beginning and end of the year.

Total variable costs	These are taken to be costs of feed, veterinary fees and medicines, other livestock costs, seeds, fertilisers, crop protection and other crop costs.
Purchased concentrate feed and fodder	This represents expenditure on feeds and feed additives, including charges for agistment.
Home-grown concentrate feed and fodder	This includes ex-farm value of all home produced cereals, beans, milk (excluding direct suckling), etc. fed on the farm both from the current and previous years' crops
Veterinary fees and medicines	This consists of veterinary fees and the cost of all medicines.
Other livestock costs	This comprises straw bought specifically for costs bedding materials, breeding costs (including AI and stud fees), miscellaneous dairy expenses, disinfectants, marketing and storage costs of animal products, Milk Development Council levy and other livestock costs not separately identified.
Purchased and home-grown seeds	This comprises expenditure on purchased seeds, plants and trees adjusted for changes in stocks. Home-grown seed from the previous crop is included and charged at estimated market price: any seeds from current crops and sown for a succeeding crop are excluded, but are included in the closing valuation of the crop and hence in enterprise output. This enables the value of home-grown seed used in the production of the current crop to be identified.
Fertilizers	This includes lime, fertilisers and other manures, and is adjusted for changes in stock. Fertilisers sown for next year's crops are treated as if they were still in store and are included in the closing valuation.
Crop protection	This includes costs of pre-emergent sprays, fungicides, herbicides, dusts and insecticides and other crop sprays.
Other crop costs	These comprise all crop inputs not separately specified, e.g. marketing charges, packing materials, British Potato Council levy, baling twine and wire (though not fencing wire).
Total fixed costs	These are the costs of labour, machinery, contract work, land and buildings, other general farming costs and depreciation.
Labour (excluding farmer and spouse)	This comprises wages and employer's insurance contributions, payments in kind, and salaried management. To calculate net farm income an imputed charge for unpaid labour is made, excluding that of the farmer and spouse, valued at the rate of comparable paid labour. The value of the manual labour of the farmer and spouse is not charged as an input in calculating net farm income (i.e. it is a component of net farm income).

Contract costs	These costs include expenditure on work carried out by agricultural contractors, including the costs of materials employed, such as fertilisers, unless these can be allocated to the specific heading. Costs of hiring machines to be used by the farm's own labour are also included. Expenditure on contract labour is only included here if it is associated with the hiring of a machine. Otherwise it is entered under (casual) labour.
Machinery running costs	These represent the cost of machinery and equipment repairs, fuel and oil and car mileage expenses. It excludes depreciation.
Land and building inputs	For the calculation of farm business income these comprise any rent paid, insurance, rates and repairs to land and buildings incurred by the whole business. In the derivation of net farm income land and building costs also include an imputed rental charge for owner occupiers but exclude those costs associated with land ownership such as the insurance of farm buildings, and landlord-type repairs and upkeep.
Depreciation of machinery, glasshouses and permanent crops	Depreciation provisions in respect of machinery, glasshouses and permanent crops (e.g. orchards) are shown on a current cost basis. The rates of depreciation used (generally on a diminishing balance basis for machinery and straight line for glasshouses and permanent crops) are intended to reflect the degree of deterioration of the assets.
Other general farming costs	These consist of electricity, heating fuel, water for all farming purposes, insurance (excluding labour and farm buildings), bank charges, professional fees, vehicle licences, and other miscellaneous expenses not recorded elsewhere.
Interest payments	Interest charges on loans taken out for business purposes, net of interest receipts on monies invested temporarily outside the business, are deducted in the calculation of farm business income.
Depreciation of buildings and works	This is calculated on a current cost basis (generally on a straight line basis over 10 years) with an adjustment to allow for the effect of capital grants.

17. ***Breeding livestock stock appreciation*** represents the change in market prices of breeding cattle, sheep and pigs between the opening and closing valuations. It is not included in the calculation of farm business income but is shown separately within table 3.

IV. BALANCE SHEET TABLES

18. ***Total fixed assets*** include milk and livestock quotas, as well as land, buildings, breeding livestock, and machinery and equipment. For tenanted farmers, assets can include farm buildings, cottages, quotas, etc., where these are owned by the occupier.

19. ***Liquid assets*** comprise cash and sundry debtors.

20. ***Bank term loans*** and ***other long and medium term loans*** are loans which exceed 12 months.

21. ***Net Worth*** represents the residual claim or interest of the owner in the business. It is the balance sheet value of assets available to the owner of the business after all other claims against these assets have been met.

V. IMPLIED OUTPUT PRICES

22. ***Implied output prices*** are average unit returns excluding direct subsidies. For crops they are calculated by dividing the value of sales, closing stocks, farm house consumption, benefits in kind and own-produced feed by total production. Sales are value at prices actually received at the farm gate before the deduction of marketing charges paid direct by the farmer such as drying and cleaning costs. More detailed information about sales volumes is collected for livestock and, in this case, the unit returns refer to sales of livestock including casualties. In both cases, any compensation payments or insurance payouts for output produced in the current year and destroyed are included.

Source: DEFRA – Farm Accounts in England 2006/2007
http://webarchive.nationalarchives.gov.uk/20130315143000/http://www.defra.gov.uk/statistics/foodfarm/farmmanage/fbs/publications/farmaccounts/

Standard Output (SO)

SOs are representative of the level of output that could be expected on the average farm under "normal" conditions (i.e. no disease outbreaks or adverse weather). Different SOs are calculated for North England, East England, West England, Wales, Scotland and Northern Ireland to allow for the differences in output in different areas. Standard outputs measure the total value of output of any one enterprise - per head for livestock and per hectare for crops. For crops this will be the main product (e.g. wheat, barley, peas) plus any by-product that is sold, for example straw. For livestock it will be the value of the main product (milk, eggs, lamb, pork) plus the value of any secondary product (calf, wool) minus the cost of replacement.

Up until 2010, Standard Gross Margins were used for the classification of farms. The difference between standard outputs and standard gross margins is that no variable costs are deducted in the derivation of standard outputs. A Defra note looking at the effects on the population by farm type as a result of the change from SGM's to SO's is available at:
http://webarchive.nationalarchives.gov.uk/20130123162956/http:/www.defra.gov.uk/statistics/files/defra-stats-foodfarm-farmmanage-fbs-reviseclass_111221.pdf/

The SOs now in use are based on a five-year average centred on 2010. SO's are based on a five-year average in order to lessen the impact of yearly fluctuations on calculated SOs.

The 2010 SO's for England can be seen on Annex 1 under UK Farm Classification on the above site.

Source:
http://webarchive.nationalarchives.gov.uk/20130123162956/http:/www.defra.gov.uk/statistics/files/defra-stats-foodfarm-farmmanage-fbs-UK_Farm_Classification.pdf/

Adjusted Forage Area (adj. for. Ha)
The adjusted forage area allows an area of rough grazing to be equated to an equivalent area of flat mowable land. This therefore reflects the true stock carrying capacity of a parcel of land and allows meaningful comparisons on true farm stocking rates to be presented. This measure is particularly important for LFA farms with large tracts of poor quality land.

Total Adjusted Area (TAA)
The total adjusted area includes; adjusted UAA, adjusted common grazing and short term rentals (less than 1 year).

References

DEFRA (2011) *Farming Statistics Note on the Revised EC Classification of Farm Types: Effects on the June Survey Population and Farm Business Survey Sample in England.* [Online], Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/182207/defra-stats-foodfarm-landuselivestock-june-results-typology.pdf (Accessed: 26 January 2014).

DEFRA (2012) *Farm Classification in the United Kingdom.* Available at: http://webarchive.nationalarchives.gov.uk/20130123162956/http://www.defra.gov.uk/statistics/files/defra-stats-foodfarm-farmmanage-fbs-UK_Farm_Classification.pdf (Accessed 22 December 2013).

DEFRA (2019) *Organic Farming Statistics 2018.* [Online], Available at: https://www.gov.uk/government/collections/organic-farming (Accessed: 22 July 2019).

Euro Stat (2017) *Organic Farming.* [Online], Available at: http://ec.europa.eu/eurostat/data/database (Accessed: 22 July 2019).

Soil Association (2019) *Organic market 2019.*

Cover photo: *Courtesy of an organic farm in Northumberland*