

Methodology and Quality Note:
**Farm Income Estimates Derived from the Farm
Accounts Survey for Scotland**

Rural and Environment Science and Analytical Services

Agriculture Statistics

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1. PURPOSE

The purpose of this note is to:

- 1 – provide an overview of the methodology behind the Farm Accounts Survey (FAS) for Scotland along with descriptions of the main income estimates produced from the data collected from this survey
- 2 – provide definitions of terms used in the published results.
- 3 – describe the quality of the information collected in this survey and the headline measure of income, namely Farm Business Income (FBI).

Headline FBI estimates for 2011/12 were first published in the 'Scottish Farm Income Estimates 2011-12' National Statistics publication, released on the 31st January 2013 at the following internet address,

<http://www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/ResultsTIFFFBI>.

Detailed analysis of farm income estimates was published in the National Statistics publication 'Economic Report on Scottish Agriculture' 2013 Edition, which was released on the 12th June 2013 at the following internet address,

<http://www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/PubEconomicReport>.

The Scottish Government's Agriculture National Statistics products were assessed by the UK Statistics Authority (UKSA) in 2011. As part of the assessment process The Scottish Government provided documented evidence (Written Evidence for Assessment, WEFA) of compliance with the Code of Practice for Official Statistics to UKSA. In December 2011 UKSA published a report of their assessment, within which the status of the two products referenced above was confirmed as being National Statistics; subject to the implementation of recommended actions detailed in the assessment report (a link to the assessment report is provided at the end of this document). Among the requirements were the following, in relation to outputs based on the results of the Farm Accounts Survey:

"Publish full details about the methods used to compile farm income estimates";

"Publish information about the quality of agriculture statistics, including the main sources of bias and other error".

This document seeks to address these requirements. More information regarding National Statistics is available from the UKSA's website, <http://www.statisticsauthority.gov.uk>.

In June 2013 UKSA approved the National Statistics Designation of these products.

2. METHODOLOGICAL NOTE

2.1 Survey Process

Estimates of farm income in Scotland (including Farm Business Income (FBI), which is the headline measure produced by the Scottish Government) come from the Farm Accounts Survey (FAS) for Scotland, which is based on a sample of 502 farms in 2011-12 and 501 farms in 2010-11. Other estimates of farm income that are derived from the FAS include; Net Farm Income, Cash Income, Farm Corporate Income and Farm Investment Income.

Annual data collection for the FAS is carried out by Scotland's Rural College (SRUC) on behalf of the Scottish Government (SG). SRUC recruits a sample of farms (stratified appropriately) and collects data directly from them through farm visits and detailed examination of the each business's books and paperwork. The processed data is passed, when complete, to the Scottish Government for analysis and publication.

Currently, around 500 fully-reconciled farm accounts are compiled each year, constructed from the information supplied by co-operating farmers. The Contractor collects detailed financial and economic information (and some physical information, such as crop areas and stock numbers) for the farm business on outputs, inputs, income and balance sheets. Imputed items are estimated for non-cash transactions (e.g. inputs of family labour) to complete the economic picture of the business. Information is also collected where possible for the farmer and spouse on their non-farming income (e.g., from other employment or self-employment, investments, pensions, and social payments) and on the hours spent earning other incomes. The financial information is collected to observe the overall performance of the farm business for a particular year and to contribute, essentially, to the construction of a full profit-and-loss account and a balance sheet. The physical data are used primarily to classify the farm according to its type and size.

The FAS results are obtained from a sample of farms that are stratified by farm type, and size. The survey does not currently include farms predominantly engaged in horticulture, poultry, egg production or pig production. The coverage of the survey is restricted to those farms which have considerable economic activity (at least 25,000 Euros of output) and are not considered as spare-time farms (have a Standard Labour Requirement (SLR) of more than 0.5).

2.2 Classification of Farms

2.2.1 Farm Type

The classification is based on detailed sub-types as defined in the EC farm typology¹, which have been grouped together where required to give the types shown below.

The classification is based on the relative importance of the various crop and livestock enterprises on each farm assessed in terms of standard gross margin (an economic measure of output less variable costs). The method of classifying each farm is to multiply the area of each crop (other than forage) and the average number of each category of livestock by the appropriate standard gross margin, the proportions of the total contributed by the various enterprises determining the type of farm. The list below defines the main types that are reported in Scottish Government Agriculture statistics products.

Type	Definition
Specialist Sheep (LFA)	Farms in the less-favoured areas with more than two-thirds of the total standard gross margin coming from sheep.
Specialist Beef (LFA)	Farms in the less-favoured areas with more than two-thirds of the total standard gross margin coming from cattle.
Cattle and Sheep (LFA)	Farms in the less-favoured areas with more than two-thirds of the total standard gross margin coming from sheep and beef cattle together.
Cereals	Farms where more than two-thirds of the total standard gross margin comes from cereals and oilseeds.
General Cropping	Other farms where more than two-thirds of the total standard gross margin comes from all crops.
Dairy	Farms where more than two-thirds of the total standard gross margin comes from dairy cows.
Lowground Cattle and Sheep	Farms NOT in the less-favoured areas with more than two-thirds of the total standard gross margin coming from sheep and beef cattle.
Mixed	Farms where no enterprise contributes more than two-thirds of the total standard gross margin.

2.2.2 Standard Gross Margins:

The gross margin of an enterprise is its enterprise output less its variable costs. Enterprise output is revenue adjusted for valuation change, plus transfers out and the value of produce used, less transfers in and purchases. Variable costs are those that can be readily allocated to an enterprise and

¹ COMMISSION REGULATION (EC) No 1242/2008 of 8 December 2008 establishing a Community typology for agricultural holdings, http://eur-lex.europa.eu/Result.do?T1=V2&T2=2008&T3=1242&RechType=RECH_naturel&Submit=Search

vary in proportion to the size of the enterprise. Standard gross margin is the Scottish average for the years 1998 to 2004.

2.2.3 Farm Size:

The survey covers farm businesses with a Standard Labour Requirement² of 0.5 and above and covers most main farm types in Scotland, excluding horticulture, specialist pig and specialist poultry producers. Around 12,000 holdings are represented at present.

Since 2003/04, farm size has been defined in terms of standard labour requirements. Standard labour requirement is equal to 1,900 hours of labour per year. The size groups are:

Size Group	SLR definition	Description
Small	0.5 < 2.00 SLR	This represents broadly a one- two person full-time farm.
Medium	2 < 3 SLR	This represents broadly a two- three person full-time farm.
Large	3 + SLR	This represents approximately full-time farms with more than three people full-time.

Note: Actual farm employment may be above or below the labour requirements listed in the table above; the values quoted refer to an average position.

On all farms the large size group is defined as 3 SLRs and over.

2.2.4 Weighting:

Where figures for all sizes are shown, these refer to the above groups weighted together. The figures for all sizes and all types are weighted averages based on the June Census distribution of agricultural holdings in Scotland in the relevant year, by type of farming and size of business.

The sample is drawn from a stratified population of 8 farm types by 3 size groups. Within each stratum, a single weight is calculated as the ratio of the number of farms in the population and in the sample. This weight, when applied to each farm, represents the number of times that farm data must be replicated in order to 'represent' farms not selected for the sample. This weight is applied to all variables.

The weights are only applied when calculating results for all types and all sizes of farms. The results for farm types by size are the arithmetic mean of all the farms in that particular size group and farm type.

² Standard Labour Requirements represent the approximate average labour requirement for a livestock or crop enterprise. The annual hours of a full-time worker is 1900 hours.

2.3. Sampling

The sampling strategy of the FAS is based on a stratified simple random sample and is effectively designed as a panel survey with little change in the membership of the sample between years. The sampling frame for the survey is the Scottish Agricultural Census, according to the specific requirements of the FAS sample in regards to farm type and size.

An important feature of the survey is the measurement of changes in farm incomes and in incomes from diversified activities for particular types and sizes of farm for at least two years. To achieve this, it is necessary to maintain farms in the sample surveyed over a number of years. Once recruited, the farm may stay in the sample for an unlimited time period. The involvement of farms in the FAS is entirely voluntary.

If farms drop out of the survey, replacements are selected depending on which farm types and sizes are required to achieve a sample which is representative of the population of farms in Scotland. Replacement farms are then selected at random from within these groups.

The survey is not carried out on a calendar-year basis but based on farms' financial years. The exact period covered by the survey, for any given year, will vary across the sample depending on individual businesses' accounting year ends, although they all centre on the same cropping period. For example, the 2011-12 accounts all centre on the 2011 production and subsidy year. The spread of closing valuation dates from the autumn of one year to the spring of the next means that (unavoidably) some of the 2011-12 accounts relate to the 2010 winter whilst others relate to that of 2011. Diagram 1 below shows the time period covered by the 2011-12 FAS.

Diagram 1: THE TIME PERIOD COVERED BY THE 2011/12 FARM ACCOUNTS SURVEY

Nov 2010	Dec 2010	Jan 2011	Feb 2011	Mar 2011	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sep 2011	Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012	Aug 2012	Sep 2012	Oct 2012	Nov 2012	Dec 2012
Account year for November-ending farms																									
			Account year for January-ending farms																						
					Account year for March-ending farms																				
							Account year for May-ending farms																		
		Period covered by the 2011-12 survey																							
													Fieldwork period for 2011-12												
		2011 cropping year (and period for which subsidy and payments are made)																							

2.4 Definition of Terms

2.4.1 Farm Income Measures

Farm Business Income

Farm Business Income (FBI) represents the return to all unpaid labour (farmers and spouses, non-principal partners and directors and their spouses and family workers) and on their capital invested in the farm business, including land and buildings.

FBI is equivalent to financial Net Profit although, in practice, they differ because Net Profit is derived from financial accounting principals whereas FBI 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.

The FBI measure is designed to capture the return to the entire farm business and therefore also includes income from diversified activities on the farm. FBI has also been introduced in England, Wales and Northern Ireland and is used as the headline UK farm income measure³.

Net Farm Income

Net Farm Income (NFI) represents the return to the farmer and spouse for their manual and managerial labour and on the tenant-type capital in the farm business. It is intended as a consistent measure of the profitability of tenant-type farming. NFI is not a proxy either for farm business income or for farm household income.

- To represent the return to the 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 farm loans, overdrafts of mortgages and any interest earned on financial assets is also excluded.

Cash Income

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

³ FBI results for all UK countries are published in "Agriculture in the United Kingdom" <http://www.defra.gov.uk/statistics/foodfarm/cross-cutting/auk/>

spouses and family workers) for their manual and managerial labour and on their investment in the business.

Farm Corporate Income

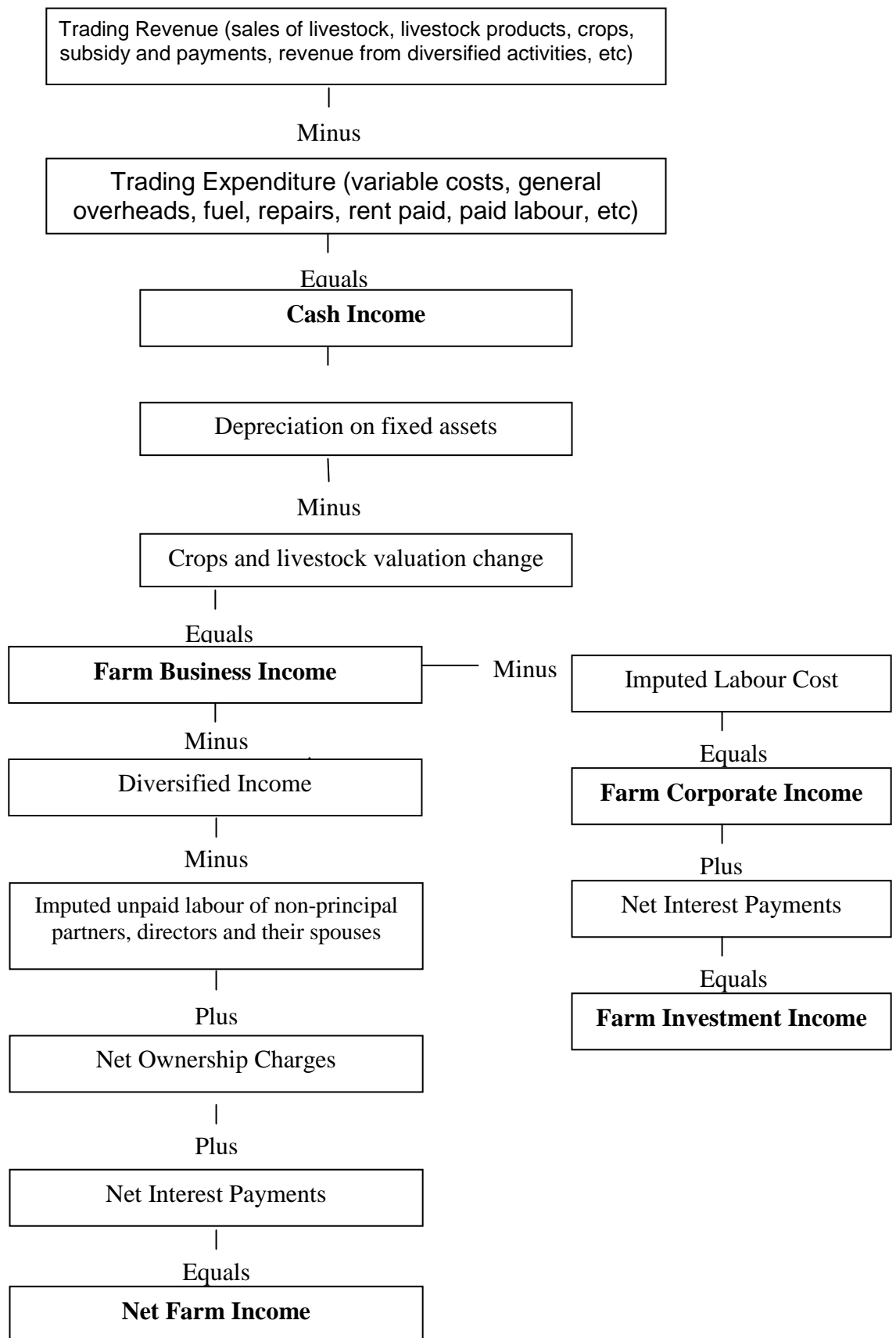
Farm Corporate Income represents the return to the owners of the business on all their capital invested. It is derived by deducting unpaid labour, both manual and managerial, from Farm Business Income. This allows the profitability of sole traders and partnerships to be compared directly with that of companies. Currently it is possible to estimate unpaid manual labour but not unpaid managerial labour and so the data are only approximate. Scottish Government is currently working with survey contractors to produce estimates of unpaid managerial labour and improve this measure in the future.

Farm Investment Income

Farm Investment Income represents the return on *all* capital invested in the farm business whether borrowed or not. 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.

The relationship between these different income measures is shown in Diagram 2:

Diagram 2: Flow Chart Showing the Construction of the Main Economic Measures Derived from the FAS Data



2.4 Accounting Terms

Only some of the items making up output and input are shown separately in the tables, but each is defined to show what comprises the totals.

Crop Output

Sales, including produce to farmhouse and labour, adjusted for debtors at the beginning and end of year and for valuation change. The value of non-fodder crops used on the farm for feed or seed is included.

Cereals

Wheat, barley, oats and mixed corn.

Livestock Output

Sales, including produce to farmhouse and labour, adjusted for debtors at the beginning and the end of year and for valuation change, less purchases of livestock and livestock products for resale. The value of milk from the dairy herd fed to stock is included. Breeding Livestock Stock Appreciation is excluded. The Revenue Value Pence per Litre is calculated on Milk sold.

Miscellaneous Output

Miscellaneous produce to farmhouse and labour, revenue from contracting and some other miscellaneous items, but excluding grants and subsidies, adjusted for valuation change.

Subsidy and Payments

Includes Single Farm Payments (SFPs) and LFASS payments and all grants except those paid in respect of permanent improvements and those deducted from expenditure.

TOTAL OUTPUT

Crop Output, Livestock Output, Miscellaneous Output and other Grants, Subsidy and Payments.

Inputs

Payments and non-cash inputs (e.g. unpaid labour, rental value) adjusted for creditors at the beginning and end of the year and for valuation change.

Feeds

Expenditure on feeds adjusted for valuation change. The value is included of (a) milk from the dairy herd fed to stock, and (b) home-grown non-fodder crops fed to stock.

Seeds

Expenditure on seeds adjusted for valuation change. The value of home-grown seed grain and potatoes is included.

Labour

Wages and employer's National Insurance contributions, payments in kind, salaried management are all included.

Fertilisers

Expenditure on lime and fertilisers, adjusted for valuation change.

Machinery (excluding Depreciation)

Expenditure on machinery repairs, small tools, contract work and fuel and oil, less allowances for private use.

Miscellaneous

Electricity, vehicle taxes, insurance and secretarial costs, adjusted for valuation change.

Other Livestock Expenses

Veterinary charges, haulage and sundry expenses.

Other Crop Expenses

Crop protection, sundry crop expenses and water for irrigation.

Land and Building Costs

Rent paid by tenants, rental value of owner-occupied farms, imputed rent on tenant's improvements. Rates paid on cottages and the business share of the farmhouse. Depreciation and repairs by occupiers.

Depreciation

Until 2009/10, depreciation on the investment in farm buildings was calculated using the straight line method. This method involves removing a set percentage of the original value of the asset each year over the expected useful life of the asset, for assets such as buildings the useful life was estimated at ten years.

The value of farm buildings was reflected by increasing the heritable valuation of the property by the cost of the buildings. Many farm buildings are still in use after ten years and would still be expected to retain some market value, reflected in the heritable valuation of the property, despite buildings having reached the end of their expected useful life. However, this approach was prone to underestimation of overall farm values because of the subjective nature of the valuation.

To correct this undervaluation a new method, component valuation, has been implemented for final 2009/10 and first 2010/11 data; collected in the 2011 survey year. This approach is more objective and involves breaking the valuation of a farm into its chief component parts; bare land, farmhouse, farm cottages, traditional farm buildings, modern farm buildings and land improvements (e.g., fencing, drainage).

Valuations: Traditional buildings, if in use as farm buildings, and cottages (most of which are over 30 years old) are given a nominal residual value of £5,000 and subject to annual revaluation. Bare land is annually valued based on the "whole farm" market. Farm house valuations are based on cost of construction materials and improvements. Values for modern buildings and improvements are initially valued on construction costs and are subject to revaluation.

Depreciation: the new method uses a 10% depreciation rate for all buildings and improvements on a diminishing balance method; this means that 10% of the current value of the asset will be deducted each year and means that assets will retain a residual value at the end of the expected useful life of the asset. This method of depreciation is applied to all assets, including short-life improvements. Bare land and farm houses are not depreciated

The new method of valuing and calculating depreciation on assets has been applied to both the 2009/10 and 2010/11 results contained in statistical releases during the 2012 calendar year. The changes have no impact on estimates of income as these do not include asset valuations, but will increase the value of assets compared to previously published results and therefore increase the estimated Net Worth shown in the balance sheets.

The new depreciation and valuation methodology is consistent with the methods applied in the Farm Business Survey in England and Wales.

Breeding Livestock Stock Appreciation

The part of the change in the value of breeding livestock that is due to changes in price. It is calculated for adult female cattle, sheep and pigs.

Balance Sheets

The balance sheets show the average opening and closing valuations of assets, liabilities and net worth (assets minus liabilities) of the farm business for each farm type, reported according to tenure type. This has been split by tenure type to account for the different financial structures of owner-occupied, tenanted and mixed tenure farms.

The tenure definitions are as follows:

Tenure Type	Definition
Owner-occupied	Farms on which all of the area used for agriculture is owner-occupied.
Tenanted	Farms on which all of the area used for agriculture is tenanted.
Mixed Tenure	Farms with any other tenure arrangements. This includes farms with landlord-tenant partnerships and farms on which the area used for agriculture is split between two or more different tenure types.

The balance sheets relate to the business rather than the farmer and therefore any other assets belonging to the latter are excluded.

For land and buildings, crops and livestock, the basis of valuation is conservative market price, while for machinery and equipment it is depreciated replacement cost. Particularly in the case of land and buildings, the balance sheet entries need to be treated with some caution in respect both of the absolute level and of the year-to-year trend, and it follows that this caveat extends to dependent figures such as net worth.

Quartiles

To produce performance bands by quartiles, FAS results were ranked by NFI and averages produced for the output and input values categories reported for the top 25 per cent and bottom 25 per cent by farm type and reported against the full analysis for that particular farm type.

Non-Farming Income

Farmers are asked to indicate into which of ten income ranges the joint non-farming income of the farmer and spouse falls for each of six separate sources of income. The sources of income are listed below:

Source of Income	Description
Off-farm employment	Paid employment off the farm.
Off-farm self-employment	Businesses (other than another farm) owned or operated away from the farm holding. Director's fees are included here.
Investment	Interest receipts on personal bank, building society and similar accounts. Rental income deriving from property off the farm and some dividends on shares are also included here.
Pensions	Includes income from retirement, widow's and disability pensions as well as from occupational and state pensions.
Social Payments	Includes payments such as child benefit and family credit.
Other off-farm income	All other off-farm income. Various commissions, and retainers, come into this category.

DIVERSIFIED ACTIVITIES RECORDED IN THE FARM ACCOUNTS SURVEY

Activity

Processing and Retailing of Farm Produce

Processing of farm produce
Processing of cereal products - excluding alcohol
Processing of horticultural products - excluding alcohol
Processing of other crop products - excluding alcohol
Alcoholic products from farm produce
Cheese making
Processing of other livestock products
Retailing of farm produce
Retailing of farm produce through dedicated farm shop
Retailing of farm produce through direct sales from farmhouse
Retailing of farm produce through other channels (e.g. farmers' market, side of road, delivery box scheme)
Gross profit on resale of purchased agricultural produce
Washing / grading of farm produce
Vegetable and fruit washing / grading / packing
Other washing / grading

Rent and Wayleaves (nb. not including tourist accommodation)

Cash rent for sub-letting all or part of farmhouse
Cash rent for farm cottages let to people not connected with the operation of the farm, (ie typical residential lets)
Other rents where farm buildings are rented for commercial or other purposes not connected with the core-farm business
Other payments in kind where farm buildings or land are rented for commercial or other purposes not connected with the core-farm business
Mobile telephone masts
Wind turbines

Recreation including activities such as shooting, fishing, nature trails, agricultural shows, sports, sheepdog trials, etc. Specific optional codes are provided for equine activities and sports.

Equine activities
Income from livery
Sports

Tourist Accommodation and Catering

Camp / caravan sites
Bed and breakfast
Bed and breakfast within farmhouse
Bed and breakfast within dedicated buildings
Holiday cottages
Catering e.g. farmhouse teas

Trading, Manufacturing and Rural Crafts (including production and/or retailing of goods, repair or restoration of machinery and other items, retailing of non-farm produce and gross profit on resale of purchased non-agricultural products)

Rural crafts
Trading

Services

Waste disposal
Miscellaneous services, e.g. metal detecting, roadside advertisements

Other Miscellaneous Receipts

3. QUALITY NOTE

This section provides a summary of information on these statistics against five dimensions of quality, based on the European Statistical System (ESS) quality framework: Relevance, Accuracy, Timeliness and Punctuality, Accessibility and Clarity, and Comparability. The Scottish Government adheres to the Code of Practice for Official Statistics and the National Statistician's guidance on quality. In addition the Scottish Government provides its own guidance on quality, which is available to view at the Scottish Government's Statistics internet pages.

Links to Guidance on Quality:

- Code of Practice for Official Statistics
<http://www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html>
- National Statistician's Guidance on Quality
<http://www.statisticsauthority.gov.uk/national-statistician/ns-reports--reviews-and-guidance/national-statistician-s-guidance/index.html>
- Scottish Government's Corporate Policy Statement
<http://www.scotland.gov.uk/Topics/Statistics/About/QualityCPS/Q/EditMode/on/ForceUpdate/on>
- Scottish Government Guide to basic quality assurance
<http://www.scotland.gov.uk/Topics/Statistics/About/QAguide>
- European Statistics Code of Practice (including quality framework)
http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-32-11-955

Data Providers

The Scottish Government relies on the data collected by the Scotland's Rural College (SRUC) to produce these statistics and therefore the quality of the SRUC data collection impacts significantly on Scottish Government analysis.

The quality of information collected from each farm is very high, based on fully reconciled farm accounts. Data for each farm is also validated against a comprehensive set of quality assurance checks. Some information on non-cash items, such as input of family labour, is estimated.

3.1 Relevance

The degree to which the statistical product meets user needs for both coverage and content.

Policy

The primary use of Farm Accounts Survey (FAS) data is to inform policy decisions and to help monitor and evaluate current policies, especially their impact on different agricultural sectors. The data is also used to model the impact of potential future policy options, such as the different scenarios for area payments modelled to inform the Inquiry Into Future Support For Agriculture in Scotland, chaired by Brian Pack. Furthermore, FAS results also contribute to the compilation of Total Income from Farming (TIFF) estimates, especially as the source of input costs, which are forecast forward a year to account for the lag in survey results. The prominent profile of FAS in policy issues relates to the nature of the information collected and the scarcity of alternative sources.

EC requirements

The FAS data is also used to meet the EC requirements of the Farm Accountancy Data Network (FADN). The FADN is the only source of micro-economic data that is harmonised across all EC countries and is used for the formulation and evaluation of agricultural policy as well as in monitoring the farm income levels in each Member State. Further information on FADN and the results for all Member States are available on the following websites:

<http://ec.europa.eu/agriculture/rca/index.cfm>

http://ec.europa.eu/agriculture/analysis/fadn/index_en.htm

Farm business advice

The FAS provides information on average levels of return and costs faced by farmers. Corresponding information on top and bottom performers are used by farmers and farm advisors to evaluate the viability of businesses and business plans. The FAS also provides data for benchmarking business performance across the UK. Benchmarking data using farm accounts data is available at:

<http://www.farmbusinesssurvey.co.uk/benchmarking/Default.aspx>

Research

Another important use of the survey is for academic research. The full dataset is made available in an anonymous form and under strict confidentiality conditions for a number of research projects.

A selection of research projects using FAS data are listed below (with links to final report where published):

- Revoredo-Giha, C., Barnes, A., Leat, P. and Walker, A. (2013). "[Scottish Dairy Sector Efficiency UK's Dairy Purchases Trends - A Contribution to the Scottish Dairy Sector Review](#)"
- Barnes, A.P., Revoredo-Giha, C., Sauer, J. Elliott, J. and Jones, G. (2010). "[A report on technical efficiency at the farm level 1989 to 2008.](#)"⁴ Report for DEFRA, London.

⁴ <http://www.defra.gov.uk/evidence/economics/foodfarm/reports/agricultureefficiency/index.htm>

- Sheane, R., Lewis, K., Hall, P., Holmes-Ling, P., Kerr, A., Stewart, K., Webb, D. "Identifying opportunities to reduce the carbon footprint associated with the Scottish dairy supply chain" Awaiting publication
- United Nations Environment Programme – World Conservation Monitoring Centre (UNEP-WCMC): National Ecosystem Assessment Project
- University of Dundee: Improve the targeting of decoupled direct payments to producers by moving towards a flatter rate of aid project.
- Brian Pack Inquiry, [Final Report of the Inquiry Into Future Support For Agriculture In Scotland](#)⁵

User Feedback

The Scottish Government is always interested to here from users about what is most relevant to them and welcomes feedback from users of these statistics. Contact details are available from the Agriculture Statistics contacts webpage, <http://www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/Contacts>.

Details of both current and past user consultations are available on the Agriculture Statistics consultations webpage, <http://www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/scotstat>.

3.2 Accuracy

The closeness between an estimated result and the (unknown) true value.

When compiling these statistics, results are examined alongside previously published outputs and related evidence from alternative sources in order to ensure that the methods being used are producing reliable results and to aid the identification of potential outlying results that may impact on the analysis. Such outliers, when identified, may be excluded from specific analysis to ensure that the results are representative of the population being described. Outputs undergo quality assurance internally before being shared with data providers for quality assurance purposes.

The survey has been designed to be representative at the national level; however results by each of the eight farm types reported by the survey ought to be treated with some caution, especially when based on small sample sizes. The majority of farms participate for a number of years although farms entering and leaving the survey will introduce increased variability in the results when comparing annual trends.

The results from the Farm Accounts Survey have a margin of error associated with them, reflecting the sampling within the survey. In the future we plan to publish these margins of error in the form of 95% Confidence Intervals.

⁵ <http://www.scotland.gov.uk/Publications/2010/11/03095445/0>

The sampling frame for the Farm Accounts Survey is the June Agricultural census. While, ideally, each strata in the survey would be proportionally representative of those farm types in the whole of Scotland, it is possible for the make up of the farming population to change from year to year and over longer periods of time. As farms can remain within the sample indefinitely the composition of the sample may not change in line with or at the same speed as the composition of the population of farms in Scotland. It is also possible, though not common in the FAS for farms in the sampling frame to be misclassified and as a result included in a different stratum to that which they are classified following recruitment (when more information about the farm and activities becomes available), this can also result in divergence from the ideal, truly proportional sample.

Data collected through the FAS is of a highly sensitive nature; due to this the refusal rate of farms approached to participate is high. It is possible that non-responders (farms refusing to participate) may have different characteristics to responders (farms willing to cooperate), which could lead to biased results. Currently there has been no assessment of non-response bias in the FAS for Scotland.

The current weighting of FAS results is based on the inverse sampling fraction, that is the results for each stratum are multiplied by the factor necessary to represent all farms within the stratum in the overall population. Further (post-stratification) weighting may be used to compensate for non-response bias. This further level of weighting is not currently applied to FAS results.

The quality of information collected from each farm is very high, based on fully reconciled farm accounts. Data for each farm is also validated against a comprehensive set of quality assurance checks. The potential for processing errors is regarded as low risk due to much of the collection being based on reconciled accounts, the extensive use of cross-checking validation routines and that the vast majority of farms have previous records in the survey which can also be used to identify inaccuracies in returns. In some cases, accounts may not be finalised until after the deadline for submission of data. In such cases estimated records are updated and the published figures are revised in the following year. In this sense, the first release of data for a particular year may be regarded as provisional.

Revisions have been made to the 2010-11 FBI estimates published in January 2012. These revisions are due to:

- (a) the inclusion of an additional seven farms in the results, whose accounts have been finalised since the previous publication.
- (b) Amendments to farmer estimates of the closing valuation of stock with actual sales data.

The scale of the revisions are shown in the table below:

Table 2 Revision to 2010-11 Farm Business Income results by farm type:

Type of Farms	Number of Farms in Sample			Farm Business Income (£/farm)		
	Jan'12 2010-11	Jan'13 2010-11	Difference	Jan'12 2010-11	Jan'13 2010-11	Difference
Specialist Sheep (LFA)	41	41	0	29,235	28,943	- 292
Specialist Beef (LFA)	116	119	3	32,528	32,803	275
Cattle and Sheep (LFA)	67	68	1	42,942	41,833	- 1,109
Cereals	80	80	0	50,866	51,586	720
General Cropping	62	64	2	59,674	70,560	10,886
Dairy	51	52	1	73,632	72,555	- 1,077
Lowland Cattle and Sheep	16	16	0	34,325	31,037	- 3,288
Mixed	61	61	0	47,812	47,381	- 431
All Farm Types	494	501	7	45,081	46,255	1,174

Source: Farm Accounts Survey.

2011-12 estimates published in the National Statistics Publication Farm Income Estimates on 31st January 2013 contained some errors. There were nine farm records identified as having capital costs double counted, which resulted in high negative margins that caused Farm Business Incomes to be incorrectly calculated. These errors were corrected in the 2013 edition of the Economic Report on Scottish Agriculture, which was released on 12th June 2013. Table 3 below shows both the erroneous figures released in January and the corrected figures released in June.

Table 3 Corrections to 2011-12 Farm Business Income results by farm type:

Type of Farms	Initial Estimates (January) (£)	Corrected Estimates (June) (£)	Difference (£)
Specialist Sheep (LFA)	29,341	30,047	706
Specialist Beef (LFA)	36,660	36,817	157
Cattle and Sheep (LFA)	43,183	45,159	1,976
Cereals	49,583	49,583	0
General Cropping	50,357	50,357	0
Dairy	78,625	80,205	1,580
Lowland Cattle and Sheep	24,191	25,005	814
Mixed	47,948	47,948	0
All Farm Types	44,829	45,366	537

Source: Farm Accounts Survey.

3.3 Timeliness and Punctuality

Timeliness refers to the lapse of time between publication and the period to which the data refer.

The survey is not carried out on a calendar-year basis but based on farms' financial years. The exact period covered by the survey, for any given year, will vary across the sample depending on individual businesses' accounting

year ends, although they all centre on the same cropping period. For example, the 2011-12 accounts, first published in January 2013, all centre on the 2011 production and subsidy year. The spread of closing valuation dates from the autumn of one year to the spring of the next means that (unavoidably) some of the 2011-12 accounts relate to the 2010 winter whilst others relate to that of 2011.

Punctuality refers to the time lag between the actual and planned dates of publication.

Published outputs of results from the FAS for the calendar year 2013 were published on the scheduled date.

Headline FBI estimates for 2011-12 were first published in the 'Scottish Farm Income Estimates 2011' National Statistics publication, released on the 31st January 2013 at the following internet address, <http://www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/ResultsTIFFFBI>.

Detailed analysis of farm income estimates was published in the National Statistics publication 'Economic Report on Scottish Agriculture' 2013 Edition, which was released on the 12th June 2013 at the following internet address, <http://www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/PubEconomicReport>.

3.4 Accessibility and Clarity

Accessibility is the ease with which users are able to access the data. It also relates to the format(s) in which the data are available and the availability of supporting information.

Clarity refers to the quality and sufficiency of the metadata, illustrations and accompanying advice.

These statistics are made available online at the Scottish Government's statistics website in accessible formats (html and pdf versions are available). All data tables are made available in excel format to allow users to carry out further analysis. Methodological notes and additional notes to tables, identifying specific quality issues, are included in this document, which is available online and linked to from all National Statistics outputs containing results from the FAS. Links to the Agriculture Statistics series of outputs are available at the following internet address, <http://www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/Publications>.

3.5 Comparability

The degree to which data can be compared over time and domain.

Trends for most farm types are subject to annual sample variations, as a small number of farms join and leave the survey each year. Between 2010-11 and 2011-12 24 farms left and 25 new farms entered the survey, table 3 below provides a breakdown of the entrants and leavers to the sample by farm type. In addition, the characteristics of farms which remain within the sample can

change between sample years, e.g. a mixed farm type may increase investment in livestock; such a change in the characteristics of the farm may result in a change to the classification of the farm type, e.g. to cattle and sheep rather than mixed.

Overall changes to farm types for farms participating in the survey in the last two sample years is also shown in table 3 below.

Table 3 Changes to Farm Business Income Sample Sizes by Farm Type

Type of Farms	Number of Farms in Sample					Change since 2009-2010
	2007-08	2008-09	2009-10	2010-11	2011-12	
Specialist Sheep (LFA)	37	37	41	41	39	-2
Specialist Beef (LFA)	109	106	115	119	116	-3
Cattle and Sheep (LFA)	68	67	61	68	68	0
Cereals	68	81	81	80	84	4
General Cropping	48	55	54	64	58	-6
Dairy	59	55	51	52	55	3
Lowland Cattle and Sheep	13	16	17	16	20	4
Mixed	66	69	71	61	62	1
All Farm Types	468	486	491	501	502	1

Source: Farm Accounts Survey and June Agricultural Census.

Although the quality of information for each farm business in the survey is considered to be high, these relatively low sample sizes do mean that the results are subject to a degree of uncertainty in terms of representing overall national averages by farm type.

The balance of movement out of, and into the sample, may result in changes to average FBI values compared to what could have been expected if the composition of the sample had not changed over the last year. However, the weighted FBI for a matched sample of 477 farms was £80 higher at £44,909 and also fell by around £1,000 in 2011-12; this provides reassurance that the trends in FBI have not been biased by changes to the sample composition. Replacement farms entering the survey are selected according to farm type and size to try to achieve and maintain a sample representative of Scottish farms.

The majority of information collected from the FAS is required to meet the EC requirements of the Farm Accountancy Data Network (FADN). The FADN is the only source of micro-economic data that is harmonised across all EC countries. As such, similar analysis of farm income estimates is available both for UK countries and member states of the EC. Some differences do exist between countries, for example the basis of valuations and depreciation of assets. Details of the methodologies of data relating to other countries (within or outwith the UK) should be sought from the respective government department.

The EC regularly produces results of the FADN data collections, providing overall and county specific results and these are made available online. Further information on FADN and the results for all Member States are available on the following websites:

<http://ec.europa.eu/agriculture/rica/index.cfm>

http://ec.europa.eu/agriculture/analysis/fadn/index_en.htm

Typically EC results are published later than Scottish or UK results due to the additional time required to collate, validate and analyse data from several countries.

The Department for Environment, Food and Rural Affairs (DEFRA) in England, the Welsh Assembly Government (WAG) in Wales and the Department of Agriculture and Rural Development (DARD) in Northern Ireland routinely publish results from their equivalent survey - the Farm Business Survey - these can be accessed from the websites below,

England (DEFRA)

<http://www.defra.gov.uk/statistics/foodfarm/farmmanage/fbs/>

Wales (produced by IBERS on behalf of WAG)

<http://www.aber.ac.uk/en/ibers/enterprise-kt/fbs/>

Northern Ireland (DARD)

<http://www.dardni.gov.uk/index/dard-statistics/agricultural-statistics/agricultural-statistics-farm-business-survey.htm>

4. USEFUL INTERNET LINKS

The Scottish Government statistics page

www.scotland.gov.uk/Topics/Statistics

The Scottish Government Agriculture Statistics page

www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries

The Scottish Government Agriculture statistics publications page

www.scotland.gov.uk/Topics/Statistics/Browse/Agriculture-Fisheries/Publications

The European Commission Farm Accountancy Data Network homepage

<http://ec.europa.eu/agriculture/rica/index.cfm>

The Scottish Agricultural College homepage

www.sac.ac.uk

The Department for Environment, Food and Rural Affairs statistics page

www.defra.gov.uk/statistics

The Welsh Assembly Government statistics page (English language version)

<http://wales.gov.uk/topics/statistics/?jsessionid=nDX9PTNJh0SrWvh8Z6FR5RLJpxtsTGcwy9nN29g3p7q7kxYHkhtz!1716096302?lang=en>

The Department for Agriculture and Rural Development, Northern Ireland homepage

www.dardni.gov.uk/index.htm

The UK Statistics Authority homepage

www.statisticsauthority.gov.uk

The Code of Practice for Official Statistics (UKSA page)

www.statisticsauthority.gov.uk/assessment/code-of-practice/index.html

The UK Statistics Authority assessment of the Scottish Government's Agriculture Statistics, November 2011, assessment report 149 (UKSA page)

<http://www.statisticsauthority.gov.uk/assessment/assessment/assessment-reports/index.html>

European Statistics Code of Practice (including quality framework)

http://epp.eurostat.ec.europa.eu/portal/page/portal/product_details/publication?p_product_code=KS-32-11-955