



**An
Phríomh-Oifig
Staidrimh**

Central
Statistics
Office

Standard SIMS Report: Farm Structure Survey



Single Integrated Metadata Structure (SIMS) Report

For

Farm Structure Survey

This documentation applies to the reporting period:

2023

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1. Overview

Farm Structure Surveys were carried out on three occasions in the 1980s ('83, '85, and '87), 1990s ('93, '95, and '97), 2000s ('03, '05, '07) and twice in the 2010s ('13, and '16). There has also been a Census of Agriculture (COA) in 2020.

The data for the 2016 Farm Structure Survey (FSS) was collected using an 8-page postal questionnaire. This questionnaire data was supplemented using administrative data from the Department of Agriculture, Food and the Marine (DAFM). The administrative databases utilised were the BPS and Bovine Registers. The use of these administrative databases has continued in subsequent years including the Census of Agriculture 2020. The 2010 Census of Agriculture was the first instance that utilised these administrative databases.

The statistical register compiled for the 2020 Census of Agriculture was updated for FSS 2023 by adding new administrative records of agriculture holdings or livestock herds created since the 2020 Census. These administrative records were provided by the Irish Ministry of Agriculture, known as the Department of Agriculture, Food and the Marine (DAFM). New administrative 'births' were added to the existing register of holdings from the 2020 Census giving a total sample frame of approximately 135,000 holdings while also accounting for deaths.

Questionnaires are issued to approximately 35,000 holdings in the week preceding the reference date of 1st June 2023. Three reminders are issued at approximately fortnightly intervals to maximise the response rate.

2. General Information

2.1. Statistical Category

Combination of administrative data and agricultural surveys.

2.2. Area of Activity

Agricultural Statistics

2.3. Contact

Contact Organisation:	Central Statistics Office
Contact Organisation Unit:	Agricultural Statistics
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2.4. Objectives and Purpose; History

A Farm Structure Survey (FSS) is carried out between Censuses to measure changes in farm structure. The first Census of Agriculture in Ireland was carried out in 1847, and annually thereafter until 1953. Between 1960 and 1980 Censuses were carried out at 5 yearly intervals. From 1980 Censuses were carried out at 10 yearly intervals.



The objective of the survey is to compile data on farm structure, land utilisation, livestock numbers and farm labour at State and regional level.

Up until June 2009, agriculture surveys (e.g. FSS and Crops and Livestock Survey June) and the Census collected data on the number of cattle held on farms under different cattle categories (e.g. dairy cows, male cattle 3 years and over etc.). From 2010, the CSO does not collect data on cattle. Published cattle numbers come from administrative data held by the DAFM and the Irish Cattle Breeding Federation (ICBF). The DAFM's Animal Identification and Movement (AIM) system is a database which records all bovine birth, movements and disposals. The system captures details of all animal movements and this administrative data enables the CSO to publish cattle category totals at county, regional NUTS 2 & NUTS 3 levels.

The Basic Payment Scheme (BPS) was introduced in 2015 as part of the new measures agreed in the reform of the Common Agricultural Policy. Under the BPS, a farmer applies to the DAFM in which the farmer declares all of their land specifying the crop type of each parcel of land. This administrative data enables the CSO to publish crop statistics at a regional level. This means that the number of crop related questions on CSO agriculture survey forms has greatly reduced since the CSO commenced using administrative crop data from the DAFM. The use of administrative data improves the quality of the statistics and reduces respondent burden.

2.5. Periodicity

Triennial

2.6. Client

General EU & National Requirements

2.7. Users

- Eurostat (the statistical service of European Commission)
- EU Commission
- DAFM
- Other sections within the CSO
- Semi-State organisations such as Teagasc
- General public

2.8. Legal Basis

Regulation (EU) No. 2018/1091 on integrated farm statistics.

3. Statistical Concepts, Methods

3.1. Subjects of the Statistics

Land Utilisation, Livestock Numbers, Farm Structure and Farm Labour

3.2. Units of Observation/Collection Units/Units of Presentation

An agricultural holding was defined, in line with the definition in Article 2 of Council Regulation 2018/1091 as 'a single unit, both technically and economically, which has a single management, and which undertakes agricultural activities within the economic territory of the European Union, either as its primary or secondary activity'.

Activities considered 'agricultural' for the purposes of the definition above as outlined in Annex I of Regulation 2018/1091, include the growing of perennial and non-perennial crops, plant propagation, animal



production, mixed farming and/or those maintaining agricultural land in good agricultural and environmental condition (under 01.61 of NACE Rev. 2).

3.3. Data Sources

Crops: The results for crops are based on data obtained from the DAFM's BPS.

Cattle: The results for cattle are obtained from DAFM's AIM system. Breeding Bull data is received from the Irish Cattle breeding Federation (ICBF).

Pigs: A specialist pig survey is conducted by the CSO due to the intensive nature of this activity and the results are published separately.

Poultry: A specialist poultry survey is conducted by the CSO due to the intensive nature of this activity.

A statistical survey is conducted by the CSO to compile statistics on Farm Labour and Sheep totals. The sampling frame for this survey is compiled using a combination of the pre-existing CSO Farm Register and two administrative databases held by the DAFM, namely the Corporate Client System (CCS) and the Animal Identification and Movement (AIM) system.

3.4. Reporting Unit/Respondents

Farms where the agricultural area used was at least 1 hectare (2.47 acres) may be included in the Farm Structure Survey. Farms with less than 1 hectare may also be included if they were engaged in intensive production.

3.5. Type of Survey/Process

Postal Survey, Web Survey, DAFM administrative data and ICBF administration data.

3.6. Characteristics of the Sample/Process

3.6.1. Population and Sampling Frame

The Farm Register is compiled using a combination of the pre-existing CSO Farm Register and two administrative databases held by the DAFM, namely the Corporate Client System (CCS) and the Animal Identification and Movement (AIM) system:

(i) The pre-existing CSO Farm Register was created for the Census of Agriculture which took place in 2020. This register is maintained by the CSO Agriculture Register Section and updated with births and deaths identified in the annual June and December surveys between 2020 and 2023 which incorporates BPS data. It was used as the sampling frame for every agriculture survey that was carried out by CSO since 2020. The availability of administrative files since 2010 ensures that now all entries on this register can be checked on an annual basis for activity and accurate contact details. The CSO register holds only contact information and location details. The register does not hold any structural variables.

(ii) The CCS database was received from DAFM in Spring 2023. This contained records consisting of the name, address, telephone number, email, date of birth, and herd number of every farmer considered to be active by the DAFM. The CCS database is separate to the BPS database but contains all of the holdings that are on the BPS system. The CCS database is used solely for the purposes of building the register. No statistical data is extracted from the CCS.

(iii) The AIM database was received from DAFM in Spring 2023. Any record without a corresponding entry in CCS (ii above) were added to the Register.

The resulting register was used as the frame for the FSS2023.



Type of frame is multiple list frames.

3.6.2. Sampling Design

The sample was a stratified one-stage sample of holdings (probability design).

The sample was stratified by farm size and region, resulting in 56 strata. Primary outputs of this survey are that of land use. For this reason, farms size was selected as the stratifying variable. The strata were allocated using the Neyman allocation method.

3.7. Survey Technique/Data Transfer

The survey is carried out by post and web survey and follow up reminders are sent to non-respondents.

3.8. Questionnaire (including explanations)

The questionnaire is an eight-page questionnaire which is simple in design to allow easy usage.

Please see the following URL to view the survey form =>

https://www.cso.ie/en/media/csoie/methods/farmstructuresurveyfss/Farm_Structure_Survey_2023_Survey_Form.pdf

3.9. Participation in the Survey

An 8-page A4 sized questionnaire ([Farm Structure Survey 2023 Survey Form](#)) is issued to all farm holdings in the week prior to June 1st, 2023 to be completed and returned to the CSO by Monday 12th June 2023. This is accompanied by an information booklet ([Farm Structure Survey 2023 Survey Form Information Leaflet](#)) with detailed notes on each section of the questionnaire. Reminders are issued based on the response rate in order to maximise the response rate.

A separate 2-page A4 sized questionnaire ([Pig Survey Form June 2023](#)) is also issued to all specialist pig-producers. A separate 2-page A4 sized questionnaire is also issued to all specialist poultry-producers.

The paper questionnaires returned to the CSO are batched, receipted and scrutinised. They are then electronically scanned, verified and edited. The FSS survey data is collected entirely by post and web survey (i.e. no interviewers). Each questionnaire issued includes a pre-addressed freepost reply envelope and a QR code which links to the web survey. The envelopes are mechanically cut open across the top and the questionnaire held within is removed manually.

The survey is a voluntary survey on respondents.

3.10. Characteristics of the Survey Process and its Results

Data are collected for the following categories

Sheep

- Breeding Flock
- Other Sheep

Cattle (from administrative sources)

- Dairy cows
- Other cows
- Bulls
- Male cattle 2 years and over
- Female cattle 2 years and over
- Male cattle 1-2 years



- Female cattle 1-2 years
- Male cattle under 1 year
- Female cattle under 1 year

Crops (from administrative source)

- Cereals
- Pulses
- Potatoes
- Fodder roots and brassicas
- Industrial plants
- Vegetables for sale
- Fruit
- Flowers
- Seeds and seedlings
- Nurseries, horticulture, etc.
- Other crops (includes fallow land, miscanthus and other energy crops)

The final results publication also reports the area covered (in hectares) by silage, hay, pasture and rough grazing at a NUTS 2 & NUTS 3 level.

3.11. Classifications used

The classifications used are listed at 4.10 above and are based on Eurostat legal requirements.

3.12. Regional Breakdown of Results

A regional breakdown of the Farm Structure results is published as part of the Farm Structure Survey publication. A Farm Structure Survey micro data set is submitted to Eurostat for validation.

The composition of the Regions breakdown is outlined below.

Northern & Western NUTS 2 Region

Border: Cavan, Donegal, Leitrim, Monaghan, Sligo

West: Galway, Mayo, Roscommon

Southern NUTS 2 Region

Mid-West: Clare, Limerick, Tipperary

South-East: Carlow, Kilkenny, Waterford, Wexford

South-West: Cork, Kerry

Eastern & Midland NUTS 2 Region

Dublin & Mid-East: Kildare, Meath, Wicklow, Louth, Dublin

Midland: Laois, Longford, Offaly, Westmeath

4. Production of the Statistics, Data Processing, Quality Assurance

4.1. Data Capture

Forms are scanned, and the dataset is then entered into the Data Management System (DMS) for edit checks etc. Administrative data from the DAFM is then merged with the scanned returns. A clean dataset is exported from the Data Management System to SAS for analysis.



4.2. Coding

No coding used within survey process.

4.3. Data Editing

Data editing is performed using the DMS. Edit rules focus on difference between current and previous year's returns. Cases where the change from one year to the next is outside certain bounds are examined to ensure that the change is not due to an error on the returned form. Data from administrative sources is not edited.

4.4. Imputation (for Non-Response or Incomplete Datasets)

Sheep: The annual Sheep & Goat Census carried out by the Ministry of Agriculture, which provides a register of all sheep producers with a reference date of December of each year. This is used to impute for missing sheep data. The number of breeding females is taken from the Census and an expected non-breeding flock per unit of breeding female was derived controlling for whether the farm was an upland or lowland holding (as this factor influences productivity per breeding female).

Grass: Where no grassland area was provided for farms with bovines, the number of bovines in each category are used as explanatory variables in predicting a value for area of grassland.

Also, imputation from administrative data or previous surveys is also used to account for unit non-response.

4.5. Grossing and Weighting

Results are based on the created full population data set, so no grossing or weighting is used.

4.6. Computation of Outputs Estimation Methods Used

The results for crops and cattle are obtained from administrative sources. The pig survey is a de facto census of the specialised pig farms that are responsible for the vast majority of pig farming within the State. A series of SAS programmes are run to identify all farmers who responded in the current year and in the previous year. Then, for each category of livestock (where matched sampling is used for total estimation) the percentage change between the two years is calculated. This percentage change is then applied to the published totals for the previous year to come up with estimates for the totals for the current year. Using the matched sampling methodology and administrative sources the "Crops and Livestock Survey June 2023 Provisional estimates" is released on September 27th, 2023.

The Farm Structure Survey data is processed and merged with all administrative sources. Final areas of crops and numbers of livestock for June 2023 is published in March 2024 as "Crops and Livestock June 2023 Final Results". This publication provided details of crops at national and regional level and cattle at national, regional and county level, and results for sheep, pigs and other livestock at national and regional level.

A final FSS publication detailing farms by size, type, economic size and detailed farm labour force data is published once NMR and FSS2023 dataset have been validated and accepted by Eurostat. The data tables will be accompanied by background notes on data collection, derivation of farm typology, livestock unit coefficients and a copy of the questionnaire.

4.7. Other Quality Assurance Techniques Used

- Cross referencing of survey results against DAFM's Sheep & Goat and Pig Censuses.
- Consistent Macro edits within DMS are performed which compare totals over a number of years.
- Consultation with experts within industry to ascertain reasons behind emerging trends.

5. Quality



5.1. Relevance

The main groups of national characteristics surveyed are decided based on EU FSS legislation, i.e. Regulation 2018/1091. A small number of additional variables were collected for national purposes. The need for these variables was identified through a consultation process with the main stakeholders prior to the survey design stage. Specifically, these variables related to:

- Sheep: A more detailed breakdown of sheep, consisting of rams, ewes (both under and over 2 years) and other sheep (both under and over 1 year).
- Equidae: The sub-division of Equidae into thoroughbred, other horses and mules, jennets and donkeys.
- Deer: Number of farmed deer.

Administrative Burden: the number of minutes taken to complete the FSS2023 questionnaire.

5.2. Accuracy and Reliability

5.2.1. Sampling Effect & Representativity

As administrative sources are used for crop and cattle totals and the pig survey is a de facto census of the specialised pig farms that are responsible for the clear majority of pig farming within the state, the focus of the June survey is on the correct measurement of sheep totals. Farm Structures Surveys are carried out at intervals in the period between each complete Census of Agriculture. The last Farm Structures Survey took place in 2016. The Farm Structures Survey is considered a representative sample of all farms in the state and includes new farms obtained from administrative records held by the Department of Agriculture. The June sample is selected in a manner that ensures a representative sample of farms with sheep. In addition, emphasis is placed on ensuring that there are adequate farms in the sample for year N (reference year), which responded to the June survey (or FSS or Census) in year N-1 (preceding year). This is required to support the matched sample methodology for estimating sheep totals.

5.2.2. Non-Sampling Effects

5.2.2.1. Quality of the Data Sources used (other than survey register)

No other data sources (besides administrative) are used in preparation of results.

5.2.2.2. Register Coverage

All necessary steps are taken to ensure full coverage of the population. The Agriculture Register, finalised after COA 2020, was further updated in April 2023 (prior to FSS2023) to add approximately 5,000 new 'births' which had been identified as newly active holdings on the DAFM's administrative databases. Therefore, the Agriculture register was considered very comprehensive. The only units that could have been excluded were those farming but not registered on either of the two administrative databases (BPS & Bovine Register). However, the likelihood of a new farm not falling into one of these two databases is considered low.

While new 'births' were added to the register, it is not always easy to identify farm 'deaths'. However, page 1 of the FSS questionnaire asks the respondent to indicate if the holding has been sold or leased or if the registered holder has retired or is deceased. These units are subsequently marked as inactive and considered 'out-of-scope'. These out-of-scope units are taken into consideration when calculating survey weights, in that only in-scope responses are included when calculating the non-response weight.

5.2.2.3. Non-response (Unit and Item)

Unit Non-response

Unit non-response occurs when a sample unit declines to respond to the questionnaire, despite the issuing of reminder letters. Non-response is assumed (as opposed to out-of-scope/inactivity) when a form wasn't returned. Administrative data is utilised where possible for farms which were found to be active on



administrative files despite providing no response. Otherwise, imputation was used to impute certain characteristics for the non-sampled units to compile a full census.

However, there are no administrative data or robust imputation method available for a small number of FSS characteristics (other gainful activities, crop rotation and soil management). Therefore, these are available for the responding units only and as such are weighted variables. Non-response is taken into consideration when calculating weights for these variables.

Full non-response is addressed by using administrative data to confirm level of activity and provide data. Therefore, bias due to non-response is considered to have been addressed.

Item Non-response

As all data on bovines and crops are collected from administrative records, only variables collected in the FSS paper or web survey is affected by item non-response. This seems to occur mostly in the crop rotation, soil management and training sections. The FSS is a self-completed postal questionnaire (8 pages) or web survey and as such there may be respondent fatigue by the time these sections are reached. The data being collected are complex and do not work well in a postal questionnaire with no trained interviewer present during completion. It can therefore be difficult also to determine if the cells are empty due to non-response or are in fact real zero.

Where available, administrative data is used to impute for item non-response or to confirm real zero. In the absence of administrative data, data are imputed using regression if appropriate explanatory variables can be identified.

5.2.2.4. Measurement Errors

Measurement errors are not formally calculated for the Survey. The questionnaire is clear and unambiguous and easily understood by respondents. Crop, cattle, and goat published totals are taken from the DAFM administrative data.

5.2.2.5. Processing Errors

The potential for processing errors is limited due to well defined processes within the DMS. Numerous edit checks are performed to ensure reasonableness of the data used at aggregation stage. Macro edit checks, where totals for each category are compared with previous years are performed on all results to ensure consistency and identify processing errors.

5.2.2.6. Model-related Effects

No known model related effects.

5.3. Timeliness and Punctuality

5.3.1. Provisional Results

No provisional results for the Farm Structure Survey.

5.3.2. Final Results

Farm Structure Survey 2023 results are not published until the dataset and National Methodological Report have been validated and accepted by Eurostat. However, totals for crops and cattle for 2023 gathered from administrative data sources are published in March 2024 as part of annual time series publications for crops & livestock required under EU Regulation 1165/2008 (Livestock) and EU Regulation 543/2009 (Crops). There is a three-month time lag between the end 2023 (reference) year and the final crops & livestock publication.

5.4. Coherence



At micro level, data is examined throughout the editing process. Different data sources are used to evaluate the data to be processed. Sources included the FSS 2016, Census 2020 and administrative sources from the DAFM.

Wherever possible, FSS data are also compared with other available sources and data in other domains. For example, the results are compared with FSS 2016, Census of Agriculture 2020 as well as annual crop and animal production surveys.

Consistency checks are also performed against other data providers, namely Teagasc, Bord Bia and DAFM.

5.5. Comparability

As a common legislative framework is in place across the European Union for this survey, results are comparable against other European Union countries.

In terms of times series, results are comparable from 2005.

5.6. Accessibility and Clarity

5.6.1. Assistance to Users, Special Analyses

All assistance within the bounds of maintaining confidentiality is given to users. Decisions on whether to perform special analyses are taken on a case-by-case basis.

5.6.2. Revisions

Revisions do not usually occur from one survey to the next, but revision may take place due to changes in methodologies and data collection methods.

5.6.3. Publications

5.6.3.1. Releases, Regular Publications

Crops and Livestock Survey, Provisional Estimates June

Crops and Livestock Survey, Final Results June

Farm Structure Survey, Final Publication

The releases are available on the CSO website at 11am on the day of publication.

<https://www.cso.ie/en/statistics/agriculture/>

5.6.3.2. Internet

Area under crops

<https://data.cso.ie/table/AQA06>

Livestock Numbers

<https://data.cso.ie/table/AAA09>

Cattle Numbers

<https://data.cso.ie/table/AAA10>

And on the Eurostat website at:

<http://ec.europa.eu/eurostat/data/database>

5.6.3.3. Statistical Reports

5.6.4. Confidentiality



All data from respondents are treated as strictly confidential in accordance with the Statistics Act 1993. Care is taken to ensure that disclosure of potentially confidential results is avoided.

6. Additional documentation and publications

The entry for this statistic under PxStat (the portal to Ireland's official statistics) is at <https://data.cso.ie/product/FS>