



**An
Phríomh-Oifig
Staidrimh**

Central
Statistics
Office

Standard SIMS Report: Census of Agriculture



Single Integrated Metadata Structure (SIMS) Report

For

Census of agriculture

This documentation applies to the reporting period:
June 2010 onwards

Last edited: 10/01/2025



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2. Introduction

This report presents the results from the Census of Agriculture 2020 conducted by the Central Statistics Office (CSO) in June 2020. This work was undertaken within the framework of the statistical programme of the European Union, and in particular, Regulation (EC) No 1166/2008. Similar Surveys were conducted in all EU member states during 2015/2016 in order to collect comparable statistics across the European Union.

3. Contact

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4. Metadata Update

4.1. Metadata last certified

13/01/2025

4.2. Metadata last posted

January 2025

4.3. Metadata last update

10/01/2025



5. Statistical Presentation

5.1. Data Description

The data describe the structure of agricultural holdings providing the general characteristics of farms and farmers and information on their land, livestock and labour force. They also describe production methods, rural development measures and agro-environmental aspects that look at the impact of agriculture on the environment.

The data are used by public, researchers, farmers and policy-makers to better understand the state of the farming sector and the impact of agriculture on the environment. The data follow up the changes in the agricultural sector and provide a basis for decision-making in the Common Agricultural Policy (CAP) and other European Union policies.

The aggregated results are disseminated through statistical tables. The data are presented at different geographical levels and over periods.

The data collections are organised in line with [Regulation \(EU\) 2018/1091](#) and have a new structure, consisting of a core data set and several modules. The regulation covers the data collections in 2020 (the agricultural census), 2023 and 2026. The data are as comparable and coherent as possible with the other European countries.

5.2. Classification System

Data are arranged in tables using many classifications. Please find below information on most classifications.

The classifications of variables are available in Annex III of Regulation (EU) 2018/1091 and in Commission Implementing Regulation (EU) 2018/1874.

The farm typology means a uniform classification of the holdings based on their type of farming and their economic size. Both are determined on the basis of the standard gross margin (SGM) (until 2007) or standard output (SO) (from 2010 onward) which is calculated for each crop and animal. The farm type is determined by the relative contribution of the different productions to the total standard gross margin or the standard output of the holding.

The farm type classification is a three-level hierarchical nomenclature which divides types of farming into the following structure:

- Level 1: General Farm Types (9 headings)
- Level 2: Principal Farm types (21 headings)
- Level 3: Particular Farm types (62 headings)

The complete classification including the definition of farm types is described in Commission Regulation (EC) no 1242/2008.

The territorial classification uses the NUTS classification to break down the regional data. The regional data is available at NUTS level 2.

Data are collected for the following main categories

Sheep

- Breeding Females
- Other Sheep

Cattle (from administrative source)

- 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)

Pigs

Data are collected for the following categories of pig in the Farm Structure Survey

- Piglets under 20 kg
- Breeding sows over 50 kg
- Other pigs

Poultry

Data are collected for the following categories of poultry in the Farm Structure Survey

- Broilers
- Laying hens
- Other poultry

Labour Force

Data are collected for the following Labour Force categories in the Farm Structure Survey

- Farm holder – Age, Sex and Farm Work
- Farm manager – Age, Sex and Farm Work
- Farm work of family members
- Farm work of non-family members
- Other Gainful Activities

5.3. Statistical Concepts and definitions

Farm/holding

An "agricultural holding" or "holding" means a single unit, both technically and economically, which has a single management and which undertakes agricultural activities listed below within the economic territory of the European Union, either as its primary or secondary activity:

- growing of non-perennial crops
- growing of perennial crops
- plant propagation
- animal production
- mixed farming
- support activities to agriculture and post-harvest crop activities



Agricultural Area Utilised

The Agricultural Area Utilised (AAU) is the combined area under crops, silage, hay, pasture and rough grazing land in use (including fallow land). Areas under roads, tracks, water, bog, marsh, rocks, unused rough grazing land, buildings etc. are excluded.

Farm Type

For analytical purposes, farms are classified in this report as one of eight farm types. These types represent the primary areas of specialisation in Irish Farming. They are derived from groupings applied to a detailed EU farm typology classification system 1 and are based on the relative economic importance of the various lines of agricultural activity carried out on each farm. These types are classified as Specialist Tillage, Specialist Dairying, Specialist Beef Production, Specialist Sheep, Mixed Grazing Livestock, Mixed Crops & Livestock, Mixed Field Crops and Other.

Standard Output (SO)

The Standard Output (SO) of an agricultural product is defined as the average monetary value of the agricultural output at farm-gate prices. SO is not a measure of farm income. It does not take into account costs, direct payments (such as the Single Farm Payment), value added tax or taxes on products. This has replaced the concept of Standard Gross Margin (SGM) which was previously used to measure the economic size of a farm. Therefore, direct comparisons cannot be made between the economic size of farms in this report and the economic size of farms published for earlier years.

Economic Size

The economic size of the holding is measured as the total standard output of the holding expressed in euro. Holdings are classified by fourteen size classes which are set out in Annex II to Commission Regulation (EC) no 1242/2008. Some of these size classes have been grouped together here and therefore, only eight size classes are presented in this report.

Family Farms

These are farms which are operated as family based enterprises.

Commercial Farms

These are farms registered as companies which paid all their workers as employees (including management) or farms connected with institutions (e.g. schools, colleges, religious communities, prisons etc.). All persons working on commercial farms are classified as regular non-family workers.

Farm Holder

The legal owner of a family farm.

Farm Manager

The person responsible for the day to day running of the farm. On 97.0% of Irish farms, the farm manager was also found to be the holder.

Livestock Units

A Livestock Unit is a standard measurement unit that allows the aggregation of numbers of livestock across different categories of livestock for comparison purposes.

Each livestock category is assigned a coefficient which reflects the relative importance of livestock in that category. The number of livestock in each such category is multiplied by the coefficient for that category and the results summed across categories to give a standardised total number of livestock for a particular farm size class or for a particular farm type. Coefficients used for each livestock category differ throughout the world. The coefficients used in this publication are taken from EU Regulation No.1166/2008 covering the 2016 Farm Structure Survey.



Non-Regular Labour Input

This refers to the labour supplied by those not employed on a regular basis such as casual workers, agricultural contractors and farm relief services.

Annual Work Unit (AWU)

The labour input of each person who worked on the farm was measured in terms of AWUs with one AWU being defined as 1800 hours or more of labour per person per annum.

Significance of Farmwork

This categorises the relative importance of farmwork as an occupation to the farm holder.

- *Sole occupation*: If an individual engaged in farmwork had no other occupation from which an income was earned, then farmwork was the sole occupation.
- *Major occupation*: If farmwork took up the greater part of a worker's time, it was regarded as a major occupation.
- *Subsidiary occupation*: If the time spent on gainful non-farming activity exceeded that spent on farmwork then farmwork was regarded as a subsidiary occupation. Gainful non-farming activity includes paid farmwork on other farms and all other non-farming activities from which an income was obtained, whether undertaken on or off the farm.

For Eurostat transmissions the list of core variables is set in Annex III of Regulation (EU) 2018/1091. The descriptions of the core variables as well as the lists and descriptions of the variables for the modules collected in 2020 are set in Commission Implementing Regulation (EU) 2018/1874.

The following groups of variables are collected in 2020:

- for **core**: location of the holding, legal personality of the holding, manager, type of tenure of the utilised agricultural area, variables of land, organic farming, irrigation on cultivated outdoor area, variables of livestock, organic production methods applied to animal production;
- for the **module "Labour force and other gainful activities"**: farm management, family labour force, non-family labour force, other gainful activities directly and not directly related to the agricultural holding;
- for the **module "Rural development"**: support received by agricultural holdings through various rural development measures;
- for the **module "Animal housing and rural development module"**: animal housing, nutrient use and manure on the farm, manure application techniques, facilities for manure.

5.4. Statistical Unit

The statistical unit is the agricultural holding (farm).

An agricultural holding was defined, in line with the definition in Article 2 of Council Regulation 1166/2008 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 1166/2008, 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).

The agricultural holding is a single unit, both technically and economically, that has a single management and that undertakes economic activities in agriculture in accordance with Regulation (EC) No 1893/2006 belonging to groups:

- An agricultural holding is then defined by the following criteria:
- It is a single unit both technically and economically; in general this is indicated by a common use of labour and means of production (machinery, buildings or land, etc.);
- It has single management; there can be single management even though this is carried out by two or more persons acting jointly.



- Carries out at least one of the following activities defined in the European Statistical Classification of Economic Activities(37) (NACE Rev. 2) for crop and animal production, and related service activities.
- Growing of non-perennial crops (NACE A01.1)
- Growing of perennial crops (NACE A01.2)
- Plant propagation (NACE A01.3)
- Animal production (NACE A01.41 to A01.47 and parts of A01.49)
 - Holdings raising and breeding ostriches or emus (NACE A01.49)
 - Holdings raising and breeding rabbits (NACE A01.49)
 - Holdings with bee-keeping, production of honey and beeswax (NACE A01.49)
 - Holdings raising animals for the production of fur (NACE A01.49)
- Mixed farming (NACE A01.5)
- Holdings exclusively maintaining agricultural land in good agricultural and environmental condition (NACE A01.61)
- Has its activity in the economic territory of the European Union as defined in the Regulation (EC) No 1059/2003(38) or, where applicable, the most recent legislation.

For further information on the EU Farm Typology Classification system please refer to the background notes accompanying the national release.

5.5. Statistical Population

Farms with size greater than 1 Hectare with at least one of the following: bovine animals, pigs, sheep, goats, poultry.

5.6. Reference Area

Republic of Ireland.

5.7. Time Coverage

2003 - 2020

5.8. Base period

Not applicable.

6. Unit of Measure

Two kinds of units are generally used:

- the units of measurement for the variables (area in hectares, livestock in (1000) heads or LSU (livestock units), labour force in persons or AWU (annual working units), standard output in Euro, places for animal housing etc.) and
- the number of agricultural holdings having these characteristics.

7. Reference Period

2020

Reference period for land variables

The use of land refers to the reference year 2020, as land variables are obtained from the IACS system, the 12-month reference period is January 1 2020 to December 31 2020. In the case of successive crops from the same piece of land, the land use refers to a crop that is harvested during the reference year, regardless of when the crop in question is sown.

**Reference period for variables on irrigation and soil management practices**

The 12-month reference for total irrigable area is January 1 2020 to December 31 2020.

Reference day for variables on livestock and animal housing

The reference day of 1 June within the reference year 2020.

Reference period for variables on manure management

The 12-month period ending on 31 December 2020. This period includes the reference day used for livestock and animal housing.

Reference period for variables on labour force

The 12-month period ending on 31 December within the reference year 2020.

Reference period for variables on rural development measures

The three-year period ending on 31 December 2020.

Reference day for all other variables

The reference day of 1 June within the reference year 2020.

8. Institutional Mandate

8.1. Legal Acts and other agreements

8.1.1. National legal acts

The statistical activities for the CSO are governed by the Statistics Act, 1993. This act provides the legislative framework for the CSO. It sets put the right of the Office to conduct statistical inquiries (See **Part III – Collection of Information** of the Act).

Part III (Section 25) of the Statistics Act specifies that a ministerial order can be put in place to prescribe persons and undertakings to provide information under the Act. Such an order was deemed necessary for the Census of Agriculture and was published before data collection commenced. The Order is named the Statistics (Census of Agriculture) Order 2020.

Part II (Section 20, 21 and 22) of the Statistics Act specifies the responsibilities of the CSO staff. It should be noted that as the COA is a Paper Data Collection and Computer Assisted Web Interviewing (CAWI) Census, enumerators do not directly visit farms/respondents.

The Census of Agriculture is collected nationally under Statutory Instrument S.I. No. 281/2020 - Statistics (Census of Agriculture) Order 2020

<https://www.irishstatutebook.ie/eli/1993/act/21/enacted/en/html>

<https://www.irishstatutebook.ie/eli/2020/si/281/made/en/print>

8.1.2. European legal acts

This work is undertaken within the framework of the statistical programme of the European Union, and in particular, Regulation (EC) No 1166/2008. Similar Surveys were conducted in all EU member states during 2015/2016 in order to collect comparable statistics across the European Union.

Regulation (EU) 2018/1091



8.2. Data Sharing.

Part IV of the Statistics Act, 1993, mentioned above grants the CSO right of access to records of public authorities for statistical purposes (with a number of exceptions). Specifically under the Act, the CSO may request any public authority to provide data that they hold as a source of statistical information and, where appropriate and practical, developing its recording methods and systems for statistical purposes. This underpins co-operation with the Department of Agriculture, Food and the Marine (DAFM) on the subject of its farm registers. (See **Part IV – Use of Records of Public Authorities for Statistical Purposes** of the Act above.)

DAFM and the CSO have strengthened their relationship over the previous number of years and a Memorandum of Understanding underpins the data sharing agreements.

9. Confidentiality

9.1. Confidentiality – policy

All information supplied to the CSO is treated as strictly confidential. The Statistics Act, 1993 sets stringent confidentiality standards: Information collected may be used only for statistical purposes, and no details that might be related to an identifiable person or business undertaking may be divulged to any other government department or body.

These national statistical confidentiality provisions are reinforced by the following EU legislation: Council Regulation (EC) No 223/2009 on European statistics for data collected for EU statistical purposes. Further details are outlined in the CSO's Code of Practice on Statistical Confidentiality.

For more information on the CSO confidentiality policy please visit:
<https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/statisticalconfidentiality/>

9.2. Confidentiality – data treatment

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.

The rules used to identify confidential cells include:

- Threshold rule : there are five or less units in a cell
- Dominance rules
 - one unit accounts for more than 80% of the total (dominance rule 1),
 - two units account for more than 90% of the total (dominance rule 2).

A category is secondary confidential if publishing that category indirectly reveals information about a confidential category.

Methods to protect data in confidential cells

- Table redesign (Collapsing rows and/or columns)
- Cell suppression (Completely suppress the value of some cells)

10. Release Policy

10.1. Release Calendar

The date of dissemination of all statistics released by CSO can be found in the Release Calendar published in CSO.ie. This calendar is regularly updated.



10.2. Release calendar access

The release calendar can be accessed via the CSO website, www.cso.ie, or directly from this link: <https://www.cso.ie/en/csolatestnews/releasecalendar/>

10.3. User access

In accordance with Principle 6 of the European Statistics Code of Practice all users of CSO statistics have equal access via the CSO website at the same time of 11 am. Any privileged pre-release access to any outside user is limited, controlled and publicised. In the event that leaks occur, pre-release arrangements are revised so as to ensure impartiality.

The CSO recognises that in very limited circumstances a business need for pre-release access may be substantiated. Any form of pre-release access is a privilege and a strict CSO pre-release access policy is adhered to for these special requests. The full pre-release access policy can be accessed at <https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/csopolicyonpre-releaseaccess/>

The various results are published nationally in statistical release format as well as on the CSO website (www.cso.ie). Selected extracts from the results are posted on the CSO's data dissemination database, PxStat.

11. Frequency of Dissemination

Decennial

12. Accessibility and clarity

12.1. News release

<https://www.cso.ie/en/csolatestnews/pressreleases/2021pressreleases/pressstatementcensusofagriculture2020/>

12.2. Publications

The CSO disseminated preliminary results for the Census of Agriculture 2020 - Preliminary Results on the 9th of December 2021. Final results were published on the 26th of May 2022.

Both publications are available in the CSO website directly from this link:

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

12.3. On-line database

Data from the Census of Agriculture is available in various formats via the CSO's main dissemination database PxStat. The tables can be accessed directly from this link: <https://data.cso.ie/product/COA>

12.3.1. AC1. Data tables - consultations

Not calculated.

12.4. Micro-data Access

Not applicable.

12.5. Other

Not applicable.



12.5.1. AC2. Metadata consultations

Not calculated.

12.6. Documentation on Methodology

For more information on the methodology used for the compilation of the Census of Agriculture please refer to the CSO Methods page:

<https://www.cso.ie/en/methods/agricultureandfishing/censusofagriculture/>

12.6.1. AC3 – Metadata completeness – rate

Not calculated.

12.7. Quality Documentation

Further information on the quality of this release is available from the CSO methods page:

<https://www.cso.ie/en/methods/agricultureandfishing/censusofagriculture/>

13. Quality Management

13.1. Quality Assurance

Quality Management Framework

The CSO avails of an office wide Quality Management Framework (QMF). This framework allows all CSO processes and outputs to meet the required standard as set out in the European Statistics Code of Practice (ESCoP). The QMF foundations are based on establishing the UNECE's Generic Statistical Business Process Model (GSBPM) as the operating statistical production model to achieve a standardised approach to Quality Management. All and any changes implemented to CSO processes and outputs require adherence to the QMF.

13.2. Quality Assessment

Training courses – the CSO has a dedicated Statistical Training Unit in place to ensure that statisticians are supported when performing their work. Each particular statistician role has an essential statistical requirements and an office skills register per statistician is used to determine a statisticians training needs. Training needs are determined with a gap analysis and training is supplied early in the term of the statistician.

Use of best practices – the CSO has a dedicated Methodology team who assist with the design of procedures to be implemented throughout Official Statistics.

Quality guidelines – the CSO began implementation of a Quality Management Framework in 2016 and a new quality strategy 2020-2023 has recently been published. Statistical procedures within the office are required to adhere to the guidelines with the Framework and policy.

Self-assessment – there is an annual requirement in the CSO to complete a self-assessment quality questionnaire on all statistical products that statisticians are responsible for.

14. Relevance

14.1. User Needs

The main users of the data are individuals from the DAFM, the Irish FADN liaison agency, environmental agencies, agricultural press (print and online), farming organisations and the public.



These groups were consulted during planning and a small number of additional variables (not in Regulation (EU) No. 2018/1091) 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.

Information was also collected and collated for out-of-scope IFS farms, these farms make little contribution to the total Utilised Agricultural Area and total Livestock Units but receive farm supports under CAP and cover approximately 3% of holdings.

Unmet user needs

Some users requested Labour and Manure Management statistics as a more detailed geographical level than NUTS3. This is not possible as this information was collected via sample surveys and designed to meet the precision requirements as set out in Annex V of Regulation No. 2018/1091.

Plans for satisfying unmet user needs

It may be possible to meet some of the regional need for the Agriculture Labour Force by matching across non-agricultural administrative sources. This will be explored in the lead up to and during processing of IFS 2023.

14.1.1. Main National Users

- Department of Agriculture, Food and the Marine
- Other section within the CSO
- Semi State organisations such as Teagasc

14.1.2. Principal External Users

- Eurostat
- EU Commission

14.2. User Satisfaction

Not measured.

14.3. Data Completeness

All required information is disseminated in the required formats. Information on low- and zero prevalence variables is available on Eurostat's website .

14.3.1. Data Completeness rate

Not applicable for Integrated Farm Statistics as the not collected variables, not-significant variables and not-existent variables are completed with 0.

15. Accuracy and reliability

15.1. Overall accuracy

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.

15.2. Sampling Error

Not applicable since the results are based on a census.



15.2.1. A1. Sampling error indicator

Calculated for a requested list of 65 cases, for which each were required to have a RSE of 7.5% or less.

Reasons for non-compliant precision requirements in relation to Regulation (EU) 2018/1091

Of the 65 eligible cases, five were non-compliant (7.69%).

Some land variables in the LAFO module had large RSEs, two eligible cases, "Cereals" and "Plants harvested green from arable land" in IE06 had RSEs over 5%. The "cereals / IE06" pair has an RSE of 6.33% and the "plants harvested green / IE06" pair has an RSE of 5.07% so a larger sample size in future data collections for the LAFO module should lower these RSEs.

In the IE06 region for the LAFO module, there were two RSEs for two eligible cases the "Dairy Cows" LSU and "Sheep and Goats" LSU variables. These RSEs were 5.20% and 5.68%, dairy farming and sheep farming are not predominant in this region and a larger sample size for these modules in future data collections should be adequate to lower the RSEs.

In the IE06 region for the AHMM module, there was one non-compliant RSE (8.7%), for the "Sheep and Goats" eligible case. As stated above sheep farming is not predominant in this region and a larger sample size will be required for repeat AHMM modules in future IFS data collections.

Finally, the IE06 region has the fewest farms of Ireland's NUTS2 regions but is also a predominant region for arable land and most of the common Irish livestock classifications will be eligible cases in this region. Future sampling designs will incorporate this information and ensure that IE06 eligible cases are compliant.

15.3. Non-sampling Error

The main source of non-sampling errors stem from coverage and response issues. Further explanations are given below.

15.3.1. Coverage error

All necessary steps are taken to ensure full coverage of the population. The Agriculture Register, finalised after Farm Structure Survey 2013, was further updated in April 2016 (prior to FSS2016) to add approximately 5,000 new 'births' which had been identified as newly-active holdings on Ministry of Agriculture'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 (IACS & 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.

Under coverage

The types of holdings included in the frame but not belonging to the population of the core (main frame and if applicable frame extension) include:

- Below thresholds during the reference period
- Ceased activities
- Merged to another unit



Over Coverage is based on the dataset of farm holdings that are above threshold as per ANNEX II of Regulation (EU) No. 2018/1091. There are approximately 5,000 active below threshold farm holdings in Ireland that are included in the national publication of results. Remaining over coverage farm holdings are ones that have ceased activity or have merged with other units.

The CSO is currently not taking any actions to minimize the over-coverage error.

Under-coverage errors are likely to be very low for Irish farm holdings. The Department of Agriculture manages a number of administrative databases and data sharing agreements ensure that the CSO can obtain and use these databases to ensure minimal under-coverage. For Irish farm holders to receive CAP payments, they must have a registered herd number with the Department.

Under Coverage

The types of holdings belonging to the population of the core but not included in the frame (main frame and if applicable frame extension) refer only to new births.

All necessary steps are taken to ensure full coverage of the population. The Agricultural Register, finalised after FSS 2016, was updated further annually and in April 2020 (prior to the Census) to add 4 687 new births which had been identified as newly-active holdings on the Department of Agriculture's administrative databases. Administrative databases include, IACS, Bovine, Ovine, Poultry and Organic farming Registers. The only holdings that could have been excluded were those farming but not registered on the databases referenced. The likelihood of a new farm not falling into these databases was considered low.

Misclassification error

The contact data was provided by the Agriculture Register. In some cases, the holder could not be reached at that address and the questionnaire was returned unopened. This occurred in 1,328 cases, many of these cases were followed up by telephone and it was found that some of the holdings had merged with another of that the holding was inactive.

Overall, coverage errors have no impact on data quality.

15.3.1.1. A2. Over coverage rate

The unweighted over-coverage rate is 6.2%.

The over-coverage rate is calculated as the share of ineligible holdings to the holdings designated for the core data collection. The ineligible holdings include those holdings with unknown eligibility status that are not imputed nor re-weighted for (therefore considered ineligible).

The over-coverage rate is calculated over the holdings in the main frame and if applicable frame extension, for which core data are sent to Eurostat.

15.3.1.2. A3. Common units – proportion

Not calculated.

15.3.2. Measurement error

The list of variables mostly affected by measurement errors include:

- Temporary (G1000T) and Permanent Grasslands (J1000T & J2000T).
- Areas declared for the above characteristics on IACS differed substantially from the returns on the Census instrument. The breakdown of grasslands obtained from respondents on the instrument was assumed valid, particularly given the geographical location of the Rough grazing returns.

Explanatory notes or handbooks for enumerators or respondents are given in order to minimise measurement error.



The measurement errors in grassland, were found in the IACS declarations and were corrected for the Census and are considered correct in the dataset sent to Eurostat.

15.3.3. Non-Response Error

Unit non-response occurred when a sample unit declined to respond to the questionnaire, despite the issuing of three reminders. Non-response was assumed (as opposed to out-of-scope/inactivity) when a form wasn't returned. Administrative data was 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.

Full non-response was 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.

Administrative data within the reference year of 2020 was available for close to 100% of the unit non-responders. The nature of the core data collected using the Census instrument and the available auxiliary information meant that accurate deductive imputation could be performed. Unit deductive imputation was performed for the demographic characteristics of the holder and manager of the holding, the legal personality of the holding, the location of the holding, presence of and heads of livestock (sheep, goats and poultry).

Item Non Response

Item non-response rate on the paper survey instrument could be detected for certain characteristics that should be on most if not all holdings – characteristics of the holder or manager, grassland. It was more difficult to determine if there was item non-response for livestock characteristics but administrative data could be used to deduce if responding units were active sheep or poultry holdings. If item non-response was found, it was controlled for and corrected with edits and imputation.

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

There was more item non-response on the paper questionnaire than the electronic questionnaire. Variables such as the year the manager started (Y_FARM_MAN) and the level of training of the manager (TNG_MAN) were the characteristics with the highest item non-response. Processing staff could edit these during processing by contacting the holder or by using previous returns if available.

The main source for item non-response was the skipping of due question.

Actions taken to minimise non-response include:

- Reminder
- Imputation
- Other

Adjusting non-response was handled at two stages during the process, staff would edit returned questionnaires if it was possible to determine with follow-up or previous information. The second stage to handle non-response was with imputation - for many characteristics it was possible to use administrative data as a source for deductive imputation. If it was not possible to deduce a value, donor imputation (both hot deck and cold deck) was implemented.

15.3.3.1. Unit non-response rate

The unweighted unit non-response rate is 11.5%.

The unit non-response rate is calculated as the share of eligible non-respondent holdings to the eligible holdings. The eligible holdings include those holdings with unknown eligibility status which are imputed or re-weighted for (therefore considered eligible).



The unit non-response rate is calculated over the holdings in the main frame and if applicable frame extension, for which core data are sent to Eurostat.

15.3.3.2. Item non-response rate

Non-responding units with unknown eligibility status are treated the same way as the ineligible units.

15.3.4. Processing error

The potential for processing errors are limited due to well defined processes within the DMS. Numerous edit checks are performed to ensure reasonableness of the data used at aggregation stage.

The main causes of processing errors were derived from the imputation methods used, which include:

- Deductive imputation
- Cold-deck imputation
- Random hot deck imputation

Due to the sheer number of paper questionnaires to be processed, it can be assumed that some errors took place during processing. To minimise these errors, different team members worked on the same questionnaires at each stage of the process i.e no team member assess the same form at different stages of processing.

The deductive imputation methods implemented were considered to be an excellent solution to missing data and were always the first method (before probabilistic methods) to be implemented where appropriate.

Data processing

Processing staff used optical scanning to capture each return electronically, this software was configured to flag errors or erroneous data at scanning. Staff then used the CSOs Data Management System (DMS) software to correct data. Ineligible digits and data are highlighted and corrected on screen by referring to previous returns or by deduction. The data then enters the edit phase where data is passed through a range of pre-programmed edit checks. Here, arithmetic checks, range checks and consistency checks (with previous returns) are carried out and the data is examined. These edits are processed through the DMS before more edits are carried out in SAS.

The majority of the imputation was performed in SAS with imputation of the a small proportion of INSPIRE grid cell codes performed using SAS in parallel with R-Studio.

15.3.5. Model assumption error

No known model related effects.

16. Timeliness and punctuality

16.1. Timeliness

See breakdown.

16.1.1. TP1. Time lag – First results

Preliminary COA results were published 11 months after the end of the reference year.

16.1.2. TP2. Time lag – Final results

Final publication of the results took place 17 months after the end of the reference year.



16.2. Punctuality

In 2021, the agriculture team agreed to release preliminary results from the Census in December 2021, and in 2022, the team agreed to release final results in May 2022.

The preliminary publication of results was delivered on schedule, there was no difference between the actual and planned dates.

16.2.1. TP3. Punctuality – Punctuality - delivery and publication

0 days, the release was delivered within the time frame specified in the release calendar.

17. Comparability

17.1. Comparability – Geographical

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

Proofs that the EU coverage requirements are met

The data sent to Eurostat is for units with at least one characteristic above the thresholds stated in Annex II of Regulation (EU) 2018/1091, data is also available for 4,845 under threshold active farms. The table below summarises the UAA and LSU breakdown for the above threshold farm holdings.

	Total	Covered by thresholds	Attained coverage	Minimum requested coverage
	1	2	$3=2*100/1$	4
UAA (exc KG)	4,931,862	4,920,270	99.8	98.0
LSU	6,321,090	6,319,365	99.9	98.0

There is close to 100% coverage provided by the farm holdings sent to Eurostat for UAA and LSUs on Irish farm holdings.

Differences between the national thresholds and the thresholds used for the data sent to Eurostat

Approximately 3.6% of Irish farm holdings are below the Regulatory thresholds. Outside of the thresholds, any farm holding registered with a herd number in receipt of farm payments is included in national publications. Livestock and Utilised Agriculture Area on these smaller farm holdings is also included in regular data transmissions to Eurostat throughout the year.

Reasons for differences

Data collection in Ireland is primarily carried out using agricultural administrative data so it is possible to capture information on the above and below threshold farmers. Information on these small farms is important, they may not contribute a large number of LSUs or farm a large portion of land but these farm holdings are in receipt of farm payments and national users are interested.

Deviations from Regulation (EU) 2018/1091 and EU handbook

Definitions and classifications of the characteristics in the IFS 2020 data sent to Eurostat match those in Regulation (EU) 2018/1091, Commission Implementing Regulation (EU) 2018/1874 and the IFS 2020 manual.

The number of working hours and days in a year corresponding to a full-time job

The number of working hours and days in a year for a full-time job correspond to one annual working unit (AWU) in the country. One annual work unit corresponds to the work performed by one person who



is occupied on an agricultural holding on a full-time basis. Annual working units are used to calculate the farm work on the agricultural holdings.

Description of methods to record data on common land

Irish common land is collected at the county (local government areas) geographical level and recorded per county in the data sent to Eurostat. Land use administrative data from the Department of Agriculture is transmitted separately with and without common land thus alleviating the risk of double counts. All survey instruments sent to holdings also specify that common land should not be included.

17.1.1. CCI. Asymmetry for mirror flow statistics

Not applicable, because there are no mirror flows in Integrated Farm Statistics.

17.2. Comparability over time

There is a comparable farm structural time series available nationally for the previous 40 years in Ireland with comparable livestock, land use and holding number time series back to the 1850s.

The current data sent to Eurostat differs slightly in format from the 2016 FSS data as thresholds were not applied to the 2016 data. This only results in a slight difference in farm numbers (as discussed in section 15.1.3.1) as the 4,785 farm holdings below threshold farms are now not included. Farm structure based on the above threshold farm holdings only is not considered as a considerable break in the time series as land utilisation, livestock and farm labour are comparable between 2016 and 2020.

The first Census of Agriculture (COA) 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.

There is an available time series from the 1850s to the present day for the number of holdings, livestock totals and utilised agricultural area.

Changes in thresholds

The only change that applying the thresholds is to remove the smaller farm holdings from the Eurostat data, this has impacted the number of Irish farm holdings but has had no impact on the LSUs, UAA and farm labour statistics. The farms below threshold account for 0.24% of national UAA and 0.03% of national LSUs. Therefore, we do not consider the application of thresholds to cause a break in time series.

Changes since the last dissemination

Legal personality of the agricultural holding

In IFS, there is a new class ("shared ownership") for the legal personality of the holding compared to FSS 2016, which trigger fluctuations of holdings in the classes of sole holder holdings and group holdings.

Other livestock n.e.c.

In FSS 2016, deer were included in this class, but in IFS they are classified separately.

Also in FSS 2016, there was a class for the collection of equidae. That has been dropped and equidae are included in IFS in "other livestock n.e.c."

Livestock units

In FSS 2016, turkeys, ducks, geese, ostriches and other poultry were considered each one in a separate class with a coefficient of 0.03 for all the classes except for ostriches (coefficient 0.035). In IFS 2020, the coefficients were adjusted accordingly, with turkeys remaining at 0.03, ostriches remaining at 0.35, ducks adjusted to 0.01, geese adjusted to 0.02 and other poultry fowls n.e.c. adjusted to 0.001.

Organic animals

While in FSS only fully compliant (certified converted) animals were included, in IFS both animals under conversion and fully converted are to be included.



The 12-month reference period for land variables and labour force variables has changed since the 2016 FSS. The land variable reference has changed as planned to January 2020 to December 2020 given the reliance on IACS administrative sources.

LAFO reference period was adapted due to the pandemic – data was collected in December 2020, so it was logical to determine from farm holders labour in the previous year - a reference period of January 2020 to December 2020.

17.2.1. Length of Comparable Time series

40 years.

17.2.2. Explanations for major trends of main variables compared to the last data transmission to Eurostat

The most significant variations (between 2016 and 2020)

in animal production statistics:

- **A4210K** goats. Larger specialised goat herds now exist in IE and an administrative source is also used to determine the number of these herds.
- **A5000X5100**. In general, in IE, there has been a well-publicised explosion in poultry in the past number of years. Also, the poultry frame used during IFS 2020 was improved compared with the frame in FSS 2016. Growth in poultry was seen across all poultry categories.

in Crops production statistics:

- **ARA99T**. The variable now contains a new variable (wild bird cover). Farm holders have started to grow this crop due to an extra subsidy.
- **C1600T/C1700T/C1900T**. Only C1900T is not NE for IE, there are small parcels of millet and canary seed grown, this leads to a large proportional increase but for small areas relatively.
- **J3000TE**. A smaller and smaller proportion of farm holders had permanent grassland not in use, permanent grassland was classified as in use or as rough grazing in IE.
- **K0000T**. Own consumption Kitchen Gardens are now NE in IE.
- **V0000_S0000TK**. This is an administrative source and faced a natural decrease.

Labour Force:

- **MOGA_NFAM_RH**. For IFS 2020, IE introduced the “HLD_GRP” LEG_FORM category for the first time. There was also a sharp increase in the “PER_LEG_EG/PER_LEG_NEG” farm holdings. In an Irish context these farms are still “family farms” and reported family labour but this labour could not be placed as family labour in the ESTAT data. For this reason, this labour was placed as non-family labour in the IFS 2020 dataset which can explain why there has been an increase in these variables.
- in IFS 2020, IE obtained improved administrative records from the Department of Agriculture as well as using the Census as an opportunity to gather the legal status of farm holdings on a wide scale. The better administrative source allowed IE to record HLD_GRPs for the first time hence there has been an increase. There has also been quite an increase in the PER_LEG_EG/PER_LEG_NEG type farms mainly driven by dairy farm holdings that are not limited companies.

Increase of OGA_RH in 2020 compared to 2016:

IFS 2020 data had clearly more farm diversification activities than FSS 2016 data and these activities make sense regarding Irish agriculture (forestry). There is a larger proportion of farms in 2020 where the holder has OGA_NRH but it should also be noted that 2016 data would have included the newly formed IE PER_LEG_EG/PER_LEG_NEG and HLD_GRP farm holding. These farm holdings have a lower proportion of farm holdings where the manager had OGA_NRH.

increase of share of working time manager 100% in 2020 compared to 2016:

Farm holders/managers are generally doing more farm work and many farm holders/managers who were in the 75-99% band have moved to the 100%. IE also added an option for farm holders/managers to state if they worked over 72 hours per week and this was an option selected by many indicating the large workload for Irish farmers in 2020.



17.3. Coherence – cross domain

In an IFS year, the annual programme for statistics in Ireland is built around the IFS data collection so micro level analysis is built into the process for both preparing the IFS data and creating “Annual Crop Statistics” and “Animal Production Statistics” aggregates for Eurostat.

The Irish statistics are based on a combination of administrative data and survey/census data and our analysis has shown that there are some classification errors (see 13.3.2.1) for the temporary and permanent grasslands breakdown from the administrative data.

The “Animal Production Statistics” sheep data that is transmitted to Eurostat is for a reference date in December whereas the IFS sheep data is for a reference date in June so there is no directly comparable source for sheep data. Nationally, there is an annual release of sheep data and the IFS sheep are coherent with this data.

Wherever possible, data were also compared with other available sources and data in other domains. For example, the results were compared with FSS 2016, Census of Agriculture 2010 as well as annual crop and animal production surveys.

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

Results of analysis at macro level

The main discrepancies between annual crops/ animal production statistics 2020 and IFS 2020:

- **G0000** and **G1000**. IFS 2020 determined incorrect classification of temporary grasses and grazings as per the administrative data that had been used in 2016 and annually. A new method to classify grasslands was developed during IFS 2020 and will be used for future deliveries of G0000 and it's associated variables annually. IE has carried out a body of work to revise G0000 for 2020 and previous years.

- **I5000**. The ACS value for I5000 will be updated to reflect the IFS 2020 value.

- **V0000_S0000**. The ACS delivery contains both under glass and market garden vegetables and strawberry's. It is more meaningful to compare V0000_S0000 with V0000_S0000T/V0000_S0000S

- **A4100** NUTS1 and NUTS2. The reference day for IFS sheep data collection is the 1st of June 2020 but the annual sheep data reference day in the “Animal Population” transmission is December 30th. Sheep data fluctuates greatly between these two days.

- **A2000** NUTS1 and NUTS2. The Animal production figures 2020 are for the December reference, if the June reference is examined the values match IFS 2020.

- **A3100** NUTS2. During the detailed georeferencing as part of IFS a small number of pig farm holdings (with large numbers of pigs) switched region. The IFS data can be considered correct and the “Animal Population” data will be updated by IE.

17.3.1. Coherence – Sub annual and annual statistics

Not applicable.

17.3.2. Coherence with National Accounts

Not applicable, because Integrated Farm Statistics have no relevance for national accounts.

17.4. Coherence – internal

The data are internally consistent. This is ensured by the application of a wide range of validation rules.



18. Cost and Burden

Estimates of Cost and Burden can be obtained from the Response Burden Barometer <https://www.cso.ie/en/statistics/enterprisestatistics/responseburdenbarometer/>

Survey specific information is available via CSO's dissemination database PxStat. <https://data.cso.ie/product/RBB>

Coordination of data collections in agricultural statistics

While the IFS data is not collected in another CSO survey, the annual June agriculture survey is replaced by the IFS in IFS years.

The utilisation of administrative data – Bovine Register, IACS, Organic Register and Rural Development Measures eliminates the need for farmers to provide this data. The combination of this data and the fact that the Labour data was collected as a sample survey meant that the survey instrument for Core IFS data collection was halved in size.

The CSO is focused on continuously reducing the response burden on farmers. The final section of the IFS questionnaires, and indeed every agricultural survey, asks the respondent to indicate, in minutes, how long it took to complete the form. This allows CSO to measure the change in response burden from year to year.

- Mean time in minutes to complete the Core questionnaire (online & paper together) was 16.70 minutes and the median was 15 minutes.
- Mean time in minutes to complete the Labour Force questionnaire (paper only) was 16.02 minutes and the median was 10 minutes.
- Mean time in minutes to complete the AHMM questionnaire (paper only) was 20.48 minutes and the median was 15 minutes.

Efficiency gains since the last data transmission to Eurostat

- On-line surveys
- Increased use of administrative data

19. Data Revision

19.1. Data Revision Policy

Published statistics are subject to correction and revision for a variety of reasons. The most common reasons include the receipt of additional information (for example, late survey responses) and updated seasonal factors. Occasional revisions also occur as a result of changes to definitions, methodology, classifications and general updating of statistical series.

It is recognised internationally that the existence of a sound revisions policy maintains credibility in official statistics. The CSO General Revisions Policy, which details how revisions should be managed and communicated to users, outlines the three main types of revisions:

- Planned Routine Revisions
- Planned Major Revisions
- Unplanned Revisions.

One reason for unplanned revisions occurring can be when errors are detected after publication. The 'CSO Error Correction Policy – How to deal with Publication Errors' outlines the steps taken when these errors are detected. As required under Principle 6.3 of the European Statistics Code of Practice, errors detected in published statistics are corrected at the earliest possible date and users are informed. An important step in the process is the documentation and analysis of errors that have occurred and their causes. This allows the CSO to take measures preventing similar errors from occurring in the future and uniformity in dealing with them when they do.



The data revision policy that CSO statistics adheres to can be found via the following link:
<https://www.cso.ie/en/methods/quality/treatmentofrevisions/>

19.2. Data Revision Practice

There are no planned revisions for the 2020 IFS data in Ireland. If any unplanned revisions arise, the policy mentioned in Data Revision Policy will be followed.

19.2.1. Data Revision – Average size

Not requested.

20. Statistical processing

20.1. Source Data

The Census of Agriculture data was collected from approximately 40,000 farms who received the Census of Agriculture questionnaire by post in the first week of September 2020. All farms were required to complete and return the questionnaire by Thursday, 17 September.

20.1.1. Population and Sampling Frame

For the Census of Agriculture 2020, the register of agriculture holdings used to contact farmers was constructed by amalgamating the CSO intercensal Agriculture Register and the Department of Agriculture, Food and the Marine's (DAFM) 2019 Corporate Client System.

20.1.2. Sampling Design

The Census of Agriculture is a full census Survey, i.e. all units in the sampling frame are included in the sample.

A one-stage stratified sampling design was implemented for the "Labour and other gainful activities" module. Irish NUTS 3 regions were incorporated into the sampling design as well as the strata mentioned below in stratification criteria:

- Unit size
- Unit location
- Unit specialization

20.1.3. Survey Size

55,000 agricultural holdings.

20.1.4. Survey technique

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

20.2. Frequency of data collection

Decennial.

20.3. Data Collection

Census of Agriculture questionnaires were sent to approximately 138,000 farmers in the week preceding the reference date of 1st September 2020 and up to four reminders were issued to maximise the overall



response rate. Farmers also had the option to respond to the census using an electronic version of the questionnaire.

Each questionnaire issued included a pre-addressed freepost reply envelope. The return address on the reply envelope was to some dedicated Post Office Boxes which were used exclusively for the Census of Agriculture. The advantage of this method was that post was segregated from other post when it was delivered to the CSO and the national Post Office was able to provide an exact count of how many envelopes were returned this way. The envelopes were mechanically cut open across the top and the questionnaire held within was removed manually. The survey is a voluntary survey on respondents.

20.3.1. Type of Survey/Process

Questionnaire survey.

20.3.2. Questionnaire (including explanations)

The main questionnaire is a four-page questionnaire which is simple in design to allow easy usage. Other questionnaires were used to collect information on various modules. Agriculture labour force and animal housing and manure management questionnaires issued with a sample size of approximately 10,000 each. The results of these provided data to satisfy data requirement on agriculture labour and animal housing and manure management modules.

Please see the following URL to view the survey forms:

<https://www.cso.ie/en/methods/surveyforms/censusofagriculture/>

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).
- Poultry: The sub-division of both broilers and turkeys into breeding birds and table birds.
- Equidae: The sub-division of equidae into thoroughbred, other horses and mules, jennets and asses.
- Deer: Number of farmed deer.
- Farm Succession: Information on farm succession planned for Ireland was requested, as Ireland has an aging farming population, this information will feed into agricultural policy beyond CAP.
- Manure Management: There was interest from the users for manure application methods on tillage farms when manure was being spread was also an important user need.

20.3.3. Survey Participation

Farmers were required to complete the questionnaire under the provisions of the Statistics (Census of Agriculture) Order 2020, (S.I. No 281 of 2020) made under the Statistics Act, 1993.

In an effort to reduce the response burden on farmers, the questionnaire contained no questions relating to cattle and crops as sufficient data is available from existing administrative data sources from DAFM. More information and support material can be found at the Census Of Agriculture 2020 web page <https://www.cso.ie/en/methods/agricultureandfishing/censusofagriculture/censusofagriculture2020/>

20.3.4. 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.



20.4. Data Validation

The CSO Data Management System was utilised for verification and edits of each questionnaire that was returned. Further data validation took place using SAS and R-Studio.

Validation checks carried out for the data transmission include:

- Completeness checks
- Range checks
- Comparisons with previous rounds of the data collection
- Comparisons with other domains in agricultural statistics

20.5. Data Compilation

Design weights were obtained by taking the inverse of the inclusion probabilities. Weights were then adjusted based on non-response within the sampling strata

The 2020 data are processed (by Eurostat) with 2017 standard output coefficients (calculated as a 5-year average of the period 2015-2019). For more information, you can consult the definition of the standard output [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Standard_output_\(SO\)](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Standard_output_(SO)).

20.5.1. Imputation (for Non-Response or Incomplete Data Sets)

Administrative data within the reference year of 2020 was available for close to 100% of the unit non-responders. This also meant that it could be determined if there was true item non-response when data was missing. The nature of the core data collected using the Census instrument and the available auxiliary information meant that accurate deductive imputation could be performed.

There was more item non-response on the paper questionnaire than the electronic questionnaire. Variables such as the year the manager started (Y_FARM_MAN) and the level of training of the manager (TNG_MAN) were the characteristics with the highest item non-response. Processing staff could edit these during processing by contacting the holder or by using previous returns if available.

The methods used to derive the extrapolation factor include the use of design weights and non-response adjustment.

20.5.1.1. A7. Imputation rate

Not calculated.

20.5.2. Grossing and Weighting

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

20.6. Adjustment

Not applicable.

20.6.1. Seasonal Adjustment

Not applicable to Integrated Farm Statistics, because it collects structural data on agriculture.



21. Comment

List of abbreviations

CAP – Common Agricultural Policy
CAPI – Computer Assisted Personal Interview
CATI – Computer Assisted Telephone Interview
CAWI – Computer Assisted Web Interview
DAFM – Department of Agriculture, Food and the Marine
DMS – Data Management System
EPA – Environmental Protection Agency
FSS – Farm Structure Survey
IACS – Integrated Administration and Control System
IFS – Integrated Farm Statistics
LSU – Livestock units
NACE – Nomenclature of Economic Activities
NUTS – Nomenclature of territorial units for statistics
PAPI – Paper and Pencil Interview
SO – Standard output
UAA – Utilised agricultural area