



**An
Phríomh-Oifig
Staidrimh**

Central
Statistics
Office

**Standard SIMS Report:
Output Input and Income in
Agriculture**



Single Integrated Metadata Structure (SIMS) Report

For

Output Input and Income in Agriculture and Regional Accounts for Agriculture

This documentation applies to the reporting period:

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2. Introduction

The main purpose of the *Output, Input & Income in Agriculture* release is to produce statistics on the economic activities of the agricultural sector over a given accounting period.

3. Contact

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4. Metadata Update

4.1. Metadata last certified

21 August 2024

4.2. Metadata last posted

29 August 2024

4.3. Metadata last update

21 August 2024



5. Statistical Presentation

5.1. Data Description

The Output, Input & Income in Agriculture (OIIA) release provides detailed estimates of major items of agricultural accounts including livestock and crop production, expenditure on items of intermediate consumption, gross and net value added and operating surplus, in a calendar year. It is a summary of the Economic Accounts for Agriculture (EAA) data provided to Eurostat. Three estimates of the OIIAs and EAAs are prepared for each calendar year.

The EAA (and OIIA) estimates are based on data from a combination of sources including administrative data, industry sources and surveys conducted by CSO and Teagasc. The release is both a national and European requirement and the current series includes data back to 1990.

The Regional Accounts for Agriculture release provides estimates of major accounting items in each of Ireland's regions at NUTS 2 and NUTS 3 level. The results for each region are derived from the State total by using a specific allocator for each output or intermediate consumption item, e.g., livestock numbers for cattle and sheep, number of dairy cows for milk, etc.

5.2. Classification System

The main classifications are a set of harmonised classifications used for the EAAs (Economic Accounts for Agriculture) by all EU and EEA countries and are laid out in Regulation (EC) No 138/2004 of the European Parliament and of the Council of 5 December 2003, on the economic accounts for agriculture in the Community.

The EAA are an integral part of the ESA. As such, they are compiled based on NACE Rev.2, the statistical classification of economic activities in the European Community. The list of activities which defines the agricultural industry corresponds, in principle, to Division 01 of that classification: Crop and animal production, hunting and related service activities. However, some differences exist, and they are detailed in Annex 1 of Regulation (EC) 138/2004 of the European Parliament and of the Council

5.3. Sector Coverage

The sector covers all units involved in agricultural production, even if some of those units have more important economic activities or if the purpose of some others is not commercial. However, kitchen gardens (producing for own consumption only) are not included.

The list of agricultural activities characteristic of the EAA corresponds to the seven groups of Division 01 of NACE Rev 2 activities (01.1 to 01.7), with the following caveats:

- the inclusion of the production of wine and olive oil (exclusively using grapes and olives grown by the same holding),
- the exclusion of certain activities which, in NACE Rev. 2, are considered as agricultural services (e.g., the operation of irrigation systems - only agricultural contract work is taken into account here).

5.4. Statistical Concepts and definitions

The subject of the statistics is to provide a wide range of indicators on the economic activities in the agricultural sector such as gross output, intermediate consumption, gross and net value added, taxes and subsidies, operating surplus etc., as well as their regional breakdown

The EAA are satellite accounts of the [European System of Accounts](#) (ESA) providing complementary information and concepts adapted to the particular nature of the agricultural industry.



The EAA are shown as a sequence of inter-related accounts. As the EAA are based on the industry concept, the sequence of accounts is limited to the first accounts of the current account:

- the **production account** and
- the **generation-of-income account**

whose balancing items are value added and operating surplus, respectively.

Nevertheless, it should be possible to compile other accounts, at least in part, in so far as the relevant flows can be clearly attributed to them. The accounts in question are the following:

- the **entrepreneurial income account** (one of the current accounts) and
- the **capital account** (one of the accumulation accounts).

The EAA provide a wide range of indicators on the economic activities in the agricultural sector: these include output, intermediate consumption, gross and net value added, gross fixed capital formation (GFCF), both in current prices and in constant prices, as well as compensation of employees, other taxes and subsidies on production, net operating surplus or net mixed income, property income and net entrepreneurial income in current prices.

Three **indicators of the economic performance** of agriculture are defined in the EAA:

- Indicator A: Index of the real income of factors in agricultural per annual work unit.
- Indicator B: Index of real net agricultural entrepreneurial income per unpaid annual work unit.
- Indicator C: Net entrepreneurial income of agriculture.

5.5. Statistical Unit

The overall unit is the agricultural sector. However, in order to provide more detailed information and to analyse flows generated by the production process and the use of goods and services, it is necessary to select units which emphasise relationships of a technical-economic kind. This means that, as a rule, institutional units must be broken-down into smaller and more homogeneous units with regard to the kind of production (local kind-of-activity units/local KAUs) that are intended to meet this requirement (ESA 2010, 2.147).

The local KAU is defined as the part of a KAU which corresponds to a local unit. The institutional unit's information system must be capable of indicating or calculating for each local KAU at least the value of output, intermediate consumption, compensation of employees, the operating surplus and employment and gross fixed capital formation (ESA 2010, 2.148).

The agricultural holding, (the unit currently used for statistical studies of agriculture (censuses, surveys of the structure of agricultural holdings), is the local KAU most appropriate to the agricultural industry (even though certain other units, such as wine or olive oil cooperatives, or units performing contract work, etc., have to be included in it). Nevertheless, it should be noted that the variety of agricultural activities that can be performed on agricultural holdings makes them a special type of local KAU. The strict application of the ESA rule to units and their group should in fact result in a division of the agricultural holding into several separate local KAUs in cases where several activities of the NACE Rev. 2 four-digit class are performed on the same holding.

5.6. Statistical Population

Although the ESA gives pre-eminence to local KAUs, the unit best suited to analyse the production process is the unit of homogeneous production (UHP). This unit is used to analyse inputs and outputs, since it corresponds exactly to a type of activity. Institutional units are thus divided into as many UHPs as there are activities (other than ancillary). By grouping these units of homogeneous production, it is possible to break down the economy into 'pure' (homogeneous) branches. A UHP cannot, as a rule, be



directly observed. Therefore, the accounts of homogeneous branches cannot be compiled on the basis of groups of UHPs. The ESA describes a method for compiling these accounts.

The use of the local KAU as the basic unit for the agricultural industry entails recording non-agricultural secondary activities where they cannot be distinguished from the main agricultural activity (inseparable non-agricultural secondary activities of local agricultural KAUs) The selection criterion for inseparable non-agricultural secondary activities is rather the type of activity than the nature of the product. For example, agro-tourism services provided by a farm must only be included if they cannot be separated from its agricultural activities.

5.7. Reference Area

Ireland

5.8. Time Coverage

1990–2023

5.9. Base period

The base period changes every 5 years in accord with Agriculture Prices. Currently, the base year is 2020.

6. Unit of Measure

Euro - millions in the Eurostat returns and the tables and publication available on the CSO website.

7. Reference Period

1990–2023

8. Institutional Mandate

8.1. Legal Acts and other agreements

8.1.1. National legal acts:

Not applicable.

8.1.2. European Legal Acts:

The compilation of Economic Accounts for Agriculture (EAA) is governed by Regulation (EC) No 138/2004 of the European Parliament and of the Council of 5 December 2003, which provides complementary information and concepts adapted to the particular nature of the agricultural industry. The EAAs are also a satellite account in the European System of Accounts (ESA2010).

Regulation (EU) 2022/590 formalises the requirement to report to the Commission regional agricultural accounts data.



8.2. Data Sharing

Two memoranda of understandings exist between the CSO and our two main providers of data used in the compilation of the EAAs. They are as follows:

- A memorandum of understanding between the CSO and Teagasc.
- A memorandum of understanding between the CSO and the Department of Agriculture, Food and the Marine (DAFM).

Copies of these memorandums can be found at the following links:

- <https://www.cso.ie/en/aboutus/lqdp/legislation/memorandumsofunderstanding/moudafm/>
- <https://www.cso.ie/en/aboutus/lqdp/legislation/memorandumsofunderstanding/csoteagasc/>

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/lqdp/csodatapolicies/statisticalconfidentiality/>

9.2. Confidentiality – data treatment

All data collected for the purpose of the EAAs is macro data that is securely collected, stored and processed. All data is treated as strictly confidential and used exclusively for statistical purposes. Steps are taken to ensure confidentiality is protected at all stages of data collection, storage, processing and dissemination. This includes the use of secure servers for the exchange of confidential information, stringent security controls on CSO computer networks and data anonymisation. Access to stored data is based on business needs, is strictly controlled and password protected. EAA results are published in tabular form and are subject to stringent primary and secondary disclosure rules. Confidential data is deleted when no longer required for statistical production.

Individual companies' data is treated as strictly confidential under the Statistics Act, 1993. Results are aggregated to industry level.

EAA outputs are anonymised aggregates with primary and secondary statistical disclosure rules applied to ensure that no information on identifiable persons or entities are revealed. Where one or two companies dominate the national output for a particular sector of agriculture, the results for this sector are never published on their own. They are published only in combination with some other sector(s).

Only persons appointed as Officers of Statistics by the Director General of the CSO under the Statistics Act 1993 and who have signed the Declaration of Secrecy have access to confidential data. The CSO computer networks are tightly secured. Access to data on the network is limited, based on business needs only and is password controlled. Passwords are subject to regular updates. Access to data must be authorised at senior management level and authorisation is regularly reviewed. Any misuse of information collected by the CSO constitutes a criminal offence and, upon conviction, the perpetrator is liable for severe penalties.



10. Release Policy

10.1. Release Calendar

The CSO has two release calendars, one internal, which is available to staff only, the other available to the public on the CSO's website. The internal calendar is completed a minimum of one year in advance and helps with the scheduling and coordination of existing and new releases office wide.

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

The CSO follows the principles contained in the European Statistics Code of Practice, including Principle 6 on objectivity and impartiality.

All of our 3 releases are pre-announced on the publicly available release calendar no later than at 12 noon on the Thursday of the week prior to publication. The data is then published on our website at 11:00am on weekdays at which time it becomes publicly available to all users, free of charge. See below link for full details of the CSO's dissemination policy.

<https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/csodisseminationpolicy/>

The CSO recognises that in very limited circumstances, pre-release access may be justified. Subject to the prescribed formal application procedure being followed and approved by the CSO's Director General, pre-release access may be granted at 10:00am on the morning of the release to named officials. Pre-release access to the three 'Output, Input and Income in Agriculture' releases is granted to two named officials in our Ministry of Agriculture, the 'Department of Agriculture, Fisheries and the Marine' (DAFM). Full details of the CSO's pre-release access policy is contained in the following link:

<https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/csopolicyonpre-releaseaccess/>

11. Frequency of Dissemination

The statistics are disseminated on an annual basis, however there are three publications, corresponding to the EAA first, second and final estimates. The timeframe for their release on the CSO website is as follows:

- 'Output, Input and Income in Agriculture - Advance Estimate': Due for publication on the CSO website in December, at T-3 weeks.
- 'Output, Input and Income in Agriculture - Preliminary Estimate': Due for publication in March, at T+11 weeks.
- 'Output, Input and Income in Agriculture - Final Estimate': Due for publication in June, at T+26 weeks.



12. Accessibility and Clarity

12.1. News release

There is no news release for this publication.

12.2. Publications

The most recent releases of *Output, Input & Income in Agriculture*, Advance, Preliminary and Final Estimate can be found on the CSO website directly from this link:

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

The most recent release of *Regional Accounts for Agriculture* is also available on the CSO website from this link: <https://www.cso.ie/en/statistics/agriculture/regionalaccountsforagriculture/>

12.3. On-line database

The data contained in the releases can be accessed in tabular format from the CSO's main dissemination database PxStat. Please find below direct links to the different tables:

'Output, Input and Income in Agriculture' tables on the CSO database: <https://data.cso.ie/product/OIIA>

'Regional Accounts for Agriculture' tables on the CSO database: <https://data.cso.ie/product/RAA>

12.3.1. AC 1. Data tables - consultations

During the period 8th Aug 2023 to 6th August 2024, there were 11,236 web hits on the 'Output, Input and Income in Agriculture' main table (Table 'AEA01'). There were a further 9,924 hits on the Regional Accounts for Agriculture's table (Table 'ACA03') over the same period.

12.4. Micro-data Access

Not applicable.

12.5. Other

Information on the 'Output, Input and Income in Agriculture' and 'Regional Accounts for Agriculture' was also published annually in the Statistical Yearbook of Ireland up to 2021;

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

Special data submissions are prepared annually for Revenue, DAFM and Eurostat, and quarterly for National Accounts.

12.5.1. AC2. Metadata consultations

Not calculated.

12.6. Documentation on Methodology

Summary information on the methodology used to produce the OIIA release is publicly available at the following link: <https://www.cso.ie/en/methods/agricultureandfishing/oiaa/>

Background notes are available here:

<https://www.cso.ie/en/methods/surveybackgroundnotes/outputinputandincomeinagriculture/>



In addition to the previous listed publicly available documentation on methodology, there are also numerous other documents outlining the methodology used to produce each variable required for the EAAs. Detailed process maps outlining the flow and timing of work required to produce the EAAs with links to manuals, file locations and the SAS programs used are available for internal use and are reviewed annually.

There are also detailed manuals for each variable required for the EAAs. These step by step guides include templates for raw data, snapshots of files, details on when raw data is available, timelines for requesting the raw data, contact details for source data, the location of files and SAS programs used to process/extract raw data, where and how raw data is entered into the files, the order in which the file can be processed, the processing required to create the output variables and the validation and consistency checks to be performed on these variables.

Summary information on the methodology used to produce the Regional Accounts for Agriculture is publicly available at the following link: <https://www.cso.ie/en/methods/agricultureandfishing/regionalaccountsforagriculture/>

12.6.1. AC3 – Metadata completeness – rate

Not calculated.

12.7. Quality Documentation

Quality documentation for the surveys can be found on the CSO website via these links <https://www.cso.ie/en/methods/qualityreports/outputinputandincomeinagriculture/> <https://www.cso.ie/en/methods/agricultureandfishing/regionalaccountsforagriculture/>

In addition to the publicly available documents on the methodology used for the EAAs, there are also very detailed internal operational manuals that cover every aspect of the production of our EAA estimates. These are step by step guides that cover literally everything required for producing our statistics. For example, each manual includes a list of the inputs required to generate each of the variables required for the EAA, when these inputs are available, the contact details of the data provider, templates for the raw data, the processing required for each set of EAA estimates, the validation and consistency checks to be run and the outputs generated.

Very detailed process maps are also available that map each step to producing the EAAs, including links to databases, SAS programs used to source and process data, the detailed manuals mentioned above etc.

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.

Further details on the CSO's Quality Management Framework can be found at the following link: <https://www.cso.ie/en/methods/quality/qualitymanagementframework/>



13.2. Quality Assessment

All disseminated information produced by CSO is required to undergo an annual self-assessment exercise to evaluate the quality of the outputs and their associated processes. During the last iteration of this exercise, it was found that the methodology in use is fundamentally sound and is fully aligned with the latest European standards and relevant CSO guidelines & policies and the statistics are sufficiently accurate to meet user needs.

14. Relevance

14.1. User Needs

The way the EAA data is used depends on the needs of the user. For example, DAFM use the data to both benchmark and evaluate agricultural policy; researchers use the data to suggest developments in food and farm policies; the media uses it to inform their audience on farm incomes and expenditure while farmer representative bodies use the EAAs to advocate on behalf of farmers.

14.1.1. Main National Users

Department of Agriculture, Food and the Marine (DAFM), Teagasc, Farmer representative bodies, researchers, Media, General Public.

14.1.2. Principal External Users

Eurostat.

14.2. User Satisfaction

Not measured.

14.3. Data Completeness

14.3.1. Data Completeness rate

Not calculated.

15. Accuracy and reliability

15.1. Overall accuracy

The data used to generate these releases comes from administrative sources, other external data providers or surveys conducted for different purposes. As such the data used is not collected for the purpose of compiling the EAA and errors or biases might occur. In any case the accuracy of the information used is deemed to be sufficient for the purposes of compiling the EAA.

15.2. Sampling Error

Not applicable.

15.2.1. A1. Sampling error indicator

Not applicable.



15.3. Non-sampling Error

Not applicable.

15.3.1. Coverage error

Not applicable.

15.3.1.1. A2. Over coverage rate

Not applicable.

15.3.1.2. A3. Common units – proportion

Not applicable.

15.3.2. Measurement error

Measurement errors are difficult to assess since most of the data comes from administrative sources, external data providers or surveys conducted for different purposes.

15.3.3. Non-Response Error

Not applicable.

15.3.3.1. Unit non-response rate

Not applicable.

15.3.3.2. Item non-response rate

Not applicable.

15.3.4. Processing error

Processing errors are kept to a minimum through the rigorous procedures for editing and error checking.

15.3.5. Model assumption error

Not applicable.

16. Timeliness and punctuality

16.1. Timeliness

The agreed timeframe for the publication of these releases, titled 'Output, Input and Income in Agriculture Advance/Preliminary/Final Estimates' are as follows:

- 'Output, Input and Income in Agriculture - Advance Estimate': Due for publication on our website in December, at T-3 weeks.
- 'Output, Input and Income in Agriculture - Preliminary Estimate': Due for publication in March, at T+11 weeks.
- 'Output, Input and Income in Agriculture - Final Estimate': Due for publication in June, at T+26 weeks. This estimate is based on an almost complete set of annual data and provides higher levels of detail in comparison to the 'Advance' and 'Preliminary' estimates.

The agreed timeframe for the publication of the release 'Regional Accounts for Agriculture' is T+42 weeks.



All releases are pre-announced on the publicly available release calendar no later than at 12 noon on the Thursday of the week prior to publication. The data is then published on our website at 11am on weekdays, at which time it becomes publicly available, free of charge to all.

16.1.1. TP1. Time lag – First results

The Output, Input & Income in Agriculture release:

- 'Advance' estimate: T-3 weeks.
- 'Preliminary' estimate: T+11 weeks.

The Regional Accounts for Agriculture release:

No provisional results are compiled or published for this release.

16.1.2. TP2. Time lag – Final results

The 'Final' estimate for "Output, Input & Income in Agriculture": T+26 weeks.

16.1.3. TP2. Time lag – Regional Accounts for Agriculture

The "Regional Accounts for Agriculture release: T+42 weeks.

16.2. Punctuality

All EAA estimates were delivered to Eurostat ahead of schedule. While the OIIA 2023 Advance and Preliminary Estimates both were published on time, due to delays in the receipt of data from one of our key data providers, the OIIA Final Estimate 2023 was not published until T+35 weeks.

16.2.1. TP3. Punctuality – Punctuality - delivery and publication

National releases: Advance and preliminary estimates of the OIIA and Regional Accounts: 0 days.

National release: Final estimates of the OIIA: +9 weeks

Eurostat dissemination: 0 days.

17. Comparability

17.1. Comparability – Geographical

The Economic Accounts for Agriculture (EAA) are based on a harmonised methodology and results are therefore directly comparable across the EU member states and the EEA.

The results published domestically are basically the same as those transmitted to Eurostat, although there are some minor differences between the formatting of national releases and our EU transmissions. The data sent to Eurostat is more detailed than what is published nationally. Also, for the benefit of domestic users, cereals produced for own/inter farm consumption, while classified as cereals on our EU transmissions, are categorised as forage plants in our domestic releases.

17.1.1. CC1. Asymmetry for mirror flow statistics

Not applicable.

17.2. Comparability over time

While the current series start in 1990, the results from different time periods are not always directly comparable. The ceasing of commercial sugar beet production in Ireland in 2005 and turf production in 2013 led to a cessation of these items in the accounts' series with the corresponding effects on output.



Other reasons, such as the timing of the payments of subsidies, may lead to results being incomparable year on year. For example, the considerable increase in Operating Surplus in 2005 in comparison to 2004 was a result of the payment of large arrears for subsidies on product after the introduction of the Single Farm Payment. Consequently, in 2006 a large drop in Operating Surplus was observed as arrears payments were not repeated.

On the whole, the results are comparable over time although there may be some minor breaks in the series due to changes in the base year resulting from changes in the baskets of goods used by Agriculture Prices.

17.2.1. Length of Comparable Time series

34 years.

17.3. Coherence – cross domain

The EAAs are a satellite account of the European System of Accounts (ESA2010) and the results are therefore fully coherent with National Accounts. There are other reports published in Ireland that also attempt to estimate farm incomes and assess economic activity in agriculture, such as the 'National Farm Survey' publication by Teagasc. However, the methodology and data sources used in this release differ considerably from those used by CSO and the results are not always directly comparable. When allowances are made for the different coverage (the NFS excludes very small farms, defined as farms with a standard output of less than €8,000, as well as all pig and poultry farms), comparative analysis show that the results correlate well.

17.3.1. Coherence – Sub annual and annual statistics

Not applicable.

17.3.2. Coherence with National Accounts

The EAA data is used by National Accounts for their estimates and other than those described in Annex 1 of Regulation (EC) 138/2004, there is full coherence between the EAAs and National Accounts.

17.4. Coherence – internal

There is full internal coherence.

18. Cost and Burden

As no survey is issued specifically for the production of the EAAs, no estimates are made of the cost and burden of producing this output.

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

Three estimates of *Output, Input and Income in Agriculture* (OIIA) are produced for each year, namely 'Advance', 'Preliminary' and 'Final' estimates. Revisions to previous years' estimates are made as part of the production process for the Final estimate release. When preparing the final estimates for the current year's release (year T), routine revisions are made to the final estimates for the two previous years also (i.e., years T-1 and T-2). These revisions to previously published final estimates tend to be relatively minor.

Only in exceptional circumstances are non-routine revisions made to any years prior to those (i.e., years T-3 or earlier) and this non-routine revised data will be published at Final estimate release stage on the PxStat Open Data Portal on the CSO website.

Following EU recommendations, a rebase of Agricultural Prices occurs every 5 years. Major revisions may occur due to the routine rebase. Major revisions are also required if, for example, there are major methodological or classification changes, or if our data providers advise us of significant amendments to their original data. The latter are rare and if they do occur, revisions will be applied retrospectively to all years affected. In some very rare circumstances, for example major classification changes, the revisions can be made back to the beginning of the time series.

The revisions cycle for the *Regional Accounts for Agriculture* release is the same as that for the Final estimates OIIA release. Any routine or major changes made to the OIIAs are also made to the Regional accounts, as these two sets of accounts are always based on the same data and reconcile with each other.

19.2.1. Data Revision – Average size

Not calculated.

20. Statistical processing

20.1. Source Data

The Department of Agriculture, Food & Marine (DAFM) provide large amounts of administrative data on livestock slaughtering, live trade in animals, commercial sales of poultry, eggs, honey, vegetables, cereals and other output items. They also provide data on the consumption of feeding stuffs, fertilisers, pesticides and the subsidies paid to farmers.

The 'Animal Identification and Movement' database supported by DAFM is an important source of information for estimating changes in the stocks of cattle.



Surveys of agricultural holdings conducted by the CSO such as the 'June Crop and Livestock Survey', 'Farm Structure Survey' (FSS) and 'Census of Agriculture' (CoA) provide the data on livestock numbers (sheep, pigs), the area planted and yield of different crops and other items.

The CSO's survey of creameries provides data on monthly and annual intake of manufacturing and liquid milk.

Absolute prices of most output and input accounting items are collected by the CSO for the compilation of Agricultural Price Indices (API). These are used to estimate the values of the accounting items and ultimately to compile the accounts.

The CSO's 'National Accounts' division provides the data on Gross Fixed Capital Formation (GFCF), Interest Received and Financial Intermediation Services Indirectly Measured (FISIM).

The 'National Farm Survey' (NFS), conducted annually by Teagasc, is an important data source. The data from this survey is used to estimate multiple items of intermediate consumption including energy costs, expenditure on maintenance and repairs, veterinary expenses, insurance and other services.

Data from multiple other sources such as Bord Bia and ICMSA are also used.

20.1.1. Population and sampling frame

Not applicable.

20.1.2. Sampling design

Not applicable.

20.1.3. Survey size

Not Applicable.

20.1.4. Survey technique

Data is collected by email, telephone, internet or from printed media.

20.2. Frequency of data collection

Depending on the availability of data from our data providers, some data is provided annually, while other data is available and collected for each of the three annual releases.

20.3. Data Collection

The EAAs are compiled using data from both administrative and non-administrative sources. No survey is conducted specifically for the purpose of compiling the EAAs.

Publicly available data is obtained from printed reports or downloaded from the internet. Any other data is requested via e-mail, followed up by telephone reminders if necessary.

Administrative data provided by DAFM is the main source of volume information for livestock, fertiliser, feeding stuffs and some other items. This is the best data available in the country, in most cases based on a census of producers (e.g. abattoirs) or traders and are generally of very good quality.

Prices for these items are collected by the CSO for the purpose of compiling an API and are of good quality. DAFM also provides value data on cereals, vegetables, fruit and a number of other items, which are the best available and of sufficiently good quality.



Milk volumes are obtained from CSO's Milk Statistics survey, which is a census of creameries, while the prices are collected from a large sample of the latter.

The majority of data on intermediate consumption comes from Teagasc's NFS survey. This is an important source of very detailed information.

20.3.1. Type of Survey/Process

A combination of administrative, internet, and survey data collected for other purposes.

20.3.2. Questionnaire (including explanations)

Survey forms or questionnaires are generally not suitable to collect the required data.

20.3.3. Survey Participation

Not applicable.

20.3.4. Data Capture

The data is received by email, telephone, internet or from printed media and is entered and stored in Excel spreadsheets.

20.4. Data Validation

The EAAs are processed using Excel spreadsheets. The first checks are to ensure that when creating new worksheets for the estimates, all formulas are correctly copied and amended as necessary.

Once received, data is checked for any obvious errors. Large deviations from previous periods or expected values are queried with the respondent and changed if necessary. Otherwise, note is taken of the explanation for the change. Some of the data received, e.g., slaughterings and exports, can be cross-checked against industry publications, e.g. Bord Bia.

Detailed validation checks are done on both the disaggregated and aggregated data. When source data are received, they are entered into the data collection repository. The accuracy of the data entry is then manually checked for any data entry errors. Once the data entry has passed the initial validation checks, a year on year comparative analysis of the source data is performed. Any unexplained significant changes in the source data are queried with the data provider and the source data is then either amended, or the explanations for the changes are noted.

If source data is not available at the time of preparing EAA estimates, missing values are imputed for. The calculation of these values is checked for consistency with previous years' data and for internal consistency with any other available data that may be correlated to the missing data.

Additional edits called *Implied Price Change* checks are run for all major output and input items. As a normal practice in EAAs, three values are produced for each item: at current, previous year and constant prices. The result of the division of the values for the reference and previous year at constant prices is, in fact, a volume index. The same ratio computed for values at current prices is a value index. Finally, the ratio of value to volume indices describes an implied price change. Implied price changes may be then validated against the corresponding Agriculture Price Index which is produced independently by the CSO's Agriculture Prices section. Obviously, this exercise can only be carried out for items for which a price index is available.

The results of this analysis may lead to further investigation, such as querying the validity of the source data if this was not previously done, rechecking formulas used in the processing of the data, consulting with industry experts etc. The conclusion of this analysis may necessitate changes to original



estimates/source data which in turn means that the whole validation process recommences from the data entry stage.

All completed accounts items are subject to multiple layers of checking. Once an account item has been completed it is passed to the next supervisor for checking. The checking process of the individual account items is escalated upwards to statistician level. The completed release tables together with an explanatory note on significant year-on-year changes is passed to the Senior Statistician in Agriculture for analysis before proceeding to release stage.

20.5. Data Compilation

Different methods are used to compute outputs when preparing the EAAs, depending on the availability and periodicity of price, volume or value data. The methodology used for major inputs and outputs is described below:

a. Livestock

The number of animals slaughtered, and meat factory prices are available on a monthly basis. Monthly values can then be easily calculated and further aggregated to provide quarterly or annual values.

Monthly data on trade in live animals are available from DAFM, as are average mart prices for different types of live cattle and sheep. The latter are coming daily from numerous marts surveyed by the CSO's 'Agricultural Prices' (API) section. Prices for live pigs are not available from marts; instead, imputation based on the price of pork and the average carcass weight of a pig is used. Hence monthly, quarterly or annual values of livestock trade can be calculated.

Change in stock numbers can be calculated on a quarterly basis for cattle using AIM data. Pig stock numbers are available on a semi-annual basis from the results of CSO's June and December surveys. Sheep stock numbers are also available semi-annually, the June data also coming from the CSO's June survey with the December stock numbers coming from DAFM's Sheep Census. Mart prices are used to estimate the values of change in stocks.

The total output for livestock items can then be calculated using the following formula:

$$\text{Slaughtering} + \text{Live Exports} - \text{Live Imports} + \text{Change in Stocks} = \text{Total Output at Producer Prices}$$

b. Milk

Intake volumes and prices are available monthly from the CSO's Milk Statistics survey and Agricultural Price Indices (API). Therefore, the same methodology used for livestock can be applied to derive quarterly and annual milk values, with an adjustment made for on-farm consumption of milk.

c. Cereals, Vegetables, Fruit, Honey

The total annual value of commercial sales is provided directly by DAFM and other providers.

d. Fertilisers and Feeding Stuffs

DAFM provides quarterly data on the consumption of different types of fertilisers and feeding stuffs in the country, while prices are available from API on a monthly basis. The values can then be produced on a quarterly basis and aggregated into annual totals.

e. Expenditure on Energy & Lubricants, Maintenance & Repairs and Other Goods & Services

The NFS provides average estimates of output and expenditure per farm stratified by farm size and type (e.g., dairy, cattle). This survey samples just over 1% of the total population. The average costs per farm are then grossed up by the number of agricultural holdings in the respective strata recorded at the latest



Census of Agriculture. As the structure of expenditure on pig farms is considerably different from other farms and these farm types are not included in the NFS, separate calculations are carried out to estimate costs incurred on pig farms.

Apart from value at current prices, two other values are computed for each accounting item, namely value at previous year's prices and at constant prices. These are calculated using the current year's volume and the prices from the previous year and from a base year. Comparing values at constant prices allows one to estimate the performance of the agricultural sector not only in value but also in volume terms, i.e., to negate to some degree the effect of price changes.

Farm population estimates are based on the results of the most recent Census of Agriculture.

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

Imputation is only used to produce 'Advance' and 'Preliminary' estimates and is necessary because the data at these early stages are incomplete.

Where partial annual data is available, e.g., livestock slaughterings and trade, milk output, consumption of feeding stuffs and fertilisers etc., the values for the missing months (normally Quarter 4 only) are estimated using year-to-date trends, year on year trends and the forecasts of industry experts such as Bord Bia, Teagasc and DAFM. Prices are assumed to remain static at the last known levels (normally September) until the end of year.

Different imputation methodologies are used in the absence of any partial data. For example, cereals and potato output values are estimated by using the area under crop, yields and harvest prices, which are known from the CSO's June survey and API. This only yields an estimate for the total value of the harvest, part of which is used as fodder and never sold commercially. To arrive at the value of commercial sales, the average ratio of commercial sales to total harvest value from several previous years is applied. The value of other items, e.g., wool, current and capital operating expenses etc., are obtained by assuming no change of volume in the year and using API to up/downscale the previous year's value.

20.5.1.1. A7 Imputation rate

Not calculated.

20.5.2. Grossing and Weighting

For most items, national totals are readily available from DAFM and other data providers, so no grossing or weighting is necessary.

However, for input items sourced from the National Farm Survey (NFS), grossing is applied. The NFS provides average estimates of output and expenditure per farm stratified by farm size and type (e.g., dairy, cattle). It samples just over 1% of the total population. The average costs per farm are then grossed up by the number of agricultural holdings in the respective strata recorded at the latest Census of Agriculture. As the structure of expenditure on pig farms is considerably different from other farms, separate calculations are carried out to estimate costs incurred on pig farms.

20.6. Adjustment

The main adjustments made to data received are adjustments to derive a VAT exclusive value/price. For the valuation of intra-farm consumption of cereals, we adjust the commercial price by a ratio provided by industry experts. We also adjust the value of some imports (seeds), where the values available are based on wholesale prices. This is done by adding a retail mark up to the wholesale prices, again using ratios provided by industry experts,

20.6.1. Seasonal Adjustment



Not applicable.

21. Comment