

**Department of Agriculture, Environment and Rural Affairs**

**Policy, Economics and Statistics Division**

**THE AGRICULTURAL CENSUS**

**IN**

**NORTHERN IRELAND**

**METHODOLOGY AND QUALITY REPORT**

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Further information

Publications relating to the Annual Agricultural Census are available on the DAERA website at [www.daera-ni.gov.uk/landing-pages/statistics](http://www.daera-ni.gov.uk/landing-pages/statistics)

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## Contents

<b>Introduction</b> .....	5
Agricultural Census Coverage .....	5
History of the Agricultural Census .....	5
Changes to the Census System .....	6
Data Uses .....	8
<b>Terms and Definitions</b> .....	10
Farms and Farm Structure .....	10
Farms .....	10
Farm Business Size .....	10
Farm Business Type .....	11
Agricultural Labour Force .....	13
Less Favoured Area (LFA) .....	14
Other Terms .....	14
<b>Methodology</b> .....	16
Creation of the Agricultural Census Sample .....	16
Collecting the data .....	18
Cleaning and validating the data .....	18
Geography .....	18
Disclosure control methods .....	17
<b>Data Notes</b> .....	20
Farm numbers.....	20
Farmers and Workforce.....	20
Land Use.....	20
Cereals.....	21
Potatoes.....	21

Forage Maize .....	21
Horticulture.....	22
Cattle .....	22
Sheep .....	22
Pigs.....	22
Poultry.....	23
Horses.....	23
Goats .....	24
<b>Data Quality.....</b>	<b>25</b>
Data Quality .....	25
Bias and non-response .....	26
<b>Data Access .....</b>	<b>27</b>
DAERA Website.....	27
Northern Ireland Neighbourhood Information service (NINIS).....	27
Open Data.....	28
Twitter .....	28
Arrangements for providing controlled access to micro-data.....	28
<b>Annexes.....</b>	<b>29</b>
Annex A Standard Labour Requirements (SLR) Factors .....	29
Annex B Standard Outputs (SO) Factors.....	30
Annex C Comparison of types and size.....	32
Annex D Map of Less favoured Areas .....	33



# Introduction

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The Agricultural Census statistical publication, which includes key facts, commentary and selected data tables is available at <https://www.daera-ni.gov.uk/articles/agricultural-census-northern-ireland>.

Also published are detailed Agricultural Census statistics tables.

This report provides the user with detail on the methodology used to produce the Agricultural Census statistics and provides some detail on data quality.

## Agricultural Census Coverage

The Agricultural Census is conducted annually in June. Under a revised methodology a full census sample was created using Departmental Administration data. All farms were contacted and invited to participate in the survey. In response to COVID-19, the data collection for the 2020 Farm Census moved entirely online for the first time. This was supported by a media campaign to encourage completion. A large response was achieved from the online-only collection and focused telephone follow-up compared to online returns in previous years. Due to the success of the 2020 census it has been decided that a similar approach will be used for the Agricultural Census in Northern Ireland in future years with no return to paper data collection.

For farms that failed to submit an online response, estimates were completed for crop areas, livestock and labour figures. For the most part, these estimates were based on data collated from other administrative systems within the Department, or from the latest return from each farm, or in some cases farms with substantive numbers or areas of pigs, poultry or mushrooms were telephoned for information. The statistics are thus compiled from a survey of farm businesses augmented by administrative data. This has enabled detailed farm census statistics to be produced.

## History of the Agricultural Census

The first Agricultural Census in Ireland was conducted in 1847, in response to the need for information on the famine conditions at that time. The main use of the census

continues to be to provide information for those involved in the industry or responsible for agricultural policy. With data stretching back over 150 years, the records provide an interesting insight into the changes which have taken place in farming. The statistics, relating to 50 year intervals, show how Northern Ireland has changed from a mixed farming economy to one dependent on grazing livestock.

#### Crop Areas and Livestock Numbers in Northern Ireland, 1868-2018

	1868	1918	1968	2018
<i>Crop areas ('000 ha)</i>				
Cereals	226	192	90	30
Potatoes	99	79	20	4
Flax	55	45	0	0
Hay and pasture	687	n.a.	720	808
<i>Livestock numbers ('000 head)</i>				
Cattle	694	770	1,207	1,630
of which Cows	n.a.	n.a.	382	567
Sheep	321	409	962	2,006
Horses	114	n.a.	n.a.	9
Pigs	119	115	1,012	634
Poultry	2,050	5,772	12,059	26,031

#### Changes to the Census System

Since 1950, there have been a number of changes in the coverage of the census and the way the census data were collected. These are summarised below:

<b>Years</b>	<b>Census methods and coverage</b>
Until 1954	Census information was collected by police enumerators who identified and visited all farms, including those under one acre. This information was given to them orally by the farmer and recorded in special books.
1954-1972	A postal census was introduced in 1954. This used the list of farmers which had been identified in the 1953 census, but included only those of one acre or more. From this time onwards, a distinction was made between "main" holdings which were included in the census and "minor" holdings (i.e. those under 1 acre) which were surveyed on a sample basis using fewer questions. Estimates for the minor holdings were made of their total crop areas and livestock numbers, but these holdings were not included in the count of farms.

Years	Census methods and coverage
1973-1980	<p>In 1973, in conformity with a similar change in the rest of the United Kingdom, an alteration was made in the scope of the census in Northern Ireland. From then until 1980, the main census covered holdings which had at least 10 acres of land, plus any below that size which had any full-time agricultural workers or whose livestock and cropping amounted to an annual estimated labour requirement of more than 40 man-days. This removed some 7,700 holdings from the old register but, at the same time, included a number of “minor” holdings of less than one acre. Arising from these adjustments the net reduction in the number of holdings covered in the main census was some 5,500.</p>
1981-1996	<p>A new system of farm classification and changes to the minimum threshold were introduced in 1981. This new threshold restricted the census to holdings which had (a) a total land area (owned or taken on long-term lease) of 6 hectares or more or (b) any full-time workers other than the farmer or (c) a farm business size of 1,000 ecus of Standard Gross Margin. This change resulted in the exclusion of a further 6,690 “minor” holdings from the main census between 1980 and 1981.</p>
1997	<p>In 1997 the basis of the Northern Ireland Agricultural Census was changed from a “census register” to a central register of all of the Department’s “clients”. The change was made possible as a result of the introduction of IACS and of work undertaken in DAERA to streamline administrative functions. This resulted in a common means of identification of clients across all schemes, with each farmer who is in contact with the Department being allocated a unique Client Reference Number and each “Client” being linked to a Business Identifier. The population surveyed in the 1997 census consisted of one “Client” in each business for which a census return with crops and/or livestock was obtained in the preceding year or which had received a subsidy in respect of crops or livestock during the preceding 15 months. Also included were those with a milk quota and those known by DAERA to be engaged in the production of pigs, poultry, potatoes or horticultural crops. The distinction between “main” and “minor” holdings was discontinued.</p>
1998	<p>Sampling was introduced and forms were issued to only half the farms categorised as “Very Small”. The records which were aggregated to provide the published results include 1998 returns from the sampled farms and 1997 returns from those not in the sample for 1998. The latter were trended to reflect the changes between 1997 and 1998 as recorded by the sampled farms. New information led to the addition of a further 166 pig farms involving no owned land; estimates of pig numbers in previous years were revised.</p>

<b>Years</b>	<b>Census methods and coverage</b>
1999	The same level of sampling applied as in 1998 but the survey included all pig farms.
2000	A full census of all farm businesses in Northern Ireland was carried out.
2001	A sample survey was carried out on the same basis as that conducted in 1999. Farms on which animals had been slaughtered due to Foot and Mouth outbreaks were not surveyed. Estimates were made for the crop areas, livestock and labour numbers for these farms.
2002 - 2006	A sample survey was carried out on the same basis as that conducted in 1999. Where available, administrative data were used in conjunction with previous census data, to provide estimates for those that were not sampled, or failed to make a return in the current year.
2007 - 2009	A sample survey was carried out. The number of cattle questions on the survey form were reduced as additional data was sourced from APHIS (Animal and Public Health Information System) to determine cattle numbers. No poultry questions were asked, with data on poultry being sourced from the NI Bird Register.
2010	A full census of all farm businesses in Northern Ireland was completed.
2011 - 2012	Sample survey completed similar to years 2007 -2009.
2013 -	Sample survey completed similar to 2011-2012. Pig questions removed from paper form. Data on pigs sourced from NI Annual Inventory of Pigs.
2020	A full census of all farm businesses in Northern Ireland was completed. The farm census population was sourced using available departmental administrative data and estimation processes were updated and improved. Survey was completed entirely online for the first time. Questionnaire was streamlined and shortened to reduce burden on farmers and encourage online completion.

## Data Uses

Agricultural census statistics are used for a wide range of purposes.

The data is used by DAERA to provide an evidence base for policy development and, as such, it is used to assess the outcomes of policies under evaluation and to predict the impacts of policy options that are under consideration to support agriculture in Northern Ireland.

Researchers make extensive use of data to construct models of the agri-food sector that are needed to undertake detailed investigations of agriculture, trade and environmental policies.



Livestock numbers and land use data are used to estimate greenhouse gas emissions from agricultural sources for the UK greenhouse gas inventory and to monitor changes in emission levels over time.

Farmers make use of data to inform themselves about changes in the structure of the industry at regional level and at lower levels of geography down to Ward level.

Producer representative organisations use agricultural census statistics to assist with lobbying government departments and political representatives, while food processors and suppliers of goods and services to the farm sector uses data in business planning and decision-making on capital investment.

# Terms and Definitions

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## Farms and Farm Structure Farms

In the census, a farm was defined in accordance with the definition adopted for European Union surveys on the structure of agricultural holdings, namely:

a single unit, both technically and economically, which has a single management and which produces agricultural products

Only those with at least one hectare of agricultural land or with any cattle, sheep, pigs or significant poultry or horticultural crops were defined as a farm.

## Farm Business Size

Farm business size is determined by calculating each farm's total Standard Labour Requirement (SLR). Standards or norms have been calculated for all major enterprises. The total SLR for each farm is calculated by multiplying its crop areas and livestock numbers by the appropriate SLR coefficients and then summing the result for all enterprises on the farm.

Prior to 2004, the farm business size had been determined by calculating each farm's total Standard Gross Margin (SGM). However, it was felt that using SLRs was a more appropriate and accurate method to size farm businesses in the UK.

To show year-to-year changes in business size, the enterprise SLR coefficients are held constant for a number of years. In UK agricultural statistics, business size is described in terms of five SLR size bands.

## UK agricultural statistics business size bands

Size	Standard labour unit*
Very Small	Less than 1
Small	1 < 2
Medium	2 < 3
Large	3 < 5
Very Large	5 or more

\*1 Standard labour unit = 1900 hours

Since there are very few farms in the 'Very Large' size range in Northern Ireland, these are included in the 'Large' category in Census analyses.

The SLR values currently in use cover the five year period centred on 2013 and can be found in Annex A. It is worth noting SLRs are generally standard across the UK, but are 50% higher for field enterprises in Northern Ireland to reflect smaller field sizes.

## Farm Business Type

The system of classifying farms according to the type of farming found on a holding is set out in Commission Regulation (EC) 1242/2008 and explained in greater detail in the EU Farm Accountancy Data Network (FADN) Typology Handbook RI/CC 1500 rev.3.

Depending on the amount of detail required, farms can be classified into 1 of 62 types. Individual farms are allocated to a type category on the basis of the aggregate value of farm outputs. As it is not feasible to estimate the value of outputs on a farm-by-farm basis, Standard Outputs (SOs) are calculated as reference values for a variety of farm products. The SO of a specific product (crop or livestock) is the average monetary value (per ha or head) of agricultural output based on regional farm-gate prices over a 5 year period. The SO excludes direct payments and no costs are deducted. Once the numbers of livestock and hectares of crop for an individual farm have been multiplied by the relevant SOs, it is allocated to a type category depending on where most of the total SO comes from. The SO values in use at the moment cover the five year period centred on 2013 and can be found in Annex B.

For UK statistical purposes, the 62 farm types (not all of which are found in Northern Ireland) are grouped into 10 ‘robust’ categories which have particular relevance to UK conditions.

The 10 UK categories used are:

Cereals	Farms on which cereals and combinable crops account for more than two-thirds of the total SO.
General cropping	Farms which do not qualify as cereals farms but have more than two-thirds of the total SO in arable, including field scale vegetable, crops or in a mixture of arable and horticultural crops where arable crops account for more than one-third of the total SO and no other grouping accounts for more than one-third. In addition, farms with a substantial area of grassland but few livestock are also included within this farm type.
Horticulture	Farms with more than two-thirds of the total SO in horticultural crops (including specialist mushroom growers).
Specialist pigs	Farms of which pigs account for more than two-thirds of total SO.
Specialist poultry	Farms on which poultry account for more than two-thirds of total SO.
Dairy	Farms on which dairy cows account for more than two-thirds of the total SO.
Grazing livestock (LFA)	Farms wholly or mainly in the Less Favoured Area which do not qualify as Dairy farms but have more than two-thirds of the total SO in grazing livestock (cattle and sheep).
Grazing livestock (Lowland)	Farms wholly or mainly outside the Less Favoured Area which do not qualify as Dairy farms but have more than two-thirds of the total SO in grazing livestock (cattle and sheep).
Mixed	Farms that have no dominant enterprise and do not fit into the above categories.
Other types	Farms that specialise in enterprises which do not fit the definitions of mainstream agricultural activities. For the most part this category is made up of specialist horse farms plus other farms that are unclassified.

To ensure a stable framework for comparison and analysis SO values, once calculated, are held constant for a number of years. However, in 2020 the business type classification was updated from the 2010 SO co-efficients to the more current

2013 SO values to align with other publications produced by the Department and across the UK. It is therefore worth noting that any comparison done on farm type data between 2020 and preceding years is not directly comparable. Annex C shows a comparison of the number of farms by type based on the 2010 and 2013 Standard Outputs (SO) in 2019 and 2020.

### Agricultural Labour Force

In conjunction with the other UK Agricultural Departments, an in-depth investigation was carried out in 1995 into the quality of statistics on the agricultural labour force. This indicated that while the number of workers recorded on each census form was generally realistic, there was confusion about the categories of workers into which farmers were asked to record themselves and other persons working on their farm. Consequently, the questions were revised to provide clearer definitions of the various categories and to bring these more into line with the requirements of data users. The definitions now used are:

Regular workers	Those who work on the farm during at least 20 weeks per year.
Full-time	Working 30 hours per week or more.
Part-time	Working less than 30 hours per week.
Casual workers	Those who work less than 20 weeks per year.

In 2020 the labour questions were streamlined further, classifications were split into three main categories:

- 1) Principal Farmer, spouses and partners,
- 2) Other employees, and
- 3) Casual staff.

All of which were requested by gender and the former two by full-time/ part-time bands. To simplify the questionnaire and reduce user burden questions relating to paid/unpaid labour were removed.

## Less Favoured Area (LFA)

The term Less Favoured Areas (LFA) is used to describe those parts of the country which, because of their relatively poor agricultural conditions, have been so designated under EU legislation. These areas, which include developed land as well as that used for agriculture and forestry, extend to 826,000 hectares.

The LFA consists of Severely Disadvantaged Area (SDA) which is the original LFA as designated in 1975 (487,000 ha) and the Disadvantaged Area (DA) which was designated following reviews in 1984 (335,000 ha) and 1990 (3,700 ha). A map of Less Favoured Areas is included in Annex D.

To reduce user burden questions concerning LFA were removed from questionnaire from 2020. Rather Departmental Administrative Data were used to allocate farm businesses with a LFA category. Where administrative data is unavailable for a specific business, an estimation process will be used whereby LFA values were allocated from the latest return from each farm. In the case were the latter is also unavailable, LFA values are estimated by way of using information from the nearest neighbor.

## Other Terms

Conacre	A system of short-term lettings, nominally for 11 months or 364 days
Less favoured areas (LFA)	Areas of poorer agricultural land which qualify for special aid under EU schemes
SDA	Severely Disadvantaged Areas, i.e. land classed as LFA under Directive 75/268/EEC
DA	Disadvantaged Areas, i.e. land classed as LFA under Directive 84/169/EEC
Area farmed	Area farmed by each business on the census date. Agricultural land which is taken in conacre by persons operating a business is included but owned land which they let out in conacre is not. Common rough grazing is excluded
Crops & grass areas	Total area excluding rough grazing, set-aside, farm woodlands and non-agricultural land.
Livestock numbers	Numbers on farms on the census date.

Cereals	Barley, wheat, oats and mixed corn
Dairy cows	Cows in milk or in calf, mainly for producing milk for sale; includes heifers in milk but excludes in-calf heifers
Beef cows	Cows in milk or in calf, mainly for producing calves for beef; includes heifers in milk but excludes in-calf heifers
Breeding ewes	Female sheep over one year which lambed in the current season or are for future breeding. (In 1995 and earlier years, only those to be put to the ram in the current year were included)
Sows & gilts	Includes in-pig gilts but excludes gilts not yet in pig. A female pig is called a gilt if she hasn't had piglets yet and a sow if she has
Total poultry	Hens, pullets, breeding fowl, broilers, turkeys, geese, ducks and other fowl. A 'pullet' is a young hen that is under 1 years of age, and has not started laying eggs yet. A broiler is any chicken that is bred and raised specifically for meat production

# Methodology

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In recent years the Agricultural Census was mainly a postal survey supplemented with administrative data. However in 2020 there were key methodological changes both in how the Agricultural Census data was collected and processed. These included;

- The creation of a revised farm census sample using departmental administrative data sources.
- Due to COVID-19 a letter of invitation was issued to all farms inviting them to participate in an online survey whereby data was collected online only for the first time.
- Some questions were simplified or removed to streamline the online collection experience and reduce the burden on farms. Questions on pigs and poultry, normally gathered from the NI Annual Inventory of Pigs and Update of NI Bird Register, were added because the inventories were postponed until later in 2020.
- Data for the cattle section was extracted from the Animal Public Health Information System (APHIS), cattle tracing database as in previous years. In 2020 supplementary cattle questions were removed from the survey.
- Telephone support was provided for farmers who could not complete online and a focused telephone follow-up of non-responding farms was carried out.
- New estimation and imputation methods were used to create statistics for those who did not provide a return.

## Creation of the Agricultural Census Sample

In the 2020 new methodologies were adopted to create a revised farm sample using Departmental Administrative Data. This sample is an amalgam of:

- active farmers (as recorded on the Integrated Administration and Control System (IACS), subsidy payment system. Note that from 2015 when the EU subsidy system was amended, receipt of the Basis Payment Scheme (BPS) indicates an active farm).



- farmers that responded to farm census survey
- active farmers registered on the APHIS.
- active farmers gathered from the NI Annual Inventory of Pigs or that are known to the Department that are not part of the IACS system.
- active farmers gathered from the Update of NI Bird Register or that are known to the Department that are not part of the IACS system
- Sheep farmers gathered from the NI Annual Sheep Inventory or that are known to the Department that are not part of the IACS system.
- Mushroom farmers noted separately as specialist producers
- Fruit and horticultural producers known to the Department not already encountered above.

The new sampling methodology identified farms that had been included in samples from preceding years, some farms that no longer appear to be active and some farms that had existed but their characteristics meant that they couldn't be captured easily in previous sampling methodologies and as a result had never been included in a farm census sample. These later farms tended to be very small in nature and previous methods of drawing a sample simply did not have the time resource to identify them. However the improved use of administrative data has allowed the inclusion of such farms in 2020 with no extra demand on resource. It is worth highlighting that these farms are not necessarily new farming enterprises but simply farms that have never been included in the farm census sample in previous years under their current business structure. Further information on the effects of methodological changes on estimates produced can be found at: <https://www.daera-ni.gov.uk/sites/default/files/publications/daera/Farm%20Census%20Methodology%20Changes%202020.pdf>

For Northern Ireland the predominance of the cattle and sheep industries mean that a very high percentage of farms will be 'registered' through the IACS or APHIS systems. However, it is possible for some of these enterprises (particularly minority ones where no compulsory register of animals is required) to exist and not be included on the register, e.g. horses.

Farmers are deactivated from the register because they have let the Department know (by some means from the list above) that they are no longer farming. However, it is

possible that this deactivation will not take place in time for the yearly sample selection process, so each year a small number of non-active farms continue to be recognised as active. Likewise, a small number of new farms (more properly farms that have been transferred to new owners) will not be recognised in time for the sample selection procedure.

### Collecting the data

Every farm business received a letter of invitation to participate in the online survey. Data collection was completed solely online with a focused telephone follow up of non-respondents. Results are based on 12,600 completed questionnaires augmented with data from the APHIS cattle tracing system. This is a census of all cattle alive (and on farms) at June 1st.

In previous years information on poultry and pigs were sourced from the Northern Ireland Bird Register and the Northern Ireland Annual Inventory of Pigs respectively. However in 2020 the inventories were postponed to later in the year as a result of Covid-19 therefore questions on pigs and poultry were reintroduced to the survey.

### Cleaning and validating the data

The survey returns are processed and the data cleansed of logical inaccuracies. Farmers indicating that they are no longer farming are noted as inactive at this stage. For farms which do not have a survey return (through non-response) data are estimated and imputed by analysing the size and type of farms missing and those where returns have been received.

Data from APHIS for cattle are added to the framework established from the survey returns, creating a database of both actual and imputed values, which are used in calculating the year's totals.

### Geography

Farms do not consist of contiguous fields and the location of the farm is centred on the address of the farmer, or the business owner.

The census data set includes geographical indicators that enable data to be produced by area. The Unique Property Reference Number (UPRN) is a unique numeric identifier for every addressable location in Northern Ireland and is used to allocate geographies to the data. If no UPRN is available for the business address geographies are allocated using postcodes. In previous years geographies were allocated solely on postcode. UPRN's are more specific than postcodes.

Note: The annual Pig inventory collects information on pigs owned by farm businesses but does not establish their exact location within units / premises used by the owner. It is therefore not possible to determine an accurate geographic breakdown for pig statistics.

Although the June Agricultural Census is collected at individual level; estimates are only compiled at higher geographical units such as district council level and county.

Additionally, the data are subject to the Data Protection Act and results may not be released at a level where an individual can be identified. This may be due to either a low number of instances or due to the dominance of one or two holdings.

#### Disclosure control methods

Estimates are not disclosed where the value is based on less than five holdings.

Where estimates have been suppressed, the second smallest estimate in the grouping is also treated similarly so that neither estimate can be derived from the total. If a value is not present, it is recorded as zero.

# Data Notes

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## Farm numbers

The population of farms to which these statistics refer includes all active farm businesses having one or more hectare of farmed land, whether owned, leased or taken in conacre, and those with under one hectare having any cattle, sheep or pigs or with significant poultry or horticultural activity.

## Farmers and Workforce

Most farm businesses in Northern Ireland are owned and operated either by an owner occupier or by a family partnership. Most labour is therefore provided by the farm family. Farm labour data is presented for owners including partners, directors and spouses, alongside other workers on a full-time, part-time or casual basis. Prior to 2020 spouses were presented separately, from 2020 onwards they have been included in the Farmers, Partners and Directors question.

Many farms are managed on a part-time basis, either in combination with off-farm employment or after the normal retirement age. Unless intensively managed, farms of less than 40ha are likely to be operated on a part-time basis.

Labour questions on the survey are not compulsory and a small proportion of respondents fail to complete this section. In the event of non-response to labour questions data is carried forward from a previous recently completed census form. Where this is not available figures are imputed and assumed as one full time male farmer.

## Land Use

The total area in agricultural production is provided and details of land use disaggregated by grassland, rough grazing, arable, horticultural and other uses.

The difference between the total area and the area of crops and grass is due to rough grazing, farm woodland and small areas of other land not in production. Rough grazing is the most important component and is low yielding permanent grassland, unimproved by fertiliser, cultivation, reseeding or drainage. These areas can normally only be used for extensive grazing of cattle and sheep.

The data illustrates the predominance of grassland as the major land use. Cropping accounts for less than 5 per cent of the total area farmed and is naturally constrained by relatively wet, maritime climate conditions and the predominance of heavy soil types.

### Cereals

While relatively small areas of cereals are grown on farms across all counties, larger scale operations are found predominately in Co. Down and Co. Londonderry/Derry. This is a result of more favourable climatic and/or soil conditions found in parts of these counties.

### Potatoes

Potatoes are an expensive crop to produce while market returns are variable. Most production is undertaken by a small number of specialist growers who service the local retail and catering trades. The data show that around two thirds of the potato crop is grown by a relatively small number of growers producing more than 15 ha each.

### Forage Maize

Mixed success with the crop (Northern Ireland latitudes and climate make it a marginal area for forage maize) has discouraged many growers from continuing to grow it. Its main use continues to be as a supplement to grass silage for winter feeding of dairy cows.

## Horticulture

Usually a complementary horticultural survey is conducted alongside the June Census to determine horticultural crop areas. Due to Covid-19 this survey was not conducted in 2020. Additionally individual vegetable crop questions were removed from the 2020 survey to simplify the survey and decrease user burden. Farmers could record horticultural crop as 'Other crops'. As expected 2020 saw a large increase in this variable.

## Cattle

Cattle farming is the main agricultural activity in Northern Ireland. Total cattle numbers are provided with breakdowns for beef and dairy cattle and for a number of age groups.

From 2007, cattle statistics have been derived from the Animal and Public Health Information System, (APHIS) and supported by further questions on the farm survey questionnaire to decipher the number of heifers in calf and females for breeding and slaughter. Data for the years 2005 and 2006 were revised using APHIS as the data source. In 2020 cattle statistics have been taken solely from APHIS by means of removing the aforementioned cattle related questions again to simplify and reduce farmer burden. Reporting on these related questions has therefore been removed from the publication.

## Sheep

Sheep flocks are typically, but not always, maintained on farms with cattle enterprises.

## Pigs

A small number of large, highly productive businesses, drive most of the change in the sector. Currently over 90 per cent of sows are found on fewer than 100 farms.

From 2013 onwards, pig data have been sourced from the Northern Ireland Annual Inventory of Pigs. However postponement of the 2020 inventories to later in the year meant questions regarding pigs were reintroduced onto the survey and augmented by previous years inventory data. Farmers were no longer asked about the number of other sows in 2020.

## Poultry

For poultry a point estimate of total numbers is disaggregated into commercial egg laying birds, breeding birds, broilers and other birds – the latter comprising a number of minor activities. Broiler birds are reared on farms in a highly vertically integrated production system and population numbers are managed in response to market conditions.

From 2007 onwards, poultry data have been sourced from the annual Northern Ireland Bird Register Update. From 2008 onwards the other category included game birds. Like the pig inventory the Northern Ireland Bird Register Update was postponed in 2020 to later in the year so poultry questions were reestablished on the survey. In the event of a nil response poultry data were estimated using weighting from previous inventories and farm census returns. From 2020 farms with less than 250 birds were also included in the survey

## Horses

Information on horses and ponies found on farms is provided for two ownership categories: holdings where animals are owned by the farmer and holdings where horses and ponies are owned by a third party.

The data relate to horse and ponies found on commercial farms; an unknown number of horses and ponies are located on holdings not covered by the survey where all land is rented out to third parties.

Horses have no know administrative data to augment returns, thus in the event of a nil survey return horses numbers were estimated using farm census returns from 2016 to 2019. Data held on horse numbers prior to 2016 is no longer be deemed of sufficient

quality to include in the estimation process.

## Goats

Total goat numbers are provided and are further sub-divided into females that have kidded and other goats. The majority of goats are found in very small numbers on farms and have no commercial significance. A very small number of farm businesses maintain specialist milk producing herds.

In the event of a nil survey return, goat numbers were estimated using farm census returns from 2016 to 2019. Data held on goat numbers prior to 2016 is no longer be deemed of sufficient quality to include in the estimation process.



# Data Quality

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## Data Quality

The data used in compiling the census statistics comes from different sources with different quality issues.

The database used to compile the statistics is considered robust and can be used to provide accurate information to a low level of geography.

The following points should be borne in mind when considering the data used in compiling the figures of this report.

- In 2020, approximately 12,600 valid responses were received with the remaining figures for the missing farms being estimated.
- The list of active farms is reviewed and updated annually based on administrative databases and from information received from surveys. The administrative databases used are maintained either under livestock identification, registration and movement legislation or for the purposes of paying grants and subsidies. For horticulture and pigs the register is updated annually with information received from surveys supplemented by input from DAERA Advisory and Veterinary Services on new business start-ups.
- The estimates connected with farm enterprises with relatively small population numbers (e.g. pigs and horticulture) may be subject to greater error.
- Farms do not consist of contiguous fields and the location of the farm is centred on the address of the farmer, or the business owner. Therefore data for a small number of farms may be allocated to a temporary address for the business or correspondence address.
- Data on cattle is derived from APHIS. This is a high quality database which has been audited and approved by the Eurostat for statistical work.
- For farms which do not have a survey return (through non-response) data are estimated and imputed. Where available, previous recent survey returns are used and weighted based on data received from other farms of similar size and type.

## Bias and non-response

While the response rate for the questionnaire part of the survey is normally high, other aspects such as the data extracted from the APHIS cattle system, poultry extracted from the NI Update of the Bird Register and pigs from the NI Annual Inventory of Pigs are based on administrative system which are almost complete - missing data is imputed. Information on the size of farm is also obtained from the Basic Payment Scheme and older information from previous surveys is often available. It is therefore possible to determine the size and type of farm which has not returned a form in a particular year. Analysis has demonstrated that there is no particular bias introduced as a result of non-response.

# Data Access

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Brief extracts from this publication may be reproduced provided the source is fully acknowledged.

## DAERA Website

These Agricultural Census statistics are available on the DAERA Statistics webpages at <https://www.daera-ni.gov.uk/landing-pages/statistics>

Infographics from the Agricultural Census are available at:  
<https://www.daera-ni.gov.uk/articles/interactive-statistics-hub>

An interactive dashboard on livestock numbers, to accompany the report and tables, is available at <https://www.daera-ni.gov.uk/articles/interactive-statistics-hub>

An overview of Northern Ireland Agriculture and Environment is available in our compendium publications:

<https://www.daera-ni.gov.uk/articles/northern-ireland-environmental-statistics-report>

<https://www.daera-ni.gov.uk/articles/statistical-review-ni-agriculture>

## Northern Ireland Neighbourhood Information service (NINIS)

The Northern Ireland Neighbourhood Information service (NINIS) is provided by the Northern Ireland Statistics and Research Agency (NISRA). Agricultural Census data is available for a number of geographies including electoral ward and local government district. It is within the Agriculture and Environment theme which brings together information and statistics about the agriculture, natural environment, food and forestry sectors.

<https://www.ninis2.nisra.gov.uk/public/Theme.aspx?themeNumber=38&themeName=Agriculture%20and%20Environment>

## Open Data

Statistical data for the Agricultural Census is available on Open Data NI.

<https://www.opendatani.gov.uk/dataset/farm-census-administrative-geographies>

## Twitter

Follow us on Twitter @DAERASTats for statistical updates

## Arrangements for providing controlled access to micro-data

Subject to protecting confidentiality, controlled access to micro data is allowed in a limited number of circumstances and after careful consideration on a case by case basis. For the most part this relates to the use by researchers of the agricultural data for economic modelling and analysis.

DAERA aims to assist researchers seeking access to detailed, unpublished data collected for the Agricultural Census. For the most part this relates to the use by researchers of the agricultural data for economic modelling and analysis.

DAERA is as facilitating as possible whilst ensuring that:

- the relevant data protection legislation is adhered to
- the confidentiality of data made available for statistical research is protected
- a consistent decision making approach is taken
- access is only granted for research that serves the public good with a clear link to the DAERA policies or the Programme for Government

Occasionally, we provide contact details, under strict conditions, for researchers if it is necessary for ad hoc surveys to be conducted or other contact made as part of research activities supported by DAERA.

# Annexes

## Annex A Standard Labour Requirements (SLR) Factors

The following factors have been used to classify farms in N.I.

	Item	Unit	Standard Labour Requirement (hours)	Units per 1900 hours
Crops & Grass	Cereals	ha	30	63
	Oilseeds	ha	22.5	84
	Potatoes	ha	135	14
	Outdoor vegetables	ha	150	12.7
	Fruit	ha	450	4.2
	Ornamentals	ha	1,500	1.3
	Glasshouse vegetables	ha	5,000	0.4
	Other glasshouse	ha	25,000	0.1
	Mushrooms	house	1,050	1.8
	Set-aside	ha	1.5	1,267
	Forage crops	ha	9	211
	Grass	ha	6	317
	Rough grazing	ha	2.25	844
	Cattle	Dairy cows	head	39
Beef cows		head	12	158
Other cattle		head	9	211
Sheep	Ewes and rams: Lowland	head	5.2	365
	Ewes and rams: LFA	head	4.2	452
	Other sheep: Lowland	head	3.3	576
	Other sheep: LFA	head	2.6	730
Pigs	Sows and gilts	head	16	119
	Piglets	head	1	1,900
	Other pigs	head	1.3	1,462
Poultry	Laying hens	head	0.17	11,176
	Pullets	head	0.12	15,833
	Broilers	head	0.04	47,500
	Turkeys, Ducks etc.	head	0.045	42,222
Other	Horses	head	150	12
	Goats	head	20	95
	Deer	head	15	127

## Annex B Standard Outputs (SO) Factors

The following 2013 factors are used to calculate the Standard Output of a farm to classify farms.

	Item	Unit	Standard Output € <sup>1</sup>
Crops & Grass	Wheat	ha	1,801
	Barley	ha	1,332
	Oats	ha	1,081
	Mixed corn	ha	966
	Potatoes	ha	6,276
	Oilseed rape	ha	1,412
	Linseed	ha	755
	Open-air horticulture		
	Vegetables	ha	4,160
	Fruit	ha	9,929
	Flowers/nursery	ha	41,479
	Glasshouses:		
	Vegetables	ha	159,801
	Flowers	ha	364,658
	Mushrooms	100 m <sup>2</sup>	50,932
	Forage Maize	ha	567
	Other fodder crops	ha	281
	Other crops	ha	780
	Grassland over 5 years old	ha	260
	Grassland under 5 years old	ha	266
Rough grazing	ha	1	
Cattle	Dairy cows	head	2,589
	Beef cows	head	511
	Heifers 2 years and older	head	426
	Heifers 1-2 years	head	477
	Bulls/steers 2 years and older	head	569
	Bulls/steers 1-2 years	head	584
	Calves under 1 year	head	545
	Ewes	head	109
Sheep	Other sheep	head	24
	Lambs	head (included with ewe)	0

<sup>1</sup> These SOs apply to crop areas and livestock numbers at June (not to the annual throughput). At the time of calculation, 1 euro = £0.80

	Item	Unit	Standard Output €¹
Pigs	Sows	head	934
	Piglets (under 20kg)	head	107
	Other pigs	head	241
Poultry	Hens	100	2,222
	Broilers	100	1,032
	Others	100	4,217
Horses	Mares, stallions	head	371
	Others	head	0
Goats	Goats	head	354

## Annex C Comparison of types and size

Table 1 shows the number of farms by type based on the 2010 Standard Outputs (SO) compared with the 2013 Standard Outputs 2019 – 2020.

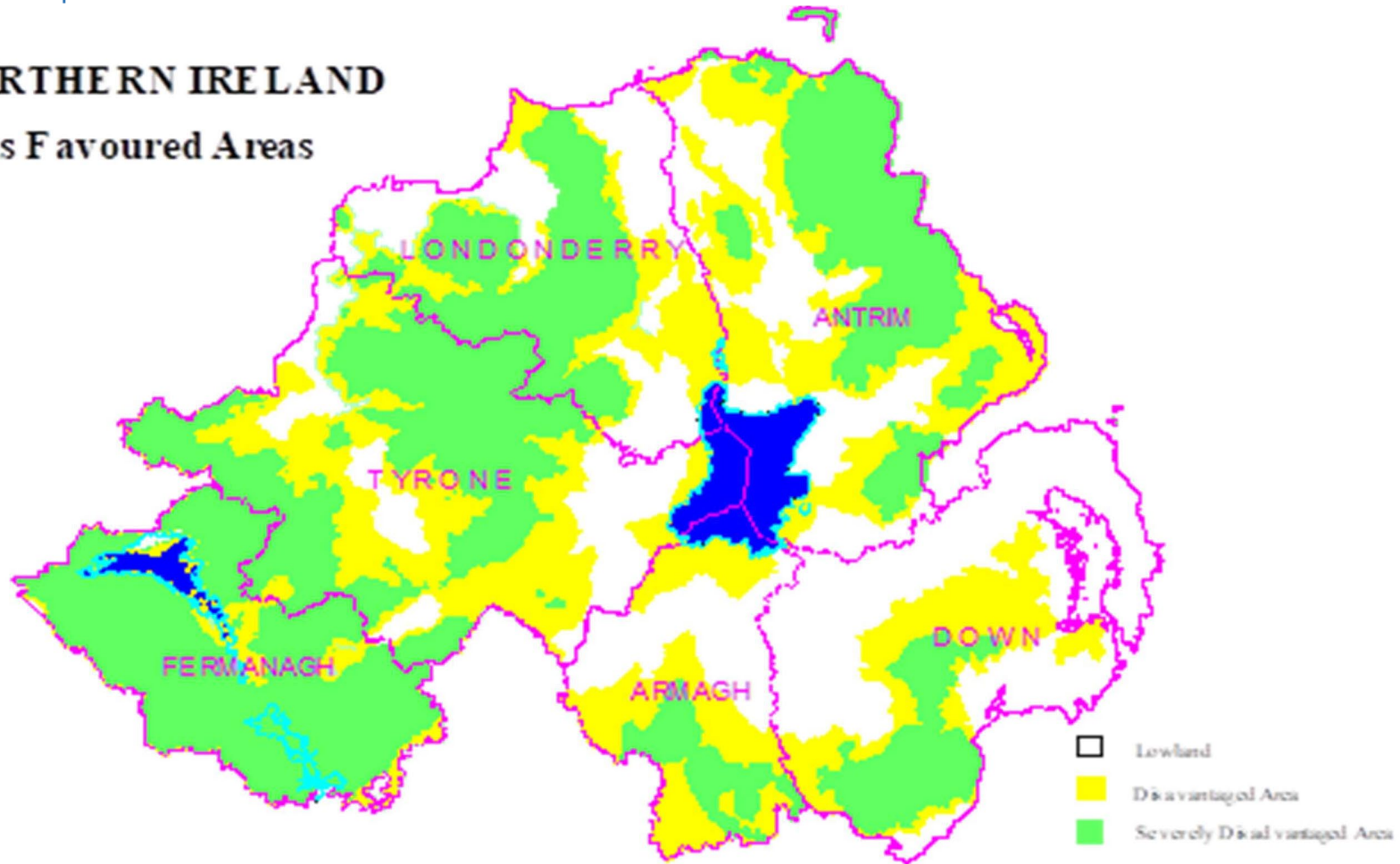
	<b>2019 Total SO2010</b>	<b>2019 Total SO2013</b>	<b>2020 Total SO2010</b>	<b>2020 Total SO2013</b>
<b>Farm Type</b>				
Cereals	253	389	268	254
General Cropping	679	919	1,682	1,105
Horticulture	249	277	236	226
Pigs	161	114	179	173
Poultry	647	502	643	628
Dairy	2,586	2,700	2,778	2,603
Cattle & Sheep: LFA	14,616	14,329	14,595	15,137
Cattle & Sheep: Lowland	4,971	4,614	4,851	5,230
Mixed	499	907	511	490
Other Types	166	76	153	50
<b>Total Farms</b>	<b>24,827</b>	<b>24,827</b>	<b>25,896</b>	<b>25,896</b>



Annex D Map of Less favoured Areas

# NORTHERN IRELAND

## Less Favoured Areas



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