

Farm Structure Survey 2007

National Methodological Reports (NMR)

Country: Ireland

FARM STRUCTURE SURVEY 2007 NATIONAL METHODOLOGICAL REPORT

A. CONTENTS

SUMMARY

1. INTRODUCTION

- 1.1 History, scope
- 1.2 Legislation

2. CONTENT

- 2.1 Characteristics
- 2.2 Questionnaires

3. SURVEY METHODOLOGY

- 3.1 Survey organisation
- 3.2 Work process
- 3.3 Preparing the survey operations
 - 3.3.1 Population and frame
 - 3.3.2 Survey design
 - 3.3.3 Pilot Survey
 - 3.3.4 Informing and training the staff and respondents
- 3.4 Sampling, data collection and data entry
 - 3.4.1 Drawing the sample
 - 3.4.2 Data collection
 - 3.4.3 Utilisation of administrative data sources
 - 3.4.4 Control of the data
 - 3.4.5 Non-response
- 3.5 Data processing, estimation and analysis
 - 3.5.1 Methods for handling missing or incorrect data items
 - 3.5.2 Estimation and sampling errors
 - 3.5.3 Non sampling errors
 - 3.5.4 Evaluation of estimates

4. PUBLICATION AND DISSEMINATION

ANNEX 1 – QUESTIONNAIRE

ANNEX 2 – SAMPLING ERRORS

SUMMARY

In Ireland the Farm Structure Survey (FSS) 2007 was a sample survey. Some 77,000 agricultural holdings, out of approximately 129,000 holdings in the state, were surveyed. The survey collected data on land use, crops, livestock, workforce, machinery and other miscellaneous characteristics of the holdings. The survey was conducted by the Agriculture Division of the Central Statistics Office (CSO), Ireland's national statistical office.

The basis for the survey was a farm register created for Ireland's FSS 2000 (a full census of agriculture). This register was initially compiled from a set of administrative registers provided by the Department of Agriculture and Food (plus supplementary information from a number of specialised agencies). After FSS 2000, it was updated periodically with 'administrative births' provided by the same Department, plus ancillary information gathered in intervening surveys.

The survey was conducted by post. In advance of the reference date, 1st June, a questionnaire was issued to the 77,000 holdings selected in the sample. The holders were asked to complete the questionnaire and return it by post by the 8th June 2007. A telephone help desk was available in the CSO to assist holders with queries.

In cases where holders didn't respond by 8th June, a postal reminder was issued. Thereafter, if a response was still not forthcoming, three further postal reminders were successively issued. A small number of specialised holdings were also phoned. Eventually 58,600 responses were received, 55,616 from active holdings (an active response rate of 72%).

Each questionnaire returned was batched, scrutinised and electronically scanned, both for receipting purposes and data capture.

Missing information on the returns was imputed in a number of cases. Most often missing information consisted of land details and workforce details. Missing data was imputed primarily by reference to responses received for the same holding in previous surveys.

A hybrid methodology was used to compile results for FSS 2007. A matched sample methodology (matching FSS 2007 returns with returns for the same holdings for FSS 2005) was used to compile crops and livestock results. These results were then calibrated against results obtained from a grossing methodology which was used to compile structural results.

Provisional crops and livestock results for FSS 2007 were published on 24 October 2007.

1. INTRODUCTION

1.1 History, scope

The FSS 2007 is the latest in a succession of Farm Structure Surveys conducted every two or three years in Ireland. FSS 2007 had a lower sample size than its immediate predecessors, FSS 2003/2005, which were a sample surveys of 85,000 agricultural holdings. The last FSS prior to 2003 was held in 2000. This was a full Census of Agriculture, covering all 141,000 holdings then in the state. Like its predecessors, FSS 2005 was conducted by the Agriculture Division of the Central Statistics Office (CSO), Ireland's national statistical office.

FSS 2007 was in most respects very similar to FSS 2003/2005. In many ways it could be seen as the third link in a chain rooted in FSS 2000, henceforth referred to as the Census 2000. Like FSS 2003/2005, FSS 2007 was based on a farm register compiled originally for Census 2000. It used a questionnaire very similar to that used for Census 2000. It followed many of the same survey procedures tried and tested for Census 2000 (with the significant exception of the use of scanning technology for data capture). And its results were linked to Census 2000 results, using FSS 2005 results as an intermediary. As such Census 2000 was as much the basis for FSS 2007 as it was for FSS 2003/2005.

Census 2000 represented a major step forward for the CSO. It was the first Census the CSO conducted by post. It was also the first census the CSO conducted using administrative farm registers as the basis for identifying farmers. The previous Census of Agriculture in 1991 was conducted by enumerator interview. The 1991 census was also based on a farm register compiled directly from farms identified by enumerators during the preceding 1990 Census of Population. The factors underlying the changes of approach were twofold.

Firstly, Census of Agriculture 2000 did not enjoy the advantage of an immediately preceding Census of Population. In fact the most recent Census of Population at the time was conducted in 1996. This was too large a gap to create anew a viable farm register. On the other hand the existing farm register, dating back to 1991, was even more out-dated. So another means of recreating a farm register had to be found.

Secondly, administrative data was becoming increasingly available. Increasing regulation of farming activities, combined with an increasing move away from paper-based means of recording data towards electronic means of recording data, meant that administrative data was simultaneously becoming both more comprehensive and more accessible. Also, importantly, most administrative contact with farm holdings was conducted by post. So up-to-date postal names and addresses were available for every farmer in the state.

The principal advantage of conducting Census 2000 by post in this manner was cost effectiveness. There was no need to recruit, train and deploy field staff. On the other hand there were also disadvantages. Most notably a longer data collection phase,

increased difficulties ensuring compliance and limited scope for independent verification of data returned. Also, the method was wholly reliant on the quality of administrative data available.

Testing the quality of administrative data, and its ease of application to statistical purposes, was a key strategic objective of Census 2000, second only to its core objective of providing benchmark agricultural statistics for the decade it inaugurates. It was hoped that Census 2000 would tap into a rich source of hitherto locked data, which would continue to flow for years to come.

Early experiences of relying on administrative data were in many ways disappointing. The quality of administrative data available was not uniformly high. It was not always as up-to-date as was hoped. And it was more difficult than expected integrating various sources together, even when the sources were from the same agency. This created particular difficulties in recreating an up-to-date and comprehensive farm register for Census 2000. Nevertheless, after a great deal of painstaking detective work, sifting through a multiplicity of data sources, a comprehensive farm register was put together in advance of Census 2000.

Once the farm register was recreated the use of administrative data from that point onwards proved more encouraging. A wide range of indicators was available, particularly from headage payment schemes and area aid schemes, which proved very useful for corroborating the information returned by individual holders. These indicators also proved very useful for imputing for partial response and non-response, etc. Thus the use of administrative data brought mixed blessings. The Census 2000 methodological experiment could best be described as inconclusive.

FSS 2003 did not clarify the position to any great extent. Between the end of Census 2000 and the start of FSS 2003 there was little opportunity to conduct further in-depth analysis of administrative sources. The situation was made more complicated by the fact that the nature and availability of administrative data itself was changing rapidly. Whilst some data sources were drying up others, for example the bovine registration scheme database (known nationally as the Cattle Movement Monitoring System), were coming on stream.

After FSS 2003 an attempt was made to tackle administrative data again. There were two approaches taken. The first was very specific and entailed a very detailed review of the bovine registration scheme database. This included systematic comparison of bovine numbers on this system for individual farmers with the data those same farmers returned in our surveys. Ultimately this comparison raised as many questions as answers. Significant differences between the two sets of data were identified that could not be explained. And it was concluded that these differences would inevitably remain unexplained until the bovine registration scheme database had several years to bed down.

A second approach consisted of making a general high-level review of all the administrative data sources held in the Department of Agriculture and Food. This was useful in that it provided an up-to-date inventory of all the data sources available. However it also illustrated that restructuring of data sources was occurring very

rapidly in the Department. In the circumstances it was felt better to wait until these data sources were settled down and consolidated before attempting to evaluate them further.

Accordingly, almost no new uses of administrative data were made for FSS 2005 or 2007. Administrative data was solely used for the purposes of updating the farm register in advance of the survey (with one exception, which will be explained in due course).

1.2 National legislation

FSS 2007 was not a statutory survey. It was conducted on a voluntary basis (all CSO surveys of agricultural holdings are voluntary except are censuses of agriculture).

The statistical activities of the CSO are governed by the Statistics Act, 1993. This act provides the legislative framework for the CSO. It sets out the right of the Office to conduct statistical inquiries. It guarantees the confidentiality of all data provided, expressly prohibiting the disclosure of information that can be related to any identifiable person or enterprise. It specifies the offences and penalties incurred for breaching this confidentiality. And it grants right of access, for statistical purposes, to records held by public authorities (administrative data).

The act does not specify the type of information that may be collected. Nor does it specify the periodicity of surveys etc. Instead it makes provision for the granting of ministerial orders, which can specify these details, and incorporate them in statute. However, as the level of voluntary response to agricultural surveys in Ireland was already deemed satisfactory, a ministerial order was not deemed necessary for FSS 2007.

2. CONTENT

2.1 Characteristics and reference period

The questionnaire for FSS 2007 collected information according to the Commission Regulation (EC) No 204/2006.

In addition a significant amount of additional data, or additional detail, was collected for national purposes only. Specifically this included:

- The subdivision of wheat, oats and barley into winter and spring varieties
- The subdivision of pasture and meadow into grass silage (1st to 4th year's and permanent), hay (1st to 4th year's and permanent) and pasture (rotation under 5 years and permanent)
- A more extensive breakdown of bovine animals, including bulls, the subdivision of heifers into dairy and other heifers, and a 2 years old and under 3 years age category for non-breeding bovines (both male and female).
- A more detailed breakdown of sheep, consisting of rams, ewes both 2 years and over and under 2, and other sheep, both 1 year and over and under 1 year.
- The subdivision of both broilers and turkeys into breeding birds and table birds.
- The subdivision of equidae into both thoroughbred and other horses (both brood mares and other types in each case) and mules, jennets and asses.
- The number of farmed deer.
- The extent of fragmentation of the holding.
- Whether or not the holding made use of communal land.

This additional national information was sought primarily for historical reasons. For example historically cattle farming has dominated, and continues to dominate, the Irish agricultural scene. Therefore, given its importance, additional information is sought to monitor closely developments in this area. Sheep farming is relatively less important, but still a very sizeable sector of Irish agriculture so again it merits closer scrutiny. Winter and spring varieties of cereal crops are sought as the relative proportion of one variety to another has important implications for yield and production of grain, etc.

A number of characteristics listed for collection in the EU regulation No 204/2006 were not collected in the case of Ireland, either because they were not significant or existent.

The reference day for the survey was 1st June 2007.

In general data collected during FSS years (and FSS 2007 is no exception) is also collected during intervening years. This is primarily to meet the purposes of national data requirements, but also to ensure the consistency of data from one FSS to another.

2.2 Questionnaire

A copy of the questionnaire for FSS 2007 is reproduced in annex 1. It is an 8-page paper questionnaire, consisting of two A3 sheets stapled together. In content and design it is similar to the questionnaire used for FSS 2007.

The first page contains a labelling space for name and address, CSO contact details and some brief background information on the survey (including a guarantee of the confidentiality of all information returned). Then (under the heading *Agricultural activity*), the recipient is asked to confirm that they are engaged in farming

Page 2 begins with some very precise instructions on how the recipient should complete the form. Recipients are asked to only write in black or blue ink, to keep within the specific boxes allotted for characters and numerals in each field, to leave fields blank rather than zero-filled, etc. These guidelines were specifically introduced to facilitate the electronic scanning of the form.

Pages 2 and 3 contain questions on the overall area of the holding (*Utilisation of Land on 1 June 2007*), the breakdown of Utilised Agricultural Area (UAA) (*Analysis of Area Farmed*), and the types of crops grown, if any, on the reference date of the survey (*Crops on Horticulture on 1 June 2007*). The second and third sections are subsets of the first and second sections respectively, and 'total' questions within them act as controls on data quality.

Page 4 contains questions on livestock, under the title *Livestock and Poultry held on 1 June 2007*. There are separate subsections entitled *Cattle* (broken down into the *Breeding herd* and *Other herd*), *Sheep* and *Poultry*.

An additional section on *Other Livestock* follows on the top of page 5. This has questions on equines, goats, deer and total pigs. Page 5 also contains a section for *Organic Farming*, a section *Management and training* (of the holder) and *Land Parcels and the Use of Commonage* i.e. the number of separate parcels of land that make up the holding).

Page 6 contains instructions on how to complete the workforce details section. Which has traditionally poorly completed by respondents

Page 7 is taken up exclusively by a section entitled *Holder, Spouse and Farm Workforce Details*. The characteristics of the farmer holder and his or her spouse, plus each additional person working on the farm, is sought on a separate line going across the page. Experience has shown that this part of the questionnaire traditionally poses the most difficulties for the respondent. A subsection on casual work is included to capture the contribution of non-family irregular workers to labour input on the holding.

Page 8 begins with a section for *Rural development* Beneath that it has a section *Other gainful activities on the farm*. Finally it concludes with a section entitled *Certificate*, wherein the respondent is asked to sign the questionnaire, and provide his or her telephone number, should further contact be necessary.

In addition, specialised pig farmers were given an extra 1-page questionnaire. This questionnaire sought a breakdown of pig herds into various categories, grouped under the headings *Breeding Pigs* and *Fattening Pigs*.

3. SURVEY METHODOLOGY

3.1 Survey organisation

FSS 2007, as already mentioned, was conducted by the Agriculture Division of the CSO. The survey team consisted in the main of approximately 22 core staff, 3 statisticians and 1 Senior Statistician. Apart from the core members other CSO personnel worked directly or indirectly on the survey, as the need arose. E.g. the CSO has its own internal Printing section which produced the questionnaire, an Office Services Unit which posted out the questionnaire, etc.

In terms of organisational structure the FSS was principally the responsibility of two sections of the Agriculture Division, the Register Section and the Data Section. The Register section was responsible for maintaining the farm register, for the design and issue of the census questionnaire, for the receipting of returned questionnaires and for the issuing of reminder notices. It was also responsible for a specialist survey of large pig units, carried out as part and parcel of the FSS. The Data Section was responsible for batching, scrutinising and editing returns, and maintaining the results datasets. Both sections also performed data-capture duties, principally scanning and verifying of returns. Each section was managed by a statistician.

3.2 Calendar (overview of work progress)

#	Task	Dates
1.0	FSS 2007 Project Initiation 1.1 Project Plan development 1.2 Time Monitor Development	Jan 2007 Feb- Apr 2007
2.0	Preparation of questionnaire 2.1 Design of questionnaire 2.2 Testing of questionnaire for electronic scanning 2.3 Printing of questionnaire	Jan-Feb 2007 Mar-Apr 2007 Apr-May 2007
3.0	Sample selection 3.1 June matched sample selected 3.2 'Administrative births' added to farm register and selected 3.3 Farm register stratified according to latest survey data 3.4 Non-matched sample randomly selected	Apr 2007 Apr 2007 Apr 2007 May 2007
4.0	Survey management 4.1 Questionnaires labelled 4.2 Questionnaire post-out 4.3 Returns receipted 4.4 1 st reminder notice issued 4.5 2 nd reminder notice issued 4.6 3 rd reminder notice issued	May 2007 May 2007 June-Nov 2007 June 2007 July 2007 Aug 2007
5.0	Data capture 5.1 Returns scrutinised 5.2 Returns batched 5.3 Returns electronically scanned 5.4 Returns verified 5.5 Returns edited 5.6 Imputation	June-Nov 2007 June-Nov 2007 June-Nov 2007 June-Nov 2007 July-Nov 2007 Jan-Mar 2008
6.0	Aggregation 6.1 Pig results aggregated 6.2 Provisional matched sample crops and livestock results 6.3 Poultry results aggregated 6.4 Regional matched sample crops and livestock results 6.5 Grossing methodology applied	July 2007 Aug-Sep 2007 Mar 2008 Jan-May 2008 Apr-May 2008
7.0	Dissemination 7.1 Pig results published 7.2 Provisional crops and livestock results published 7.3 Micro-data codified and transmitted to Eurostat	July 2007 Oct 2007 May 2008

3.3 Preparing the survey operations ('Planning the survey')

3.3.1 Population and frame

- **Population**

The target population of FSS 2007 was the estimated 129,000 agricultural holdings in the state.

An agricultural holding was defined, in line with the definition adopted for the FSS (Article 5 of Council Regulation 571/88) as:

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

A minimum size threshold of 1 hectare was not applied in advance of the survey. Experience has shown that excluding such units can significantly reduce state-level results for some characteristics that are more frequent on smaller holdings (e.g. goats). Also, there is a sizeable amount of common land in the state, which can allow very small land holders to keep significant numbers of livestock (sheep in particular). However farms that returned less than 1 hectare in the survey, that had less than 1 livestock unit, and that were not engaged in any specialist activity, were excluded.

- **Frame ⁽¹⁾**

The population frame for FSS 2007 was essentially the population frame for Census 2000, updated in the intervening years.

The frame for Census 2000 had been built primarily around one administrative register; the Department of Agriculture and Food's Main Client File. This was a list of the postal names and addresses of all the Department's clients in April 2000, i.e. every agricultural holder in the state who had registered with the Department either to comply with agricultural regulations at the time, or to avail of agricultural subsidies. In practice this included virtually all farmers. In total there were over 180,000 records in this file. Each record had a Department of Agriculture and Food unique identifier, known as a herd-number, associated with it.

⁽¹⁾ The *frame* is the listing or listings of units that delimit, identify, and allow access to the elements or sets of elements of the target population.

In addition to the Main Client File the Department of Agriculture and Food also provided 6 other registers. These consisted of pig farmers, poultry farmers, organic farmers, potato growers, REPS applicants and structural payments applicants. These registers combined contained over 196,000 records. However, when cross-referenced with the Main Client File over 191,000 matches were found (these 6 registers were not mutually exclusive). The balance, some 5,000 records, were appended to the Main Client File.

A separate client file was provided by Teagasc, Ireland's semi-state farm advisory agency. This file contained over 156,000 records. The Teagasc file again contained postal names and addresses of its clients, and in addition contained a date-of-last-contact field, which was useful. Unfortunately, however, Teagasc did not use the Department of Agriculture and Food's herd number referencing system. Thus its client file could not be linked directly to the Main Client File/Department supplementary file register that had already been built up. Instead a decision was made to include only those farmers which had availed of Teagasc's services in the preceding 12 months, and whose name and address could not be found in the amalgamated Department registers by extensive string-searching techniques. Ultimately over 6,000 Teagasc records were appended to the Department records.

A further 7 specialised registers were provided by Bord Glas, a semi-state horticultural body. These registers consisted of mushroom growers, potato growers, vegetable growers, bulb growers, soft fruit growers, top fruit growers and nurseries. All told these comprised some 3,000 names and addresses. Again these records did not contain herd-numbers and string searching had to be used to search for occurrences in the developing census register. Eventually, nearly 2,000 Bord Glas records were appended to the census frame.

Finally a small number of specialised farms from the CSO's pre-census farm register were added to the census frame. These included pig, poultry and deer farmers, and apple growers, who could not be identified in the administrative records. These were added as a precautionary measure, to ensure that these important records in relatively unregulated areas were not lost. They comprised an additional 200 records.

When the building up process was complete, the frame for Census 2000 stood at 191,573 records. This was held electronically as a SAS dataset, which could be accessed interactively by all staff.

At the time it was realised that this frame inevitably contained many redundant records. Results from previous structural surveys indicated that the total number of holdings in 2000 should converge at approximately 140,000. Thus an estimated over-coverage of more than 50,000 was expected. Had more time been available to examine the records this over-coverage could have been reduced. Unfortunately delays in receiving the administrative registers, and difficulties in integrating them, militated against this. In the final analysis such over-coverage was deemed acceptable, in that it minimised the risk of exclusion.

The experience of processing the returns of Census 2000 confirmed these expectations. A large number of questionnaires were sent back with the recipient

indicating they were no longer actively engaged in farming. In other cases the same holder had been issued two separate questionnaires, under two different versions of his or her name, and sent back both. Nevertheless when the processing was complete, and through dint of considerable investigative work and exhaustive cross-checking, a much reduced, and much more satisfactory register of 141,500 active agricultural holdings resulted.

The end of Census 2000 was the high point of the farm register, in terms of quality, comprehensiveness and immediacy. A complete, accurate and fully up-to-date farm register had been achieved, although not in advance of Census 2000, but rather as a consequence of it.

There were eight national farm surveys conducted between Census 2000 and FSS 2005. There were four surveys in June (2001, 2002, 2004 and 2006) and seven surveys in December (2000, 2001, 2002, 2003, 2004, 2005 and 2006). These national surveys had a much smaller scope than either the Census or an FSS. Each of them had a sample size of 30,000, or approximately 20% of the population frame. In each case the sample was a stratified sample, based on holding size, with proportionately more of the larger holdings selected. And in each case 20,000 of the 30,000 sample was a matched sample. This meant that in practise there could only be limited sample rotation from survey to survey. Nevertheless, these national surveys ensured that at least all the larger holdings were surveyed regularly between 2000 and 2007. So this element of the register was kept reasonably up-to-date.

FSS 2003 and FSS 2005, coming between Census 2000 and FSS 2007, was also a considerable help in updating the farm register. In both cases, 85,000 holdings were sampled. In 2003, as only 20,000 out of 85,000 of these holdings were required for a 2002/2003 matched sample, the remaining 65,000 holdings could be selected from anywhere on the register. A decision was made to preferentially select those holdings that had not been included in any of the national surveys since Census 2000. In this manner the opportunity FSS 2003 provided to update the register was fully exploited. In total 62,000 holdings responded. This response, covering 45% of the farm register, effectively updated the particulars of nearly every second holding on the register, largely those from which no information had been available since 2000. The same approach was applied to sampling for the FSS 2005.

Additionally, in advance of almost every survey new ‘administrative births’ were being added to the farm register. The number of these ‘births’ varied from survey to survey, but typically were about 2,000 in number. In nearly all cases these ‘births’ did not represent new holdings being created in the state, but rather new clients with the Department of Agriculture and Food. In fact, upon being surveyed it was usually discovered that the new client was merely the new legal holder of a holding already on our farm register². However this information was useful for keeping contact details up

² Unfortunately, as the Department only maintained a list of clients, not a list of holdings, the fact that one of their clients may be taking over responsibility for managing a holding from another of their clients, could not be ascertained from their data

to date and it did, on occasion, indicate cases where holdings split into two or more separate units, etc.³

The net effect of these ‘administrative births’ and ‘survey deaths’ was that there were 132,284 holdings marked active on the farm register at the end of May 2005. These 132,284 holdings comprised the sampling frame for FSS 2005.

³ One disadvantage of adding these ‘administrative births’ to the farm register was that it increased the risk of duplication of holdings. If the ‘birth’ did not respond when surveyed, or if it responded but did not provide any information that could be used to link it to a pre-existing holding, then effectively two records of that holding then existed on the farm register. However, whilst this was a problem it was usually only a short term one. Sooner or later that holding would be surveyed again under the former contact name and at that stage notification would be received that the former client no longer owned the farm.

3.3.2 Survey design

The sample selected for FSS 2007 was a composite of three separate sub-samples. To begin a 2007/2006 matched sample was required for provisional crops and livestock results. These consisted of all those farms that were surveyed in the previous June 2006 national farm survey and that were currently active⁴. There were 18,968 of these. These returns were treated preferentially when they were received back in the office. They were fast-tracked through the processing stages. The objective was to enable provisional crops and livestock results to be estimated and published within four months of the survey reference date, well before the bulk of FSS returns could be fully processed.

The next sub-sample composed of all remaining farms on the register. To select these holdings the register was stratified. 10 different strata were used. Firstly a specialist pig stratum was used. This consisted of all specialised pig units in the state. Next a specialist poultry stratum was used. For holdings that did not fall into the specialist pig and poultry strata, but which were nevertheless very important economically, a unique stratum was created. This consisted of all other holdings that an economic size of at least 100 ESU according to most recent FSS information (either Census 2000 or FSS 2003/2005). One of the objectives of creating this stratum was to capture holdings that could be relatively small in terms of land area, but were nevertheless often engaged in important specialist activity in their own right (other than pig or poultry activity), e.g. horticulture. This stratum also contained most tillage farms (which also tend to be very large both economically and in terms of land area used).

Specialist pig, poultry, holdings ≥ 100 ESU of 3,240 holdings. This left 68,000 holdings to select from a remaining sampling frame of 106,807 holdings. These remaining holdings were divided amongst six farm size strata, less than 10 hectares, 10 to less than 20 hectares, 20 to less than 30 hectares, 30 to less than 50 hectares, 50 to less than 100 hectares and 100 hectares or more. Amongst these a *Neymann Allocation*⁵ was used select sampling proportions from each of these strata such that the total number of holdings selected added up to 68,000. The *Neymann Allocation* selected proportionately more holdings from the larger farm size strata. In fact all holdings in the farm size stratum of 50 hectares or more were included in the sample. Preference was given to active holdings which sampled in 2005. The final number of farms to be selected in each stratum (and the sampling proportions) resulting from these calculations is tabulated below.

⁴ June national surveys collect the exact same crops and livestock characteristics as Farm Structure Surveys.

⁵ The Neymann Allocation method used the economic size of holdings (either as returned in Census 2000 or FSS 2003) within strata to select the sampling proportions. The number of holdings selected for the sample in each stratum was weighted according to the standard deviation of economic size within the stratum.

The final sub sample (or stratum) was administrative births. These were holdings identified from examination of the Department of Agriculture client files as not present on our register. This consisted of 3,469 farms

The final number of farms to be selected in each stratum (and the sampling proportion) resulting from these calculations is tabulated below.

For comparative purposes the same information is given for the matched sub-samples (Including the number which matched against FSS 2005).

FSS 2007 sample

Stratum	Population	Sample	Sampling Fraction	Matched Sample 2006	Matched Sample 2005	UnMatched Sample
Pig units	430	430	100%	10	191	229
Fowl units	551	551	100%	0	332	219
Births	3,469	3,469	100%	0	0	3469
>= 100 ha	3,433	3,433	100%	694	749	1990
>= 100 ESU	2,169	2,169	100%	933	251	985
<10 ha	25,326	8,737	34%	1987	5707	1,043
10-<20 ha	29,296	11,246	38%	3684	7562	0
20-<30 ha	22,169	8,624	39%	3157	5467	0
30-<50 ha	27,541	20,410	74%	4967	7592	7,851
50-<100 ha	17,900	17,900	100%	3536	4069	10,295
Total	132,284	76,969	58%	18968	31,920	26,081

3.3.3 Pilot Survey

A pilot survey was not carried out for FSS 2007. In terms of questionnaire design etc., FSS 2007 was very similar to FSS 2005, and the June 2006 national farm survey, and accordingly a pilot survey was not considered necessary.

3.3.4 Informing and training the staff and respondents

All CSO staff who worked in FSS 2007 had also worked on either FSS 2005, or the national surveys. Thus no special training was deemed necessary in their case.

Respondents were provided with basic background information on the survey on the first page of the questionnaire. A special low-cost telephone helpdesk was available in office hours to respond to specific queries and provide additional guidance where needed.

3.4 Sampling, data collection and data entry

3.4.1 Drawing the sample

For holdings within the matched sample, drawing the sample is not an issue. The exact holdings to be included in the sample is predefined by those holdings responses to previous surveys. There is no element of choice.

Similarly there is no element of choice in selecting that part of the unmatched sample that falls into strata where there is a 100% sampling proportion. In effect the criteria that define these strata also determines which holdings are selected.

These strata were selected randomly with bias given to those farms which been sampled in 2005 this ensure that there would be a large sample available for the second matched sample.

3.4.2 Data collection and entry

Each FSS 2007 questionnaire was issued with a pre-addressed freepost reply envelope. This envelope had a Post Office box number for ease of delivery. The advantage of this method was that FSS 2007 post was segregated from other post when it was delivered to the CSO. Also the national Post Office was able to provide an exact count of how many envelopes were returned this way. Once within the CSO the top of each reply envelope was automatically slit for ease of access. The questionnaire within was then manually extracted for coding.

Each questionnaire was coded as either active or inactive, according to the information supplied by the respondent. The code was written on the front page of the questionnaire, along with the initials of the staff member who made the coding assignment. Differently coded returns were then sorted into separate piles. These were then sorted in reference number order and bundled into batches of 20.

Each batch of 20 was fed through an electronic scanner. This electronic scanner read the holding reference number of each return, which was pre-printed on the questionnaire in barcode format, under the name and address of the recipient. It also assigned an activity code to each return, based upon the respondent's reply in the *Agricultural Activity* section on the front of the form. The scanner then added these reference numbers and codes incrementally to a single electronic master receipts file. At the end of the day, when all scanning was complete, the day's additions to this receipts file were electronically transferred to the farm register, along with the current date.

The amount of forms returning by post and being receipted was monitored daily. When, in the second week of June, these numbers began to decline, a reminder notice was posted to those who still had not responded. A further two reminder notices were issued as the response rate dictated, one in the first week of July and one in the first week of August. The second reminder notice also included a second questionnaire, in case the first had been mislaid.

A limited number of non-respondents were phoned. These consisted almost entirely of specialised pig holdings.

On the whole the response from the farming community was very good, especially considering that it was a voluntary survey.

Data entry modes:

The electronic scanning of forms served a dual purpose. Firstly it receipted forms returned to the office (so that subsequent reminder notices would not be issued, etc.). Secondly, and more importantly, electronically scanning directly captured the respondents reply to every single question on the form. Each question an answer field with a specific box for each digit to be entered (or ticks in the case of tick-box questions). The digits the respondent had entered within these boxes was captured using optical recognition technology.

3.4.3 Utilisation of administrative data sources

As mentioned in the section 1.1, administrative data was used for the purposes of updating the farm register in advance of the survey. It was also used for the evaluation of the results.

3.4.4 Control of the data

One of the features of the scanning technology used for FSS 2007 was that the precision of the optical recognition could be varied. This precision was expressed as a percentage. If the electronic software within the scanner could recognise a particular digit or character with the pre-set percentage it was taken as read. If not the digit was flagged for subsequent verification (during FSS 2007 95% precision levels were used, which ensured a very high degree of accuracy).

Verification entailed a subsequent step in the process wherein digits that could not be recognised electronically, within the desired degree of confidence, were resolved through human intervention. An electronic image of the scanned form was displayed on a verifier station (a dedicated PC). The ambiguous digit was highlighted, alongside the recognition software's best interpretation of it. A member of staff could then choose either to accept the interpretation offered or overwrite this with a completely different digit. Once this was resolved the verifier jumped directly to the next ambiguous digit in the form, if any, etc.

One of the difficulties with using this technology was that quite frequently a respondent would draw a line through an answer field, or write text in it, to indicate that it did not apply to him (as opposed to leaving these fields blank, as instructed in the completion guidelines). This had the potential to greatly slow down the verification process, as every single box of every such field would be flagged as containing an unrecognisable 'digit'. This problem was largely resolved by introducing control 'bubbles' to each significant section of the questionnaire. Prior to scanning a member of staff would quickly look through the returns to see if answer fields were incorrectly marked in this manner when they should have been left blank. In such cases the staff member would tick the control bubble in each of the effected sections. This instructed the optical recognition technology to read these entire sections as though they were zero-filled. This greatly facilitated the verification process.

The verification process also had its own in-built edit checks. Thus, if say a mandatory field was left blank, the verifier would flag this and would not allow verification to proceed until the staff member operating it had put in an appropriate entry. And, within the relevant sections, if the subtotals did not up their respective totals this would also be flagged and verification would not also be not allowed proceed until this issue was resolved.

Apart from verification there was also a much more extensive batch edit conducted subsequently, once the captured data had been transferred to a SAS dataset. This edit identified inconsistencies that occurred between different sections (often on different pages) of the form that could not be easily addressed at the verification stage.

3.4.4 Non-response

The principal tool used to tackle non-response was the issuing of reminder notices, as outlined above. A limited telephone follow-up was also undertaken.

However in the final analysis, given that FSS 2007 was non-statutory, a full response was never considered realistic. Also, given that FSS 2007 was not a full census, and that a grossing methodology would be used to compile results, a full response from every holder issued a questionnaire was not essential.

3.5 Data processing, analysis and estimation

3.5.1 Methods for handling missing or incorrect data items

Partial non-response was more of a concern than full non-response. When a questionnaire was returned, it had of course to be completed correctly, with no parts left unanswered. By-and-large partial non-response was not a big problem. Most respondents were willing to provide all the information requested (typically they would zero-fill, write 'none' or draw a line through answer boxes when they had nothing to declare, indicating at least that they had looked carefully at each question). There were however a few areas which caused difficulty, all in the *Holder, Spouse and Farm Workforce Details* section.

Age seemed very problematic. Many holders did not know the age of their regular non-family workforce, and did not wish to hazard a guess. Some were not sure of the age of their own family members. As a result the age question was often left unanswered (about 10% of cases). In these cases ages for both categories of workers had to be imputed based on the age and family profile of the holder. Weeks worked and average hours per week worked also caused some difficulties. Some respondents were probably not entirely clear of what constituted farm work and what didn't. So either weeks or hours or both were occasionally left blank (about 10% of cases also).

Estimation was also used for variables which were sub totals of other variables if they were not directly available. This estimation was normally based on data available from previous survey returns.

3.5.2 Estimation and sampling errors

The methodology used to estimate results for FSS 2007 consisted of three phases. The first phase was to compile crops and livestock estimates using a matched sample method. The second phase consisted of calculating grossing factors based on a population frame. The third phase consisted of adjusting these grossing factors by post stratification and using a system of multiplicative weighting to ensure on a broad level that results achieved by use of grossing factors take account of those achieved via the matched sample method.

A preliminary population frame was estimated based on the farm register. This population frame was adjusted for inter-stratum movements, administrative births and survey death trends. Using this population frame a grossing factor was calculated for each stratum, based on the proportion of returns received to the total numbers in each stratum. These grossing factors were then assigned to the holdings in those related strata. Using these grossing factors crops and livestock estimates were determined.

The next step was to compare these crops and livestock estimates, compiled using the grossing factors above, with the crops and livestock estimates, compiled using the matched sample method. This comparison was made at three broad levels: total cereals, total cattle and total sheep. Although the actual differences were of a small magnitude generally it was decided to reduce the differences further by post stratification. In order to do this each non-specialist stratum was divided into 5 sub-strata:

- (i) Farms with greater than 2 hectares of cereals
- (ii) Farms with greater than 50 cattle
- (iii) Farms with greater than 50 sheep
- (iv) Farms with greater than 25 head of livestock (i.e. pigs, sheep, cattle, goats, equidae and deer)
- (v) Other farms.

The grossing factor of each of these sub-strata in turn was adjusted using multiplicative weighting to allow the total number of farms within each stratum to remain the same whilst further adjusting the total cereals, total cattle and total sheep of each stratum to the results of the matched sample method. After these grossing factors were determined final crop and livestock estimates were determined.

Sampling errors were calculated using the standard error formula. A list of standard errors is included in Annex II.

3.5.3 Non sampling errors ⁽⁶⁾

No adjustment was deemed necessary for non-sampling errors.

⁽⁶⁾ *Non-sampling error* is the error attributable to all sources other than sampling error. Non-sampling errors arise during the planning, conducting, data processing and final estimation stages of all types of survey.

3.5.4 Evaluation of results

Where administrative data were available, global comparisons were made. These did not lead to a re-evaluation of our estimates.

4. PUBLICATION AND DISSEMINATION

Preliminary results using returns from the Farm Structures Survey 2007 were published in October 2007 in the form of a statistical *release Crops and Livestock Survey June 2007 - Provisional Estimates*. This contained provisional estimates of areas under the main crops viz. Winter wheat; spring wheat; winter barley; spring barley; winter oats; spring oats; other cereals and potatoes. It also contained provisional estimates of the numbers of livestock broken down by appropriate categories viz. Dairy cows; other cows; dairy heifers; other heifers; bulls; cattle (other than breeding cattle) broken down by categories male two years and over; female two years and over; male one to two years; female one to two years; male under one year and female under one year. It also contained information on sheep – breeding sheep broken down by ewes two years and over; ewes under two years and rams and sheep other than breeding sheep. The release contained summary methodological information. It can be viewed free of charge on the CSO website. There is a nominal charge for mailed paper copies of the release.

It is intended to produce a more detailed publication with structural results other than those published in the releases. Additional information likely to be published would relate farm size to type of farm, economic size of farm size and characteristics of holder. They will also relate farm size, type of farm and economic size of farm to areas under crops for the principal crop varieties and to size of herd for the principal livestock categories. Farm size, type of farm and economic size of farm will also be related to the level of training of managers and numbers of family workers and regular non-family workers. Regional breakdowns would be given.

Explanatory notes will accompany the results, giving an overview of Farm Structures Survey methodology and commenting on the principal changes to emerge over time.

It is envisaged that this detailed publication will be produced in hard copy at a standard price based on the size of the publication. It has not yet been decided whether it will be available on the CSO website free of charge.

At present the expected publication date is during 2008.


Access to individual data is available only to Officers of Statistics under the Statistics Act, 1993.

ANNEX 1 – QUESTIONNAIRE

CONFIDENTIAL



CENTRAL STATISTICS OFFICE
PO BOX 208
SKEHARD ROAD
CORK

Enquiries to:
 LoCall 1890 924 990
or 021 453 5364
Fax 021 453 5369
Website www.cso.ie

AGRICULTURE SURVEY

JUNE 2007

Before completing this form, please see the guidelines on the next page.

The purpose of this survey is to compile statistics on farming activity undertaken in June 2007. The results are required to meet national and EU needs for regular statistics on agricultural activity.

Please return this form by **Friday, 08 June 2007**. A pre-addressed envelope, **which need not be stamped**, is enclosed for this purpose. A prompt response is needed from all farms, irrespective of the size of the farm or the level of activity on it.

If you require further information or would like to give the information by phone please make contact using one of the above telephone numbers.

The information supplied will be treated as **strictly confidential**. It will be used only in the compilation of aggregate national or regional statistics. **Under no circumstances will the individual returns be used for any other purpose or be made available to any Government Department or Agency .**

Donal Garvey
Director General

Agricultural Activity

Does the person or concern named above engage in farming? (please **X**) Yes No

Does the person or concern named above maintain land in good agricultural and environmental condition in order to receive the Single Farm Payment? (please **X**) Yes No

If **Yes** to **either** of the above, please complete pages 2 to 8.

If **No** to **both** of the above, please **X** as appropriate

Land : *transferred* *sold* *let* *temporarily idle*

Farmer retired :



Guidelines for completing this form

- Please write clearly in black or blue ink.
- Enter one letter or number in each box.
- If a box should be blank, please **do not** fill it with zeros or dashes.
- **Do not** include any commas, decimal points or text in the boxes.
- All areas should be returned to two decimal places (where applicable).

DO	DO NOT																																										
Do fill the boxes like this:	Do not fill the boxes like this:																																										
<table border="1" style="width: 100%; text-align: center;"> <tr><td> </td><td> </td><td>5</td><td>2</td><td>.</td><td>7</td><td>5</td></tr> <tr><td> </td><td> </td><td>3</td><td>5</td><td> </td><td> </td><td> </td></tr> </table>			5	2	.	7	5			3	5				<table border="1" style="width: 100%; text-align: center;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td>N</td><td>O</td><td>N</td><td>.</td><td>E</td><td> </td></tr> <tr><td>0</td><td>0</td><td>0</td><td>0</td><td>.</td><td>0</td><td>0</td></tr> </table>																N	O	N	.	E		0	0	0	0	.	0	0
		5	2	.	7	5																																					
		3	5																																								
	N	O	N	.	E																																						
0	0	0	0	.	0	0																																					
If you have nothing to enter, just leave blank.																																											
<table border="1" style="width: 100%; text-align: center;"> <tr><td> </td><td> </td><td> </td><td> </td><td>.</td><td> </td><td> </td></tr> </table>					.																																						
				.																																							

Utilisation of Land on 1 June 2007

Will the land areas below be given in... Hectares or Acres (Please **X** appropriate box and use this unit in other sections as applicable)

	Area	
1. Total area owned (including woodlands and non-agricultural land)	+	<div style="border: 1px solid black; padding: 5px; display: inline-block;">Exclude Commonage in all cases</div>
2. Land taken by you (under short or long term lease)	-	
3. Land let by you (under short or long term lease)	-	
4. Area under woods and plantations (exclude shelter belts and hedgerow timbers which should be returned as part of the fields in which they are located)	-	
5. Unused agricultural land (include rough grazing land not in use, exclude land used in the crop rotation system and land maintained in good agricultural and environmental condition in order to receive the Single Farm Payment)	-	
6. Non-agricultural land (include area under farmyards, farm buildings, roads, bog, water, etc.)	-	
7. AREA FARMED (Total of items 1 and 2 above, minus items 3, 4, 5 and 6)	=	

Analysis of Area Farmed

8. Total area under crops and horticulture (including land maintained in good agricultural and environmental condition solely for the purpose of receiving the Single Farm Payment (give details on the next page))		<div style="border: 1px solid black; padding: 5px; display: inline-block;">The sum of these items should equal Area Farmed (i.e. item 7 above)</div>
9. Grass silage (exclude arable/maize silage, see 25 & 26 across) (base area either cut or intended to be cut for grass silage this year)		
(a) 1st to 4th year's grass silage (laid down in 2003 or later years)		
(b) Permanent grass silage (laid down before 2003)		
10. Hay (base area either cut or to be cut for hay or seed this year)		
(a) 1st to 4th year's hay (laid down in 2003 or later years)		
(b) Permanent meadow (laid down before 2003)		
11. Pasture (exclude any land recorded at 9 and 10 above being used for silage or hay this year)		
(a) Rotation under 5 years old (sown in 2003 or later years)		
(b) Permanent pasture (sown before 2003)		
12. Rough grazing land in use (mountain or rocky land on which livestock have grazed at any time during the past year)		

Crops and Horticulture on 1 June 2007

Cereals Area

13. Winter wheat (sown in 2006 for harvesting in 2007)

14. Spring wheat (sown in 2007 for harvesting in 2007)

15. Winter oats (sown in 2006 for harvesting in 2007)

16. Spring oats (sown in 2007 for harvesting in 2007)

17. Winter barley (sown in 2006 for harvesting in 2007)

18. Spring barley (sown in 2007 for harvesting in 2007)

19. Other cereals (rye, triticale)

Fodder Area

25. Arable silage

26. Maize silage

27. Fodder rape/kale

28. Fodder beet

Beet/Rape Area

29. Oilseed rape (including rape grown for seed)

30. Sugar beet

Vegetables Area

20. Beans and peas

21. Potatoes

22. Turnips

23. Vegetables mainly for sale

(a) Open field vegetables (grown in rotation with general agricultural crops)

(b) Market gardening including under cover (vegetables grown in rotation with other vegetables and/or horticultural crops)

Fruit Area

31. Fruit for Sale (excluding nurseries)

(a) Apples

(b) Other fruit

Fallow Land Area

32. (a) Fallow Land not subject to aid schemes (include land being rested this year under normal crop rotation)

(b) Fallow land subject to aid schemes and/or land maintained in good agricultural and environmental condition in order to receive the Single Farm Payment (exclude set-aside arable land being used for other agricultural purposes)

Nurseries Area

24. Nurseries, horticultural bulbs, flowers and bushes (include the area under ornamental trees and nurseries of fruit trees)

Other Crops Area

33. Miscanthus (elephant grass)

34. Other crops (include kitchen gardens, linseed, etc.; exclude clover and grasses cut for hay, seed or silage)

Total - This should equal item 8 on the previous page Area

35. Total area under crops and horticulture (total of items 13 to 34 equals item 8 on previous page)

Livestock and Poultry held on 1 June 2007

Please enter below details of each category of livestock and poultry held by you on 1 June 2007. Livestock held by you on commonage or on leased land should be included as belonging to your farm.

Please enter your Herd Number

--	--	--	--	--	--	--	--	--	--

Cattle (Breeding Herd)

	Number								
1. Dairy cows (cows kept principally to produce milk for sale or for human consumption. Include culled dairy cows and dairy cows temporarily dry e.g. dairy cows in calf)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
2. Other cows (cows kept principally for rearing calves and whose milk is not intended for sale or for human consumption. Include culled cows and cows temporarily dry)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
3. Dairy heifers in calf (heifers known to be in calf for the first time intended for use as dairy cows)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
4. Other heifers in calf (heifers known to be in calf for the first time intended for use as other cows)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
5. Bulls used for breeding (include bulls owned by you only and exclude A.I.)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
6. TOTAL (items 1 to 5 above)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								

Cattle (Other than Breeding Herd)

	Number								
1. Cattle 3 years old and upwards	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(a) Male	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(b) Female	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
2. Cattle 2 years old and under 3	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(a) Male	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(b) Female intended for breeding but not yet in calf	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(c) Other female	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
3. Cattle 1 year old and under 2	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(a) Male	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(b) Female intended for breeding but not yet in calf	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(c) Other female	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
4. Cattle under 1 year	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(a) Male	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(b) Female	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
5. TOTAL (items 1 to 4 above)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								

Sheep

	Number								
Breeding Flock*									
1. Rams	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
2. Ewes	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(a) 2 years old and upwards	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
(b) Under 2 years	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
Other Sheep (i.e. other than breeding flock)									
3. 1 year old and upwards	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
4. Under 1 year including lambs	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
5. TOTAL Sheep (incl. rams) (total of items 1 to 4 above)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								

* Exclude animals intended for breeding but which are as yet too young as well as culled rams and culled ewes - such animals should be included under *Other Sheep*

Poultry

	Number								
Ordinary Fowl									
1. Laying stock (i.e. principally producing eggs for human consumption)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
2. Breeding birds (i.e. producing eggs for hatching)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
3. Table birds (incl. broilers)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
Turkeys									
4. Table turkeys	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
5. Breeding turkeys (i.e. producing eggs for hatching)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
Other Poultry									
6. Geese	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
7. Ducks	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								
8. Other (e.g. ostrich, quail)	<table border="1"><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table>								

Other Livestock		Number
1. Thoroughbred Horses	Number	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(a) Brood mares	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
(b) Other (incl. stallions and foals)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
2. Other horses and ponies		
(a) Brood mares	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
(b) Other (incl. stallions and foals)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
3. Pigs (including boars)		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. Goats		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(a) Breeding females	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
(b) Other goats	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
5. Mules, Jennets and Asses		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6. Deer		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Special Items	Ares*
1. Greenhouse vegetables	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2. Nurseries	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3. Kitchen gardens	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
4. Base area of mushroom beds	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

*1 acre = 40 ares, 1 hectare = 100 ares

Land Parcels and Use of Commonage	Number
How many separate parcels of land make up the farm?	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(A parcel is any piece of land farmed by the holding which is completely surrounded by land of other holdings and/or by roads, forests, water, etc.)	
Is commonage used?	
(Please X)	Yes <input type="checkbox"/> No <input type="checkbox"/>

Organic Farming	
1. Is the holding a registered organic farm or in conversion to registered status?	(please X) Yes <input type="checkbox"/> No <input type="checkbox"/>
2. If 'YES' specify :	
▶ Horticulture	Partly <input type="checkbox"/> Totally <input type="checkbox"/>
▶ Other Crops	<input type="checkbox"/> <input type="checkbox"/>
▶ Livestock	<input type="checkbox"/> <input type="checkbox"/>
	} Please X appropriate box(es)
3. Area used for organic farming	Area under conversion to organic farming
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Management and Training	
Accounts	
Are regular accounts kept for the purpose of managing the holding?	(please X) Yes <input type="checkbox"/> No <input type="checkbox"/>
Training	
Has the farm manger completed a farm apprenticeship under a formal scheme or any full-time or part-time courses on farming or related subjects?	(please X) Yes <input type="checkbox"/> No <input type="checkbox"/>
If 'YES' indicate whether he/she has completed:	
▶ A full-time 3rd level course of at least 2 years duration	<input type="checkbox"/>
▶ Certificate in Farming or Farm Apprenticeship under a formal scheme	<input type="checkbox"/>
▶ Other formal full-time or part-time courses of 60 hours or more	<input type="checkbox"/>
▶ Other courses of less than 60 hours duration	<input type="checkbox"/>
	} Please X appropriate box(es)

Example Section - Completion of Section "Holder, Spouse and Farm Workforce Details"

In the example **the holder** of a family-run farm is recorded **on line 1** and is a male aged 57. Over the past 12 months he was actively engaged in farming (so the 'Engaged in farming in past 12 months?' box has been X'ed). During this period he worked 50 weeks on the farm (he was away for two weeks on holidays) and on average he estimates that he spent 45 hours per week on farmwork. The holder is also returned as the manager - i.e. he is responsible for day-to-day running of the farm. He has another job, from which he obtains an income, but work on the farm takes up more of his time and thus farmwork is his major occupation.

The **holder's spouse** is recorded **on line 2** as a female aged 52 years. She didn't work on the farm in the last year and so the 'Engaged in farming in past 12 months?' box has been left blank. She does, however, work full-time as a shop assistant in a local supermarket. Thus, under the heading 'Importance of farmwork', the 'Subsidiary occupation?' box has been x'ed (see footnote 3 on page 5).

The **member of the family** recorded **on line 3** is male and is aged 25. He worked 49 weeks on the farm in the past year (he was on holidays for two weeks and was sick for a further week) and his estimated average time worked was 40 hours per week. Farmwork was his sole occupation.

The **member of the family** recorded **on line 4** is female, aged 23 who worked 45 weeks on the farm for an average of 10 hours per week. She has a full-time job outside the farm and thus her farmwork is recorded as her subsidiary occupation.

The **final member of the family**, recorded **on line 5**, is male and is aged 20. He is a university student and worked on the farm during holiday periods. In total he worked 15 weeks on the farm and, on average, he worked 30 hours per week. Since he does not have another paid occupation, farmwork is recorded as his sole occupation.

The one **regular non-family worker** is recorded **on line 7**. He is male and is aged 53. He worked 48 weeks in the past year for an average time of 42 hours per week.

Family -one line per person	Gender Please X		AGE (Years)	ENGAGED IN FARMING IN PAST 12 MONTHS? Please X if yes	TIME SPENT ON FARMWORK		MANAGER Please X if manager	IMPORTANCE OF FARMWORK Please X appropriate column						
	Male	Female			Number of weeks	Average no. of hours per week		Sole occupation?	Major occupation?	Subsidiary occupation?				
	Holder	1			X			5	7	X	5	0	4	5
Holder's Spouse/Partner	2		X	5	2									X
Other Members of Family (15 years of age and over who carried out farmwork)	3	X		2	5		4	9	4	0		X		
	4		X	2	3		4	5	1	0				X
	5	X		2	0		1	5	3	0		X		
	6													
Regular non-family workers - one line per person (Normally employed each week either part-time or full- time)	7	X		5	3		4	8	4	2				
	8													
	9													

Please continue to pages 7 and 8 over

Holder, Spouse & Farm Workforce Details

Please fill in lines 1 and 2 below for the farm holder and his/her spouse/partner (even if no farmwork was carried out). Also fill out a separate line for each person 15 years of age and over who carried out some farmwork on the holding in the past 12 months. Farmwork includes management but excludes housework.

Use lines 3 to 6, for other members of the family only and the second part, lines 7 to 12, for regular non-family workers. If there are not enough lines enter details on a separate page and enclose with the questionnaire.

An example of how to complete this page of the questionnaire is given on the previous page. (See also the footnotes at the bottom of this section).

Family -one line per person	Gender Please X		Age (Years)	Engaged in farming in past 12 months? Please X if yes	Time spent on farmwork ¹		Manager ² Please X if manager	Importance of farmwork ³ Please X appropriate column		
	Male	Female			Number of weeks	Average no. of hours per week		Sole Occupation?	Major Occupation?	Subsidiary Occupation?
Holder	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Holder's spouse/partner	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Members of Family (15 years of age and over who carried out farmwork)	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regular non-family workers -one line per person (Normally employed each week either part-time or full-time)	7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Notes:

1. Give an estimate of the number of weeks in which each person worked on the farm and the average number of hours per week devoted to this work. The number of hours given should reflect the average hours worked per week throughout the year.
2. The manager is the person responsible for the day-to-day running of the farm.
3. i.e. importance of farmwork in comparison with time spent on other occupations **from which an income was earned**. (For holders/spouses/partners **not** engaged in farming in the past 12 months please X the 'Subsidiary Occupation?' box if another full or part-time gainful activity was pursued in this period. Otherwise leave these boxes blank.)

Casual Workers, Agricultural Contractors and Farm Relief Services

Please give an estimate of the total number of days worked on your farm in the year ended 31st May 2007 by the following categories of workers.

	Days
Casual workers (non-family)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Agricultural contractors and their employees	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Farm relief services	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

(For example, 3 casual workers for 5 days gives a total of 15 days for casual workers)

Rural Development

1. Please indicate which (if any) of the following Department of Agriculture and Food schemes the holding is participating in:

- ▶ Rural Environment Protection Scheme (REPS)
- ▶ On-Farm Investment Scheme
- ▶ Installation Aid Scheme
- ▶ Forestry Development
- ▶ Investment Aid Scheme for Farm Waste Management

Please **X** appropriate box(es)

2. On the holding (or within the farm household) are there any other activities conducted from which an income is earned? (Please **X**) Yes No

3. If **'YES'** which activity (more than one may apply)?

- ▶ Farm tourism related to the farm household (bed and breakfast, farm holidays, coffee shop etc.)
- ▶ Recreational activities (riding, pony trekking, golf, pitch and putt, fishing, etc.)
- ▶ Home arts and crafts
- ▶ Processing of farm products (e.g. cheese making, etc.)
- ▶ Wood processing (e.g. sawing, etc.)
- ▶ Fish farming
- ▶ Renewable energy production
- ▶ Contractual work (using equipment of the holding)
- ▶ Other (please specify)

Please **X** appropriate box(es)

Certificate

The information given on this form is correct to the best of my knowledge.

Signature Date / / 2 0 0 7

Day-time contact telephone number

The information you have supplied will be treated as **strictly confidential**. It will be used only in the compilation of aggregate national or regional statistics. **Under no circumstances will the individual returns be used for any other purpose or be made available to any Government Department or Agency .**

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY

ANNEX 2 – SAMPLING ERRORS

Crop Characteristics FSS 2007

Code	Descriptor	N	Mean	Std Dev	Std Error
A11	Utilized agricultural area (UAA)	55616	37.62358	37.69690	0.15985
D01	Common wheat & spelt	55616	0.67969	7.03701	0.02984
D04	Barley	55616	1.39497	7.41279	0.03143
D05	Oats	55616	0.16101	2.00996	0.00852
D08	Other cereals	55616	0.02857	0.67112	0.00285
D09	Pulses - total	55616	0.01593	0.44324	0.00188
D09E_1	Peas, filed beans and sweet lupines	55616	0.01593	0.44324	0.00188
D10	Potatoes	55616	0.08328	2.25538	0.00956
D11	Sugar beet	55616	0.01348	0.35314	0.00150
D12	Fodder roots and brassicas	55616	0.09226	0.93026	0.00394
D14	Fresh vegetables, melons, strawberries - outdoor	55616	0.03837	1.31762	0.00559
D14A	Fresh vegetables, melons, strawberries - outdoor - open field	55616	0.02594	1.08129	0.00459
D14B	Fresh vegetables, melons, strawberries - outdoor - market gardening	55616	0.01243	0.67442	0.00286
D15	Fresh vegetables, melons, strawberries - under glass	55616	0.00027	0.01858	0.00008
D16	Flowers - outdoor	55616	0.01919	0.91256	0.00387
D18	Forage plants - total	55616	6.05158	12.52182	0.05310
D18A	Forage plants - temporary grass	55616	5.71868	12.14359	0.05149
D18B	Forage plants - other green fodder - total	55616	0.33290	2.25001	0.00954
D18B1	Forage plants - other green fodder - green maize	55616	0.16682	1.52619	0.00647
D18B2_3	Other forage plants	55616	0.16608	1.61446	0.00685
D20	Other crops	55616	0.01471	0.39097	0.00166
D21	Fallow land without subsidies	55616	0.01412	0.39431	0.00167
D22	Fallow land with subsidies	55616	0.13004	1.50265	0.00637
D26	Rape and turnip	55616	0.06524	1.51416	0.00642
E	Kitchen gardens	55616	0.00106	0.01850	0.00008
F	Permanent grassland and meadow - total	55616	28.80787	31.93159	0.13540
F01	Permanent grassland and meadow - pasture and meadow	55616	24.01572	24.62316	0.10441
F02	Permanent grassland and meadow - rough grazings	55616	4.64798	22.48906	0.09536
G01	Fruit and berry plantations -total	55616	0.00979	0.45420	0.00193
G05	Nurseries	55616	0.00216	0.22207	0.00094
H01	Unutilised agricultural land	55616	0.74558	6.35460	0.02695
H02	Wooded area	55616	2.20984	14.16751	0.06008
H03	Other land	55616	0.84047	3.55058	0.01506
I02	Mushrooms	55616	0.00117	0.24455	0.00104
I08	Set-aside areas under incentive schemes - total	55616	0.16266	1.69617	0.00719
I08A	Set-aside areas under incentive schemes - fallow land with no economic use	55616	0.13004	1.50265	0.00637

I08B	Set-aside areas under incentive schemes - raw material for non-food purposes	55616	0.00112	0.07546	0.00032
I08C	Set-aside areas under incentive schemes - converted into permanent pasture	55616	0.02443	0.58319	0.00247
I08D	Set-aside areas under incentive schemes - converted into wooded areas	55616	0.00692	0.30376	0.00129
I08E	Set-aside areas under incentive schemes - others	55616	0.00015	0.01477	0.00006

Livestock Characteristics FSS 2007

Code	Descriptor				
J01	Equidae	55616	0.83293	4.435	0.01881
J02	Bovine under one year old -total	55616	13.49734	20.489	0.08688
J03	Bovine under 2 years - males	55616	6.93662	15.105	0.06405
J04	Bovine under 2 years - females	55616	7.10256	13.823	0.05861
J05	Bovine 2 years and older - males	55616	5.64548	15.980	0.06776
J06	Heifers 2 years and over	55616	3.82507	10.393	0.04407
J07	Dairy cows	55616	9.46364	24.913	0.10564
J08	Bovine 2 years and over - other cows	55616	9.16691	15.064	0.06388
J09	Sheep - total	55616	43.52740	129.187	0.54780
J09A	Sheep - breeding females	55616	24.25162	68.734	0.29146
J09B	Sheep - others	55616	19.27578	67.657	0.28689
J10	Goats	55616	0.07654	3.671	0.01557
J10A	Goats - breeding females	55616	0.05004	3.317	0.01407
J10B	Goats - others	55616	0.02650	1.071	0.00454
J11	Pigs - piglets under 20 kg	55616	6.88106	206.135	0.87408
J12	Pigs - breeding sows over 50 kg	55616	2.49416	77.626	0.32916
J13	Pigs - others	55616	14.92279	441.637	1.87269
J14	Poultry - broilers	55616	102.53296	2482.980	10.52865
J15	Laying hens	55616	25.18142	987.611	4.18780
J16	Poultry - others	55616	15.15497	1410.130	5.97944
J16A	Turkeys	55616	8.76956	595.758	2.52621
J16B	Ducks	55616	6.19712	1277.730	5.41799
J16C	Geese	55616	0.08399	3.627	0.01538
J16D	Other poultry	55616	0.10430	13.908	0.05898