Methodology of animal statistics

A study of the methodology applied by the Member States of the European Union and candidate countries to livestock surveys, slaughter statistics, production forecasts (gross domestic production), external trade statistics and the latest developments in the field of poultry statistics

Part A: Member States of the European Union
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1 General

(1) To ensure sound management of the common agricultural policy, the European Commission needs regular data on developments in livestock population and meat production and on probable production trends.

(2) While data collection and preparation and the organisation of surveys at national level should remain the responsibility of the statistical services of the Member States, the Commission has the task of ensuring the coordination and harmonisation of statistical information at European level and the use of the harmonised methods required to implement common policy.

(3) The Eurostat Directorate-General of the European Commission provides the public with farming data on the Member States and the applicant countries in the form of the "New Cronos" database. While the collection of data in the Member States is governed by regulations and directives as well as gentlemen's agreements, information on the applicant countries has until now been provided on a voluntary basis. In both cases, the statistics must be accompanied by reports on the methods applied to ensure that the data are wholly comparable and provide users with sufficient information. The European Commission therefore produces detailed method reports, which also provide important information for the Agris project. In this project, presented to the Working Group on Animal Products Statistics in March 2000, available data is recorded from various databases and can be checked for consistency. The inconsistencies found are then investigated and any improvements are implemented.

(4) Method reports are drawn up in cycles of several years when relevant changes take place in the area of animal statistics. The last reports were drawn up in 1985 and 1991. Since then, several fundamental changes have taken place: Council Directives 93/23/EEC, 93/24/EEC, 93/25/EEC and 97/77, the accession of Austria, Finland and Sweden to the European Union, the change of methodology in the Member States, etc. In addition, enlargement of the EU is imminent, and a method report on animal products statistics would provide the applicant countries with a valuable guide to analysing the system of animal products statistics in the current 15 Member States of the EU and finding ways of bringing their system of farming statistics into line with EU requirements.

(5) The study made use of all the relevant available information. In order to ensure that the study provided a completely up-to-date picture of the methodology of animal statistics, a questionnaire was distributed among the Member States' and candidate states’ delegates to the Working Party on Animal Production Statistics. All the questionnaires which were completed and returned to Eurostat were used to compile the report.

(6) The Member States send Eurostat statistical data pursuant to Community legislation (Directives and Decisions) and gentlemen’s agreements. In order to ensure that the statistics are produced cost effectively, Eurostat applies the "agriflex principle", which says that not all Member States have
to fulfil the requirements in the same manner. If an area of agricultural production is insignificant in a particular country, the items of information to be provided by that country can be reduced in number or even eliminated altogether. This principle is akin to the "selection according to the concentration principle", which is often applied in market research, and yields statistically representative information at lower cost. The Council Directives on animal statistics contain numerous examples of this approach (e.g. the option available to Member States whose pig population is less than three million head to carry out just one survey, rather than the usual three). Another possibility for cost savings is to use administrative data, an option which the Directives expressly provide for.

2 Legislative reference texts


Table 1

<table>
<thead>
<tr>
<th>Animal</th>
<th>Directive</th>
<th>Date</th>
<th>Decision</th>
<th>Date</th>
</tr>
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<tr>
<td>Pigs</td>
<td>93/23/EEC</td>
<td>1 June 1993</td>
<td>94/432/EC</td>
<td>30 May 1994</td>
</tr>
<tr>
<td>Cattle</td>
<td>93/24/EEC</td>
<td>1 June 1993</td>
<td>94/433/EC</td>
<td>30 May 1994</td>
</tr>
<tr>
<td>Sheep</td>
<td>93/25/EEC</td>
<td>1 June 1993</td>
<td>94/434/EC</td>
<td>30 May 1994</td>
</tr>
<tr>
<td>Goats</td>
<td>93/25/EEC</td>
<td>1 June 1993</td>
<td>94/434/EC</td>
<td>30 May 1994</td>
</tr>
</tbody>
</table>

The Council Directives were amended by Directive 97/77/EEC. The Commission Decisions were amended by the decisions:
- 95/380/EC of 18 September 1998;
- 98/718/EC of 4 December 1998;
- 99/47/EC of 8 January 1999
- 99/547/EC of 14 July 1999
- 2000/380/EC of 29 May 2000

3 Structure of the study

(8) The methodology used by the Member States and candidate states is then described in detail. One chapter is devoted to each country. Each chapter has the same structure:

A) Livestock surveys
   aa) Surveys on the number of pigs
   ab) Surveys on the number of cattle
   ac) Surveys on the number of sheep and goats

B) Statistics on slaughterings

C) Data on external trade in live animals
D) Production forecasts (gross indigenous production)

E) Poultry statistics

The methodologies used by the EU Member States are looked at first, followed by a detailed examination of the situation in the candidate states.

**Part A: Member States of the European Union**

1 **Belgium**

1.1 **Livestock surveys**

1.1.1 Surveys on the number of pigs

(9) The described methodology was used until 2002. Then Belgium reduced the pig surveys from four to two and furthermore administrative data for the production forecasts were used. The characteristics of the database that contains administrative data (Sanitel) are also explained in this study.

(10) Belgium carries out four pig surveys a year, in April, May, August and November. The April and August surveys are concentrated on pigs while the surveys in May and November cover various aspects of agricultural activity.

(11) The surveys in April, August and November are samples while the one in May is a full survey. With the surveys in April and August 23 % of the total pig population are covered. The survey in November covers 44 %. In November the average sampling error for the total pig population is 0.6% (confidence interval 68 %). The sampling errors for April and August are not known.

(12) Within the April and August surveys one selects 60 communes. All enterprises which are located in these communes are part of the survey. A rotation system is installed; one commune can only be selected once every two years. To determine the sample size the communities are selected in both regions in accordance with the regional subdivision. The sample is then distributed among the four half-years. The regional subdivision will initially be made in proportion to the pig population recorded (agricultural census in May). This breaks down into 4.04% for the Walloon region and 95.96% for the Flemish region. Since the concentration of breeding farms is lower in the Walloon region, the proportion of communities to be recorded must be higher than the proportion of pigs.

(13) The sampling selection for the November survey is based on the data of the previous year's agricultural census in May. For the construction of the sample basis, types of holding are excluded from the sampling frame which do not have arable crops or livestock and horticulturists (farming types 2, 3 and 6) which did not record crops or livestock in the November survey.
(14) A stratified random sample is taken. The following criteria are applied: language region, economic size and techno-economic orientation of the enterprise. The sample design covers 24 strata.

(15) The sample holdings were assigned to the different strata using the Neyman method. This method optimises the estimate of the overall value of a specific variable. It is based on the spread of these variables in the various strata. Since several variables must be estimated for this survey, an optimum result cannot be achieved for a specific variable, but it can be achieved for general criteria such as the standard gross margin.

(16) In April and August, about 2 500 holdings (4% of the total number of holdings) are surveyed. In November, the survey is carried out at 15 000 holdings (25%).

(17) In November the survey takes the form of a postal enquiry. In April and August the samples are carried out by officials of the local administrations. The survey in May is done in the same way. The respondents are committed by law to respond and therefore the response rate is 100%. The surveys are carried out by the Institut National de Statistique (National Statistics Office).

(18) In the medium term (up to 2005), Belgium plans to partially replace statistical surveys on the pig population by the use of administrative data. Sanitel and Animo are available as a data source.

(19) In the future (beginning in 2002) Belgium will carry out only two surveys a year, at six-month intervals in the months of May/June and November/December. Belgium will use administrative information from the Sanitel system to compile its gross indigenous production forecasts.

(20) The basic conditions determining the use of the Sanitel administrative database in compiling gross indigenous production forecasts are:

- A cooperation group made up of officials from the National Statistical Institute (Institut National de Statistique) at the Belgian Ministry of Economic Affairs, from the Centre for Agricultural Economics (Centre d’Économie Agricole) at the Ministry of Small Enterprises, Traders and Agriculture, or from corresponding bodies set up under the regionalisation programme, and from the European Commission shall supervise the use of the Sanitel administrative database in compiling gross indigenous production forecasts.

- In particular this group shall ensure that the procedure for updating the Sanitel register will continue to guarantee adequate coverage and representativeness compared with the results of the pig livestock surveys. This group shall always undertake a detailed examination each time there is a significant change in the Sanitel administrative database.

- Before 31 December 2004, Belgium shall transmit to the European Commission a report on the experience acquired through use of the
Sanitel administrative database in compiling gross indigenous production forecasts.

(21) SANITEL is a computerised system intended to manage automatically the permanent inventory of animals by taking account of the entries into, and departures from, each herd. It also provides information on:

- health status (eg. contagious diseases, brucellosis);
- the status concerning residues (eg. detection of antibiotics or hormones on slaughter);
- the status concerning contaminants.

Note: the difference between the latter two points lies in the responsibility of the keeper. In the case of residues, the substances are in the animal following an action by the keeper. This is not the case with contaminants.

This third status has had to be added following the different crises which the farming world has suffered.

(22) This system shows the situation as regards the inventory of herds of the different species (currently cattle and pigs) and traces the movements of animals. The objective of SANITEL is above all the health and epidemiological monitoring of the animals concerned.

(23) SANITEL is a national database but one which is decentralised in regional posts (called federations) corresponding to the following provinces:

- a. Lier (Province of Antwerp);
- b. BerTEM, including Brussels (Province of Flemish Brabant);
- c. Braine (Province of Walloon Brabant);
- d. Torhout (Province of Western Flanders);
- e. Drongen (Province of Eastern Flanders);
- f. Mons (Province of Hainaut);
- g. Loncin (Province of Liège);
- h. Rocherat (Eastern Cantons);
- i. Alken (Province of Limburg);
- j. Marloie (Province of Luxembourg);
- k. Ciney (Province of Namur).

(24) However, the management and uniformity of the system are handled in a centralised way by the Central Association for Animal Health (ACSA) under the supervision of the public health administration.

(25) SANITEL can constitute a tool with a view to a reduction in the number of surveys. However, this database is not designed either for statistical processing or for counting on a specific date. In fact, pig monitoring is not individual but on a herd basis.

(26) Every keeper of pigs is required to complete a health certificate showing the capacity of his holding. Subsequently, every three or four
months approximately, he has a visit from an approved veterinarian so that he can declare the type and number of animals actually present. The exact number of pigs is only known when the visit reports are made or where there is movement! The veterinarian is required to send his reports to the Federation every week (or every day in a crisis period).

(27) Since all the veterinarians do not visit all holdings at the same time, a method allowing the number of pigs by category to be determined precisely at a given time has been developed.

(28) Moreover, the pig data are encoded by optical reading at the time visit reports are made. If, unfortunately, the veterinarian introduces an erroneous datum into his encoding sheet, the system will not detect it and it will be difficult to correct it later. With a view to detecting and correcting these errors, a second procedure has been developed.

(29) The categories of pigs present in SANITEL are:

- breeding boars;
- weaned piglets;
- rearing pigs;
- fattening pigs;
- sows.

(30) Sows are defined as being covered sows and other sows which are not covered. This category does not include young sows which have not been covered which are included in the category of rearing pigs.

1.1.2 Surveys on the number of cattle

(31) Belgium carries out two cattle surveys a year, in May and November. With the surveys multiple objectives are established.

(32) The May surveys is a full survey; the one of November is a sample survey. The average sampling error for the total bovine population is 0.3% (confidence interval 68%).

(33) The sampling selection for the November survey is based on the data of the previous year's agricultural census in May. For the construction of the sample basis, types of holding are excluded from the sampling frame which do not have arable crops or livestock and horticulturists (farming types 2, 3 and 6) which did not record crops or livestock in the November survey.

(34) A stratified random sample is taken. The following criteria are applied: language region, economic size and techno-economic orientation of the enterprise. The sample design covers 24 strata.

(35) The sample holdings were assigned to the different strata using the Neyman method. This method optimises the estimate of the overall value of a specific variable. It is based on the spread of these variables in the
various strata. Since several variables must be estimated for this survey, an optimum result cannot be achieved for a specific variable, but it can be achieved for general criteria such as the standard gross margin.

(36) The survey is carried out at 15 000 agricultural holdings, i.e. 25%. It records 33% of the total bovine population.

(37) In November the survey takes the form of a postal enquiry. In May the samples are carried out by officials of the local administrations. The respondents are committed by law to respond and therefore the response rate is 100%. The surveys are carried out by the Institut National de Statistique (National Statistics Office).

(38) In the medium term (up to 2005), Belgium has no plans to use administrative data as a substitute for statistical surveys on the bovine population.

1.1.3 Surveys on the number of sheep and goats

(39) Belgium carries out one survey of the sheep and goat population a year - in May. The surveys are carried out jointly in May each year (integrated surveys).

(40) In May the samples are carried out by officials of the local administrations. The respondents are committed by law to respond and therefore the response rate is 100%. The surveys are carried out by the Institut National de Statistique (National Statistics Office).

(41) In the medium term (up to 2005), Belgium has no plans to use administrative data as a substitute for statistical surveys on the sheep and goat population.

1.2 Statistics on slaughterings

(42) Belgium compiles monthly statistics on the number and slaughter weight of animals slaughtered in abattoirs for human consumption. These cover pigs (total), calves, heifers, cows, bulls, steers, sheep (total), lambs and goats (total).
### Availability of monthly data on slaughterings

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Slaughter weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigs, total</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Calves</td>
<td>available</td>
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</tr>
<tr>
<td>Heifers</td>
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</tr>
<tr>
<td>Steers</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Sheep, total</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Lambs</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Goats, total</td>
<td>available</td>
<td>available</td>
</tr>
</tbody>
</table>

(43) All abattoirs report their slaughterings to the Institut National de Statistique every month. The results are available two months after the reference month.

#### 1.3 Data on external trade in live animals

(44) Since 1 January 1999 data on external trade no longer refer to the Belgo-Luxembourg Economic Union (BLEU), but to Belgium.

(45) The National Bank of Belgium (BNB) has collected data on external trade since 1 January 1995. For live animals information is provided on number, weight and value (€).

(46) Before the creation of the internal market and the abolition of tax and customs formalities at the internal borders of the European Union on 1 January 1993, data on external trade were collected on the basis of customs documents. For extra-EU trade this continues to be the case. For intra-EU trade a new survey method called Intrastat has been introduced.

(47) An important feature of this new method is that enterprises send data directly to the BNB. Up to the end of 1997, Belgian enterprises were not obliged to report their figures before the month in which the annual dispatches or arrivals exceeded BEF 4 200 000 (104 115 €). In 1998 the threshold was raised to BEF 10 000 000 (247 894 €) (only trade flows exceeding this threshold must be reported).

(48) The Intrastat declaration must arrive at the BNB no later than the 20th working day of the month after the reference month. The data are usually available after two and a half to three months.

(49) To calculate estimated production volumes, the data on external trade in live animals are converted into carcass equivalents using special conversion coefficients.
1.4 Production forecasts (gross indigenous production)

(50) Gross indigenous production is calculated according to the official EU definition, i.e. total slaughterings plus the export of live animals, minus the import of live animals.

(51) To make its forecasts, the BEE used a demographic model based on the results of the surveys and censuses carried out regularly during the year. A breakdown of the various types of animal by weight (pigs) or age (cattle) and gender was used, and reproduction potential and productivity were also taken into account.

(52) The model was validated by taking into account movements in appropriations (chronological series), previous observations and market conditions (prospects).

(53) These initial estimates were presented to experts for their opinion and confirmation.

(54) Beginning in 2002, census data will be replaced by administrative data, those from SANITEL. Another model for calculating the GDP forecast which is simpler and more rapid to use has been devised. This links the number of sows to the GDP in such a way as to establish GDP forecasts directly and uniquely on the basis of this population. The main question which arises is the quantification of this link, in other words the determination of the coefficient “\( ct \)” in the following equation

\[
PIB_t = ct \cdot SAN_{t-7}
\]

where \( PIB_t \) = gross domestic production in month \( t \)

\( SAN_{t-7} \) = number of sows in production in month \( t-7 \), a number calculated on the basis of SANITEL data.

(55) The 7-month deviation corresponds to the normal period between farrowing and slaughter (in other words: 70 days-weaning- + 140 days – fattening-). The model has been tested with other periods (11 months, in other words by adding the gestation period; and 6 months), but it is with \( t-7 \) that the strongest ratio is obtained.

1.5 Poultry statistics

(56) Poultry statistics are currently available from various sources in Belgium:

- The overall poultry population of the individual farmers is known from the annual agricultural and horticultural surveys in May and December and the surveys on the structure of the agricultural holdings.

- Prodcom industrial statistics provide businesses with less than ten employees or with an annual turnover of BEF 100 000 (2 479 €) monthly data on their production in terms of monetary units (Belgian Francs) and
weight units (CPA code 15.12). In 1997 these results covered approximately 93% of the sector's turnover.

- Poultrymeat consumption is monitored via household budget surveys.

(57) In accordance with a European Union Regulation, the department of the Ministry for Agriculture which is responsible for rearing provides the Commission with data on hatching eggs and day-old chicks. The "Centre d'Economie Agricole" evaluates these data to produce meat balances (using technical coefficients).

2 Denmark

2.1 Livestock surveys

2.1.1 Surveys on the number of pigs

(58) In Denmark five surveys on the number of pigs are carried out per year, namely in January, April, May, July and October. The surveys carried out in January, April, July and October are separate pig censuses, while the surveys carried out in May are integrated agricultural surveys.

(59) All the surveys are sample surveys. The last full survey on the number of pigs was carried out in 1999. The average sampling error is 1.0 %. All the pig population is included into the sample surveys.

(60) 5,000 farms are drawn from the Register of Agricultural Statistics. When the farms are selected, they are divided into 14 strata according to the total number of pig at the farm. Random sample is then drawn for each stratum. The selection method is optimum, i.e. the strata of the total sample are divided so that the variance of the estimated total number of pigs is minimised.

(61) By the sample survey 5,000 farms are recorded which is 7 % of all farms breeding pigs. All the pig population is included into the sample frame. The 5,000 farms in the sample breed 50 % of the total pig population.

(62) Denmark does not carry out the surveys in selected regions.

(63) The data are obtained by written inquiries. The average response rate achieved is 90 %. Analyses have shown that the non response rate has no significant affect on the survey results. Statistics Denmark is responsible for carrying out the surveys.

(64) Denmark does not plan to use administrative data instead of statistical surveys within the next 5 years.

2.1.2 Surveys on the number of cattle

(65) In Denmark two surveys on the number of cattle are carried out per year, namely in May and December. The surveys carried out in May are
integrated agricultural surveys while surveys carried out in December are separate cattle censuses.

(66) All the surveys are sample surveys. The last full survey on the number of cattle was carried out in 1999. The average sampling error in the recent years is 1.2%. All the cattle population is included into the sample survey.

(67) 3,000 farms are drawn from the Register of Agricultural Statistics. When the farms are selected, they are divided into 14 strata according to the total number of cattle at the farm. Random sample is then drawn for each stratum. The selection method is optimum, i.e. the strata of the total sample are divided so that the variance of the estimated total number of cattle is minimised.

(68) By the sample survey 3,000 farms are recorded which is 4% of all farms breeding cattle. All the cattle population is included into the sample frame. 3,000 farms in the sample breed 17% of the total cattle population.

(69) Denmark does not carry out the surveys in selected regions.

(70) The data are obtained by written inquiries. The average response rate achieved is 90%. Analyses have shown that the non-response rate has no significant affect on the survey results. Statistics Denmark is responsible for carrying out the surveys.

(71) For the first time the stock of cattle was estimated on the basis of data from the Central Register of Livestock instead of the traditional sample surveys on 31 December 2000. The primary data used in compiling the statistics on the stock of cattle are extracted from Register of Agricultural Statistics, which is updated annually on the basis of the agricultural and horticultural survey, the municipal property registers, the General Register of Agricultural Statistics, and the Central Register of Livestock.

(72) The Central Register of Livestock is maintained by the Ministry of Food, Agriculture and Fishery and the Cattle Database is maintained by the Agricultural Advisory Centre and the Danish Association of Cattle Breeders.

(73) The Central Register of Livestock can be used for several purposes, but the actual purpose of the register was to assist in preparing health programmes. The Cattle Database is a major system, which primarily serves cattle breeders with a view to achieving a sound operation of their farms. Data from the Cattle Database are used in updating the Central Register of Livestock.

(74) The register consists of information on number, birthday and sex of each individual animal for several types of farm, e.g. dairy cows and cows for meat production, and to this is added a range of identification numbers.

(75) The register is updated on the basis of weekly reports of data by cattle breeders with respect to increase and decrease of cattle, and information...
by suppliers and purchasers. Furthermore, the decrease of livestock for
slaughter is verified by the slaughterhouses and livestock dead from
disease or accident by the destruction plants.

(76) Statistics Denmark extracts data from the Cattle Database with respect
to age of heifers and gestation of each individual animal.

(77) However, as none of the registers has been established for the
purpose of replacing the surveys of cattle, it has been necessary to carry
out comprehensive analytical work to create a link between the cattle
registers and Statistics Denmark register system for agricultural statistics.

2.1.3 Surveys on the number of sheep and goats

(78) In Denmark one survey on the number of sheep is carried out per year,
while there are no surveys on the number of goats. The survey on sheep
is carried out in May. All the surveys on the number of sheep are
integrated agricultural surveys.

(79) All the surveys on the number of sheep are sample surveys. The
average sampling error is 14 %. The last full survey on the number of
sheep was carried out in 1999.

(80) The number of sheep is obtained within the integrated agricultural
survey. Stratification is based on economic size, farm size and
geographical location. The selection method is optimum; i.e. the strata of
the total sample are divided so that the variance of the estimated totals is
minimised.

(81) All the sheep population is included into the sample frame. By the
sample survey 4,000 farms are recorded which represents 6 % of all farms
breeding sheep.

(82) The survey on the number of sheep in May is carried out in selected
regions, namely in all counties.

(83) The data are obtained by written inquiries. The average response rate
achieved is 100 %. Statistics Denmark is responsible for carrying out the
surveys.

(84) Denmark does not plan to use administrative data instead of statistical
surveys within the next 5 years.

2.2 Statistics on slaughterings

(85) Monthly slaughtering data are available in Denmark on the number and
slaughterweight for pigs overall, calves, heifers, cows, bulls, bullocks,
sheep overall and lambs.

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<thead>
<tr>
<th>Availability of monthly data on slaughterings</th>
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<td>Number</td>
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(86) Statistics Denmark receives figures (in number and weight) from the Veterinarian control for the totals. The slaughterhouses send in the statistics broken down on 7 groups for cattle, 6 groups for pigs, 5 groups for poultry, 3 groups for sheep and lambs and 3 groups for horses. The figures are normally received 3 week of the month provisional and 6 weeks for the final figures.

2.3 Data on external trade in live animals

(87) Statistics Denmark receives monthly figures from companies which yearly imports from EU countries exceeds 1.5 Mio DKK (about 201 300 €) and exports which exceeds 2.5 Mio DKK (about 335 500 €).

(88) The figures are available 6 weeks after the reference month. The categories are more detailed than wished in the Directives.

2.4 Production forecasts (gross indigenous production)

(89) The methods used are pipe-line models which reach 10 – 12 months for pigs and 1.5 – 2 years for cattle and one year for sheep and lambs. The number consists of:

• Slaughtering at slaughterhouses
• Exports of live animals for slaughter
• Slaughtering at the farms

2.5 Poultry statistics

(90) Statistics Denmark receives quarterly figures on slaughtering of (Number and dressed carcassweight):

• Broilers
• Hens
• Ducks
• Geese
• Turkeys

The figures received are the totals in slaughterhouses. Furthermore a quantity for direct sale and own consumption is added. Forecasts have up to now been of a poor quality. An econometric model will probably be of a higher quality than the normal based on incubation.

3 Germany

(91) The German methodology is valid from 1999 onwards.

3.1 Livestock surveys

3.1.1 Surveys on the number of pigs

(92) Germany conducts two pig surveys per year, the first in May and the second in November. These are integrated livestock censuses in that other types of animal (together with land use and farm structure) are surveyed at the same time.

(93) The reduction in the number of surveys from three to two is justified as follows: the annual seasonal variations in the number of pigs have attenuated over time, as has their amplitude. The pig population is becoming increasingly concentrated on fewer holdings in response to structural changes in farming. Consequently, the number of pigs actually included in the sample is increasing, even though the number of holdings in the sample remains the same.

(94) In May of odd-numbered years, these pig censuses are carried out as a full survey, otherwise they are stratified sample surveys. Since May 1999, a new sampling procedure has been used for the integrated survey of livestock, land use and structure. The last full survey was carried out in Germany in May 1999. The percentage of the pig population included in the sample is much higher than the percentage of holdings surveyed, as the inclusion rate for holdings with very large livestock populations is generally 100%. For the May sample survey, up to 100 000 holdings are questioned, the corresponding figure for the November survey being 80 000 maximum. In November 1999, the total number of holdings with pigs was around 139 000.

(95) The sample surveys are stratified samples. Holdings with very large livestock populations are generally recorded in strata with sampling rates of 100%.

(96) Germany carries out statistical surveys of pigs (integrated surveys) across the entire country (not in selected regions only).

(97) During the sample surveys, the pig population is estimated by grossing up.
(98) In Germany, the surveys are a combination of face-to-face interviews with farmers, a written questionnaire and the use of administrative data plus a survey (pilot project in Bavaria and Baden-Württemberg). The average response rate is nearly 100%. If a farmer fails to reply, repeated reminders are first sent out with an indication of the response obligation and of the coercive penalties and administrative fines that will be imposed in the event of failure to reply. Should this prove fruitless, the grossing-up factor applied at the next stage is increased accordingly. The survey is carried out by the Land statistical offices and the municipal authorities.

(99) In the medium-term, Germany plans to replace part of the statistical surveys on the pig population with administrative data. Use may also be made of the Integrated Administrative and Control System (IACS). In Bavaria and Baden-Württemberg, this procedure was introduced in May 1999 as part of a pilot project.

3.1.2 Surveys on the number of cattle

(100) Germany carries out two cattle surveys per year, the first in May and the second in November. These are integrated livestock censuses in that other types of animal (together with land use and farm structure) are surveyed at the same time.

(101) In May of odd-numbered years, these cattle censuses are carried out as a full survey, otherwise they are stratified sample surveys. Since May 1999, a new sampling procedure has been used for the integrated survey of livestock, land use and structure. The last full survey was carried out in Germany in May 1999. The percentage of the pig population included in the sample is much higher than the percentage of holdings surveyed, as the inclusion rate for holdings with very large livestock populations is generally 100%. For the May sample survey, up to 100 000 holdings are questioned, the corresponding figure for the November survey being 80 000 maximum. In November 1999, the total number of holdings with cattle was around 277 000.

(102) The sample surveys are stratified. Holdings with very large livestock populations are generally recorded in strata with sampling rates of 100%.

(103) Germany carries out statistical surveys of cattle (integrated surveys) across the entire country (not in selected regions only).

(104) During the sample surveys, the cattle population is estimated by grossing up.

(105) In Germany, the surveys are a combination of face-to-face interviews with farmers, a written questionnaire and the use of administrative data plus a survey (pilot project in Bavaria and Baden-Württemberg). The average response rate is nearly 100%. If a farmer fails to reply, repeated reminders are first sent out with an indication of the response obligation and of the coercive penalties and administrative fines that will be imposed in the event of failure to reply. Should this prove fruitless, the grossing-up
factor applied at the next stage is increased accordingly. The survey is carried out by the Land statistical offices and the municipal authorities.

(106) In the medium-term, Germany plans to replace part of the statistical surveys on the cattle population with administrative data. Use may also be made of the Integrated Administrative and Control System (IACS). In Bavaria and Baden-Württemberg this procedure was introduced in May 1999 as part of a pilot project.

3.1.3 Surveys on the number of sheep and goats

(107) Germany carries out an annual survey of the sheep population in May. The goat population is estimated every five years. The sheep survey is an integrated cattle census in that other types of animal (together with land use and farm structure) are surveyed at the same time.

(108) In May of odd-numbered years these sheep censuses are carried out as a full census, otherwise they are stratified sample surveys. Since May 1999, a new sample procedure has been applied as part of the integrated survey of livestock, land use and structure. The last full survey was carried out in Germany in May 1999. The percentage of the sheep population included in the sample is much higher than that of the holdings surveyed, as the inclusion rate for holdings with very large cattle populations is generally 100%. For the May sample survey, up to 100 000 holdings are questioned. The total number of holdings with sheep was around 34 000 in May 1999.

(109) The sample surveys are stratified. Holdings with very large livestock populations are generally recorded in strata with sampling rates of 100%.

(110) Germany carries out the statistical surveys of sheep (integrated surveys) across the country as a whole (not in selected regions only).

(111) The estimate of the sheep population not covered by the survey is done by grossing-up.

(112) In Germany, the surveys are a combination of face-to-face interviews with farmers, a written questionnaire and the use of administrative data plus a survey (pilot project in Bavaria and Baden-Württemberg). The average response rate is nearly 100%. If a farmer fails to reply, repeated reminders are first sent out with an indication of the response obligation and of the coercive penalties and administrative fines that will be imposed in the event of failure to reply. Should this prove fruitless, the grossing-up factor applied at the next stage is increased accordingly. The survey is carried out by the Land statistical offices and the municipal authorities.

(113) In the medium-term, Germany plans to replace part of the statistical surveys on the sheep population with administrative data. Use may also be made of the Integrated Administrative and Control System (IACS). In Bavaria and Baden-Württemberg, this procedure was introduced in May 1999 as part of a pilot project.
3.2 Statistics on slaughterings

(114) Germany compiles monthly statistics on the number and slaughter weight of animals slaughtered in abattoirs for human consumption. These are for pigs (total), calves, heifers, cows, bulls, steers, sheep (total) and goats (total).

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<tr>
<th>Availability of monthly data on slaughterings</th>
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<tr>
<td>Number</td>
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<tr>
<td>Pigs, total</td>
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<tr>
<td>Calves</td>
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<td>Heifers</td>
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<td>Cows</td>
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<td>Bulls</td>
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<td>Steers</td>
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<td>Sheep, total</td>
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<tr>
<td>Lambs</td>
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<td>Goats, total</td>
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</table>

(115) Statistics on slaughterings show the total number of animals slaughtered domestically. These are secondary statistics, being derived from the number of animals officially inspected by veterinarians and meat inspectors in accordance with the Meat Hygiene Act. Data are broken down by type of animal (cattle, pigs, sheep, goats and horses) and, in the case of cattle, are further subdivided into calves, steers, bulls, cows and female cattle. A distinction is also made between commercial and domestic slaughterings, and the origin of the slaughtered animals (domestic, foreign) is given.

(116) As part of the statistics on slaughterings, monthly surveys are conducted on the slaughter weight of cattle, calves, pigs and sheep. For commercial slaughterings, these data are also taken from abattoir reports of quantities delivered and prices paid. Pursuant to the provisions of the Administrative Regulation on price reporting for slaughter cattle and carcasses outside markets subject to obligatory notification (Fourth ViehFIGDV), owners of abattoirs are under a response obligation if cattle, calves, pigs or sheep are delivered to them live or slaughtered and if they sell or process the meat of these animals for own or third-party account. The response obligation only exempts abattoirs which slaughter an average of fewer than 75 pigs, 30 head of cattle or 50 sheep per week. However, under the terms of Article 2(2) of the Fourth ViehFIGDV, abattoirs may also be exempt from the response obligation if their returns in terms of turnover volume are not significant for pricing. Around two-
thousands of all commercial slaughterings in Germany take place in abattoirs subject to response obligation.

(117) The slaughter weights of horses and goats are long-term averages. They are determined by the Statistisches Bundesamt [Federal Statistical Office] in agreement with the Federal Ministry of Food, Agriculture and Forestry. For home slaughterings (excluding pigs), the average values are estimated on the basis of the figures arrived at for commercial slaughterings. For pigs slaughtered at home, which are traditionally fattened more than commercially slaughtered pigs, an average slaughter weight laid down by the Federal Ministry of Food, Agriculture and Forestry is applied.

3.3 Data on external trade in live animals

(118) In Germany, external trade statistics are designed as central statistics, with the Statistisches Bundesamt having sole responsibility for implementing and organising them.

(119) Since the completion of the internal market on 1 January 1993 and the concomitant elimination of customs checks on goods at the internal borders of the Member States of the European Union, a distinction has been made in external trade statistics between extra- and intra-Community trade, i.e. data on cross-border movements of goods are recorded conventionally (via the customs authorities) or by direct notification on the part of enterprises.

(120) Extra-Community trade statistics (the legal basis for which is Council Regulation (EEC) No 1172/95 on the statistics relating to the trading of goods by the Community and its Member States with non-member countries, plus the implementing regulation and amendments) record Germany’s cross-border trade with non-member countries.

(121) Extra-Community trade data are traditionally collected by the customs authorities during completion of the import or export formalities required by legislation. The document to be used here is the Single Administrative Document (SAD), which is used to simultaneously record completion of formalities for customs, taxation, external trade and external statistics. It consists of several copies, numbers two and seven of which (export and import declarations respectively) are used for statistical purposes.

(122) Statistical declarations thus form an integral part of customs forms. They are checked by customs bodies for completeness and obvious errors before being forwarded to the StBA. This system guarantees virtually complete coverage of these goods transactions.

(123) All movements of goods, whether imports and exports, require the completion of customs formalities. In general, therefore, the importer/exporter supplies the data as the declarant. He can either make the declaration himself or have it done by an authorised representative (such as a forwarding agent).
(124) Intra-Community statistics (for details of legal basis, c.f. Council Regulation (EEC) No 3330/91 on the statistics relating to the trading of goods between Member States, plus implementing regulation and amendments) record cross-border trade between Germany and the other Member States of the EU.

(125) For the purposes of customs legislation, trade within the EU, i.e. within the Community customs area, is now monitored by the customs authorities in a few cases only (e.g. trade in non-Community goods), so a new/different reporting system had to be set up in the form of direct declarations by the enterprises involved. The scheme in question is known as the permanent statistical reporting system, or Intrastat for short. One of the features of the Intrastat system is its close links with the turnover tax system, which makes indirect controls possible as a result of the turnover tax returns to be submitted each month by enterprises to the financial authorities.

(126) Under the Intrastat system (form N), cross-border transactions in goods may be declared only in the following cases only:

- The merchandise in question must be Community merchandise, i.e. goods that were obtained or produced in the EU, or that originated in a non-member country and were brought into free circulation in the EU in accordance with customs legislation, and

- the goods flow was between regions of EU Member States that also belong EU territory subject to turnover tax.

All other cross-border transactions of goods are recorded under the statutory customs procedures.

(127) There is a reporting obligation on enterprises engaged in intra-Community trade that are subject to turnover tax. The burden on enterprises is eased by the assimilation threshold, beneath which a statistical declaration need not be made.

Declaration exemptions apply, *inter alia*, to movements of goods of minor economic significance (such as transfers of personal property), goods that are particularly difficult to record (e.g. diplomatic goods) and the temporary import and export of goods (e.g. for trade fairs and exhibitions).

In addition to these exceptions, which are independent of the notification system used, there are also general exemptions that take account of the specific features of the notification systems:

- For example, in the case of direct surveys of companies (Intrastat system), enterprises whose intra-Community trade in goods per direction (arrivals/dispatches) during the previous or current year does not exceed € 200 000 (around DM 400 000), are exempted from making a return.
• For customs survey purposes, consignments up to a value of € 800 (around DM 1 600) need not be declared, provided the total weight of the consignment does not exceed 1 000 kg.

(128) Preliminary external trade data are available some six weeks after the end of the month, and detailed results two to three weeks later.

3.4 Production forecasts (gross indigenous production)

(129) Quantitative forecasts (gross indigenous production, GIP) for pigs are derived from the stock groups shown in the livestock census results for the following forecasting intervals:

- Pigs for fattening (50-80 kg live weight) GIP 1-2 months later
- Young pigs (20-50 kg live weight) GIP 3-4 months later
- Piglets up to 20 kg live weight GIP 5-6 months later
- Pregnant sows GIP 7-10 months later
- Gilts GIP 11 months later

This quantitative forecast is converted to a quarterly result by distributing the GIP equally across the months. The quarter-based forecasting periods begin two months after the survey in question, i.e. two months of the first forecast period are dispensed with. The production forecast for the last two months must incorporate information on short-term trends in gilt stocks, the profitability of piglet production and pig fattening, the number of slaughtering days and other criteria. In practice, the stock groups in question are correlated with the staggered GIPs. These are then used to derive the estimated parameters for the following intervals. A distinction must be made here between GIPs excluding external trade in piglets (production from older stock groups) and GIPs including external trade in piglets (production derived from piglet and sow stocks). The estimate of external trade in piglets is restricted to the first quarter of the forecasting period and is derived by continuing trends to date.

(130) The GIP forecast for cattle and calves is likewise based on the continued correlations between individual stock groups and the corresponding staggered GIPs in the two six-month periods following the livestock census. In addition, increases in calf numbers and rearing quotas for large cattle are determined for each six-month period. The most recent results are based on continued estimates of the relevant stocks of individual categories (stocks of calves and dairy cows, total cattle) in the following period and the resultant GIP. Individual parameters such as increases in calf numbers, rearing quotas, etc., are incorporated into the annual estimates following the livestock censuses. For calves, the estimate of the rearing quota takes due account of basic agricultural and economic conditions.

(131) The production estimate of cows is based on changes in heifer stocks and the replenishment rate. With a fixed milk quota, dairy cow stocks decrease in proportion to the estimated increase in output, whilst suckler cow stocks increase further still as a result of premiums. Unlike heifers,
cows play only a limited role in external trade. Changes in parameters are more marked for heifers, this being attributable to fluctuations in the external trade of breeding heifers as well as discontinuous trends in the replenishment of dairy cow stocks. The forecast takes account of anticipated exports, and is based on changes in the stocks of breeding heifers and heifers for slaughter.

(132) For steers and bulls, parameters have undergone fairly major fluctuations as a result of unification and the BSE crisis. For forecasting purposes, account is taken during the first six-month period of initial stocks of male animals aged over one year, as well as of the previous year’s initial stocks of male animals aged between 6 months and 1 year. The GIP for the second six-month period is correlated with the same stock group as of the last survey date. Furthermore, the forecast values are verified using other parameters, such as the rearing of steers and bulls, and additional factors. The rearing of steers, accounting for over 2% of the total steer and bull production, plays a fairly minor role in Germany.

(133) These results, as with pigs, are presented to a joint meeting of the Committee of Experts for the Evaluation of Livestock Census Findings, where they are discussed, modified as necessary, then published in specialist journals.

(134) The advance estimate of GIP for sheep and goats is based on the estimated stocks of ewes and lambs or goats (estimate) on the relevant enumeration days. In order to put estimates on a firmer footing, a long-term time series is used to build up GIP quotients (per 1 000 head) for each initial population on each survey day (per 1 000 head). The resultant quotients are kept virtually constant in the estimates and compared with the results of the statistics on slaughterings.

(135) All advance estimates of GIP are affected by the under-recording of trade in live animals in the intra-Community trade sector. Since 1993, therefore, Germany has systematically supplemented national data on imports and exports with data from the other Member States (mirror statistics) in order to calculate GIP. Comparison with the other Member States is very expensive and is not done until the end of the calendar year. The basic trend is towards a decrease in the number of adjustments made.

3.5 Poultry statistics

(136) The Agricultural Statistics Act calls for monthly surveys of birds slaughtered in poultry processing abattoirs. Data are collected on slaughterings of broilers, boiling hens, ducks, geese, turkeys and guinea fowl. A response obligation applies to the owners of poultry abattoirs with a slaughter capacity of at least 2 000 animals per month.


4 Greece

4.1 Livestock surveys

(137) The methodology of livestock surveys which is described in this chapter was applied in Greece in 1998 and 2000.

4.1.1 Surveys on the number of pigs

(138) In Greece one survey on the number of pigs is carried out per year, namely in December. The surveys are separate pig censuses.

(139) All the surveys are sample surveys. The average sample error is 2%. The last full survey was carried out in 1998. The sampling method that is used is a one stage stratified random sample. 3 % of the total pig population and 23.119 holdings are recorded by the survey.

(140) The surveys are carried out in selected regions, namely on the NUTS II-level.

(141) The Method which is used for estimating the pig population that is not recorded by the sample surveys is that variances of each holding are multiplied by an appropriate coefficient (reverse value of the holding choice probability) and consequently results of multiplication are added.

(142) The data are obtained by oral interviews with farmers. The average response rate is 100 %. The National Statistical Service of Greece is responsible for carrying out the surveys.

(143) Greece does not plan to use administrative data instead of statistical surveys within the next 5 years.

4.1.2 Surveys on the number of cattle

(144) In Greece one survey on the number of cattle is carried out per year, namely in December. All the surveys are separate cattle censuses.

(145) The surveys are sample surveys. The average sample error is 1.5%. The last full survey was carried out in 1998. The sampling method that is used is a one stage stratified random sample. 2,3 % of the total cattle population and 34.696 holdings are recorded by the survey.

(146) The surveys are carried out in selected regions, namely on the NUTS II-level.

(147) The Method which is used for estimating the cattle population that is not recorded by the sample surveys is that variances of each holding are multiplied by an appropriate coefficient (reverse value of the holding choice probability) and consequently results of multiplication are added.
The data are obtained by oral interviews with farmers. The average response rate is 100%. The National Statistical Service of Greece is responsible for carrying out the surveys.

Greece does not plan to use administrative data instead of statistical surveys within the next 5 years.

4.1.3 Surveys on the number of sheep and goats

In Greece one survey on the number of sheep and goats is carried out per year, namely in December. Sheep and goat populations are recorded separately and all the surveys are separate sheep and goat censuses.

All the surveys are sample surveys. The average sample error is 2%. The last full survey was carried out in 1998. The sampling method that is used is a one stage stratified random sample. 1.8% of the total sheep population and 1.5% of the total goat population are recorded by the survey. 132,988 sheep and 140,243 goat holdings are recorded by the survey.

The surveys are carried out in selected regions, namely on the NUTS II-level.

The Method which is used for estimating the sheep/goat population that is not recorded by the sample surveys is that variances of each holding are multiplied by an appropriate coefficient (reverse value of the holding choice probability) and consequently results of multiplication are added.

The data are obtained by oral interviews with farmers. The average response rate is 100%. The National Statistical Service of Greece is responsible for carrying out the surveys.

Greece does not plan to use administrative data instead of statistical surveys within the next 5 years.
4.2 Statistics on slaughterings

(156) Monthly slaughtering data are available in Greece on the number and slaughterweight for pigs overall, calves, heifers, cows, bulls, bullocks, sheep overall, lambs and goats overall.

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<tr>
<th>Availability of monthly data on slaughterings</th>
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<tr>
<td>Number</td>
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<tr>
<td>Slaughterweight</td>
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<td>Pigs, overall</td>
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<td>Calves</td>
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<td>Sheep, overall</td>
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<td>Lambs</td>
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<td>Goats, overall</td>
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(157) The prefectural departments of the Ministry of Agriculture, under the supervision of the veterinary services responsible for monitoring abattoir hygiene, record slaughtered animals during the month of their slaughter.

(158) The very small number of animals slaughtered outside abattoirs is estimated on the basis of informal sample surveys of stockbreeders by members of the above departments. These data are sent to the Central Service of the Ministry of Agriculture (Directorate for Agricultural Policy and Documentation) the following month, where they are checked and computer processed. They are then ready for all types of use.

4.3 Production forecasts (gross indigenous production)

(159) In order to estimate the extent of the projected production of pigs, sheep, goats and cattle, Greece bases the calculations on:

- estimates from the prefectural departments, which work in conjunction with the main livestock holdings;
- the external trade in (imports of) live animals, taking due account of (i) the status of domestic production and (ii) the trend in imports over the past few years

4.4 Poultry statistics

(160) Monthly data are available. These are estimates by the prefectural departments based on eggs for incubation (for battery breeding) and estimates of domestic poultry rearing (for all types of poultry).
5 Spain

5.1 Livestock surveys

(161) The methodology of livestock surveys which is described in this chapter is valid in Spain since the accession to the EU (1986).

5.1.1 Surveys on the number of pigs

(162) Spain carries out three pig surveys per annum, in April, August and December. These surveys record only the pig population.

(163) The surveys are sample surveys, with average sample survey errors which lie within the limits set down in the legal provisions of the European Union. The last full survey took place in 1986; however, the population continued to be recorded in the agricultural censuses and the structural surveys. At present, a livestock census with a reporting period of December 1996 has been completed. This livestock census is carried out independently of agricultural censuses and structural surveys. The sample surveys involve between 25 % and 30 % of the total pig population. The surveys cover 7,000 holdings, representing 7.5 % of the total.

(164) The agricultural census is used to draw up the list of all pig keepers, and this list is supplemented annually with information from administrative sources. This list provides the sample frame, on the basis of which the sample is drawn, from which the holdings are surveyed using double stratification. The survey records two classes of holdings (holdings with mother sows and without mother sows) and eight size classes (taking as a basis the capacity to accommodate mother sows or pigs for fattening). In order to improve the response rate, a replacement sample is drawn from the holdings in addition to the main sample.

(165) All three surveys are carried out in selected regions. In regions with pig populations of less than 1 % of the total national population and in which pig keeping is less than 5 % of final agricultural output in the region, no surveys are carried out (based on the Agriflex principle). The areas concerned are as follows: Asturias, Cantabria, the Basque Provinces, the Madrid Region and the Canary Islands.

(166) The pig population which is not recorded in the survey is estimated from changes in the updated list of holdings and using various relevant information of an administrative nature.

(167) The surveys are carried out through oral questioning of farmers by interviewers. As there is a main sample and a replacement sample, and in order to avoid sample losses, holdings in the main samples which cannot be reached are replaced by holdings in the replacement sample. If sample losses do however emerge, the raising coefficients are revised and, in any case, the sample frame is recalculated according to the replacement holdings and the relevant reasons for the replacement. Interviewing is the responsibility of the Sub-directorate-General for Agricultural and Food...
Statistics of the Ministry for Agriculture, Fisheries and Food in cooperation with the Autonomous Communities (Regions) of the relevant agricultural statistical offices. The response rate is almost 100 %.

(168) Spain has no medium-term plans (up to 2005) to replace statistical surveys on the pig population using administrative data.

5.1.2 Surveys on the number of cattle

(169) Spain carries out two cattle surveys per annum, in June and December. The surveys record only the cattle population.

(170) The surveys are sample surveys, with average sample survey errors which lie within the limits set down in the legal provisions of the European Union. The last full survey took place in 1986; however, the population continued to be recorded in the agricultural censuses and the structural surveys. At present, a livestock census with a reporting period of December 1996 has been completed. This livestock census is carried out independently of agricultural censuses and structural surveys. The sample surveys involve between 10 % and 15 % of the total cattle population. The surveys cover 7 000 holdings, representing 3.5 % of the total.

(171) The agricultural census is used to draw up the list of all cattle keepers and this list is supplemented annually with information from administrative sources. This list provides the sample frame, on the basis of which the sample is drawn, from which the holdings are surveyed using double stratification. The survey records three classes of holdings (mainly dairy cow keepers and holdings which have mainly cows other than dairy cows, and holdings with calves for fattening) and ten size classes (taking as a basis the capacity to accommodate the relevant type of animal in each size class). In order to improve the response rate, a replacement sample is drawn from the holdings in addition to the main sample.

(172) Both surveys are carried out in selected regions. In regions with cattle population of less than 1 % of the total national population and in which cattle keeping is less than 5 % of final agricultural output in the region, no surveys are carried out (based on the Agriflex principle). The regions concerned are as follows: Comunidad Valenciana, Murcia and the Canary Islands (the Murcia Region and the Canary Islands both carry out the survey).

(173) The cattle population which is not recorded in the survey is estimated from changes in the updated list of holdings and using various relevant information of an administrative nature.

(174) The surveys are carried out through oral questioning of farmers by interviewers. As the main sample and the replacement sample, and in order to avoid sample losses, holdings in the main samples which cannot be reached are replaced by holdings in the replacement sample. This sample surveys do however emerge, the raising coefficients are revised and in any case the sample frame is recalculated according to the
replacement holdings and the relevant reasons for the replacement. Interviewing is the responsibility of the Sub-directorate General for Agricultural and Food Statistics of the Ministry for Agriculture, Fisheries and Food in cooperation with the Autonomous Communities (regions) of the relevant agricultural statistical offices. The response rate is almost 100%.

(175) Spain has no medium-term plans (up to 2005) to replace statistical surveys on the cattle population using administrative data.

5.1.3 Surveys on the number of sheep and goats

(176) Spain carries out annual surveys of the sheep and goat population, in December. These surveys are carried out jointly and no other types of animal are included in the surveys, i.e. the sheep and goat population are taken together but not in combination with any other type of animal.

(177) The surveys are sample surveys, with average sample survey errors which lie within the limits set down in the legal provisions of the European Union. The last full survey took place in 1986; however, the population continued to be recorded in the agricultural censuses and the structural surveys. At present, a livestock census with a reporting period of December 1996 has been completed. This livestock census is carried out independently of agricultural censuses and structural surveys. The sample surveys involved between 10% (for sheep) and 11% (for goats) of the total population. As this is a joint survey, the sample covers 5,000 holdings per type of animal, representing 4.5% of the total.

(178) The agricultural census is used to draw up the list of all sheep and goat keepers and this list is supplemented annually with information from administrative sources. This list provides the sample frame, on the basis of which the sample is drawn and the holdings are surveyed using double stratification. The survey records three classes of holdings (mainly sheep keepers and holdings which have mainly goats, and holdings with sheep for fattening) and eight size classes (taking as a basis the capacity to accommodate the relevant type of animal in each size class). In order to improve the response rate, a replacement sample is drawn from the holdings in addition to the main sample.

(179) The surveys are carried out in selected regions. In regions with sheep and goat population of less than 1% of the total national population and in which sheep and goat keeping is less than 5% of final agricultural output in the region, no surveys are carried out (based on the Agriflex principle). The areas concerned are as follows: Galicia, Asturias and Cantabria.

(180) The sheep and goat population which is not recorded in the survey is estimated from changes in the updated list of holdings and using various relevant information of an administrative nature in this sector.

(181) The surveys are carried out through oral questioning of farmers by interviewers. As the main sample and the replacement sample, and in
order to avoid sample losses, holdings in the main samples which cannot be reached are replaced by holdings in the replacement sample. This sample surveys do however emerge, the raising coefficients are revised and in any case the sample frame is recalculated according to the replacement holdings and the relevant reasons for the replacement. Interviewing is the responsibility of the Sub-directorate General for Agricultural and Food Statistics of the Ministry for Agriculture, Fisheries and Food in cooperation with the Autonomous Communities (regions) of the relevant agricultural statistical offices. The response rate is almost 100 %.

(182) Spain has no medium-term plans (up to 2005) to replace statistical surveys on the sheep and goat population using administrative data.

5.1.4 Notes on the livestock surveys

(183) Spain considers that the reporting periods for the livestock surveys of the individual types of animals should be combined in all the Member States of the European Union.

5.2 Statistics on slaughterings

(184) The methodology of statistics on slaughterings which is described in this report is valid in Spain since 1991.

(185) Spain produces monthly statistics on the carcass weight of animals which are slaughtered in slaughterhouses and whose meat is fit for human consumption; these statistics relate to the following: pigs in total, calves, heifers, cows, bulls, oxen, sheep in total, lambs and goats in total.

<table>
<thead>
<tr>
<th>Availability of monthly data on slaughterings</th>
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</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Pigs, total</td>
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<tr>
<td>Calves</td>
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<tr>
<td>Heifers</td>
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<td>Cows</td>
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<tr>
<td>Bulls</td>
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<tr>
<td>Oxen</td>
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<tr>
<td>Sheep, total</td>
</tr>
<tr>
<td>Lambs</td>
</tr>
<tr>
<td>Goats, total</td>
</tr>
</tbody>
</table>

(186) A monthly survey is carried out using a sample of livestock slaughtering enterprises (slaughterhouses). The sample is drawn by the Autonomous Communities (regions). Slaughterhouses are included in the
sample if - in relation to the individual Autonomous Communities - at least 70% of total slaughterings of each type of animal are carried out in the slaughterhouse. The results are supplemented by slaughterings which are not carried out in the slaughterhouses (information from administrative sources and expert information).

5.3 Data on external trade in live animals

(187) The external trade data are taken from the Spanish external trade statistics, compiled by the Aduanas e Impuestos Especiales (Department for Duties and Special Taxes) of the Spanish Tax Office (Agencia Tributaria).

5.4 Production forecasts (gross indigenous production)

(188) Slaughter forecasts are produced; these are supplemented by forecasts for the external trade in livestock for slaughter. Two procedures are used to communicate slaughterings: the first procedure consists of analysing the time series for livestock slaughterings; this uses a statistical model with the values of the series, and time as an independent variable. The second procedure is based on the reproductive ability of mother animals based on the relationship between the mother animals at the end of the reporting period and slaughterings during the relevant period. Final forecasts are arrived at by combining these procedures.

5.5 Poultry statistics

(189) As part of the monthly statistics on livestock slaughterings, monthly data are produced for slaughterings of poultry for slaughter (chicken, hens and other poultry). The forecasts draw on models based on egg breeding data.

6 France

6.1 Livestock surveys

6.1.1 Surveys on the number of pigs

(190) Methodology updated on 01/11/01. Methodology used since 1990, but number of surveys per year reduced from three to two in 1999.

(191) France carries out two pig surveys a year, in May and November. They cover only the pig population.

(192) These are sample surveys whose average sampling error is less than 0.5% in November and 1% in May. In France, the most recent exhaustive surveys were organised as part of the agricultural censuses of 1989 and 2000. Surveys cover 98% (in November) and 80% (May) of the pig population. The new sample for November 2001, drawn from the sampling base of the 2000 census, covers 5,700 holdings. The sample for the May 2002 survey will cover 3,000 holdings.
The May and November surveys are independent of each other. Samples are stratified according to the typology of the livestock farms (breeders, breeders-fatteners, fatteners) and their size. Only holdings above a threshold of five sows or 20 pigs are surveyed. The samples comprise panels which are renewed about once every five years. However, France is adjusting the level at which the survey is carried out (total pig population) to that used in the structure surveys. For years in which a structure survey is not carried out, interpolation or extrapolation is used.

In May, the survey takes place in the main pig-farming regions. In November, however, only those regions where the pig herd is insignificant are excluded.

The 1%-2% of the pig herd located outside the geographical area covered by the November survey is estimated on the basis of the values for the structure surveys, because these regions change little, and the few changes which do occur often differ from those in the sample.

Except for the initial contact (November 2001), surveys are done by telephone. The survey is carried out by the SCEES and the regional ministerial departments. The response rate is 100%.

France has no medium-term plans (i.e. between now and 2005) to replace the pig surveys with administrative data.

6.1.2 Surveys on the number of cattle

France carries out two cattle surveys per year, in May and November. These surveys cover only the cattle population.

These are sample surveys whose average sampling error is less than 0.5% in November and 1% in May. The most recent exhaustive surveys were carried out as part of the agricultural censuses of 1989 and 2000. The surveys cover 97% (in November) and 76% (May) of the cattle population. In November 2001, the survey was carried out among 17 600 holdings. In May 2002, the sample will comprise between 5 000 and 6 000 holdings.

The sample is selected from the sampling base (the most recent agricultural census) and stratification is done according to the typology and size of livestock farms.

The November survey covers nearly the entire national territory (and 98% of the population). In May, only the main regions are surveyed (80% of the population).

The cattle population not located within the geographical area covered by the survey is estimated by extrapolation, on the basis of the most
recent structure survey and taking due account of trends in the survey sample.

(204) In November 2001, the survey was done by telephone, as the preferred means of establishing initial contact with the panel. Future surveys will also be done by telephone. The survey is carried out by the SCEES and the regional ministerial departments. The response rate is 100%.

(205) In the medium term, (by about 2006), France plans to replace the cattle surveys with administrative data. The "Base nationale d'identification permanente des animaux" will be used as the data source.

6.1.3 Surveys on the number of sheep and goats

(206) Methodology updated on 01/11/01. Methodology used since 1990.

(207) France carries out sheep and goat surveys every November. They are carried out independently of one another and the sheep and goat populations are counted separately.

(208) These sample surveys have an average sampling error of less than 1% for sheep and less than 2% for goats. The most recent exhaustive survey was carried out in 2000. The surveys cover 95% of the sheep and goat populations. The sheep survey is based on a sample of 6 700 holdings, the goat survey on one of 2 900.

(209) Samples are drawn from the agricultural census. They will be used for five years. A change to the level of the structure surveys is planned. Only holdings with at least 10 sheep or 5 goats are surveyed.

(210) Almost all French regions are involved in the sheep surveys, while the goat population, which is concentrated in certain regions, is surveyed only in those regions.

(211) Livestock located outside the geographical area covered by the survey is estimated by extrapolating the data from the 2000 census and the structures surveys, taking due account of survey trends.

(212) Apart from November 2001, when initial contact was established by a personal visit from the enumerator, surveys are done by telephone. The survey is carried out by the SCEES and the regional ministerial departments. The response rate is 100%.

(213) In the medium term (between now and 2005), France has no plans to replace the sheep and goat surveys with administrative data.

6.2 Statistics on slaughterings

(214) Methodology updated on 01/11/01.

(215) France compiles monthly statistics on the number and weight of animals which are killed in abattoirs and whose meat is used exclusively
for human consumption, as well as of those intended for withdrawals, i.e. pigs (total), calves, heifers, cows, bulls, steers, sheep (total), lambs and goats (total).

### Availability of monthly data on slaughterings

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Slaughter weight</th>
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<tbody>
<tr>
<td>Pigs, total</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Calves</td>
<td>available</td>
<td>available</td>
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<tr>
<td>Heifers</td>
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<td>available</td>
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<tr>
<td>Cows</td>
<td>available</td>
<td>available</td>
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<tr>
<td>Bulls</td>
<td>available</td>
<td>available</td>
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<tr>
<td>Steers</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Sheep, total</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Lambs</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Goats, total</td>
<td>available</td>
<td>available</td>
</tr>
</tbody>
</table>

(216) Since 2000, the 340 enterprises in question have reported their slaughtering statistics directly to the SCEES on a centralised basis. These enterprises reply by fax to a questionnaire which is faxed to them at the end of each month. The data are available on the 20th day of the month following the month in which the data are collected ("m + 20 days"). "Home slaughterings" (non-controlled slaughterings) are insignificant, except in the case of sheep. Adjustments are made using coefficients which are liable to periodic revision, to establish "total slaughterings".

### 6.3 Data on external trade in live animals

(217) Data on external trade in live animals (exports and imports) are provided by French Customs in unit, volume (tonnes) and value terms. The SCEES has its own database, which is updated (for the most recent 13-month period) between the 20th and 25th of each month, using Customs data. Thus, on the 25th of each month, the data for month "m-2" become available (e.g. the August data become available on 25 October). The quantities traded are declared by the companies involved in imports and exports.

(218) France applies the CN8. The aggregates are those used in the EU (Eurostat) nomenclature. Calculations are done in carcass or egg weight equivalent tonnes, using coefficients which, generally speaking, are not employed by Eurostat. A description is sent to Eurostat annually.
6.4 Production forecasts (gross indigenous production)

(219) France calculates its gross indigenous production according to the official EU definition: total slaughterings plus exports of live animals less imports of live animals. Total slaughterings correspond to adjusted, controlled slaughterings.

(220) A distinction is made between intra-Community trade and trade with non-member countries.

(221) France uses a demographic model for its production forecasts. Each category of animal appearing in a given survey makes up a part of future production.

(222) Slaughter and production data are published monthly via e-mails sent to subscribers to the “Supplément mensuel d'animaux hebdo” and are made available free of charge on the Ministry of Agriculture's website: www.agreste.agriculture.gouv.fr

6.5 Poultry statistics

(223) Methodology updated on 01/11/01.

(224) France has a comprehensive system of statistical monitoring for poultry.

(225) Controlled slaughters of poultry are surveyed each month at the 220 biggest abattoirs (between 96% and 99% of the total, depending on the species). An annual survey is also carried out among 400 small abattoirs. Results are available on m + 35 days. However, some slaughterings are done by private individuals for their personal consumption. These are not included in the slaughtering statistics.

(226) Egg collection and packaging is the subject of a monthly survey carried out among 140 establishments and an annual survey of 400 small establishments. Results become available on m + 45.

(227) A survey among 30 French poultry breeders is carried out monthly. The results are transmitted to Eurostat. However, they are unusable for production forecast purposes as they are not closely correlated with the data on the next generation of hatchlings.

(228) The activities of hatcheries are the subject of a monthly follow-up for the main species of poultry. Each month, the 150 hatcheries answer a questionnaire which asks for weekly data. This provides information on the hatcheries' capacity, the number of eggs in incubation, broken down by type (i.e. for egg or meat production) and the number of chicks incubated and hatched in France (taking foreign trade in chicks into account). The results become available between m + 45 and m + 60.
Gross indigenous production is calculated every three months, based on the number of hatchlings and foreign trade in chicks, using production models. Results (balances) are calculated quarterly and published 60 days after the end of the previous quarter (by which time the external trade data become available).

Production is estimated on the basis of the number of hatchlings. Average carcass weight is determined using the survey of slaughters.

A model of the production of eggs intended for consumption is used to forecast the number of pullets hatched and due to come into production five to six months later. A demographic model is used to forecast the production of the entire population of layers within about one year.

The forecast of poultry meat production is necessarily a very short-term one, given the speed of livestock-farming cycles.

Poultry-farming statistics are published monthly in the review "Aviculture" and are also available free of charge on the Ministry of Agriculture's Internet site: www.agreste.agriculture.gouv.fr

7 Ireland

7.1 Livestock surveys

The description of the surveys for the major livestock items (cattle, sheep and pigs) describes how the surveys with a reference date of June 2001 and December 2000 were carried out.

7.1.1 Surveys on the number of pigs

In Ireland two surveys on the number of pigs are carried out per year, namely in June and December. All the surveys are separate pig censuses.

All the surveys are full surveys (with only very small units excluded).

Pig production in Ireland is very specialised. In 1997 400 pig herds accounted for over 90% of pig numbers. The Central Statistics Office (CSO) conducts a separate survey of the largest pig producers (based on information supplied by the Department of Agriculture, Food & Rural Development and Teagasc (government farm agency)) in June and December. This survey accounts for almost 100% of pig numbers.

The general farm surveys in June and December also incorporate summary questions on pig numbers. This gives one information on holdings with small numbers of pigs. In the Census of Agriculture 2000, all farms were sent the general census form and specialised pig producers were sent an additional pig questionnaire with a more detailed category breakdown, for example five fattening weight categories instead of two.
(239) 97 % of the total pig population, about 550 farms, are recorded by the survey which is 35 % of all holdings with pigs. However all specialised pig farms are included in the surveys.

(240) Data are obtained by written inquiries and by telephone. The average response rate is 95 %. Non-response is small. To arrive at an estimate for the total pig population a matched sample approach is followed. The trends within the matched sample are applied to the estimates of the previous year. The Central Statistics Office is responsible for carrying out the surveys. A combination of examining the change in a matched sample of holdings plus an examination of the aggregated actual returns with imputation for non-response is used.

(241) Ireland does not plan to use administrative data instead of statistical surveys within the next 5 years.

7.1.2 Surveys on the number of cattle

(242) In Ireland two surveys on the number of cattle are carried out per year, namely in June and December. All the surveys are integrated livestock surveys.

(243) All the surveys are sample surveys. The last full survey was in June 2000 (1991 previously). The following sampling method is used: Stratification based on area farmed and total cattle is used. A matched sample approach is also used and resampling is used to ensure geographical representation.

(244) 24 % of the total cattle population is recorded by the sample survey (in June 1999). In June 1999 about 29.000 holdings were recorded which is 23 % of all holdings breeding cattle.

(245) The surveys are carried out in selected regions. Both the June and December surveys collect data on a regional basis. But only results of the June survey are published on a regional basis. Data is collected at a county level. This data is then grouped into respective regional levels (NUTS 3 level).

(246) The method that is used for estimating the cattle population which is not recorded by the sample surveys is that a matched sample approach is followed which compares back to the last Census of Agriculture. The Central Statistics Office (CSO) may move to direct grossing in post-Census 2000.

(247) Data are obtained by written inquiries. The average response rate is about 95 %. Important livestock holdings are followed up by telephone. If despite extensive follow up non-response still pertains then a matched sample approach is followed. The Central Statistics Office is responsible for carrying out the surveys.
Ireland does not plan to use administrative data instead of statistical surveys within the next 5 years.

7.1.3 Surveys on the number of sheep and goats

In Ireland two surveys on the number of sheep and goats are carried out per year, namely in June and December. Sheep and goats population are recorded separately. All the surveys are integrated livestock surveys.

All the surveys are sample surveys. The last full survey was carried out in June 2000 (1991 previously). The following sampling method is used: Stratification based on area farmed and total sheep is used. A matched sample approach is also used and resampling is used to ensure geographical representation.

In June 1999 25 % of sheep population as well as 25 % of goat population were recorded. In June 1999 about 10,000 (23 %) holdings breeding sheep and 800 (23 %) holdings breeding goats were recorded.

The surveys are carried out in selected regions. Both the June and December surveys collect data on a regional basis. But only the June survey is published on a regional basis. Data is collected at a county level. This data is then grouped into respective regional levels (NUTS 3 level).

The method that is used for estimating the sheep an goat population which is not recorded by the sample surveys is that a matched sample approach is followed which compares back to the last Census of Agriculture.

Data are obtained by written inquiries. The response rate is 75 % (according to the actual survey). Important livestock holdings are followed up by telephone. If despite extensive follow up non-response still pertains then a matched sample approach is followed. The Central Statistics Office is responsible for carrying out the surveys.

Ireland does not plan to use administrative data instead of statistical surveys within the next 5 years.

7.2 Statistics on slaughtering

The description of the slaughtering statistics describes how this work is currently done.

Monthly slaughtering data are available in Ireland on the number and slaughterweight for pigs overall, calves, heifers, cows, bulls, bullocks, sheep overall and lambs.
### Availability of monthly data on slaughterings

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Slaughterweight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigs, overall</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Calves</td>
<td>available</td>
<td>available</td>
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<tr>
<td>Heifers</td>
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<td>Cows</td>
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<tr>
<td>Bulls</td>
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<td>available</td>
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<tr>
<td>Bullocks</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Sheep, overall</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Lambs</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Goats, overall</td>
<td>not available</td>
<td>not available</td>
</tr>
</tbody>
</table>

(258) Slaughtering data in Ireland is sourced from two areas. Slaughterings in export-licensed factories are collected by the Department of Agriculture, Food and Rural Development. This data is then submitted to CSO, typically 4 weeks after the relevant month. Slaughterings in other premises are under the supervision of local authorities in Ireland. CSO undertakes a monthly survey of all local authorities in Ireland to receive this data. All of this data is typically available to CSO by 4 weeks after the relevant month. Please see below table 1 which, using 1999 data, shows the allocation of the slaughterings for both number and weight in percentage terms between the different means of slaughter processing.

### Table 1

<table>
<thead>
<tr>
<th></th>
<th>Cattle number</th>
<th>Cattle weight</th>
<th>Sheep number</th>
<th>Sheep weight</th>
<th>Pig number</th>
<th>Pig weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>% killed in export-licensed plants</td>
<td>93.6%</td>
<td>95.2%</td>
<td>86.3%</td>
<td>83.9%</td>
<td>95.3%</td>
<td>95.6%</td>
</tr>
<tr>
<td>% killed under the control of local authority</td>
<td>6.4%</td>
<td>4.8%</td>
<td>13.6%</td>
<td>16.1%</td>
<td>4.6%</td>
<td>4.3%</td>
</tr>
<tr>
<td>% killed in other areas (farm)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.1%</td>
<td>0.1%</td>
</tr>
</tbody>
</table>
7.3 Data on external trade in live animals

(259) Due to the discontinuity in the trade statistics of live animals since the introduction of the single market in 1993, CSO relies on data supplied by the Department of Agriculture, Food & Rural Development as well as official trade statistics.

Cattle:

The Department of Agriculture, Food & Rural Development conducts what is known as a “portal survey”. This survey details by category of cattle, on a weekly basis, the number of cattle exported by destination and shipping port. There are no reporting thresholds. The Department of Agriculture, Food & Rural Development supplies this information to CSO, typically 2 weeks after the reference period. The following categories of cattle are detailed in this survey: fat bull, fat bullock, fat heifer, fat cow, store bull, store bullock, store cow, weanling bull, weanling heifer, calf. Official trade statistics only collect information on cattle in two categories - Purebred cattle for breeding and Cattle other than purebred breeding animals.

Sheep & Pigs:

Estimates for the live trade in sheep and pigs are complicated by cross-border trade between Ireland and Northern Ireland which is not picked up the Department of Agriculture, Food & Rural Development portal survey. Therefore estimates of total live trade in sheep and pigs (both import and export) are calculated by experts in the field from the Department of Agriculture, Food & Rural Development and Bord Bia (the Irish food marketing agency). These estimates are made every 6 months.

7.4 Production forecasts (gross indigenous production)

(260) The description of the GIP forecasting describes how this work is currently done.

(261) The primary source for estimating production forecasts for the animals listed above is the June and December livestock surveys which are carried out by CSO, as well as slaughterings and trade data. These surveys provide an estimate of the total number of animals within the country and hence the total availability for supply for slaughter and live trade. These numbers are then discussed with the relevant experts from the Irish Department of Agriculture, Food and Rural Development and Bord Bia (the Irish food marketing agency). Based on their market knowledge, estimates are made for slaughterings, live imports and live exports. Regarding the treatment of foreign trade in live animals, live imports are a negative figure and live exports are a positive figure in the calculation of gross indigenous production.
7.5 *Poultry statistics*

(262) Monthly slaughtering data for broilers and turkeys is compiled by the Department of Agriculture, Food and Rural Development. Data for other poultry types is available but for some poultry types cannot be made public for confidentiality reasons. This applies in particular to duck data given the concentration of duck producers in Ireland. CSO are currently liaising with the Department of Agriculture, Food and Rural Development regarding the provision of monthly broiler and turkey slaughtering data to CSO.

(263) The Department of Agriculture, Food and Rural Development states that the carcass weight for a broiler is assumed to be 4.5 pounds and 12 pounds for a turkey (1 pound = 0.4536 kg).

(264) CSO has a model which, using the number (or placements) of ordinary fowl and other fowl placed in the marketplace, estimates the number of ordinary fowl and other fowl in the country at survey time. The source of the placement information is the Department of Agriculture, Food & Rural Development. The data is sent to the CSO on a monthly basis, normally 2-3 months after the reference month. The data is categorised into: commercial layers, commercial broilers and commercial turkeys.

8 *Italy*

8.1 *Livestock surveys*

(265) The methodological description of the livestock surveys is valid from 1998 onwards.

8.1.1 Surveys on the number of pigs

(266) In Italy two surveys on the number of pigs are carried out per year, namely in June and December. All surveys are integrated livestock surveys.

(267) All surveys are sample surveys. The average sampling error is 1 %. The last full survey was carried out in 2000 (before that in 1990). The survey is a stratified random sample. It is a sub-sample of the farm structure survey.

(268) By the sample surveys 1 % of the total pig population is recorded and the sample covers 12.241 holdings which is 4.7% of the total holdings breeding pigs.

(269) The surveys are not carried out in selected regions.

(270) The pig population which is not recorded by the sample surveys is estimated by sampling weight obtained through the use of calibration estimator.

(271) The data are obtained by telephone. The average response rate is 72%. The calibration estimator automatically corrects total non response.
The Italian Statistical Office (ISTAT) is responsible for carrying out the surveys.

(272) Italy does not plan to use administrative sources instead of pig surveys in the medium term (one to five years).

8.1.2 Surveys on the number of cattle

(273) In Italy two surveys on the number of cattle are carried out per year, namely in June and December. All surveys are integrated livestock surveys.

(274) All surveys are sample surveys. The average sampling error is 1%. The last full survey was carried out in 2000 (before that in 1990). The survey is a stratified random sample. It is a sub-sample of the farm structure survey.

(275) By the sample surveys 13.5% of cattle population is recorded and the sample covers 15,049 holdings which is 1.6% of the total holdings breeding cattle.

(276) The surveys are not carried out in selected regions.

(277) The cattle population which is not recorded by the sample surveys is estimated by sampling weight obtained through the use of calibration estimator.

(278) The data are obtained by telephone. The average response rate is 72%. The calibration estimator automatically corrects total non response. The Italian Statistical Office (ISTAT) is responsible for carrying out the surveys.

(279) Italy does not plan to use administrative sources instead of cattle surveys in the medium term (one to five years).

8.1.3 Surveys on the number of sheep and goats

(280) In Italy one survey on the number of sheep and goats is carried out per year, namely in December. Sheep and goat populations are recorded jointly. All surveys are integrated livestock surveys.

(281) All surveys are sample surveys. The average sampling error is 1% by sheep as well as by goat surveys. The last full survey was carried out in 2000 (before that in 1990). The survey is a stratified random sample. It is a sub-sample of the farm structure survey.

(282) By the sample surveys 17.3% of sheep and 18.4% of goat populations are recorded and the sample covers 9,473 (7.2%) holdings breeding sheep and 4,399 (7.2%) holdings breeding goats.

(283) The surveys are not carried out in selected regions.
(284) The sheep and goat population which is not recorded by the sample surveys are estimated by sampling weight obtained through the use of calibration estimator.

(285) The data are obtained by telephone. The average response rate is 82.2%. The calibration estimator automatically corrects total non response. The Italian Statistical Office (ISTAT) is responsible for carrying out the surveys.

(286) Italy does not plan to use administrative sources instead of statistical surveys in the medium term (one to five years).

8.2 Statistics on slaughterings

(287) The methododical description of the statistics on slaughterings is valid from 2001 onwards.

(288) Monthly slaughtering data are available in Italy on the number and slaughterweight for pigs overall, calves, heifers, cows, bulls, bullocks, sheep overall, lambs and goats overall.

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<thead>
<tr>
<th>Availability of monthly data on slaughterings</th>
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<td>Pigs, overall</td>
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<td>Goats, overall</td>
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(289) ISTAT collects the data directly from the slaughterhouses by mail. The veterinary responsible of the sanitary control of the meat fill in the questionnaire. The data are available 60 days after the reference month. The domestic slaughtering is estimated considering external information.

(290) From 2001 Italy will carry out a sample survey on the monthly slaughtering using the CATI technique. The objective of this technique is to improve the timeless of the data collection operations and the response rate.
8.3 Data on external trade in live animals

(291) The methododical description of the external trade is valid from 1993 onwards.

(292) The sources of the data are the enterprises (for INTRASTAT data) and the Customs (for the extra-EC trade). The enterprises with a trade volume > 50 millions of lira (25 823 €) in the previous year have to communicate the figures at ISTAT each month; all the others only once a year before the 31st January of the following year. The foreign trade data are available into 4 months after the reference month. The categories are classified by the NC. There is not a perfect harmonisation with the livestock categories fixed in the EU agricultural statistics directives.

8.4 Production forecasts (gross indigenous production)

(293) The methododical description of GIP is valid from 1998 onwards.

(294) For pigs, ISTAT has studied a statistical model to forecast the production. The forecasting model chosen is of the VAR (vector autoregressive) type. The assumption underling the model is the existence of a mechanism linking the number of pigs produced and those slaughtered. In this respect slaughtering and production are taken as proxies for demand and supply of meat, while the difference between overall demand and national production is met by imports.

(295) The model forecasts production and slaughtering by means of past information on production and slaughtering (both lagged 1, 2, 3, 12 months) and some “dummies”. The observations in mind are monthly. Post sample tests of the model (over the last 3 years) show a trimmed mean absolute error of 3.8%, 3.1% and 0.6% for 1st, 2nd and 3rd forecast.

(296) The results of the surveys and the forecasts are checked twice a year with data from veterinary services at regional level.

(297) For cattle, sheep and goats, the forecasts are made by experts considering the statistical and market information available.

8.5 Poultry statistics

(298) In Italy there are statistical information on the activities of the eggs hatcheries, on the number of farms and live animals, on the external trade, on the industrial production and on the consumption. No forecasts are made. From 2001 Italy has planned to start a total monthly survey on the poultry slaughtering.
9 Luxembourg

9.1 Livestock population surveys

9.1.1 Surveys on the number of pigs

(299) Luxembourg conducts two pig surveys per year - in May and December. Each year, the surveys conducted in May, and every three years those conducted in December are integrated livestock censuses.

(300) These surveys are carried out as full-scale surveys each year in May and every three years in December. The last full-scale surveys were conducted in Luxembourg on 1.12.1999 and 15.05.2000. 98.3% of the total pig population is covered by the sample surveys. They cover 275 holdings, representing 61.25 % of the total number of pig holdings.

(301) A sample is drawn on the basis of the results of the full-scale survey carried out on 1 December every three years. The tables showing the number of livestock held are used to produce strata with the total number of holders and animals in a given stratum. The percentage of livestock in a stratum is placed in relation to the total number of livestock in all strata; the percentages obtained are applied to the number of holders in the individual strata in order to establish the necessary number of holders in these strata; the computer then seeks the required holders by random selection and calculates the number of animals held by these for the individual strata. The calculated livestock populations are then compared for each stratum with the total number of animals in these strata in order to obtain the corresponding coefficients. These coefficients are applied in the sample surveys in the two years between two full-scale surveys in order to raise the results to the total population level; all holdings with over 50 pigs are covered.

(302) The definitions are the same as for the structure survey. The full-scale survey in May is identical with this survey.

(303) The surveys are not restricted to selected regions.

(304) The surveys are conducted by enumerators interviewing farmers (in full-scale surveys) or as written enquiries in the case of sample surveys. Responses are obtained from 97.5% of those questioned. The communal administrations do the interviewing for full-scale surveys; STATEC is responsible for conducting sample surveys. The results of the full-scale surveys are checked and evaluated by STATEC.

(305) In order to incorporate missing information (non-response) in the results processing, a coefficient is calculated on the basis of the full-scale surveys of May of year n and year n-1, which is applied to the results of the full-scale survey or sample survey in December of the holding of year n-1 in order to estimate the results for December of year n.
Luxembourg intends in the medium term (by 2005) to replace statistical surveys of the pig population by the use of administrative data. The data source used in future could be SANITEL (an electronic registration system). At the moment, however, this system is only available for cattle.

9.1.2 Surveys on the number of cattle

Luxembourg conducts two cattle surveys per year - in May and December. Each year, the surveys conducted in May, and every three years those conducted in December are integrated livestock censuses.

These surveys are carried out as full-scale surveys each year in May and every three years in December. The last full-scale surveys were conducted in Luxembourg on 1.12.1999 and 15.05.2000. 64.6% of the total cattle population is covered by the sample surveys. They cover 780 holdings, representing 41.96% of the total number of cattle holdings.

A sample is drawn on the basis of the results of the full-scale survey carried out on 1 December every three years. The tables showing the number of livestock held are used to produce strata with the total number of holders and animals in a given stratum. The percentage of livestock in a stratum is placed in relation to the total number of livestock in all strata; the percentages obtained are applied to the number of holders in the individual strata in order to establish the necessary number of holders in these strata; the computer then seeks the required holders by random selection and calculates the number of animals held by these for the individual strata. The calculated livestock populations are then compared for each stratum with the total number of animals in these strata in order to obtain the corresponding coefficients. These coefficients are applied in the sample surveys in the two years between two full-scale surveys in order to raise the results to the total population level.

The definitions are the same as for the structure survey. The full-scale survey in May is identical with this survey.

The surveys are not restricted to selected regions.

The surveys are conducted by enumerators interviewing farmers (in full-scale surveys) or as written enquiries in the case of sample surveys. Responses are obtained from 97.5% of those questioned. The communal administrations do the interviewing for full-scale surveys; STATEC is responsible for conducting sample surveys. The results of the full-scale surveys are checked and evaluated by STATEC.

In order to incorporate missing information (non-response) in the results processing, a coefficient is calculated on the basis of the full-scale surveys of May of year n and year n-1, which is applied to the results of the full-scale survey or sample survey in December of the holding of year n-1 in order to estimate the results for December of year n.
Luxembourg intends in the medium term (by 2005) to replace statistical surveys of the pig population by the use of administrative data. The data source used in future could be SANITEL (an electronic registration system). At the moment, however, this system is only available for cattle.

9.1.3 Surveys on the number of sheep and goats

Luxembourg conducts two surveys per year on the sheep population and one survey on the goat population. The surveys are carried out in May (sheep) and December (together for both sheep and goats). The annual May survey and the December survey held every three years are integrated livestock surveys.

These surveys are conducted as full-scale surveys.

They are not restricted to selected regions.

The surveys are carried out by enumerators interviewing farmers. In two out of three years, the December surveys are implemented as written surveys. The communal administrations are responsible for the interviewing, while STATEC is responsible for checking and evaluation. STATEC is directly responsible for the implementation of the written survey held every two years.

Luxembourg intends in the medium term (by 2005) to replace statistical surveys of the sheep population by the use of administrative data. The data source used in future could be SANITEL (an electronic registration system). At the moment, however, this system is only available for cattle.

9.2 Statistics on slaughterings

Luxembourg keeps monthly statistics of the number and slaughter weight of livestock slaughtered in abattoirs whose meat is suitable for human consumption, for all pigs, calves, heifers, cows, bulls and bullocks.

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<th>Availability of monthly data on slaughterings</th>
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<td><strong>Number</strong></td>
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<td>Pigs, total</td>
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<td>Calves</td>
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<td>Lambs</td>
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<td>Goats, total</td>
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(321) The Service d'Economie Rurale, a State service answerable to the Minister of Agriculture has a Division for Agricultural Statistics and Economic Accounts for Agriculture, whose responsibilities include producing statistics on agricultural output.

(322) All slaughterings of domestic cattle and pigs in Luxembourg are recorded constantly (weekly or monthly) by the "Cheptel et Viandes", section of the Service d'Economie Rurale at abattoirs and private slaughter sites (tueries privées). The data collected comprise: number of livestock slaughtered, sex and age of the animals by category. The different categories are, for cattle: cows, female calves, bulls, bullocks; for pigs: fattening pigs, sows and boars, piglets. The classification is based on the Community classification system.

(323) The data are processed by the "Cheptel et Viandes" section and passed on to the Agricultural Statistics Division. They are forwarded by the abattoirs to the Service d'Economie Rurale" by post and are generally available 6 weeks after the end of the survey month and can be passed on to external bodies, e.g. Eurostat. Slaughter data have been forwarded electronically since 1.1.2000, at least by abattoirs. Work on the use of electronic reporting by abattoirs for statistical purposes is continuing. The slaughter statistics are expected to be switched to this data source in the summer of 2001. More reports are expected to be submitted and the statistics improved as a result. All slaughterings (of domestic animals and those imported for slaughtering) are covered by a uniform system: the slaughterings of horses, sheep and goats, too, are covered by this system. Data on the slaughterings of imported animals for slaughter are provided by the veterinary authority. These data do not contain information on the category and slaughter weight.

(324) House slaughterings are covered by the full-scale survey of livestock populations on 1 December every three years. The data collected are: number, category and total slaughter weight. The data thus obtained are used unchanged for three years for the quantity statistics and EAA. House slaughterings make up a small proportion (about 2%) of the total number of slaughterings.

9.3 Data on external trade in live animals

(325) Exports of live animals within the single market are collected by the veterinary authority under the health provisions and forwarded to the Service d'Economie Rurale, Agricultural Statistics Division. The data are broken down by livestock for slaughter and breeding and productive livestock, but not according to category and class (for animals for slaughter). They are compiled by the Service d'Economie Rurale, Agricultural Statistics Division, broken down by category and class and expressed in slaughter weight. The breakdown of the data by category and class and the establishment of the total slaughter weight is obtained by raising the results of a survey of the main livestock export trading companies.
A survey of live animal imports, broken down by breeding and productive livestock/livestock for slaughter, is conducted by the veterinary authority and forwarded to the Service d'Economie Rurale, Agricultural Statistics Division.

9.4 Poultry statistics

The poultry population is covered by an annual full-scale survey held on 15 May and based on the structure survey. The veterinary authority compiles statistics of the poultry slaughtered in officially recognised poultry abattoirs. A survey of domestic slaughters of poultry is carried out every three years in December. No breakdown is made by category for existing data on poultry slaughters. No monthly slaughtering data or forecasts on poultry meat output are available. It is not possible to estimate the poultry population on the basis of eggs for hatching since there are currently no hatcheries in Luxembourg.

10 The Netherlands

10.1 Livestock surveys

10.1.1 Surveys on the number of pigs

In the Netherlands three surveys on the number of pigs are carried out per year, namely in April, August and December. The surveys carried out in August and December are separate pig surveys, while the one in April is carried out as structure survey. Till 1992 there were three sample surveys in January, April and August and the structure survey was executed in May, from 1993 till 1996 there were also three sample surveys but the reference dates were the first of December, April and August and the structure survey had it’s reference date in still in May.

The surveys carried out in August and December are sample surveys, while the structure surveys in April are full surveys. The average sampling error is less than 1%. The last full survey was carried out in April 2001.

The sample is drawn from the agricultural structure survey. It is a stratified sample. The stratification is based on the type of the holding and on the size (in Dutch size units). The results are calculated by a ratio-estimate.

The sample records 100 % of the total pig population. The sample excludes no holding with pigs, so every holding has a chance to be in the sample. (Holdings in the sample have together about 3,5 million pigs, about 2/3 of the forms are usable, that means 2,3 million pigs in the sample represent 13,5 million in the total population). About 3.000 holdings get a form, and about 2.000 holdings are used for making the figures. The number of holdings with pigs is about 15.000. So the percentage of total holdings is about 20%.

The surveys are not carried out in selected regions.
Data are obtained by written inquiries. The average response rate is 66%. It is known that about 2/3 of the sent forms will be usable. So the number of holdings in the sample is 3/2 of the number that is needed. One believes that not responding holdings have not a big influence on the result, because one can compare it with the sample frame that is updated once a year, and one also uses a stratification that will prevent that a difference in respond rate for different type of holdings will influence the results. Statistics Netherlands is responsible for carrying out the survey.

The Netherlands do not plan to use administrative sources instead of statistical surveys in the medium term (one to five years).

10.1.2 Surveys on the number of cattle

In the Netherlands two surveys on the number of cattle are carried out per year, namely in April and November. The surveys carried out in November are separate cattle surveys, while the surveys in April are carried out as structure survey. Till 1992 there were two sample surveys, with reference date in January and July, and the reference date for the structure survey was May. From 1993 till 1998 one sample survey was carried out in January, and also figures from the structure survey in May were available.

The surveys carried out in November are sample surveys, while the structure surveys in April are full surveys. The average sampling error is less than 1%. The last full survey was carried out in April 2001.

The sample is drawn from the agricultural structure survey. It is a stratified sample. The stratification is based on the type of the holding and on the size (in Dutch size units). The results are calculated by a ratio-estimate.

The sample records 100% of the total cattle population. The sample excludes no holding with cattle, so every holding has a chance to be in the sample. (Holdings in the sample have together about 0.3 million cattle, about 2/3 of the forms are usable, that means 0.2 million cattle in the sample represent 4.1 million in the total population). About 3,000 holdings get a form, and about 2,000 holdings are used for making the figures. The number of holdings with cattle is about 46,000. So the percentage of total holdings is about 7%.

The surveys are not carried out in selected regions.

Data are obtained by written inquiries. The average response rate is 66%. It is known that about 2/3 of the sent forms will be usable. So the number of holdings in the sample is 3/2 of the number that is needed. One believes that not responding holdings have not a big influence on the result, because one can compare it with the sample frame that is updated once a year, and one also uses a stratification that will prevent that a difference in respond rate for different type of holdings will influence the results. Statistics Netherlands is responsible for carrying out the survey.
The Netherlands plan eventually to use administrative sources instead of statistical surveys in the medium term (one to five years). It depends on the results of the investigations. The data source available for this is the System for Identification and Registration of Bovine Animals.

10.1.3 Surveys on the number of sheep and goats

In the Netherlands one survey on the number of sheep and goats is carried out per year, namely in April. Sheep and goat populations are recorded separately. The survey is carried out within the structure survey in April. In the structure survey lambs, ewes and rams and milkgoats and other goats are distinguished. Till 1996 the structure survey was carried out in May.

The structure surveys in April are full censuses.

Statistics Netherlands is responsible for carrying out the survey.

10.2 Statistics on slaughters

Monthly slaughtering data are available in the Netherlands on the number and slaughterweight for pigs overall, calves, heifers, cows, bulls (together with bullocks), bullocks (together with bulls), sheep overall, lambs and goats overall.

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<th>Availability of monthly data on slaughters</th>
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<td>Pigs, overall</td>
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<td>Number available</td>
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<td>Bulls (together with bullocks)</td>
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<td>Goats, overall</td>
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<td>Number available</td>
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<td>Slaughterweight available</td>
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The public inspection service for livestock and meat (RVV) collects the data on the number of slaughtering of every slaughterhouse and butcher who are allowed to slaughter by their own. RVV sends these figures to Statistics Netherlands. The Product board for Livestock, Meat and Eggs records the average weight of the animals, and sends also the results to Statistics Netherlands. Statistics Netherlands integrates these figures. The data are available two months after the reference period.
10.3 Data on external trade in live animals

(347) The department International Trade of Statistics Netherlands is responsible for the foreign trade statistics. Figures for countries outside the EU are based on the customs declarations. Inside the EU figures are based on the data that enterprises are sending to Statistics Netherlands. Enterprises importing or exporting more than 500,000 Dutch guilder (is about 227,000 Euro) are obliged to send monthly figures. Estimation for enterprises under this threshold and estimation in case of non-response is made. The classification of the goods is based on the SITC. Monthly figures are published divided in 1,250 groups of goods and for 50 (groups of) countries.

10.4 Production forecasts (gross indigenous production)

(348) GIP for pigs:

The starting point is the realised GIP in the year before. When forecasting quarter X in year t+1, the base is the GIP in quarter X in year t. There are some "adaptation factors" for correcting the GIP:

- The development of the number of mated sows and the number of raised piglets per sow per year.
- The development of the number of the monthly exported piglets.
- Correction for "not exported" piglets in the quarter before. They will be fattening pigs in the next quarter.
- Some special events that will influence the production.

(349) GIP for cattle:

GIP for cattle production is forecast by means of an annual population extrapolation method. This forecast model is based on historical data for the previous years. On the basis of cattle population at the beginning and end of the year and the GIP the annual number of calf births is determined for the previous years. The annual calf rate compared with the initial cow and heifer population will give the calving rate. These rates are used for estimations for the current and coming year. A cattle population and production sheet is drawn up on basis of observation and forecasting. Allowance is made for both the numbers of calves joining the adult population, as either heifers or bulls, and the change in the cow population using coefficients based on data from previous years.

Estimates for the final number of cows and total cattle, which is related to the number of cows gives estimates for the GIP following the calculation: Initial cattle population + calf births – calf losses – GIP = final population.

The mathematical model calculates the GIP for the different categories based on historical data. The results are discussed with experts of the
Meat Board and also economic and market factors are checked to adjust any element if necessary.

Especially the figures for foreign trade for live animals are weak elements in the model. Additional data on foreign trade are searched to improve the model for forecasting cattle GIP.

(350) GIP for sheep and goats:

The starting point is the realised GIP in the year before. On the base of the development of the number of animals and the expectation how the market and financial position of the farmers will develop, a correction will made on the GIP.

10.5 Poultry statistics

(351) Yearly surveys are carried out by Netherlands Statistics for:

- Laying hens total, of which:
  - younger than 18 weeks;
  - 18 weeks till 20 months;
  - 20 months and older.
- Broilers
- Parent stock for broilers total, of which:
  - younger than 18 weeks;
  - 18 weeks and older
- Ducks for meat production
- Turkeys
- Other poultry

(352) Monthly slaughtering data for broilers and turkeys are available separately. Monthly slaughtering data for ducks, geese and guinea fowl are not separately available, but the total of these "other poultry" is.

(353) Used coefficients for calculating live weights to carcass weight are:

- broilers 74%;
- old laying hens 70%;
- turkeys 80%;
- other poultry 70%.

(354) A forecast model on poultry meat production is not available, but could be developed on the basis of incubated eggs or chicks hatched. The basic data for such an econometric model are available.
On the basis of placed young laying hens on farms, a production forecast for eggs is made.

11 Austria

11.1 Livestock surveys

11.1.1 Surveys on the number of pigs

Up until 1992, the pig population in Austria was surveyed four times a year - on 3 March, 3 June, 3 September and 3 December. The first three surveys were of the sample variety and the fourth a full survey. Since 1980, the December survey has been exhaustive every other (odd) year, the intervening surveys being sample surveys. This was done for reasons of cost.

As from 1993, the EU cycle was adopted, the number of surveys being reduced to three per year - in early April, early August and early December. In each case, Austria opted for the first of the month. As before, every other December survey was exhaustive (except for 1997).

Austria was authorised by Commission Decision 2000/380/EC of 29 May 2000 to carry out just two surveys per year on the pig population. Austria submitted a study showing the quality of the GIP (gross domestic production) forecasts could be maintained. This study simulated a June survey by calculating a linear trend for the April and August surveys, and it showed that two pig surveys were sufficient to provide the requisite data.

Austria thus carries out two pig surveys a year, the first in June and the second in December. The December survey is an integrated livestock survey in the sense that other types of animal are also taken into account. The June survey is a separate pig survey.

These pig surveys are carried out as sample surveys. The mean sampling error over the past few years for the pig surveys was 1.11% for the total pig population, with 95% statistical certainty. The last full surveys were in December 1995 and December 1999.

Holdings are selected on the basis of the previous census of the livestock population. The sample covers 4 000 holdings in June and 7 000 holdings in December, accounting for 5% and 8% respectively of the total number of holdings with pigs. The sample covers 100% of the total pig population.

Austria does not conduct the statistical surveys of pigs (integrated surveys) in selected regions only.

The surveys are carried out by face-to-face interview with farmers. The mean response is 100%. The survey bodies are towns and municipalities.
In the medium term (by 2005), Austria intends to replace the pig surveys with administrative data. The pig database will be used as a source of data.

11.1.2 Surveys on the number of cattle

Commission Decision 2000/554/EC of 6 September 2000 authorised the Republic of Austria to make use of the register of bovine animals (RBA) to partially replace the cattle surveys carried out pursuant to Council Directive 93/24EEC. This supplies all the statistical data required by the Directive. Authorisation to use the RBA runs until 31 December 2003.

The administrative register of bovine animals provides up-to-date, complete and representative information on the following characteristics:

- Total cattle population
- Cattle under one year old
- Cattle aged between 1 and 2 years
  - Male
  - Female
- Cattle aged 2 and over
  - Male
  - Female
    - Heifers
    - Cows

The following parameters, which cannot be taken from the RBA, form the subject of an additional statistical survey covering at least 1,000 holdings:

- Cattle aged under one year, cattle to be slaughtered as calves
- Cattle aged under one, other
- Cattle aged under one, other, male
- Cattle aged under one, other, female
- Cattle aged between one and two years, female, for slaughter
- Cattle aged between one and two, female, other
- Cattle aged two or over, female, heifers, for slaughter
- Cattle aged two and over, female, heifers, other
- Cattle aged two or over, female, cows, dairy cows
- Cattle aged two or over, female, cows, other

This additional sample survey is carried out by face-to-face interview with farmers. The response rate is 100%. The survey is carried out by towns and municipalities.

A co-operation group consisting of officials from Statistik Austria, the Federal Ministry of Agriculture and Forestry, the Environment and Water Management (main body responsible for the bovine database), plus representatives of agricultural chambers of commerce, experts from the Vienna University of Soil Science (statistics and veterinary science) and a
representative of the European Commission, monitors statistical application of the administrative database.

(369) This group takes particular care to ensure that the procedure for updating the RBA continues to guarantee a complete and representative register. In the event of significant changes being made to the database, this group always carries out a detailed investigation.

(370) Austria will be drawing up an annual report on the use of the RBA for statistical purposes. Once the authorisation period is over, Austria must present the European Commission with a report comparing the RBA results with the findings of the cattle surveys. To this end, 2003 will see not just the farm structure survey being carried out, but also a regular cattle survey complying with Article 4 of Council Regulation 93/24/EEC. This comparative study, together with the annual reports, will allow the Commission, once the Standing Committee on Agricultural Statistics has delivered its opinion, to take a decision on the use of the RBA for statistical purposes.

(371) In practical terms, this means that the coefficients of variation in the 2003 survey may not exceed 1% for total cattle and 1.5% for total cows. The sample must include sufficient holdings to ensure that at least 95% of the total cattle population is included. This will mean a sample of between 4 000 and 5 000 holdings. As already stated, the aim is to generate all the requisite data on cattle from this survey alone. The survey findings can then be compared with the RBA results. A final report on the use of the RBA can then be drawn up, and this may allow use of the RBA to be extended.

Fig. 1

<table>
<thead>
<tr>
<th>Survey schedule for Austria based on the register of bovine animals</th>
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<tbody>
<tr>
<td>December 2000</td>
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<tr>
<td>June 2001</td>
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<td>December 2001</td>
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<td>June 2002</td>
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<td>December 2002</td>
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<tr>
<td>June 2003</td>
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<tr>
<td>December 2003</td>
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</table>

(372) During the authorisation period, the structural studies based on population size classes to be carried out in December of odd-numbered years will be drawn up using the register of bovine animals.

(373) Austria sends the European Commission figures on the cattle population twice a year, in June and December.

(374) The surveys carried out pursuant to Directive 93/24 of 1 June 1993 are sample surveys. The last full survey was carried out in Austria on 1 December 1999. These surveys have a mean sampling error of 1.2% for the total population of cattle (with 95% statistical certainty).
In each case, holdings were selected on the basis of the previous livestock census. In future, the RBA will probably be taken into account and duly exploited.

The additional, RBA-based surveys cover 100% of the total livestock population. 1,000 holdings are surveyed, corresponding to 1% of the parent population. The surveys are not conducted in selected regions only.

11.1.3 Surveys on the number of sheep and goats

Austria conducts surveys of the sheep and goat population in December of each year. The surveys are carried out jointly.

The surveys are of the sample variety. The last full surveys were carried out in December 1995 and 1999. The mean sampling error over the past few years for the sheep and goat surveys was 2.64% for the total sheep population and 5.79% for the total goat population, with 95% statistical certainty. In each case, the holdings are selected on the basis of the previous livestock census.

The surveys cover 100% of the total sheep and goat population, involving 3,800 holdings with sheep and 2,300 with goats - 19% and 16% of the parent population respectively. The surveys are not conducted in selected regions only.

The surveys are conducted by face-to-face interview with farmers. The response rate is 100%. The survey bodies are the towns and municipalities.

In the medium term (up to 2005), Austria does not intend to replace statistical surveys of the sheep and goat populations with administrative data.

11.2 Statistics on slaughterings

Austria compiles monthly statistics on the number and slaughter weight of animals slaughtered in abattoirs for human consumption. These cover pigs (total), calves, heifers, cows, bulls, steers, sheep (total) and lambs and goats (total). Monthly statistics are available only for the slaughterings that are surveyed and are not representative of total slaughterings, i.e. "calves" and "pigs" (around 95% coverage each), and particularly not of "sheep/lambs" and "goats" (around 25% and 10% coverage respectively).
<table>
<thead>
<tr>
<th>Availability of monthly data on slaughterings</th>
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<tbody>
<tr>
<td>Number</td>
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<tr>
<td>Pigs, total</td>
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<tr>
<td>Calves</td>
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<td>Heifers</td>
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<td>Cows</td>
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<td>Bulls</td>
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<td>Steers</td>
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<td>Sheep, total</td>
</tr>
<tr>
<td>Lambs</td>
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<tr>
<td>Goats, total</td>
</tr>
</tbody>
</table>

(383) The surveyed slaughterings are reported by official district veterinarians to Statistik Austria, where they are combined into Bundesland and national totals. These are available around one month after the reporting month in question. Slaughterings that are not surveyed are covered partly by the livestock population surveys (pigs), by exploiting the RBA (calves) and by drawing on estimates produced by experts in the chambers of agriculture (sheep and goats).

11.3 Data on external trade in live animals

(384) Live animals are recorded under CN-01. The data are recorded as part of Intrastat (trade within the EU) and Extrastat (trade with non-EU countries). For the Intrastat returns, threshold values are applied (currently ATS 2 000 = 145 346 €). External trade data are available 12 weeks after the reporting month. The data are recorded and processed by Statistik Austria.

(385) The figures on external trade in live animals are taken from the statistics compiled by Statistik Austria. However, it is often clear from mirror statistics (from Austria’s biggest trading partner, Germany, for example) that either the Austrian or German figures must contain errors. However, in a bid to protect against the accusation of manipulation, official figures are systematically based on Austrian statistics.

11.4 Production forecasts (gross indigenous production)

(386) When calculating the future GIP of pigs, it is empirically established which percentage of pigs in each age class is to be slaughtered in a given month. These percentages vary according to the month of survey (June or December). They also change from one year to the next. An average is then taken of these deviations, this then being used to continue the series.
Example of the June survey: pigs weighing over 110 kg are slaughtered in the livestock census month of June, so they no longer fall under the first forecast quarter (July to September). Likewise, some three-quarters of animals weighing between 80 and 110 kg are slaughtered as early as June. The first month after the census, i.e. the first forecast month, includes the remainder of animals weighing between 80 and 110 kg, and a large portion of the 50-80kg category (the mid-term figure for the period under investigation was around 40%). In the second month after the census, i.e. the second forecast month, the remainder of animals weighing between 50 and 80 kg are marketed. In the third month the figure is around 40% of young pigs (20-50 kg weight-group). The fourth month accounts for around 40% of young pigs, the fifth month covers the remainder of young pigs and some 30% of piglets, whilst the sixth month accounts for just over 40% of piglets. Two calendar quarters can thus be estimated by adding up the monthly values.

The seventh month still accounts for a significant portion of piglets, though a large portion of GIP comes from litters from the covered sow population of 1 June. The portion of GIP generated by these animals was estimated as follows:

The fictive increase in piglets per covered breeding sow for individual quarters was calculated for a fairly long period using the population equation, and the average worked out for the corresponding quarters. This mean piglet increase was multiplied by the number of covered sows at the start of the quarter. This yields the animal population deriving from covered sows. This population, part of which should be ready for slaughter, was again multiplied by empirical percentage rates to provide, together with the remaining portion of piglets ready for slaughter (or export) the GIP volume for month seven. A similar procedure (minus the processed piglets) is followed for months eight and nine. Adding these three months together yields GIP for the third quarter.

The GIP for cattle is basically calculated using a population continuation procedure. Parameters are also calculated for the transition between one animal category and the next oldest, these then being continued. The most important of these parameters are calving rate, calf slaughter rate, rearing rate, cow population turnover and slaughter rate. Unfortunately, external factors (calf processing/Herodes premium, BSE crisis, etc.) have adversely affected the consistency of these transitional parameters over the past few years. This has also made cattle forecasts less accurate. Discrepancies in external trade statistics have likewise had a negative impact on forecast calculations.

Austria has very small populations of sheep and goats, hence the relatively scant attention paid to the forecasting procedure used for the GIP of sheep and goats. Basically, the ewe population for December of the previous year is compared with the GIP for goats and sheep. The trend in the resultant ratio is then extrapolated, the latest population figure yielding the forecast GIP.
11.5 Poultry statistics

(392) A monthly record is kept of hatcheries and chick hatchings in holdings with a minimum storage capacity of "500 hatching eggs", and of the number and weight of slaughtered birds in holdings with a minimum of "5 000 slaughterings during the previous year". A distinction is made between laying hens, table birds, turkeys, guinea fowl, geese and ducks.

(393) For the poultry meat supply balances, the meat portion is calculated using hatchery data. The reason for this is that data on slaughterings also included imports of live poultry (for slaughter). External trade statistics could be used to draw conclusions about gross domestic production. However, external trade statistics in the poultry sector in particular are beset by uncertainties.

(394) The calculation of gross domestic production using hatchery data yields more reliable results. This is the model used for hens and turkeys. Chick statistics are used to calculate the production of duck and goose meat.

(395) Use is made of hatchery data by taking account of time-to-market (incubation and fattening period) by type of poultry, hatching and loss rates, imports and exports of chicks and average slaughter weight.

12 Portugal

(396) The methodology which is described in this chapter is valid from 2001 onwards.

12.1 Livestock surveys

12.1.1 Surveys on the number of pigs

(397) Portugal carries out one pig survey per year, in December. Under the terms of Council Directive 93/23/EEC, Portugal is allowed to dispense with two of the three annual surveys, as it has a pig population of less than three million. The December survey covers pigs only.

(398) The December survey in Portugal is a sample survey with a mean sampling error of 2 %. The last full survey of the pig population was conducted as part of the general survey of agriculture in 1999. The sample includes 53% of the total pig population. The survey covers 2 396 holdings, or 2% of the total.

(399) The pig population is surveyed by selecting a sample based on the register of holdings from the 1999 general survey of agriculture. This frame is updated after each special survey (livestock surveys), after farm structure surveys and, if necessary, with the help of an external survey or administrative sources. For each type of animal, a sample is selected from a total stratified by agricultural region and population size class. For each region, classes are drawn up according to the number of animals.
(400) The survey is conducted in selected regions, namely Entre Douro e Minho, Beira Litoral, Beira Interior, Ribatejo e Oeste and Alentejo.

(401) This sample survey allows extrapolation to the total population. The INE (Instituto Nacional de Estatística - National Statistical Institute) subsequently draws on other sources as a comparative basis for data on regions not included in the survey. These include the structural survey in particular (when available), the annual pig survey (conducted by government bodies, obligatory) and polls of the relevant interest groups.

(402) Surveys are conducted by face-to-face interviews with farmers. The response rate is 100%, any holding failing to provide information being replaced by another with comparable characteristics. Interviews are conducted by the INE in conjunction with the Ministry of Agriculture.

(403) In the medium term (up until 2005), Portugal has no plans to replace statistical surveys of the pig population with administrative data. The way administrative data are currently organised rules out direct access to data. However, as soon as this is possible, it would make sense to draw on such data - they would be used much more effectively, and further surveys of producers could be dispensed with.

12.1.2 Surveys on the number of cattle

(404) Portugal conducts one cattle survey per year, in December. Under the terms of Council Directive 93/24/EEC, Portugal is allowed to dispense with the second annual survey, as it has a bovine population of less than 1.5 million. The December survey covers cattle only.

(405) The December survey in Portugal is a sample survey with a mean sampling error of 1%. The last full survey of the cattle population was conducted as part of the general survey of agriculture in 1999. The sample survey includes 19% of the total cattle population. The survey covers 3302 holdings, or 2% of the total.

(406) The cattle population is surveyed by selecting a sample based on the register of holdings from the 1999 general survey of agriculture. This frame is updated after each special survey (livestock surveys), after farm structure surveys and, if necessary, with the help of an external survey or administrative sources. For each type of animal, a sample is selected from a total stratified by agricultural region and population size class. For each region, classes are drawn up according to the number of animals.

(407) The survey is carried out in selected regions, namely Entre Douro e Minho, Trás-os-Montes, Beira Litoral, Beira Interior, Ribatejo e Oeste, Alentejo and the Azores.

(408) This sample survey allows extrapolation to the total population. The INE subsequently draws on other sources as a comparative basis for data on regions not included in the survey. These include the structural survey
in particular (when available), the annual cattle survey (conducted by government bodies) and polls of the relevant interest groups.

(409) Surveys are conducted by face-to-face interviews with farmers. The response rate is 100%, any holding failing to provide information being replaced by another with comparable characteristics. Interviews are conducted by the INE in conjunction with the Ministry of Agriculture.

(410) In the medium term (up until 2005), Portugal has no plans to replace statistical surveys of the cattle population with administrative data. The way administrative data are currently organised rules out direct access to data. However, as soon as this is possible, it would make sense to draw on such data - they would be used much more effectively, and further surveys of producers could be dispensed with.

12.1.3 Surveys on the number of sheep and goats

(411) Portugal conducts surveys of the sheep and goat populations every December. The surveys are carried out separately and cover the sheep and goat populations only.

(412) The surveys are sample surveys. The last full survey was carried out as part of the 1999 general survey of agriculture. The mean sampling error over the past few years for the sheep and goat surveys has been 2% of the total population of these animals.

(413) The sheep and goat populations are surveyed by selecting a sample based on the register of holdings from the 1999 general survey of agriculture. This frame is updated after each special survey (livestock surveys), after farm structure surveys and, if necessary, with the help of an external survey or administrative sources. For each type of animal, a sample is selected from a total stratified by agricultural region and population size class. For each region, classes are drawn up according to the number of animals.

(414) The surveys cover 9% and 11% of the total sheep and goat populations respectively. 947 sheep holdings and 860 goat holdings are questioned, representing 1% of the total population in each case. The surveys are carried out in selected regions. For sheep, these are Trás-os-Montes, Beira Litoral, Beira Interior, Ribatejo Oeste and Alentejo, and for goats the regions of Entre Douro e Minho, Trás-os-Montes, Beira Litoral, Beira Interior, Ribatejo e Oeste, Alentejo and the Algarve.

(415) This sample survey allows extrapolation to the total population. The INE subsequently draws on other sources as a comparative basis for data on regions not included in the survey. These include the structural survey in particular (when available), the annual sheep and goat survey (conducted by the administration, obligatory) and polls of the relevant interest groups.
(416) Surveys are conducted by face-to-face interviews with farmers. The response rate is 100%, any holding failing to provide information being replaced by another with comparable characteristics. Interviews are conducted by the INE in conjunction with the Ministry of Agriculture.

(417) In the medium term (up until 2005), Portugal has no plans (before 2005) to replace statistical surveys of the sheep and goat population with administrative data. The way administrative data are currently organised rules out direct access to data. However, as soon as this is possible, it would make sense to draw on such data - they would be used much more effectively, and further surveys of producers could be dispensed with.

12.1.4 Notes on the livestock surveys

(418) Surveys of animal populations raise a number of complex problems. This is particularly true of countries such as Portugal, where farming is characterised by a large number of relatively small holdings.

(419) One particularly acute problem is the constant need to update the extensive and extremely complex register. In some cases, comprehensive representative samples must be selected to make up for registers that are not up to date.

(420) Because of the low educational level of farmers, surveys must also be carried out as face-to-face interviews, adding to the logistical and financial burden.

(421) Another complication is the fact that, for odd-numbered years, the data that are needed on livestock populations by holding size must be generated by screening the adjusted findings of the farm structure survey, this study focusing primarily on structural aspects.

12.2 Statistics on slaughterings

(422) Portugal compiles monthly statistics on the number and slaughter weight of animals slaughtered in abattoirs for human consumption. These cover pigs (total), calves, heifers, cows, bulls, steers, sheep (total), lambs and goats (total).
### Availability of monthly data on slaughterings

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Slaughter weigh</th>
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<tbody>
<tr>
<td>Pigs, total</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Calves</td>
<td>available</td>
<td>available</td>
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<tr>
<td>Heifers</td>
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<td>Cows</td>
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<td>Steers</td>
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<tr>
<td>Sheep, total</td>
<td>available</td>
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<td>Lambs</td>
<td>available</td>
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<tr>
<td>Goats, total</td>
<td>available</td>
<td>available</td>
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</table>

(423) The monthly census of all public and private abattoirs (some 120 units) is carried out by post by the INE on a country-wide basis. Data are likewise processed by the INE, and are ready on the 19th working day of the month n+2. For slaughterings outside abattoirs (home slaughterings), there are estimated own-consumption coefficients for each type of animal.

### 12.3 Data on external trade in live animals

(424) For data on intra-Community trade, the INE (Division for business statistics, Department for international trade statistics) uses the Intrastat system. Every natural or legal person liable to pay VAT and engaged in the trading of goods between Member States is obliged to take part in a monthly postal survey. Assimilation thresholds are set for individual trade flows. If values fall under these thresholds, data are not recorded. Each year, the INE lays down statistical assimilation thresholds for individual intra-Community trade flows. For 2000, these were PTE 12 million (59 856 €) for imports and PTE 17 million (84 796 €) for exports.

(425) Data on trade with non-member countries are collected using the Single Administrative Document. This is a full survey.

(426) Data preparation (intra-Community trade and non-member countries) is done by the INE only.

(427) Data are available 10 weeks after the reference month for intra-Community trade and six weeks after the reference month for extra-Community trade.

### 12.4 Production forecasts (gross indigenous production)

(428) Forecasts are based on the results of the annual survey of animal stocks carried out in December.
Forecasts for gross indigenous production (GIP) are drawn up over two successive years according to trends in the stocks of certain categories of animals. In other words, the trends in stocks for years n and n+1 are applied to the GIPs calculated using actual data on slaughterings and trade in live animals up until the end of year n+1. This produces a projection of production potential at the time of the survey up until year n+2.

For forecasting purposes, use is also made of other indicators, such as trends in the survey of slaughter cattle, producer prices and international trade in live animals and meat, co-operation taking place with experts from the relevant institutions and interest groups.

The data on international trade used for calculating GIP are the data recorded by the INE on imports/exports (total and intra-Community) of live animals. Account is taken only of the classification codes that relate to the import and export of animals for slaughter.

12.5 Poultry statistics

The following data are available in Portugal:

Monthly survey of breeding establishments (Regulation (EEC) No 2782/75) - production of eggs for hatching, production of day-old chicks, capacity of incubators and number of hens capable of laying or not yet capable of laying.

Monthly survey of imports and exports of day-old chicks (Regulation (EEC) No 2782/75) - imports and exports of day-old chicks for breeding or slaughter/laying.

Monthly survey of laying hen establishments - Number of hens capable of laying or not yet capable of laying, plus number of eggs laid in the reference month.

Monthly survey of establishments rearing broilers for meat - Number of arriving hens for meat, number of departing live broilers and number of broilers slaughtered during reference month.

Annual survey of poultry farms (chickens, turkeys, ducks and quails) and interim survey of poultry farms (chickens) - Number of farms by type (meat, eggs or breeding), number of young birds ready or not ready for laying on 30th June and 31st December, annual production of meat, eggs for eating, eggs for hatching and day-old chicks.

Data on poultry slaughterings are not yet collected on a routine basis. It had been planned to expand data collection in this area as part of the 2001 TAPAS action plan ("supply balances"). However, since data are still being analysed, it is not yet possible to supply results on a routine basis.
Use is not made of an econometric model that gives an indication of poultry stocks. The relevant data are recorded by the INE by means of the above-mentioned annual survey and the interim survey of poultry farms.

13 Finland

13.1 Livestock surveys

13.1.1 Surveys on the number of pigs

In Finland three surveys on the number of pigs are carried out per year, namely in May, June and December. The surveys carried out in May (reference date 1. 5.) and in December (reference date 1. 12.) are integrated livestock surveys (excluding bovine animals).

The surveys carried out in June and December are sample surveys, while surveys carried out in May are full surveys. The average sampling error is between 1,79 and 2,05 %. The Rural Business Register includes the number of pigs annually.

In 2000, the sampling frame included a total of 83,000 farms, with at least one hectare of cultivated arable land or at least one animal unit. To facilitate sampling the sampling frame was stratified into 407 strata (307 strata plus 100 biggest farms, each one for own strata). Stratification variables were farm's geographical location (16 Development Centers), size of the farm (calculatory unit that was a mean of animal unit and crop area on the farm, divided to 4 categories) and farm typology (7 categories). The size of the farm was the allocation variable. Allocation was carried out by using the Neyman allocation. All those farms included in the stratum with less than 10 farms are within the sample. The sample size was about 10,000 farms. The sample is a panel sample of which one-third of the farms is drawn afresh each year, based on the aforementioned allocation method.

By the sample surveys 46 % of pig population is recorded. The survey covers 2,000 farms which is 44 % of all farms breeding pigs.

The three surveys are carried out in selected regions. The survey is carried out by Employment and Economic Development Centres in all regions.

The method used for estimating the pig population which is not recorded by the sample surveys in June and December is the following: Estimates are calculated on the basis of sample using the CLAN-program developed by Statistics Sweden. The estimation method used in the survey is Horwitz-Thompson type of estimation. Data is chiefly calculated by using the normal estimation formula for stratified sampling. For comparison, data is also calculated by means of combined ratio estimation. Woodroff’s transformation is used for calculating standard errors. Comparing standard errors show which method of estimation produces more accurate data.
In June and December data are obtained by oral interviews with farmers and by telephone. Data for surveys in May are obtained from Rural Business Register. The average response rate is 80% (in June and December surveys). The Information Centre of the Ministry of Agriculture and Forestry is responsible for carrying out the survey.

Finland plans to make use of administrative sources in the medium term (one to five years). The data source available for this is the Rural Business Register.

13.1.2 Surveys on the number of cattle

In Finland administrative data are used to get the livestock for cattle. For this purpose one has the Bovine Animal Register, which is a part of the Rural Business Register. The data are extracted twice per year, namely in May and December.

The Ministry of Agriculture and Forestry and the Agriculture Accounting Centre are responsible for extracting the data.

13.1.3 Surveys on the number of sheep and goats

In Finland two surveys on the number of sheep and goats are carried out per year, namely in May and December. Sheep and goat populations are recorded separately. All the surveys are integrated livestock surveys.

The surveys carried out in December are sample surveys, while surveys carried out in May are full surveys. The average sampling error in December surveys is between 5.2 and 10.0% for sheep and between 9.5 and 18.2% for goats. The last full survey was carried out in May 2000.

In 2000, the sampling frame included a total of 83,000 farms, with at least one hectare of cultivated arable land or at least one animal unit. To facilitate sampling the sampling frame was stratified into 407 strata (307 strata plus 100 biggest farms, each one for own strata). Stratification variables were farm's geographical location (16 Development Centers), size of the farm (calculatory unit that was a mean of animal unit and crop area on the farm, divided to 4 categories) and farm typology (7 categories). The size of the farm was the allocation variable. Allocation is carried out by using the Neyman allocation. All those farms included in the stratum with less than 10 farms are within the sample. The sample size was about 10,000 farms. The sample is a panel sample of which one-third of the farms is drawn afresh each year, based on the aforementioned allocation method.

By the sample surveys 15% of sheep population and 16% of goat population are recorded. The survey covers 259 farms (12%) breeding sheep and 109 farms (16%) breeding goats.
The two surveys are carried out in selected regions. The survey is carried out by Employment and Economic Development Centres in all regions.

The method used for estimating the sheep and goat population which is not recorded by the sample surveys in December is the following: Estimates are calculated on the basis of sample using the CLAN-program developed by Statistics Sweden. The estimation method used in the survey is Horwitz-Thompson type of estimation. Data is chiefly calculated by using the normal estimation formula for stratified sampling. For comparison, data is also calculated by means of combined ratio estimation. Woodroff’s transformation is used for calculating standard errors. Comparing standard errors show which method of estimation produces more accurate data.

In December data are obtained by oral interviews with farmers and by telephone. Data for surveys in May are obtained from Rural Business Register. The average response rate is 80 % (in December surveys). The Information Centre of the Ministry of Agriculture and Forestry is responsible for carrying out the survey.

Finland plans to make use of administrative sources in the medium term (one to five years). The data source available for this is the Rural Business Register.

Notes on the livestock surveys

In Finland, two sample surveys on number of livestock are carried out every year, as of 1st of June and as of 1st of December. These surveys are integrated livestock and crop surveys. The Rural Business Register includes data on all number of livestock as of 1st of May. The Bovine Animal Register is part of the Rural Business Register. Number of cattle is not obtained by the surveys, but data is taken from the Bovine Animal Register twice a year.

Statistics on slaughterings

Monthly slaughtering data are available in Finland on the number and slaughterweight for pigs overall, calves, heifers, cows, bulls, bullocks, sheep overall, lambs and goats overall.
### Availability of monthly data on slaughterings

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<thead>
<tr>
<th></th>
<th>Number</th>
<th>Slaughterweight</th>
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<tbody>
<tr>
<td>Pigs, overall</td>
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<tr>
<td>Calves</td>
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<td>Bullocks</td>
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<tr>
<td>Sheep, overall</td>
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<tr>
<td>Lambs</td>
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<tr>
<td>Goats, overall</td>
<td>available</td>
<td>available</td>
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(455) Slaughtering data is recorded monthly by the Information Centre of the Ministry of Agriculture and Forestry. Basic rule is that slaughterhouses or other kind of enterprises which has bought animals from farmers report it to the Information Centre of the Ministry of Agriculture and Forestry. All the enterprises report the number and the weight of animals slaughtered in abattoirs. Big enterprises report also the prices paid to farmers. Monthly slaughtering data is available within two months after the end of the reference month. Data on slaughtering on farms are based on the sample survey carried out by the Information Centre in June and December.

### 13.3 Data on external trade in live animals

(456) Foreign trade of live animals is recorded by customs statistics. Trader report the volumes traded to customs officers. However the amount of live animals traded is very small and it does not affect GIP-numbers at all.

### 13.4 Production forecasts (gross indigenous production)

(457) Sources used for meat production forecasts:

- number of animals from the surveys of TIKE, the Rural Business Register
- monthly slaughter statistics by type of animals (kg and no.) from TIKE
- carcass statistics by municipality from TIKE
- milk production models of Gallup ETT
- the purchasing network of the slaughtering companies
- the producer surveys of Gallup ETT
The number of animals on the farms (TIKE surveys, Rural Business Register and the producer surveys of Gallup Food and Farm Facts (Gallup ETT)) are compared with and connected to the slaughter statistics of TIKE.

For the beef meat forecast the following data is used: the number of lactating cows, the normal monthly slaughtering, the number of calves born, and the number of inseminations of cows. These data are used for forecasting both young beef and cow meat coming to the markets. The data are collected from the milk-production forecasting models of Gallup ETT and the slaughter statistics of TIKE. Also the Rural Business Register and the producer surveys of Gallup ETT.

The pig meat forecast is made on the basis of data from the sample surveys of TIKE and the Rural Business Register. The meat coming to the markets in the coming months is forecasted using slaughter data from TIKE, the number of piglets distributed through the companies, and the relation between the distributed piglets and slaughtered animals (part of combined production). The developing trends are also recorded through the producer surveys of Gallup ETT.

13.5 Poultry statistics

Slaughtering data are collected also in the area of poultry statistics. Monthly slaughtering data on broilers and turkeys and also monthly slaughtering data on hens, ducks, geese and other poultry are available. Amount of ducks, geese and other poultry is so small that they are reported all together. Enterprises are reporting on carcasses so coefficients are not used.

It might be possible to have an econometric model to provide information on the poultry population. At this moment there is not such a model available. Data on poultry population is available from the Rural Business Register (reference data 1st of May).

By the sample surveys carried out by the Information Centre in June and December information on the number of laying hens and the production of eggs is obtained as well.

14 Sweden

14.1 Livestock surveys

The described surveys on the number of pigs and cattle are valid for December 1999. The survey on the number of sheep is valid for June 1999 and of goats for June 1992. For the years 2000 and 2001 there are some changes in the sample sizes compared to 1999. Concerning the number of pigs and cattle there was a sample of 10 000 in June 2000 and of 6 000 in December 2000. In June 2001 the survey was based on a sample of 15 100 farms. In this survey, besides the cattle and the pigs, information was also collected concerning sheep, fowl and chicken.
August 2000 a total survey was carried out on the number of pigs, sheep, fowl and chicken.

14.1.1 Surveys on the number of pigs

(465) In Sweden two surveys on the number of pigs are carried out per year, namely in June and December. All the surveys are integrated livestock surveys.

(466) All the surveys are sample surveys. The average sample error is 1% (0.4 – 1.5 % during last years). The last full survey on the number of pigs was carried out in June 1999 within the Farm Structure Census.

(467) The sample design is a stratified random sampling. Sampling frame is the Farm Register. Stratification is based on size groups of cattle, dairy cows, pigs and regions. The total sample size is at least 6,000 holdings. By the sample surveys 2,800 holdings are recorded which is 47 % of all holdings breeding pigs. 75% of the total pig population is recorded. The survey is not designed in the same way every time, for instance the sample size varies.

(468) The survey is not carried out in selected regions.

(469) Data are obtained by written inquiries. The average response rate is 94%. The “no response” is treated with the simple raising method.

(470) Statistics Sweden is responsible for carrying out the surveys.

(471) Sweden does not plan to use administrative sources instead of pig surveys in the medium term (one to five years).

14.1.2 Surveys on the number of cattle

(472) In Sweden two surveys on the number of cattle are carried out per year, namely in June and December. All the surveys are integrated livestock surveys.

(473) All the surveys are sample surveys. The average sample error is 1% (0.4 – 1.4 % during last years). The last full survey on the number of cattle was carried out in June 1999 within the Farm Structure Census.

(474) The sample design is a stratified random sampling. Sampling frame is the Farm Register. Stratification is based on size groups of cattle, dairy cows, cattle and regions. The total sample size is at least 6,000 holdings. By the sample surveys 4,200 holdings are recorded which is 12 % of all holdings breeding cattle. 25% of the total cattle population is recorded. The survey is not designed in the same way every time, for instance the sample size varies.

(475) The survey is not carried out in selected regions.
Data are obtained by written inquiries. The average response rate is 94%. The “no response” is treated with the simple raising method.

Statistics Sweden is responsible for carrying out the surveys.

Sweden plans to use administrative sources instead of cattle surveys in the medium term (one to five years). The data source available for this is the computerised cattle database.

14.1.3 Surveys on the number of sheep and goats

In Sweden one survey on the number of sheep is carried out per year, namely in June. Surveys on number of goats are carried out every 10 years. Sheep and goats populations are recorded jointly. All the surveys are integrated livestock surveys.

All the surveys are sample surveys. The average sample error is 3% (2 - 4%) for the total number of sheep. The last full survey on the number of sheeps was carried out in June 1999 and of goats in June 1992, both within the Farm Structure Census.

Stratification is based on type of holding and labour requirement.

The survey is not carried out in selected regions.

Data are obtained by written inquiries. The average response rate is 95%. The “no response” is treated with the simple raising method.

Statistics Sweden is responsible for carrying out the surveys.

Sweden does not plan to use administrative sources instead of statistical surveys on sheep and goats in the medium term (one to five years).

14.2 Statistics on slaughterings

Monthly slaughtering data are available in Sweden on the number and slaughterweight for pigs overall, calves, heifers, cows, bulls, bullocks, sheep overall, lambs and goats overall.
Availability of monthly data on slaughterings

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Slaughterweight</th>
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<tbody>
<tr>
<td>Pigs, overall</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Calves</td>
<td>available</td>
<td>available</td>
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<tr>
<td>Heifers</td>
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<td>Cows</td>
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<td>Bulls</td>
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<td>Bullocks</td>
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<tr>
<td>Sheep, overall</td>
<td>available</td>
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<tr>
<td>Lambs</td>
<td>available</td>
<td>available</td>
</tr>
<tr>
<td>Goats, overall</td>
<td>available</td>
<td>available</td>
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</tbody>
</table>

(487) All slaughterhouses are obliged to send information to the Swedish Board of Agriculture about every slaughtered animal within 45 days from the date of slaughter. This information is sent through an IT-medium.

14.3 Data on external trade in live animals

(488) Foreign trade is reported by the trading enterprises to Statistics Sweden according to the statistical survey Intrastat. Enterprises with an export or an import of at least 1,500,000 SEK (about 162,000 €) are obliged to report. The foreign trade figures are available in three months after the reference month.

14.4 Production forecasts (gross indigenous production)

(489) Method for pigs: From the pig surveys the number of pigs in different classes are considered. The number of piglets, young pigs and pigs for fattening are distributed as slaughterings during the three quarters following the pig survey. The number of piglets from the mated sows are estimated and distributed as slaughterings during the third and following quarters.

(490) Method for cattle: A certain number of the adult cattle according to the cattle survey is expected to be slaughtered during the forthcoming periods. The slaughterings are distributed in a statistical way on different periods and kinds of animals according to the actual distribution during the last periods.

14.5 Poultry statistics

(491) Within a TAPAS project finished in June 2001, yearly statistics for the years 1990-2000, as well as quarterly statistics for the year 2000, have been collected, concerning both number and slaughtering weight of the following poultry respectively: Broiler, laying hen, broiler mother, turkey,
duck, goose and ostrich. Quarterly statistics will also from 2001 and onwards be collected for these poultry categories. No forecasts of meat production are made.

15 United Kingdom

15.1 Livestock surveys

(492) The methodology on livestock surveys below is for surveys run in 2000. In 2001 a different methodology was used in the livestock surveys as a result of the impact of FMD in the UK. The June Census was run as a large sample survey with approximately 25% of holdings sampled and the December Survey will also be run in a similar way with approximately 25% of holdings sampled. This is a decrease of the sample size for June and an increase in sample size for December. It is envisaged that in 2002 the livestock surveys run in the UK will be run in a similar way to those in 2000.

15.1.1 Surveys on the number of pigs

(493) The United Kingdom carries out two pig surveys per annum, in June and December. All the surveys are integrated livestock surveys.

(494) All surveys are sample surveys. The June Census is normally a large sample survey but was a full Census in 2000. The average sampling error rate of pig surveys in recent years in terms of overall pig numbers is 1,0% for June, 3,6% for December (for England).

(495) The sample is drawn from the population of main agricultural holdings in the UK. England, Wales, Scotland and Northern Ireland run their own surveys and have different methods of stratification. The strata are based on the particular farm type of the holding and its SGM. The June Census is a large sample survey and the December Survey is a smaller sample survey. The June Census is the basis of information for the Farm Structure Survey.

(496) In the past, the United Kingdom recorded the breeding sow population from the June census, the survey in December and two small surveys on the pig population in April and August. Under the new system, the United Kingdom will no longer carry out the two small surveys in April and in August. The two remaining surveys in June and December will also record holdings with no pig breeding and can therefore provide estimates on holdings which are taking up or abandoning pig breeding.

(497) In June 100 % of the total pig population is recorded by the sample survey (for England). In December this percentage amounts 37 % (for England). In June 8.765 holdings are recorded by the survey, in December 1.126 holdings are recorded. This means a percentage of 100% for total holdings for June and 13% for December (for England).

(498) The surveys are not carried out in selected regions.
To estimate the pig population which is not recorded by the survey the ratio raising method is used. This method is used for both the June Census and the December Survey. The trend for responding holdings is applied to those non-responding and non-sampled holdings to produce national estimates.

The surveys are carried out by written inquiries. The average response rate in these surveys are 80% for June and 74% for December. (for England).

The various Government Departments in each of the UK countries are responsible for carrying out the surveys. DEFRA for England, NAWAD for Wales, SEERAD for Scotland and DARDNI for Northern Ireland.

15.1.2 Surveys on the number of cattle

The United Kingdom carries out two cattle surveys per annum, in June and December. All the surveys are integrated livestock surveys.

All surveys are sample surveys. The June Census is normally a large sample survey but was a full Census in 2000. The average sampling error rate of cattle surveys in recent years in terms of overall cattle numbers is 0.1% for June, 0.5% for December (for England). The sample survey covers 14% of holdings in England and Wales, and 35% to 40% of the holdings in Scotland and Northern Ireland. The holdings for the surveys are determined by random selection.

The sample is drawn from the population of main agricultural holdings in the UK. England, Wales, Scotland and Northern Ireland run their own surveys and have different methods of stratification. The strata are based on the particular farm type of the holding and its SGM. The June Census is a large sample survey and the December Survey is a smaller sample survey. The June Census is the basis of information for the Farm Structure Survey.

In June 100% of the total cattle population is recorded by the sample survey (for England). In December this percentage amounts 24% (for England). In June 60,362 holdings are recorded by the survey, in December 7,939 holdings are recorded. This means a percentage of 100% for total holdings for June and 13% for December (for England).

The surveys are not carried out in selected regions.

To estimate the cattle population which is not recorded by the survey the ratio raising method is used. This method is used for both the June Census and the December Survey. The trend for responding holdings is applied to those non-responding and non-sampled holdings to produce national estimates.
(508) The surveys are carried out by written inquiries. The average response rate in these surveys are 80% for June and 74% for December. (for England).

(509) The various Government Departments in each of the UK countries are responsible for carrying out the surveys. DEFRA for England, NAWAD for Wales, SEERAD for Scotland and DARDNI for Northern Ireland.

(510) A Tapas action (technical action plan for improving agricultural statistics) under the 2001 action plan will investigate the potential for using administrative data. The data source available for this is the CTS (Cattle Tracing Scheme for Great Britain) and the APHIS (Public Health Information System for Northern Ireland). The aim of this is to improve the quality of data on the cattle population and reduce the number of statistical surveys. Moreover, additional information will be provided on births, deaths and movements of cattle, in order to improve the production forecasts too.

15.1.3 Surveys on the number of sheep and goats

(511) The United Kingdom carries out two surveys of the sheep population per annum, in June and December and one survey of the goat population in June. The surveys are carried out separately.

(512) All surveys are sample surveys. The June Census is normally a large sample survey but was a full Census in 2000. The average sampling error rate of sheep surveys in recent years in terms of overall sheep numbers is 0.2% for June, 1.5% for December (for England). The average sampling error rate of goat surveys in recent years in terms of overall goat numbers is 3.4% for June (for England).

(513) The sample is drawn from the population of main agricultural holdings in the UK. England, Wales, Scotland and Northern Ireland run their own surveys and have different methods of stratification. The strata are based on the particular farm type of the holding and its SGM. The June Census is a large sample survey and the December Survey is a smaller sample survey. The June Census is the basis of information for the Farm Structure Survey.

(514) In June 100 % of the total sheep and goat population is recorded by the sample survey (for England). In December this percentage for sheep amounts 17 % (for England). In June 42.646 sheep holdings and 4.863 goat holdings are recorded by the survey, in December 4.764 sheep holdings are recorded. This means a percentage of 100% for total holdings for June and 11% for December (for England).

(515) The surveys are not carried out in selected regions.

(516) To estimate the sheep and goat population which is not recorded by the survey the ratio raising method is used. This method is used for both the June Census and the December Survey. The trend for responding
holdings is applied to those non-responding and non-sampled holdings to produce national estimates.

(517) The surveys are carried out by written inquiries. The average response rate in these surveys are 80% for June and 74% for December. (for England).

(518) The various Government Departments in each of the UK countries are responsible for carrying out the surveys. DEFRA for England, NAWAD for Wales, SEERAD for Scotland and DARDNI for Northern Ireland.

15.2 Statistics on slaughterings

(519) Monthly slaughter data are available in the United Kingdom on the number and slaughterweight for pigs overall, calves, heifers, cows, bulls, bullocks, sheep overall and lambs.

<table>
<thead>
<tr>
<th>Availability of monthly data on slaughterings</th>
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<tbody>
<tr>
<td>Number</td>
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<tr>
<td>Pigs, overall</td>
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<td>Calves</td>
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<td>Heifers</td>
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<tr>
<td>Lambs</td>
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<td>Goats, overall</td>
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</table>

(520) The Department for Environment, Food and Rural Affairs carry out a statutory survey of slaughterhouses in England and Wales. The larger slaughterhouses are surveyed weekly (approximately 128 slaughterhouses), medium sized slaughterhouses are surveyed monthly (approximately 87 slaughterhouses), and administrative data obtained from the Meat Hygiene Survey (MHS) are used for the smallest slaughterhouses (approximately 106 slaughterhouses). The survey asks for the number of cattle, sheep and pigs slaughtered for human consumption, and the dressed carcase weights (if available).

(521) Information from the survey is combined with similar information for Scotland, collected by the Scottish Executive Environment and Rural Affairs Department, and Northern Ireland, collected by the Northern Ireland Department Of Agriculture And Rural Development, to provide details of the number of cattle, sheep and pigs slaughtered for human consumption in the United Kingdom. These numbers, and average dressed carcase
weights, are also used to estimate the production of meat for the United Kingdom.

(522) The weekly results are published every Thursday, 12 days after the end of the survey period (except at Christmas when they are published 19 days after the end of the survey period). Historical data on both throughputs and average carcase weights is published in the form of datasets on the MAFF website.

15.3 Data on external trade in live animals

(523) The standard source of trade data for the UK is the UK Customs and Excise for both trade with EU Member States and non-EU Member States. A threshold applies; adjustments are made for under threshold trade. C&E trade data is normally available about 2-3 months after the end of the month the data relates to. In some cases, Intrastat data is believed to be less reliable than data available from other sources.

(524) Northern Ireland Department Of Agriculture And Rural Development provide data on live trade between Northern Ireland and the Republic of Ireland.

(525) ANIMO data is administrative data that is collected to ensure animal welfare and health (eg disease control) mainly on live trade of animals within the EU. Council Directives 89/662/EEC and 90/425/EEC specify how controls are to be carried out. To facilitate checks at points of destination, the ANImal MOVement (ANIMO) computer system was established. Data is available irregularly.

15.4 Production forecasts (gross indigenous production)

15.4.1 Pigs

(526) The main information source used to estimate pig production is the size of the breeding sow population. The breeding sow population includes pregnant sows, pregnant young sows and other sows which either have been suckled or are to be used for breeding. The breeding sow population is established in the annual June census and the December survey.

(527) The breeding sow population is estimated for the following six months in advance, using a simple model based on the profitability of pig breeding (relationship between the price for covered pigs and the feed price). The results of the model are compared with expert opinions and adjusted accordingly. The breeding sow population for the intervening months (July to November and January to May) are derived using linear interpolation.

(528) In addition to the forecast of the breeding sow population, there are also special forecasts for the marketing of pigs covered and fattened on the holding and for the marketing of sows fattened and slaughtered on the holding and for boars. The forecast for pigs covered and fattened on the holding is based on pig breeding productivity, i.e. the relationship between
the marketing of covered pigs and the breeding sow population of five months previously, whilst the forecast for the marketing of sows and boars is based on the estimated value of the breeding sow population and on the existing ratio of slaughter rates of sows and boars with respect to the breeding sow population.

(529) As in the case of the forecast of the breeding sow population, the results of both models are compared with expert opinions and adjusted accordingly.

15.4.2 Cattle

(530) The main information source used to estimate cattle production is the size of the dairy and beef breeding herd population. The breeding herd population includes cows in calf, cows in milk, cull cows and heifers that have calved or are in calf. The breeding herd population is established in the annual June census and the December survey.

(531) The breeding herd population is estimated for the following six months in advance, using a model based on the breeding herd of recent surveys, numbers of herd replacements and marketing and cull figures. The results of the model are compared with expert opinions and adjusted accordingly. The breeding herd population for the intervening months (July to November and January to May) are derived using marketing information.

(532) In addition to the forecast of the breeding herd population, there are also special forecasts for the marketing of steers, heifers, young bulls, calves and adult cattle. The forecasts are based on various information including marketings, cattle breeding productivity and previous cattle populations.

(533) As in the case of the forecast of the breeding herd population, the results of both models are compared with expert opinions and adjusted accordingly.

15.4.3 Sheep

(534) The main information source used to estimate sheep production is the size of the breeding ewe population. The breeding ewe population includes pregnant ewes and other ewes which are to be used for breeding. The breeding ewe population is established in the annual June census and the December survey.

(535) The breeding ewe population is estimated for the following six months in advance, using a model based on the breeding population of recent surveys, numbers of ewe replacements and marketing figures. The results of the model are compared with expert opinions and adjusted accordingly. The breeding ewe population for the intervening months (July to November and January to May) are derived using marketing information.
In addition to the forecast of the breeding ewe population, there are also special forecasts for the marketing of sheep and lambs and also ewes and rams. The forecast for sheep and lambs fattened on the holding is based on sheep breeding productivity, i.e. the relationship between the marketing of sheep and lambs and the breeding ewe population of twelve months previously, whilst the forecast for the marketing of ewes and rams is based on the estimated value of the breeding ewe population and on the existing ratio of slaughter rates of ewes and rams with respect to the breeding ewe population.

As in the case of the forecast of the breeding ewe population, the results of both models are compared with expert opinions and adjusted accordingly.

15.5 Poultry statistics

In the United Kingdom the following information in the area of poultry statistics is available: UK Hatcheries Data, UK Trade Data, UK Slaughterhouse Data, UK Poultrymeat Production, UK Domestic Usage, Retail Prices, monthly slaughtering data on broilers, turkeys and hens, quarterly slaughtering data on ducks and geese (quarterly update of yearly figures). There are also forecasts on poultry meat production available (one year ahead). The numbers of birds slaughtered, by species (broilers, boiling fowl, turkeys & ducks), are estimated monthly using a model that takes account of hatcheries data, imports, lifespan & mortality.

The United Kingdom conducts a sample survey of registered Poultry Slaughterhouses in England and Wales, combining these results with information from Northern Ireland and Scotland to produce UK figures. The results provide the average liveweight figures that are used along with the number slaughtered (model based) to give meat production. This liveweight amount of meat is converted to deadweight and carcass weight using industry advised conversion rates.

16 Summary and conclusions

The Member States of the European Union are required by EU legislation to provide Eurostat with regular data on livestock, slaughterings and production forecasts (gross domestic production). The various Member States implement the Directives differently, and the study looks in detail at the methods used in each country. The annex contains a tabular overview of the methodology of animal statistics in the EU Member States and candidate states.

Pursuant to Council Directive 97/77/EC of 16 December 1997, the Commission may, if so requested, authorise Member States to carry out just two pig surveys a year (in May/June and November/December). Authorisation is conditional on appropriate methods being used to ensure that the quality of the forecasts is maintained. The Member States must, if requested, provide appropriate methodological documentation. To date,
the Commission has authorised Austria, France, Germany, Italy and the United Kingdom to carry out only two surveys of their pig populations.

(542) Pursuant to Article 1(2) of Council Directive 93/23/EEC, 93/24/EEC and 93/25/EEC of 1 June 1993, Member States may, at their request, be authorised to use administrative sources instead of statistical surveys. Article 1(3) provides for the Commission to decide on such requests in accordance with the procedure laid down in Article 17. This means that all countries which wish to use administrative data instead of statistical surveys must apply to the Commission for authorisation. The Standing Committee on Agricultural Statistics is then asked for its opinion on the request. Opinions require 54 votes in order to be adopted. This procedure is compulsory for any country wishing to use administrative sources rather than statistical surveys.

(543) The present study also examines the methodology of animal statistics in the candidate states. New Member States are obliged to adopt the Community acquis, which also extends to agricultural statistics. The candidate states' animal production statistics do not yet conform with EU rules. The present study is an opportunity for the candidate states to familiarise themselves with the methods used by the Member States and to draw appropriate conclusions for their own agricultural statistics. Moreover, experts from the Working Party on Animal Production Statistics will, in future, be taking a regular look at the candidate states' progress in the area of animal statistics, with a view to supporting the development of those statistics and helping to bring them into line with EU legislation. The present study provides a basis for that discussion.