

Farm structure survey - administrative sources

Statistics Explained

Administrative sources are generally defined as data sources containing information which is not primarily collected for statistical purposes. The use of administrative data in the production of agricultural statistics has remarkably increased in recent years and has also been incorporated into the legislative framework.

This article describes the variety of administrative sources used by countries in the [farm structure survey \(FSS\)](#) in 2013, the purpose of their use, their quality, as well as the problems encountered while using such sources. The article is part of an [online publication](#) on methodological articles dealing with the farm structure survey. The analysis and findings are based on the [national methodological reports \(NMRs\)](#).

Administrative sources in legislation

The use of administrative sources is for the first time enshrined in [Regulation \(EC\) No 1166/2008](#) of the European Parliament and of the Council setting forth the implementation of three farm structure surveys (2009/2010, 2013 and 2016) and a [survey on agricultural production methods \(SAPM\)](#) (2009/2010).

According to Article 4 of Regulation (EC) No 1166/2008, provided that the information from the administrative source is of at least equal quality to information obtained from statistical surveys, Member States are allowed to use information from:

- The Integrated Administration and Control System (IACS) provided for in [Council Regulation \(EC\) No 1782/2003](#),
- The System for the Identification and Registration of Bovine Animals provided for in [Regulation \(EC\) No 1760/2000](#),
- The organic farming registers set up pursuant to [Council Regulation \(EC\) No 834/2007](#),
- Administrative sources associated with the cultivation of genetically modified crops and the specific rural development measures referred to in Annex III of the Regulation (EC) No 1166/2008.

Moreover, in case Member States decide to use any administrative source other than those specified above, they can do so on condition that the Commission will be informed in advance and will be provided with a description of the used methods and quality of the data from this administrative source.

In addition, the Regulation specifies that for the purposes of updating the sampling frame for the FSS 2013 and 2016, Member States shall provide the national authorities responsible for farm structure surveys with access to information on agricultural holdings contained in administrative files compiled on their national territory.

The same Regulation further specifies in Article 12 that Member States are obliged to provide information on the quality of any administrative data source that was used in the FSS in a national methodological report (NMR).

Overview of administrative sources used in the FSS 2013

On average, each country used four administrative data sources in the 2013 farm structure surveys, although more than half of the countries used between four and ten administrative sources. Each country used at least one register. However, a few countries used only the statistical farm register. In general, statistical farm registers, maintained by statistical bodies, even if they are not administrative registers as such, are built on some information from administrative sources, and for completeness, they are included in this analysis and in Tables 1 and 2.

Concerning the purpose of use of administrative sources:

- All 29 countries indicated the use of registers in order to build up and/or to update the sampling frame. Most countries used the farm register updated with data from administrative sources and/or survey data.
- The majority of countries, i.e. 25 out of 29 countries, reported the use of administrative sources to replace survey variables for the whole population or for subpopulations (Belgium, Bulgaria, Czech Republic, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Latvia, Lithuania, Luxembourg, Hungary, Malta, the Netherlands, Austria, Poland, Slovenia, Finland, Sweden, the United Kingdom and Norway).
- At least 20 countries (Belgium, Bulgaria, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Latvia, Lithuania, Luxembourg, Hungary, the Netherlands, Austria, Poland, Portugal, Slovenia and Norway) indicated in the NMR that they used administrative sources for data control/validation. However, it could be assumed that all reporting countries are carrying out some kind of control and validation of their FSS data based on external or internal data sources (among which data from other surveys).
- At least 14 countries (Bulgaria, Germany, Estonia, Ireland, Italy, Latvia, Lithuania, Luxembourg, Hungary, Austria, Poland, Slovenia, Finland and Sweden) indicated the imputation of non-response using the data from administrative sources.
- 7 countries (Germany, Estonia, France, Latvia, Lithuania, the Netherlands and Austria) used administrative data to pre-fill the survey questionnaire on certain characteristics, mostly crop, livestock and rural development characteristics.
- Finally, only a few countries indicated the use of registers for calibration in order to reduce bias from estimation and non-response and to produce coherent estimates. Belgium used an administrative source to calibrate the survey estimates by strata defined by crossing NUTS 2 regions, size classes and provinces. France calibrated the survey estimates based on the number of farms from the Farm Register, by NUTS 3 regions, standard output and utilised agricultural area (UAA). In Latvia, the Generalised Regression Estimator (GREG) was used to calibrate the FSS 2013 results using a set of variables (the number of sheep, pigs, dairy cows, other cattle, poultry, rabbits and bees, sown area of crops - spring rape, winter rape, oats, spring wheat - and total number of farms) at the level of NUTS 2 regions. Data on these variables came from the Agricultural Data Centre (ADC) Livestock Register, the Rural Support Service (RSS) IACS databases and the Statistical Farm Register (SFR), which is regularly updated with various data sources. Finland adjusted the weights so that the values estimated from the sample were as close as possible to the data on all land and animal characteristics from various administrative registers. Denmark also adjusted the weights based on information from the IACS, the Register of Fur Animals and the pig surveys. Also Croatia applied calibration based on an administrative source of data on permanent grassland (rough grazings) for those holdings which have only rough grazings.

Regarding the quality assessment of the administrative sources, the majority of countries indicated problems related to over- and/or under-coverage, some countries indicated problems with missing data and misclassifications, while a few countries mentioned problems related to data coherence.

Many countries also indicated various difficulties using administrative sources, the most frequently mentioned problems related to the links (matching) of various data sources, definitions/classifications of characteristics and definitions of reporting units. Among other problems encountered were different population coverages, non-corresponding reference periods, non-fitting timelines or insufficient data quality.

Administrative sources used by each country in the FSS 2013

The list of administrative sources used differs country by country, depending mainly on the administrative organisation and on the practices and culture of the body in charge of the survey. See Table 1.

Country	Regulation (EC) No 1166/2008 - FSS 2013				Other Registers
	The Integrated Administration and Control System provided for in Regulation (EC) No 1782/2003	The System for the Identification and Registration of Bovine Animals provided for in Regulation (EC) No 1760/2000	The organic farming Registers set up pursuant to Regulation (EC) No 834/2007	Administrative sources associated with the cultivation of genetically modified crops (GMO) and the specific rural development measures (RDM)	
Belgium	X	X (Sanitel)		X (RDM)	<ul style="list-style-type: none"> · Cadaster information system · Farm Register · an administrative source used for post-stratification
Bulgaria	X			X (RDM)	<ul style="list-style-type: none"> · Farm Register
Czech Republic	X (Land Parcel Information System)	X (Animal Register)		X (RDM)	<ul style="list-style-type: none"> · Register of Enumeration Districts and Buildings · Farm Register
Denmark	X	X (Livestock Register)	X	X (RDM)	<ul style="list-style-type: none"> · Address (Business) Register · Register of Fur Animals
Germany	X	X	X	X (RDM)	<ul style="list-style-type: none"> · Official Building Coordinates · Data from agricultural liability insurance · Register of establishments keeping laying hens · Farm Register
Estonia	X (Register of Agricultural Support and Parcels)	X (Register of Agricultural Animals)	X	X (RDM and GMO)	<ul style="list-style-type: none"> · Traffic Register · Database of Certified Seed Producers · Population Register · Business Register · Farm Register
Ireland	X	X			<ul style="list-style-type: none"> · Corporate Client System · Farm Register
Greece	X				<ul style="list-style-type: none"> · Register of the Ministry of Finance · Register of the Ministry of Rural Development and Food · Farm Register
Spain	X	X (Livestock Register)		X (RDM)	<ul style="list-style-type: none"> · PADRON (Continuous Municipal Register)
France	X	X		X (RDM)	<ul style="list-style-type: none"> · SIRENE Register (Business Register) · Farm Register
Croatia	X		X		<ul style="list-style-type: none"> · Register of common pastures · Register of Paying Agency for Agriculture, Fisheries and Rural Development · Farm Register (Statistical Register of Agricultural Holdings) · An administrative register with information on permanent grassland (rough grazings)
Italy	X	X		X (RDM - IACS)	<ul style="list-style-type: none"> · Farm Register
Cyprus					<ul style="list-style-type: none"> · Farm Register
Latvia	X	X (Animal Register)	X	X (RDM- IACS)	<ul style="list-style-type: none"> · State Land Cadastre · Population Register · Farm Register · Business Register
Lithuania	X	X	X	X (RDM)	<ul style="list-style-type: none"> · Address Register · State Social Insurance Fund Board Register · Farm Register · Business Register · Population Register
Luxembourg	X	X (SANITEL)	X	X (RDM)	<ul style="list-style-type: none"> · Database of agricultural holdings managed by SER · An administrative data source used to validate FSS data on equipment for the production of renewable energy
Hungary	X	X	X	X (IACS - RDM)	<ul style="list-style-type: none"> · Vineyard Register · Farm Register · Business Register
Malta		X	X	X (RDM)	<ul style="list-style-type: none"> · Malta Environment and Planning Authority (MEPA) · Agricultural Register (Farm Register)
Netherlands	X	X		X (IACS-RDM)	<ul style="list-style-type: none"> · Administrative Farm Register (AFR) · Statistical Farm Register (SFR) · Business Register
Austria	X including organic farming characteristics	X	X	X (RDM)	<ul style="list-style-type: none"> · Veterinary Information System (VIS) · Address-Buildings and Dwellings Register · Agricultural and Forestry Register (Farm Register)
Poland			X	X (RDM)	<ul style="list-style-type: none"> · Records of producers · Records of agricultural holdings · Special branches of agricultural activity Register · National Official Business Register (REGON) · National Official Register of Territorial Division of the Country (TERYT) · National Register of Geographical Names · National Register of Borders and Areas of Territorial Division Units · Statistical Register (Farm Register)
Portugal	X (Financing Institute for Agriculture and Fisheries data)	X (Financing Institute for Agriculture and Fisheries data)			<ul style="list-style-type: none"> · Farm Register
Romania					<ul style="list-style-type: none"> · Farm Register
Slovenia	X	X	X	X (RDM and GMO)	<ul style="list-style-type: none"> · Register of Territorial Units · Register of beehives · Farm Register
Slovakia					<ul style="list-style-type: none"> · Register of orchards · Register of vineyards · Register of cattle · Register of pigs · Register of sheep · Register of goats · Register of organic farms · Register of applicants of the Single Area Payment Scheme (SAPS) · Register of organisations
Finland	X	X	X	X (IACS-RDM)	<ul style="list-style-type: none"> · Animal Register · Agricultural and Horticultural Enterprise Register · Population Register · Farm Register
Sweden	X	X	X	X (RDM and GMO)	<ul style="list-style-type: none"> · Education Register · Animals Register (poultry, sheep and pigs) · Registers on slaughtering of animals · Registers on memberships for different horticultural associations · Farm Register
United Kingdom	X (Scotland)	X	X	X (RDM - agri-environmental schemes)	<ul style="list-style-type: none"> · Northern Ireland Annual Inventory of Pigs · Northern Ireland Bird Register Update · Sheep and Goat Inventory · Farm Register
Norway	X (The System of Application for Governmental Production Subsidies (PRO))	X	X		<ul style="list-style-type: none"> · National Cadastre System · National Land Cover and Resource Map System · The Income Tax Return and the Tax Assessment · Central Population Register · Central Coordinating Register for Legal Entities · Education Register · other administrative data sources · Farm Register

Table 2 provides structured information, by country, on the purposes of the use of administrative sources.

Countries	Purpose of the administrative source				
	to directly replace the values of the characteristics	to pre-fill answers in the questionnaires which are then checked by farmers during the survey	to inspect farm-level non-response	to validate the survey data (quality control)	to update the (sampling) frame (used for census or for sample survey)
Belgium	MCS for most crop characteristics			SANTEL for cattle and pigs	MCS
	Administrative data for rural development Cadastral information system for coordinates				Farm Register
Belgium	State Fund Agriculture for rural development characteristics		MCS	MCS	MCS
	State Agricultural Intervention Fund for rural development characteristics				Farm Register
Czech Republic	Register of Enumeration Districts and Buildings for coordinates				Land Parcel Information system
					Animal Register
Denmark	MCS for forestry farming and land use characteristics				Farm Register
	Livestock Register for cattle				MCS
Denmark	Register on organic farms				Livestock Register
	Register on rural development				Address (Business) Register
Denmark	Address (Business) Register for coordinates				Register of Fur Animals
Germany	MCS on land use characteristics	MCS on land use characteristics, if the MCS number is not given to the statistical office	MCS	MCS	MCS
	Bovine Register				Bovine Register
Germany	Rural development measures			Official Building Coordinates	Organic Farming Register
					Data from agricultural liability statistics
Germany					Register of establishments keeping laying hens
					Farm Register
Estonia	Register of Agricultural Support and Parcels (RACS) for rural development measures and distribution of follow land parcels	Register of Agricultural Support and Parcels (RACS) for cadastral units of main locations, type of farms and Liv and its components	Register of Agricultural Support and Agricultural Parcels	Register of Agricultural Support and Agricultural Parcels	Register of Agricultural Support and Agricultural Parcels
	Organic Farming Register	Database of Certified Seed Producers for arable land seeds and seedlings	Register of Agricultural Animals	Database of Certified Seed Producers	Database of Certified Seed Producers
Estonia	Register of Agricultural Animals for cadastral units of main locations, cattle, sheep, goats, pigs, horses, beekeeping	Traffic Register for tractors	Traffic Register	Register of Agricultural Animals	Register of Agricultural Animals
				Organic Farming Register	Organic Farming Register
Estonia				Traffic Register	Environmental Register for genetically modified crops
					Traffic Register
Estonia					Population Register
					Business Register
Estonia					Farm Register
Ireland	SPS-MCS for coordinates and land use characteristics		SPS-MCS	SPS-MCS	SPS-MCS
	Bovine Register		Bovine Register		Bovine Register
Ireland					Corporate Client System Database
					Farm Register
Greece	MCS for common land			Register of the Ministry of Rural Development and Food	Register of the Ministry of Finance
					Register of the Ministry of Rural Development and Food
Greece					Farm Register
Greece					Livestock Register
					Rural Development Programmes
Spain	PADRON (Census Municipal Register) for holder's age and gender and legal personality of the holding				
France	National database for the Identification and Registration of Bovine Animals	Area declarations made by farmers when applying for aid (MCS) for land use characteristics	Area declarations made by farmers when applying for aid (MCS)	SRENE Register (Business Register)	Farm Register
	The files from Services and Payment Agency for Rural development measures				
France	Register of common pastures				
Croatia					
Croatia					
Italy	MCS for rural development measures		System for the Identification and Registration of Bovine Animals	MCS	Farm Register
Cyprus	Agricultural Data Centre (ADC) Livestock and Herd Registers, including Bovine Register	RSS MCS Database on land use characteristics	RSS MCS Database	RSS MCS Database	RSS MCS database
	ADC Organic Farming Statistics Information System			ADC Animal Register	ADC Animal Register
Latvia	Rural Support Service (RSS) MCS database for rural development characteristics				State Land Cadastre
	State Land Cadastre for coordinates				Population Register
Latvia					Farm Register
					Business Register
Lithuania	Organic Farming Register	MCS Crop Declaration Database for land use characteristics	MCS Crop Declaration Database	MCS Crop Declaration Database	MCS Crop Declaration Database
	Address Register	Bovine Register	Bovine Register	Bovine Register	Bovine Register
Lithuania		Rural Development Measures database (National Payment Agency database)	Rural Development Measures database	Address Register	Address Register
		State Social Insurance Fund Board Register	State Social Insurance Fund Board Register	Business Register	Business Register
Lithuania					Farm Register
					Population Register
Luxembourg	MCS for coordinates, farm type, land use and livestock other than bovine characteristics		MCS	an administrative data source used to validate FSS data on equipment for the production of renewable energy	Database of agricultural holdings managed by SEN
	Bovine Register (SANTEL)		Bovine Register (SANTEL)		
Luxembourg	Database of the Ministry of Agriculture (MAM) for rural development characteristics				
	Organic Farming Register				
Hungary	Organic Farming Register				
	MCS for rural development measures				
Hungary	Vineyard Register				
Malta	Bovine Register for bovine, sheep and goats				
	Organic Farming Register				
Malta	Paying agency for rural development measures				
	Malta Environment and Planning Authority (MEPA) for coordinates				
Netherlands	MCS for rural development characteristics	Animal Identification and Registration as bovine animals		Animal Identification and Registration on bovine animals	Administrative Farm Register (AFR)
	Administrative Farm Register (AFR) for coordinates and legal personality of the holding				Statistical Farm Register (SFR)
Austria	Measures for rural development	MCS including Organic Farming for crop and organic farming characteristics	MCS including Organic Farming	MCS including Organic Farming	Business Register
	Cattle Register for total cattle	Veterinary information system for livestock characteristics	Cattle Register	Cattle Register	Business Register
Austria	Address Buildings and Dwellings Register for coordinates		Veterinary Information System	Veterinary Information System	Veterinary Information System
					Agricultural and Forestry Register (Farm Register)
Poland	Register of Organic Farms	Register of Organic Farms	Records of agricultural holdings	Register of Organic Farms	Records of producers
	Records of agricultural holdings benefiting from support in respect of the Rural Development Programme				Records of agricultural holdings
Poland	National Register of Geographical Names for coordinates				Special branches of agricultural
	National Register of Borders and Areas of Territorial Obstacles (data for coordinates)				National Official Business Register (BOCR)
Portugal					National Official Register of Territorial Division of the Country (TERC)
					Statistical Register (Farm Register)
Portugal					Financing Institute for Agriculture and Fisheries (IFAP)
					Farm Register
Romania	MCS for coordinates, legal personality, farm type, land use and livestock other than bovine and beekeeping characteristics, other specific activities		MCS	MCS	Farm Register
	System for the Identification and Registration of Bovine Animals				System for the Identification and Registration of Bovine Animals
Slovenia	Organic Farming Register				Organic Farming Register
	Register of Genetically Modified Crops				Register of Genetically Modified Crops
Slovenia	Rural Development Measures				Rural Development Measures
	Register of Beekeepers				Register of beekeepers
Slovakia					Register of Territorial Units
					Farm Register
Slovakia					Register of orchards
					Register of vineyards
Slovakia					Register of cattle
					Register of pigs
Slovakia					Register of sheep
					Register of organic farms
Slovakia					Register of applicants of the Single Area Payment Scheme (SAPS)
					Register of organisations
Finland	MCS for coordinates, farm type, land use, horses, poultry, pigs, rural development measures		MCS	MCS	MCS
	Agricultural and Horticultural Enterprise Register for crops other than horticulture		Population Register	Agricultural and Horticultural Enterprise Register	Agricultural and Horticultural Enterprise Register
Finland	Bovine Register				Bovine Register
	Animal Register for pigs (for pig data in MCS), sheep, goats				Animal Register
Finland	Organic Farming Register				Organic Farming Register
	MCS for coordinates and land use characteristics				
Finland	Bovine Register (Cattle Register)				Bovine Register (Cattle Register)
	Organic Farming Register				Animal Register for poultry, sheep and pigs
Finland	Register of Genetically Modified Crops				Register on slaughtering of animals
	Register of Support for Rural Development				Organic Farming Register
Sweden	Education Register for the agricultural training of the manager				Register of Genetically Modified Crops
					Register of Support for Rural Development
Sweden					Educational Register
					Farm Register
United Kingdom	Organic Data				Cattle Tracing System
	Rural Development Payments				Sheep and Goat Inventory
United Kingdom	Cattle Tracing System				Crop areas in Scotland
	Crop areas in Scotland				Farm Register
United Kingdom	Northern Ireland Annual Inventory of Pigs				other administrative data sources
	Northern Ireland Data Register Update				
United Kingdom	The System of Application for Governmental Production Subsidies for legal personality, farm type, land use and livestock characteristics				The National Cadastre System
	Register of Bovine Animals for distribution of bovine characteristics				Central Population Register
Norway	Organic Farming Register				Central Coordinating Register for Legal Entities (Business Register)
	Educational Register for the agricultural training of the manager				Farm Register
Norway	National Cadastre System for coordinates, wooded area and other land				other administrative data sources
	National Land Cover and Resource Map System for wooded area and other land				

A description of the administrative sources used by each country in the FSS 2013, the purpose of their use, their quality, the difficulties of their use, as well as the measures taken to overcome them, is provided below.

Belgium

The FSS 2013 was carried out as a sample survey, with most characteristics collected from administrative sources for the sampled holdings. The access to administrative data on crop areas is based on a written agreement for Flanders and on a gentlemen's agreement for Wallonia.

Most land characteristics were collected from the *IACS* ([Integrated Administration and Control System](#)) obtained from Regional Administrations responsible for agriculture, while the characteristics on rural development were obtained from another source i.e. *EAFRD* ([European Agricultural Fund for Rural Development](#)), delivered by the same Regional Administrators. Belgium also used the cadastre information system (CADMAP) for the origin of the coordinates.

Some land characteristics could not be collected from the *IACS* , e.g. rough grazings, permanent grassland no longer used for production purposes and eligible for payment of subsidies, fallow land without any subsidies and fallow land subject to the payment of subsidies with no economic use, irrigated area, energy crops, unutilised agricultural land and other land. These characteristics were obtained directly from the farmers.

Belgium has been using the *IACS* as the basis for the *Farm Register* since 2011.

For livestock (cattle and pigs), survey data were compared at micro and macro levels with Sanitel, i.e. a registration system of animals.

Belgium also used administrative sources to calibrate survey estimates in the FSS 2013 .

In Flanders, the definition of a reporting unit in the *IACS* is based on the management autonomy for the agricultural activities and means of production. One "exploitatie" (agricultural holding) may have many "exploitants" (farmers). An agricultural holding has to be entered into the register if at least one of the conditions presented in the 2013 NMR is met. In Wallonia, the register includes all farmers who submit a premium application (and thus are identified in the *IACS*) and/or who have to comply with the [Nitrate Directive](#) (Directive 2000/60/EC).

There were several difficulties in using administrative sources:

- Over-coverage due to the inclusion of studs, cattle dealers, private persons who have a few horses for horse riding or have a few animals for their own consumption.
- Under-coverage due to the possible loss of new holdings (at least two consecutive *IACS* declarations have to be submitted to be included in the sampling frame), as well as retired farmers with small areas or a few animals who do not supply an application for subsidies in the *IACS*.
- Missing data on horticultural crops belonging to Walloon holdings, therefore the administrative source is completed with an exhaustive survey for horticultural crops in Wallonia.

Bulgaria

The law on statistics sets that the National Statistical Institute and other statistical authorities shall receive individual data as well as aggregate information from administrative sources set up and maintained by other government authorities.

The FSS 2013 was carried out as a sample survey, complemented basically with two external administrative data sources. While *State Fund Agriculture* was used for the collection of information on rural development measures, the sampling frame was updated and complemented with new farms identified through *IACS-SAPS* data control. Moreover, the *IACS* was used for data control at micro and macro levels as well as for data validation and imputation of item/unit non-response.

The registration in the *IACS* is not mandatory and it might happen that small holdings are not covered.

There were several difficulties in using the administrative data sources, e.g. different population coverage, problems creating the links between the units and between databases.

Czech Republic

The State Statistical Service uses data acquired or collected by ministries and other administrative authorities under special acts. Ministries and other administrative authorities are bound to provide the State Statistical Service authorities with the necessary data at their request, on time and free of charge, unless otherwise stated by acts.

The FSS 2013 information was collected from a field sample survey. However, for the collection of characteristics on rural development measures (RDM), the information provided by the *State Agricultural Intervention Fund* was used. The State Agricultural Intervention Fund is an accredited paying agency - an administrator of financial subsidies both from the European Union and from the national financial funds. The RDM database included 13 896 records out of which 6 935 were linked with the FSS 2013 data, i.e. the over-coverage rate was 50.09 %. Data were linked via a unique holding identification number (or an ID number of a person in case of unregistered natural persons).

The Czech Republic used the *Farm Register* managed by the Agricultural Statistics Department of the Statistical Office to build and update the frame for agricultural statistical surveys, including the FSS. The Farm Register is updated regularly based on the results of statistical surveys carried out on a regular basis. Two administrative sources are used to update the Farm Register, i.e. *Land Parcel Information System (LPIS)* and *Animal Register*.

Denmark

Statistics Denmark has the right to receive all kinds of administrative registers from other government institutions according to the Danish Law on Statistics.

The FSS 2013 was based on a sample for which characteristics on crops, livestock, organic farming and rural development were obtained from registers and linked to the holdings in the sample. In particular, the IACS was used to collect information on crops, while information on cattle was collected from the Livestock Register and information on rural development support and on organic farming were obtained from the registers of the Ministry of Agriculture. In contrast with the IACS and the registers on rural development and organic farming, which are updated once a year, the Livestock Register is continuously updated.

- The *IACS* is the source for collecting information on crop areas for farms having applied for single payment, but also on the tenancy type of holdings. The reporting unit is an applicant for crop subsidies. The applicant must be either a person or a legal business unit. This unit is almost always the same as the farm unit and a match between the Business Register and the IACS can be obtained using its business number. However, since the definition of an applicant in the IACS and an agricultural holding are not identical, there were very few cases – less than 10 – where a unit might own land in different parts of Denmark and thus did not meet the requirements of the farm definition. In such a case, when one farm does not correspond to one subsidy application, this farm has to report the crop areas to Statistics Denmark when completing the FSS questionnaire. Also, if a farmer did not apply for subsidies, complete information on all crops has to be provided in the FSS questionnaire.
- In the *Livestock Register*, the reporting unit is a physical place where the animals are located. This place is in most cases an agricultural property and has a unique identification number. However, one farm can have more than one identification number. All farmers in the survey are asked if they have cattle and, if yes, they must specify one or more identification numbers in the Livestock Register in order to create a match.
- In the *Register on Rural Development Measures*, the unit is a business unit with a business number. For small farms with no business number, the identifier is the personal code.
- All *organic farms* have to be registered by the Ministry of Agriculture. The link to this register is created by match with the business number, which is obligatory.

The sampling frame consists of all agricultural holdings above the [survey thresholds](#), included in the *Business Register*, which is updated based on the information from the IACS and the Livestock Register. The same Business Register is also used to obtain the geo-codes of the agricultural holding, where they exist as a part of the address information.

Additionally, Denmark uses the IACS and the *Fur Animals Register* from the Danish Fur Animal Farmers Association to calibrate the survey weights.

Difficulties using administrative sources appear when matching IACS information with FSS data as the IACS contains a huge number of crops, modified slightly from year to year. Farmers report their land use in April and are obliged to report any changes that can occur during a given crop year. The IACS thus reflects the crop year 2013 and as such, no adjustment procedure is necessary to meet the FSS requirements. Similarly, there is no problem matching the 12 cattle categories obtained from the Livestock Register with the FSS categories. The registration number in the IACS as well as in the Livestock Register must be provided in the FSS questionnaire. To eliminate false matches, a specific procedure applies to both the IACS and the Livestock Register.

A possible under-coverage might happen as the IACS contains only information on farms applying for subsidies. Approximately 5% of the Danish farms in the FSS do not apply for single payment. Generally, these farms are horticultural farms with green house area but no crops on field land, livestock farms with no agricultural land and small farms. However, farms not applying for subsidies are obliged to specify their crops on the FSS questionnaire. As concerns the quality of the Livestock Register, it contains information on each single animal. The Livestock Register is updated by the cattle farmer regarding acquisition and/or disposal of animals weekly or continuously. Furthermore, the deliverance of cattle for slaughtering is verified by the slaughter houses and the animals that died of natural causes by the carcase disposal plants. Due to this tight system of control and validation, unreported events must be assumed to be negligible, maybe even non-existent.

Germany

The statistical offices of the states are permitted to use administrative sources for statistical purposes as long as the information matches the FSS variables and refers to the same reporting periods.

The 2013 FSS was conducted as a sample survey with some characteristics collected from administrative sources for the sampled holdings.

The information on land use was taken from the *IACS* and all data on bovine livestock from the *Bovine Register*. In addition, administrative sources on rural development measures were used and the data from the *Official Building Coordinates* was used to ascertain the geographic coordinates of the holdings. Furthermore, data from agricultural liability insurance, from organic farming registers as well as the *Register of establishments keeping laying hens* were used to update the population in the *Farm Register*.

- The *IACS* is continuously updated and reporting units are agricultural enterprises and holdings that applied for subsidies. The IACS was used in the FSS 2013 to replace the survey on land use characteristics and also to build and update the sampling frame, to pre-fill answers in the FSS questionnaires, to impute item/unit non-response as well as to validate the survey data.
- The *Bovine Register* is also continuously updated and reporting units are units under animal disease control law, i.e. local units defined by the veterinary authorities to monitor livestock and to prevent the spread of diseases. The register was used in the FSS 2013 to replace the survey on bovine characteristics and to build/update the sampling frame. By contrast, the information on pigs, sheep, goats, poultry and equidae was obtained from the survey.
- The *Rural development measures* provided by the administrative data of the states (EAFRD support programmes) was used to replace the relevant survey characteristics; the sources include farms or enterprises which were approved to receive rural development support in the period from 1 January 2011 until 31 December 2013. The data are continuously updated.
- The *Official Building Coordinates* in the form of geographical coordinates provided by the land survey offices was used in the FSS 2013 to obtain the geo-location of the agricultural holdings. The register is updated once a year, the reference time is 1 April and the reporting unit is a building.
- The *Organic Farming Register* was used in the FSS 2013 to build/update the sampling frame. It is continuously updated and the reporting unit is an organic farm.
- The *Data from agricultural liability insurance* is updated once a year, the reporting units are agricultural enterprises and it was used to build/update the sampling frame in the FSS 2013.
- The *Register of establishments keeping laying hens* was used to build/update the sampling frame. It is continuously updated and the reporting unit is a holding, i.e. a local, economic and hygienic unit consisting of one or more coops for the production of eggs.

The IACS is different in each state, which is reflected in different lists of variables and, therefore, the extent of use of the IACS data was not uniform across the states. Moreover, in some states, each variable might not cover the entire area, but only the supported area. Over-coverage might appear in relation to the use of the IACS and the Bovine Register, i.e. they might contain information on holdings that may not belong to the target population. These are eliminated by the application of [coverage thresholds](#), so that no over-coverage exists in the dataset. Furthermore, under-coverage might have happened in the IACS for the units not applying for subsidies. Occasionally, there were some problems assigning the categories “dairy cows” and “other cows” due to missing or outdated information on the farms’ types of production. No estimation of the rate of unreported events has been conducted for bovine livestock, because of validation checks prior to use of the Bovine Register data.

Regarding the rural development support schemes, the approved measures could only be identified for co-funded payments (i.e. when EU funds were used). Non co-funded payments (i.e. if only federal or state funds were used) were usually recorded as sums by the agricultural administrations. In such cases, only the measures already paid were included; this results in under-coverage. In some states there are combined rural development support programmes, consisting, for example, of payments for agricultural areas within the scope of NATURA 2000 and payments related to the Water Framework Directive. In these cases, participation in both schemes was included for the respective holding; this results in over-coverage. Any resulting over-coverage is considered less problematic than the under-coverage of measures.

Estonia

The Official Statistics Act states that at the request of a producer of official statistics, chief processors of databases are required to submit data collected in the administrative records.

The FSS 2013 was carried out as a sample survey, where part of the data was received from the following administrative sources:

- The *Register of Agricultural Support and Agricultural Parcels* (referred to as the *IACS* and *Rural Development measures*). The reporting units are natural and legal persons who have agricultural area or benefit from rural development measures. The data are continuously updated and were used to replace the survey characteristics on rural support measures and on the distribution of fallow land in land with and without subsidies, to pre-fill the FSS questionnaire with data on the total UAA and its categories (including the total fallow land), the type of tenure as well as the cadastral units of main locations to determine the farm geo-coordinates. Furthermore, the data from the register were used to impute item and/or unit non-response and to validate the survey results on UAA, its categories and type of tenure.
- The *Register of Agricultural Animals* (the *Bovine Register*). The reporting units are natural and legal persons who own agricultural animals. The data on cattle, sheep, goats, pigs, horses, beehives and the cadastral units of main locations obtained from this register were used to pre-fill the FSS questionnaire, to impute item/unit non-response and to validate the survey results. The data were continuously updated.
- The *Organic Farming Register* was used to replace the survey on organic farming characteristics as well as to validate the FSS data. The reporting units are natural and legal persons engaged in organic production and the data are continuously updated.
- The data on tractors were obtained from the *Traffic Register* that includes all natural and legal persons who have registered their tractors. The data from the register were used to pre-fill the FSS questionnaire, to impute item/unit non-response and to validate the FSS data.
- The *Database of Certified Seed Producers* contains the initial data on seed production referring to the day of application and the final data referring to the inspection date. The reporting units are natural and legal persons who grow seeds and want the relevant fields to be certified. These data were used to pre-fill the questionnaire and to validate the results. Where holdings did not check the pre-filled data, these data were considered to be correct by default.
- The 2013 data on genetically modified crops were checked in the *Environmental Register* and currently these are not grown in Estonia.

For all registers, there may be problems with creating links between the units, in particular when several persons from one holding have registered their lands or animals separately in administrative registers.

There is no information on errors in the registers. However, as the data in registers are checked regularly, they are

expected to be correct. In the case of the Register of Agricultural Animals, not all animals have to be included in this register. Similarly, in the case of the Traffic Register, all registered tractors do not have to be used in agriculture. Therefore, the FSS questionnaire was pre-filled with the relevant information extracted from these registers to be checked and corrected by the holder when relevant.

The *Farm Register* is used as a framework for all agricultural statistical surveys. This register is regularly updated on the basis of several administrative and statistical sources (e.g. all six sources presented above, the Population Register and data received from official agricultural statistics surveys). Moreover, the Business Register for Statistical Purposes of Statistics Estonia, based on the Commercial Register, the Non-Profit Institutions and Foundations Register, the Register of Taxable Persons and the State Register of State and Local Government Agencies, are also used to update the Farm Register.

Ireland

The Statistics Act grants the Central Statistical Office (CSO) the right of access to records of public authorities for statistical purposes. Under the Act, the CSO may request any public authority to consult and co-operate with the CSO for the purpose of assessing the potential of the records of the authority as a source of statistical information and, where appropriate and practicable, developing its recording methods and systems for statistical purposes.

In 2010, the data collected with the questionnaire were, for the first time, supplemented by the use of administrative data from the Irish Ministry of Agriculture. The administrative databases were the IACS and the Bovine Registers. The use of these administrative databases continued in subsequent years including the FSS 2013:

- Data on cereals and potatoes were obtained from the *Single Payment Scheme* (SPS-IACS), provided by the Irish Ministry of Agriculture. The earliest application date for the IACS was March, and the closing date for applications was May, so while the reference date did not correspond exactly to the FSS reference date (1 June 2013), the information in the IACS was still usable for the FSS 2013. Data from the IACS were also used to build the statistical register, to impute item/unit non-response and to validate the survey data: in case of any large discrepancies between information provided in FSS questionnaires and IACS data, or when the respondent indicated that the farm holding was no longer active, such inconsistencies were checked again and if they could not be resolved, the IACS data was taken to be correct as this is extensively audited by the Ministry of Agriculture.
- Data on cattle were obtained from the *Animal Identification and Movement system* (AIM - Bovine Register), also provided by the Irish Ministry of Agriculture. The AIM system contains detailed information on cattle that allows the compilation of estimates for bovine characteristics. These characteristics can all be directly computed based on the age and gender of the animals as recorded in the AIM database. Data from the AIM system were also used to build the statistical register and to impute item/unit non-response.
- In addition to the above, the *Corporate Client System* (CCS) database was received from the Ministry of Agriculture in spring 2013 for the purpose of enhancing the Agriculture Register. This contained records consisting of the name, address, telephone number, email, date of birth and herd number of every farmer considered to be active by the Ministry. The CCS database is held separately to the IACS database but contains all holdings that are in the IACS. The CCS database was solely used for the purposes of building the register.

The reporting unit in the administrative databases is the herd number. Each herd number represents a farm holding in Ireland. All holdings are identified by their herd number and all data are linked based on herd number (unique identifier). All holdings have a herd number, irrespective of whether they hold any livestock or not.

Thorough checks were performed on all administrative databases that were used for the FSS. A small number of small farms without bovines and without IACS payment entitlements may fall outside the scope of administrative databases (estimated to be 1.3 % of farms). However, these are captured through the *NSI Agriculture Register*. Records were joined across databases using the herd number identifier. In some, but not all instances, farm holdings may have more than one herd number, which complicates the linking process. To reduce the possibility of under-coverage, all administrative databases were merged together with the existing Agriculture Register and the union of all of these records was used to establish the 2013 Register of Farm holdings. The fact that the AIM system is the definitive register of cattle owners in Ireland implies that the coverage provided by this data source is more complete than that provided by sample survey. As farmers must supply the date of birth when registering an animal, the AIM data for age are likely to be much more accurate than the survey data.

Greece

All public services and entities are obliged to allow access to all administrative data sources, public registers and records, kept by them either in hardcopy, electronic, magnetic or other media.

In the FSS 2013, data were collected through a sample survey, except for the common land data, which were obtained from the *Payment and Control Agency for Guidance and Guarantee Community Aid* (OPEKEPE) of the Ministry of Rural Development and Food, a body responsible for the administration and maintenance of the IACS in Greece. Data are collected on an annual basis through applications submitted by holders. The reporting unit for OPEKEPE is the holder that is the physical or legal person or group of physical or legal persons, regardless of the legal status assigned to that group and its members by national law, who practice agricultural production and whose agricultural production units are located in Greece.

The main problem was to ensure the correspondence between the definitions used by the IACS and those used in the FSS. However, given the nature of the variable for which administrative data were used ([common lands](#)), as well as the way these were introduced in the FSS data (as virtual units), differences in population coverage and problems related to the incoherence of the statistical units and to the linking of the two databases were not considered significant. There was a possible slight over-coverage of the source on common land due to different [thresholds](#) , but this was not quantifiable due to the lack of relevant information.

In addition to the IACS, various statistical and administrative sources were used to update the Register of Agricultural Holdings of ELSTAT (*Farm Register*) that was used to build up the sampling frame. The Farm Register is a statistical register generated and updated periodically during the agricultural censuses. It is updated from administrative sources (e.g. registers of the Ministry of Rural Development and Food and the Ministry of Finance, specifically on new farmers and organic farming), as well as other agricultural statistical surveys conducted by ELSTAT.

Spain

The FSS 2013 was carried out as a sample survey. All FSS variables were included in the questionnaire, except for the holders' gender and age and the legal personality of the holding, which were obtained from *PADRÓN* (*Continuous Municipal Register*) .

PADRÓN is an administrative dataset managed by the National Statistics Institute (INE) and is continuously updated by town and city councils. Its purpose is to provide the official population figures of all Spanish municipalities as at 1 January each year. It contains a list of all residents accompanied by various variables, e.g. tax ID number, gender, age, place of birth, place of residence and nationality. In order to replace the survey on holder's gender and age, the tax ID number was used to cross-reference the data collected in the survey with *PADRÓN*. The tax ID number, a unique 9-position alphanumeric code, is also used to obtain the legal personality of the holding.

From *PADRÓN*, the holder's gender and age were obtained for 96 % of all agricultural holdings. For the remaining 4 %, the 2009 census data were used.

Other variables of the administrative registers could not be used to directly replace other FSS characteristics, because the units in administrative sources do not directly correspond to the definition of holdings.

Other registers were mainly used to validate the survey data and to update/build the sampling frame:

- The *IACS* register which includes all farmers who receive subsidies.
- The *Register of livestock holdings* (REGA), containing farms with cattle, sheep and goats, equines, pigs, poultry, rabbits, hives and other animals. It is updated annually, however the reference period differs from the reference period requested in the FSS.
- The *Rural Development Programmes* , containing the holders who receive subsidies from EAFRD. Seventeen regional programs, one for each region, are included in this register.

France

The official statistical service (SSP) of the Ministry for Agriculture is entitled by law to access administrative

registers. The FSS 2013 collected information directly from the holdings of two samples, except for the characteristics on bovine animals and rural development, for which the information was taken from registers. In addition, for areas, a register was used to pre-fill the answers on the questionnaires. The following administrative sources were used:

- The *Common Agricultural Policy aid declarations* contains the area declarations made by farmers when applying for CAP aids. This source was used to pre-fill the questionnaires using farmers' administrative identification numbers and to validate the survey data on land use. The interviewers could change the data according to the farmer declaration during the face-to-face interview. This source is updated annually.
- The *Base de Données Nationale d'Identification* (BDNI, National Database for the Identification and Registration of Bovine Animals) provides information on bovine animals as at the reference date (1 November 2013). This source is updated daily by farmers' declarations, which they are committed to make each time they buy or sell bovine animals.
- The files from the *Agence de Services et de Paiement* (ASP, *Services and Payment Agency*) responsible for paying the rural development aids, are updated each year, when farmers ask for these aids. The FSS data on rural development aid over the last three years were calculated on the basis of these files.

In order to build/update the sampling frame, the SPP register (the *Statistical Farm Register*), which includes holdings from the FSS 2010 as well as the ones surveyed by SSP since 2010, and the SIRENE register (the *Business Register*) were used in the FSS 2013. In addition, the SPP register was used to calibrate survey estimates by NUTS 3 region, standard output and UAA.

There may be some under-coverage of bovine herds due to the quality of identification numbers, however the only misclassification that can appear concerns the distinction between *dairy cows* and *other cows*.

Croatia

The Official Statistics Act lays down the right of the Croatian Bureau of Statistics (CBS) to use all administrative data sources for the purpose of conducting official statistics tasks. Furthermore, it sets the obligations of the administrative data holders to allow an assessment of the data content and potential changes at the CBS's special request, as well as the CBS's right to provide methodological support for the development of the administrative sources to meet data requirements of official statistics.

The 2013 FSS survey was carried out on a sample of family farms and on a complete enumeration of agricultural enterprises; characteristics were directly collected from the surveyed holdings.

The following registers were used:

- The *Register of Organic Producers* to obtain a list of producers (all organic farming characteristics were collected directly from holdings);
- The *Register of common pastures* maintained by the Agricultural Land Agency, to obtain data on [common land](#) and to create special common land units;
- The *IACS*;
- The *Register of Paying Agency for Agriculture, Fisheries and Rural Development*.

All registers are continuously updated and were used for updating the *Statistical Register of Agricultural Holdings*, while the Register of Organic Producers and the IACS were also used to validate the survey data.

CBS used data on rough grazings from an administrative source to calibrate data for those holdings that have only rough grazings.

The reporting unit in the Register of Organic Producers and the IACS is an agricultural holding with the same definition as that provided in the FSS. The reporting unit in the Register of Common Pastures is a production and technological unit of agricultural land, owned by the Republic of Croatia, which has pasture, meadows, hayfields and barren plots of land for grazing of livestock and poultry.

There were several difficulties in using the administrative data sources, e.g. incoherence of concepts/definitions for dried pulses in the IACS and the FSS and different population coverages.

Italy

The right of access to administrative data is based on the Protocol of Understanding signed by the Italian Institute of Statistics (ISTAT), the Ministry of Agriculture and the Regions and on other protocols between ISTAT and other public administrations.

The two main administrative sources used in Italy for the FSS 2013 were the following:

- The *IACS* is the most significant and complete source managed by AGEA (the Agency for the Disbursement in Agriculture). It has been established to record, verify and control data on payment of subsidies. The IACS database contains, among others, the identification data of the farmer or the agricultural holding, including the Unique Code of Agricultural Holdings (CUAA code), that corresponds to the fiscal code of the holder. The CUAA code is mandatory whenever a relation with the public administration is undertaken. Furthermore, the IACS identification data consists of holder's name, permanent address or place of residence, VAT number, dates of inscription and updating. The IACS also contains territorial data on all agricultural parcels of the holding, information on the use of each parcel (crops, livestock) as well as cadastral and agricultural area utilised for farming. If the holder is not the owner of the parcels, the identification code of a landholder and the type of contract that links farmer to landholder is recorded.
- The *System for the Identification and Registration of Bovine Animals and other species* consists of registers managed by the Ministry of Health. They include information on animals (bovine, pigs, sheep and goats, poultry and equines) and holders of animals. The National Database of Bovine Animals is the only fully operative register up to date.

The FSS 2013 data were collected from the sampled holdings, except for the rural development measures which were collected from the IACS. A big advantage of the IACS is the presence of a unique identification code (CUAA) that identifies the holding and solves problems of links with different sources having a system of units identification based on fiscal codes. Both the IACS and the System for the Identification and Registration of Bovine Animals were used in the FSS 2013 to validate the survey data, while the latter was also used to impute item/unit non-response.

ISTAT is currently conducting a study to assess the quality of the IACS.

ISTAT is also building up a *Farm Register* based on a combination of administrative sources to get an exhaustive coverage of holdings.

Cyprus

The law allows the Statistical Service of Cyprus (CYSTAT) to have access to administrative records and this has proved very useful for cross-checking purposes, especially in terms of survey coverage.

The FSS 2013 was carried out as a sample survey, based on the Agricultural Register (*Farm Register*) used as sampling frame. The Agricultural Register was updated based on the 2010 census results and the information obtained through the annual surveys on crops and livestock carried out between 2010 and 2013.

Latvia

In accordance with the State Statistics Law, the statistical office is entitled to receive, free of charge, information from public records or databases necessary for the execution of the national statistical information programme, including statistical data relating to individuals.

The FSS 2013 was carried out as a sample survey. The largest share of information was obtained from the survey; however, three state administrative registers were also used as source of information to replace survey questions on certain characteristics:

- The *Agricultural Data Centre (ADC) Livestock and Herd Register*, including *Bovine Register*, provided data on cattle, sheep, goats, horses, rabbits and beehives, as well as on the organic livestock by species as of 1 July 2013. The reporting unit is the livestock herd holder. In one holding, there may be several livestock herd owners/holders. To combine the data, the identity code for physical persons or registration number for legal holdings served as common identifier.

- The *ADC Organic Farming Statistics Information System* contains information on the area of crops of the holding on which organic farming production methods were applied in 2013. The reporting unit is a natural or legal person who is awarded a certificate of organic farming by any of the existing certification bodies. There might be several persons certified for organic farming included in one agricultural holding. To combine the data, the identity code for physical persons or registration number for legal holdings served as common identifier. Information was integrated in the Statistical Farm Register (SFR), i.e. all certified persons were identified and attributed to the agricultural holdings in the SFR.
- The *Rural Support Service (RSS) IACS database* provided information on support for rural development during the last 3 years (2011-2013). The database is updated once a year, when the land owner/user submits an application for the single area payment. The unit registered in the RSS IACS database is a client – natural or legal person eligible to apply for the support within the framework of the activities organised by the RSS. A personal code for physical persons or registration number for legal holdings was used as common identifier.
- The *State Land Cadastre* provided information on holdings' coordinates.

Moreover, the FSS questionnaires were pre-filled with the provisional information on 2013 sown areas obtained from RSS IACS. The same data source (RSS IACS) was used also to impute the item and/or unit non-response as well as to validate the FSS data.

Additionally, various data sources were used to update the *Statistical Farm Register*, e.g. *Statistical Business Register*, *State Land Cadastre*, *Population Register*, *ADC Animal Register* and *RSS IACS database*.

The main problems associated with the use of administrative data sources related to different definitions used and timeliness of the data.

In order to calibrate the survey estimates the information from the ADC Animal Register, the RSS IACS database and Farm Register was used. Weight calibration was carried out by the number of sheep, pigs, dairy cows, other cat-tle, poultry, rabbits and bees in each region as of 1 July 2013 and by sown area of crops in each region from the IACS.

Lithuania

In the FSS 2013, the data were collected by means of a sample survey (with an exhaustive coverage of agricultural companies).

The following administrative sources were used:

- The organic farming characteristics were taken directly from the *Organic Farming Register*. This register is managed by a public institution that conducts certification of organic farms. The reporting unit is a farm undertaking organic production. The reference period for crops in the Organic Farming Register is the same as required in the FSS 2013, while animals belonging to the holdings are certified during the period from May to August. In accordance with the FSS methodology, the reference day for farm animals is 1 June 2013. Holdings were linked by the holder's ID.
- The *IACS Crop Declaration Database* was used to pre-fill the FSS questionnaire, to impute item/unit non-response, to validate the FSS data and to update the sampling frame. The IACS Crop Declaration Database is maintained by a State Enterprise Agricultural Information and Rural Business Centre and consists of farms which declare their UAA in order to receive support. The reporting unit is the beneficiary, i.e. the applicant who meets all requirements for benefits and to whom the support is awarded. The information is updated each year. The reference period coincides with that used in the FSS 2013.
- The *Animal Register (Bovine Register)* is part of the IACS and is created for identification and registration of farm animals. The Animal Register is updated every day. The reporting unit is a farm keeping different species of farm animals. The data from the Animal Register were used to pre-fill the FSS questionnaire, as well as to impute item/unit non-response, to validate the FSS data and to update the sampling frame.
- The *Rural Development Measures database* belongs to the National Paying Agency which is the only accredited institution managing the measures of support for agriculture, rural development and fisheries. The Agency manages over 200 support measures and activities. The information from the National Paying Agency was used to pre-fill the questionnaire, to impute item/unit non-response and to validate the FSS data. The reporting unit is a farm submitting an application to receive support according to the Rural Development Programme.

- The *Address Register* was used to estimate the information on the location of the holding, i.e. latitude and longitude, to pre-fill the FSS questionnaires and to update the sampling frame.
- The *State Social Insurance Fund Board Register* was used to impute non-response in the questionnaires with data on labour force and for data control and validation.

In order to build up the sampling frame, various administrative sources (e.g. the IACS Crop Declaration Database, Animal Register, Address Register and *Population Register*), together with statistical registers (e.g. *Statistical Business Register*, *Statistical Farm Register* updated with data from the 2010 census) and other statistical surveys were used.

The following problems occurred in using the administrative sources:

- In the IACS Crop Declaration Database, the farm manager is declared as a holder without taking into account the actual person undertaking the agricultural activities. Moreover, there are also problems related to different population coverage and incoherence of definition of holdings.
- As concerns the Animal Register, there are problems related to different population coverage (some holders do not register their farm animals) and to data quality (some holders who according to the register had farm animals, in fact never did).
- In the Organic Farming Register, the breakdown of organic crops does not correspond to the required classification in the FSS.

On the quality of administrative sources, there are shortcomings related to coverage (e.g. over-coverage in the IACS where holdings declared crop areas while these were rented, under-coverage of holdings which do not apply for subsidies in the IACS or those that do not declare their animals in the Animal Register). Moreover, as concerns the Animal Register, farmers have an obligation to provide information on farm animals, which are registered by herds (pigs, poultry, rabbits, etc.), at least 2 times per year. The only exception is for pigs; herds of pigs should be registered at least once per quarter. On 1 June 2013 (the reference date), the exact number of these farm animals was not known. Thus, questionnaires were prefilled with available information from the Animal Register and farmers had the possibility to correct figures if pre-filled figures were incorrect.

Luxembourg

All individuals or legal entities are obliged to provide the statistical information requested by STATEC within pre-set deadlines.

The FSS 2013 was carried out as a census survey for the characteristics related to other gainful activities, labour force, machinery and equipment for the production of renewable energy and complemented with administrative data provided by the *Service d'Economie Rurale* (SER) for the rest of the FSS characteristics (land use, livestock, organic farming and rural development).

The following administrative sources were used in the FSS 2013:

- The *IACS* was used to replace the information on geo-location, tenancy type, crop areas and livestock (except for bovine animals) otherwise collected via the FSS questionnaire. The definition of the reporting unit in the IACS is in accordance with [Council Regulation \(EC\) No 73/2009](#) and corresponds to that used in the FSS. As concerns the coverage, the IACS is complete for all holdings applying for payments within CAP or which have to be officially registered at the Ministry of Agriculture following EU and national legislation. However, the IACS data are unavailable for holdings not applying for subsidies and these are addressed with a special questionnaire containing the characteristics needed from the IACS. The IACS is updated annually.
- The *Bovine Register (SANITEL)* is a permanently updated database containing the information on holders of bovine animals (as reporting units) so the information on bovine livestock can be derived from SANITEL at any date. The bovine characteristics requested in the FSS are calculated/deducted from the characteristics on individual animals registered in SANITEL. Moreover, a link between the IACS and SANITEL allows for a regular exchange of information and permanent mutual updating of the list of reporting units.
- The *Database of the Ministry of Agriculture (MAFEA)* on the payments made to farmers and other beneficiaries eligible for [European Agricultural Guarantee Fund \(EAFG\)](#) or EAFRD is fully integrated with the IACS database and is continuously updated. In order to obtain the requested FSS information on rural development, the database is checked for payments made during at least one of the three preceding harvest years.

- The *Organic Farming Register* is the register of agricultural holdings certified or under certification in organic farming, managed by the *Administration des Services Techniques de l'Agriculture (ASTA)*, an administration of the Ministry of Agriculture. It is permanently updated and fully compatible with the IACS. The information on the status of holdings concerning organic farming at a reference day (1 April) is uploaded in the IACS yearly. This register provides the organic farming characteristics needed for the FSS. For the holdings within the scope of FSS, all the characteristics from other administrative sources and survey results are considered as "organic". This is possible because in Luxembourg, a holding only can be 100% organic or not at all.

Besides replacing survey characteristics as indicated above, the IACS and SANITEL were also used to impute unit and/or item non-response. The same common identifier is used to link the data from all administrative sources to the FSS. Moreover, some collected FSS data on equipment for the production of renewable energy was validated using administrative data.

Over-coverage holdings detected in the administrative files are excluded from the survey, e.g. holdings not reaching the [FSS threshold](#), while the under-coverage holdings (IACS and MAFEA), i.e. mostly holdings not applying for payments within CAP, are addressed with a special questionnaire. All events concerning live bovine animals are recorded in the SANITEL register, thanks to strict official checks and applied sanctions. If errors are detected in the register variables, STATEC contacts SER to deal with them.

Hungary

The Hungarian Central Statistical Office (HCSO) is authorised for using administrative data sources listed in the act of agricultural census and has the legal possibility to access them. For the FSS 2013, HCSO signed a contract with the relevant organisations.

The FSS 2013 data were collected based on a sample survey (private holdings) and on a census survey (agricultural enterprises and key private holdings). For the holdings in the sample/census, some characteristics were used from the following, continuously updated, administrative sources:

- The *Organic Farming Register* mainly maintained by two bodies (i.e. Biokontroll Hungária Nonprofit KFT that covers 95% of the organic farms and Hungária ÖKO Garancia KFT covering the remaining organic farms). The link between the Organic Farming Register and the surveyed holdings was created by matching different ID codes. The reference period of the Organic Farming Register is different from that used in the FSS, due to the control and registration of organic farming in the period from spring till autumn of the year concerned.
- The *IACS*, where the link between this register and the surveyed holdings was also created by matching different ID codes.
- The *Vineyard Register*.
- The *Uniform Animal Registration and Identification System*.

While the Vineyard Register, Organic Farming Register and IACS were used to replace some survey characteristics (the IACS for rural development characteristics, Organic Farming Register for organic farming characteristics and Vineyard Register for wine characteristics), the former two were also used to build/update the FSS frame. The Uniform Animal Registration and Identification System on bovines and the IACS were used to validate the 2013 survey data. Moreover, the IACS was used to impute item/unit non-response.

The sampling frame was built based on both the *Farm Register*, which includes private holdings, and the *Business Register*, which contains legal entities engaged in any kind of agricultural activity, regardless of their size. The Business Register is continuously updated with data transmitted from the Registry Court. The Farm Register can be updated exhaustively when an agricultural census is carried out. Between the agricultural censuses 2000 and 2010, the Farm Register was updated only partially based on the information of the Census of Vineyards and Fruit Plantations in 2001, the FSS (2003, 2005, 2007, 2013) and regular annual sample surveys. In the preparation phase of the FSS 2013, the Farm Register was completed with information from the IACS and from the Organic Farming Register.

There are no particular concerns on the quality of administrative sources. There was, however, a need to split the vineyards area from the Vineyards Register to the required FSS vineyards categories using a methodology presented in the NMR.

Malta

The FSS 2013 was carried out as a sample survey. Together with the collection of information via a questionnaire, the following administrative sources were used to collect the data for sampled holdings:

- The *Bovine Register* is maintained by the Veterinary Regulatory Directorate at the Civil Abattoir within the Ministry of Sustainable Development, Environment and Climate Change and provides for the identification and registration of all animals. The Bovine Register was used to replace the survey information on cattle, sheep and goats data.
- The *Organic Register* is continuously updated by the certification body, the Standards and Metrology Institute within the Maltese Competition and Consumer Affairs Authority. The Organic Register was used to replace the organic farming characteristics in the FSS 2013.
- The *Paying Agency* operates an effective administrative set-up to ensure an efficient, effective and timely processing of claims for support and to provide accurate and timely information to the Commission, the local entities and the farming community. Data from the Paying Agency were used to replace the survey characteristics related to rural development.

Moreover, the statistical office obtained information on the location of holdings from the *Malta Environment and Planning Authority (MEPA)*.

The data from the administrative sources from the Paying Agency and from the Organic Register are linked via the farmer's ID card. The data from the Bovine Register are linked via the licence number that is obligatory for all cattle breeders.

The Bovine Register does not provide for the breakdowns of various categories of animals as requested in the FSS legislation. In particular, the breakdown to heifers, dairy cows and other cows, as well as the categories of sheep and goats, does not exist. Therefore, the coefficients obtained from the detailed data collected in the 2010 census were used to obtain the requested information. In contrast with sheep and goats, which are currently only partially included in the register, the register is fully operational for bovine animals.

The Agricultural and Environment statistics section maintains the *Agricultural Register*, which consists of a central database including the personal details of the holdings and the data from the previous surveys. This enables the compilation and extraction of an updated list of holdings for the FSS. No thresholds are applied to the register. The Agricultural Register is frequently updated and the new holdings may be traced from surveys carried out by the Agricultural and Fisheries statistics section and other administrative sources.

Netherlands

The Statistics Netherlands' Act establishes Statistics Netherlands as an executive office for community statistics and also provides rights of access to administrative data.

In 2013, as in each year, the agricultural census was carried out by an exhaustive enumeration of all agricultural holdings above the [threshold](#) of EUR 3 000 of standard output. The FSS 2013 was fully integrated in the agricultural census.

- The *Administrative Farm Register (AFR)* is based on several legal obligations (e.g. all holdings falling under the Manure Act, or those engaged in agricultural activities falling under the responsibility of the commodity boards as well as the holdings requesting CAP support). The AFR contains names, addresses and several other characteristics of holders or holdings and a unique registration number.
- The *Integrated Administrative and Control System (IACS)* is a control system for direct aid and agri-environmental schemes of the CAP and contains the same identification number as the AFR.
- The *Animal Identification and Registration (I&R register)* is based on [Regulation \(EC\) No 1760/2000](#), which establishes a system for the identification and registration of bovine animals.

All three registers are held by the Netherlands Enterprise Agency (RVO - 'Rijksdienst voor Ondernemend Nederland'), an executive service of the Ministry of Economic Affairs and are continuously updated. By law, all agricultural holdings have to register with the RVO.

Since 2008, farmers also have to register in the *Business Register (BR)*. However, in 2013 the Administrative Farm

Register of the RVO was still used to build up the FSS frame and as a direct data source for the characteristics on geographic location (based on the postal code) and on the legal personality of the holding. The IACS was used as direct data source for the characteristics related to rural development measures, while the I&R register on bovine animals was used to pre-fill the number of bovine animals in the online FSS questionnaires as well as to validate the survey data.

Over-coverage is prevented in the AFR by the use of a unique registration code and by handling applications for the single payment scheme. As concerns under-coverage, the risk is reportedly minimal for all three administrative sources. Multiple listing in the AFR is prevented by the use of a unique registration code for each holding and via regular checks on, for instance, duplication in names, addresses and postal codes. Multiple listings cannot be excluded, but are supposed to be very small. The most common reason for possible duplication in the register is partnerships such as those between father and son, where both partners are registered and both partners receive the census questionnaire. In these cases, usually one of the questionnaires is not returned or is returned with a note that the duplicate listing should be corrected.

Based on the census information of several years, Statistics Netherlands has built up a *Statistical Farm Register* (SFR). Relevant characteristics from the AFR (e.g. identification number, addresses, legal status) are also stored in the SFR. Changes in addresses are entered into the AFR throughout the year, changes in the SFR only once a year.

Austria

Under the Federal Statistics Act 2000, Statistics Austria is required to use available administrative data instead of information obtained by using its own questionnaires. Additionally, there is an obligation on the holders of administrative data to cooperate. Regarding the preparation of statistics concerning the structure of agricultural holdings in 2013, Agrarmarkt Austria (AMA) is required to transmit the administrative data necessary for collecting the survey characteristics at the request of Statistics Austria, free of charge, and on an electronic data carrier.

The FSS 2013 was conducted in the form of a sample survey. The following administrative sources were used:

- The *IACS* including the *Austrian programme for the funding of environmentally sustainable extensive agriculture that conserves the natural world (ÖPUL)* : the administrative data from the IACS concerning areas and livestock (including organic ones) were pre-filled in the FSS electronic questionnaire and checked by respondents. Moreover, the IACS information was used to update the sampling frame, to impute item/unit non-response and to validate the survey data.
- The *System for Identification and Registration of Bovine Animals (Cattle Register)* is continuously updated and is used to replace the survey on most bovine categories. The total number of cattle on the reference day was integrated into the electronic questionnaire. The data for the breakdowns were provided by the survey. Moreover, the information from the Cattle Register was used to update the sampling frame, to impute item/unit non-response and to validate the survey data.
- The *Measures for rural development* is updated every year and used according to the survey reference period. Questions on the measures for rural development were not part of the FSS questionnaire and funding data for rural development were consolidated after the survey. Additionally, the information from this register was used to impute item/unit non-response.
- The *Veterinary Information System (VIS)* is also updated every year and used according to the survey reference day. The administrative data on animals from the VIS were pre-filled in the electronic questionnaire and checked by respondents. Moreover the information from the VIS was used to update the sampling frame, to impute item/unit non-response and to validate the survey data.
- The *Coordinates from the Address-Buildings and Dwellings Register (ABDR)* served to update addresses or provide information on new buildings. The process of allocating coordinates to the individual addresses in Austria is the task of the local authorities.

Every agricultural holding has a unique identification number, which is used in applications for subsidies as well as in the frame of statistical surveys. The assignment between various data sources is done with this unique identification number. The definition of the reporting unit in the above registers (except for the coordinates) meets the definitions used for the subsidy system and for the FSS. Concerning coordinates, the assignment is also done with the unique identification number and the coordinates were aggregated to allow the identification of single holdings.

The sampling frame essentially comprises all active holdings in the *Farm Register* or *Agricultural and Forestry Register* (AFR) that meet the [national thresholds](#) and is continuously updated in the light of various primary agricultural surveys and by comparison with various types of administrative data (e.g. IACS including ÖPUL, the Cattle Register, the VIS, social insurance information, necrologies, etc.).

The FSS is run late in the year for the sake of optimising the use of administrative data. On an earlier date, the administrative data would not be available in the same (verified) quality to pre-fill answers in the FSS questionnaires. Furthermore, in the IACS (including ÖPUL), data are recorded on the level of land parcels and transition tables were used to aggregate the information to the required FSS categories. The data from the Cattle Register and the VIS had also to be aggregated to the requested FSS categories. Regarding the coordinates, no essential drawbacks occurred, only 112 holdings could not be processed automatically due to missing coordinates. They had to be located "by hand", using a GIS-application.

No major quality problems with administrative sources exist. There is a good match of the classification between IACS and FSS characteristics. The reference day of the area matches the record day of the IACS data (15 May), while information on organic farming had to be provided by 15 November, which meets the FSS requirements. Missing data in the IACS (fresh vegetables, melons and strawberries, flowers and kitchen gardens) are filled in the questionnaire by the respondents. The Cattle Register contains the complete bovine categories in accordance with the FSS guidelines, with the exception of dairy cows/other cows, which are calculated subsequently. Out-of-scope holdings are excluded, while agricultural holdings keeping livestock that were neither reported by the VIS nor submitted an IACS application, had to provide the information about livestock as part of the FSS. The reference day coincides with that of cattle data in the FSS, i.e. 1 April 2013. Unreported events are excluded due to the control and sanctioning mechanisms. Finally, the comparison between the administrative sources and statistical surveys revealed that there is generally a very good consistency between the various data sources and, therefore, a great accuracy and reliability of the results can be assumed.

Poland

The law on official statistics provides a legal base for the use of administrative data in Poland.

The FSS 2013 was carried out as a sample survey where all organic holdings and legal holdings were surveyed exhaustively. FSS characteristics were collected directly from the interviewed holdings, except for rural development measures and organic farming characteristics, for which administrative sources were used to obtain the data for all sampled holdings.

The following administrative sources were used in the FSS 2013:

- The *Records of agricultural holdings benefiting from support in respect of the Rural Development Programme* are under the responsibility of the Agency for Restructuring and Modernisation of Agriculture (ARMA).
- The *Records of producers* are also under the responsibility of the ARMA, with a reference day as of 31 December 2011. The reporting unit is an agricultural producer enrolled in the Register of Producers.
- The *Records of agricultural holdings* are also under the responsibility of the ARMA, with a reference period of 2011 campaign. The reporting unit is an agricultural producer benefiting from direct payments in a given year.
- The *Register of Organic Farms* contains the organic producers and is under the responsibility of an Agricultural and Food Quality Inspection, with a reference day as of 31 December 2011.
- The *Special branches of agricultural activity register* includes payers of income tax coming from special branches of agricultural activity and is under the responsibility of the Ministry of Finance, with a reference day as of 31 December 2011.
- The *National Official Business Register (REGON)* contains entities running economic activity and agricultural farms of natural persons which applied to REGON. It is under the responsibility of the Central Statistical Office (CSO), with a reference day as of 30 June 2012.
- The *National Official Register of Territorial Division of the Country (TERYT)* contains regional division units (regions, voivodships, subregions, powiats, gminas, localities) and it is under the responsibility of the CSO, with a reference day as of 1 January 2013.

The Register of Organic Farms was used to replace the survey on organic farming characteristics, while the *Records of agricultural holdings benefiting from support in respect of the Rural Development Programme* were used to replace the rural development characteristics. For both sources, the common identifier was the producer number in the ARMA, which is linked to the personal identity number of the holder. Moreover, the Register of Organic Farms was used to impute item/unit non-response and the *Records of agricultural holdings* were used to validate the survey results.

In addition, coordinates were determined on the basis of information from multiple sources, including the *National Register of Geographical Names* and the *National Register of Borders and Areas of Territorial Division Units*.

The source of the sampling frame was the *Statistical Register*. The register was built on the basis of the 2010 census results and is updated every year with the results of statistical surveys, as well as the information obtained from most of the administrative sources presented above.

The main difficulties of using administrative sources concerned, for example, a different reference period used for statistical surveys and administrative data, timeliness of validated data of administrative sources, differences in definitions of agricultural holdings (e.g. one holding could correspond to two or more holdings in the administrative sources), differences in definitions of some characteristics (e.g. in contrast with the FSS data, the data on organic farming from the Agricultural and Food Quality Inspection covers also rough grazing and the category of other animals covers species of animals different from those provided in the FSS) as well as some IT problems.

Portugal

The national legislation provides for access to administrative records.

In the FSS 2013, there were no characteristics directly collected from administrative sources. However, the information from the *Financing Institute for Agriculture and Fisheries (IFAP)* was used to update the sampling frame and to validate the survey results.

The source of the sampling frame was the *Farm Register*. In order to update the list of holders, ad-hoc cross-checks were made with files on statistical units that include all companies and self-employed persons, with specific agricultural surveys (horticulture, orchard, floriculture, etc.) and with data from administrative sources, namely with the IFAP. In addition, use was made of specific information from the Autonomous Region of Madeira and, on an ad-hoc basis, of information scattered in files from other statistical surveys of the Economic Statistics Department, notably the inquiry population of statistical operations targeted at poultry farms and nurseries.

The IFAP (IACS) includes the agricultural holders that actually received aid in the reference year. It covers Mainland as well as the Autonomous Regions of Azores and Madeira. It is updated yearly. The two following files are included in the information provided by IFAP:

- Holders (i.e. area declared by holders) that received payments under the Common Agricultural Policy (CAP) from IFAP in 2013. In theory there are no significant differences between the concepts used by Statistics Portugal and the IFAP. However, often the beneficiaries of IFAP and holders don't have a perfect match (e.g. one holding may correspond to two or more beneficiaries of IFAP if different household members apply for aid).
- The SNIRA (*Animal Register*) includes livestock keepers at national level. However, also here, differences in concepts can be found and one holding might correspond to two or more holdings of the SNIRA.

Romania

The national legislation foresees the possibility of using administrative sources. However, administrative sources cannot currently be used due to the lack of unique identifier between the *Statistical Farm Register* and other administrative agricultural registers, as well as due to different definitions and methodologies used for the observation units. The administrative sources in Romania, which can be considered for their reliable data, are the IACS and Organic Farming registers.

The FSS 2013 was carried out as a sample survey. The *Farm Register*, which was updated based on the 2010 census results and the information obtained through the annual surveys on crops and livestock, was used as a sampling frame.

Slovenia

The Statistical Office of the Republic of Slovenia (SURS) has an agreement with administrative data providers to access the data when needed.

The FSS 2013 was a sample survey combined with the use of the following administrative sources to replace the survey on certain characteristics:

- The *System for the Identification and Registration of Bovine Animals* is continuously updated. All characteristics in the register are defined according to EU legislation, including age and sex of bovine animals. The information from the register is entered directly into the FSS database for all male bovine animals and for female bovine animals under two years old, as well as for heifers, two years old and over. However, according to the FSS requirements, the category of cows over two years old should be broken down to dairy cows and other cows. Since this data breakdown is not available in the register, it was collected from the survey.
- The *Organic Farming Register* is updated every time the holding is visited by the control organisation, and used to take data on organic farming characteristics. All characteristics in the register are defined according to EU legislation. This register is considered complete (i.e. except for those holdings under the [thresholds](#)).
- The *Register of Genetically Modified Crops* is maintained by the Ministry of Agriculture and the Environment (MAFF) and checked by SURS, which found that there were no genetically modified crops grown in Slovenia in 2012/2013.
- The *Rural Development Measures* register was used to replace the survey on rural development characteristics. The reporting unit is an agricultural holding that received the approved support for rural development. All characteristics in the register are defined according to EU legislation. The data on rural development measures are considered complete. Nevertheless, approximately 2.5 % of agricultural holdings did not match due to the holdings under the [thresholds](#) and some other holdings which probably changed their ID numbers within the period of the last three years.
- The *IACS* was used to replace the survey on crop and animals (except bovine animals), geo-coordinates, legal personality, tenancy type and other gainful activities of the labour force.
- The *Register of Beehives* was used to provide data on beehives. The data is updated twice a year (15 April and 30 October).

For all these administrative sources, the reporting unit is the agricultural holding with the same definition as in the FSS. The records were linked with the IDs of agricultural holdings established by the MAFF, which are also included in the Statistical Register of Agricultural Holdings.

Besides replacing the survey on the indicated characteristics, all these administrative sources were also used to validate the survey data and update the sampling frame, that is the *Statistical Farm Register* (SFR) (approximately 95 % of data can be directly linked with administrative sources). All addresses of the holdings were updated using the *Register of Territorial Units*. Moreover, some variables from the IACS were used to impute unit/item non-response.

Bias is assessed through the comparison with administrative data. The FSS estimates are close to other sources, except for organic farming, for which the survey over-estimates the results by about 10%.

Slovakia

The right of access to administrative data is based on the Act on State Statistics that provides the Statistical Office of the Slovak Republic (SO SR) with access to data from other organisations.

The FSS 2013 was carried out as a census for legal units, registered natural persons and households with an area of at least 5 hectares, and as a sample survey for households with an area less than 5 hectares. Administrative data sources were used only to build up and update the sampling frame.

Together with the 2010 census data, the new farms identified during regular statistical surveys and those from the *Register of organisations of the SO SR*, the following external registers were used to complete (update) the 2013 file of reporting units:

- the *Register of Orchards* ,
- the *Register of Vineyards* ,
- the *Farm Animals Central Register Records* , which includes the *Register of Cattle* , the *Register of Pigs* , the *Register of Sheep* and the *Register of Goats* ,
- the *Register of Organic Farms* ,
- the *Register of Applicants of the Single Area Payment Scheme* (SAPS), which includes applications submitted as of 15 May 2013.

Registers are continuously updated.

There were problems creating links between databases caused by e.g. the lack of common identifiers and obstacles related to IT issues.

Finland

Agricultural statistics have large rights of access to administrative data. About one half of the FSS 2013 data was obtained from administrative registers while the rest was collected in a sample survey using either an online questionnaire or a telephone interview.

All registers employ the same ID (farm code) for their basic units (farms and horticultural enterprises) and therefore the units could be reliably linked between the registers:

- The *IACS* is maintained by the Agency for Rural Affairs (Mavi) and is the most important administrative source of data for the FSS. It is the source of basic farm details (farm code, location, etc.), arable land use, crop areas, number of horses and poultry and rural development measures. Pig numbers were initially taken from the *IACS* or, if the *IACS* contained no pig data for a specific farm, then they were taken from the *Animal Register* (see below).
- The areas of greenhouse crops, which are not included in the *IACS*, were collected in an annual horticultural survey and obtained from the *Agricultural and Horticultural Enterprise Register* . Similarly, for some farms that did not have coordinates of their location in the *IACS*, the location data were received from the National Land Survey of Finland.
- The *Animal Register* is maintained by the Finnish Food Safety Authority (Evira) and besides pigs it provided information on sheep and goats.
- The *Bovine Register* is maintained by the Pro Agria's (an advisory organisation) Agricultural Data Processing Centre Ltd. and provided information on cattle.
- The *Organic Farming Register* is maintained by Evira. Farms that engage in organic farming must be entered into the organic control system.

Data are copied from administrative registers for statistical use annually in October, when all subsidy applications have been recorded and no significant changes are expected to be made to administrative data.

Questions required for statistical purposes have been added to subsidy application forms and the register sections were designed in such a way that the data extracted from, for example, the *IACS*, also match well with the data required for statistics. However, in the *IACS*, for instance, the data on crop area exists in much greater detail than in the FSS, thus the *IACS* data had to be selected and summed up when compiling the results.

The administrative registers are generally of good quality as concerns their coverage. However, inconsistency in the classification of pigs (in the register, pigs are classified by age, whereas in the FSS the required classification is by weight) is currently dealt with in a project on animal registers. In the frame of the same project, the timeliness of the process of estimating the number of animals from the register will also be improved.

Sweden

The Official Statistics Ordinance states that data from registers (i.e. administrative data or registers produced within the statistical system) should be used when possible. This means that the organisations responsible for

administrative registers are obliged to provide the information.

In the FSS 2013, data were collected from a mix of different sources – sample survey and administrative sources, as follows:

- The *IACS* contains information from applications for single farm payments and was used to replace the survey on the areas of different crops and to obtain the location of holdings. The reporting units are single persons and legal holdings which sent applications to the Swedish Board of Agriculture. There is no exact correspondence between the reporting unit in the IACS and the FSS, i.e. one holding could consist of several persons applying for the single farm payment. The main linkage is the unique personal number for natural persons and organisational number for legal holdings. For units which mismatch according to this method, the client number for the single payment application at the Swedish Board of Agriculture followed by production location number is used. All remaining reporting units in the IACS are considered to form new holdings in the Farm Register. The reference time in the IACS is a crop year and it corresponds to the FSS requirements.
- The *Bovine Register* (Central Cattle Register (CDB)) is operational since 2000 and was used to replace the survey on cattle. It is made up of two main parts, the first containing information on the identity of individual animals, both living and dead, such as sex, date of birth, breed and age, while the second part contains information on events relating to individual animals, such as birth, slaughter, purchase and sale, as well as transfer between different holdings, etc. There is no exact correspondence between the reporting unit in the CDB and the FSS, i.e. a person responsible for the reporting to the CDB does not need to be the same as a holder in the Statistical Farm Register. It could also be the case that a holding has more than one production location and that different persons are responsible for the reporting to the CDB for different production locations. The main linkage is the unique personal number for natural persons and organisational number for legal enterprises. For units that mismatch, the production location number is used instead. The reference date for the transmission of information from the CDB to the Farm Register is 5 June, the same as the FSS reference day.
- The *Organic Farming Register* is maintained by authorised control bodies. To establish a link to the Statistical Farm Register and in order to have the information suitable for the FSS 2013, the Board of Agriculture sent a questionnaire to the control bodies asking for detailed information on organic farms. Consequently, in the FSS questionnaires, holders were asked to fill in their client number at the control body. By using the personal/organisational number of the holding combined with the information on client number at the control body and in the FSS questionnaires, a link between the Organic Farming Register and the Statistical Farm Register could be established. In cases of mismatch, addresses and telephone numbers were also used to link holdings in the different registers.
- The *Register of Genetically Modified Crops* is maintained by the Swedish Board of Agriculture and contains information about location, areas and type of GMO crops grown. The definition of the reporting unit is the same as for holdings in the IACS. Hence, the identification of units is also the same, i.e. the personal number for natural persons and organisational number for legal holdings. In case of a mismatch, the client number at the Swedish Board of Agriculture is used.
- The *Register of Support for Rural Development* is again based at the Swedish Board of Agriculture and contains information about all holdings seeking support for different kinds of rural development measures. The definition of the reporting unit is the same as for holdings in the IACS, hence the identification of units is again the same as described above. The information obtained from this register replaces all information in the FSS section for rural development support.
- The *Education Register* contains information on education level for each person in Sweden. The identification is based on the personal number and is matched with all persons on a holding.

Additionally, a number of registers are used to update the sampling frame (based on the *Statistical Farm Register*) and to give information for having the best possible sampling design: the IACS, the Cattle Register, the *Animal Register* for poultry, sheep and pigs, the *Registers on Slaughtering of Animals*, the Organic Farming Register, the Register on Genetically Modified Crops, the Register of Support for Rural Development and the Education Register.

There are no problems of over-coverage (holdings above [thresholds](#)) in the IACS and the CDB. The IACS contains information only from the holdings applying for single farm payments, however it is estimated that these holdings cover nearly all arable land in Sweden. For holdings with no land areas according to the IACS register, Sweden conducted a special follow-up survey to investigate their different kind of crops. The areas on these holdings were covered to a large extent (93 %) by forage plants - temporary grass and fallow land without subsidies. There might be a small under-coverage due to newly created holdings, which did not apply for subsidies in 2013 and were not

found in the poultry, sheep or pig registers. However the number of such holdings is estimated to be very small. There is no misclassification in the IACS. In the CDB, a model is used to distinguish milk cows from other cows, and this model is likely to produce a small over-estimation of the number of milk cows and a corresponding under-estimation of the number of other cows. The risk of duplicate or multiple listings in the frame was possible, however each holding was asked to respond only to one questionnaire, should this happen. The quality of the information in the IACS and the CDB is deemed to be very high, as there are controls on a part of the holdings about the information delivered by the farmers. The farmers may also lose some part of the single farm payment if the reported areas are incorrect.

United Kingdom

The legislation does not set rights of access to administrative data. Administrative data may be shared by agreement, subject to the provisions of the Data Protection Act from 1998.

Separate surveys are conducted in England, Wales, Scotland and Northern Ireland by the administrations in these countries, with the results compiled at the United Kingdom level. In the United Kingdom, a farmer must register for a holding number if he intends to buy, sell or move livestock, sell crops for human consumption or claim any agricultural subsidies.

In the FSS 2013, data on organic farming, cattle, rural development payments and [common land](#) were collected from administrative sources. In Northern Ireland, data on poultry and pigs were also derived from administrative sources and in Scotland, most data on crops and land was also collected from an administrative database.

More specifically, the following administrative data sources were used during the FSS 2013:

- The *Organic data* are gathered from all organic operators via annual inspections carried out by various organic certification bodies. These bodies provide land use areas and livestock data on an annual basis to the Department for Environment Food and Rural Affairs (Defra) which links this data with the FSS data via valid County Parish Holding (CPH) numbers. In Northern Ireland, a register of all organic producers is held by a specialist unit at Greenmount Campus (College of Agriculture, Food and Rural Enterprise). This register consists of the name and address – including postcode – of the participants, coupled with the area currently considered organic or under conversion plus the types of enterprises conducted there. A sub-list of poultry producers is also held where the actual area of production may be registered as zero. This data was merged with the FSS dataset using both names and addresses as key variables.
- The *Rural Development Payments* - The exact source of the administrative data varies from country to country but basically it comes from the unit who makes the payments. In some cases this is a single central source (as occurs in Wales and Northern Ireland) or a number of sources (England and Scotland). Administrative data is linked with FSS data through the country parish holding (CPH) reference numbers and sometimes also through some additional identifiers.
- The *Cattle Information* was obtained from the *Cattle Tracing System* (CTS). In Northern Ireland, the Animal and Public Health Administration (APHIS) system, which is also an EU audited Cattle Tracing System, was used. These provide a continuous record of the births, deaths and all movements of individual cattle and thus it is possible to obtain a snapshot of all cattle on any given date. This date can be chosen to coincide with the reference date of the FSS.
- The *Crop Areas Information* was used in Scotland, where the *Single Application Form* (SAF) that farmers complete annually to claim farm subsidies contains detailed crop information.
- The *Poultry and Pigs Information* was used in Northern Ireland, where data on poultry and pigs were derived from the *Northern Ireland Annual Inventory of Pigs* and the *Northern Ireland Bird Register Update*.

The source of the frame is *Farm Registers* compiled from administrative sources. Moreover, the Scottish crop areas and United Kingdom cattle figures are used in calculations to determine the farm size and type, which are the variables used to stratify the population for sampling.

The same definition of holding is used in all registers.

There were several difficulties in using the data from the register on Rural Development Payments, e.g. a given holding has many different agri-environment agreements logged within the database, or there is a complex claim involving more than three holdings. Moreover, in cases when the CPH reference number was missing, the data

needed to be matched on the basis of names, addresses and postcodes. As concerns the data on cattle, the CTS provides information on cattle age, sex and breed. However, there were a few cases where the farmer will choose to use a different identifier for their cattle movements compared to the one used in the survey register. In these cases, the matching name and address have been used, but there still might remain a small number of cattle on holdings which cannot be assigned to a holding in the database.

As the registration of cattle on the CTS is compulsory by law and the acceptance of animals at slaughterhouses and livestock markets requires the appropriate CTS documentation, the level of unreported cattle movements is likely to be minimal. However, the register does not make a distinction between dairy cows and beef. The overall quality of the majority of the Scottish land data is very high, as the data is under-pinned by cross-compliance and is subject to audit and inspection, as well as to financial penalties for incorrect SAF submissions.

Norway

Statistics Norway has the right to use administrative data systems in the state administration and in nationwide municipal organisations in accordance with national legislation.

The FSS 2013 data were based on two main sources, the population of agricultural holdings that is updated yearly on the basis of several administrative and statistical sources and is also used as a survey frame, and a sample survey.

The *Farm Register* is the basic register for agricultural and forestry statistics in Norway. The register intends to cover all agricultural and forestry properties, all holdings in agriculture and persons/enterprises connected to the properties and holdings as owners and/or holders. In principle, the Farm Register is being continuously updated, e.g. from the *Central Population Register*, the *Central Coordinating Register for Legal Entities (Business Register)* and the *National Cadastre System*. It is also updated from the applications for governmental production subsidies.

Since 2000, Statistics Norway creates annually a *population of agricultural holdings* consisting of holdings applying for governmental production subsidies as of 31 July. In addition to these holdings, Statistics Norway identifies a number of additional holdings by combining various registers (e.g. the Norwegian Farm Register, the Sample Survey of Agriculture, the Business Register, the *Register on Deliveries of Grains and Oil-seeds*, the *Register on Slaughtered Animals*, the Application for Governmental Production Subsidies on 1 January, supplementary forms to tax returns, etc.).

The Norwegian Agricultural Authority (NAA), which is a body under the Ministry of Agriculture and Food, is responsible for several administrative registers that form the basis for agricultural statistics carried out by Statistics Norway. All registers are linked to the Farm Register via common identification characteristics.

The following administrative data sources were used during the FSS 2013 to replace survey characteristics:

- The *System of Application for Governmental Production Subsidies (PRO)* is a source of information about the land use, livestock categories, legal personality and tenancy type of holdings applying for subsidies. It is the most important administrative source. As concerns the updating of the PRO, there are two application rounds per year, on 1 January and 31 July.
- The *Organic Farming Register* contains the detailed distribution of crops and is derived from Debio's database on holdings engaged in organic production or under conversion. All providers of organic products in Norway are certified by Debio.
- The *Register of Bovine Animals* is operated by the Norwegian Food Safety Authority as a tool to prevent and eliminate contagious animal diseases. Every holder shall report any birth, purchase or sale, slaughter and death of a bovine animal. From the System of Application for Governmental Production Subsidies (PRO), only the aggregates of bovine animal characteristics are available. This sum is split up by age and sex by using information from the Register of Bovine Animals at a holding level.
- The *National Cadastre System* of the Norwegian Mapping Authority contains a list of properties, property boundaries, addresses and buildings and it was used to replace the geo-coordinates (latitude and longitude), wooded area and other land in the FSS. The *National Land Cover and Resource Map System* was also used for wooded area and other land.
- The *Education Register* was used for the agricultural training of the manager.

In addition, the *Income Tax Return and the Tax Assessment* information was used to validate, control and edit the FSS labour force data concerning holders being natural persons and their spouses/cohabitants. The unique personal identity number is used as a key when linking the sources. In these systems, the information on income for the holders and spouses/cohabitants are split up into wages and salaries, entrepreneurial income from agriculture, other entrepreneurial income, pensions and capital income.

Due to insignificant subsidies to cultivation of flowers and ornamental plants in greenhouses, many holdings with solely this production are missing in the PRO. About half of these holdings are derived from other sources. Missing harmonisation between the Organic Farming Register and the PRO meant that nearly 8 % of the area in the Organic Farming Register was not linked to holdings in the FSS. In addition, there are some differences between the FSS and registers' definitions of characteristics. For example, in the application for governmental production subsidies, the area of outdoor cultivated flowers is registered together with area of nurseries. The area is split up using a method presented in the NMR.

Conclusions

In the past, administrative data was mostly used for building the sampling frame and calibrating the results (on the basis of the auxiliary variables), as well as for analysing and validating the survey results at macro level. More recently, administrative data are increasingly used as a direct data source. The motivation is the reduction of expenditures and a significant reduction of response burden. However, this became possible only with the rapid development of the IT environment and also when the level of understanding of the usefulness of closer cooperation between the different government authorities significantly increased.

Although the advantages of administrative data usage are quite evident, it is also necessary to consider the possible disadvantages and shortcomings of such practice. First, it is too often believed that administrative data are free of errors. Administrative authorities also use some kind of collection processes, which inevitably produce different kinds of errors in the collected data. Besides these measurement errors, which are due to the "hidden" collection processes, some other quality aspects exist. They are specific to the use of administrative data and should be studied in detail by the users of such data: over-coverage, under-coverage, misclassification, multiple listings, missing data, processing errors and coherence with other data sources.

Source data for tables and graphs

- [Farm structure survey - administrative sources: tables](#)

See also

- [Family farming in the EU](#)
- [Agriculture, forestry and fishery statistics](#)
- [Farms and farmland in the European Union - statistics](#)
- [Farm structure survey \(FSS\) — glossary](#)
- [Standard Output — glossary](#)

Dedicated section

- [Farm Structure Survey](#)
- [Agriculture](#)

Publications

- [News release on Farm structure survey 2013](#)
- [Agriculture, forestry and fishery statistics — 2016 edition](#) (Statistical book)
- [Agriculture, forestry and fishery statistics — 2015 edition](#) (Statistical book)
- [Agriculture, forestry and fishery statistics — 2014 edition](#) (pocketbook)

Methodology

- Farm structure ([ESMS metadata file](#))
- [National methodological reports 2013](#)
- [National methodological reports 2010](#)
- [Farm structure survey — methodological articles](#)
- [Farm structure — Methodology of Community surveys](#)

Legislation

- [Commission Regulation \(EC\) No 1200/2009](#) implementing Regulation (EC) No 1166/2008 as regards livestock unit coefficients and definitions of the characteristics
- [Regulation \(EC\) No 1166/2008](#) on farm structure surveys and the survey on agricultural production methods
- [Summaries of EU Legislation: EU integrated farm statistics](#)
- [Council Regulation \(EEC\) No 571/1988](#) on the organisation of Community surveys on the structure of agricultural holdings

External links

- [European Commission — Common agricultural policy](#)
- [European Commission — Rural Development Policy](#)

View this article online at

http://ec.europa.eu/eurostat/statistics-explained/index.php/Article_name