

# Integrated farm statistics manual

2020 edition





**Integrated farm  
statistics manual | 2020 edition**

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## Preface

Integrated farm statistics provide the backbone of agricultural statistics. Here, the framework for European statistics at the level of agricultural holdings is established. It integrates data on structure, such as areas per crop or number of animals, with information on production methods, farm labour, rural development measures and agro-environmental aspects.

Regarded as one of the main building blocks of Eurostat's Strategy on Agricultural Statistics 2020 and beyond, the Regulation (EU) 2018/1091 of the European Parliament and the Council of 18 July 2018 on Integrated Farm Statistics entered into force on 27th August 2018.

The collection of structural statistics related to farms and farmers have undergone a strategic revision and moved on from the Farm Structure Surveys, latest carried out in 2016. Agriculture is changing due to globalisation, climate and societal change. Partly in reaction, the Common Agricultural Policy (CAP) and other EU policies related to agriculture are changing. This creates important new data needs for agricultural statistics where technological progress and the availability of new data sources can be better exploited. The Integrated Farm Statistics should remain dynamic enough to respond to new policy requirements.

In 2020, farm statistics are collected in the form of an agricultural census. This is the only way to get updates on the full agricultural population of the EU, by casting the widest net to cover the farming sector as a whole. It is the only data collection instrument that produces statistical information on farms at the most detailed geographical level. The agricultural census is an essential source of information for governments, scientists, the general public and decision-makers.

A number of experts from Eurostat and other Commission Directorates-Generals, National Institutions, and scientists have helped develop this manual. It is the result of many consultations and discussions and it is part of the effort to guarantee that data collected from across Europe is comparable, and serves the needs of our users. I would like to thank all those who have contributed.

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## Acknowledgements

This manual was prepared by Eurostat and discussed in the Working Group on structure of agricultural holdings. The manual is based on previous handbooks and working group documents for the Farm Structure Surveys 2010-2016, and was enriched with contributions from the colleagues in National Statistical Institutes, external experts and other European Commission services.

## Abbreviations and acronyms

Code	Description
ACS	Annual Crop Statistics
AWU	Annual Work Unit
CAP	Common Agricultural Policy
CC0	Creative Commons "no rights reserved"
CLRTAP	Convention on Long-Range Transboundary Air Pollution
CPSA	Standing Committee for Agricultural Statistics
DG AGRI	Directorate-General for Agriculture and Rural Development
DG CLIMA	Directorate-General for Climate Action
DG ENV	Directorate-General for the Environment
DG REGIO	Directorate-General for Regional and Urban Policy
EASS	European Agricultural Statistics System
EPDG	European Petroleum Survey Group
ESQRS	ESS Standard for Quality Reports Structure
ESS	European Statistical System
EU	European Union
EU-12	European Union – 12 countries (1993-1994)
EU-15	European Union – 15 countries (1995-2004)
EU-25	European Union – 25 countries (2004-2006)
EU-27_2007	European Union – 27 countries (2007-2013)
EU-28	European Union – 28 countries (2013-2020)
EU-27_2020	European Union – 27 countries (from 2020)
eWA	EDAMIS Web Application
eWP	EDAMIS Web Portal
FADN	Farm Accountancy Data Network
FAO	Food and Agriculture Organization
FSS	Farm Structure Survey
GAEC	Good Agricultural and Environmental Conditions
GDPR	General Data Protection Regulation
IACS	Integrated Administration and Control System
ICC	Indicative Crop Classification
IFS	Integrated Farm Statistics regulation
IPCC	Intergovernmental Panel on Climate Change
LPIS	Land Parcel Identification System
LSU	Livestock Unit
MoA	Ministry of Agriculture
MS	Member State(s)
NACE	Statistical Classification of Economic Activities in the European Community
NE	Non existing
n.e.c.	Not elsewhere classified
NECD	National Emissions Ceilings Directive
NS	Non-significant
NSI	National Statistical Institute
NUTS	Nomenclature of Territorial Units for Statistics
PDO	Protected Designation of Origin
PGI	Protected Geographical Indication
PSU	Primary sampling unit
SAIO	Statistics on Agricultural Input and Output

<b>Code</b>	<b>Description</b>
SAPM	Survey on Agricultural Production Methods
SRID	Spatial Reference System Identifier
SSU	Secondary sampling unit
UAA	Utilised agricultural area
UNECE	United Nations Economic Commission for Europe
UNFCCC	United Nations Framework Convention on Climate Change
UTC	Coordinated Universal Time

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# 1

## Introduction

### 1.1 Aim

The current European Agricultural Statistics System (EASS) has been built up since the early 1950s. Agricultural statistics are the oldest EU statistics still to be produced, and a large part of them are provided under legal obligations. The EASS covers more than 50 data sets that are transmitted to Eurostat by National Statistical Institutes (NSIs) or other national statistical authorities. It consists of seven statistical domains: structural data, agri-monetary statistics, crop production, organic farming, permanent crops, animal products and livestock, and agri-environmental indicators. In addition, the Directorate-General for Agriculture and Rural Development (DG AGRI) manages the Farm Accountancy Data Network (FADN), a survey that, while not officially part of EU statistics, is closely linked to the EASS.

Agriculture produces close to 100% of the food we eat. The safety and security of food are non-negotiable. Detailed knowledge of production structures and supply chains is essential for rapid responses, particularly for crisis management purposes. In the global context, increasingly volatile food prices coupled with a still increasing world population present a challenge for all countries. Data on prices, yields and production structures are used in market analyses and market outlook models for policy development and management. They are also widely used by private operators, as such data reduce asymmetries in market information.

Moreover, agriculture covers 47% of the EU territory. The environmental impact of agricultural practices, but also the environmental services provided by agriculture are immense. Agriculture uses soil, water, air and biodiversity and affects these resources through land management practices and input, output, crop and livestock patterns. Agriculture also plays a special role in view of climate change: it is an important source of emissions (non-CO<sub>2</sub> emissions from agriculture currently account for approximately 9% of total EU emissions), but can also sequester carbon (e.g. through reduced tillage practices) and protect carbon sinks related to agricultural land through good management practices. Without a thorough knowledge of what is produced where by whom and how through high-quality statistics, it would be very difficult to target agricultural, environmental and related policy interventions to where they are most needed.

Lastly, agriculture accounts for almost 40% of the EU budget, being the only policy almost entirely funded by the EU, where EU spending largely replaces national spending. EU taxpayers must have the guarantee that this policy is based on hard facts and figures.

The main aim of the Integrated Farm Statistics (IFS) data collection is to provide comparable data on the agricultural holdings of the European Union.

Data on farm structure has been collected at regular intervals since 1966, both by full censuses which are carried out every 10 years and via intermediate sample surveys every 3 or 4 years.

Such data is used, for example, to produce a variety of information on specific Common Agricultural Policy (CAP) targets, agri-environmental issues or provide a basis for extrapolating Farm Accountancy Data Network (FADN) data.

## 1.2 History

### From farm structure survey to integrated farm statistics

Agricultural census and the related triennial surveys on the structure of agricultural holdings form the backbone of the current EASS, providing reliable data on the structure of agricultural holdings in the EU, in order to assess the situation of agriculture across the EU and to monitor trends.

The farm structure survey is the only statistical source covering the widest range of farms, acting as a pivot reference for all agricultural statistics. Since 1966, it has been used as a benchmark and basis (especially a sampling basis) for the other agricultural statistics, and the produced statistics are highly appreciated by policy makers (for example, FADN selection plans are based on the farm structure survey results). It is a key source for the design, implementation, monitoring and evaluation of the CAP and other EU policies.

The countries collect information from individual [agricultural holdings](#) and, observing strict rules of confidentiality, data is forwarded to [Eurostat](#). The information collected in the FSS covered [land use](#), livestock numbers, rural development, management and farm labour input (including the age, gender and relationship to the holder of the agricultural holding). The survey data can then be aggregated by different geographic levels (countries, regions, and for basic surveys also district level). The data can also be arranged by size class, area status, legal status of the holding, objective zone and farm type.

The 2000 census covered the EU-15 Member States, Latvia, Hungary, Slovenia, Slovakia and Norway, while the 2010 census covered the EU-27\_2007 Member States, Croatia, Iceland, Norway, Switzerland, Montenegro and Serbia. In 2010 a special survey, the survey on agricultural production methods (SAPM) was carried out. SAPM was carried out together with the FSS 2010 census in some countries, whereas in other countries the survey was carried out as a sample survey and data were linked to data of the census at the level of the individual holding to enable cross comparisons of variables collected in SAPM and variables collected in the census. The in between sample surveys of 2003, 2005 and 2007 covered the EU-27\_2007 Member States. In 2013 and 2016, the survey covered the EU-28 Member States. Iceland, Norway, Switzerland, Montenegro, North Macedonia and Serbia also send farm structure data to Eurostat. The data available by year and country since 1999/2000 can be seen in Figure 1.

Figure 1 – Farm structure data available by country and year since 1999/2000

	1999/2000	2003	2005	2007	2009/10	2013	2016
Belgium	C	C	C	C	C	S	C
Bulgaria		C	S	S	C	S	S
Czechia		S	S	S	C	S	S
Denmark	C	S	S	S	C	S	S
Germany	C (1999)	S	S	S	C	S	S
Estonia		S	S	S	C	S	S
Ireland	C	S	S	S	C	S	S
Greece	C (1999)	S	S	S	C (2009)	S	S
Spain	C (1999)	S	S	S	C (2009)	S	S
France	C	S	S	S	C	S	S
Croatia				S	S	S	S
Italy	C	S	S	S	C	S	S
Cyprus		C	S	S	C	S	S
Latvia	C (2001)	S	S	S	C	S	S
Lithuania		C	S	S	C	S	S
Luxembourg	C (1999)	C	C	C	C	C	C
Hungary	C	S	S	S	C	S	S
Malta		S	S	S	C	S	S
Netherlands	C (1999)	C	C	C	C	C	C
Austria	C (1999)	S	S	S	C	S	S
Poland		C (2002)	S	S	C	S	S
Portugal	C (1999)	S	S	S	C (2009)	S	S
Romania		C (2002)	S	S	C	S	S
Slovenia	C	S	S	S	C	S	S
Slovakia	C (2001)	S	S	S	C	S	S
Finland	C	C	C	C	C	S	S
Sweden	C (1999)	C	C	C	C	S	S
United Kingdom	C	C	C	C	C	S	S
Iceland					C	S	S
Norway	C (1999)	C	C	C	C	S	S
Switzerland			C	C	C	S	S
Montenegro					C		S
North Macedonia						S	S
Albania					C (2012)		
Serbia					C (2012)		S (2018)
Kosovo*					C (2014)		

C-Census; S-Sample survey

\*This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence.

The Regulation (EC) No 1166/2008 implementing Regulation (EC) No 1200/2009 on farm structure surveys ceased to provide statistical information as of 2018.

## 1.3 User needs

In 2013 and 2014 the user needs assessment for farm structure was carried out and the results presented to the CPSA. It covered new developments in agriculture, revised legislation and changing policy priorities, in particular the reformed CAP for actions such as “greening” and climate change and also actions in DG ENV, DG CLIMA, DG REGIO, environmental accounts or biodiversity

policies. These policies require high-quality data to enable evidence-based policy design, implementation and evaluation. Key stakeholders expressed this need at multiple occasions.

Data providers and users also expressed a wish to increase harmonisation and coherence in order to improve data comparability and usefulness and be able to do more with fewer resources. It was also proposed to reduce burden by improving the use of administrative data registers, reusing data collected once multiple times, and harmonising concepts and definitions across legislation, domains and databases.

In December 2016 the [Impact Assessment Report<sup>\(1\)</sup>](#) was published. In it is mentioned that harmonised EU policies such as the CAP, a policy using almost 40% of the EU budget, need ipso facto high-quality data comparable across Member States to target policy interventions most efficiently, effectively and fairly. This can only be ensured by common and coordinated action in the European Statistical System (ESS).

## 1.4 Legal basis

The legal basis for the IFS is Regulation (EU) 2018/1091 of the European Parliament and of the Council of 18 July 2018 on integrated farm statistics and repealing Regulations (EC) No 1166/2008 and (EU) No 1337/2011 (OJ L 200, 7.8.2018, p. 1–29).

## 1.5 Changes in structure

Not applicable to the current version.

## 1.6 Changes in classification

There is an effort to align definitions across domains. For example concepts used in structure, crops and animals statistics were harmonised or, when not possible, the differences are explained.

## 1.7 Changes from previous versions

The manual for IFS follows the instructions for previous data collections closely. The present manual aggregates information that was spread across different documents: the former FSS handbook, the data suppliers manual, instructions for the production of National Methodological Reports (now called quality reports), and information available in documents presented to working groups.

Differences to previous campaigns are indicated below.

### 1.7.1 Changes in classification

#### Figs, pomegranate and persimmons

Despite the discussions farm structure working group of April 2018, where it was agreed that the figs, pomegranate and persimmons should not be considered "tropical fruit", further investigation into the issue has revealed that they **should be kept as part of F2000**. Figs are included in the tropical and

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<sup>(1)</sup> <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52016SC0429>

sub-tropical fruit class, in line with the ICC/FAO classification and NACE. Figs are considered a Mediterranean fruit, which are similar to sub-tropical fruit in the sense that they do not resist to extremely low temperatures and do not have strict chilling requirements for flowering/fructifying. The same applies to pomegranate, persimmons, guava and avocado.

### Other livestock n.e.c.

In previous campaigns of the farm structure survey, deer were included in this class, but in IFS they are classified separately.

Also in previous campaigns there were classes for the collection of equidae. Those have been dropped and equidae for the production of meat are to be included in "other livestock n.e.c."

### Livestock units

On previous farm structure surveys, ducks, geese and other poultry were considered in a unique class with a coefficient of 0.03. In IFS the classes were separated and the coefficients adjusted accordingly, with turkeys remaining at 0.03, ostriches remaining at 0.35, ducks adjusted to 0.01, geese adjusted to 0.02 and other poultry fowls n.e.c. adjusted to 0.001.

### Organic animals

While in FSS only fully compliant (certified converted) animals were included, in IFS both animals under conversion and fully converted are to be included.

# 2

## Methodology

### 2.1 General information

#### The modular approach of IFS

For the purposes of flexibility to the European agricultural statistical system, and simplification and modernisation of the agricultural statistics, the variables to be collected should be allocated to different collection groups (core data and modules) varying in frequency or representativeness, or both.

### 2.2 Coverage

#### 2.2.1 Whole frame of agricultural holdings

The **whole frame** is formed by the agricultural holdings defined in section 3.1.2.1.1.

It includes, among others, the common land units. It excludes, among others:

- Holdings having **only** kitchen gardens (no market activity).
- Holdings clearly producing farming goods **only** for their own subsistence, without market activity (e.g. households with 10 chicken producing eggs and meat for the family).

#### 2.2.2 Coverage or frame of data collections

In order to avoid placing an unnecessary burden on agricultural holdings and national administrations, the Regulation (EU) 2018/1091 requires each Member State to provide data on the agricultural holdings which cover 98 % of the total utilised agricultural area (UAA) (excluding kitchen gardens) and 98 % of the livestock units (LSUs) of the Member State. Each Member State should define the **coverage** of the data collections with the view to meet the two 98% coverage shares calculated on the **whole frame**.

To support achieving the 98% coverage requirements, Member States shall provide data representative of the agricultural holdings and common land units that meet at least one of the physical thresholds listed in Annex II of Regulation (EU) 2018/1091 with regard to the size of agricultural land or the number of livestock units.

Table 1 – Thresholds according to Annex II of Regulation (EU) 2018/1091 (IFS thresholds)

Item	IFS threshold
Utilised agricultural area	5 ha
Arable land	2 ha
Potatoes	0.5 ha
Fresh vegetables and strawberries	0.5 ha
Aromatic, medicinal and culinary plants, flowers and ornamental plants, seeds and seedlings, nurseries <sup>(2)</sup>	0.2 ha
Fruit trees, berries, nut trees, citrus fruit trees, other permanent crops excluding nurseries, excluding vineyards and excluding olive trees	0.3 ha
Vineyards	0.1 ha
Olive trees	0.3 ha
Greenhouses (including all crops under glass or high accessible cover)	100 m <sup>2</sup>
Cultivated mushrooms	100 m <sup>2</sup>
Livestock	1.7 livestock units

Note: The Member State should discard from the list in Table 1 those thresholds that relate to variables that are not existent or not significant in the Member State.

The holdings that meet at least one of the IFS thresholds mentioned in Table 1 form the so-called **main frame**.

In 2020, the holdings in the main frame represent the relevant population for core as well as for the modules 'Labour force and other gainful activities' and 'Rural development' (although only a part of them might benefit from rural development measures). Only a subset of the holdings of the main frame - only those with at least one of the following: bovine animals, pigs, sheep, goats, poultry represents the relevant population for the module 'Animal housing and manure management module' (see Annex V of Regulation (EU) 2018/1091).

As there is no perfect correspondence between the 98% UAA (excluding kitchen gardens) and LSU coverage requirements and the IFS thresholds, two specific cases apply:

- Where the holdings above at least one of the IFS thresholds cover more than 98 % of the national agricultural production measured by the standard output, Member States may, subject to **prior approval** by Eurostat, establish higher physical or corresponding economic thresholds to reduce the coverage, as long as the 98 % coverage of the UAA (excluding kitchen gardens) and 98 % coverage of the LSUs of the Member States is still reached.
- Where the holdings above at least one of the IFS thresholds do not cover 98 % of the UAA (excluding kitchen gardens) and/or 98 % of the LSUs, Member States should extend the coverage by establishing lower thresholds, or by establishing additional thresholds, or both. The holdings under all IFS thresholds form the so-called **frame extension**. The holdings in the **extended frame** (main frame plus frame extension) form the relevant population only for the core data collection in 2020.

These two specific cases are presented in detail in the sections below.

<sup>(2)</sup> Refers only to crops grown outdoors; for example in case of medicinal plants grown under glass, the threshold to use is the one for greenhouses.

## 2.2.3 Raising the thresholds

If a Member State finds that the holdings above at least one of the IFS thresholds cover more than 98 % of the standard output of the whole frame, then it may require **prior approval** to Eurostat to use higher (physical or economic) thresholds, with the condition that the higher thresholds cover at least 98% of the UAA (excluding kitchen gardens) and at least 98 % of the LSUs.

With the request for prior approval, the Member States should demonstrate that:

- a. the holdings above at least one of the **IFS** thresholds cover more than 98 % of the standard output of the whole frame;
- b. the holdings above at least one of the **raised** thresholds cover at least 98% of the UAA (excluding kitchen gardens) and at least 98 % of the LSUs of the whole frame.

### a. How to demonstrate that the standard output condition is met by the holdings above at least one of the IFS thresholds

In practice it is almost impossible to know the total standard output of the whole frame because it is almost impossible to know the total standard output of the holdings below the IFS thresholds.

Let's use the following notation:

$N_a$  = number of holdings above at least one of the raised thresholds

$N_b$  = number of holdings above at least one of the IFS thresholds and under the raised thresholds

$N_c$  = number of holdings under the IFS thresholds

$\overline{SO}_a$  = average standard output of the holdings above at least one of the raised thresholds

$\overline{SO}_b$

= average standard output of the holdings above at least one of the IFS thresholds and under the raised thresholds

$\overline{SO}_c$  = average standard output of the holdings under the IFS thresholds

Then  $Total\ SO = N_a \times \overline{SO}_a + N_b \times \overline{SO}_b + N_c \times \overline{SO}_c$

The purpose is to show that  $N_a \times \overline{SO}_a + N_b \times \overline{SO}_b$  represents at least 98% of the  $Total\ SO$ , or equivalently, that  $N_c \times \overline{SO}_c$  represents at most 2% of  $Total\ SO$ .

As specified above,  $\overline{SO}_c$  is not usually known in practice.

Obviously  $\overline{SO}_c$  should be lower than  $\overline{SO}_b$ .

For the demonstration, the Member State can assume the extreme case where  $\overline{SO}_c = \overline{SO}_b$ , as follows. There are two **equivalent** options:

1. If the Member State demonstrates that  $N_c \times \overline{SO}_b$  (which is an overestimation of  $N_c \times \overline{SO}_c$ ) represents at most 2% of  $O$ , then it results that  $N_c \times \overline{SO}_c$  also represents at most 2% of  $Total\ SO$ .

### Example

Let's consider that:

$N_a = 200\ 000$ ,  $\overline{SO}_a = 175\ 000$  euro

$N_b = 10\ 000$ ,  $\overline{SO}_b = 1\ 500$  euro

$N_c = 100\ 000$ .

Let's assume the extreme case, that  $\overline{SO}_c = \overline{SO}_b = 1\,500$  euro.

$Total\ SO = 200\,000 \times 175\,000\ \text{euro} + 10\,000 \times 1\,500\ \text{euro} + 100\,000 \times 1\,500\ \text{euro} = 35\,165\,000\,000\ \text{euro}$ .

$N_c \times \overline{SO}_b = 100\,000 \times 1\,500\ \text{euro} = 150\,000\,000\ \text{euro}$ .

$N_c \times \overline{SO}_b$  represents 0.4% of  $Total\ SO$ .

As  $\overline{SO}_c < \overline{SO}_b$ , then  $N_c \times \overline{SO}_c$  represents even less than 0.4% of  $Total\ SO$ .

2. If the Member State demonstrates that the estimated number of holdings under the IFS thresholds needed to fill the 2% of the  $Total\ SO$

$$\widehat{N}_c = \frac{2\% \times Total\ SO}{\overline{SO}_b}$$

(which is an underestimation of the real  $N_c$ , given that  $\overline{SO}_b$  is an overestimation of  $\overline{SO}_c$ )

is higher than the true known  $N_c$ ,

that is

$$\widehat{N}_c = \frac{2\% \times Total\ SO}{\overline{SO}_b} > N_c \quad \text{or} \quad N_c \times \overline{SO}_b < 2\% \times Total\ SO,$$

then it results that  $N_c \times \overline{SO}_c$  is also  $< 2\% \times Total\ SO$ .

### Example

Let's consider that:

$Total\ SO = 35\,165\,000\,000$  euro.

$\overline{SO}_b = 1\,500$  euro

Using the above formula,  $\widehat{N}_c = 468\,867$ . This is an underestimation of the real  $N_c$ , so we need more than 468 867 under the IFS threshold to fill the 2% of the  $Total\ SO$ .

We have only 100 000 holdings under the IFS thresholds ( $N_c$  is 100 000) which obviously cover less than 2% of the  $Total\ SO$ .

### b. How to demonstrate that the 98% UAA (without kitchen gardens) and LSU conditions are met by the holdings over at least one of the raised thresholds

In some cases only one threshold is raised or some thresholds are raised.

- On the basis of a register, the Member State can calculate the share of the total number of hectares or livestock covered by the holdings above the raised threshold in the total number of hectares or livestock covered by the register, and show that the result is at least 98%.
- Otherwise, the Member State can demonstrate that the 98% condition is met by using the example below.

### Example

The Regulation requires that all holdings with at least 1.7 LSUs are covered (the IFS threshold).

A Member State asks for prior approval to use the threshold 50 pigs (the raised threshold).

Total number of pigs: 27 977 515

Number of holdings with pigs: 40 267

Average number of pigs per holding: 695

Let's assume the extreme case that the average number of pigs per holding under the raised threshold is 49 pigs (just under the raised threshold of 50 pigs).

To cover 2% of all pigs in the Member State, we need the following number of holdings with pigs under the raised threshold:

$$N_{under} = \frac{2\% * 27\,977\,515}{49} = 11\,419$$

However it is unlikely to have so many holdings with pigs under the raised thresholds and not covered by the data collection (so meeting only the threshold for pigs) because:

- A part of these holdings are covered having other variables exceeding some other threshold: There are 14 821 holdings having 1 to 49 pigs, but those holdings have on average 40 ha UAA. 13 231 of those 14 821 holdings have other animals with 30.5 LSUs on average.

(The list of proposed thresholds include 10 bovine animals, 50 pigs, 10 breeding sows, 20 sheep, 20 goats, 1000 poultry, 5 ha UAA, 0.5 ha hops **etc.**)

- There are only 70 holdings solely meeting the thresholds for pigs within the size category between 50 and 100 pigs and it is very unlikely that there exist 11 419 holdings in the size category less than 50 pigs and meeting no other thresholds.
- In the above formula, since the average 49 is overestimated, then 11 419 is underestimated. Therefore the number of holdings under the raised thresholds and not covered should be even larger than 11 419, which is even less likely.

The following should be noted concerning **the use of economic threshold(s) instead of IFS physical threshold(s)**:

- If the economic threshold(s) is (are) equivalent to the IFS physical threshold(s), then it is enough that the Member State use the standard output coefficients to prove the equivalence.
- If the economic threshold(s) is (are) higher than the IFS physical threshold(s), then the Member State should require **prior approval** and demonstrate that:
  - a. The standard output condition is met by the holdings above at least one of the IFS thresholds and
  - b. The 98% UAA (without kitchen gardens) and LSU conditions are met by the holdings over at least one of the raised thresholds.

## Does the main frame of the country have to cover holdings with 2 cows?

As holdings with 2 cows meet at least one of the IFS thresholds (1.7 LSU), then these holdings should be included in the main frame. They should be the subject of the data collections of the core and the modules, including the 'Animal housing and manure management' module (whose relevant population is the holdings in the main frame with at least one of the following: bovine animals, pigs, sheep, goats, and poultry).

The country can reduce the scope of the main frame by raising the threshold for cows, as long as it requires prior approval from Eurostat and demonstrates that:

- a. the holdings in the main frame cover more than 98 % of the standard output of the whole frame;
- b. the holdings in the reduced main frame cover at least 98% of the LSUs of the whole frame.

In this case, the reduced main frame applies for the data collections of core and modules, including the 'Animal housing and manure management' module.

### 2.2.4 Extending the frame of the data collections

If the holdings above at least one of the IFS thresholds do not cover at least 98% of the UAA (without kitchen gardens) and/or at least 98% of the LSUs in the whole frame, then the Member State can establish lower thresholds and/or use additional thresholds to extend the frame of the data collection. This applies only for the core data collection in 2020.

The Member State does not have to ask for prior approval to extend the frame.

This section presents the procedure for extending the frame, by distinguishing two cases, depending on whether the frame allows identifying holdings producing for the market and holdings producing (mainly) for self-consumption.

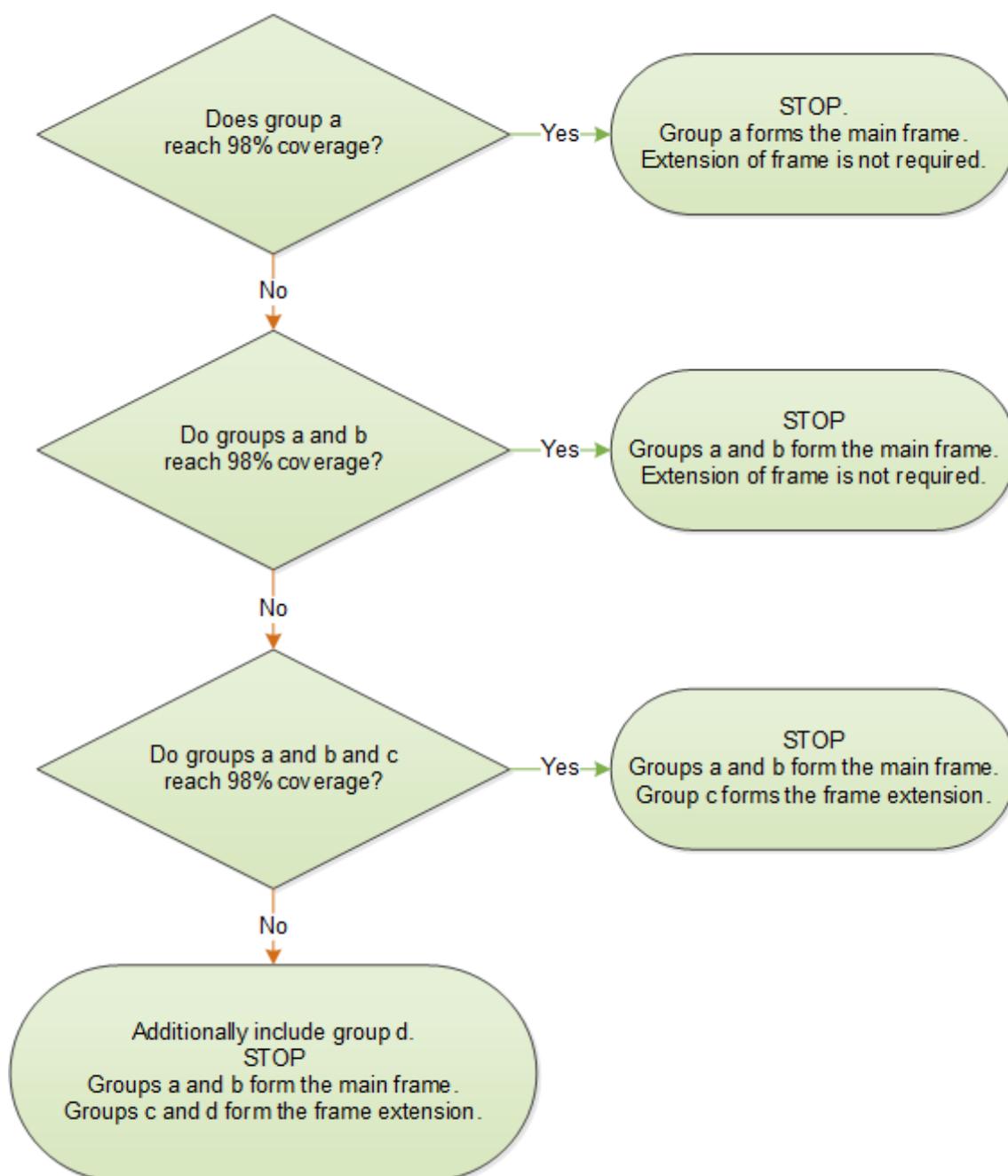
#### Case 1. The frame allows distinguishing between holdings producing for the market and holdings producing (mainly) for self-consumption

The order of the holdings to consider is:

- a. Include all holdings **over the thresholds** producing **for the market**.
- b. Include all holdings **over the thresholds** producing mainly **for self-consumption**.
- c. Include all holdings **under the thresholds** producing **for the market**.
- d. Include all holdings **under the thresholds** producing mainly **for self-consumption**.

The Member State should consider to **sequentially** include the groups of holdings a, b, c and d, **until** the coverage conditions of at least 98% UAA (without kitchen gardens) and 98% LSU are reached on the whole frame.

Figure 2 – Extended frame case 1: the frame allows distinguishing between holdings producing for the market and holdings producing (mainly) for self-consumption



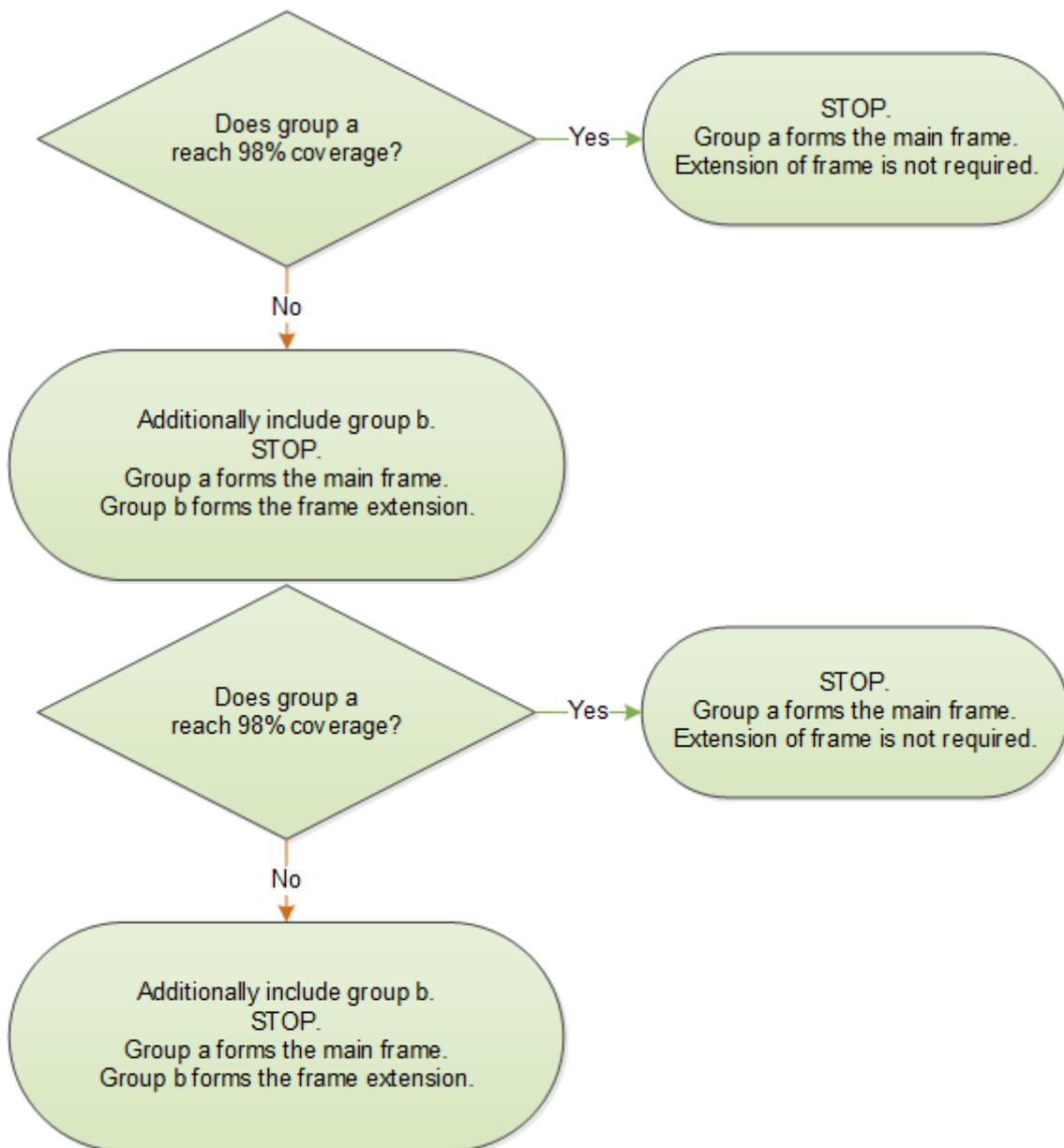
**Case 2. The frame does not allow distinguishing between holdings producing for the market and holdings producing (mainly) for self-consumption**

The order of the holdings to consider is:

- Include all holdings **over the thresholds** producing **for the market or (mainly) for self-consumption**
- Include all holdings **under the thresholds** producing **for the market or (mainly) for self-consumption**

The Member State should consider to **sequentially** include the groups of holdings a and b, **until** the coverage conditions of at least 98% UAA (without kitchen gardens) and 98% LSU are reached on the whole frame.

Figure 3 – Extended frame case 2: the frame does not allow distinguishing between holdings producing for the market and holdings producing (mainly) for self-consumption



## 2.2.5 Special cases

### Orchards (IFS2023)

Member States with at least 1 000 hectares of any of the individual crops, referred to under the detailed topics of the ‘Orchard’ module in Annex IV, producing entirely or mainly for the market, shall carry out the ‘Orchard’ module for that particular crop.

### Vineyards (IFS2026)

Member States with at least 1 000 hectares of vineyards planted with vines with grapes for wine, producing entirely or mainly for the market shall carry out the 'Vineyard' module.

## 2.3 Data sources

For the purpose of obtaining the data referred to in Regulation (EU) 2018/1091, Member States shall use one or more of the following sources or methods, provided that the information allows for the production of statistics that meet the quality requirements laid down in Article 11:

- statistical surveys;
- the administrative data sources specified in paragraph 2 of this Article;
- other sources, methods or innovative approaches

### 2.3.1 Census and survey

Amongst other reasons, for the purposes of updating the basic registers of agricultural holdings and the rest of the information required for the stratification of samples, a census of agricultural holdings should be carried out in the Union at least every ten years. The most recent census took place in 2009/2010.

The core data collection for the reference year 2020 shall be carried out as a census. The core data collections for the survey reference years 2023 and 2026 may be carried out as sample surveys. In that case, Member States shall ensure that the weighted survey results are statistically representative of agricultural holdings within each region and are designed to meet the precision requirements set out in Annex V.

#### 2.3.1.1 FRAME DEFINITION

##### Frame

A frame is a list of all the elements in a population. For the purposes of IFS the population is composed of agricultural holdings undertaking economic activities within the economic territory of the European Union either as primary or secondary activity (thresholds apply). The frame corresponds to the list of the holdings in the target population. A sample can then be drawn from the frame.

A good sampling frame includes all the units in the target population, excludes all units not in the target population and has accurate information on the unit (e.g. information allowing contacting the unit). Ideally each unit should have a unique identifier.

##### Frame extension

Because IFS target population is not covering all the agricultural holdings (due to agreed thresholds on area and number of livestock units) there may be countries where an extension of the frame, beyond the one resulting from direct application of the thresholds, is needed. In 2020 data on the core variables have to be provided for those units which are part of the frame extension.

According to Regulation (EU) 2018/1091, where the frame does not represent 98 % of the utilised agricultural area and 98 % of the livestock units, Member States shall extend the frame in accordance with article 6 by establishing lower thresholds than those referred to in paragraph 2 of Article 3, or by establishing additional thresholds, or both.

### 2.3.1.2 SAMPLE SELECTION

The data collection on the agricultural holdings in the frame extension may be carried out on samples. In that case Member States shall ensure that the weighted results are statistically representative of agricultural holdings within each region and are designed to meet the precision requirements set out in Annex V of Regulation (EU) 2018/1091.

The data collection of modules may be carried out on samples of agricultural holdings. In that case Member States shall ensure that the weighted results are statistically representative of agricultural holdings within each region and are designed to meet the precision requirements set out in Annex V of Regulation (EU) 2018/1091.

## 2.3.2 Administrative sources

Article 4 (1) b of Regulation (EU) 2018/1091 states that Member States can use administrative data from the integrated administration and control system (IACS) established by [Regulation \(EU\) No 1307/2013 of the European Parliament and of the Council](#)<sup>(3)</sup>, the system for the identification and registration of bovine animals established by [Regulation \(EC\) No 1760/2000 of the European Parliament and of the Council](#)<sup>(4)</sup> and the system for the identification and registration of ovine and caprine animals established by [Council Regulation \(EC\) No 21/2004](#)<sup>(5)</sup>, the vineyard register implemented in accordance with Article 145 of [Regulation \(EC\) No 1308/2013](#)<sup>(6)</sup> of the European Parliament and of the Council, and the organic farming registers set up pursuant to [Council Regulation \(EC\) No 834/2007](#)<sup>(7)</sup> or [Regulation \(EU\) No 2018/848 of the European Parliament and of the Council of 30 May 2018 on organic production and labelling of organic products](#)<sup>(8)</sup> or more recent regulation. Member States may also use administrative sources associated with specific rural development measures.

### 2.3.2.1 ACCESS TO REGISTER DATA

National authorities responsible for fulfilling the requirements of this Regulation shall have the right to access and use, promptly and free of charge, data, including individual data on agricultural holdings and personal data on their holders contained in administrative files compiled on their national territory pursuant to Article 17a of [Regulation \(EC\) No 223/2009](#)<sup>(9)</sup>. The national authorities and the owners of the administrative records shall establish the necessary cooperation mechanisms.

Frequently the owner of the register is not the same entity that needs to provide the statistical data. Therefore the co-operation between the statistical authorities and register holders has to be in place from the set-up of the register onwards to make sure that statistical needs are met by the register and that the data are available for statistics.

<sup>(3)</sup> [http://eur-lex.europa.eu/legal-content/EL/TXT/?uri=uriserv:OJ.L\\_.2013.347.01.0608.01.ENG](http://eur-lex.europa.eu/legal-content/EL/TXT/?uri=uriserv:OJ.L_.2013.347.01.0608.01.ENG)

<sup>(4)</sup> <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32000R1760>

<sup>(5)</sup> <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32004R0021>

<sup>(6)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R1308>

<sup>(7)</sup> <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32007R0834>

<sup>(8)</sup> [https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3A0J.L\\_.2018.150.01.0001.01.ENG](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3A0J.L_.2018.150.01.0001.01.ENG)

<sup>(9)</sup> <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32009R0223>

## Regulation (EC) No 223/2009

### *Article 17a - Access, use and integration of administrative records*

In order to reduce the burden on respondents, the NSIs, other national authorities as referred to in Article 4, and the Commission (Eurostat) shall have the right to access and use, promptly and free of charge, all administrative records and to integrate those administrative records with statistics, to the extent necessary for the development, production and dissemination of European statistics, which are determined in the European Statistical Programme in accordance with Article 1.

The NSIs and the Commission (Eurostat) shall be consulted on, and involved in, the initial design, subsequent development and discontinuation of administrative records built up and maintained by other bodies, thus facilitating the further use of those records for the purpose of producing European statistics. They shall be involved in the standardisation activities concerning administrative records that are relevant for the production of European statistics.

### 2.3.2.2 QUALITY OF REGISTER DATA

Administrative sources have been considered a useful source specially for reducing the burden on respondents. At its best data collection from registers can be a win-win situation: high quality statistics produced at a low cost without asking anything from the respondents (again). At its worst the statistical obligation may not be met at all (no data) or the quality of the delivered data fails to meet most statistical quality criteria. Eurostat is together with the ESS carrying out project [ADMIN - Administrative Data Sources](#)<sup>(10)</sup> that aims to support the EU Member States to reap the benefits (decrease costs and burden, increase of data availability) of using administrative data sources for the production of official statistics, and to promote the quality of the output produced using administrative sources, in particular the comparability of the statistics required for European purposes.

When using register data for statistics, keep in mind that

- Statistics need to meet strict pre-defined quality criteria
- For register data the quality criteria may or may not be applied and often the metadata to judge the quality of the registers is not available
- Sometimes the registers are not kept up-to-date if there is no quality assurance and checking mechanism in place
- Quality assessment tools are needed to analyse the quality of register data and to judge if they are fit-for-purpose for statistics

### 2.3.2.3 IACS

IACS is the most important system for the management and control of payments to farmers made by the Member States in application of the Common Agricultural Policy (EC, 2017). It provides for a uniform basis for controls and, among other requirements, it covers the administrative and on-the-spot controls of applications and the IT system which supports the national administration in carrying out their functions.

IACS is operated in the Member States by accredited paying agencies and applies to all direct payment schemes as well as certain rural development support measures which are granted based on the number of hectares or animals held by the farmer. Furthermore, it is also used to manage the

<sup>(10)</sup> <https://ec.europa.eu/eurostat/documents/7330775/7339647/ADMIN+fact+sheet.pdf/cbb590b2-9d6f-439c-af2d-ca8b5e9cf1f7>

controls put in place to ensure that the requirements and standards under the cross-compliance provisions are respected

In physical terms, IACS consists of a number of computerised and interconnected databases, in particular:

- a system for the identification of all agricultural parcels in Member States called Land Parcel Identification System (LPIS)
- a system for the unique identification of beneficiaries
- a computerised database for animals in Member States where animal-based aid schemes apply
- a system for identification of payment entitlements in Member States applying the Basic Payment Scheme
- IT systems facilitating the smooth running of the IACS's steps, in particular for submitting and receiving aid applications and for enabling the national administration to perform controls and cross-checks of data received from farmer through his/her aid application

### 2.3.2.4 SYSTEM FOR IDENTIFICATION OF BOVINE ANIMALS

According to European Commission sources<sup>(11)</sup>, in April 1997 - in response to the BSE crisis - the European Union implemented a system of permanent identification of individual bovine animals enabling reliable traceability from birth to death.

The basic objectives for Community rules on the identification of bovine animals are:

- the localisation and tracing of animals for veterinary purposes, which is of crucial importance for the control of infectious diseases
- the [traceability of beef](#) for public health reasons
- the management and supervision of livestock premiums as part of the common organisation of the market in [beef and veal](#)

The system for the identification and registration of individual bovine animals includes the following elements:

- double identifiers
  - one electronic identifier such as a ruminal bolus or an electronic ear tag
  - one visible identifier such as a conventional ear tag, tattoo or mark on the pastern
- maintaining a register on each holding (farm, market, etc.)
- a movement document for each movement of groups of animals (bovine-passports)
- a central register or computerised database of all holdings and movements of batches of animals at national level (with a future voluntary interoperability of bovine databases <http://ec.europa.eu/avservices/video/player.cfm?ref=I107984>)

To enhance food safety and better safeguard animal health in the EU as from 18 July 2019 the bovine animals will be allowed to be identified using two means of the identifications: conventional ear tag and an electronic identifier. Member State and operators may choose the electronic identifier amongst e.g. an electronic ear tag, a ruminal bolus or an injectable transponder.

<sup>(11)</sup> [https://ec.europa.eu/food/animals/identification/bovine\\_en](https://ec.europa.eu/food/animals/identification/bovine_en)

### 2.3.2.5 SYSTEM FOR IDENTIFICATION OF OVINE AND CAPRINE ANIMALS

According to European Commission sources<sup>(12)</sup>, the Union rules on the identification of ovine and caprine animals (sheep and goats) are based on the principle of individual traceability and includes the following elements:

- double identifiers
- one electronic identifier: a ruminal bolus or an electronic ear tag, and
- one visible identifier: a conventional ear tag, tattoo or mark on the pastern
- maintaining a register on each holding (farm, market, etc.)
- a movement document for each movement of groups of animals
- a central register or computerised database of all holdings and movements of batches of animals at national level.

Member States with populations of less than 600.000 sheep and goats or less than 160.000 goats can make electronic tagging voluntary for animals not entering intra-EU trade. However, this does not exempt them from individual traceability and applying two conventional ear tags.

### 2.3.2.6 OTHER ANIMAL REGISTERS

Animal registers exist also for [equine animals](#)<sup>(13)</sup> and for [pigs](#)<sup>(14)</sup>. Some countries, like Austria, Slovenia, Italy or Portugal have also beekeeping registers.

### 2.3.2.7 VINEYARD REGISTER

The vineyard register is currently under Regulation (EU) No 1308/2013 (article 145) and Commission Regulation (EC) No 436/2009.

The Regulation stipulates that the Member State shall ensure that the register is updated regularly and that at least every 5 years it is made sure that the register corresponds to the 'actual situation'. In the exercise for the collection of structural vineyard data in 2017, it was identified that in all countries the vineyard register is kept by an institution other than the one responsible for delivering agricultural statistics (NSI or MoA). Therefore inter-institutional co-operation at all levels was necessary to use the registers:

- Eurostat with DG AGRI
- DG AGRI and Eurostat with register holder at national level
- National statistical authorities with register holders at national level
- National and/or regional co-operation in cases where the register was regionalised

### 2.3.2.8 ORGANIC FARMING REGISTER

Several countries do not have specific national legal acts for collection of organic farming statistics, however both Article 36 of [Council Regulation \(EC\) No 834/2007](#) and Article 93 of [Commission Regulation 889/2008](#)<sup>(15)</sup> define that statistical data on organic farming is to be provided to Eurostat.

The responsible entities for collecting organic farm data at national level differ from country to country: in many countries it is the Ministry of Agriculture (as supervisor of the Control Bodies) who is

<sup>(12)</sup> [https://ec.europa.eu/food/animals/identification/ovine\\_caprine\\_en](https://ec.europa.eu/food/animals/identification/ovine_caprine_en)

<sup>(13)</sup> [https://ec.europa.eu/food/animals/identification/equine\\_en](https://ec.europa.eu/food/animals/identification/equine_en)

<sup>(14)</sup> [https://ec.europa.eu/food/animals/identification/porcine\\_en](https://ec.europa.eu/food/animals/identification/porcine_en)

<sup>(15)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008R0889>

responsible, but in other countries it can be the Ministry of Rural Affairs or the Ministry for Nutrition and Food, other Ministries or Agencies.

The organic farming register can provide aggregated data and micro-data covering all organic certified operators. Most data on organic farming is public, except personal data or the unique identifier of the farm and tax ID number.

Linking the holdings in the registers of the control bodies with the statistical farm register allows comparison to structural data and provision data which is harmonized across domains.

### 2.3.2.9 ENTERPRISE GROUP REGISTER

The enterprise group register also includes entities with NACE A01 activity. It contains information on multinational enterprise groups and their constituent units, but does not cover domestic/resident only entities. The enterprise group register is a statistical register (not an administrative business register), and according to [Regulation \(EC\) No 177/2008<sup>\(16\)</sup>](#) its use is limited to statistical purposes (as it covers statistical confidential microdata).

## 2.3.3 Other sources

Member States which decide to use the sources, methods or innovative approaches referred to in Article 4 (1) (c) of Regulation (EU) 2018/1091 (other sources, methods or innovative approaches) shall inform the Commission (Eurostat) during the year preceding the survey reference year and shall provide details concerning the quality of the data obtained from that source, method or innovative approach and the data collection methods to be used.

The transfer of such information is done via the ADM2020 data collection also described in the present manual (see 3.6 - ADM2020, 6.1.2 and Annex I). Member states can also include the information from 2.3.2 in ADM2020.

## 2.3.4 Geographical data

### 2.3.4.1 INSPIRE GRID

INSPIRE Statistical Units grid for European usage as defined in the INSPIRE Directive, its implementing regulations and [technical guidelines<sup>\(17\)</sup>](#). The mandatory coordinate reference system is ETRS89-LAEA (Lambert Azimuthal Equal Area). Grid resolution 1 Km.

### 2.3.4.2 NUTS3 REGIONS

A shapefile with GISCO NUTS3 regions at the scale of 1:100.000 can be made available on demand to those countries having a grant agreement for carrying out IFS 2020. They would need to sign an agreement with the Commission and will have to destroy the data after expiry of the grant agreement. Note that in order to determine areas NSI's should use their National spatial data provider's information (i.e. that of the national mapping and cadastre agency members).

### 2.3.4.3 AREAS FACING NATURAL CONSTRAINTS

Support for farming in areas facing natural constraints aims at compensating farmers for disadvantages due to adverse natural or specific conditions. EU regulation No 1305/2013 provides grounds to delineate such areas as defined in Article 32 using bio-physical criteria spelt in Annex III of the same regulation. The Joint Research Centre has issued guidelines that intend to support

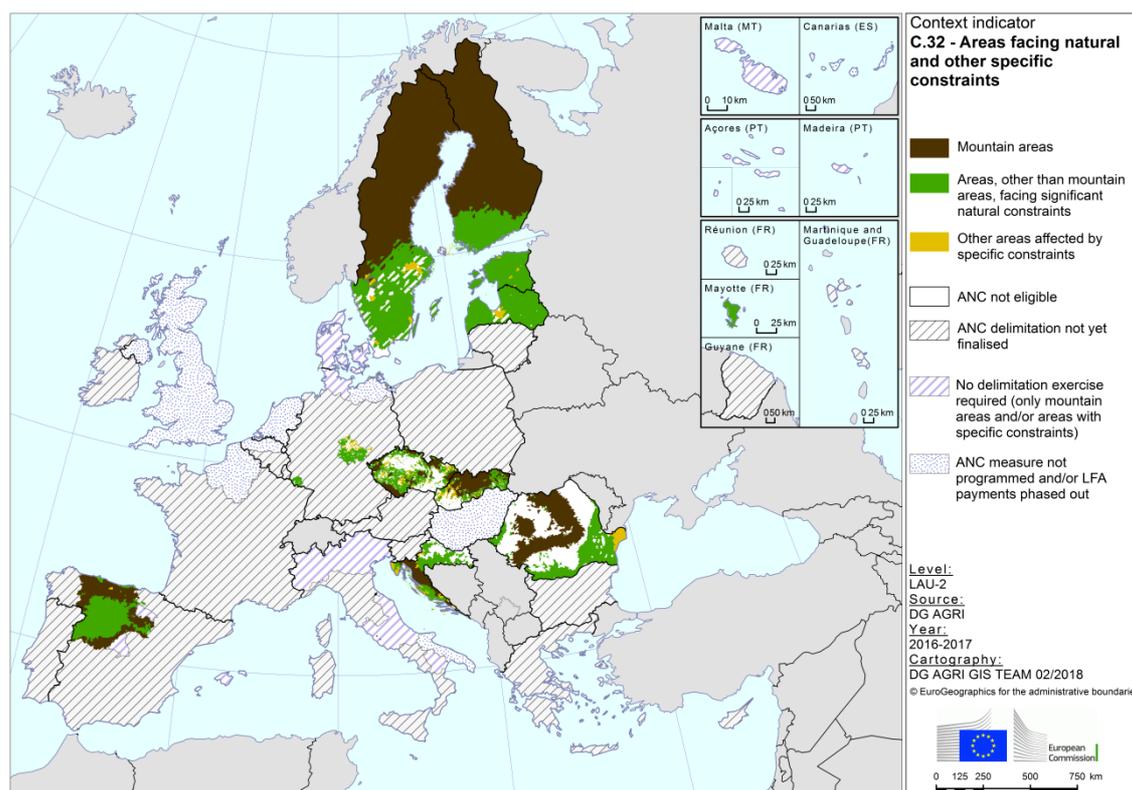
<sup>(16)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32008R0177>

<sup>(17)</sup> <https://inspire.ec.europa.eu/id/document/tg/su>

Member States on the delineation of those areas. Further information can be found on the website of the [Joint Research Centre<sup>\(18\)</sup>](#), including [guidelines for mapping the proposed common bio-physical soil, climate and terrain criteria<sup>\(19\)</sup>](#).

As of February 2018 the situation of the mapping was as indicated in Figure 4 – Delimitation and mapping of the areas facing natural constraints (December 2017). For the updated situation please consult the [CAP context indicator page<sup>\(20\)</sup>](#).

Figure 4 – Delimitation and mapping of the areas facing natural constraints (December 2017)



Source: [https://ec.europa.eu/agriculture/cap-indicators/context/2017/c32-1\\_en.jpg](https://ec.europa.eu/agriculture/cap-indicators/context/2017/c32-1_en.jpg)

## 2.4 Treatment of NS/NE variables

For the core variables of IFS2020, Article 5 (3) of Regulation (EU) 2018/1091 states that “When a variable has a low or zero prevalence in a Member State, the variable may be excluded from the data collection subject to the Member State concerned providing information duly justifying its exclusion to the Commission (Eurostat) in the calendar year preceding the reference year.”

A similar statement for the module variables is included in Article 7 (9) of the same regulation.

This information is sent to Eurostat as a separate data collection (NSNE2020).

<sup>(18)</sup>

[https://marswiki.jrc.ec.europa.eu/wikicap/index.php/Designation\\_of\\_areas\\_facing\\_natural\\_and\\_other\\_specific\\_constraints\\_\(ANCs\)](https://marswiki.jrc.ec.europa.eu/wikicap/index.php/Designation_of_areas_facing_natural_and_other_specific_constraints_(ANCs))

<sup>(19)</sup> [https://marswiki.jrc.ec.europa.eu/wikicap/images/e/ef/LB-NA-27950-EN-C\\_print.pdf](https://marswiki.jrc.ec.europa.eu/wikicap/images/e/ef/LB-NA-27950-EN-C_print.pdf)

<sup>(20)</sup> [https://ec.europa.eu/agriculture/cap-indicators/context\\_en](https://ec.europa.eu/agriculture/cap-indicators/context_en) context indicator 32

For further details on the NSNE2020 data collection, see chapter 3.7.

## 2.5 Precision requirements

The core data (in 2023 and 2026) and the module data shall be statistically representative for the relevant populations of agricultural holdings as defined in the precision table below at the level of NUTS 2 regions in terms of the size and the type of the agricultural holdings, in accordance with Council Regulation (EC) No 1217/2009, Commission Delegated Regulation (EU) No 1198/2014 and Commission Implementing Regulation (EU) 2015/220.

The precision requirements apply to the variables in the table below.

The data in the frame extension in 2020 shall be statistically representative for the relevant population at the level of NUTS 2 regions as defined in the precision table below.

In addition, the precision requirements defined in the table apply to all NUTS 2 regions with at least:

- 5 000 agricultural holdings in the relevant population for the "Orchard" and "Vineyard" modules;
- 10 000 agricultural holdings in the relevant population for the core data, for all other modules and for the data in the frame extension.

For NUTS 2 regions with fewer agricultural holdings the precision requirements defined in the table apply to the associated NUTS 1 regions with at least:

- 500 agricultural holdings in the relevant population for the "Orchard" and "Vineyard" modules;
- 1 000 agricultural holdings in the relevant population for core data, all other modules and the data in the frame extension.

A national precision of maximum 5 % relative standard error is required for those variables of the "Orchard" and "Vineyard" modules with no applicable precision requirement for any NUTS 2 and NUTS 1 regions.

A national precision of a maximum of 7.5% relative standard error is required for all variables of the other modules with no applicable precision requirement for any NUTS 2 and NUTS 1 regions for any variable.

Table 2 – Precision requirements

Relevant population	Variables for which precision requirements apply	Prevalence in the relevant population	Relative standard error
<b>Core data in 2023 and 2026</b> as defined by Article 5			
<b>Labour force and other gainful activities module</b> as defined by Article 7			
<i><b>Land variables</b></i>			
	Cereals for the production of grain (including seed)		
	Oilseeds		
	Plants harvested green from arable land		
	Fresh vegetables (including melons), strawberries, flowers and ornamental plants (excluding nurseries)	7,5 % or more of UAA in the region	< 5 %
	Permanent grassland excluding rough grazings		
	Fruits, berries, nuts and citrus fruits (excluding grapes and strawberries)		
	Grapes		
	Olives		
<i><b>Livestock variables</b></i>			
	Dairy cows		
	Non-dairy cows	7,5 % or more of the livestock units in the region and 5% or more of the variable in the country	< 5 %
	Other bovine animals (bovine animals less than 1 year, bovine animals 1 to less than 2 years, male bovine animals 2 years old and over, heifers 2 years old and over)		
	Breeding sows live weight 50 kg and over		
	Piglets live weight of under 20 kg and other pigs		
	Sheep and goats		
	Poultry		
<b>Core data for frame extension in 2020</b> as defined by Article 6			
<i><b>Land variables</b></i>			
	Arable land	7,5 % or more of the utilised agricultural area in the region	< 7.5 %
	Permanent grassland excluding rough grazings		
	Permanent crops		
<i><b>Livestock variables</b></i>			
	Total livestock units	5% or more of the variable in the country	< 7.5 %
<b>Rural development module</b> as defined by Article 7			
<b>Machinery and equipment module</b> as defined by Article 7			
<i><b>Land variables</b></i>			
	as for the "Labour force and other gainful activities" module	7,5 % or more of the utilised agricultural area in the region	< 7,5 %
<i><b>Livestock variables</b></i>			
	as for the "Labour force and other gainful activities" module	7,5 % or more of the livestock units in the region and 5% or more of the variable in the country	< 7,5 %

Relevant population	Variables for which precision requirements apply	Prevalence in the relevant population	Relative standard error
<b>Animal housing and manure management module</b>			
The subset of the population of holdings defined by Article 7 with at least one of the following: bovine animals, pigs, sheep, goats, poultry			
	<b>Livestock variables</b> as for the "Labour force and other gainful activities" module	7,5 % or more of the livestock units in the region and 5% or more of the variable in the country	< 7,5 %
<b>Irrigation module</b>			
The subset of the population of holdings defined by Article 7 with irrigable area			
	<b>Land variables</b> Total irrigable area	7,5 % or more of the utilised agricultural area in the region	< 7,5 %
<b>Soil management practices module</b>			
The subset of the population of holdings defined by Article 7 with arable land			
	<b>Land variables</b> Arable land	7,5 % or more of the utilised agricultural area in the region	< 7,5 %
<b>Orchard module</b>			
The subset of the population of holdings defined by Article 7 with any of the individual orchard variables that meet the threshold specified in Article 7(5)			
	<b>Orchard variables</b> The orchard <i>variables</i> among apples, pears, apricots, peaches, nectarines, oranges, small citrus fruits, lemons, olives, grapes for table use, grapes for raisins that meet the threshold specified in Article 7(5)	5 % or more of the utilised agricultural area in the region	< 7,5 %
<b>Vineyard module</b>			
The subset of the population of holdings defined by Article 7 with grapes for wine			
	<b>Vineyard variables</b> Grapes for wine	5 % or more of the utilised agricultural area in the region	< 7,5 %

## 2.5.1 Codes of variables for which precision requirements apply in 2020

<b>Land variables</b>	<b>IFS codes</b>
Cereals for the production of grain (including seed)	C0000T
Oilseeds	I1100XI1150T = sum(I1110T,I1120T,I1130T,I1140T,I1190T)
Plants harvested green from arable land	G0000T
Fresh vegetables (including melons), strawberries, flowers and ornamental plants (excluding nurseries)	V0000_S0000_N0000 = sum(V0000_S0000T,V0000_S0000S,N0000T,N0000S)
Permanent grassland excluding rough grazings	J1000_3000TE= sum(J1000T,J3000TE)
Fruits, berries, nuts and citrus fruits (excluding grapes and strawberries)	F0000_T0000T=sum(F0000T,T0000T)
Grapes	W1000T
Olives	O1000T
Arable land	sum (ARAT,ARAS)=sum (C0000T, P0000T , R0000T, I0000T , V0000_S0000T , N0000T ,G0000T , E0000T , ARA99T , Q0000T, V0000_S0000S, N0000S, ARA09S)
Permanent crops	PECRT
<b>Livestock variables</b>	
Dairy cows	A2300F_LSU=A2300F*1
Non-dairy cows	A2300G_LSU = A2300G*0,8
Other bovine animals (bovine animals less than 1 year, bovine animals 1 to less than 2 years, male bovine animals 2 years old and over, heifers 2 years old and over)	A2000X2300_LSU= sum(A2010_LSU, A2120_LSU, A2220_LSU, A2130_LSU, A2230_LSU)= sum(A2010*0,4, A2120*0,7, A2220*0,7, A2130*1, A2230*0,8)
Breeding sows live weight 50 kg and over	A3120_LSU= A3120*0,5
Piglets live weight of under 20 kg and other pigs	A3110_3130_LSU=sum(A3110_LSU, A3130_LSU)=sum(A3110*0,027, A3130*0,3)
Sheep and goats	A4000_LSU=sum(A4100_LSU,A4200_LSU)=sum(A4100*0,1, A4200*0,1)
Poultry	A5000X5120_5130_LSU= sum(A5140_LSU,A5110O_LSU,A5000X5100_LSU)=sum(A5140*0,007, A5110O*0,014, A5230*0,03, A5210*0,01, A5220*0,02, A5410*0,35, A5240_5300*0,001)
Total livestock units	A0010_LSU= sum(A2000_LSU,A4000_LSU,A3100_LSU,A5000X5120_5130_LSU,A6111_LSU)= sum(A2010*0,4, A2120*0,7, A2220*0,7, A2130*1, A2230*0,8, A2300F*1, A2300G*0,8, A4100*0,1, A4200*0,1, A3110*0,027, A3120*0,5, A3130*0,3, A5140*0,007, A5110O*0,014, A5230*0,03, A5210*0,01, A5220*0,02, A5410*0,35, A5240_5300*0,001, A6111*0,02)

## 2.5.2 Procedure for computation of the share of not compliant precision requirements in 2020

The procedure has 6 steps and is applied separately to each country.

A country transmits data on either:

- 5 Data collections: CORE<sup>(21)</sup>, CORE\_FEF<sup>(22)</sup>, LAFO<sup>(23)</sup>, RDEV<sup>(24)</sup>, AHMM<sup>(25)</sup>
- or
- 4 Data collections CORE, LAFO, RDEV, AHMM.

The data records corresponding to each Data collection is identified in the single dataset received from each country using the following SAS codes:

**CORE:** SELECT \* where (HLD\_FEF=0 and EXTPOL\_FACT1\_CORE is not missing)

**CORE\_FEF:** SELECT \* where (HLD\_FEF=1 and EXTPOL\_FACT1\_CORE is not missing)

**LAFO:** SELECT \* where (HLD\_FEF=0 and EXTPOL\_FACT1\_LAFO is not missing)

**RDEV:** SELECT \* where (HLD\_FEF=0 and EXTPOL\_FACT1\_RDEV is not missing)

**AHMM:** SELECT \* where (HLD\_FEF=0 and EXTPOL\_FACT1\_AHMM is not missing and SUM (A2300F, A2300G , A2010, A2120, A2220, A2130, A2230, A3110, A3120, A3130, A4100, A4200, A5140, A5110O, A5230, A5210, A5220, A5410, A5240\_5300)>0<sup>(26)</sup>)

### 2.5.2.1 STEP 1 - COMPUTE THE NUMBER OF CASES ELIGIBLE TO PRECISION REQUIREMENTS<sup>(27)</sup>, OVER ALL DATA COLLECTIONS

- 1.1. Select the NUTS 2 regions with at least 10 000 extrapolated holdings. These represent the eligible NUTS2 regions.
- 1.2. For each NUTS 2 region with less than 10 000 extrapolated holdings, select their corresponding NUTS 1 regions having at least 1 000 extrapolated holdings. These represent the eligible NUTS1 regions.

#### 1.3. For each Data collection:

**1.3.1. CORE:** Over the records where (HLD\_FEF=0 and EXTPOL\_FACT1\_CORE is not missing), do the following:

**1.3.1.1.** For each eligible NUTS 2 region and then for each eligible NUTS 1 region:

calculate the prevalence of the following **land variables** in the total utilised agricultural area of the region in question:

— **Cereals for the production of grain (including seed)**

— **Oilseeds (excluding cotton)**

<sup>(21)</sup> Core data on the main frame

<sup>(22)</sup> Core data on the frame extension

<sup>(23)</sup> Data on module "Labour force and other gainful activities", on the main frame

<sup>(24)</sup> Data on module "Rural development", on the main frame

<sup>(25)</sup> Data on module "Animal housing and manure management, on the main frame

<sup>(26)</sup> With at least one of the following: bovine animals, pigs, sheep, goats, poultry as according to

[Regulation \(EU\) 2018/1091](#)

<sup>(27)</sup> According to [Regulation \(EU\) 2018/1091](#), Annex V

- Plants harvested green from arable land
- Fresh vegetables (including melons), strawberries, flowers and ornamental plants (excluding nurseries)
- Permanent grassland excluding rough grazings
- Fruits, berries, nuts and citrus fruits (excluding grapes and strawberries), outdoor
- Grapes
- Olives

Example: for the eligible NUTS2 region AT11, compute:

$$\begin{aligned} & \text{Percentage of cereals in the total UAA in NUTS2 region AT11} \\ &= \frac{N \text{ hectares cereals in NUTS2 region AT11}}{N \text{ hectares of UAA in NUTS2 region AT11}} \end{aligned}$$

If this percentage is at least 7.5%, then the pair Cereals – NUTS2 region AT11 is an eligible pair or case. Otherwise, this pair is not an eligible case.

**1.3.1.2.** For each eligible NUTS 2 region and for each eligible NUTS 1 region:

calculate the prevalence of the following **livestock variables** in the total livestock units of the region and in the **same livestock variable** of the country.

- Dairy cows
- Non-dairy cows
- Other bovine animals (bovine animals less than 1 year, bovine animals 1 to less than 2 years, male bovine animals 2 years old and over, heifers 2 years old and over) = Bovine animals excluding cows
- Breeding sows live weight 50 kg and over
- Piglets live weight of under 20 kg and other pigs
- Sheep and goats
- Poultry

Example: for the eligible NUTS2 region AT11, compute:

$$\begin{aligned} & \text{Percentage of dairy cows (LSU) in the total LSU in NUTS 2 region AT11} \\ &= \frac{\text{LSU dairy cows in NUTS2 region AT11}}{\text{Total LSU in NUTS2 region AT11}} \end{aligned}$$

and

$$\begin{aligned} & \text{Percentage of dairy cows (LSU) in NUTS2 region AT11 in total dairy cows (LSU) in AT} \\ &= \frac{\text{LSU dairy cows in NUTS2 region AT11}}{\text{LSU dairy cows in country AT}} \end{aligned}$$

If the first percentage is at least 7.5% **and** the second percentage is at least 5%, then the pair Dairy cows – NUTS2 region AT11 is an eligible case. Otherwise, this pair is not an eligible case.

**1.3.2. LAFO:** Repeat the procedure described in 1.3.1 over the records where (HLD\_FEF=0 and EXTPOL\_FACT1\_LAFO is not missing).

The list of land and livestock variables is the same as for CORE.

As CORE is based on census, and LAFO can be based on sample (a reduced number of records), please note that the result could be slightly different here than for CORE.

Only if, for LAFO, all the above 4 lists are empty<sup>(28)</sup> (there is no eligible pair)<sup>(29)</sup>, then take that the number of eligible pairs are:

- each Land variable – Country level (8 pairs because there are 8 variables) and
- each Livestock variable – Country level (7 pairs because there are 7 variables).

**1.3.3. RDEV:** Repeat the procedure described in 1.3.1 over the records where (HLD\_FEF=0 and EXTPOL\_FACT1\_RDEV is not missing)

The list of land and livestock variables is the same as for CORE.

Only if, for RDEV, all the above 4 lists are empty<sup>(30)</sup> (there is no eligible pair)<sup>(31)</sup>, then take that the number of eligible pairs are:

- each Land variable – Country level (8 pairs because there are 8 variables) and
- each Livestock variable – Country level (7 pairs because there are 7 variables).

**1.3.4. AHMM:** Repeat the procedure described in 1.3.1 over the records where (HLD\_FEF=0 and EXTPOL\_FACT1\_AHMM is not missing and SUM (A2300F, A2300G, A2010, A2120, A2220, A2130, A2230, A3110, A3120, A3130, A4100, A4200, A5140, A5110O, A5230, A5210, A5220, A5410, A5240\_5300)>0<sup>(32)</sup>)

The list of livestock variables is the same as for CORE. **There are no land variables.**

Only if, for AHMM, both above 2 lists are empty<sup>(33)</sup> (there is no eligible pair)<sup>(34)</sup>, then take that the number of eligible pairs are:

- each Livestock variable – Country level (7 pairs).

<sup>(28)</sup> Expected to be very unlikely

<sup>(29)</sup> According to Regulation (EU) 2018/1091, a national precision of a maximum of 7,5 % relative standard error is required for all variables of the other modules with no applicable precision requirement for any NUTS 2 and NUTS 1 regions for any variable.

<sup>(30)</sup> Expected to be very unlikely

<sup>(31)</sup> According to Regulation (EU) 2018/1091, a national precision of a maximum of 7,5 % relative standard error is required for all variables of the other modules with no applicable precision requirement for any NUTS 2 and NUTS 1 regions for any variable.

<sup>(32)</sup> With at least one of the following: bovine animals, pigs, sheep, goats, poultry as according to [Regulation \(EU\) 2018/1091](#)

<sup>(33)</sup> Expected to be very unlikely

<sup>(34)</sup> According to Regulation (EU) 2018/1091, a national precision of a maximum of 7,5 % relative standard error is required for **all variables** of the other **modules** with **no applicable precision requirement for any NUTS 2 and NUTS 1 regions for any variable.**

**1.3.5. CORE\_FEF:** Do the following procedure over the records where (**HLD\_FEF=1** and **EXTPOL\_FACT1\_CORE** is not missing):

For each eligible NUTS 2 region and then for each eligible NUTS 1 region:

calculate the prevalence of the following **land variables** in the total utilised agricultural area of the region in question:

- **Arable land**
- **Permanent grassland excluding rough grazings**
- **Permanent crops**

Example: for the eligible NUTS2 region AT11, compute:

$$\begin{aligned} & \text{Percentage of arable land in the total UAA in NUTS2 region AT11} \\ &= \frac{N \text{ hectares arable land in NUTS2 region AT11}}{N \text{ hectares of UAA in NUTS2 region AT11}} \end{aligned}$$

If this percentage is at least 7.5%, then the pair Arable land – NUTS2 region AT11 is an eligible case. Otherwise, this pair is not an eligible case.

For each eligible NUTS 2 region and for each eligible NUTS 1 region, calculate the prevalence of the **Total livestock units** of the region in question in the country.

- **Total livestock units**

Example: for the eligible NUTS2 region AT11, compute:

$$\begin{aligned} & \text{Percentage of total LSU in the NUTS2 region AT11} \\ &= \frac{\text{Total LSU in NUTS2 region AT11}}{\text{Total LSU in country AT}} \end{aligned}$$

If the percentage is at least 5%, then the pair Total livestock units – NUTS2 region AT11 is an eligible case. Otherwise, this pair is not an eligible case.

**1.3.6. Calculate the total number of eligible cases over all data collections:**

$$\begin{aligned} & \text{Number of eligible cases over all data collections} \\ &= \text{Number of eligible cases for CORE} \\ &+ \text{Number of eligible cases for LAFO} \\ &+ \text{Number of eligible cases for RDEV} \\ &+ \text{Number of eligible cases for AHMM} \\ &+ \text{Number of eligible cases for CORE FEF} \end{aligned}$$

### 2.5.2.2 STEP 2 - IMPORT THE RELATIVE STANDARD ERRORS REPORTED BY COUNTRIES FROM THE VALIDATED DATA FILES

*RSE separate data collection.*<sup>(35)</sup>

In the dataset created in SAS following the import, please make sure that for each relative standard error there is clear associated variable, region/country level and Data collection. For

<sup>(35)</sup> The names and number of these files are not yet established

example, the RSE 4.5% corresponds to variable Arable land, NUTS 2 region AT11 and Data collection CORE\_FEF.

### 2.5.2.3 STEP 3 - ADD RSE TO THE ELIGIBLE PAIRS

For each Data collection to each eligible pair (variable - region/country) from step 1, add its corresponding RSE from step 2. For each Data collection, the SAS join is done on common variable and on common region/country.

### 2.5.2.4 STEP 4 - COMPUTE THE NUMBER OF NOT COMPLIANT ELIGIBLE CASES, OVER ALL DATA COLLECTIONS

Using the dataset resulted from step 3, add another column where you flag if the RSE is or not compliant.

- 1.1. **CORE**: A RSE is not compliant if exceeds the threshold of 5%. The RSEs are only at regional level.
- 1.2. **LAFO**: A RSE associated to a NUTS2 or a NUTS 1 region is not compliant if exceeds the threshold of 5%. A RSE associated to country level is not compliant if exceeds the threshold of 7.5%.
- 1.3. **RDEV**: A RSE is not compliant if exceeds the threshold of 7.5%. This is valid for NUTS2 region, NUTS1 region and country level.
- 1.4. **AHMM**: A RSE is not compliant if exceeds the threshold of 7.5%. This is valid for NUTS2 region, NUTS1 region and country level.
- 1.5. **CORE\_FEF**: A RSE is not compliant if exceeds the threshold of 7.5%. The RSEs are only at regional level.

$$\begin{aligned}
 & \text{Number of not compliant eligible cases over all data collections} \\
 &= \text{Number of not compliant eligible cases for CORE} \\
 &+ \text{Number of not compliant eligible cases for LAFO} \\
 &+ \text{Number of not compliant eligible cases for RDEV} \\
 &+ \text{Number of not compliant eligible cases for AHMM} \\
 &+ \text{Number of not compliant eligible cases for CORE FEF}
 \end{aligned}$$

### 2.5.2.5 STEP 5 - COMPUTE THE SHARE OF NOT COMPLIANT PRECISION REQUIREMENTS

Using the results of steps 1 and 4, compute:

$$\begin{aligned}
 & \text{Share of not compliant precision requirements for all data collections} \\
 &= \text{Number of not compliant eligible cases over all data collections} \\
 & / \text{Number of eligible cases over all data collections}
 \end{aligned}$$

## 2.6 Reference area

The reference area for the data collection is the farm.

Data is delivered per country.

Regulation (EU) 2018/1091 is a text with EEA relevance. According to the provisions of the EEA agreement, the provisions of the Regulation shall be read with the following adaptations:

- The EFTA States shall not be bound by the regional breakdown of data

- The EFTA States shall not be bound to collect and provide data on the implementation of measures associated with the “Rural-development” module in Article 7(b), the “Orchard”-module in Article 7(g) and the “Vineyard”-module in Article 7(h) and as listed in Annex IV of the Regulation, also including any ad-hoc data supplementing the three mentioned modules due to Article 9
- The Regulation shall not apply to Liechtenstein

## 2.7 Reference period

The collected information shall refer to a single reference year that is common to all Member States by referring to the situation during a specified timeframe or date.

### 2.7.1 Farm land

For land variables the use of the land shall refer to the reference year. In the case of successive crops from the same piece of land, the land use shall refer to a crop that is harvested during the reference year, regardless of when the crop in question is sown.

#### Main use of land or main area

When two or more crops are planted in succession on the same parcel, the main area refers to the crop which gives the highest value of production. When a distinction by value is not possible, then the main use is given to the crop which occupies the area for the longer period in the reference year. To ensure that data provided to IFS is in line with data provided to Annual Crop Statistics (Main Area - Table 4), it is important that a crop is considered only if it is harvested in the reference year. Please note that the planting of the crop can take place before the reference year.

For the purposes of IFS, young permanent crops (such as hops, fruit or berry plantations) which are not yet in production can be included from the year they are planted onwards.

### 2.7.2 Irrigation and soil management practices

For variables on irrigation and soil management practices, the reference period is a 12-month period ending within the reference year, to be established by each Member State with a view to covering the related production cycles.

### 2.7.3 Livestock, animal housing and manure management

For variables on livestock, animal housing and manure management, a common reference day within the reference year shall be established by each Member State.

The variables on manure management shall refer to a 12-month period including that date.

### 2.7.4 Labour force

For variables on labour force, a 12-month reference period ending on a reference day within the reference year shall be established by each Member State.

## 2.7.5 Rural development

For variables on rural development measures implemented in the individual agricultural holdings, the reference period shall be the three-year period ending on 31 December of the reference year.

## 2.7.6 Other variables

For all other variables, a common reference day within the reference year shall be established by each Member State.

## 2.8 Reporting frequencies

Member States shall collect and provide the core structural data ('core data') related to the agricultural holdings referred to in Article 3 (2) and (3), for the reference years 2020, 2023 and 2026, as listed in Annex III of Regulation (EU) 2018/1091. The core data collection for the survey reference year 2020 shall be carried out as a census.

Table 3 – Reporting frequencies for IFS Core and modules (C-as a census; S-sample survey is possible)

Data collection	2020	2023	2026
IFS Core	C	S	S
IFS Core (frame extension)	S		
Labour force and other gainful activities	S	S	S
Rural development	S	S	S
Animal housing and manure management	S		S
Irrigation		S	
Soil management practices		S	
Machinery and equipment		S	
Orchard		S	
Vineyard			S

## 2.9 Units of measurement

### 2.9.1 Labour force

#### 2.9.1.1 ANNUAL WORK UNIT (AWU)

Annual work unit (AWU) is the full-time equivalent employment, i.e. the total hours worked divided by the average annual hours worked in full-time jobs in the country. One annual work unit corresponds to the work performed by one person who is occupied on an agricultural holding on a full-time basis.

The minimum working hours for work to be considered full-time are defined in the national provisions governing contracts of employment. If these do not indicate the number of annual hours, then 1800 hours is to be taken as the minimum figure (225 working days of eight hours each).

As the volume of agricultural labour is being calculated on the basis of full-time equivalent jobs, no person can therefore represent more than one AWU. This constraint holds even if it is known that someone is working on agricultural activities for more than the number of hours defining full-time in the Member State concerned).

### 2.9.1.2 FULL TIME WORKING DAYS

A full time working day is the normal working day of regular workers employed on a full-time basis. It is any day of such length that the worker is paid the salary or any kind of remuneration (wages, profits, or other payments including payments in kind) for a full day's work, during which the work performed is of the kind normally carried out by a full time agricultural worker.

Days of leave and sickness do not count as working days.

## 2.9.2 Area

For the purpose of IFS areas are transmitted in hectares (10.000 m<sup>2</sup>). The are (100 m<sup>2</sup>) and its multiple the hectare are part of the SI units permitted only in specialized fields (area of farmland and building land), which are defined in the [Directive No 80/181/EEC<sup>\(36\)</sup>](#) on units of measurement.

## 2.9.3 Livestock

### 2.9.3.1 HEADS OF ANIMALS

The heads of animals are given on a reference day during the reference period (see 2.7.3 above).

It is known that the number of livestock in a year may fluctuate.

For some animal types (e.g. poultry) there may be a period between production cycles in which the housing is empty, due to temporary breaks in the production cycle (e.g. regular sanitary cleaning of animal houses, disease outbreaks, or similar reasons) and a lower number or no livestock are on the holding.

Because IFS is a structural survey, such holdings should still be recorded to avoid illusionary fluctuations in the data. The livestock of these holdings will correspond to the number of animals just before the sanitary cleaning (provided they no longer exist in any other holding).

### 2.9.3.2 LIVESTOCK UNIT

The livestock unit, abbreviated as LSU (or sometimes as LU), is a standard measurement unit that allows the aggregation of the various categories of livestock of various species and age as per convention, via the use of specific coefficients established on the basis of the nutritional or feed requirement of each type of animal, in order to enable a comparison.

The coefficients for IFS are adopted in accordance with Annex I of Regulation (EU) 2018/1091.

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<sup>(36)</sup> <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:31980L0181>

Table 4 – Livestock units in accordance with Annex I of Regulation (EU) 2018/1091

Type of animal	Characteristic of animal	Coefficient
Bovine animals	Less than 1 year old	0.4
	1 to less than 2 years old	0.7
	Male, 2 years old and over	1
	Heifers, 2 years old and over	0.8
	Dairy cows	1
	Non-dairy cows	0.8
Sheep and goats		0.1
Pigs	Piglets, live weight of under 20 kg	0.027
	Breeding sows, live weight 50 kg and over	0.5
	Other pigs	0.3
Poultry	Broilers	0.007
	Laying hens	0.014
	<i>Other poultry</i>	
	Turkeys	0.03
	Ducks	0.01
	Geese	0.02
	Ostriches	0.35
	Other poultry fowls n.e.c.	0.001
Rabbits, breeding females		0.02

Table 5 – Other livestock units

Type of animal	Characteristic of animal	Coefficient
Equidae		0.8

### 2.9.3.3 NUMBER OF HIVES

For bees, the unit adopted is the number of hives.

### 2.9.3.4 HOLDINGS WITH LIVESTOCK

Holdings with livestock are agricultural holdings with bovine animals, [goats](#), [sheep](#), [pig](#), [poultry](#), rabbits, beehives or livestock n.e.c.

Holdings with livestock can have zero [livestock units \(LSU\)](#) as LSU is only calculated for bovine animals, goats, sheep, pigs, poultry, and female breeding rabbits. Holdings with livestock and no LSU are holdings which have beehives or livestock n.e.c.

## 2.9.4 Animal housing

In the IFS core, the number of animals present in the farm for each class is collected for a reference day.

For the module on animal housing and manure management the relevant units are the average number of animals and the number of places.

### 2.9.4.1 AVERAGE NUMBER OF ANIMALS (FOR REPORTING PURPOSES)

For the purpose of reporting on greenhouse gas emissions (CH<sub>4</sub> emissions from enteric fermentation, CH<sub>4</sub> emissions from manure management and N<sub>2</sub>O emissions from manure management) a basic characterisation of livestock, gathered from official national statistics is sufficient (IPCC, 2006). The value to be used for this purpose, even for the simplest methodology (Tier 1) is the annual average population, which is calculated using the following formula:

#### Annual average animal population (IPCC)

$$\text{Annual Average Population} = \text{Days alive} * \text{Number of animals produced annually} / 365$$

In case of static animal populations, (e.g., dairy cows, breeding swine, layers), the annual average population will be the same as the one-time animal inventory data. But it may not be so for populations of meat animals, such as broilers, beef cattle and swine.

Broiler chickens are typically grown approximately 60 days before slaughter. Estimating the average annual population as the number of birds grown and slaughtered over the course of a year would overestimate the population, as it would assume each bird lived the equivalent of 365 days. Instead, one should estimate the average annual population as the number of animals grown divided by the number of growing cycles per year. For example, if broiler chickens are typically grown in flocks for 60 days, an operation could turn over approximately 6 flocks of chickens over the period of one year. Therefore, if the operation grew 60,000 chickens in a year, their average annual population would be 9,863 chickens. For this example the equation would be:

$$\text{Annual average population} = 60 \text{ days} * 60,000 \text{ chickens} / 365 \text{ days} = 9,863 \text{ chickens}$$

The CLRTAP methodology has a different approach to the calculation of the annual average population, by using a combination of number of places and number of empty days (EEA, 2017), but it leads to equivalent results as the calculation proposed by IPCC which is given above.

#### Annual average animal population (CLRTAP)

$$\text{Annual Average Population} = \text{Number of places} * (1 - \text{days empty} / 365)$$

Where "days empty" is the product of the number of production cycles or rounds per year and the duration of the period during which the animal place is empty

$$\text{days empty} = \text{rounds} * \text{days of empty place}$$

A basic calculator (functioning in Word) is provided in Annex III.

Note that the average number of animals across housing types is additive.

Animals that spend part of their time grazing are also to be included in the calculation.

### 2.9.4.2 NUMBER OF PLACES

The unit for assessing the dimension of animal housing is the number of places.

The term "places" is used in the sense of the stable capacity during the reference period.

The number of places in the animal house which are temporarily empty during the reference period is also recorded if they are normally occupied.

For animals always outdoors “places” refers to the number of animals that could be supported in the holding (assuming a reasonable LSU/ha of pasture).

## Are “places” the same of “maximum number of places occupied in the reference period”?

**No. Places are to be interpreted as the stable capacity during the reference period.**

However, in case such number is not possible to obtain in a simple manner Eurostat accepts that the maximum number of places occupied during the reference period, including those cases where “over-exploitation” occurs, is used as an estimate of the number of places. This should be communicated in advance as part of the ADM2020 data transmission.

### 2.9.5 Date / Time

Date and time shall follow the ISO 8601 norm. The main feature of the norm is that date/time information is ordered so that the largest temporal term (the year) is placed to the left and successive smaller terms are placed to the right of the previous term (date elements can be separated by "-" and time elements by ":" to improve human readability). The norm also fixes a reference calendar as the Gregorian calendar. The norm also prescribes as a minimum a four digit year (YYYY). Note that YYYYMM is not allowed for the representation of a month and YYYY-MM is to be used instead.

Example of a day: 2017-07-31 (YYYY-MM-DD) or 20170131 (YYYYMMDD)

Example of a month: 2017-03 (YYYY-MM) but not 201703

Example of a date with time in UTC: 2017-07-31T07:59:19+00:00

# 3

## Classification

### 3.1 IFS2020 Core

#### 3.1.1 Specific definitions and concepts

##### 3.1.1.1 MIXTURES OF CROPS

Mixtures of crops usually have to be recorded in the respective crops or in the pre-defined mixture classes. Mixtures of crops should as far as possible be recorded elsewhere, either according to the definitions of the respective variable, or if nothing is mentioned, under the crop with the highest economic value.

##### 3.1.1.2 COMBINED CROPS

In the case of combined crops the utilised agricultural area is allocated among the crops pro rata to the use of the ground by the crops concerned. If one crop has no significance for the holding, it is ignored in the breakdown of the areas. Areas of agriculture combined with woodland are similarly split up. This principle does not apply to mixed crops (these are crops grown and harvested together on the same ground, e.g. mixed corn), or to successive crops (e.g. barley under-sown with clover for later harvesting).

An exemption from the principle of pro rata allocation may be made where the results would not be satisfactory, provided that the rules established by the Member States in agreement with the Commission are respected.

##### 3.1.1.3 GROUPING OF CROPS

If a crop cannot be recorded separately, it should be grouped with crops of the same kind rather than with other crops of a different category.

### An example of grouping of crops

Small areas with oil-flax should not be included in other arable land, but rather under 'other oil seed crops'

##### 3.1.1.4 SUCCESSIVE CROPS AND MAIN CROP

Successive secondary crops are not recorded separately in UAA for IFS. In utilised agricultural area, the area of each successive crop is not calculated, but the area is allocated to only one crop taken as the main crop. Where during one harvest year several crops are grown in succession on an area, the main crop is the crop that has the highest value of the production. If the value of production does not

determine what the main crop is, then the main crop is taken as the one that occupies the ground for the longest time.

### 3.1.1.5 DUAL PURPOSE CROPS

Dual purpose crops, such as cotton, have several uses. Cotton, for instance, is cultivated for the seed (oil and oilcake) and fibre.

The area under cultivation for dual purpose crops should be recorded only once. For the area statistics (such as IFS), cotton is recorded only under cotton fibre, in line with Annual Crop Statistics.

Other dual purpose crops such as soya seed (oil and protein) are reported only under I1130 'Soya', because the seed can be used only for one of these products and the farmer may not know for which of the products it will be used.

Cereals which are grown for the production of grain, but which also produce straw that can be used for energy purposes or other uses, are not considered as a dual purpose crop, as (long as) no data are requested for the by-product (straw).

Crops which can be used for food /feed and energy purposes are classified under the main heading (e.g. G3000 Green maize).

### 3.1.1.6 OTHER (...) N.E.C

In the tables presenting the data and in the Eurostat databases, the heading 'Other products, n.e.c. (not elsewhere classified)' comprises all species in a group of products that have not previously been broken down, even if they are mentioned in detail in the national statistics. It usually includes species which are produced in minor quantities throughout the EU or species with particular importance for a small number of countries. This heading's content is very variable and it contains crops which are often not comparable from one country to another.

### 3.1.1.7 ENERGY CROPS

The classification of energy crops has posed some problems in the past. The following guidelines have been mutually agreed by Integrated Farm Statistics (IFS) and Annual Crop Statistics (ACS).

Most of the crops used for energy purpose are classified in the same class as the same crop used for food or feed, e.g.:

- Maize for energy purpose into class G3000 Green maize
- Rape for energy purposes in class I1110 Rape and turnip rape seeds
- Fibre crops in class I2000, etc.

The specific class I6000 'Energy crops n.e.c.' is defined as follows:

- It includes only specific energy crops not used for other purposes than energy production and cultivated on arable land, such as miscanthus and canary reed
- This item should not include any other crops reported under other items (e.g. maize for biogas), which means that double counting is not allowed
- It is part of the aggregate 'Industrial crops'
- If the practice in a Member State differs from these definitions and the data is transmitted as used in the MS, an explanation is needed in the quality report

Short-rotation coppices

- Land on which the short rotation coppices are grown is **not considered as UAA**, although this is the case in legal bases of some Member States. They are collected in IFS as a sub-category of wooded area; in Annual Crop Statistics they are not at all collected

### 3.1.1.8 PLANTS HARVESTED GREEN FROM ARABLE LAND

The important time limit between grasslands on arable land and permanent grassland is 5 years. Grasslands are considered as permanent if they stay at least 5 years on the ground.

### 3.1.1.9 GREEN MANURE

Green manure crops are grown, cut and ploughed into the soil to enhance the soil fertility. Mustard, radish and some leguminous crops are used as green manure.

The situation for green manure is clarified as follows:

- If green manure use is not the sole use of the plants, then the area is classified according to the main use.
- In IFS the area that is used exclusively as green manure is included under Q0000 'Fallow land'.

### 3.1.1.10 CROPS UNDER GLASS OR HIGH ACCESSIBLE COVER

'Crops under glass or high (accessible) cover' refers to crops that are covered by accessible greenhouses for the whole period of growth or for the predominant part of it.

#### Includes

- Accessible greenhouses
- Accessible shade houses
- Fixed high cover (made of glass, rigid plastic or flexible plastic)
- Mobile high cover (made of glass, rigid plastic or flexible plastic)

#### Excludes

- Sheets of plastic laid flat on the ground
- Land under cloches
- Tunnels not accessible to persons
- Movable glass-covered frames

### 3.1.1.10.1 Systems to protect crops

In practice there are two main objectives for the crop protection systems:

The purpose of shade houses is to protect plants from excessive heat, light, hail, frost or dryness. They provide shelter from the elements, and the material is normally a sheet of shade cloth which is available in different colours and shading percentages.

Greenhouses have an opposite objective: they have glass or plastic roofs (and walls) that allow the light to enter the structure. The greenhouse heats up as the incoming solar radiation heats the plants and soil (or substrate) faster than the heat is able to escape from the structure. In addition, they can also protect plants from wind, rain and animals. Glasshouses and greenhouses have the same

objectives, and the difference is related only to the material they are made of (as in the past only glass was suitable for the purpose of creating a greenhouse, which can also be called "hothouse").

## Systems to protect crops

*The following systems are used to protect crops*

**Crops are considered under glass or high accessible cover**

- (GL) Glasshouse
- (GR) Greenhouse
  - Fixed
  - Mobile (high cover)
- (SH) Shade house
- (WT) Walk-in tunnel

**Crops can either be considered as under high accessible cover or as outdoor**

- (PL) Plastic house

**Crops are considered outdoor or in open field**

- (LT) Low tunnel
- Sheets of plastic laid flat on the ground
- Arable land under cloches
- Areas under tunnels not accessible to man
- Movable, glass-covered, low frames

### Glasshouse (GL)

It is a walk-in, static, closed shelter with glass roof and walls, of variable size from small sheds to very large buildings. Normally glasshouses are more technologically advanced than greenhouses, but the two terms are considered synonyms (in the sense that in the past only glass was used to make a greenhouse).

Figure 5 – Glasshouse



**Greenhouse (GR)**

It is a walk-in, static, closed shelter with glass or plastic roof (rigid or flexible) and walls with variable size from small sheds to very large buildings. It can be fixed or mobile.

Figure 6 – Greenhouse



### Shade house (SH)

It is an unheated shelter used to protect plants (normally ornamentals) from excessive heat and/or light and against insects and/or birds. It is covered by permeable fabric (net) with different shade percentage (up to 80%).

For the purpose of IFS, accessible shade houses are always considered under "high accessible cover", regardless of the shade level offered by the net.

Figure 7 – Shade house



### Walk-in tunnel (WT)

It is an unheated shelter used for growing plants. It is composed of a single layer of plastic supported by plastic/metal arches. This structure is large enough to walk and work in. Normally they are temporary shelters and are removed at the end of cultivation.

Figure 8 – Walk in tunnel



### Plastic house (PL)

It is an unheated shelter used to protect plants, especially fruit crops such as table grapes, from cold or rain and to extend the harvest period (to anticipate or postpone fruiting). The cover may be discontinuous. This system may either be considered as "high protective cover" (namely if the plants are covered by the plastic most of the growing or ripening time) or as a simple protection (equivalent to a low tunnel) and therefore the crop would be considered as "outdoor".

Figure 9 – Plastic house – high accessible cover, the plants are accessible without destroying the shelter



## Low tunnel (LT)

It is a simple plastic cover, generally associated to mulching. Covering may be provided also by nonwoven fabric. It is a temporary cover (removed well before harvest)

Figure 10 – Low tunnel



### 3.1.1.10.2 Reporting areas under glass or high accessible cover

For mobile greenhouses or high cover, the area reported is the total area of arable land actually covered during the preceding 12 months (summing them up to calculate the total area covered), not merely the area of arable land covered by the installation at any one time.

If the same area under glass is used more than once it is reported once only.

Only the base area of multi-storeyed greenhouses is counted.

Note that while in Annual Crop Statistics the area under glass or high accessible cover is reported together with the area of open field crops, in IFS the areas are reported separately.

### 3.1.1.11 HYDROPONICS

Hydroponics is a method of growing plants without soil, by using mineral nutrient solutions in water. Plants can be grown on this solution directly or be supported by inert materials such as perlite or gravel. Where significant, crops in hydroponics can be counted as “crops under glass or high accessible cover”.

### 3.1.1.12 CULTIVATED MUSHROOMS

Mushrooms belong botanically to fungi and not to plants as other vegetables do. Their production method differs also very much from other vegetables. Because of these reasons 'cultivated mushrooms' are not included in the main aggregate 'Vegetables, melons and strawberries'. It is a stand-alone item in the crop statistics and in IFS.

Normally mushrooms are not produced on arable land but in special buildings or cellars. The production takes place in layered structures and for some species/varieties even not on a plain ground but e.g. on tree logs. As most of the mushroom cultivation takes place on such layered structures in buildings, and the production surface differs between the mushroom species, calculation instructions are needed.

The **harvested area** of mushrooms in annual crop statistics differs from the 'main area' (production surface) counted in IFS. In IFS it includes the surface of all layers covered with mushroom substrate and used for the production, not regarding how often the substrate/nutrient medium is changed during the crop year. When mushrooms are cultivated on tree logs on grassland the entire area of tree logs (apart from each other) is to be recorded.

Mushrooms which have the main growing phase on a used substrate/nutrient medium during the year before the survey year, but are mainly harvested in the survey year, have to be included. Those which will be harvested mainly in the following year shall not be included. The harvest is defined as a full harvest of one substrate/nutrient medium.

### 3.1.1.13 TRUFFLES

Normally truffles (*Tuber* spp.) are a wild product and therefore, as the production of other wild mushrooms, they are not collected in Annual Crop Statistics or in IFS. Although they are a kind of mushroom, they are cultivated in a very different way from the other mushrooms and should not be included in the same class as other mushrooms.

Note however that in some countries there are now truffle farms, where the truffles are grown on trees (usually of the genus *Quercus*, *Castanea* or *Corylus*) specially planted for the purpose of producing the mushroom.

The common advice both for ACS and IFS is that the cultivated truffles should be included in class PECR9\_H9000T - Other permanent crops including other permanent crops for human consumption n.e.c. (H9000 – Other permanent crops for human consumption n.e.c. in ACS).

If the truffles are cultivated together with nut trees, and if the production of nuts is also used, the production of both should be recorded while the area is recorded only once according to the main use (which normally would refer to the truffle, as they are very valuable).

## 3.1.1.14 SEEDS AND SEEDLINGS

The classification of seeds and seedlings is complex and varies between crops. In general seed and seedling production takes place in specialised farms, as it is often subject to authorisation. Table 6, which is aligned with the classification of the ACS, gives details of the classification of seeds and seedlings.

Table 6 – Seeds and seedlings

Seeds and seedlings	IFS
<ul style="list-style-type: none"> <li>- Cereals</li> <li>- Dry pulses</li> <li>- Oilseeds (including flax)</li> <li>- Potatoes</li> <li>- Other roots crops where root is used to produce the next generation</li> </ul>	Always included under their main classes
<ul style="list-style-type: none"> <li>- Grasses (temporary and permanent)</li> </ul>	Always included under 'Seeds and seedlings'
<ul style="list-style-type: none"> <li>- Sugar beet,</li> <li>- Fibre crops (excluding fibre flax)</li> <li>- Other root crops</li> <li>- Other industrial crops</li> </ul>	Always included under 'Seeds and seedlings'
<ul style="list-style-type: none"> <li>- Vegetables (including melons) and strawberries</li> <li>- Flowers</li> </ul>	<p>Included under 'Seeds and seedlings' if <b>for sale use</b>.</p> <p>Included under their main class if <b>for own use</b>.</p>

Plants harvested green, other than grasses (G1000), such as cereals and leguminous plants (G2000), cannot be used for seed production. Their seeds are thus included in the corresponding class harvested as dry grain/pulses, which for the case of Annual Crop Statistics is their respective class in P1000 to P9000 and in IFS is P0000.

Young ligneous plants grown for subsequent transplantation (such as fruit trees and berry bushes) are classified under nurseries.

## 3.1.1.15 KITCHEN GARDENS

Kitchen gardens are areas of an agricultural holding devoted to the cultivation of agricultural products not intended for selling but for consumption by the farm holder and his household.

### Kitchen gardens in NACE

In general NACE does not differentiate between market and non-market activities even if this distinction is an important feature of the System of National Accounts. Division T98 of NACE includes the undifferentiated subsistence goods and service producing activities of households. NACE T98.10 includes activities such as hunting, gathering or farming when goods are produced by the household for its own subsistence. If households are also engaged in the production of market goods, they are classified to the appropriate goods-producing industry of NACE.

### 3.1.1.16 CHRISTMAS TREES

Christmas trees are defined as trees planted for commercial purposes, to be sold as Christmas trees (planted pines, firs, etc., including the use as fir sprigs). They are classified according to the following principles:

- Christmas trees planted for commercial purposes, outside woodland, on the utilised agricultural area (land regularly cultivated), are part of permanent crops, therefore to be classified under PECR9\_H9000T. (In crop statistics they belong to class PECR9 'Other permanent crops')
- Christmas tree plantations which are no longer maintained belong to wooded area (WA) in IFS. They are not counted in crop statistics.

## 3.1.2 General variables

### 3.1.2.1 AGRICULTURAL HOLDING

Code	Label	Unit
HLD_ID	Agricultural holding identifier	integer

#### 3.1.2.1.1 Agricultural holding identifier (HLD\_ID)

The holding unique identifier is a unique numerical identifier for transmitting the data.

The holding id is a unique integer within a dataset sent by one data supplier.

The maximum length allowed is 11 digits. The maximum holding id which can be accepted is 99 999 999 999. As the ID is an integer, do NOT start a holding ID with a 0 (zero).

Data providers are asked to keep the same holding ID for the same holding throughout all the revisions of the file. This allows the identification of changes between different versions. Even if desirable, there is no obligation to keep the same holding ID between campaigns.

#### Agricultural holding

An agricultural holding, holding, or farm is a single unit, both technically and economically, operating under a single management and which undertakes economic activities within the economic territory of the European Union either as its primary or secondary-activity. The holding may also provide other supplementary (non-agricultural) products and services.

An agricultural holding is then defined by the following criteria:

- It is a single unit both technically and economically; in general this is indicated by a common use of labour and means of production (machinery, buildings or land, etc.);
- It has single management; there can be single management even though this is carried out by two or more persons acting jointly;
- Carries out at least one of the following activities defined in the [European Statistical Classification of Economic Activities](#)<sup>(37)</sup> (NACE Rev. 2) for crop and animal production, and related service activities:
  - Growing of non-perennial crops (NACE A01.1)
  - Growing of perennial crops (NACE A01.2)

<sup>(37)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Statistical\\_classification\\_of\\_economic\\_activities\\_in\\_the\\_European\\_Community\\_%28NACE%29](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_%28NACE%29)

- Plant propagation (NACE A01.3)
- Animal production (NACE A01.41 to A01.47 and parts of A01.49)
  - Holdings raising and breeding ostriches or emus (NACE A01.49)
  - Holdings raising and breeding rabbits (NACE A01.49)
  - Holdings with bee-keeping, production of honey and beeswax (NACE A01.49)
  - Holdings raising animals for the production of fur (NACE A01.49)
- Mixed farming (NACE A01.5)
- Holdings exclusively maintaining agricultural land in good agricultural and environmental condition (NACE A01.61)
- Has its activity in the economic territory of the European Union as defined in the [Regulation \(EC\) No 1059/2003<sup>\(38\)</sup>](#) or, where applicable, the most recent legislation.

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<sup>(38)</sup> <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:32003R1059>

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### Includes

- Agricultural holdings that have utilised agricultural area (or livestock) in different regions; the holding is treated as one unit as long as it remains a “single unit both technically and economically (common use of the means of production) and operates under single management”
  - Holdings that for tax or other reasons are split up among two or more persons, but still have a single management (one common manager) and are therefore considered to be one economic unit (single holding)
  - Two or more separate holdings, each having previously been an independent holding, that have been integrated into the hands of a single holder, are considered to be a single holding if they now have a common manager or if they use the same labour and equipment (single management and technical and economic unity)
  - Agricultural holdings growing non-perennial crops (NACE A01.1)
  - Agricultural holdings growing perennial crops (NACE A01.2) including
    - those that produce wine from self-produced grapes
    - those that produce olive oil from self-produced olives
  - Plant propagation (NACE A01.3)
  - Animal production (NACE A01.4 with some exceptions in A01.49)
    - Raising and breeding of semi-domesticated or other live animals such as
      - Holdings raising and breeding ostriches or emus (NACE A01.49)
      - Holdings raising and breeding rabbits and animals for the production of fur (NACE A01.49)
      - Holdings with bee-keeping, production of honey and beeswax (NACE 01.49)
  - Mixed farming (NACE A01.5)
  - Holdings exclusively maintaining agricultural land in good agricultural and environmental conditions as defined in Article 94 of [Regulation \(EU\) No 1306/2013](#)<sup>(39)</sup> (NACE A01.61)
  - Bull, boar, ram and billy-goat breeding stations and studs
  - Hatcheries
  - Agricultural holdings of research institutes, sanatoria and convalescent homes, religious communities, schools and prisons
  - Agricultural holdings which form part of industrial enterprises
  - Common land consisting of pasture, horticultural or other utilised agricultural area, provided that such utilised agricultural area is operated as an agricultural holding by the local authority concerned (e.g. by the taking in of another persons’ cattle to graze as in “taking of animals into assignment”)
  - Common land units (a virtual entity created for the purposes of data collection and recording, consisting of the utilised agricultural area used by agricultural holdings but not belonging directly to them)<sup>(40)</sup>
- 

<sup>(39)</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013R1306>

<sup>(40)</sup> These should be an exception; utilised agricultural land in “virtual units” should instead be allocated to the holdings using it. See Annex II for methodological details.

- 
- Livestock holdings with no animals present on the reference day, due to temporary breaks in the production cycle (e.g. regular sanitary cleaning of animal houses, disease outbreaks, or similar reasons)
  - “Single-product group-holdings” if they are independent of the “parent” holdings and they mainly use their own factors of production and do not rely mainly on the factors of production of the “parent” holdings
  - Migrating herds, which do not belong to holdings using agricultural areas (independent holdings)

## Excludes

- Holdings with the activities covered by NACE code A01.49 that are not mentioned above, such as
    - worm, mollusc or snail farms
    - raising of silk worms
    - raising of pet animals
    - operation of frog farms, crocodile farms or marine worm farms
    - operation of fish farms
    - raising of diverse animals
  - Single-product group-holdings in the case that they are not independent from the parent holding
  - Riding stables, racing stables, gallops (i.e. land used for exercising racehorses), if they do not have breeding activities
  - Kennels
  - Markets
  - Slaughterhouses (without rearing)
  - Game reserves growing crops only for the purpose of feeding the wild animals or maintaining the land in good environmental condition (but not receiving agricultural support for it)
  - Holdings having only kitchen gardens (no market activity)
  - Holdings producing farming goods only for its own subsistence, without market activity (NACE T98.10) (see also 2.2 Coverage)
  - Holdings that carry out support activities to agriculture and postharvest crop activities (NACE A01.6) when they are undertaken exclusively (exception applies to NACE A01.61)
  - Hunting, trapping, and related service activities (NACE A01.7)
-

## Is it the same holding?

### *If two holdings use the same equipment but different labour force, are they still one unit?*

The key solution for deciding if such a holding is one holding only, is finding whether these holdings have "single management". As mentioned in the **FAO definition** of agricultural holding, *single management may be exercised by an individual or household, jointly by two or more individuals or households, by a clan or a tribe, or by a juridical person such as a corporation, cooperative or government agency*. In single management, it is expected that the resources are pooled, and that there is a common budget.

It can happen that a single holding may have land parcels in more than one region. If they are too far apart, it is no longer possible that they share the agricultural inputs and therefore they should not be considered as the same holding.

Additional analyses and information from interviewers may be needed to make a final decision.

### Single product holding-groups

Separate holdings may put resources for one particular farm activity together to form a distinct joint enterprise that is run separately from the holdings behind it (the parent holdings). These enterprises can be, for example, common orchards, common cattle lots, and common dairy buildings. It is a case of partial fusion and these joint enterprises are here called "single-product group-holdings".

These "single-product group-holdings" are treated as agricultural holdings independent of the "parent" holdings if they mainly use their own factors of production and do not rely mainly on the factors of production of the "parent" holdings. In the case that they are not independent, the crops/livestock are recorded on the "parent" holding in relation to the ownership ratio.

### Livestock holdings without animals

Livestock holdings with no animals present on the reference day, due to temporary breaks in the production cycle (e.g. regular sanitary cleaning of animal houses, disease outbreaks, or similar reasons) are still to be recorded, in order to keep them in the census population.

### Good agricultural and environmental conditions (GAEC)

Good agricultural and environmental conditions (GAEC)<sup>(41)</sup>, refers to a set of European Union (EU) standards (described in Annex II of Council Regulation 1306/2013) defined at national or regional level, aiming to achieve a sustainable agriculture. Keeping land in good agricultural and environmental conditions is directly related to issues such as:

- minimum level of maintenance
- protection and management of water
- soil erosion
- soil organic matter
- soil structure

These standards are to be respected by European farmers receiving direct payments or some of the rural development payments.

<sup>(41)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Good\\_agricultural\\_and\\_environmental\\_conditions\\_\(GAEC\)](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Good_agricultural_and_environmental_conditions_(GAEC))

## Common land

Common land allotted under "utilised agricultural area for share farming or other modes" and common land which has been rented out under "utilised agricultural area for tenant farming" is to be included as part of the holding which is renting (or using) the land.

### 3.1.2.2 LOCATION OF THE HOLDING

Code	Label	Unit
GEO_LCT	Geographical location	code
REGION	NUTS3 region	code
REGL_1305_2013	Areas facing natural constraints	code

The agricultural holding is located where the farm undertakes its main agricultural activity.

The location of land (or livestock) in different regions is not a criterion for splitting one holding into several ones. The data regarding such holding is not split by region, and a single agricultural holding has a single location placed in one region.

## How do we handle animals belonging to the holding but located in another country?

*A farm located in the Netherlands has a number of bovine animals grazing in Belgium on the reference day of the survey. Should they be counted as part of the holding or not?*

The rules specify that if the animals are in possession of the agricultural holding, which is a single unit both technically and economically and has a single management, then the location of the livestock in different regions is not a criterion for splitting one holding into several ones. If the location of such holding has been defined in Netherlands, then the animals should be counted in Netherlands. They should not be counted in Belgium. Double counting and missing animals or crops are to be avoided.

### 3.1.2.2.1 Geographical location (GEO\_LCT)

The cell code of the 1 km INSPIRE Statistical Units Grid for pan-European usage<sup>(42)</sup> where the farm is located. This code will be used only for transmission purposes.

For data dissemination purposes, in addition to the normal disclosure control mechanisms for tabular data, the 1 km grid will be used only if there are more than 10 agricultural holdings in the grid; failing that, nested 5 km, 10 km or larger grids will be used as required.

For geocoding of agricultural holdings, the Statistical Units theme in accordance with Annex III to Directive 2007/2/EC of the European Parliament and of the Council should be used.

Note that even if a cell has less than 10 holdings, no re-allocation should be done *a-priori*. The confidentiality treatment is made by Eurostat.

### The INSPIRE Directive

The INSPIRE Directive aims to create a European Union spatial data infrastructure for the purposes of EU environmental policies and policies or activities which may have an impact on the environment. This European Spatial Data Infrastructure will enable the sharing of environmental spatial information

<sup>(42)</sup> Commission Regulation (EU) No 1089/2010 of 23 November 2010 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards interoperability of spatial data sets and services

among public sector organisations, facilitate public access to spatial information across Europe and assist in policy-making across boundaries.

INSPIRE is based on the infrastructures for spatial information established and operated by the Member States of the European Union. The Directive addresses 34 spatial data themes<sup>(43)</sup> needed for environmental applications.

The Directive came into force on 15 May 2007 and will be implemented in various stages<sup>(44)</sup>, with full implementation required by 2021.

The Statistical Units are one of the themes listed under Annex III of INSPIRE. To be INSPIRE compliant, statistical information at pan-European level (if geo-referenced and if based on a grid) shall use the Equal Area Grid defined in Section 2.2.1 of Annex II of the Regulation (EU) No 1089/2010<sup>(45)</sup> (the INSPIRE implementing act).

Note that INSPIRE does not state which resolution is to be used to present the statistical data, and even multi-resolution is allowed, even if not common for statistical reporting.

### The statistical units theme

The INSPIRE statistical units theme<sup>(46)</sup> is used to inform on the location of statistical data and information. The principle of this theme is to provide stable and identified representations of the statistical units and statistical data refers to these objects through their identifier.

INSPIRE provides recommendations on how to give stable identifiers to statistical unit and use these identifiers to attach statistical information on them. This is particularly important if the responsibility for geometry and statistical data are shared between different institutions e.g mapping agency and statistical offices. Other INSPIRE data specifications such as Population Distribution use this referencing mechanism.

The data model does not intend to harmonise all existing specific statistical units, like census districts, management zones, environmental reporting units, etc.

The philosophy of INSPIRE is to provide an abstract model of statistical units that can then be specialised for specific statistical units (if needed).

### The statistical units grid

The Statistical Units Grid is defined in section 1.4 of Annex IV of Regulation (EU) No 1253/2013 of 21 October 2013 amending Regulation (EU) No 1089/2010 implementing Directive 2007/2/EC as regards interoperability of spatial data sets and services. As mentioned in 1.5 (2), for pan-European usage it uses the ETRS89 Lambert Azimuthal Equal-Area coordinate reference system as defined in section 2.2.1 of Annex II.

Spatial features of any INSPIRE application schema can be considered as a statistical unit, because all can be used as spatial reference. This class is provided to represent features that are used only to disseminate statistical information and that are not included in another INSPIRE application schema, which is the case of the agricultural holding for which IFS is collecting data.

The INSPIRE data model provides two specialisations of the statistical unit class: statistical grid cells, described in the grid package, and vector statistical units, described in the vector package. This means that for obtaining INSPIRE compliant representations, statistical units can be represented either as grid cells or as vector geometries (point, line and polygon).

<sup>(43)</sup> <https://inspire.ec.europa.eu/data-specifications/2892>

<sup>(44)</sup> <https://inspire.ec.europa.eu/inspire-roadmap/61>

<sup>(45)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02010R1089-20131230>

<sup>(46)</sup> <https://inspire.ec.europa.eu/Themes/125/2892>

However, when studying socioeconomic and environmental phenomena such as flooding, commuting, mobility or leisure, a system of grids with equal-size grid cells has many advantages<sup>(47)</sup>:

- grid cells all have the same size allowing for easy comparison
- grids are stable over time
- grids integrate easily with other scientific data (e.g. meteorological information)
- grid systems can be constructed hierarchically in terms of cell size thus matching the study area and
- grid cells can be assembled to form areas reflecting a specific purpose and study area (mountain regions, water catchments)

### The statistical units grid for pan-European applications

Because an important requirement of statistical grids is to be composed of equal area cells, grids based on non-projected coordinate reference systems should be used only on small spaces for which the cells keep comparable sizes.

Because IFS is a pan-European initiative, non-projected coordinate systems are not adequate. For pan-European applications, INSPIRE recognised the need to specify common European grids. The recommended statistical grids follow the recommendation of the INSPIRE data specification document on geographical grid systems (D2.8.I.2) as far as possible.

The data specification document for statistical units (v3.0)<sup>(48)</sup> states a requirement stemming from the INSPIRE implementing act:

- For pan-European usage, the Equal Area Grid defined in Section 2.2.1 of Annex II (of Commission Regulation (EU) N0 1089/2010) shall be used (see box below).

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<sup>(47)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Population\\_grids#Why\\_grid\\_statistics.3F](https://ec.europa.eu/eurostat/statistics-explained/index.php/Population_grids#Why_grid_statistics.3F)

<sup>(48)</sup> <https://inspire.ec.europa.eu/id/document/tg/su>

## Commission Regulation (EU) No 1089/2010

### Annex II

*Requirements for spatial data themes listed in Annex I to Directive 2007/2/EC*

#### 2.2 Grids

The grid specified in section 2.2.1 shall be used in INSPIRE, unless one of the conditions specified in section 2.2.2 holds.

##### 2.2.1. Grid for pan-European spatial analysis and reporting

The grid defined in this Section shall be used as a geo-referencing framework where grids with fixed and unambiguously defined locations of equal-area grid cells are required.

The grid is based on the ETRS89 Lambert Azimuthal Equal Area (ETRS89-LAEA) coordinate reference system with the centre of the projection at the point 52° N, 10° E and false easting:  $x_0 = 4\,321\,000$  m, false northing:  $y_0 = 3\,210\,000$  m.

The origin of the grid coincides with the false origin of the ETRS89-LAEA coordinate reference system ( $x=0$ ,  $y=0$ ).

Grid points of grids based on ETRS89-LAEA shall coincide with grid points of the grid.

The grid is hierarchical, with resolutions of 1m, 10m, 100m, 1 000m, 10 000m and 100 000m.

The grid orientation is south-north, west-east.

The grid is designated as Grid\_ETRS89-LAEA. For identification of an individual resolution level the cell size in metres is appended.

The reference point of a grid cell shall be the lower left corner of the grid cell.

For the unambiguous referencing and identification of a grid cell, the cell code composed of the size of the cell and the coordinates of the lower left cell corner in ETRS89-LAEA shall be used. The cell size shall be denoted in metres ('m') for cell sizes up to 100m or kilometres ('km') for cell sizes of 1 000m and above. Values for northing and easting shall be divided by  $10^n$ , where  $n$  is the number of trailing zeros in the cell size value.

##### 2.2.2. Other Grids

Exceptions, where other grids than that specified in section 2.2.1 may be used, are:

1. Other grids may be specified for specific spatial data themes in this Annex. In this case, data exchanged using such a theme-specific grid shall use standards in which the grid definition is either included with the data, or linked by reference.
2. For grid referencing in regions outside of continental Europe Member States may define their own grid based on a geodetic coordinate reference system compliant with ITRS and a Lambert Azimuthal Equal Area projection, following the same principles as laid down for the grid specified in section 2.2.1. In this case, an identifier for the coordinate reference system shall be created.

#### Coding the statistical grid cell

For the purpose of INSPIRE, statistical grid cells are squares, identified by a single code. The code shall be composed of:

- (1) A coordinate reference system part, represented by the word CRS, followed by the EPSG code.
- (2) A resolution and position part:
  - if the coordinate reference system is projected, the word RES followed by the grid resolution in meters and the letter m. Then, the letter N followed by the northing value in meters, and the letter E followed by the easting value in meters (**CRS**<EPSGcode>**RES**<size>(m | km)**N**<northing>**E**<easting>)
  - if the coordinate reference system is not projected (which is not the case for statistical grids), the word RES followed by the grid resolution in degree-minute-second, followed by the word dms. Then the word LON followed by the longitude value in degree-minute-second, and word LAT followed by the latitude value in degree-minute-second (**CRS**<EPSGcode>**RES**<d> - <m> - <s>dms**LON**<d>-<m>-<s>**LAT**<d> - <m> - <s>)
- For both cases, the given position shall be the position of the lower left cell corner.

### SRID and the EPSG Code

A Spatial Reference System Identifier (SRID) is a unique value used to unambiguously identify projected, unprojected, and local spatial coordinate system definitions. INSPIRE refers to the specific SRID implementation of EPSG (European Petroleum Survey Group).

The recommended grid for pan-European statistical units is based on the ETRS89 Lambert Azimuthal Equal Area (ETRS89-LAEA) coordinate reference system with the centre of the projection at the point 52° N, 10° E and false easting: x 0 = 4 321 000 m, false northing: y 0 = 3 210 000 m.

The EPSG code for this coordinate system is 30 35.

For the purposes of IFS, the ISO-2 code of the country is added as a prefix.

#### Example of codification for a Portuguese cell:

**PT\_CRS3035RES1000mN1760000E2635000**

### The GEOSTAT 2 project

GEOSTAT 2<sup>(49)</sup> "a point based foundation for statistics" was conducted between 2014 and 2016, with the main objective of proposing a model for point-based geocoding infrastructure for statistics, based on geocoded address, building and dwelling. Before this, the Eurostat task force on integration of geography and statistics had already concluded that statistical-geospatial data integration should start at the level of individual statistical records. The project results are to be understood as the implementation guidance for NSI's, mainly as regards principles 1 (use fundamental geospatial infrastructure and geocoding), 2 (geocoded unit record data in a data management environment) and 4 (interoperable data and metadata standards) of the Global Statistical Geospatial Framework (SGF).

In a fundamental sense, a point-based geocoding infrastructure for statistics can be understood as a production setting where a record with X, Y (and Z) coordinates of a location, along with a unique identifier (ID), can be linked to a record with statistical or administrative data which belongs to this point. This process is called "geocoding" of statistics or other data. The actual purpose of the point-based approach is to assign a single coordinate location to each unit record. The term "point-based" should be understood in contrast to "area-based" which appears in traditional surveys and censuses where the population surveyed is assigned to a fixed output area, such as an enumeration district. It

<sup>(49)</sup> <http://www.efgs.info/wp-content/uploads/2017/03/GEOSTAT2ReportMain.pdf>

should be stressed that the proposed shift from an area-based to a point-based approach, only refers to the geocoding infrastructure itself and hence to the collection and processing of statistics. The area-based approach is, and will continue to be, the primary method for the dissemination of statistics.

The characteristics of a point-based geocoding infrastructure encompass the following three generic principles:

- Use of high quality point-based location data, regularly updated with time stamps
- Geocoding of statistical unit, and related statistical information, at unit record level
- Use of standardised identifiers/geocodes to link unit record data with location data

The project authors recognise the special situation of the agricultural holdings, where the simple use of address or building locations risks the production of a non-appropriate spatial representation.

Agricultural holdings may be inappropriately geocoded by using address information when the address location refers to the dwelling of the farmer, rather than to the farm site of the holding. Typically, the farm site and the place of residence of the farmer coincide, but in case the farm site is very different from the residence of the farmer, address geocoding of the agricultural holding may produce erroneous results. Another problem with agricultural holdings is that they represent the "site" of the holding rather than the spatial envelope of the farmstead. In that way, all area features, such as the agricultural land belonging to the holding, will be linked to a single point location. This may potentially cause erroneous outputs if, for example, administrative data on agricultural land linked to point locations is aggregated to grid cells, as a result of which the whole land will be assigned to the grid cell of the holding. The geocoding of agricultural holdings may therefore require alternative location strategies, using Land Parcel Identification System (LPIS) or the collection of location data specifically for the purpose of geocoding the holdings (EFGS & Eurostat, 2017).

### Establishing the geographic location of the holding in the frame

High quality point-based location data should be understood as geospatial information that accurately represents the geographic location of a given phenomenon. The accurate point-based representation of an individual or a dwelling typically requires the use of a geocoded address or building data. Depending on various traditions throughout Europe, the rationale for choosing one of the categories over another may vary between countries. The GEOSTAT 2 project has concluded that it is of less importance whether the geocoding infrastructure is built on address data, building data or cadastral parcel information, as long as it can produce harmonised output with equal quality cross countries.

Hence, the choice of location data objects should rather be guided by the principles of authoritativeness and maturity of the location data, as well as by the potential for long-term temporal maintenance. According to the GEOSTAT 2 survey temporal accuracy and well-managed maintenance policies are rated even higher than the spatial accuracy of location data.

In some Member States, location data frameworks comprise integrated combinations of address information, building or dwelling data and cadastral parcels. Ideally, these objects are consistently and hierarchically linked to each other, enabling a flexible choice of the location data objects to be used, depending on the purpose of the task and the scope of output data.

Geocoding of statistical information at the unit record level means that each statistical unit record included in a dataset should be assigned a high accuracy geocode, i.e. without previous data aggregation or grouping. The geocodes assigned to each statistical unit record need to match the address codes or building codes found in the corresponding location data framework (EFGS & Eurostat, 2017).

### Establishing the geographic location of the holding for transmission to Eurostat

Taking into account the above mentioned limitations for the location of an agricultural holding over a point based infrastructure, for the purposes of IFS the geographical location of a holding is established according to the following criteria, in order of preference:

1. The location of the main agricultural building.  
For livestock farms<sup>(50)</sup> it should be where the livestock is located.  
For **crop**<sup>(51)</sup> and **mixed farms**<sup>(52)</sup> it should be the main building of the holding which is usually located close to the agricultural activities.
2. If there is no agricultural building to which a location of the holding could be attributed:
  - a. The location of the majority of the area of the holding
  - b. The location of the most important parcel chosen by physical size.  
The physical size will be calculated on the number of hectares belonging to that parcel which also belongs to the holding located in a particular area.
  - c. The location of the most important parcel chosen by economic size.  
The economic size will be calculated on the economic significance of the agricultural production on that parcel.  
This criterion is more complex due to the variability over the time on the crop sown or to be sown in the selected parcel and should be avoided as IFS is a structural survey and not a production survey. The following order can be used to decide on the significance of the parcel: intensive production on arable land, permanent crops (fruit trees, berries or olive plantations, vineyards) and finally grassland.
3. The location of the farmer's residence if it is not further than 5 km straight from the farm
4. A combination of the above referred criteria
5. None of the above referred criteria
6. The criteria are not applicable (e.g. only one NUTS3 region in the country)

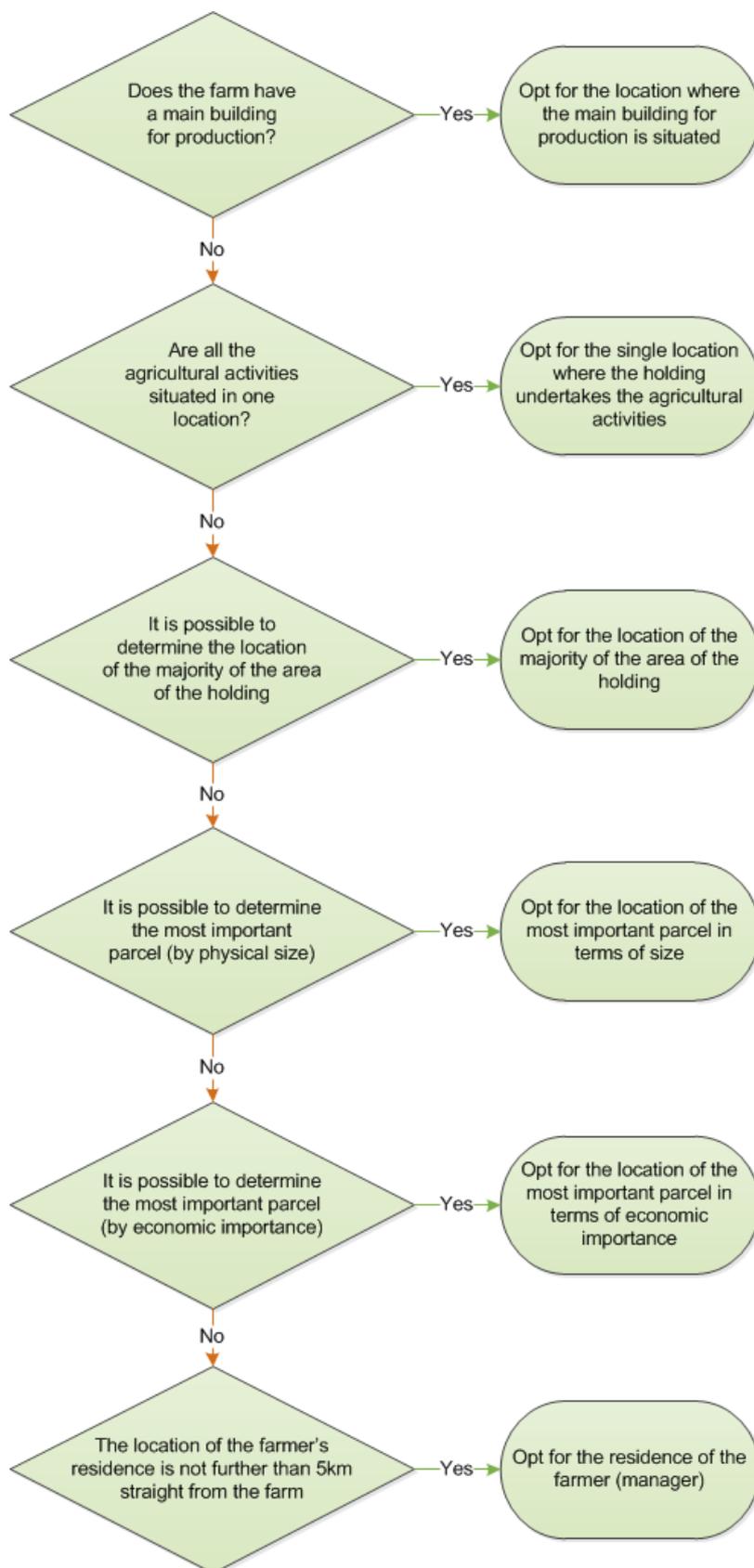
In any case Member States shall provide to Eurostat more detailed information regarding this issue in their quality reports.

<sup>(50)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Livestock-specialist\\_holding](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Livestock-specialist_holding)

<sup>(51)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Crop-specialist\\_holding](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Crop-specialist_holding)

<sup>(52)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Mixed-farming\\_holding](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Mixed-farming_holding)

Figure 11 – Location of the holding



### 3.1.2.2.2 NUTS 3 regions (REGION)

The code of the NUTS 3 region (according to [Regulation \(EC\) No 1059/2003<sup>\(53\)</sup> of the European Parliament and the Council](#)) in which the holding is located.

The list of valid NUTS 3 regions codes is provided with the DSD.

The method for determining the NUTS 3 regions shall be the same method that is used to determine the geographical location.

### 3.1.2.2.3 The agricultural holding has areas designated as facing natural constraints under regulation (EU) No 1305/2013 (REGL\_1305\_2013)

Information on areas facing natural constraints (ANC) is to be provided in line with Article 32 of [Regulation \(EU\) No 1305/2013 of the European Parliament and of the Council<sup>\(54\)</sup>](#).

- L - the agricultural holding is in an area other than a mountainous area, facing significant natural constraints;
- M - the agricultural holding is in a mountainous area
- O - the agricultural holding is in another area affected by specific constraints;
- N - the agricultural holding is not part of an area facing natural constraints

To classify the status of holdings under this item, the following rules are established

- If there is less than 50% of all UAA under areas facing natural constraints, then the holding is assigned to (N) (non-ANC/LFA).
- If there is 50% or more of all UAA under ANC/LFA, then the holding is assigned to the respective code.
  - (M) if the area of "less favoured mountainous area" is equal or larger than the area under other constraints
  - (L) or (O) if the area of "less favoured mountainous area" is less than the area under other constraints

### 3.1.2.3 LEGAL PERSONALITY OF THE HOLDING

Code	Label	Unit
LEG_FORM	Legal personality of the agricultural holding	code

The legal personality of the holding depends on the holder's status. The legal and economic responsibility for the holding is defined according to Member States' own documented rules.

Until survey year 1997, only two types of legal personality of the holding were distinguished: sole holder holdings and legal entities. From 2000 onward, some countries have introduced a third type of holding: holding-groups. For the 2020 census of agriculture a new type of holding (with shared ownership) is added.

#### Holder

The holder of the agricultural holding is the natural person, group of natural persons or legal person on whose account and in whose name the holding is operated and who is legally and economically responsible for the holding, i.e. who takes the economic risks of the holding.

<sup>(53)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1501503881230&uri=CELEX:32003R1059>

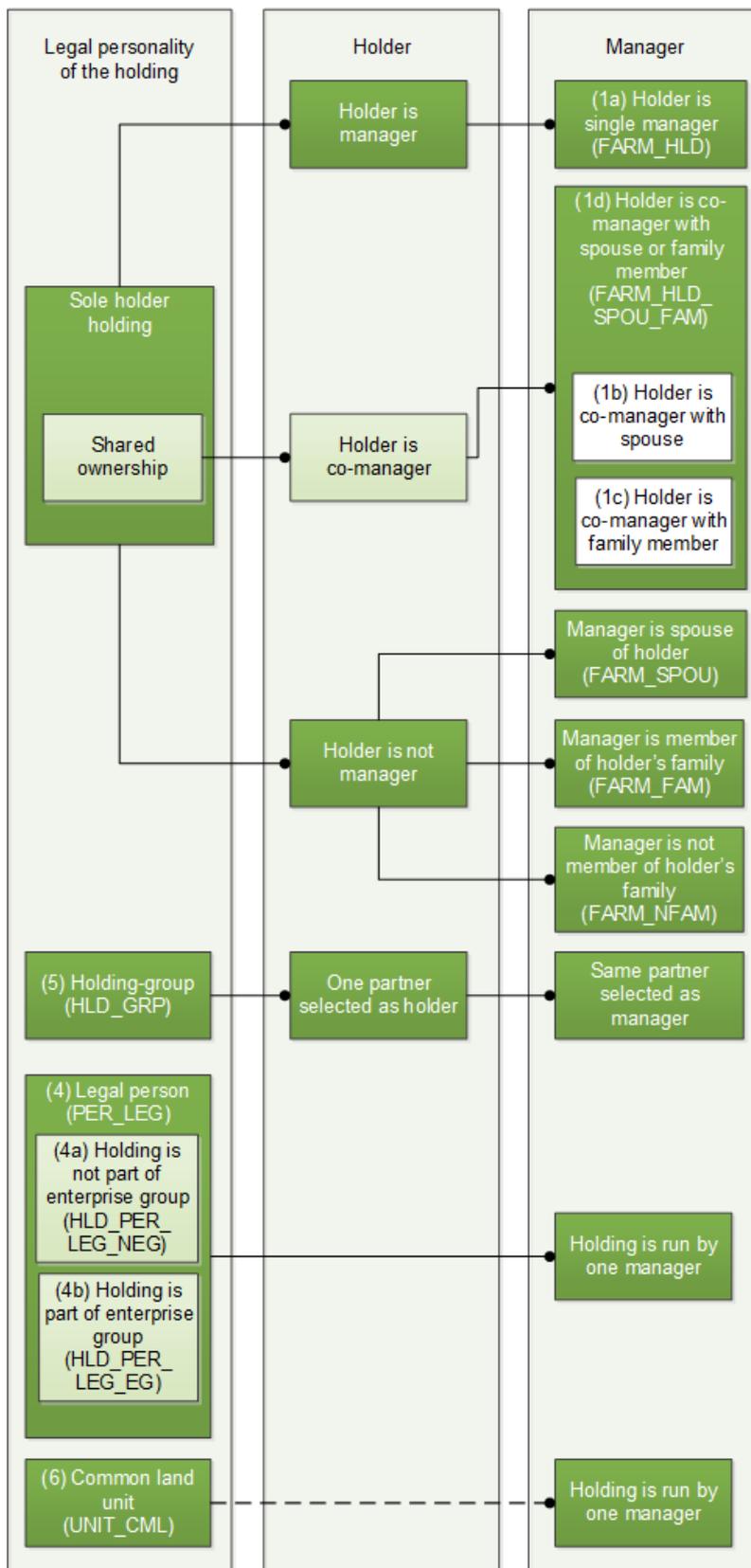
<sup>(54)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1501503921872&uri=CELEX:32013R1305>

The laws of certain Member States treat for fiscal and/or legal reasons a “legal” person (company) as if it were a “natural” person or a group of “natural” persons. These are generally any forms of enterprises where one or all of the members have full personal liability for the debts of the enterprise. In such cases, Member States may attribute such a “legal” person to the classes “sole holders” or “holding-groups”. These choices have to be made using documented rules that are explicit and consistent.

The holder can own the holding outright or rent it or be a hereditary long-term leaseholder or a usufructuary or a trustee.

The holder may have delegated to a manager all or part of the power of the decision-making regarding the normal daily financial and production routines of the holding. In such case it is said to be “holder/not manager”. In the cases where the holder is also the manager it is said to be “holder/manager”.

Figure 12 – Legal personality of the holding and status of the holder and manager



## Holdings

Depending on whether the holder is a “natural” or a “legal” person the holdings are classified under one of the following groups:

- **Sole holder holding**  
Holdings where the holder is a natural person and the sole holder of an independent holding
- **Shared ownership**  
Holdings where the holder is a natural person but where the holding is managed in cooperation with a spouse or family member
- **Holding-group**  
Holdings where the holder is a group of natural persons being a group of partners on a holding-group
- **Legal holding**  
Holdings where the holder is a legal person

### 3.1.2.3.1 Legal personality of the agricultural holding (LEG\_FORM)

The data for legal personality of the holding is to be coded using one of the following options:

- FARM\_HLD – Sole holder who is the single manager (1a)
- FARM\_HLD\_SPOUFAM - Holder is co-manager with spouse or a family member) (1d)
- FARM\_SPOU - Sole holder holding and the holder's spouse is the manager of the holding (2a)
- FARM\_FAM - Sole holder and the manager is a member of the holder's family, but not his spouse (2b)
- FARM\_NFAM - Sole holder who is not the manager, and the manager is not a member of the holder's family (3)
- PER\_LEG\_NEG - The agricultural holding is a legal person which is not part of an enterprise group (4a)
- PER\_LEG\_EG - The agricultural holding is a legal person which is a part of an enterprise group (4b)
- HLD\_GRP - The agricultural holding is a holding-group (5)
- UNIT\_CML - The holding is a common land unit (6)

### 3.1.2.3.2 Natural persons

#### Manager

Manager of the holding is the natural person responsible for the normal daily financial and production routines of running the holding concerned.

There can either be one manager on the holding or the holding can have a holder who is a co-manager with a spouse or family member. The manager is generally, but not necessarily, also the holder. The holder who is a natural person and the sole holder of an independent holding is generally, but not necessarily, also the manager.

In cases where the holder is not the manager, they pass the responsibility of managing the holding to someone else, for example a member of the family, maybe a spouse, or a person with no family ties to the holder.

## Holder or manager?

### Holder / manager

Person who assumes economic and legal responsibility for the holding and undertakes its day-to-day management.

### Holder / not manager

Person who assumes economic and legal responsibility for the holding without undertaking its day-to-day management.

### Manager / not holder

Person who undertakes day-to-day management of the holding without assumption of economic and legal responsibility for it.

### Spouse

For the purpose of IFS, two people living together as conjugal partners, without being married, are also treated as spouses. Member States own national rules on recognising people living together as spouses should be followed.

### Partners of a holding-group

Partner(s) of a holding-group are natural persons owning, renting or otherwise managing together one agricultural holding (shared ownership excluded) or managing together their individual holdings as if they were one holding. Such cooperation must be either in conformity with the law or by written agreement.

If on one holding two or more natural persons carry out the functions of the holder only one of them is shown as such (e.g. the one who bears the greatest share of the risk or who takes the main part in managing the holding. If such criteria still fail, in order to pick out one individual, the choice should be based on some other criteria, such as age).

### 3.1.2.3.3 Legal persons

#### Legal person

A legal person is a legal entity other than a natural person but having the normal rights and duties of an individual, such as the ability to sue or to be sued (a general legal capacity of its own).

### 3.1.2.3.4 Legal personality

#### Sole holder holding

The legal and economic responsibility of the holding is assumed by a single individual and natural person who is the holder of a holding which is not linked to any holdings of other holders, either by common management or similar arrangements.

This holder can take any decisions regarding the holding by him/herself.

The following, inter alia, are to be regarded as sole holders: siblings, joint beneficiaries under a will or intestate, if they have not made an agreement and are not fiscally and/or legally treated as a group holder or as a legal entity according to the laws of the Member State.

If a company (legal person) is owned by only one natural person and is treated as a natural person by the Member State (see explanation of legal personality), it is considered to be a holding with a sole holder.

If only one person has the full legal and economic responsibility for the holding, he/she is considered to be the sole holder, even if the holding otherwise meets the criteria of a holding-group.

### Shared ownership

Shared ownership refers to natural persons, who are the sole holders of an agricultural holding which is not linked to any agricultural holdings of other holders, and who share the ownership and management of the agricultural holding. This includes spouses or close family members (such as siblings or joint beneficiaries under a will or interstate) who own or rent and manage a holding together.

Shared ownership excludes the cases where family members are managing "as a group". Such arrangements no longer form a "sole holder holding" and should be classified as "holding-group".

### Holding-group

A holding group is a company owned, rented or otherwise managed by more than one natural person. Partners can also manage together their individual holdings as if they were one holding. Such cooperation must be either in conformity with the law of a Member State or by written agreement.

If a company (legal person) is owned by more than one natural person and is treated as a natural person by the Member State, it is considered to be a holding-group.

"In conformity with the law" may include oral agreement or "de facto" association depending on the national laws.

Member States who choose not to record information on holding-groups collect all information on all holdings where the holders are natural persons and the holder is also manager, regardless of whether they are "holding-groups" as defined here.

## Holding-groups in Germany

Exceptionally, in Germany it is possible for holdings with only one holder to choose a legal personality of "holding-group"

### Common land agricultural unit

'Common land agricultural unit' means an entity of land on which common rights apply.

They are normally under the responsibility of a public authority (state, parish, etc.) over which another person is entitled to exercise rights of common, and these rights are generally exercisable in common with others.

Common land units are found across Europe, in Greece, Spain, France, Italy, Cyprus, Portugal, Austria, Norway, Bulgaria, Croatia, Hungary, Poland, Romania, Slovenia, Montenegro, Serbia, Ireland, United Kingdom, Iceland and Germany.

Common land consists mainly of permanent grassland, although it could also consist of horticulture or arable land. A large percentage of these areas are used for grazing animals.

## Legal holding

The legal and economic responsibility of the holding is assumed by a legal entity other than a natural person but having the normal rights and duties of an individual, such as the ability to sue or to be sued (a general legal capacity of its own).

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### Includes

- State, regions and municipalities
- Churches and their institutions
- Other similar institutions of public or semi-public character
- Commercial enterprises
- The companies with limited responsibilities, including cooperative enterprises
- All stock corporations (enterprises having issued shares)
- Foundations (bodies administering provided funds for certain purposes that are often social or philanthropic)
- Non stock corporations with limited liabilities
- All other enterprises of similar character

### Excludes

- Sole holder holdings
  - Holding-groups where one or more natural persons is/are a partner
- 

## Enterprise group

According to [Council Regulation \(EEC\) No 696/93<sup>\(55\)</sup>](#), an [enterprise group<sup>\(56\)</sup>](#) is an association of enterprises bound together by legal and/or financial links and controlled by the group head. A group of enterprises can have more than one decision-making centre, especially for policy decisions on production, sales and profits. It may centralize certain aspects of financial management and taxation. It constitutes an economic entity which is empowered to make choices, particularly concerning the units which it comprises.

The group head is a parent legal unit which is not controlled either directly or indirectly by any other legal unit. The subsidiary enterprises of a subsidiary enterprise are considered to be subsidiaries of the parent enterprise.

Legal units include legal persons whose existence is recognized by law independently of the individuals or institutions which may own them or are members of them, such as general partnerships, private limited partnerships, limited liability companies, incorporated companies etc. Legal units as well include natural persons who are engaged in an economic activity in their own right, such as the owner and operator of a shop or a garage, a lawyer or a self-employed handicraftsman.

A multinational enterprise group is defined as an enterprise group composed of at least two enterprises or legal units located in different countries.

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<sup>(55)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31993R0696>

<sup>(56)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Enterprise\\_group](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Enterprise_group)

## Who to choose as holder or manager?

There are different cases where it is possible to have more than one manager in an agricultural holding.

### Holding-groups

The instruction is to choose one person who will be simultaneously the holder and the manager.

### Shared ownership

In shared ownership take one individual as the holder and another as a manager. No information on any eventual third person will be collected. There are no specific rules on whether one or other should be holder or manager, but if it can be determined that one person has “more responsibility” than the other, then the person with more responsibility is to be taken as the holder. In some countries, it happens that this shared ownership is a “parent-child” relation where the parent is the holder and the child takes the day-to-day management, but we do not recommend using age as the single criteria for the choice.

### 3.1.2.4 EU SUPPORT

Code	Label	Unit
BNF_EU_IACS	Holder is beneficiary of EU support for land or animals on the agricultural holding and thus included in the integrated administration and control system (IACS)	code
BNF_CAP_YFARM	Holder is a young farmer or new entrant into farming who has received financial support under the common agricultural policy (CAP) in the previous 3 years	code

#### 3.1.2.4.1 Holder is beneficiary of EU support for land or animals on the agricultural holding and thus included in the integrated administration and control system (BNF\_EU\_IACS)

The holder is an active farmer within the meaning of Article 9 of Regulation (EU) No 1307/2013 of the European Parliament and of the Council<sup>(57)</sup> and the application for a subsidy has been accepted.

- 1 - Yes
- 0 - No

As long as at least one application for subsidy (for any kind of CAP support scheme) was submitted in the past three years, choose 1.

#### 3.1.2.4.2 Holder is a young farmer or new entrant into farming who has received financial support for this purpose under the common agricultural policy (CAP) in the previous 3 years (BNF\_CAP\_YFARM)

The financial support can refer to direct payments under Articles 50 and 51 of Regulation (EU) No 1307/2013 or support provided by rural development programs under Article 19(1)(a)(i) – business start-up aid for young farmers of Regulation (EU) No 1305/2013.

- 1 - Yes

<sup>(57)</sup> Regulation (EU) No 1307/2013 of the European Parliament and of the Council of 17 December 2013 establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy and repealing Council Regulation (EC) No 637/2008 and Council Regulation (EC) No 73/2009 (OJ L347, 21.12.2013, p. 608).

- 0 - No

### 3.1.2.5 FARM WORK OF THE MANAGER OF THE HOLDING

Code	Label	Unit
Y_BIRTH_MAN	Year of birth of the manager of the agricultural holding	date
SEX_MAN	Sex of the manager of the agricultural holding	Code
WH_MAN_AWU_PC	Farm work on the agricultural holding (apart from household work) of the manager of the agricultural holding	%bands AWU
Y_FARM_MAN	Year when classified as manager of agricultural holding	date

#### 3.1.2.5.1 Year of birth of the manager of the agricultural holding (Y\_BIRTH\_MAN)

The year of birth of the manager of the agricultural holding in the format YYYY

#### 3.1.2.5.2 Sex of manager of the agricultural holding (SEX\_MAN)

The sex of the manager of the agricultural holding:

- M – Male
- F – Female

#### 3.1.2.5.3 Farm work on the agricultural holding (apart from household work) of the manager of the agricultural holding (WH\_MAN\_AWU\_PC)

Percentage band of **annual work units (AWU)**<sup>(58)</sup> of **farm work**<sup>(59)</sup> carried out by the manager of the agricultural holding.

- > 0-< 25
- ≥ 25-< 50
- ≥ 50-< 75
- ≥ 75-< 100
- 100

#### Farm work

Farm work is considered as every type of work on the holding which contributes to either

- the activities defined in the [European Statistical Classification of Economic Activities](#)<sup>(60)</sup> (NACE Rev. 2) for crop and animal production and related service activities (see also the definition of [agricultural holding](#)<sup>(61)</sup>)
- maintenance of the means of production, or
- activities directly derived from these productive actions

<sup>(58)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Annual\\_work\\_unit\\_\(AWU\)](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Annual_work_unit_(AWU))

<sup>(59)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Farm\\_work](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Farm_work)

<sup>(60)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Statistical\\_classification\\_of\\_economic\\_activities\\_in\\_the\\_European\\_Community\\_%28NACE%29](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_%28NACE%29)

<sup>(61)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Agricultural\\_holding](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Agricultural_holding)

### Includes

- Organisation and management tasks such as buying and selling or accounting
- Field labour tasks such as ploughing, haymaking or harvesting
- Raising of animals related tasks such as preparation and distribution of feed, milking or care of animals
- All work carried out on the holding in respect of storage, processing and market-preparation of primary agricultural products (ensiling, packing, etc.)
- Maintenance work (on buildings, machinery, installations, etc.)
- Holding own-account transports, as far as this is carried out by the holding's own labour force
- All non-separable non-agricultural secondary activities (activities closely linked to agricultural production which cannot be separated from the main agricultural activity e.g. some instances of wine-processing)

### Excludes

- Work in the households of the holder or manager
- Agricultural activities carried out on other agricultural holdings
- Any forestry, hunting and fishery operation (whether or not carried out on the holding).
- Separable non-agricultural secondary activities (such as the ones mentioned in NACE A01.63 e.g. the processing of agricultural products on the holding; these are classified under other gainful activities directly related to the holding, on the holding)
- Any non-agricultural activity.
- Any other gainful activities carried out by the holder and/or the labour force.

#### 3.1.2.5.4 Year when classified as manager of agricultural holding (Y\_FARM\_MAN)

The year in which the manager of the agricultural holding took up his role

#### 3.1.2.6 TRAINING OF THE MANAGER OF THE HOLDING

Code	Label	Unit
TNG_MAN	Agricultural training of the manager	code
VT_MAN_M12	Manager took vocational training in the last 12 months	code

Farm managers' agricultural training is thought to have among others an influence on the environmental impact of farming.

### 3.1.2.6.1 Agricultural training of manager (TNG\_MAN)

The highest agricultural education level that was obtained by the manager:

- PRACT - only practical agricultural experience; if the manager's experience was acquired through practical work on an agricultural holding.
- BASIC - basic agricultural training; if the manager took any training courses completed at a general agricultural college and/or an institution specialising in certain subjects (including horticulture, viticulture, silviculture, pisciculture, veterinary science, agricultural technology and associated subjects); a completed agricultural apprenticeship is regarded as basic training.
- FULL - full agricultural training; if the manager took any training course continuously for the equivalent of at least 2 years full-time training after the end of compulsory education and completed at an agricultural college, university or other institute of higher education in agriculture, horticulture, viticulture, silviculture, pisciculture, veterinary science, agricultural technology or an associated subject.

### 3.1.2.6.2 Vocational training undertaken by manager during the last 12 months (VT\_MAN\_M12)

If the manager took vocational training, a training measure or activity provided by a trainer or a training institution which has as its primary objective the acquisition of new skills related to the farm activities or activities related directly to the holding or the development and improvement of existing ones.

- M12 – Yes, in the last 12 months
- NVR\_NM12 – Never or not in the last 12 months

### 3.1.2.7 TYPE OF TENURE

Code	Label	Unit
OWN_UAA	Farming on own land	hectares
RENT_UAA	Farming on rented land	hectares
SHROTH_UAA	Share farming or other tenure modes	hectares
CMNL_UAA	Common land	hectares

The type of tenure depends on the situation on a reference day of the year of the survey.

#### Special cases

When single-product holding-groups are treated as independent holdings, the total utilised agricultural area of the single-product holding-group is attributed to the person named as "holder" but given the type of tenure under which it is held by the 'parent' holding.

Utilised agricultural area in co-ownership or leased and worked by several holdings but which does not constitute a single-product holding-group is treated as relating to the parent holding, in accordance with to the ownership ratio.

The type of tenure depends on the current situation: if the area is co-owned by the parent holdings, then it will be recorded as "owner farming", if the area is rented as "tenant farming".

### 3.1.2.7.1 Farming on own land (OWN\_UAA)

Hectares of utilised agricultural area farmed by the agricultural holding and held by the holder as a property or farmed by the holder acting as a usufructuary or heritable long-term leaseholder or under some other equivalent type of tenure.

The utilised agricultural area allotted to a farm worker (for his own cultivation) as part of his wage:

- is allocated to the holding making the allotment if the farm worker uses the means of production of that holding,
- is allocated to the holding of that farm worker if they use their own means of production.

If a parcel has been retained by the former holder when transferring the holding to his successor (heir, tenant, etc.), it is:

- included with the successor's holding if the retained utilised agricultural area is worked in conjunction with the rest of the holding and if in general the same labour force and means of production as for the rest of the holding are employed;
- attributed to the previous holder's holding if normally worked with the labour force and means of production of that holding.

#### **3.1.2.7.2 Farming on rented land (RENT\_UAA)**

Hectares of utilised agricultural area rented by the agricultural holding in return for a fixed rent agreed in advance (in cash, kind or otherwise), and for which there is a (written or oral) tenancy agreement. The utilised agricultural area is allocated to only one agricultural holding. If the utilised agricultural area is rented out to more than one agricultural holding during the reference year, it is normally allocated to the agricultural holding with which it is associated on the survey reference day or which used it for the longest period during the reference year.

The rented area can consist of:

- a complete holding
- individual parcels of utilised agricultural area

## Includes

- Area of the parcels of the utilised agricultural area rented by the holder from members of the holder's family if this area is farmed as part of the holding being surveyed in question
- Utilised agricultural area belonging to another holding but worked by the surveyed holding in question in return for a certain number of hours of labour. A tenancy agreement of the type envisaged here will specify not only the utilised agricultural area concerned but also where it is and its exact boundaries
- Area of parcels of "common land" which are recorded for the surveyed holding, but only if this holding pays for its use

## Excludes

- Utilised agricultural area put at the disposal of a farm worker as a form of wage (which generally remains within the crop rotation system of the holding). This is to be recorded under "owner farming" (Check the referred this item for information about the holding to which this area is attributed)
- Utilised agricultural area which has been sublet by the surveyed holding in question to a third party. This is to be included as a part of this third party's holding, as area under "tenant farming"
- Utilised agricultural area rented and used by the surveyed holding in question for which a rent is not fixed in advance. This is to be recorded under "Share farming or other modes" in particular "other modes"

### 3.1.2.7.3 Share farming or other tenure modes (SHROTH\_UAA)

Hectares of utilised agricultural area which is:

- shared, meaning farmed in partnership by the landlord and the sharecropper under a written or oral share-farming contract. The output (either economic or physical) of the share cropped area is shared between the two parties on an agreed basis
- under other modes of tenure not covered elsewhere under the previous items

#### Share farming

Share-farmed agricultural area is the utilised agricultural area (which may constitute a complete holding) farmed in partnership by the landlord and the sharecropper under a written or oral share-farming contract. The output (either economic or physical) of the share cropped area is shared between the two parties on an agreed basis.

**Includes**

- The "colonia parziaria" contract, where the landlord entrusts an entire agricultural holding to the head of a family, who undertakes to carry out with the aid of the members of his family all the work required on the holding, to bear part of the outgoings and to divide the farm's production with the landlord in fixed proportions. The share farmer is shown as the holder and not the landlord.

**Other tenure modes**

Utilised agricultural area used under other modes of tenure is the utilised agricultural area not covered elsewhere under the previous items.

**Includes**

- Utilised agricultural area over which the holder enjoys rights by virtue of his occupancy of a particular post (forester, priest, teacher, etc.)
- Utilised agricultural area over which the holder enjoys rights allotted by the parish or other organisation
- Utilised agricultural area which the holding works free of any charge (without paying any rent) (e.g. areas from derelict holdings being worked by the holding in question)
- "Colonia parziaria" applied to individual parcels of the utilised agricultural area, whereby the landlord entrusts one or more parcels of the utilised agricultural area to the head of a family under the same conditions as described above

**3.1.2.7.4 Common land (CMNL\_UAA)**

Hectares of utilised agricultural area used by the agricultural holding but not belonging directly to it, i.e. on which common rights apply.

For the purposes of IFS, **common land**<sup>(62)</sup> is **utilised agricultural area (UAA)**<sup>(63)</sup> owned by a public authority (state, parish, etc.) over which another person is entitled to exercise rights of common, and these rights are generally exercisable in common with others.

As the land of common land units can also be used by other agricultural holdings for agricultural production, in such cases it should be allocated to the respective holdings (in the same manner that rented land is no longer considered as part of the holding of the owner, but as part of the holding of the tenant).

<sup>(62)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Common\\_land](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Common_land)

<sup>(63)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Utilised\\_agricultural\\_area\\_\(UAA\)](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Utilised_agricultural_area_(UAA))

## Includes

- Common land as utilised agricultural area, not rented by the agricultural holding (implying that the holding might not pay for its use)

## Excludes

- Common land as utilised agricultural area if the holding rents a specified area and pays for it (normally a written or oral agreement exists)
- Common land that is not used for agriculture

At the FSS Working Group in October 2017, Eurostat proposed that the utilised agricultural area from the common land units should be allocated to the agricultural holdings using this land (in case such information is lacking also allocation to neighbouring farms would be possible) in order that the “virtual” common land units could be removed from data dissemination. The Working Group could not conclude on the proposal; however Eurostat strongly encouraged Member States to implement it before submitting data.

An example of allocation of land from common land units using proportional allocation on the basis of number of livestock at the lowest available geographical breakdown is given in Annex II.

The methods to assign the hectares to a holding using common land are the following:

- Proportionally to the use by each holding. This is the preferred method to measure the common land. In this option, the area of common land used by a specific holding should be included in the UAA area of this holding. The area assigned to a particular holding should be determined proportionally (on acreage or LSU basis). This option can be used if there is a guarantee of no double counting of the area. An example on how to allocate common land is given in Annex II.
- Assigned to the common land unit as long as this unit fulfils the other criteria defining an agricultural holding.
- Common land units with no agricultural activity of their own are not to be collected (see definition of agricultural holding).

Countries will explain in detail the methods and sources used to collect the data on common land in their quality reports.

### 3.1.2.8 ORGANIC FARMING AND OTHER CERTIFICATION SCHEMES

Code	Label	Unit
ORG	Organic farming	code
UAAXK0000_ORGF	UAA fully converted to organic farming	hectares
UAAXK0000_ORGU	UAA in conversion to organic farming	hectares
ENVCERT_OTH	Participation in other environmental certification schemes	code

#### 3.1.2.8.1 Organic farming (ORG)

The agricultural holding has production which falls under agricultural practices according to certain set standards and rules specified in (i) [Council Regulation \(EC\) No 834/2007](#) or Regulation (EU) 2018/848 of the European Parliament and of the Council or, where applicable, in the most recent legislation, and (ii) the corresponding national implementing rules for organic production.

- Yes
- No

The regulation sets up a harmonised framework for the labelling, production and control of agricultural products bearing or intended to bear indications referring to organic production methods. According to Article 11 of [Council Regulation \(EC\) No 834/2007](#), (or again in Article 9 (7) of Regulation (EU) 2018/848) a holding may be split up into clearly separated units which are not all managed under organic production. As regards animals, different species shall be involved. As regards plants, different varieties that can be easily differentiated shall be involved.

Where not all units of a holding are used for organic production, the operator shall keep the utilised agricultural area, animals, and products used for, or produced by, the organic units separate from those used for, or produced by, the non-organic units and keep adequate records to show the separation.

In the case where organic farming production methods are only applied on part of the utilised agricultural area or livestock of the holding, only those specific areas and livestock are to be recorded here.

National standard and rules are allowed if they respect [Council Regulation \(EC\) No 834/2007](#). If it is the case, the Member State shall provide Eurostat with the description of such differences in their quality reports.

#### **3.1.2.8.2 The total UAA of the agricultural holding on which organic farming production methods are applied and certified according to national or European Union rules (UAAXK0000\_ORGF)**

Hectares of the utilised agricultural area of the agricultural holding on which the production method applied is fully compliant with the principles of organic production at farm level, as set out in:

- [Regulation \(EC\) No 834/2007](#) or
- [Regulation \(EU\) 2018/848](#) or
- where applicable, in the most recent legislation
- the corresponding national implementing rules for certification of organic production

Both [Regulation \(EC\) No 834/2007](#) and Regulation (EU) 2018/848 distinguish between utilised agricultural areas that are in full compliance with the specified rules and those that are still in a conversion period. Only products that originate from utilised agricultural areas that have been fully converted to the principles of organic production can be marketed with a label that refers to the organic production methods.

Under this item only the utilised agricultural area that has completed the conversion period is recorded.

Organic kitchen gardens are not included in the totals.

#### **3.1.2.8.3 The total UAA of the agricultural holding that is under conversion to organic farming production methods to be certified according to national or European Union rules (UAAXK0000\_ORGU)**

Hectares of the utilised agricultural area of the agricultural holding on which organic farming methods are applied during the transition from non-organic to organic production within a given period ('conversion period') as set out in:

- [Regulation \(EC\) No 834/2007](#) or,
- [Regulation \(EU\) 2018/848](#) or,
- where applicable, in the most recent legislation

- the corresponding national implementing rules for certification of organic production

Under this item is recorded only the utilised agricultural area that has not gone through the whole conversion period but is allowed according to article 17 of [Regulation \(EC\) No 834/2007](#).

### 3.1.2.8.4 Participation in other environmental certification schemes (ENVCERT\_OTH)

The holding participates in national or regional environmental certification schemes referred in Annex IX of [Regulation \(EU\) No 1307/2013](#) of the European Parliament and of the Council of 17 December 2013 establishing rules for direct payments to farmers under support schemes within the framework of the common agricultural policy ("current certification schemes equivalent to the greening payment of CAP").

- Yes
- No

The measures mentioned in Annex IX of [Regulation \(EU\) No 1307/2013](#) include practices which are equivalent to crop diversification and crop rotation, coverage of soil in winter, catch crops, management of meadows or pastures, extensive grazing systems, and ecological focus areas (set-aside, buffer zones for high nature value areas, uncultivated buffer strips and field margins, borders managed for wildlife or specific fauna, management of landscape features, keeping peaty or wet soils under grass, production without use of fertilisers and/or plant protection products, conversion of arable land into extensively used land).

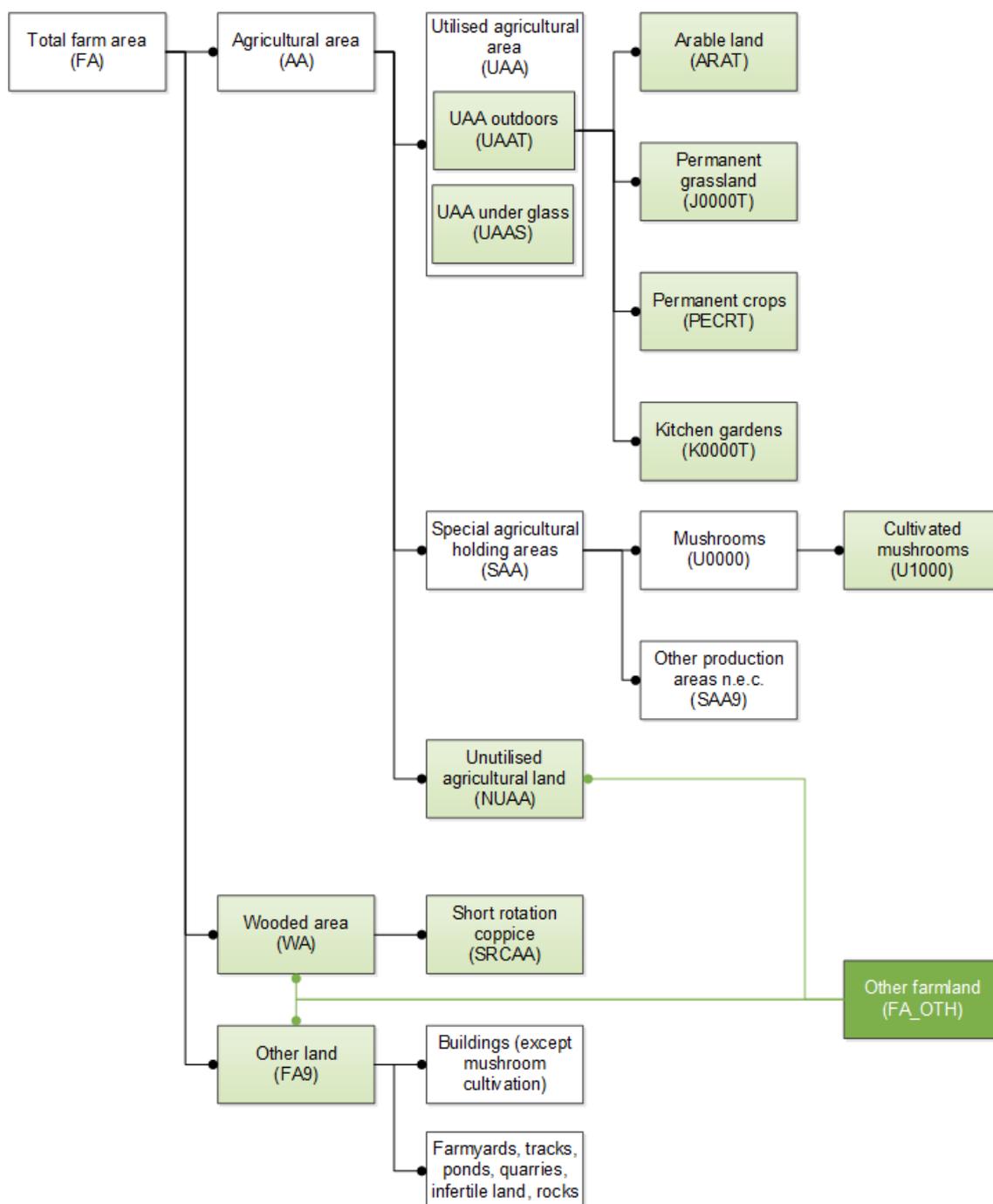
## 3.1.3 Variables of land

### 3.1.3.1 AREA OF THE AGRICULTURAL HOLDING

#### 3.1.3.1.1 Total area of the agricultural holding

The total area of the holding (or total farm area) consists of the utilised agricultural area (arable land, permanent grassland, permanent crops and kitchen gardens), special agricultural holding areas and other farmland (unutilised agricultural land, wooded area and other land not elsewhere classified).

Figure 13 – Total farm area (FA) general hierarchy



### 3.1.3.2 UTILISED AGRICULTURAL AREA

Code	Label	Unit
UAAT	Utilised agricultural area	hectares

#### 3.1.3.2.1 Utilised agricultural area (UAAT)

Hectares of utilised agricultural area.

The utilised agricultural area is the total area taken up by arable land, permanent grassland, permanent crops and kitchen gardens used by the holding, regardless of the type of tenure or of whether it is used as a part of common land.

It refers only to utilised agricultural area outdoors.

### Includes

- Arable land
- Permanent grassland
- Permanent crops
- Kitchen gardens

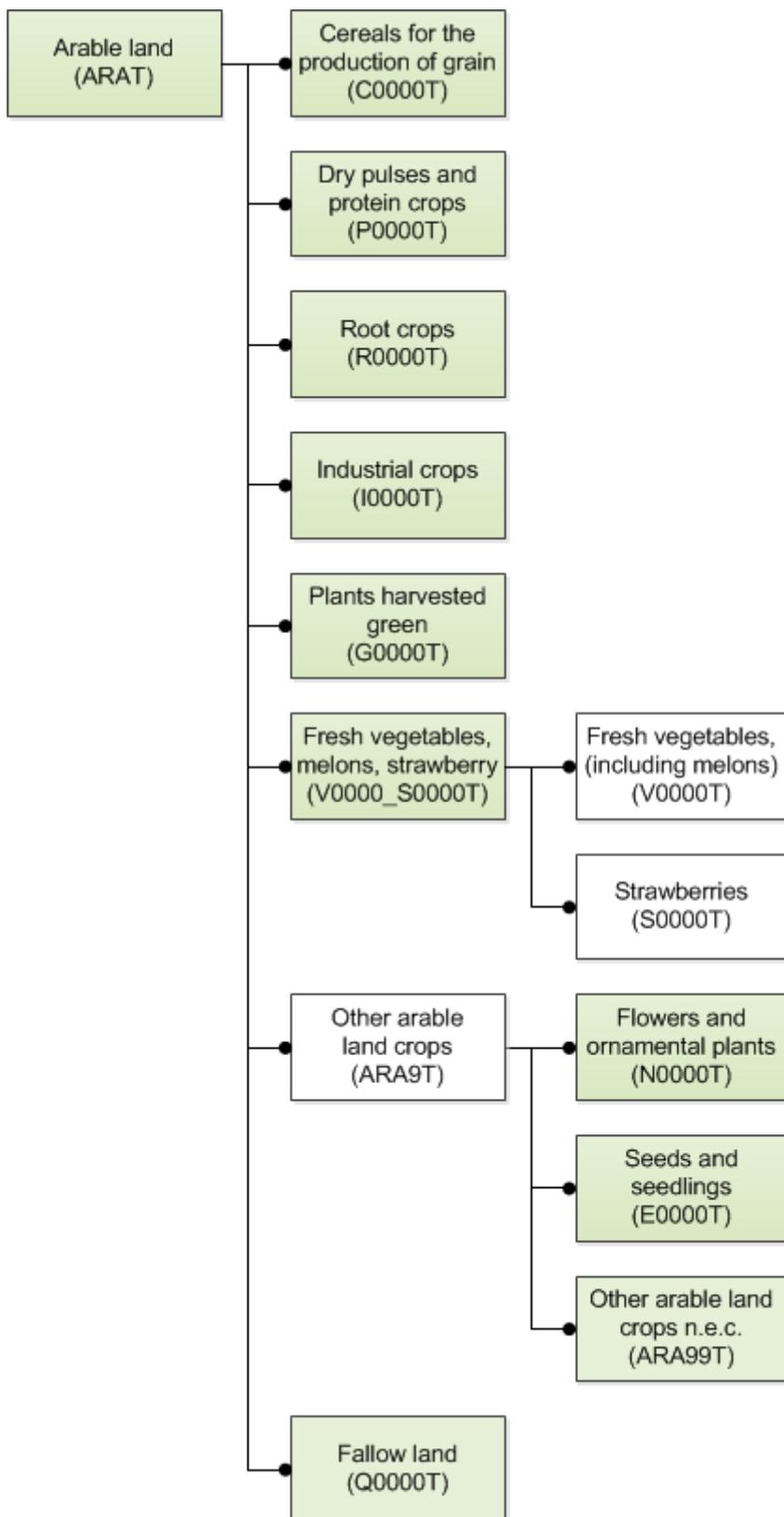
### Excludes

- Mushrooms (U0000)
- Unutilised agricultural land (NUAA)
- Woodland (WA)
- Other land, occupied by buildings, farmyards, tracks, ponds, etc. (FA9)
- Utilised agricultural area which is a property of the owner but is leased or rented to someone else
- Common land which is not used (NUAA)
- Utilised agricultural area under glass or high accessible cover (UAAS)

### 3.1.3.3 ARABLE LAND

Code	Label	Unit
ARAT	Arable land	hectares

Figure 14 – Arable land hierarchy



### 3.1.3.3.1 Arable land (ARAT)

Hectares of land worked (ploughed or tilled) regularly, generally under a system of crop rotation.

For the purpose of IFS the arable land outdoor and the arable land under glass or high accessible cover are collected separately.

#### Crop rotation

Crop rotation is the practice of alternating crops grown on a specific field in a planned pattern or sequence in successive crop years so that crops of the same species are not grown without interruption on the same field. In a rotation the crops are normally changed annually, but they can also be multi-annual.

Although there is no limit to the number of crops that are used in a rotation, nor in the amount of time that a rotation takes to complete, it is commonly accepted to use a threshold of 5 years to separate arable land from permanent crops or permanent grassland. This means that if a plot is used for the same crop for 5 years or more, without in the meantime removing the preceding crop and establishing a new one, then this plot is not considered to be in crop rotation and therefore is not to be taken as part of arable land.

#### Special cases

There are crops that do not fit this pattern, and that are treated differently. For example hops has been chosen to always be an arable crop, despite being perennial and often being renewed at intervals beyond 5 years, and berries are considered permanent crops despite being renewed sometimes annually.

#### Includes

- Land under temporary agricultural crops, with multi-cropped areas counted only once
- Land that has been left fallow for less than 5 years
- Certain crops which are usually treated as vegetables, as ornamental plants or as industrial plants, such as asparagus, roses, decorative shrubs cultivated for their blossom or leaves, strawberries or hops even if they might occupy the land for more than 5 years
- Areas with energy crops (for the production of biofuels or other renewable energy) that can be occupying the arable land for much more than 5 years such as *Miscanthus* spp.

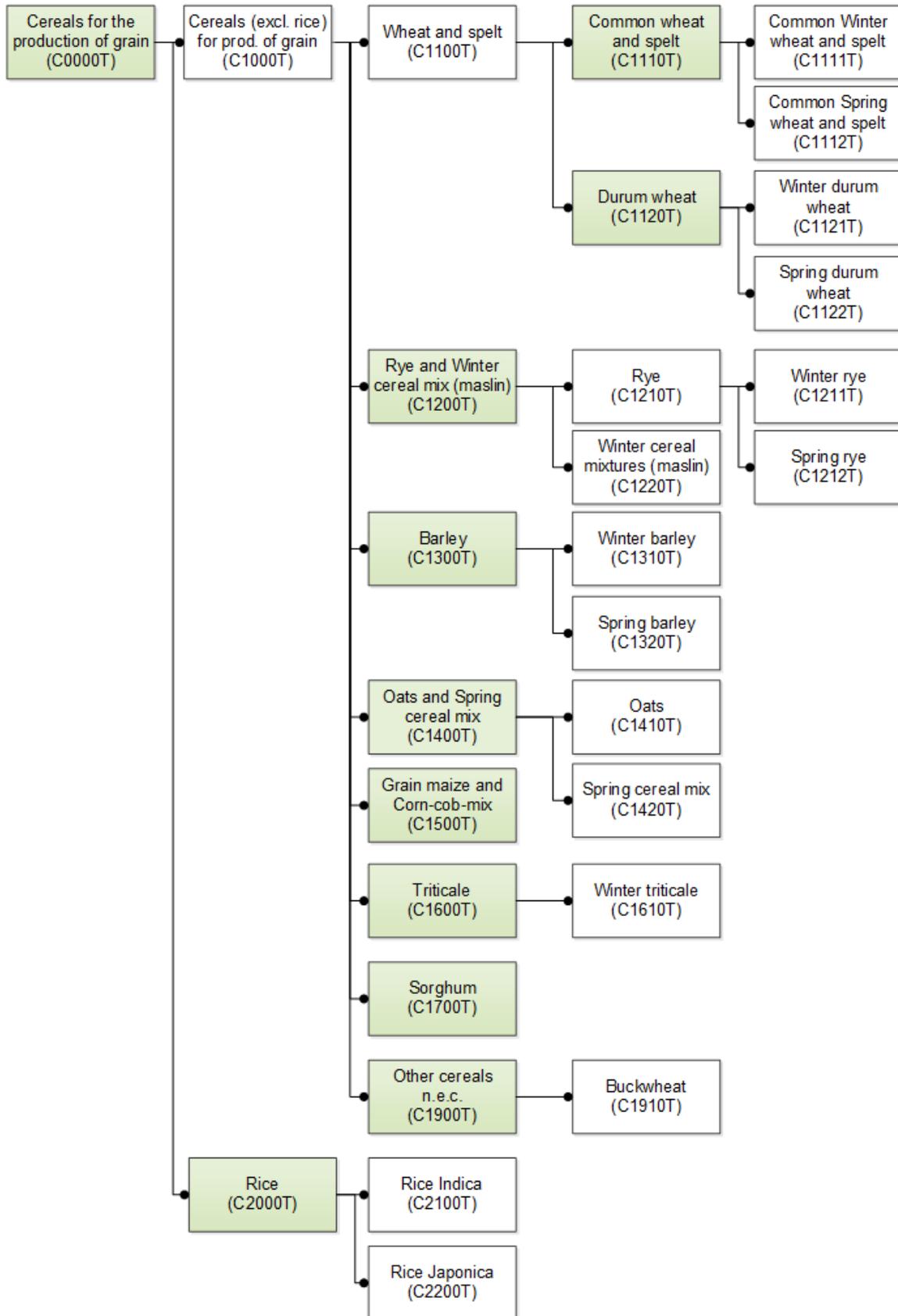
#### Excludes

- Arable land under glass or high accessible cover (ARAS)
- Berries plantations even if their permanence on the plot is less than 5 years (PECR)
- Land that has been definitely taken out of cultivation even if less than 5 years have passed since it was last cropped
- Cultivated mushrooms (U1000)

**3.1.3.4 CEREALS**

<b>Code</b>	<b>Label</b>	<b>Unit</b>
C0000T	Cereals for the production of grain (including seed)	hectares
C1110T	Common wheat and spelt	hectares
C1120T	Durum wheat	hectares
C1200T	Rye and winter cereal mixtures (maslin)	hectares
C1300T	Barley	hectares
C1400T	Oats and spring cereal mixtures (mixed grain other than maslin)	hectares
C1500T	Grain maize and corn-cob-mix	hectares
C1600T	Triticale	hectares
C1700T	Sorghum	hectares
C1900T	Other cereals not elsewhere classified (buckwheat, millet, canary seed, etc.)	hectares
C2000T	Rice	hectares

Figure 15 – Cereals hierarchy



**3.1.3.4.1 Cereals for the production of grain (including seed) (C0000T)**

Hectares of all cereals harvested dry for grain, regardless of use.

Cereals are annual plants, generally of the graminaceous family, yielding grains used for food, feed, seed and industrial purposes such as production of ethanol.

## Includes

- Buckwheat<sup>(64)</sup> (*Fagopyrum esculentum* Mill.)
- Barley (*Hordeum vulgare* L.)
- Canary seed (*Phalaris canariensis* L.)
- Common wheat (*Triticum aestivum* L. emend. Fiori et Paol.)
- Durum wheat (*Triticum durum* Desf.)
- Einkorn wheat (*Triticum monococcum* L.)
- Emmer wheat (*Triticum dicoccum* Schrank ex Schübl.)
- Grain maize (*Zea mays* L. and *Zea mays everta*)
- Millet (*Panicum miliaceum* L.)
- Oats (*Avena sativa* L.)
- Perennial sorghum (*Sorghum x sudanense* (Piper) Stapf.)
- Quinoa<sup>(65)</sup> (*Chenopodium quinoa* Wild.)
- Rice (*Oryza sativa* L.)
- Rye (*Secale cereale* L.)
- Sorghum (*Sorghum bicolor* (L.) Conrad Moench)
- Spelt (*Triticum spelta* L.)
- Triticale (*x Triticosecale* Wittmack)
- Cereals seeds
- Cereal grains harvested just before maturity
- Cereals used for renewable energy production
- Rye and winter cereal mixtures (maslin)
- Spring cereal mixtures (mixed grain, other than maslin)

## Excludes

- Maize harvested green (G3000)
- Cereals (excluding maize) harvested green or yellow as whole plant for fodder, or renewable energy (G9100)
- Sweet corn cobs for human consumption (V0000\_S0000; V3900 in ACS)

<sup>(64)</sup> Buckwheat is part of the Polygonaceae family, but as it is grown as a grain crop, it is common to consider it a pseudocereal

<sup>(65)</sup> Quinoa is not a grass (botanically it is part of the *Amaranthaceae* family), but as it is grown as grain crop, it is common to consider it a pseudocereal

#### 3.1.3.4.2 Common wheat and spelt (C1110T)

Hectares of *Triticum aestivum* L. emend. Fiori et Paol., *Triticum spelta* L. and *Triticum monococcum* L.

##### Includes

- Common wheat (*Triticum aestivum* L. emend. Fiori et Paol.)
- Einkorn wheat (*Triticum monococcum* L.)
- Emmer wheat (*Triticum dicoccum* Schrank ex Schübl.)
- Spelt (*Triticum spelta* L.)
- Cereal grains harvested just before maturity

##### Excludes

- Durum wheat (*Triticum durum* Desf.) (C1120)
- Cereals harvested green or yellow as whole plant for fodder or renewable energy (G9100)

#### 3.1.3.4.3 Durum wheat (C1120T)

Hectares of *Triticum durum* Desf.

##### Includes

- Cereal grains harvested just before maturity

##### Excludes

- Cereals harvested green or yellow as whole plant for fodder or renewable energy (G9100)

#### 3.1.3.4.4 Rye and winter cereal mixtures (maslin) (C1200T)

Hectares of rye (*Secale cereale* L.) sown any time, mixtures of rye and other cereals and other cereal mixtures sown before or during the winter (maslin).

##### Includes

- Rye (*Secale cereale* L.)
- Rye and winter cereal mixtures (maslin)
- Cereal grains harvested just before maturity

##### Excludes

- Cereals harvested green or yellow as whole plant for fodder or renewable energy (G9100)

#### 3.1.3.4.5 Barley (C1300T)

Hectares of barley (*Hordeum vulgare* L.)

##### Includes

- Cereal grains harvested just before maturity

##### Excludes

- Cereals harvested green or yellow as whole plant for fodder or renewable energy (G9100)

#### 3.1.3.4.6 Oats and spring cereal mixtures (mixed grain other than maslin) (C1400T)

Hectares of oats (*Avena sativa* L.) and other cereals, sown in the spring and grown as mixtures and harvested as dry grain, including seed.

##### Includes

- Cereal grains harvested just before maturity

##### Excludes

- Cereals harvested green or yellow as whole plant for fodder or renewable energy (G9100)

#### 3.1.3.4.7 Grain maize and corn-cob-mix (C1500T)

Hectares of maize (*Zea mays* L.) harvested for grain, as seed or as corn-cob-mix.

##### Includes

- Grain maize harvested by hand, corn-picker, corn-sheller or combine harvester, regardless of the use, including grain for silage
- Grain harvested together with parts of the cob, but with humidity higher than 20% and used for silage (so called corn-cob-mix, CCM – humidity 30-35%)
- Maize for pop-corn (*Zea mays everta*)

##### Excludes

- Sweet corn cobs for human consumption (V0000\_S0000; V3900 in ACS)
- Maize harvested green as whole plant for fodder or renewable energy use (humidity of 65-70%) (G3000)

#### 3.1.3.4.8 Triticale (C1600T)

Hectares of triticale (*x Triticosecale* Wittmack)

##### Includes

- Cereal grains harvested just before maturity

##### Excludes

- Cereals harvested green or yellow as whole plant for fodder or renewable energy (G9100)

#### 3.1.3.4.9 Sorghum (C1700T)

Hectares of sorghum (*Sorghum bicolor* (L.) Conrad Moench or perennial sorghum (*Sorghum x sudanense* (Piper) Stapf.)

##### Includes

- Cereal grains harvested just before maturity

##### Excludes

- Cereals harvested green or yellow as whole plant for fodder or renewable energy (G9100)

### 3.1.3.4.10 Other cereals not elsewhere classified (buckwheat, millet, canary seed, etc.) (C1900T)

Hectares of cereals, harvested dry for grain, and which are not recorded elsewhere under the previous items such as millet (*Panicum miliaceum* L.), buckwheat (*Fagopyrum esculentum* Mill.), canary seed (*Phalaris canariensis* L.) and other cereals not elsewhere classified (n.e.c.).

#### Includes

- Cereal grains harvested just before maturity

#### Excludes

- Cereals harvested green or yellow as whole plant for fodder or renewable energy (G9100)

### 3.1.3.4.11 Rice (C2000T)

Hectares of rice (*Oryza sativa* L.)

Refers to all rice, regardless of having longer grains, or short and roundish grains.

#### Includes

- Basmati rice
- Jasmine rice
- Ordinary rice
- Glutinous rice

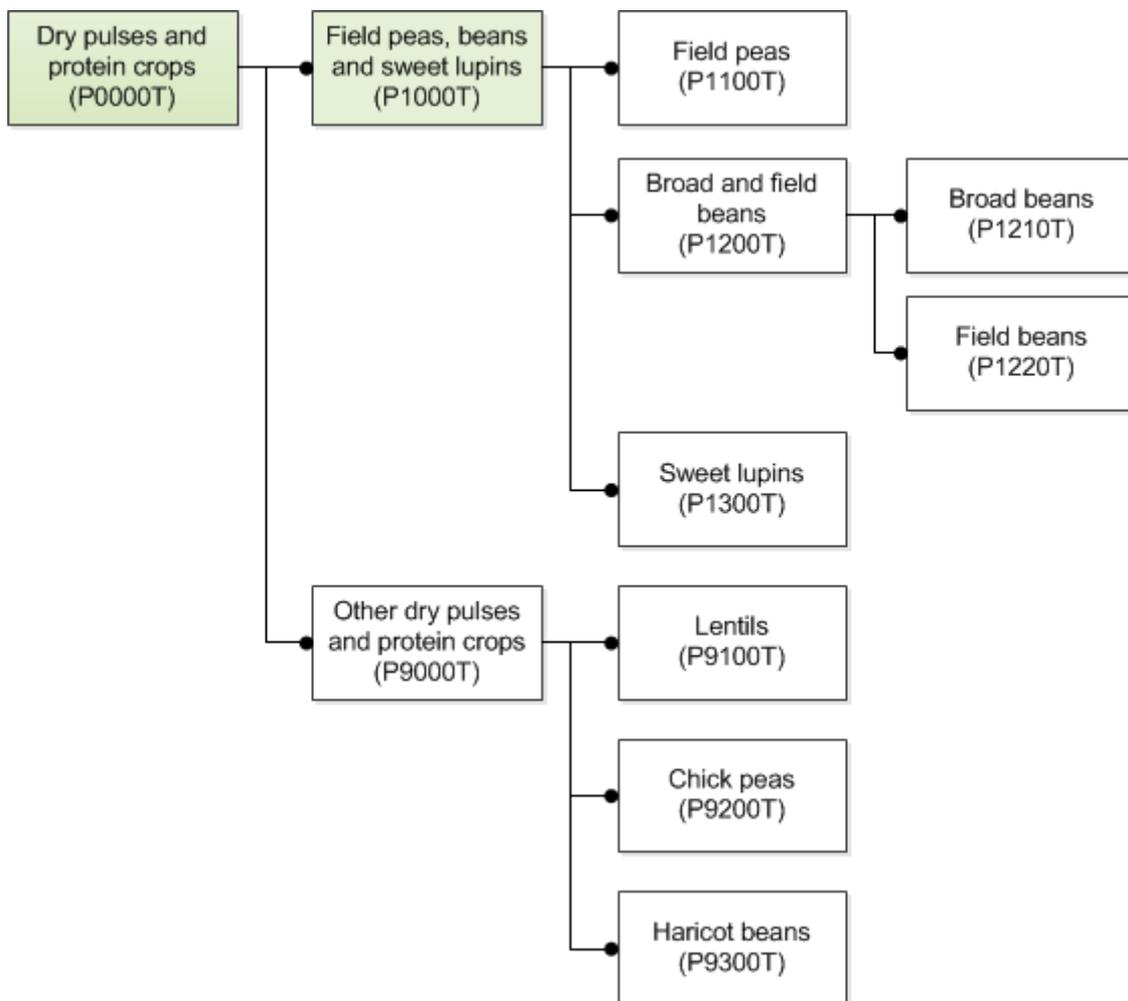
### 3.1.3.5 DRY PULSES

Code	Label	Unit
P0000T	Dry pulses and protein crops for the production of grain (including seed and mixtures of cereals and pulses)	hectares
P1000T	Field peas, beans and sweet lupins	hectares

Dry pulses are crops sown and harvested mainly for their protein content.

This heading should be limited to crops harvested for dry grain only and excluding crops harvested green for forage, used as grazing or as green manure.

Figure 16 – Dry pulses and protein crops hierarchy



### 3.1.3.5.1 Dry pulses and protein crops for the production of grain (including seed and mixtures of cereals and pulses) (P0000T)

Hectares of dried pulses and protein crops harvested dry for grain, regardless of use

#### Includes

- Field peas (*Pisum sativum* L. convar. *sativum* or *Pisum sativum* L. convar. *arvense* L. or convar. *speciosum*)
- Broad and field beans (*Faba vulgaris* (Moench) syn. *Vicia faba* L. (partim))
- Sweet lupins (*Lupinus* spp.)
- Dry common beans / French beans / haricot beans (*Phaseolus vulgaris* L.)
- Runner beans (*Phaseolus coccineus* L.)
- Lentils (*Lens culinaris* Medikus (syn. *esculenta*, syn. *Ervum lens* syn. *Lens orientalis* L.)
- Chickling vetch (*Lathyrus cicera* L.)
- Chick peas (*Cicer arietinum* L.)
- Vetches (*Vicia sativa* L, *Vicia pannonica* Crants, *Vicia villosa* Roth syn. *Vicia varia* Host)
- All pulses and protein crops harvested dry for grain, regardless of the use
  - dry pulses used for fodder
  - dry pulses used for human consumption
  - dry pulses used for renewable energy production
- Other protein crops sown in pure crops or as mixtures with cereals harvested dry for grain

#### Excludes

- Protein crops harvested green (not dry) if they are used for human consumption, such as fresh beans or fresh peas (V0000\_S0000; V5000 in ACS)
- Protein crops harvested green (not dry) if the whole plant is harvested green and used for fodder, renewable energy or other purposes (G2000)

### 3.1.3.5.2 Field peas, beans, and sweet lupins (P1000T)

Hectares of all varieties of field peas (*Pisum sativum* L. convar. *sativum* or *Pisum sativum* L. convar. *arvense* L. or convar. *speciosum*) harvested dry for grain, plus hectares of all varieties of broad or field beans (*Vicia faba* L. (partim)) harvested dry for grain, plus hectares of all sweet lupins (*Lupinus* spp.) harvested dry for grain, including seed, regardless of their use

Sweet lupins mean those varieties of lupins producing seed comprising not more than 5 % bitter seeds. The bitter seed content shall be calculated in accordance with the test set out in Annex II to Commission Regulation (EC) No 1121/2009<sup>(66)</sup> or, where applicable, the most recent legislation.

<sup>(66)</sup> <https://publications.europa.eu/en/publication-detail/-/publication/13f80eb2-2034-4608-861c-6f8ee816798d/language-en>

**Includes**

- Field peas (*Pisum sativum* L. convar. *sativum* or *Pisum sativum* L. convar. *arvense* L. or convar. *speciosum*)
- Broad and field beans (*Faba vulgaris* (Moench) syn. *Vicia faba* L. (partim))
- Sweet lupins (*Lupinus* spp.)

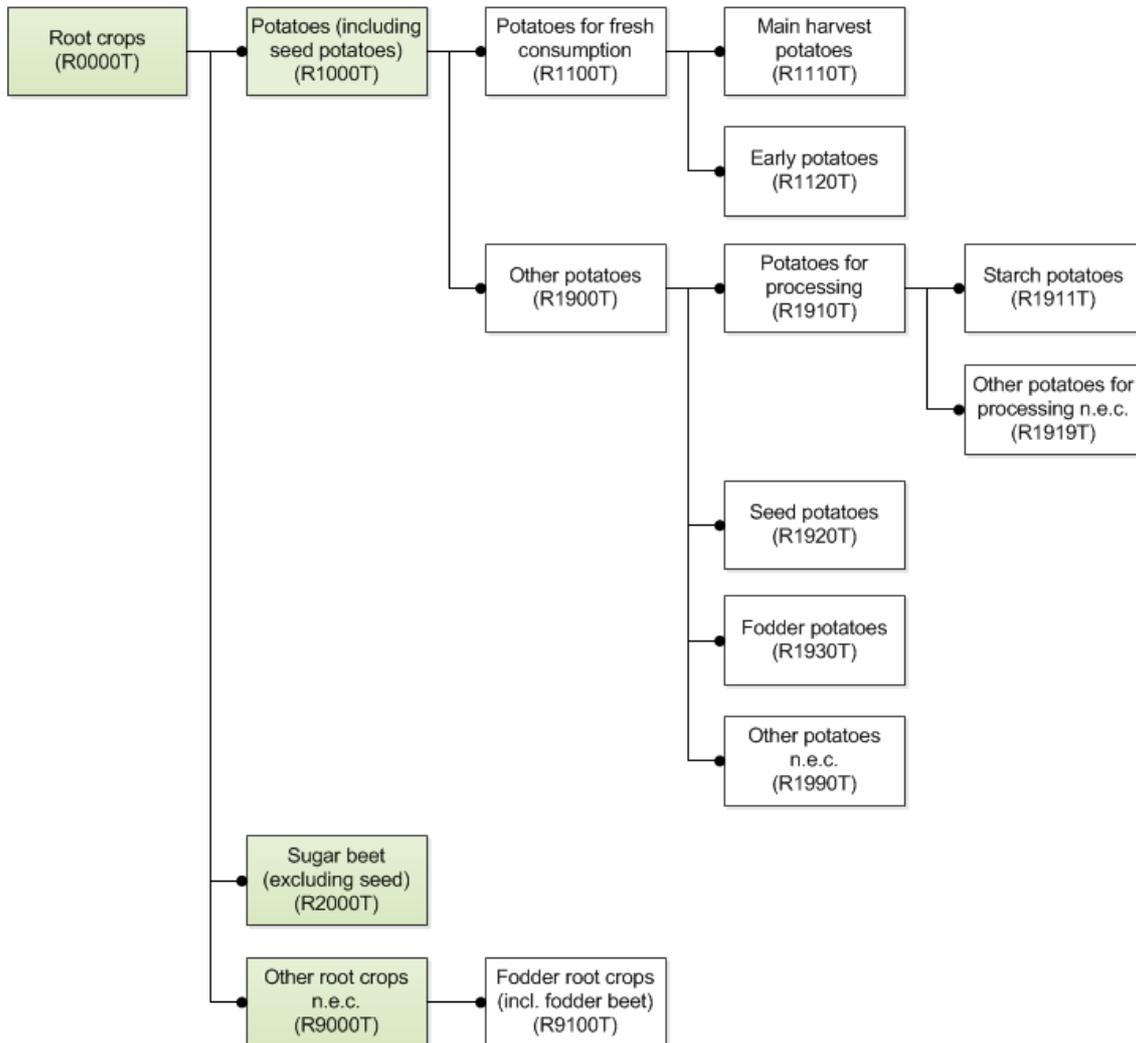
**Excludes**

- Protein crops harvested green (not dry) if they are used for human consumption, such as fresh beans or fresh peas (V0000\_S0000; V5000 in ACS)
- Field peas, broad and field beans harvested green (not dry) if the whole plant is harvested green and used for fodder, renewable energy or other purposes (G2000)

**3.1.3.6 ROOT CROPS**

Code	Label	Unit
R0000T	Root crops	hectares
R1000T	Potatoes (including seed potatoes)	hectares
R2000T	Sugar beet (excluding seed)	hectares
R9000T	Other root crops n.e.c.	hectares

Figure 17 – Root crops hierarchy



### 3.1.3.6.1 Root crops (R0000T)

Hectares of crops cultivated for their root, tuber or modified stem. It excludes root, tuber and bulb vegetables such as carrots, beetroots or swedes, among others.

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**Includes**

- Potatoes (tubers of *Solanum tuberosum* L.), including seed potatoes, regardless of the harvest time
- Sugar beet (roots of *Beta vulgaris* L.) intended for sugar industry, alcohol production or renewable energy production
- Sweet potatoes (tuberous root of *Ipomoea batatas* (L.) Lam) for fodder or seed
- Yam (tubers of *Dioscorea* spp.) for planting
- Other root crops where the root is used for seed for the next generation

**Excludes**

- Root, tuber and bulb vegetables such as carrots, beetroots or swedes, among others (V0000\_S0000; V4000 in ACS)
  - Sweet potatoes (*Ipomoea batatas* (L.) Lam) for human consumption (V0000\_S0000; V4900 in ACS)
  - Yam (*Dioscorea* spp.) for human consumption (V0000\_S0000; V4900 in ACS)
  - Sugar beet (*Beta vulgaris* L.) for production of seed (E0000)
  - Root crops that are planted for seed (exceptions apply for those where the roots are used for seed) (E0000)
- 

**3.1.3.6.2 Potatoes (including seed potatoes) (R1000T)**

Hectares of potatoes (*Solanum tuberosum* L.)

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**Includes**

- Potatoes (tubers of *Solanum tuberosum* L.) regardless of the harvest time
- Seed potatoes

**Excludes**

- Sweet potatoes (*Ipomoea batatas* (L.) Lam) for human consumption (V0000\_S0000; V4900 in ACS)
-

### 3.1.3.6.3 Sugar beet (excluding seed) (R2000T)

Hectares of sugar beet (*Beta vulgaris* L.) intended for the sugar industry and alcohol production.

#### Includes

- Sugar beet (*Beta vulgaris* L.)
- Sugar beet (*Beta vulgaris* L.) used for renewable energy production

#### Excludes

- Sugar beet (*Beta vulgaris* L.) for production of seed (E0000)

### 3.1.3.6.4 Other root crops n.e.c. (R9000T)

Hectares of fodder beet (*Beta vulgaris* L.) and plants of the *Brassicaceae* family harvested mainly for animal feed, regardless of whether it is the root or the stem, and other plants cultivated mainly for their roots for fodder, not elsewhere classified.

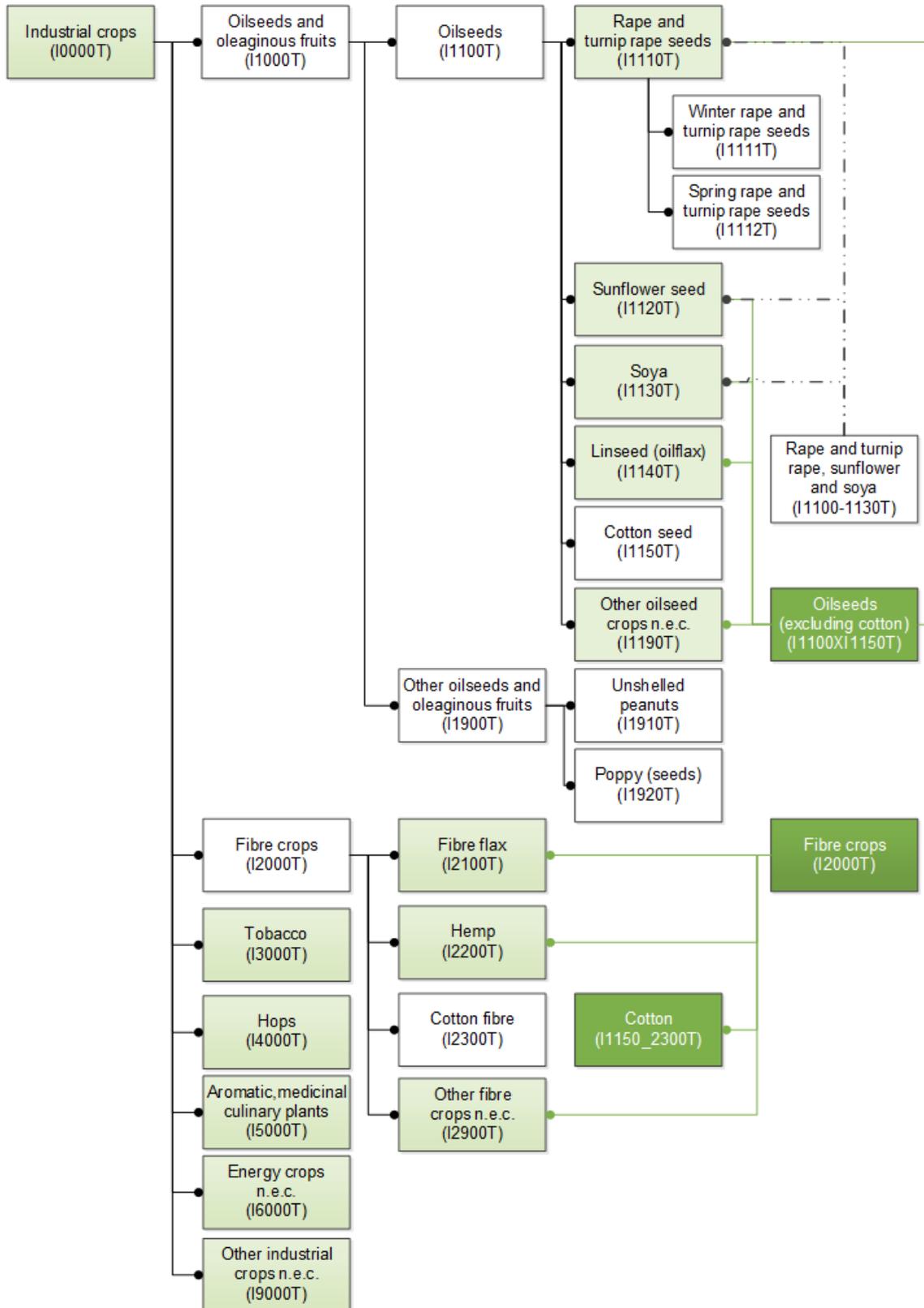
#### Excludes

- All root, tuber and bulb crops intended for seed production where the seed production differs from usual yield (E0000)
- Sugar beet for production of seed (E0000)
- Root, tuber and bulb vegetables (such as carrots, beetroots, swedes, sweet potatoes or yam) used for human consumption (V0000)
- Oilseeds, where the yield can be used as well for seeding are classified under their respective crop code (e.g. I1190)

### 3.1.3.7 INDUSTRIAL CROPS

Code	Label	Unit
I0000T	Industrial crops	hectares
I1100X11150T	Oilseeds (excluding cotton)	hectares
I1110T	Rape and turnip rape seeds	hectares
I1120T	Sunflower seed	hectares
I1130T	Soya	hectares
I1140T	Linseed (oilflax)	hectares
I1190T	Other oil seed crops	hectares
I2000T	Fibre crops	hectares
I2100T	Fibre flax	hectares
I2200T	Hemp	hectares
I1150_2300T	Cotton	hectares
I2900T	Other fibre crops	hectares
I3000T	Tobacco	hectares
I4000T	Hops	hectares
I5000T	Aromatic plants, medicinal and culinary plants	hectares
I6000T	Energy crops n.e.c.	hectares
I9000T	Other industrial crops n.e.c.	hectares

Figure 18 - Industrial crops hierarchy



**3.1.3.7.1 Industrial crops (I0000T)**

Hectares of industrial crops, which are normally not sold directly for consumption because they need to be industrially processed prior to final use.

**Includes**

- Oilseeds
- Fibre crops
- Tobacco
- Hemp
- Hops
- Aromatic, culinary and medicinal plants
- Seeds for herbaceous oilseed plants
- Seeds for linseed (and consequently fibre flax)
- Energy crops
- Crops used for renewable energy production

**Excludes**

- Seeds and seedlings for fibre crops except fibre flax (E0000)
- Seeds and seedlings for hops (E0000)
- Seeds and seedlings for tobacco (E0000)
- Seeds and seedlings for other industrial plants which are not oilseeds (E0000)
- Chicory (*Cichorium intybus*, L.) for processing (V0000\_S0000; V2720 in ACS)
- Chicory (*Cichorium endivia*, L.), for salad (V0000\_S0000; V2720 in ACS)

**3.1.3.7.2 Oilseeds (excluding cotton) (I1100XI1150T)**

Hectares of rape (*Brassica napus* L.) and turnip rape (*Brassica rapa* L. var. *oleifera* (Lam.)), sunflower seed (*Helianthus annuus* L.), soya (*Glycine max* (L.) Merrill), linseed (*Linum usitatissimum* L.), mustard (*Sinapis alba* L.), poppy (*Papaver somniferum* L.), carthame (*Carthamus tinctorius* L.), sesame seed (*Sesamum indicum* L.), earth almond (*Cyperus esculentus* L.), peanuts (*Arachis hypogea* L.), pumpkins for oil (*Cucurbita pepo* L. var. *styriaca*) and hemp (*Cannabis sativa* L.) grown for the production of oil, harvested as dry grains, except cotton seed (*Gossypium* spp.).

**Includes**

- Rape (*Brassica napus* L.)
- Turnip rape (*Brassica rapa* L. var. *oleifera* (Lam.))
- Sunflower seed (*Helianthus annuus* L.)
- Soya (*Glycine max* (L.) Merrill)
- Linseed (*Linum usitatissimum* L.)
- Mustard (*Sinapis alba* L.)
- Poppy (*Papaver somniferum* L.)
- Carthame (*Carthamus tinctorius* L.)
- Sesame seed (*Sesamum indicum* L.)
- Earth almond (*Cyperus esculentus* L.)
- Peanuts (*Arachis hypogea* L.)
- Pumpkins for oil (*Cucurbita pepo* L. var. *styriaca*)
- Hemp (*Cannabis sativa* L.)
- Camelina (*Camelina sativa* (L.) Crantz)
- Oilseed raddish (*Raphanus sativus* var. *oleiformis* L.) if used for oilseed
- Seeds

**Excludes**

- Cotton seed (*Gossypium* spp.) (I1150\_I2300; I2300 in ACS)

**3.1.3.7.3 Rape and turnip rape seeds (I1110T)**

Hectares of rape (*Brassica napus* L.) and turnip rape (*Brassica rapa* L. var. *oleifera* (Lam.)) grown for the production of oil, harvested as dry grains.

**Includes**

- Rape (*Brassica napus* L.)
- Turnip rape (*Brassica rapa* L. var. *oleifera* (Lam.))

**3.1.3.7.4 Sunflower seed (I1120T)**

Hectares of sunflower (*Helianthus annuus* L.), harvested as dry grains.

**Includes**

- Sunflower (*Helianthus annuus* L.)

### 3.1.3.7.5 Soya (I1130T)

Hectares of soya (*Glycine max* L. Merrill), harvested as dry grains, both for oil and protein use.

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#### Includes

- Soya (*Glycine max* L. Merrill)
  - Soya for oil use
  - Soya for protein use
- 

### 3.1.3.7.6 Linseed (oilflax) (I1140T)

Hectares of linseed varieties (*Linum usitatissimum* L.) grown mainly for producing oil, and harvested as dry grains.

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#### Includes

- Linseed varieties (*Linum usitatissimum* L.) for producing oil
- Linseed varieties (*Linum usitatissimum* L.) for human consumption
- Seeds of *Linum usitatissimum* L.

#### Excludes

- Fibre flax (I2100)
-

**3.1.3.7.7 Other oil seed crops n.e.c. (I1190T)**

Hectares of other crops grown mainly for their oil content, harvested as dry grains, which are not elsewhere classified (except cotton seed (*Gossypium* spp.))

**Includes**

- Carthame or safflower (*Carthamus tinctorius* L.)
- Castor oil plant (*Ricinus communis* L.)
- Earth almond (*Cyperus esculentus* L.).
- Hemp (*Cannabis sativa* L.) for hemp seed oil (0%THC and only traces of CBD)
- Jojoba (*Simmondsia chinensis*, (Link) C. K. Schneid.)
- Mustard (*Sinapis alba* L.)
- Peanuts (*Arachis hypogea* L.)
- Poppy (*Papaver somniferum* L.)
- Pumpkins for oil (*Cucurbita pepo* L. var. *styriaca*)
- Sesame seed (*Sesamum indicum* L.)

**Excludes**

- Hemp (*Cannabis sativa* L.) for fibre (<0.2% THC) (I2200)
- Hemp (*Cannabis sativa* L.) for tea (I5000)
- Hemp (*Cannabis sativa* L.) for cannabidiol (CBD) (<0.2% THC) (I5000)
- Hemp (*Cannabis sativa* L.) for tetrahydrocannabinol (THC) (I5000)
- Cotton seed (*Gossypium* spp.) (I1150\_I2300; I2300 in ACS)

**3.1.3.7.8 Fibre crops (I2000T)**

Hectares of fibre flax (*Linum usitatissimum* L), hemp (*Cannabis sativa* L.), cotton (*Gossypium* spp.), jute (*Corchorus capsularis* L.), abaca *alias* manila (*Musa textilis* Née), kenaf (*Hibiscus cannabinus* L.) and sisal (*Agave sisalana* Perrine)

**3.1.3.7.9 Fibre flax (I2100T)**

Hectares of fibre flax varieties (*Linum usitatissimum* L.), grown mainly for producing fibre.

## Excludes

- Linseed (oil flax) (I1140)
- Linseed varieties (*Linum usitatissimum* L.) for human consumption (I1140)
- Seeds of *Linum usitatissimum* L. (I1140)

### 3.1.3.7.10 Hemp (I2200T)

Hectares of hemp (*Cannabis sativa* L.) grown for straw.

## Excludes

- Hemp (*Cannabis sativa* L.) for oil (I1190)
- Hemp (*Cannabis sativa* L.) for tea (I5000)

### 3.1.3.7.11 Cotton (I1150\_2300T)

Hectares of cotton (*Gossypium* spp.), harvested for fibre and/or oilseed use

There are four products of cotton: the lint (fiber), the seed, the stalk and the leaves. The fibre is the main product. The seed (kernel), which is used for the production of oil is considered a by-product. To avoid duplication of areas, only one single area for cotton is to be collected. It shall also include the seeds that are used for sowing the next crop.

## Includes

- Seed of cotton (*Gossypium* spp.)
- Cotton (*Gossypium* spp.) for fibre use
- Cotton seed (*Gossypium* spp.) for oil production

### 3.1.3.7.12 Other fibre crops n.e.c. (I2900T)

Hectares of other plants grown mainly for their fibre content, not elsewhere classified such as jute (*Corchorus capsularis* L.), abaca alias manila (*Musa textilis* Née), sisal (*Agave sisalana* Perrine), and kenaf (*Hibiscus cannabinus*, L.)

## Includes

- Jute (*Corchorus capsularis* L.)
- Abaca alias manila (*Musa textilis* Née)
- Sisal (*Agave sisalana* Perrine)
- Kenaf (*Hibiscus cannabinus* L.)

### 3.1.3.7.13 Tobacco (I3000T)

Hectares of tobacco (*Nicotiana tabacum* L.) grown for leaves.

**3.1.3.7.14 Hops (I4000T)**

Hectares of hops (*Humulus lupulus* L.) grown for seed cones.

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**Includes**

- Young plantations which are not yet in production can be included from the year they are planted onwards
- 

**3.1.3.7.15 Aromatic plants, medicinal and culinary plants (I5000T)**

Hectares of aromatic, medicinal and culinary plants, cultivated for pharmaceutical purposes, perfume manufacture or human consumption.

Culinary plants are distinguished from vegetables in that they are used in small amounts and provide flavour rather than substance to food. Amongst culinary plants certain edible flowers can be found, which are produced mostly for salads or other dishes.

Generally medicinal and aromatic plants are not sold directly for consumption because they need to be industrially processed prior to final use; however, some of the culinary plants can be used directly (e.g. parsley).

## Includes

- Aromatic, medicinal and culinary plants produced outdoors
- Aloe (*Aloe vera* (L.) Burm.f.)
- Angelica (*Angelica* spp.)
- Basil (*Ocimum basilicum* L.)
- Bay leaves (*Laurus* spp.)
- Belladonna (*Atropa* spp.)
- Camomile (*Matricaria* spp.)
- Caraway (*Carum* spp.)
- Chervil (*Anthriscus* spp.)
- Chives (*Allium schoenoprasum* L.)
- Cumin (*Cuminum cyminum* L.)
- Digitalis (*Digitalis* spp.)
- Dill (*Anethum graveolens* L.)
- Fennel (*Foeniculum vulgare* Mill.) for seed or foliage use
- Gentian (*Gentiana* spp.)
- Hemp (*Cannabis sativa* L.) for tea
- Hyssop (*Hyssopus* spp.)
- Jasmine (*Jasminum* spp.)
- Lavender and lavandin (*Lavandula* spp, *Lavandula angustifolia* Mill., Syn. *Lavandula officinalis*, *Lavandula vera*)
- Marigold (*Calendula* spp.)
- Marjoram (*Origanum* spp.)
- Melissa (*Melissa* spp.)
- Mint (*Mentha* spp.)
- Parsley (*Petroselinum crispum* (Mill) Nym, spp.*crispum*)
- Periwinkle (*Vinca* spp.)
- Poppy (*Papaver* spp.)
- Psyllium (seed) (*Psyllium* spp.)
- Rose (normally *Rosa x damascena* Mill.) for rose oil or rose water to be extracted from the petals
- Rye grown for ergot of rye (*Secale cereale* L.)
- Saffron (*Crocus sativus* L.)
- Sage (*Salvia* spp.)
- Tarragon (*Artemisia dracuncululus* L.)
- Thyme (*Thymus vulgaris* L.)
- Turmeric (*Curcuma* spp.),
- Valerian (*Valeriana* spp.), etc.
- Culinary, aromatic and medicinal plants sold fresh for final users (e.g. potted and cut herbs)

**Excludes**

- Fennel (*Foeniculum vulgare* Mill.) if the bulb is used (V0000\_S0000; V4900 in ACS)
- Aromatic, medicinal and culinary plants, which are used as ornamental plants or flowers (N0000)
- Aromatic plants produced under glass or high accessible cover (ARA09S)

**3.1.3.7.16 Energy crops n.e.c. (I6000T)**

Hectares of energy crops used exclusively for renewable energy production not elsewhere classified and cultivated on arable land.

This heading includes only specific energy crops not used for other purposes than energy production (non-food energy crops) and cultivated on arable land. These crops can vary depending on the country. With the change of agricultural policy, it is expected that new plants used exclusively for energy production will be taken into production

**Includes**

- Miscanthus (*Miscanthus* spp.)
- Reed canary grass (*Phalaris arundinacea* L.)
- Other country specific species

**Excludes**

- Food crops, as they are not used exclusively for renewable energy production (under their respective headings)
- Maize intended to produce renewable energy (G3000)
- Sugar beet intended to produce renewable energy (R2000)
- Short rotation coppices (SRCAA)

## 3.1.3.7.17 Other industrial crops n.e.c. (I9000T)

Hectares of other industrial crops not elsewhere classified.

### Includes

- Fuller's teasel (*Dipsacus sativus* (L.) Honck.)
- Miscanthus (*Miscanthus* spp.) for uses other than energy purposes
- Rolled lawn
- Spurge (*Euphorbia lathyris* L.)
- Stevia (*Stevia rebaudiana*, Bertoni)
- Sugar cane (*Saccharum officinarum* L.)

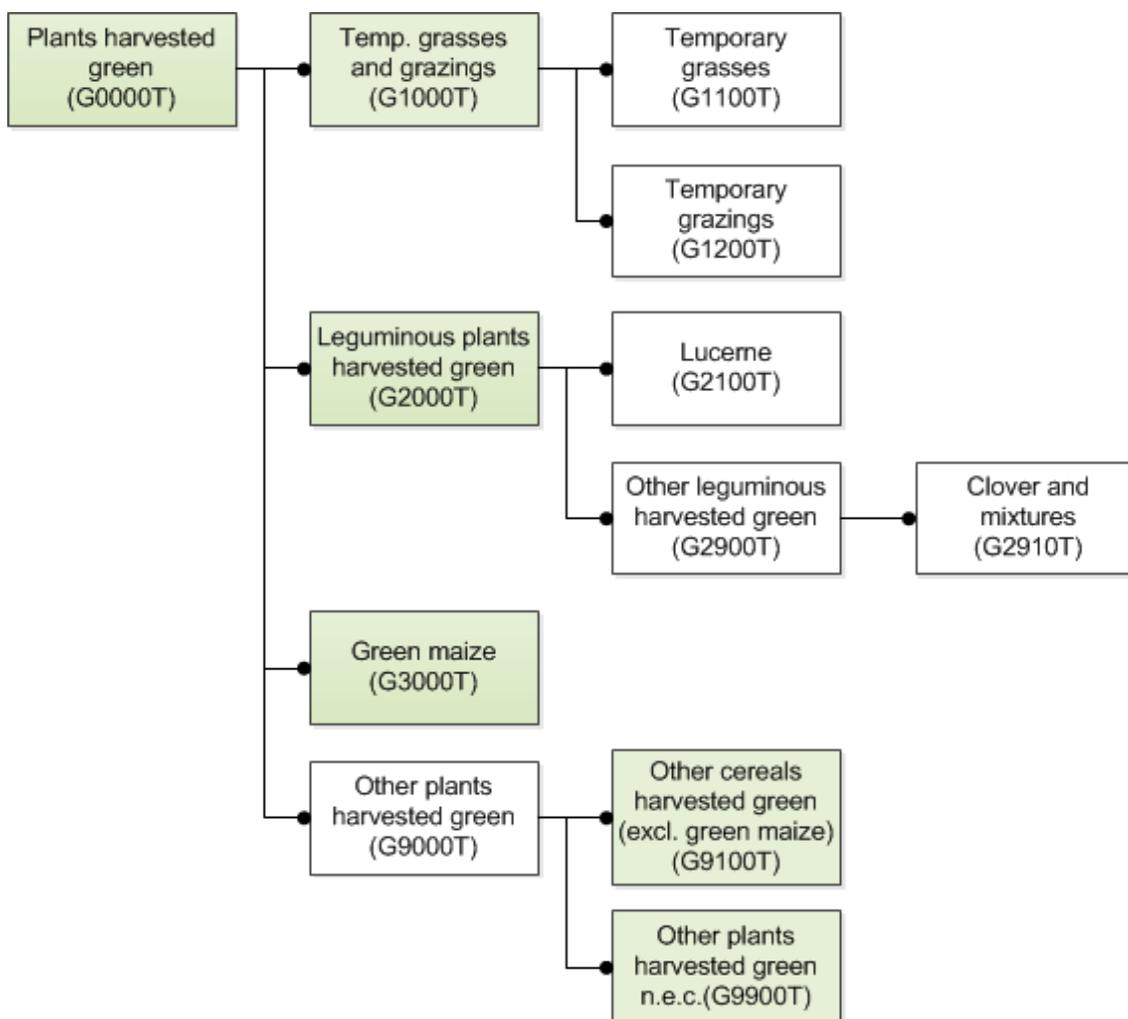
### Excludes

- Chicory (*Cichorium intybus*, L.) for processing (V0000\_S0000; V2720 in ACS)
- Chicory (*Cichorium endivia*, L.), for salad (V0000\_S0000; V2720 in ACS)
- Short rotation coppices (SRCAA in FSS)

## 3.1.3.8 PLANTS HARVESTED GREEN FROM ARABLE LAND

Code	Label	Unit
G0000T	Plants harvested green from arable land	hectares
G1000T	Temporary grasses and grazings	hectares
G2000T	Leguminous plants harvested green	hectares
G3000T	Green maize	hectares
G9100T	Other cereals harvested green (excluding green maize)	hectares
G9900T	Other plants harvested green from arable land n.e.c.	hectares

Figure 19 – Plants harvested green hierarchy



### 3.1.3.8.1 Plants harvested green from arable land (G0000T)

Hectares of all arable land crops harvested 'green' and intended mainly for animal feed, forage or renewable energy production, namely cereals, grasses, leguminous or industrial crops and other arable land crops harvested and/or used 'green'.

The crops should be grown in rotation with other crops, occupying the same parcel for less than 5 years (annual or multi-annual fodder crops).

'Green crops' (as opposed to those 'for dry grain') are normally used for allowing animals to graze or are harvested green, but can be also harvested dried, like hay.

Generally, the whole plant, except the roots, is harvested and used for fodder, forage or renewable energy production (for example, production of bio-mass from green maize).

**Includes**

- Cereals, industrial plants and other arable land crops harvested and/or used green
- Crops not used on the holding but sold, either for direct use on other agricultural holdings or to industry
- Plants used on the own farm as fodder
- Production of biomass from green maize
- Plants used for energy production

**Excludes**

- Energy crops (I6000)
- Areas used solely for plants for green manure (Q0000)
- Fodder roots and brassicas (not used as manure) (R9000)
- Permanent grasslands (J0000)

**3.1.3.8.2 Temporary grasses and grazings (G1000T)**

Hectares of grass plants for grazing, hay or silage included as a part of a normal crop rotation, lasting at least one crop year and normally less than 5 years, sown with grass or grass mixtures.

The areas are broken up by ploughing, other tilling or the plants are destroyed by other means such as by herbicides before they are sown again.

**Includes**

- Brome-grasses (*Bromus catarticus* Vahl., *B. sitchensis* Trin.)
- Cocksfoot (*Dactylis glomerata* L.)
- Meadow fescue (*Festuca pratensis* Hudson)
- Meadow foxtail (*Alopecurus pratensis* L.)
- Mixtures of predominantly grass plants and other forage crops (usually leguminous) grazed, harvested green or as dried hay
- Perennial ryegrasses (*Lolium perenne* L. x *boucheanum* Kunth.)
- Perennial sorghum (*Sorghum sudanense* Piper Stapf.)
- Tall fescue (*Festuca arundinacea* Schreber)
- Tall oat grass (*Arrhenaterum elatius* Mert.)
- Timothy (*Phleum pratense* L.)

**Excludes**

- Perennial sorghum (*Sorghum sudanense* Piper Stapf.) for grain (C1700)
- Areas used solely for plants for green manure (Q0000)
- Permanent grasslands (J0000)

### 3.1.3.8.3 Leguminous plants harvested green (G2000T)

Hectares of leguminous plants grown and harvested green as the whole plant mainly for fodder, or energy use.

Mixtures of predominantly leguminous (normally > 80 %) crops and grass plants, harvested green or as dried hay are included.

#### Includes

- Annual or perennial clovers pure or in mixture with other species
- Crimson clover (*Trifolium incarnatum* L.)
- Bird'sfoot trefoil (*Lotus corniculatus* L.)
- Black medic (*Medicago lupulina* L.)
- Chickling vetch (*Lathyrus sativus* L.)
- Egyptian clover (*Trifolium alexandrinum* L.)
- Fenugreek (*Trigonella foenum-graecum* L.)
- Field beans (*Vicia faba* L. (partim)) for green fodder
- Field peas (*Pisum sativum* L.) for green fodder
- Lucerne / alfalfa (*Medicago* spp.) and hybrids, cultivated alone or with high percentage in a mixture
- Mixtures of predominantly leguminous crops (normally > 80%) and grass plants, harvested green or as dried hay
- Melilot (*Melilotus alba* Lam.)
- Persian clover (*Trifolium resupinatum* L.)
- Red clover (*Trifolium pratense* L.)
- Sainfoin (*Onobrychis viciifolia* Scop.)
- Serradella (*Ornithopus sativus* Brot.)
- Sulla (*Hedysarum coronarium* (L.) Medik.)
- Sweet lupins (*Lupinus albus* L., *L. angustifolius* L., *L. luteus* L.)
- Vetches (*Vicia sativa* L., *V. villosa* Roth, *V. pannonica* Crantz, and others)
- White clover (*Trifolium repens* L.)

#### Excludes

- Areas used solely for plants for green manure (Q0000)
- Lucerne / alfalfa harvested for grain (P9000)
- Leguminous plants harvested for grain (in the respective P1100-P9000 classes)

### 3.1.3.8.4 Green maize (G3000T)

Hectares of all forms of maize (*Zea mays* L.) grown mainly for silage (whole cob, parts of or whole plant) and not harvested for grain.

Refers to maize harvested as a whole plant with 65% to 70% moisture content and when the fruit is non-mature. This range of moisture content works well for fodder or renewable energy and for its preservation in silos.

### Includes

- Green maize directly consumed by animals (without silage)
- Whole cobs (grain, rachis, husk) harvested for feedstuff or silage
- Whole cobs for renewable energy production

### Excludes

- Maize harvested for grain (C1500)
- Corn-cob mix (C1500)

#### 3.1.3.8.5 Other cereals harvested green (excluding green maize) (G9100T)

Hectares of all cereals (excluding maize) grown and harvested green as the whole plant used for fodder or for the production of renewable energy (production of biomass).

### Includes

- Annual sorghum (*Sorghum bicolor* (L.) Moench) harvested green
- Buckwheat (*Fagopyrum esculentum* Moench, *Fagopyrum tartaricum* (L.) Gaertn.) harvested green
- Rye (*Secale cereale* L.) harvested green
- Triticale (x *Triticosecale* Wittmac) harvested green
- Wheat (*Triticum* spp.) harvested green

### Excludes

- Green maize (G3000)
- Cereals harvested as dry grain (in the specific classes C1100 to C1900)
- Areas used solely for plants for green manure (Q0000)

#### 3.1.3.8.6 Other plants harvested green from arable land n.e.c. (G9900T)

Hectares of other annual or multi-annual (less than 5 years) crops intended mainly for animal fodder and harvested green. Also remainders of crops not elsewhere classified when the main harvest was destroyed, but the residues could still be used (as fodder, or renewable energy).

### Includes

- All mixtures of plants harvested green on arable land which are not included under leguminous plants mixtures
- Annual ryegrasses (*Lolium multiflorum* Lam. and hybrids),
- Cruciferous non elsewhere classified (rape, etc.) harvested green
- Lacy phacelia (*Phacelia tanacetifolia* Benth.) harvested green
- Meadowgrass (*Poa annua* L.)
- Other annual graminaceous plants harvested green not elsewhere classified
- Sunflowers (*Helianthus annus* L.) harvested green
- Pumpkins (*Cucurbita* spp.) for fodder

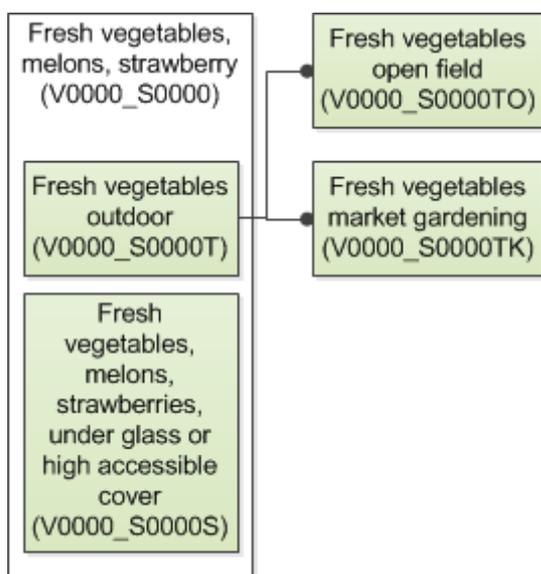
### Excludes

- Area used solely for plants for green manure (Q0000)

### 3.1.3.9 FRESH VEGETABLES AND STRAWBERRIES

Code	Label	Unit
V0000_S0000T	Fresh vegetables (including melons) and strawberries	hectares
V0000_S0000TK	Fresh vegetables (including melons) and strawberries grown in rotation with horticultural crops (market gardening)	hectares
V0000_S0000TO	Fresh vegetables (including melons) and strawberries grown in rotation with non-horticultural crops (open field)	hectares

Figure 20 – Fresh vegetables hierarchy (extract, full hierarchy can be found in Eurostat's glossary<sup>(67)</sup>)



<sup>(67)</sup> <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Vegetable>

**3.1.3.9.1 Fresh vegetables (including melons) and strawberries (V0000\_S0000T)**

Hectares of all brassicas, leafy and stalked vegetables, vegetables cultivated for fruit, root, tuber and bulb vegetables, fresh pulses, other vegetables harvested fresh (not dry) and strawberries grown on arable land outdoor in rotation with other agricultural or horticultural crops.

**Includes**

- Sweet potatoes (*Ipomoea batatas* (L.) Lam) for human consumption
- Yam (*Discorea* spp.) for human consumption
- Fresh vegetables, melons and strawberries grown on arable land outdoor in rotation with other agricultural or horticultural crops
- Root crops originally intended for human consumption which are partially used as fodder in the end because of quality problems
- Vegetables (such as pumpkins) originally intended for human consumption which are partially used as fodder in the end because of quality problems

**Excludes**

- Products not intended for human consumption
- Root crops cultivated for fodder (R9000)
- Pulses and protein plants harvested dry (sub-classes of P0000)
- Cultivated mushrooms (U1000)
- Kitchen gardens (K0000)
- Fresh vegetables (including melons) and strawberries grown under glass or high accessible cover (V0000\_S0000S)

**3.1.3.9.2 Fresh vegetables (including melons) and strawberries grown in rotation with horticultural crops (market gardening) (V0000\_S0000TK)**

Hectares of fresh vegetables, melons and strawberries grown outdoor on arable land in rotation only with other horticultural crops.

The basic element to take into account is the rotation system on the parcel of the holding, namely if the utilised agricultural area occupied by vegetables is rotated only with other horticultural crops.

The harvested production from the market gardening is generally used for fresh consumption rather than for industrial processing, but because the intended use of the products can change from year to year and not be known at the time of harvest, the rotation system should be taken into account as a distinguishing element.

**Includes**

- Strawberries grown on arable land outdoor in rotation with horticultural crops

**Excludes**

- Fresh vegetables (including melons) and strawberries grown under glass or high accessible cover (V0000\_S0000S)

### **3.1.3.9.3 Fresh vegetables (including melons) and strawberries grown in rotation with non-horticultural crops (open field) (V0000\_S0000TO)**

Hectares of fresh vegetables, melons and strawberries grown outdoor on arable land in rotation with other agricultural crops.

The basic element to take into account is the rotation system on the parcel of the holding, namely if the utilised agricultural area occupied by the vegetables is rotated with agricultural crops other than the horticultural crops.

In case of strawberries and perennial vegetables such as asparagus or rhubarb no annual crops rotation is necessary.

The harvested production from the open field is generally used for industrial processing rather than directly for fresh consumption, but because the intended use of the products can change from year to year and not be known at the time of harvest, the rotation system should be taken into account as a distinguishing element.

### **3.1.3.10 FLOWERS AND ORNAMENTAL PLANTS**

<b>Code</b>	<b>Label</b>	<b>Unit</b>
N0000T	Flowers and ornamental plants (excluding nurseries)	hectares

#### **3.1.3.10.1 Flowers and ornamental plants (excluding nurseries) (N0000T)**

Hectares of all flowers and ornamental plants intended to be sold as cut flowers (e.g. roses, carnations, orchids, gladioli, chrysanthemum, foliage cut and other cut products), as potted, bedding and balcony flowers and plants (e.g. rhododendrons, azaleas, chrysanthemum, begonia, geranium, impatiens, other potted, bedding and balcony plants) and as bulb and corm flowers and other ornamental plants (tulips, hyacinths, orchids, narcissi and others)..

Areas of plants which are grown temporarily under glass and temporarily in the open air are reported as entirely under glass, unless the period under glass is of extremely limited duration.

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## Includes

- Cut flowers
  - Roses
  - Carnations
  - Orchids
  - Gladioli
  - Chrysanthemum
  - Foliage cut
  - Other cut products
- Potted, bedding and balcony flowers and plants
  - Rhododendrons
  - Azaleas
  - Chrysanthemum
  - Begonia
  - Geranium
  - Impatiens
  - Other potted, bedding and balcony plants
- Bulb and corm flowers
  - Tulips
  - Hyacinths
  - Orchids
  - Narcissi
  - Other bulb and corm flowers
- Other ornamental plants

## Excludes

- Nursery plants (L0000)
  - Bulbs, corms, and other very young plants and seeds (E0000)
  - Seeds and seedlings of flowers (E0000)
  - Seeds and seedlings of vegetables (E0000)
  - Flowers and ornamental plants (excluding nurseries) under glass or high accessible cover (N0000S)
-

### 3.1.3.11 SEEDS AND SEEDLINGS

Code	Label	Unit
E0000T	Seeds and seedlings	hectares

#### 3.1.3.11.1 Seeds and seedlings (E0000T)

Hectares of seeds of roots (except potatoes and other plants where the roots are as well used as seeds), fodder crops, grasses, industrial crops (except oilseeds) and seeds and seedlings of vegetables and flowers.

##### Includes

- Areas producing seeds and seedlings for sale
- Bulbs, corms, and other very young plants
- Green forage harvested for seed
- Roots harvested for seed
- Seeds and seedlings of vegetables (for sale)
- Seeds and seedlings of flowers (for sale)

##### Excludes

- Seeds and seedlings of those crops where usually the yield can be used as well for seeding (under the respective heading)
- Seeds and seedlings for the own needs of the holding (e.g. young vegetable plants such as cabbage or lettuce seedlings)
- Cereals (C0000 and respective sub-classes)
- Rice (C2000)
- Pulses (P0000 and respective sub-classes)
- Potatoes (R1000)
- Jerusalem artichoke (R9000)
- Oil seeds (I1100)
- Seeds of *Linum usitatissimum* L. (I1140)
- Seeds of *Gossypium* spp. (I1150\_2300)
- Young ligneous plants grown for subsequent transplantation (such as fruit trees and berry bushes) (L0000)

## 3.1.3.12 OTHER ARABLE LAND CROPS N.E.C.

Code	Label	Unit
ARA99T	Other arable land crops n.e.c.	hectares

### 3.1.3.12.1 Other arable land crops, n.e.c. (ARA99T)

Hectares of arable crops not elsewhere classified.

This class includes only crops of low economic importance and should contain only crops that cannot be classified under any other item.

This can be e.g. buffer strips on field margins with different flowers, etc., if they are not the same crops as on the main field and cultivated with extensive farming methods for habitat creation or crops only sown as habitat creation and offering cover for wild animals and with no other use (and if not signed as fallow land).

## 3.1.3.13 FALLOW LAND

Code	Label	Unit
Q000T	Fallow land	hectares

### 3.1.3.13.1 Fallow land (Q000T)

Hectares of all arable land either included in the crop rotation system or maintained in good agricultural and environmental condition (GAEC<sup>(68)</sup>), whether worked or not, but which will not be harvested for the duration of a crop year. The essential characteristic of fallow land is that it is left to recover, normally for the whole of a crop year.

On land lying fallow there shall be no agricultural production. Land lying fallow for more than 5 years for the purpose of fulfilling the ecological focus area shall remain arable land.

## Fallow land

Fallow land may be:

- Bare land bearing no crops at all; or
- Land with spontaneous natural growth, which may be used as feed or ploughed in; or
- Land sown exclusively for the production of green manure (green fallow)

<sup>(68)</sup> Regulation (EU) No 1306/2013 of the European Parliament and of the Council of 17 December 2013 on the financing, management and monitoring of the common agricultural policy and repealing Council Regulations (EEC) No 352/78, (EC) No 165/94, (EC) No 2799/98, (EC) No 814/2000, (EC) No 1290/2005 and (EC) No 485/2008 (OJ L 347, 20.12.2013, p. 549).

**Includes**

- Arable land lying fallow for less than 5 years
- Arable land lying fallow for 5 years or more if for the purpose of fulfilling the ecological focus area

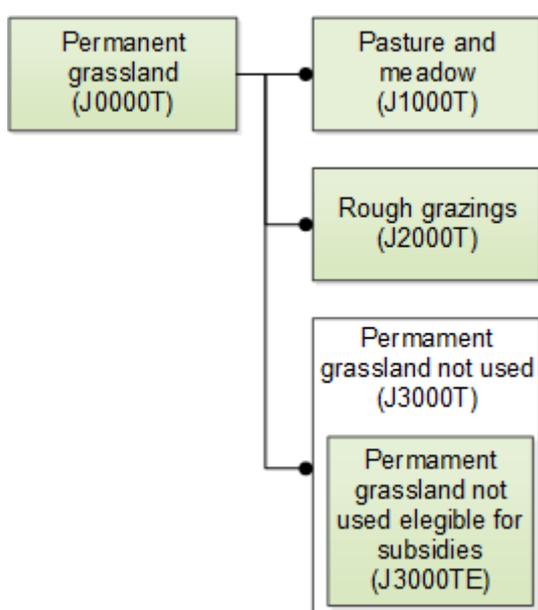
**Excludes**

- Successive crops
- Areas which were planted with permanent crops (e.g. vineyards), ploughed and left idle for one growing period waiting to be planted again with permanent crops (ARA)
- Permanent grassland no longer used for production purposes and eligible for financial support (J3000)
- Land taken out of production for more than 5 years which is maintained in good agricultural and environmental conditions (J3000)
- Areas the farmer declares that are put out of production (not only for resting), immediately from the first year of declaration (NUAA)
- Arable land taken out of production for more than 5 years that are not part of the land kept in good agricultural and environmental condition (NUAA)

**3.1.3.14 PERMANENT GRASSLAND**

Code	Label	Unit
J0000T	Permanent grassland	hectares
J1000T	Pasture and meadow, excluding rough grazings	hectares
J2000T	Rough grazings	hectares
J3000TE	Permanent grassland no longer used for production purposes and eligible for the payment of subsidies	hectares

Figure 21 – Permanent grassland hierarchy



### 3.1.3.14.1 Permanent grassland (J0000T)

Hectares of land used permanently (for several consecutive years, normally 5 years or more) to grow herbaceous fodder, forage or energy purpose crops, through cultivation (sown) or naturally (self-seeded), and which is not included in the crop rotation on the holding.

The grassland can be used for grazing, mown for silage and hay or used for renewable energy production.

Grassland must have fodder interest, i.e. they include vegetal species of fodder interest.

#### Includes

- All harvested areas of permanent grass, regardless of the use
- Areas of permanent grassland used for renewable energy production
- Pastures and meadows that can normally be used for intensive grazing
- Rough grazings, which are permanent grazings with low yield, and normally in poor soils, in mountainous areas, normally not improved by use of fertilisers, soil mobilisation, sowing or drainage, and which are only suitable for extensive grazing
- Permanent grassland no longer used for production purposes and eligible for the payment of subsidies
- Land taken out of production for more than 5 years which is maintained in good agricultural and environmental conditions

#### Excludes

- Areas without fodder interest (i.e. without species that can be used for fodder)

### 3.1.3.14.2 Pasture and meadow, excluding rough grazings (J1000T)

Hectares of permanent pasture, on good or medium quality soils, which can normally be used for intensive grazing.

#### Includes

- All harvested areas of permanent grass, regardless of the use
- Areas of permanent grassland used for renewable energy production

#### Excludes

- Rough grazing whether used intermittently or permanently (J2000)
- Permanent grassland no longer used for production purposes and eligible for financial support (J3000)
- Pastures and meadows not in use (NUAA)

### 3.1.3.14.3 Rough grazings (J2000T)

Hectares of low yielding permanent grassland, usually on low-quality soil, for example on hilly land and at high altitudes, usually unimproved by fertiliser, cultivation, reseeding or drainage. These areas

can normally be used only for extensive grazing and are not normally mown or are mown in an extensive manner as they cannot support a large density of animals.

#### Includes

- Stony ground, heath, moorland and “deer forests” in Scotland
- Areas of rough grazing's mown instead of grazed by animals, often being of high nature value and kept under environmental contracts

#### Excludes

- Rough grazing not in use (NUAA)

## Rough grazing or wooded area?

It is possible that a combination of rough grazing and wooded area co-exist in the same plot. In such case use the rule for combined crops (see 3.1.1.2 above): *area is allocated among the crops pro rata to the use of the ground by the crops concerned. If one crop has no significance for the holding, it is ignored in the breakdown of the areas.*

### 3.1.3.14.4 Permanent grassland no longer used for production purposes and eligible for the payment of subsidies (J3000TE)

Hectares of permanent grassland and meadows no longer used for production purposes which, in line with Regulation (EU) No 1307/2013 or, where applicable, the most recent legislation, are maintained in a state which makes it suitable for grazing or cultivation without preparatory action going beyond usual agricultural methods and machinery and are eligible for financial support.

#### Eligible for financial support

Eligible for financial support means that the application of the farmer/holder (holding) for a single payment subsidy according to the rules maintaining the permanent pastures with no economic use in good agricultural and environmental conditions has been accepted. The time reference used for this application should coincide with the time reference of the survey. It is irrelevant whether the payment has been already done or not.

#### Includes

- Permanent grassland no longer used for production purposes and eligible for the payment of subsidies
- Land taken out of production for more than 5 years which is maintained in good agricultural and environmental conditions

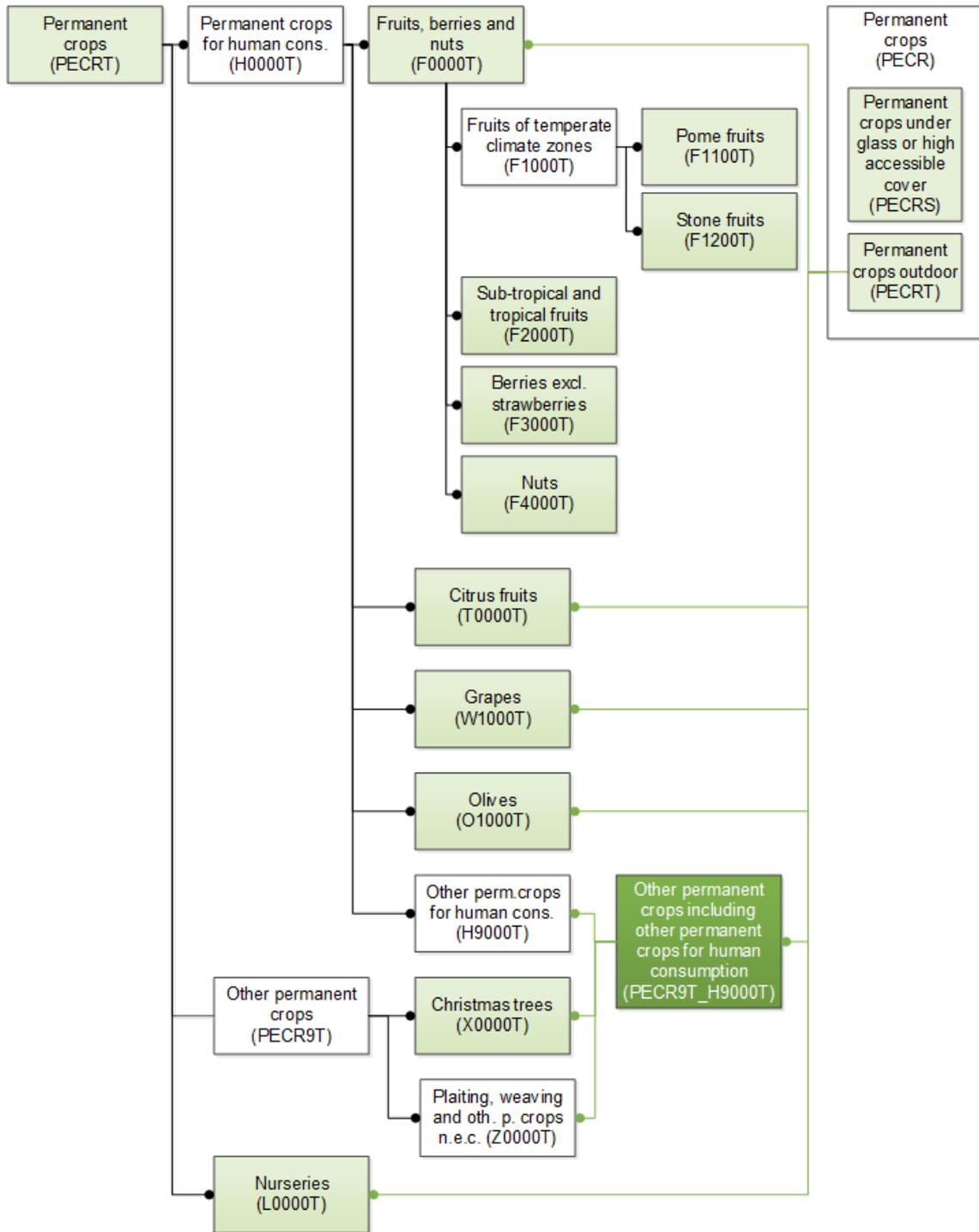
#### Excludes

- Rough grazing not in use (NUAA)

3.1.3.15 PERMANENT CROPS

Code	Label	Unit
PECRT	Permanent crops	hectares

Figure 22 – Permanent crops' hierarchy



### **3.1.3.15.1 Permanent crops (including young and temporarily abandoned plantations, excluding areas producing for own consumption only) (PECRT)**

Hectares of all fruit trees, all citrus fruit trees, all nut trees, all berry plantations, all vineyards, all olive trees and all other permanent crops used for human consumption (e.g. tea, coffee or carobs) and for other purposes (e.g. nurseries, Christmas trees or plants for plaiting and weaving such as rattan, or bamboo).

Permanent crops are usually ligneous crops, meaning trees or shrubs, not grown in [rotation](#)<sup>(69)</sup>, but occupying the soil and yielding harvests for several (usually more than five) consecutive years.

Permanent crops are usually intended for human consumption and generally yield a higher added value per hectare than annual crops. They also play an important role in shaping the rural landscape (through orchards, vineyards and olive tree plantations) and helping to balance agriculture within the environment.

Orchards may be of the continuous type with minimum spacing between trees, or of the non-continuous type with wide spacing.

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<sup>(69)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Crop\\_rotation](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Crop_rotation)

## Includes

- Young fruit and berry plantations which are not yet in production can be included from the year they are planted onwards
- Berry plantations are included even if their permanence on the plot is less than 5 years
- Young plantations which are not yet in production from the year of the plantation onwards<sup>(70)</sup>
- Temporarily abandoned plantations if there is a possibility of reversibility in maximum 5 years
- Rattan
- Bamboo
- Christmas trees planted for commercial purposes outside woodland, on the utilised agricultural area
- Trees originally planted for the production of wood, but systematically harvested annually before they are cut down (e.g. cherry trees, chestnut trees)

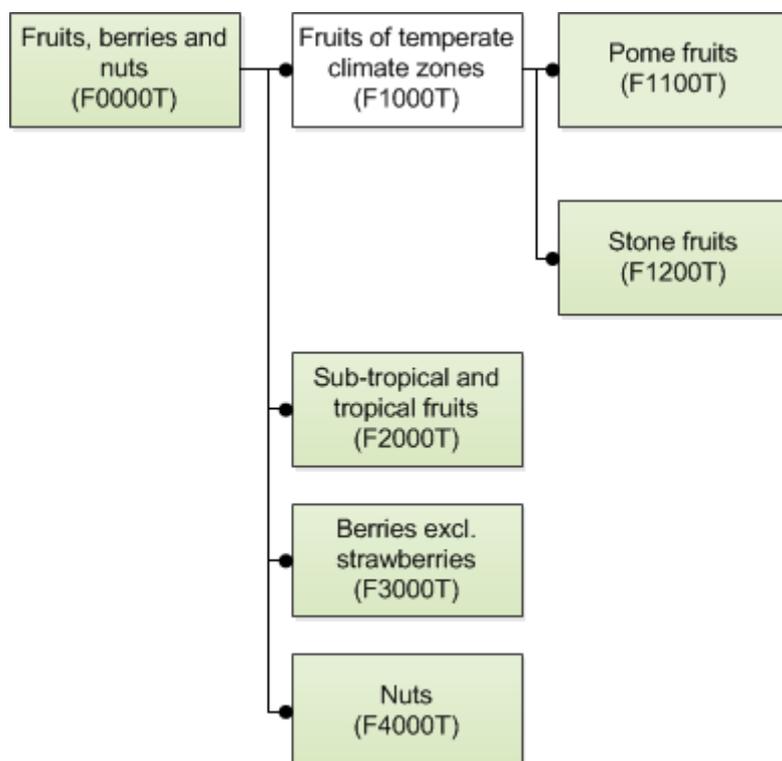
## Excludes

- Permanent crops under glass or high accessible cover (PECRS)
- Permanent crops which are usually treated as vegetables, ornamental or industrial plants, such as asparagus, roses, decorative shrubs cultivated for their blossom or leaves, strawberries, hops or certain energy crops (*Miscanthus* spp.) (in the respective headings)
- Areas producing exclusively for own consumption (K0000)
- Fruit trees no longer in production, clearly abandoned for more than 5 years (NUAA)
- Cherry trees or chestnut trees clearly abandoned for more than 5 years, or which are not used for the production of fruit (WA)
- Trees which produce fruit marginally, for example for pigs grazing under the trees (WA)
- Christmas tree plantations which are no longer maintained and belong to wooded area (WA)
- Short-rotation coppices (SRCAA)

### 3.1.3.16FRUIT, BERRIES AND NUTS

Code	Label	Unit
F000T	Fruits, berries and nuts (excluding citrus fruits, grapes and strawberries)	hectares
F1100T	Pome fruits	hectares
F1200T	Stone fruits	hectares
F2000T	Fruits from subtropical and tropical climate zones	hectares
F3000T	Berries (excluding strawberries)	hectares
F4000T	Nuts	hectares

<sup>(70)</sup> Different in ACS, where these areas which are not under production are not reported

Figure 23 – Fruits, berries and nuts hierarchy (extract, for full tree see Eurostat's website<sup>(71)</sup>)

### 3.1.3.16.1 Fruits, berries and nuts (excluding citrus fruits, grapes and strawberries) (F0000T)

Hectares of orchards of pome fruits, stone fruits, berries, nuts and fruits from tropical and subtropical climate zones.

<sup>(71)</sup> <https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Fruit>

## Includes

- Berries
- Figs (*Ficus carica*, L.)
- Fruits from tropical and subtropical climate zones
- Nuts
- Pomegranate (*Punica granatum* L.)
- Persimmons (*Diospyros kaki* L.f.)
- Pome fruits
- Stone fruits

## Excludes

- Citrus fruits (T0000)
- Grapes (W1000)
- Olives (O1000)
- Strawberries (V0000\_S0000)
- Other permanent crops for human consumption (PECR9\_H9000; H9000 in ACS)
- All permanent crops which are not intended for human consumption (PECR9\_H9000; PECR9 in ACS)

### 3.1.3.16.2 Pome fruits (F1100T)

Hectares of orchards of pome fruits such as apples (*Malus* spp.), pears (*Pyrus* spp.), quinces (*Cydonia oblonga* Mill.) or medlars (*Mespilus germanica*, L.)

#### Includes

- Apples and pears for fresh consumption (table use)
- Apples for processing (juice, marmalade, cider, etc.)
- Medlars (*Mespilus germanica* L.)
- Pears for processing (perry, cider, canned fruit, etc.)
- Quinces (*Cydonia oblonga* Mill.)

### 3.1.3.16.3 Stone fruits (F1200T)

Hectares of orchards of stone fruits, such as peaches and nectarines (*Prunus persica* (L.) Batch), apricots (*Prunus armeniaca* L. and others), sweet and sour cherries (*Prunus avium* L., *P. cerasus*), plums (*Prunus domestica* L. and others) and other stone fruits not elsewhere classified such as blackthorn/sloe (*Prunus spinosa* L.) or loquats/Japanese medlar (*Eriobotrya japonica* (Thunb.) Lindl.)

**Includes**

- Stone fruits for fresh consumption (table use)
- Stone fruits for processing (juice, marmalade, canned, etc.)

**3.1.3.16.4 Fruits from subtropical and tropical climate zones (F2000T)**

Hectares of all fruits from subtropical and tropical climate zones such as kiwis<sup>(72)</sup> (*Actinidia chinensis* Planch.), avocados (*Persea americana* Mill.) and bananas (*Musa* spp.).

**Includes**

- Annona (*Annona* spp.)
- Avocados (*Persea americana* Mill.)
- Bananas (*Musa* spp.)
- Dates (*Phoenix dactylifera* L.)
- Figs (*Ficus carica*, L.)
- Guava (*Psidium* spp.)
- Kiwis (*Actinidia chinensis* Planch.)
- Lychee (*Litchi* spp.)
- Mango (*Mangifera* spp.)
- Papaya (*Carica* spp.)
- Passion fruit (*Passiflora* spp.)
- Persimmons (*Diospyros kaki* L.f.)
- Pineapple (*Ananas comosus* (L.) Merr.; syn. *A. sativus* Lindl.)
- Pomegranate (*Punica granatum* L.)
- Prickly pear (*Opuntia* spp.)

**Excludes**

- Quinces (*Cydonia oblonga* Mill.) (F1100)

<sup>(72)</sup> In FAO/ICC classification, kiwi is considered a berry (03.04.03)

## Are figs tropical fruit?

Fruit are typically distinguished into

- **Fruit from temperate climate zones** – fruit that requires chilling (a number of hours of cold during the winter season) to flower/fructify
- **Fruit from Mediterranean / sub-tropical climate zones** – they are not hardy to extreme cold, and are mostly indifferent to chilling, even if some may have chilling requirements
- **Tropical fruit** – these can grow in all habitats but are intolerant to frost

Figs, as well as persimmons, guava, avocados, or pomegranates, have in common this certain indifference to chilling (even if it has been shown that for figs production can be higher when there are more hours of chill). Considering them under “sub-tropical” fruit is in line with FAO/ICC classification, and also with NACE. As a product, in the combined nomenclature (CN) figs are in the same class as dates, avocados, guavas and mangoes (0804). Therefore, even if they are not “tropical” they should be classified under F2000, which also includes the “sub-tropical” crops.

### 3.1.3.16.5 Berries (excluding strawberries) (F3000T)

Hectares of all cultivated berries such as blackcurrants (*Ribes nigrum* L.), redcurrants (*Ribes rubrum* L.), raspberries (*Rubus idaeus* L.) or blueberries (*Vaccinium corymbosum* L.).

**Includes**

- Blackberries (*Rubus* spp.)
- Blackcurrants (*Ribes nigrum* L.)
- Blueberries (*Vaccinium corymbosum* L.)
- Chokeberries (*Aronia* spp.)
- Cranberries (*Vaccinium oxycoccus* L.)
- Elderberry (*Sambucus nigra* L.)
- Goji berry (*Lycium barbarum* L.)
- Golden berry (*Physalis peruviana* L.)
- Gooseberries (*Ribes grossularia* L.)
- Jostaberries (*Ribes x nidigrolaria* Rud. Bauer & A. Bauer)
- Kiwi berry, kiwai or hardy kiwi (*Actinidia arguta* (Siebold & Zucc.) Planch.)
- Mulberries (*Morus* spp.) for human consumption (berries)
- Raspberries (*Rubus idaeus* L.)
- Redcurrants (*Ribes rubrum* L.) and its white variant
- Rose (normally *Rosa canina* L.) for human consumption (as tea, juice or marmalade)
- Sea buckthorn (*Hippophae rhamnoides* L.)
- Strawberry tree (*Arbutus unedo* L.)

**Excludes**

- Wild berries
- Strawberries (V0000\_S0000; S0000 in ACS)
- Mulberries (*Morus* spp.) if grown for the leaves to feed silkworms (PECR9\_H9000T)

**3.1.3.16.6 Nuts (F4000T)**

Hectares of all nut trees: walnuts, hazelnuts, almonds, chestnuts and other nuts.

**Includes**

- Almonds (*Prunus dulcis* (Mill.) D.A.Webb.)
- Chestnuts (*Castanea sativa* Mill.)
- Hazelnuts (*Corylus avellana* L.)
- Pine seeds (*Pinus pinea* L.)
- Pistachio (*Pistacia vera* L.)
- Walnuts (*Juglans regia* L.)

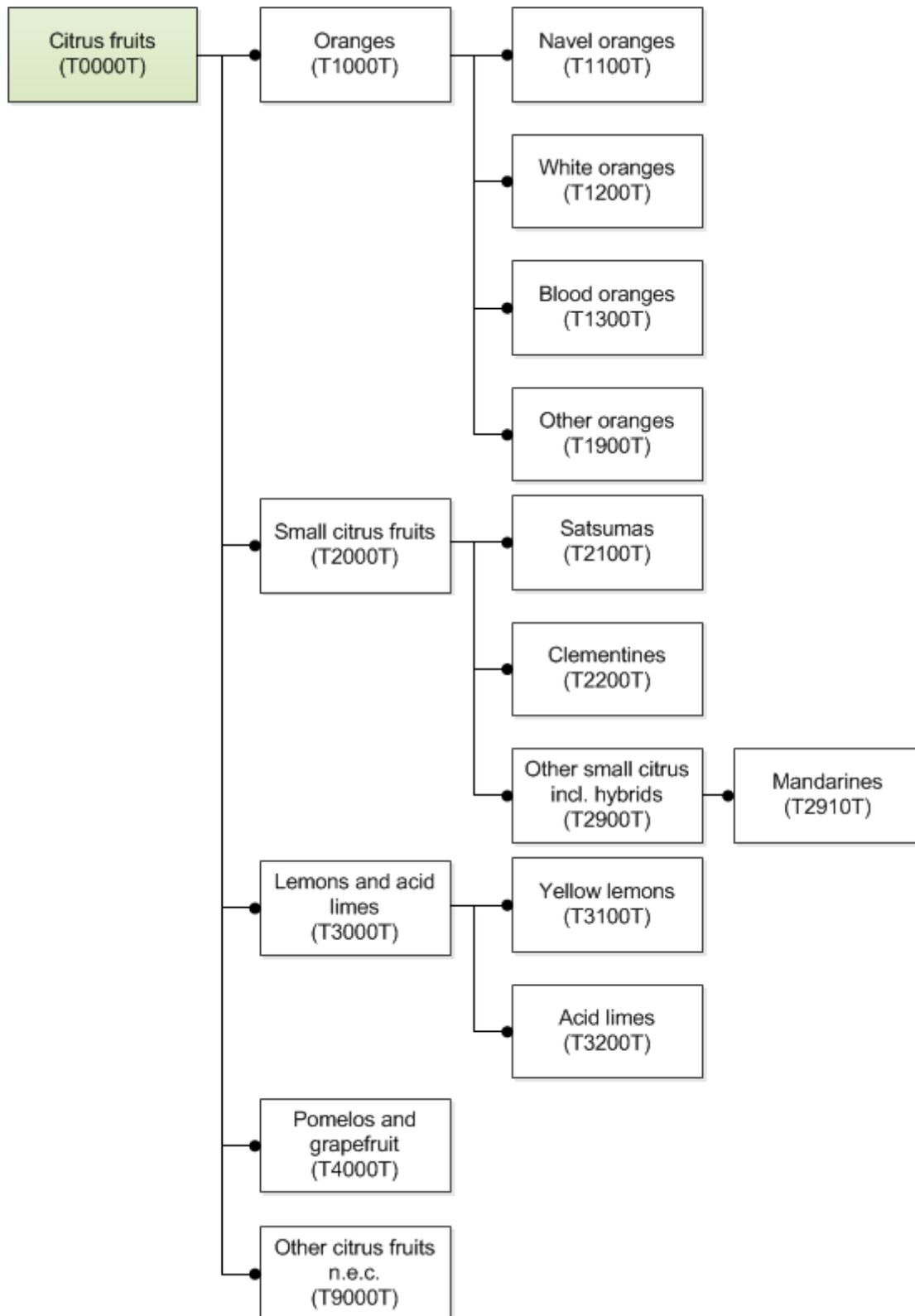
**Excludes**

- Peanuts (*Arachis hypogea* L.) (I1190)

**3.1.3.17CITRUS FRUITS**

Code	Label	Unit
T0000T	Citrus fruits	hectares

Figure 24 – Citrus' hierarchy



### 3.1.3.17.1 Citrus fruits (T0000T)

Hectares of citrus fruits (*Citrus* spp.): oranges, small citrus fruits, lemons, limes, pomelos, grapefruits and other citrus fruits.

#### Includes

- Acid limes (*Citrus aurantifolia*, *C. latifolia* Yu. Tanaka)
- Bergamote (*Citrus bergamia* Risso et Poit.)
- Bitter orange (*Citrus aurantium* L.),
- Clementines (*Citrus x clementina*)
- Fingered citron (*Citrus medica* L.)
- Grapefruit (*Citrus paradisi* (Macfad.))
- Lemons (*Citrus limon* (L.) Burm.f., *C. jambhiri* Lush., *C. meyeri* Yu. Tanaka, *C. pseudolimon* Tanaka)
- Mandarins, tangerines or mandarin oranges (*Citrus reticulata* Blanco)
- Mediterranean mandarin (*Citrus x deliciosa*)
- Oranges, including navel, white and blood varieties (*Citrus sinensis* (L.) Osbeck)
  - navel group: Washington navel, Navelina, Newhall, Thomson, Navelate, Navel lane late and others
  - white group: non sanguine pulp other than navel group such as Ovale, Calabrese, Belladonna, Shamotti or Jaffa, Salustiana, Pera, Pera da Videgheira, Berna, Valencia late, Dom Joao, Cadenera, Bionda comun/blanca comun
  - blood and semi-blood group: Sanguinelli, Doble Fina, Entrefina, Sanguinello, Moro, Tarocco Rosso
- Pomelos (*Citrus maxima* (Merr., Burm. f.))
- Satsumas (*Citrus unshiu* var. owari, clausellina, planellina, etc.)
- Tangerina (*Citrus tangerina* Tanaka)
- Tangor, king of siam (*Citrus nobilis* Loureiro)
- Other citrus fruit, including small citrus fruits such as *C. myrtifolia* Raf., *C. limettioides*, *C. limetta* Risso, *C. limonia* Osbek, *C. madurensis* Lour., *C. hystrix* DC., *Fortunella* spp.
- Orange hybrids
  - Clemenvilla / nova (*C. clementina* x (*C. paradise* x *C. tangerina*))
  - fortune (*Citrus reticulata* x *Citrus tangerina*)
  - nadorcott / afourer (*C. reticulata* x *C. sinensis*)
  - ortanique (*Citrus tangerina* x *Citrus sinensis*)
- Lemon hybrids such as *C. limon* x *sinensis*

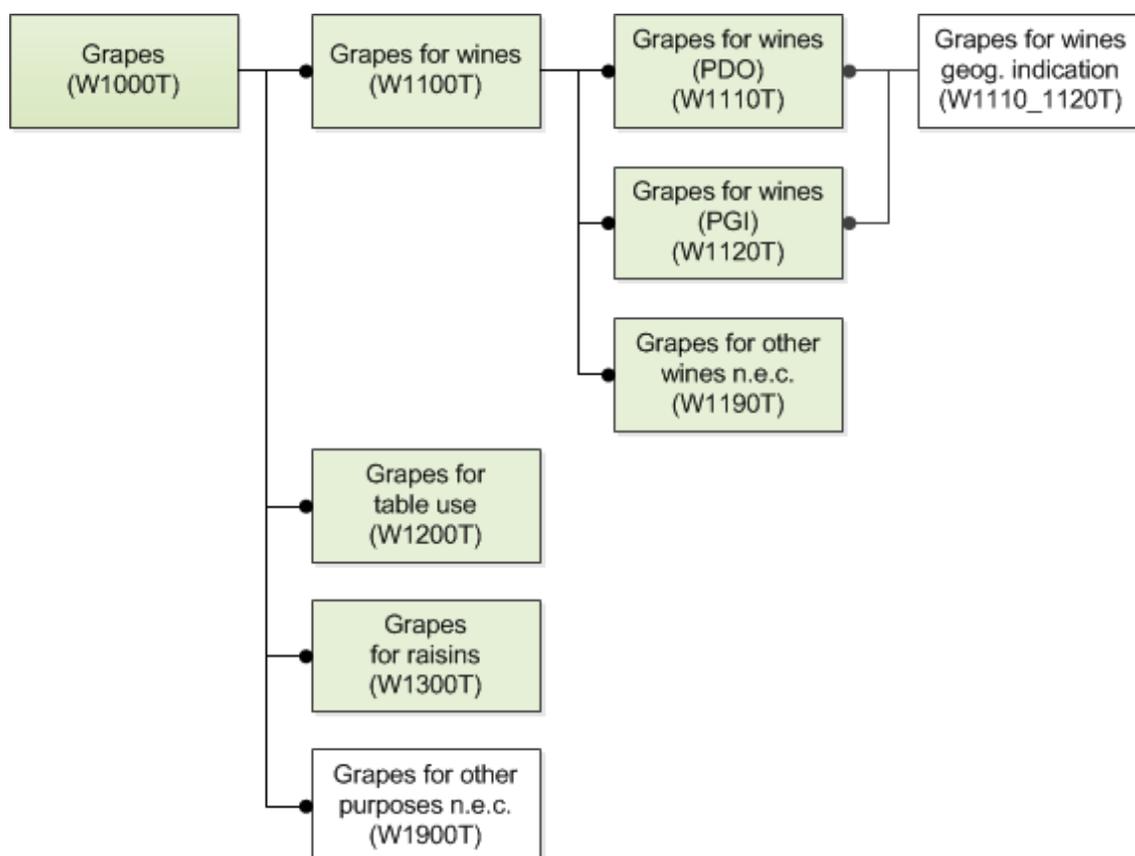
### 3.1.3.18 GRAPES

Code	Label	Unit
W1000T	Grapes	hectares
W1100T	Grapes for wine	hectares
W1110T	Grapes for wine with protected designation of origin (PDO)	hectares
W1120T	Grapes for wine with protected geographical indication (PGI)	hectares
W1190T	Grapes for other wines n.e.c.	hectares
W1200T	Grapes for table use	hectares
W1300T	Grapes for raisins	hectares

The concept of EU quality wines is based on a geographical origin approach (quality wine produced in a specified region). Thus, this classification distinguishes between wines with Geographical Indication (GI) and other wines.

Wines with GI are further divided into wines with a protected designation of origin (PDO) and wines with a protected geographical indication (PGI).

Figure 25 – Grapes' hierarchy



#### 3.1.3.18.1 Grapes (W1000T)

Hectares of vines (*Vitis vinifera* L.)

**3.1.3.18.2 Grapes for wine (W1100T)**

Hectares of vines of grape varieties normally grown for the production of juice, must and/or wine.

**3.1.3.18.3 Grapes for wine with protected designation of origin (PDO) (W1110T)**

Hectares of vines of grape varieties normally grown for the production of wines with a protected designation of origin (PDO) which comply with the requirements of (i) Council Regulation (EC) No 491/2009<sup>(73)</sup> or, where applicable, the most recent legislation and (ii) the corresponding national rules.

**Protected designation of origin (PDO)**

The grapes need to originate in vine areas which comply with the requirements of [Regulation \(EU\) 1308/2013 of the European Parliament and of the Council of 17 December 2013](#) and the corresponding national rules. Grapes should be classified in the category "PDO", as long as they originate in vine areas which comply with the conditions established in the specifications of a given PDO, the maximum yield established in the specifications is not surpassed for the respective vine areas and the respective grower decides to use or market those grapes for the production of PDO wines in a given year.

PDO wine must be produced exclusively with grapes from the area in question, but it is not enough that the grapes are grown in the geographical area of production of a given PDO. Also the yields verified that year and analytical and/or organoleptic elements have to be respected.

If the grapes originate in vine areas which comply with the specifications of both PDO and PGI, the maximum yields are respected and the respective grower decides to use or market those grapes for the production of PDO and PGI wines in a given year, it shall be included only as "PDO" in order to avoid double counting.

**3.1.3.18.4 Grapes for wines with protected geographical indication (PGI) (W1120T)**

Hectares of vines of grape varieties normally grown for the production of wines with a protected geographical indication (PGI) which comply with the requirements of (i) Regulation (EC) No 491/2009 or, where applicable, the most recent legislation and (ii) the corresponding national rules.

**Protected geographical indication (PGI)**

Grapes which are used for production of wines with protected geographical indication (PGI). The grapes need to originate in vine areas which comply with the requirements of [Regulation \(EU\) 1308/2013 of the European Parliament and of the Council of 17 December 2013](#) and the corresponding national rules. Grapes should be classified in the category "PGI", as long as they originate in vine areas which comply with the conditions established in the specifications of a given PGI, the maximum yield established in the specifications is not surpassed for the respective vine areas and the respective grower decides to use or market those grapes for the production of PDO/PGI wines in a given year. It is not enough that the grapes are grown in the geographical area of production of a given PGI, also the yields verified that year and analytical and/or organoleptic elements have to be respected.

<sup>(73)</sup> Council Regulation (EC) No 491/2009 of 25 May 2009 amending Regulation (EC) No 1234/2007 establishing a common organisation of agricultural markets and on specific provisions for certain agricultural products (Single CMO Regulation) (OJ L 154, 17.6.2009, p. 1).

If the grapes originate in vine areas which comply with the specifications of both PDO and PGI and the respective grower decides to use or market those grapes for the production of PDO and PGI wines in a given year, it shall be included only as "PDO" in order to avoid double counting.

However it needs to be considered that PGI wines can be made of up to 15% of grapes which do not comply with the above conditions.

### 3.1.3.18.5 Grapes for other wines n.e.c. (without PDO/PGI) (W1190T)

Hectares of vines of grape varieties normally grown for the production of wines other than PDO and PGI wines.

### 3.1.3.18.6 Grapes for table use (W1200T)

Hectares of vines of grape varieties normally grown for the production of fresh grapes.

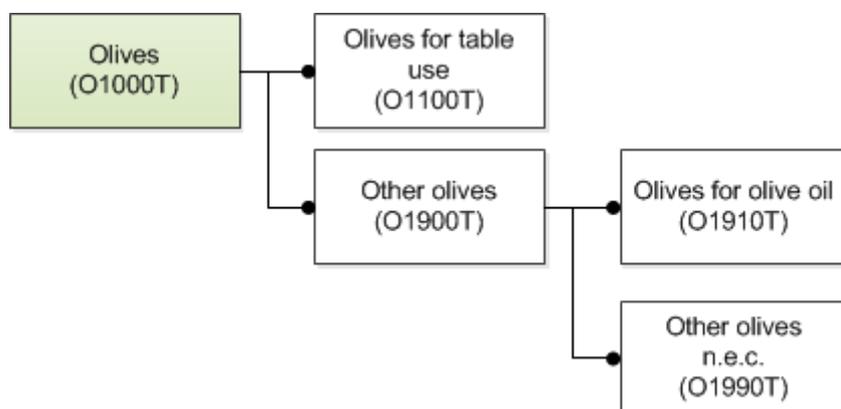
### 3.1.3.18.7 Grapes for raisins (W1300T)

Hectares of vines of grape varieties normally grown for the production of raisins.

## 3.1.3.19 OLIVES

Code	Label	Unit
O1000T	Olives	hectares

Figure 26 – Olives' hierarchy



### 3.1.3.19.1 Olives (O1000T)

Hectares of olive trees (*Olea europaea* L.) grown for the production of olives.

#### Includes

- Olive trees grown for producing table olives
- Olive trees grown for producing olive oil

### 3.1.3.20 NURSERIES

Code	Label	Unit
L0000T	Nurseries	hectares

#### 3.1.3.20.1 Nurseries (L0000T)

Hectares of land, where young ligneous (woody) plants are grown in the open air for subsequent transplantation.

##### Includes

- Vine and root-stock nurseries
- Fruit tree and berry nurseries
- Ornamental nurseries for flowers and ornamental plants
- Commercial nurseries of forest trees, whether in woodland or outside
- Non-commercial forest tree nurseries for the holdings own requirements, grown outside of woodland
- Trees and bushes for planting in gardens, parks, on roadsides and on embankments (e.g. hedgerow plants, rose trees and other ornamental bushes, ornamental conifers), including in all cases their stocks and young seedlings
- Potted plants such as olive tree, fruit trees and berry bushes to sell as ornamentals

##### Excludes

- Nurseries which are not in utilised agricultural area
- Nurseries of forest trees for the holding's own requirements grown within woodland (WA)
- Nurseries under glass or high accessible cover (PECRS)

### 3.1.3.21 OTHER PERMANENT CROPS

Code	Label	Unit
PECR9_H9000T	Other permanent crops including other permanent crops for human consumption	hectares
X0000T	Christmas trees	hectares

#### 3.1.3.21.1 Other permanent crops including other permanent crops for human consumption (PECR9\_H9000T)

Hectares of permanent crops for human consumption not elsewhere classified, and trees planted as Christmas trees on the utilised agricultural area.

For the purposes of IFS, this class refers only to other permanent crops, including other permanent crops for human consumption, which are cultivated outdoors.

**Includes**

- Bamboo (*Bambuseae* spp.)
- Carob trees (*Ceratonia siliqua* L.)
- Christmas trees such as pines or firs, planted for commercial purposes on the utilised agricultural area
- Coffee (*Coffea* spp.)
- Other plaiting and weaving plants
- Rattan or manila or malacca (*Raphia ruffia* (Jacq.) Mart. and other palms of the *Calamoideae* sub-family)
- Rush (*Schoenoplectus lacustris* L.)
- Tea (*Camellia sinensis* (L.) Kuntze)
- Cultivated truffles (*Tuber* spp.)
- Willow/osier (*Salix viminalis* L.)
- Mulberries (*Morus* spp.) if grown for the leaves to feed silkworms

**Excludes**

- Other permanent crops under glass or high accessible cover (PECRS)
- Christmas trees plantations grown within woodland (WA)
- Mulberries (*Morus* spp.) if grown for berries for human consumption (F3000T)
- Short rotation coppices (SRCAA in IFS)

**3.1.3.21.2 Christmas trees (X0000T)**

Hectares of Christmas trees planted for commercial purposes, outside woodland, on the utilised agricultural area. Christmas tree plantations which are no longer maintained and belong to wooded area are excluded.

**Includes**

- Christmas trees on utilised agricultural area

**Excludes**

- Christmas trees plantations grown within woodland (WA)

**3.1.3.22 KITCHEN GARDENS**

Code	Label	Unit
K0000T	Kitchen gardens	hectares

### 3.1.3.22.1 Kitchen gardens (K0000T)

Hectares of land normally occupied with vegetables, root crops and permanent crops, among others, intended for self-consumption by the holder and his household, normally separated from the rest of the agricultural land, and recognisable as kitchen gardens.

Even if normally these correspond to small areas of the farms (less than 0.5 ha), the main aspect to use for identifying a kitchen garden is its use. A kitchen garden is used for self-consumption. Only occasional surplus products coming from this area are sold off from the holding. All areas from which products are consistently sold on the market belong under other items, even if part of the production is consumed by the holder and his household.

#### Includes

- Areas cultivated by collective households, for example research institutions, religious communities, boarding schools or prisons, which are used for self-consumption

#### Excludes

- All areas from which products are consistently sold on the market (even if part of the production is consumed by the holder and his household)
- Areas producing forage for any animals, even though the animals are consumed by the holder and his family
- Pleasure gardens, parks and lawns (FA9)
- Areas cultivated by collective households, for example research institutions, religious communities, boarding schools or prisons, which are not used for self-consumption

### 3.1.3.23 OTHER FARMLAND

Code	Label	Unit
FA_OTH	Other farmland	hectares
NUAA	Unutilised agricultural land	hectares
WA	Wooded area	hectares
SRCAA	Short rotation coppices	hectares
FA9	Other land	hectares

### 3.1.3.23.1 Other farmland (FA\_OTH)

Hectares of unutilised agricultural land (agricultural land which is no longer farmed, for economic, social or other reasons, and which is not used in the crop rotation system), wooded area and other land occupied by buildings, farmyards, tracks, ponds, quarries, infertile land, rock, etc.

### 3.1.3.23.2 Unutilised agricultural land (NUAA)

Hectares of previously used land for an agricultural purpose which during the reference year of the survey is no longer worked and which is not used in the crop rotation system, i.e. land where no agricultural use is intended.

This land could be brought back into cultivation using the resources normally available on an agricultural holding.

The difference to fallow land, is that this is land which is not considered by the farmer as being part of the rotation.

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#### Includes

- Fruit trees no longer in production, clearly abandoned for more than 5 years
- Common land which is not used
- Rough grazing not in use
- Pastures and meadows not in use
- Areas the farmer declares that are put out of production (not only for resting), immediately from the first year of declaration
- Arable land taken out of production for more than 5 years that are not part of the land kept in good agricultural and environmental condition

#### Excludes

- Pleasure gardens, parks and lawns (FA9)
  - Fallow land (Q0000)
  - Areas of arable land maintained in good agricultural condition (Q0000)
  - Permanent grassland no longer used for production purposes but eligible for financial support (J3000)
- 

#### **3.1.3.23.3 Wooded area (WA)**

Hectares of land covered with trees or forest shrubs, including plantations of poplar and other similar trees inside or outside woods and forest-tree nurseries grown in woodland for the holding's own requirements, as well as forest facilities (forest roads, storage depots for timber, etc.).

For the purposes of IFS, when agricultural crops are combined with wooded area, the area is split pro-rata to the use of the ground (see 3.1.1.2 above).

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## Includes

- Nurseries of forest trees for the holding's own requirements grown within woodland
- Cherry trees or chestnut trees clearly abandoned for more than 5 years, or which are not used for the production of fruit
- Trees which produce fruit marginally, for example for pigs grazing under the trees
- Christmas trees plantations grown within woodland
- Christmas tree plantations which are no longer maintained and belong to wooded area
- Windbreaks, shelter belts and hedgerows as far as it is appropriate to regard them as woodland

## Excludes

- Walnut and chestnut trees grown mainly for their fruit (F4000)
  - Christmas trees (X0000)
  - Other plantations of non-forest trees (PECR)
  - *Salix* spp. plantations (PECR9\_H9000)
  - Areas of isolated trees, small groups or lines of trees (FA9)
  - Parks or gardens with parks and lawns (FA9)
  - Permanent grassland (J0000)
  - Heath and moorland (J2000)
  - Permanent grassland no longer used for production purposes but eligible for financial support (J3000)
  - Unutilised agricultural land (NUAA)
-

## Forest and other wooded land by FAO

FAO defines **forest** as land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. However, it does not include land that is predominantly under agricultural or urban land use.

Forest is determined by the presence of trees and absence of agricultural and urban land use. It includes areas with young trees, forest roads, fire breaks, wind breaks, and corridors of trees of more than 0.5ha and a width of more than 20m. Includes abandoned shifting cultivation of land with tree regeneration that has reached, or is expected to reach, at least 10% and a tree height of at least 5 m. Includes areas of mangroves in tidal zones, rubber wood, cork oak and Christmas trees plantations<sup>(74)</sup>. Includes areas with bamboo and palms, provided that the land use height and canopy cover criteria are met. Excludes tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations, olive orchards and agro-forestry systems when crops are grown under tree cover.

**Other wooded land** is land not defined as forest, spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds; or with a combined cover of shrubs, bushes and trees above 10 percent. It also does not include land that is predominantly under agricultural or urban land use. (FAO, 2015)

### 3.1.3.23.4 Short rotation coppices (SRCAA)

Hectares of wooded areas managed for growing wooded plants, where the rotation period is 20 years or less.

#### Short rotation coppice in the CAP

According to Regulation (EU) No 1307/2013, short rotation coppice is the area planted with live forest trees species (CN 0602 90 41) to be defined by Member States, that consist of woody, perennial crops, the rootstock or stools of which remain in the ground after harvesting, with new shoots emerging in the following season and with a maximum harvest cycle to be determined by the Member States.

#### Rotation period

The rotation period is the time between the first sowing/planting of the trees and the harvest of the final product, where harvesting does not include normal management activities such as thinning.

#### Short rotation coppice vs. short rotation forestry

For the purpose of forest statistics a distinction is normally made between short rotation coppices (rotation periods below 8 years) and short rotation forestry (rotation periods between 8 and 20 years).

For the purpose of integrated farm statistics, the rotation period is set at 20 years or less. This implies that also other species, not included in those selected by the country in respect to the CAP Regulation definition on short rotation coppices, may have to be included in IFS as part of SRCAA.

<sup>(74)</sup> Note that although the FAO definition of forest includes Christmas trees, in IFS and ACS these are not part of the wooded area but of the permanent crops.

## Short rotation coppice in Poland

In Poland the following species were defined as part of the CAP short rotation coppice

- *Salix* spp.
- *Populus* spp.
- *Betula* spp.

However, if other woody species exploited on a rotation period of 20 years or less exist in the holding, then they should be counted in SRCAA as well.

### Includes

- Areas of willow or poplar for energy production
- Areas of poplar or eucalyptus for pulpwood
- Areas of *Paulownia* spp. managed in short rotation
- All short rotation plantations of wooded plants intended for industrial processing

### 3.1.3.23.5 Other land (land occupied by buildings, farmyards, tracks, ponds and other non-productive areas) (FA9)

Hectares of land which are part of the total area belonging to the agricultural holding but constitute neither utilised agricultural area, unutilised agricultural area nor wooded area, such as land occupied by buildings (except if used for mushroom cultivation), farmyards, tracks, ponds, quarries, infertile land or rock.

### Includes

- Areas not used directly for crop production, but necessary for the work on the holding, such as land occupied by buildings or roads
- Areas unsuitable for agricultural production, which are the ones that can only be brought into production by extreme means not normally available on the agricultural holding
- Marshland
- Heaths which are not part of rough grazings
- Pleasure gardens, parks and lawns
- Areas of isolated trees, small groups of trees or lines of trees

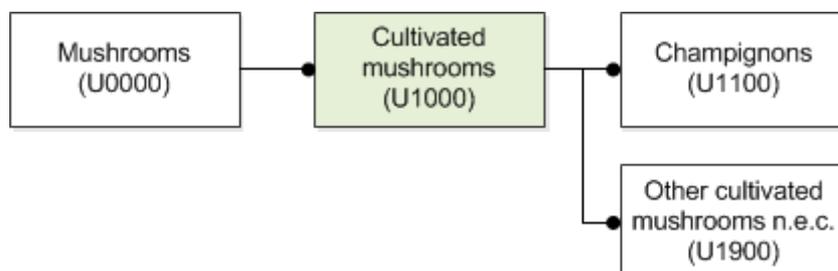
### Excludes

- Buildings which are used for cultivation of mushrooms (U1000)
- Heaths which are rough grazings (J2000)

**3.1.3.24 CULTIVATED MUSHROOMS**

Code	Label	Unit
U1000	Cultivated mushrooms	hectares

Figure 27 – Mushrooms' hierarchy

**3.1.3.24.1 Cultivated mushrooms (U1000)**

Hectares of cultivated mushrooms grown in buildings which have been specially erected or adapted for that purpose, as well as in underground premises, caves and cellars.

Mushrooms belong botanically to fungi and not to plants as other vegetables. Their production method differs also very much from other vegetables. Mushrooms are not produced on arable land but in special buildings or cellars. The production takes place in layered structures and for some species/varieties even not on a plain ground but e.g. on tree logs.

The area refers to the effective growing surface area (beds, bags, growing shelves or similar surfaces) which are or will be used at least once during the 12 month reference period. If used more than once, the area is still counted once only.

In case of mushrooms grown in logs outdoors, all the area, including the spaces between the logs, should be taken into account.

**Includes**

- Table mushrooms (*Agaricus bisporus* L.)
- Shiitake (*Lentinula edodes* (Berk.) Pegler)
- Oyster mushrooms (*Pleurotus ostreatus* (Jacq. ex Fr.) P.Kumm.)
- King trumpet mushroom (*Pleurotus eryngii* (DC.) Quél. (syn. *Pleurotus fuscus battarra* ex Bres.))

**Excludes**

- Wild mushrooms
- Cultivated truffles (*Tuber* spp.) (PECR9\_H9000T)



### 3.1.3.25.1 Utilised agricultural area under glass or high accessible cover (UAAS)

Hectares of crops, which for the whole of their period of growth or for the predominant part of it are covered by greenhouses or fixed high cover or mobile high cover or mobile high cover (glass or rigid or flexible plastic). These areas must not be included in the variables mentioned above.

#### Includes

- Vegetables, melons and strawberries cultivated under glass or high accessible cover
- Permanent crops cultivated under glass or high accessible cover
- Flowers and ornamental plants (excluding nurseries) cultivated under glass or high accessible cover
- Nurseries under glass or high accessible cover
- Other UAA under glass or high accessible cover

#### Excludes

- Crops covered by sheets of plastic laid flat on the ground
- Arable land under cloches
- Tunnels not accessible to man
- Movable, glass-covered, low frames

### 3.1.3.25.2 Vegetables, including melons and strawberries under glass or high accessible cover (V0000\_S0000S)

Hectares of all brassicas, leafy and stalked vegetables, vegetables cultivated for fruit, root, tuber and bulb vegetables, fresh pulses, other vegetables harvested fresh (not dry) and strawberries grown under glass or high accessible cover.

These plants are covered by greenhouses or fixed or mobile high cover (glass or rigid or flexible plastic) for the whole of their period of growth or for the predominant part of it.

### 3.1.3.25.3 Flowers and ornamental plants (excluding nurseries) under glass or high accessible cover (N0000S)

Hectares of all flowers and ornamental plants intended to be sold as cut flowers (e.g. roses, carnations, orchids, gladioli, chrysanthemum, foliage cut and other cut products), as potted, bedding and balcony flowers and plants (e.g. rhododendrons, azaleas, chrysanthemum, begonia, geranium, impatiens or other potted, bedding and balcony plants) and as bulb and corm flowers and other ornamental plants (tulips, hyacinths, orchids, narcissi and others) under glass or high accessible cover.

These plants are covered by greenhouses or fixed or mobile high cover (glass or rigid or flexible plastic) for the whole of their period of growth or for the predominant part of it.

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## Includes

- Roses, carnations, orchids, gladioli, chrysanthemum, foliage cut and other cut products under glass or high accessible cover
- Rhododendrons, azaleas, chrysanthemum, begonia, geranium, impatiens, other potted, bedding and balcony plants under glass or high accessible cover
- Tulips, hyacinths, orchids, narcissi and others under glass or high accessible cover
- Flowers and ornamental plants under glass or high accessible cover

## Excludes

- Nursery plants under glass or high accessible cover (PECRS)
  - Bulbs, corms, and other very young plants and seeds under glass or high accessible cover (ARA09S)
- 

### **3.1.3.25.4 Other arable land crops under glass or high accessible cover (ARA09S)**

Hectares of other arable land crops not elsewhere classified, grown under glass or high accessible cover.

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## Includes

- Bulbs, corms, and other very young plants and seeds under glass or high accessible cover
- Aromatic, medicinal and culinary plants under glass or high accessible cover

## Excludes

- Fruits, berries and nuts under glass or high accessible cover (PECRS)
  - Nursery plants under glass or high accessible cover (PECRS)
-

### 3.1.3.25.5 Permanent crops under glass or high accessible cover (PECRS)

Hectares of permanent crops grown under glass or high accessible cover.

#### Includes

- Fruits, berries and nuts grown under glass or high accessible cover
- Citrus fruits grown under glass or high accessible cover
- Grapes grown under glass or high accessible cover
- Olives grown under glass or high accessible cover
- Other permanent crops including other permanent crops for human consumption grown under glass or high accessible cover
- Nursery plants under glass or high accessible cover

### 3.1.3.25.6 Other utilised agricultural area (UAA) under glass or high accessible cover n.e.c. (UAA09S)

Hectares of utilised agricultural area, not elsewhere classified, and grown under glass or high accessible cover.

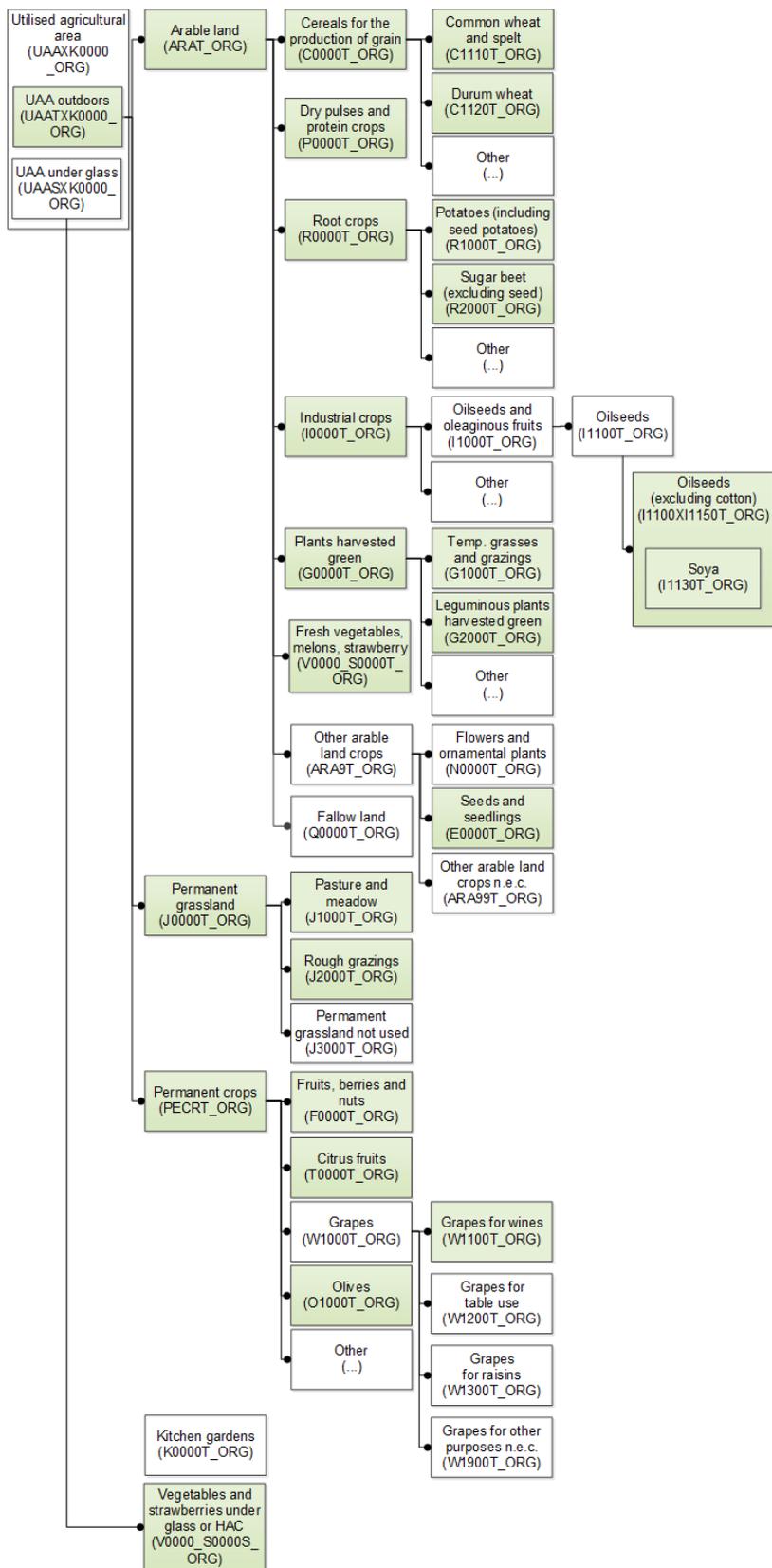
#### Includes

- Kitchen gardens under glass or high accessible cover (<100 m<sup>2</sup>)

### 3.1.3.26 ORGANIC FARMING

The agricultural holding has land where organic farming production methods are used according to certain set standards and rules specified in (i) Regulation (EC) No 834/2007 or Regulation (EU) 2018/848 or, where applicable, in the most recent legislation, and (ii) the corresponding national implementing rules for organic production, including during the conversion period.

Figure 29 – UAA organic hierarchy



Code	Label	Unit
UAATXK0000_ORG	Organic farming utilised agricultural area	hectares
ARAT_ORG	Organic farming arable land	hectares
C0000T_ORG	Organic farming cereal for the production of grain (including seed)	hectares
C1110T_ORG	Organic farming common wheat and spelt	hectares
C1120T_ORG	Organic farming durum wheat	hectares
P0000T_ORG	Organic farming dry pulses and protein crops for the production of grain (including seed and mixtures of cereals and pulses)	hectares
R0000T_ORG	Organic farming root crops	hectares
R1000T_ORG	Organic farming potatoes (including seed potatoes)	hectares
R2000T_ORG	Organic farming sugar beet (excluding seed)	hectares
I0000T_ORG	Organic farming industrial crops	hectares
I1100XI1150T_ORG	Organic farming oilseeds (excluding cotton)	hectares
I1130T_ORG	Organic farming soya	hectares
G0000T_ORG	Organic farming plants harvested green from arable land	hectares
G1000T_ORG	Organic farming temporary grasses and grazings	hectares
G2000T_ORG	Organic farming leguminous plants harvested green	hectares
V0000_S0000T_ORG	Organic farming fresh vegetables (including melons) and strawberries	hectares
E0000T_ORG	Organic farming seeds and seedlings	hectares
J0000T_ORG	Organic farming permanent grassland	hectares
J1000T_ORG	Organic farming pasture and meadow, excluding rough grazings	hectares
J2000T_ORG	Organic farming rough grazings	hectares
PECRT_ORG	Organic farming permanent crops (including young and temporarily abandoned plantations, excluding areas producing for own consumption only)	hectares
F0000T_ORG	Organic farming fruits, berries and nuts (excluding citrus fruits, grapes and strawberries)	hectares
T0000T_ORG	Organic farming citrus fruits	hectares
W1100T_ORG	Organic farming grapes for wines	hectares
O1000T_ORG	Organic farming olives	hectares
V0000_S0000S_ORG	Organic farming vegetables, including melons and strawberries under glass or high accessible cover	hectares

### 3.1.3.26.1 Organic farming and conversion to organic farming

In the past, some issues related to comparability of organic farming data from different sources have been identified by Eurostat. For a minority of countries, there is similar data for all variables, and it is supposed that the same source is used for all the variables. A second group of countries (the majority) had comparable data. However still for some countries data was not comparable even for the aggregates, where it was suspected that there was no link between data provided for FSS and organic farming statistics. These differences are probably explained because Eurostat collects data on organic farming from national Certification and Inspection bodies. This data collection differed from the FSS data on organic farming due to the different statistical unit (for organic statistics the unit is the certified agricultural holding) and to the data collection methodology (organic farming data is taken from administrative registers).

#### Organic farming

Organic farming is a mode of agricultural production which uses organic production methods and places the highest emphasis on environmental and wildlife protection and, with regard to livestock production, on animal welfare considerations. Organic production involves holistic production

management systems for crops and livestock, emphasizing on-farm management practices over off-farm inputs.

This is accomplished by avoiding, or largely reducing, the use of synthetic chemicals such as [fertilisers](#), [pesticides](#), ([fungicides](#), [herbicides](#), [insecticides](#)), additives and veterinary medicinal products, replacing them, wherever possible, with cultural, biological and mechanical methods. Organic producers develop a healthy, fertile soil by growing and rotating a mixture of crops and using clover to fix nitrogen from the atmosphere. The production of genetically-modified (GM) crops and their use in animal feed is avoided.

### Organic area

In the context of [European Union \(EU\)](#) statistics, farming is considered to be organic if it complies with [Regulation \(EC\) No 834/2007](#) on organic production and labelling of organic products. The detailed rules for the implementation of this Regulation are laid down in [Regulation 889/2008](#). In the meanwhile a new act for organic production and labelling of organic products (Regulation (EU) 2018/848) will repeal Regulation (EC) No 834/2007. For the purposes of IFS, there is no change in the sense that the organic area still covers land fully converted to organic and areas under conversion.

#### 3.1.3.26.2 Organic farming utilised agricultural area (UAATXK0000\_ORG)

Hectares of organic farming utilised agricultural area

#### 3.1.3.26.3 Organic farming arable land (ARAT\_ORG)

Hectares of organic farming arable land

#### 3.1.3.26.4 Organic farming cereal for the production of grain (including seed) (C0000T\_ORG)

Hectares of organic farming cereals for the production of grain (including seed)

#### 3.1.3.26.5 Organic farming common wheat and spelt (C1110T\_ORG)

Hectares of organic farming *Triticum aestivum* L. emend. Fiori et Paol., *Triticum spelta* L. and *Triticum monococcum* L.

#### 3.1.3.26.6 Organic farming durum wheat (C1120T\_ORG)

Hectares of organic farming *Triticum durum* Desf.

#### 3.1.3.26.7 Organic farming dry pulses and protein crops for the production of grain (including seed and mixtures of cereals and pulses) (P0000T\_ORG)

Hectares of organic farming dry pulses and protein crops for the production of grain

**3.1.3.26.8 Organic farming root crops (R000T\_ORG)**

Hectares of organic farming root crops

**3.1.3.26.9 Organic farming potatoes (including seed potatoes) (R100T\_ORG)**

Hectares of organic farming potatoes (including seed potatoes)

**3.1.3.26.10 Organic farming sugar beet (excluding seed) (R200T\_ORG)**

Hectares of organic farming sugar beet (excluding seed)

**3.1.3.26.11 Organic farming industrial crops (I000T\_ORG)**

Hectares of organic farming industrial crops

**3.1.3.26.12 Organic farming oilseeds (I1100XI1150T\_ORG)**

Hectares of organic farming oilseeds

**3.1.3.26.13 Organic farming soya (I1130T\_ORG)**

Hectares of organic farming soya (*Glycine max* L. Merrill) harvested as dry grains.

**3.1.3.26.14 Organic farming plants harvested green from arable land (G000T\_ORG)**

Hectares of organic farming plants harvested green from arable land

**3.1.3.26.15 Organic farming temporary grasses and grazings (G100T\_ORG)**

Hectares of organic farming temporary grasses and grazings

**3.1.3.26.16 Organic farming leguminous plants harvested green (G200T\_ORG)**

Hectares of organic farming of leguminous plants harvested green.

**3.1.3.26.17 Organic farming fresh vegetables (including melons) and strawberries (V0000\_S0000T\_ORG)**

Hectares of organic farming fresh vegetables (including melons) and strawberries

**3.1.3.26.18 Organic farming seeds and seedlings (E0000T)**

Hectares of organic farming seeds and seedlings

**3.1.3.26.19 Organic farming permanent grassland (J0000T\_ORG)**

Hectares of organic farming permanent grassland

**3.1.3.26.20 Organic farming pasture and meadow, excluding rough grazings (J1000T\_ORG)**

Hectares of organic farming pasture and meadow, excluding rough grazings

**Includes**

- Pasture and meadow, excluding rough grazing on which organic farming production methods are either applied and certified or under conversion to be certified
- Temporary grass on which organic farming production methods are either applied and certified or under conversion to be certified

**3.1.3.26.21 Organic farming rough grazings (J2000T\_ORG)**

Hectares of organic farming rough grazings

**3.1.3.26.22 Organic farming permanent crops (including young and temporarily abandoned plantations, excluding areas producing for own consumption only) (PECRT\_ORG)**

Hectares of organic farming permanent crops

**3.1.3.26.23 Organic farming fruits, berries and nuts (excluding citrus fruits, grapes and strawberries) (F0000T\_ORG)**

Hectares of organic farming fruits, berries and nuts

**3.1.3.26.24 Organic farming citrus fruits (T0000T\_ORG)**

Hectares of organic farming citrus fruits

**3.1.3.26.25 Organic farming grapes for wines (W1100T\_ORG)**

Hectares of organic farming grapes for wine

**3.1.3.26.26 Organic farming olives (O1000T\_ORG)**

Hectares of organic farming olives

**3.1.3.26.27 Organic farming vegetables, including melons and strawberries under glass or high accessible cover (V0000\_S0000S\_ORG)**

Hectares of organic farming vegetables, including melons and strawberries under glass or high accessible cover

**3.1.3.27 IRRIGATION ON CULTIVATED OUTDOOR AREA**

Code	Label	Unit
UAAT_IB	Total irrigable area	hectares

**3.1.3.27.1 Irrigable area**

Trends in water abstraction rates depend on different factors: crop variety (examples of water-intensive crops are potatoes in Northern Europe and cotton, grain maize, rice and fruit in Southern Europe), irrigation area, irrigation technology, water prices, water restrictions, pumping costs and climate conditions. Farmers may select crops that require more water during the growing season, or that have growth periods more sensitive to soil moisture stress.

Because of these varying factors, irrigated areas change from year to year and irrigable areas, defined as the total area equipped for irrigation, are used instead to present irrigation trends.

**3.1.3.27.2 Total irrigable area (UAAT\_IB)**

Hectares of total maximum utilised agricultural area which could be irrigated in the reference year using the equipment and the quantity of water normally available on the agricultural holding.

The outdoor area that the farmer can potentially irrigate with the equipment and normal volume of water at hand should be recorded regardless of the type of irrigation equipment and method.

**Excludes**

- Areas under glass or high accessible cover
- Kitchen gardens

### 3.1.4 Variables of livestock

For the purposes of IFS, livestock refers to the number of production animals that are in the direct possession, or management, of the holding on the reference day of the survey.

The animals reported are not necessarily the property of the holder, if they are under the management of the holding, either because they are on the holding (on utilised agricultural areas or in animal housing used by the holding) on the reference day, but eventually also off it (on common grazing's or in the course of migration, etc.).

#### Livestock and poultry

Note that in some interpretations of the word "livestock", poultry (including chicken, turkeys, pigeons or geese) is excluded. In others livestock refers only to "animals with hooves" (such as bovines and goats). In some cases it refers only to animals which are bred for consumption. In IFS the broader definition of the word is used.

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#### Includes

- Production animals that are in the direct possession or management of the holding on the reference day of the survey.
- Animals not necessarily a property of the land holder, such as animals grazing on the holding but belonging to a non-agricultural undertaking (e.g. feed-mill, slaughterhouse)
- Migrating herds (which do not belong to holdings using agricultural areas) regarded as independent holdings
- Bovine animals
- Sheep and goats
- Pigs
- Poultry
- Rabbits
- Beehives
- Fur animals for the production of fur
- Deer for the production of meat
- Equidae

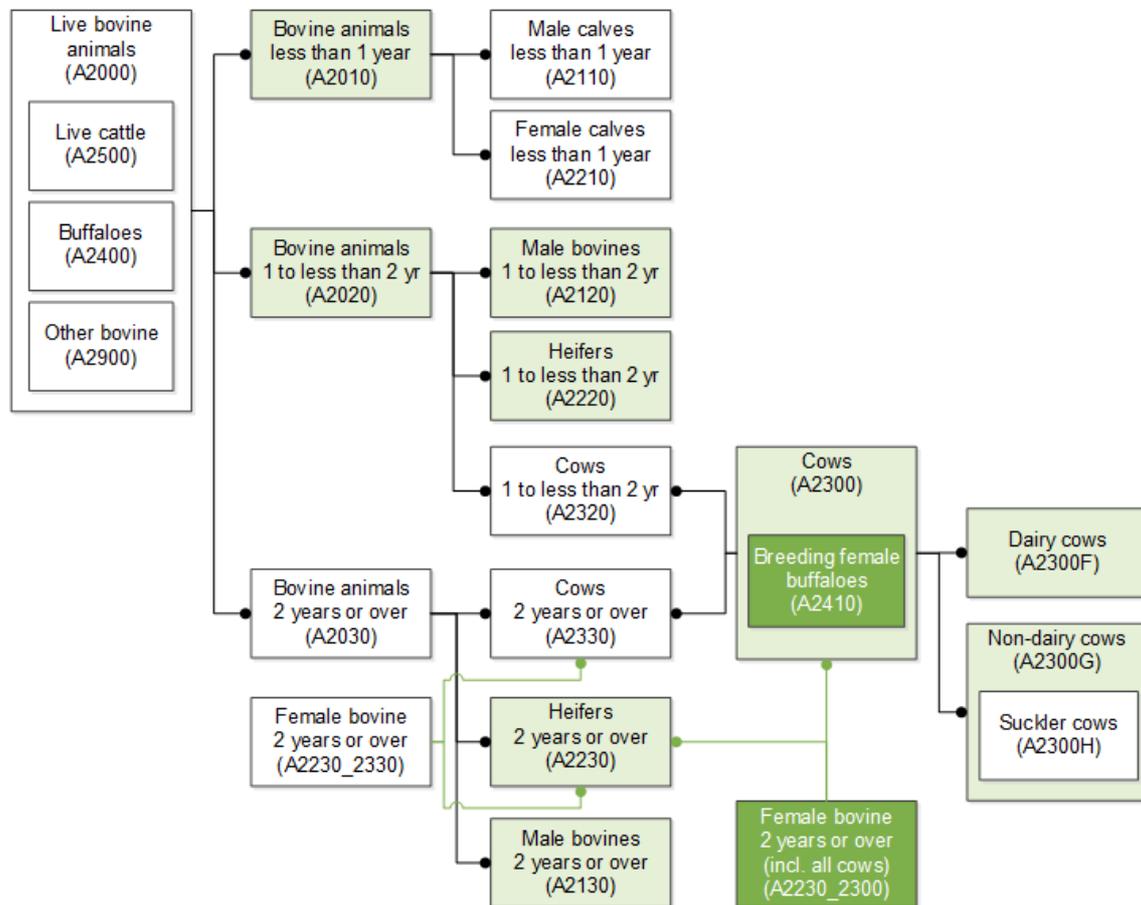
#### Excludes

- Pets and animals, not used in the production or not used for income generating activities, i.e. used only for the holder's own family leisure purposes
  - Animals in transit (e.g. female animals being taken for service)
  - Animals grazing on another holding
  - Aquatic animals, fish, batrachians and reptiles
-

### 3.1.4.1 BOVINE ANIMALS

Code	Label	Unit
A2010	Bovine animals less than 1 year old	heads
A2020	Bovine animals, 1 to less than 2 years old	heads
A2120	Male bovine animals, 1 to less than 2 years old	heads
A2220	Heifers, 1 to less than 2 years old	heads
A2130	Male bovine animals, 2 years old and over	heads
A2230_2300	Female bovine, 2 years old and over (including all cows)	heads
A2230	Heifers 2 years old and over	heads
A2300	Cows	heads
A2300F	Dairy cows	heads
A2300G	Non-dairy cows	heads
A2410	Buffalo-cows	heads

Figure 30 – Bovine animals' hierarchy



### 3.1.4.1.1 Bovine animals

#### Includes

- Cattle (*Bos taurus*, L.)
- Buffalo, such as water buffalo (*Bubalus bubalis* L.)
- Aurochs (*Bos primigenius*, Bojanus)
- Bison (*Bison* spp.)
- Hybrids, such as Beefalo (*Bos Taurus x Bison bison*)

A distinction can be made by the age of the animal (less than 1 year old, aged between 1 and 2 years, and 2 years old and over), with a further division between male and female bovines.

Female bovines aged 1 year old and over are divided into heifers (female bovines that have not yet calved) and cows (a female [bovine](#) that has calved, including animals that are less than 2 years). The latter are further divided into dairy cows and others.

### 3.1.4.1.2 Bovine animals less than 1 year old (A2010)

Heads of bovine animals, male and female, under 1 year old.

#### Includes

- Calves (bovines animals aged under or equal 8 months) regardless of their dairy/meat aptitude
- Young cattle (bovines animals over 8 months but less than 1 year) regardless of their dairy/meat aptitude

### 3.1.4.1.3 Bovine animals, 1 to less than 2 years old (A2020)

Heads of bovine animals, with at least 1 but less than 2 years old.

### 3.1.4.1.4 Male bovine animals, 1 to less than 2 years old (A2120)

Heads of bovine animals, male, with at least 1 but less than 2 years old.

### 3.1.4.1.5 Heifers, 1 to less than 2 years old (A2220)

Heads of bovine animals, female, with at least 1 but less than 2 years old.

---

**Includes**

- Females of at least 1 but less than 2 years old which have not yet calved

**Excludes**

- Female bovine animals, which have already calved, even if less than 2 years old (A2300)
  - Dairy cows (A2300F)
- 

**3.1.4.1.6 Male bovine animals, 2 years old and over (A2130)**

Heads of male bovine animals, two years old and over.

**3.1.4.1.7 Female bovine, 2 years old and over (including all cows) (A2230\_2300)**

Heads of female bovine animals of two years old and over.

---

**Includes**

- Heifers, 2 years old and over
  - Cows
  - Female bovine animals, which have already calved, even if less than 2 years old
- 

**3.1.4.1.8 Heifers 2 years old and over (A2230)**

Heads of female bovine animals of two years old and over which have not yet calved.

---

**Includes**

- Female bovine animals of two years and over which have not yet calved
  - Female bovine animals of two years and over which have not yet calved and are pregnant on the day of the survey
- 

**3.1.4.1.9 Cows (A2300)**

Heads of female bovine animals of two years old and over which have already calved

**Includes**

- Female bovine animals that are less than 2 years old if they have already calved
- Buffalo-cows (A2410)

**3.1.4.1.10 Dairy cows (A2300F)**

Heads of female bovine animals which have already calved (including those less than two years old) and which, by reason of their breed or particular qualities, are kept exclusively or principally to produce milk for human consumption or for processing into dairy products.

**Includes**

- Buffalo dairy cows
- Cull dairy cows which were taken out of milk production to be slaughtered, whether or not they were fattened between their last lactation and their slaughter

**3.1.4.1.11 Non-dairy cows (A2300G)**

Heads of female bovine animals which have already calved (including those less than 2 years old) and which, by reason of their breed or particular qualities, are kept exclusively or principally for the production of calves and whose milk is not intended for human consumption nor for processing into dairy products.

**Includes**

- Cows intended for rearing calves for meat production (whether or not fattened before slaughter)
- Draught cows and cull cows other than dairy cows

**3.1.4.1.12 Buffalo-cows (A2410)**

Heads of buffalo-cows (females of the species *Bubalus bubalis*, L.) which have already calved (including those less than 2 years old)

The class for buffalo-cows (A2410) is included as a part of cows (A2300): to be read as "A2300 - Cows: of which A2410 - buffalo-cows".

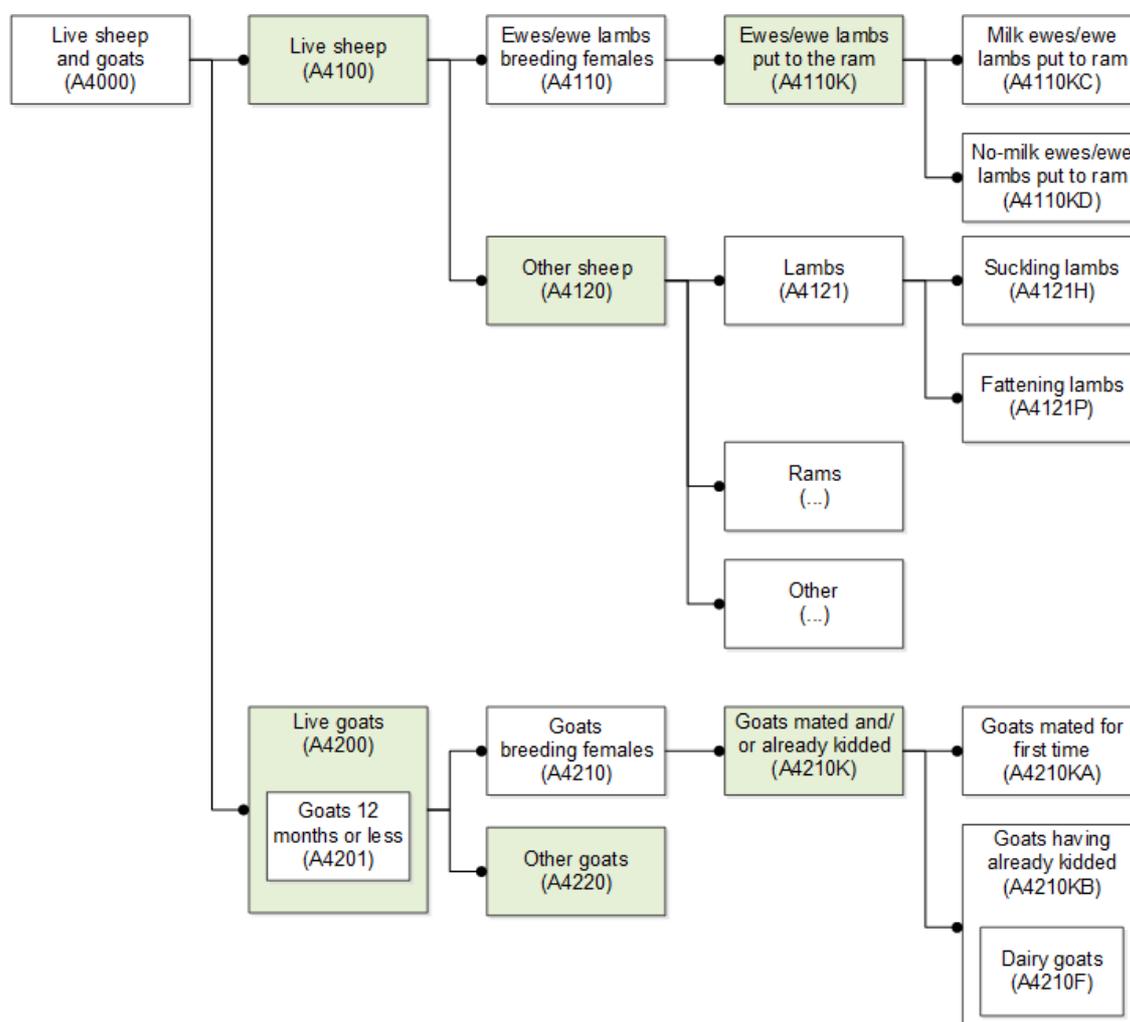
**Excludes**

- Cows of other bovines
- Bison
- Aurochs
- Hybrids

### 3.1.4.2 SHEEP AND GOATS

Code	Label	Unit
A4100	Sheep (all ages)	heads
A4110K	Breeding female sheep	heads
A4120	Other sheep	heads
A4200	Goats (all ages)	heads
A4210K	Breeding female goats	heads
A4220	Other goats	heads

Figure 31 – Sheep and goats hierarchy



#### 3.1.4.2.1 Sheep

Sheep are domesticated animals of the species *Ovis aries*, L. kept in flocks mainly for their milk, wool or meat.

#### 3.1.4.2.2 Sheep (all ages) (A4100)

Heads of domestic animals of the species *Ovis aries* L.

**3.1.4.2.3 Breeding female sheep (A4110K)**

Heads of ewes and ewe lambs put to the ram, regardless of dairy/meat aptitude.

**Includes**

- Ewes that have lambed (been bred from)
- Ewes put to the ram for the first time
- Cull ewes (unproductive ewes to be sent for slaughter)

**Excludes**

- Other sheep (A4120)

**3.1.4.2.4 Other sheep (A4120)**

Heads of all sheep other than breeding females.

**Includes**

- Ram
- Male lambs under 12 months
- Female lambs (other than breeding females) under 12 months
- Female sheep which have not been put to the ram

**3.1.4.2.5 Goats**

For the purpose of European statistics, goats are domestic animals of the subspecies *Capra aegagrus hircus* L.

**3.1.4.2.6 Goats (all ages) (A4200)**

Heads of domestic animals of the subspecies *Capra aegagrus hircus* L.

**3.1.4.2.7 Breeding female goats (A4210K)**

Heads of female goats which have already kidded and goats which have been mated.

**Includes**

- Female goats which have already kidded regardless of their dairy/meat aptitude
- Female kids and goats which have been mated regardless of their dairy/meat aptitude
- Cull female goats

**3.1.4.2.8 Other goats (A4220)**

Heads of all goats, other than breeding females.

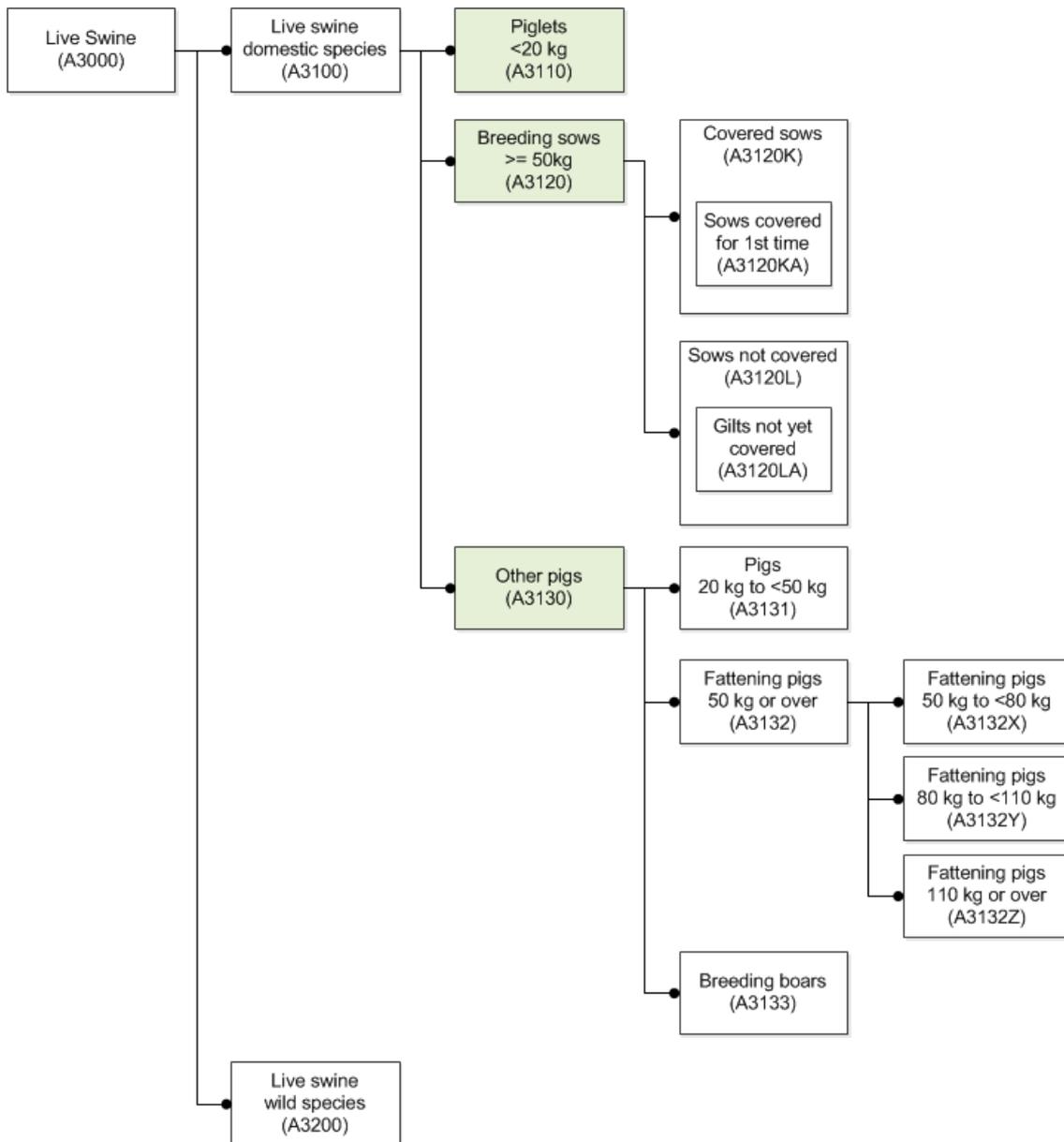
**Includes**

- All male breeding goats
- All goat kids (male) under 12 months
- All goat kids (female) under 12 months which have not been mated yet
- Female goats which have not been mated yet

**3.1.4.3 PIGS**

<b>Code</b>	<b>Label</b>	<b>Unit</b>
A3110	Piglets, live weight under 20 kg	heads
A3120	Breeding sows, live weight 50 kg and over	heads
A3130	Other pigs	heads

Figure 32 – Pigs hierarchy



### 3.1.4.3.1 Pigs

Pigs are domestic animals of the species *Sus scrofa domesticus* [Erxleben](#).

### 3.1.4.3.2 Piglets, live weight of under 20 kilograms (A3110)

Heads of piglets having a live weight of under 20 kilograms.

### 3.1.4.3.3 Breeding sows, live weight 50 kilograms and over (A3120)

Heads of female pigs weighing 50 kilograms and over intended for breeding purposes, regardless of whether they have farrowed or not.

#### Includes

- All gilts (sows not yet covered)

#### Excludes

- Cull sows

### 3.1.4.3.4 Other pigs (A3130)

Heads of pigs not specified elsewhere.

#### Includes

- Pigs (male or female) with a live weight from 20 Kg to less than 50 Kg
- Fattening pigs (including cull boars and cull sows) with a live weight of 50 kilograms and more, whether or not fattened before their slaughter
- Breeding boars of a live weight of 50 kilograms and more

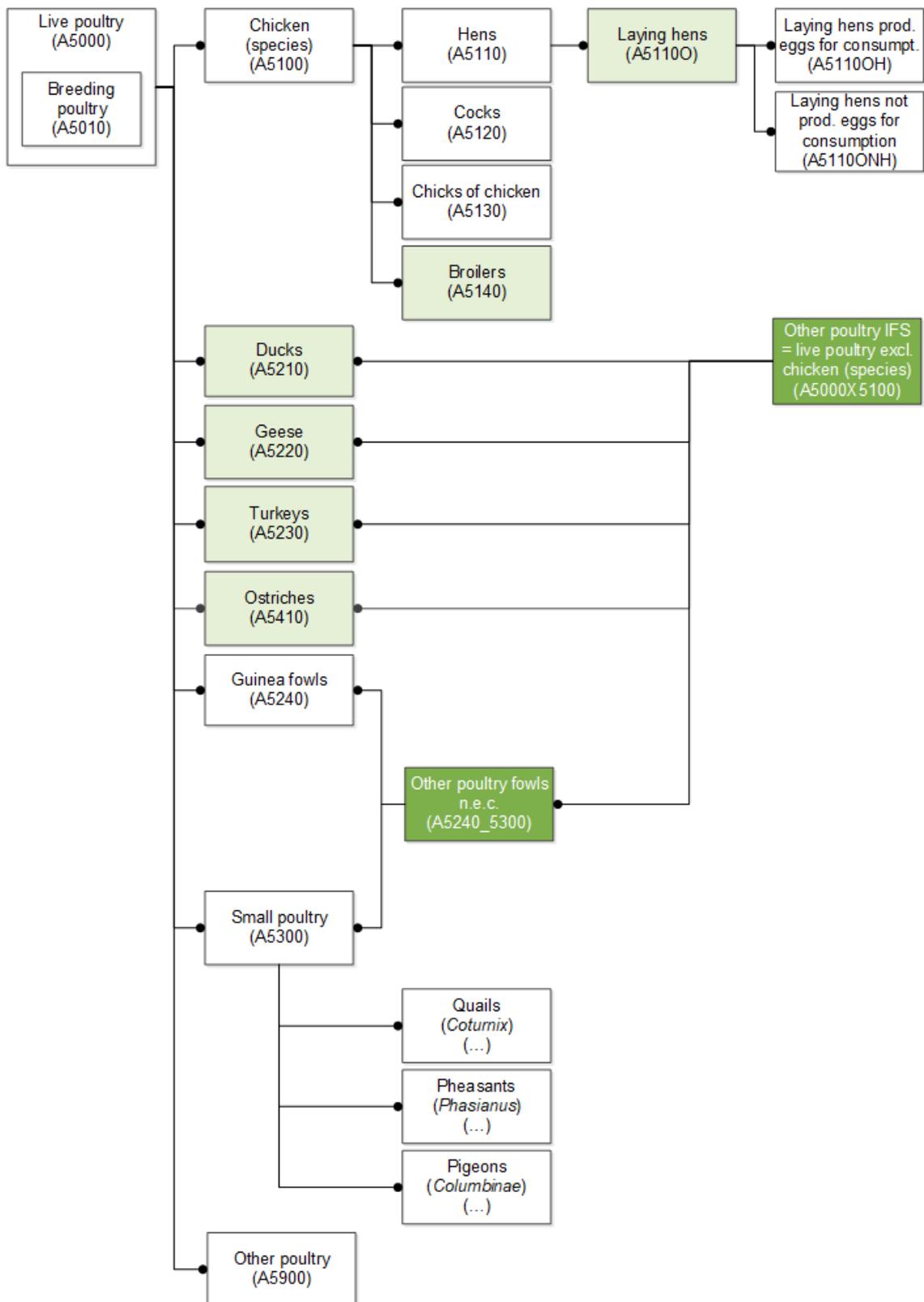
#### Excludes

- Wild pigs (*Sus scrofa*, L.)
- Hybrids
- Other pigs (*Sus ahoenobarbus*, Huet; *Sus barbatus*, Muller; *Sus cebrifirons* Heude; *Sus celebensis* Müller & Schegel; *Sus philipensis*, Nehring; *Sus verrucosus*, Boie)
- Pigmy pigs (*Porcula salvania*, Hodgson)

### 3.1.4.4 POULTRY

Code	Label	Unit
A5140	Broilers	heads
A51100	Laying hens	heads
A5000X5100	Other poultry	heads
A5230	Turkeys	heads
A5210	Ducks	heads
A5220	Geese	heads
A5410	Ostriches	heads
A5240_5300	Other poultry fowls, n.e.c.	heads

Figure 33 – Poultry hierarchy



### 3.1.4.4.1 Poultry

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#### Includes

- Domestic hens and chickens (*Gallus gallus* L.)
- Turkeys (*Meleagris* spp.)
- Ducks (*Anas* spp. and *Cairina moschata* L.)
- Domestic geese (*Anser anser domesticus* L.)
- Quails (*Coturnix* spp.)
- Pheasants (*Phasianus* spp.)
- Guinea fowl (*Numida meleagris domestica* L.)
- Pigeons (*Columbinae* spp.)
- Ostriches (*Struthio camelus* L.)

#### Excludes

- Birds raised in confinement for hunting purposes
  - Birds not for meat/eggs production
- 

#### Poultry

In the context of European agricultural statistics poultry refers to domestic species of birds but excludes birds raised in confinement for hunting purposes which are not intended for meat or egg production.

The term refers to any kind of domesticated bird, or captive bird which is raised for meat, eggs or feathers. Domestic ostriches are kept as poultry, in line with this definition, but are not considered gamefowl nor waterfowl (as they are of the order *Struthioniformes*).

The CAP refers to "farmyard poultry" to identify poultry raised in the farms, i.e. with an economic purpose.

#### Fowl

Is a term used for birds belonging to two biological orders: game or landfowl (*Galliformes*) and waterfowl (*Anseriformes*). In many languages there is not a distinction between "fowl" (which has a germanic origin) and "poultry" (of latin origin).

In some other languages, the same multiple meaning applies to words covering, on the one hand a group of species and on the other hand a physiological step and sex of poultry. Depending on the context, fowl may either mean any poultry individual or specifically female adult poultry (e.g. chicken fowl = hens).

#### Chicks

A chick is a young, non-feathered bird. The farmyard poultry chicks for which the age is accounted in days are called "day chicks".

Regulation (EU) No 1308/2013<sup>(75)</sup> defines the farmyard poultry chicks as live fowls, ducks, geese, turkeys and guinea fowls each weighing not more than 185 g.

Chicks fall in one of the following categories<sup>(76)</sup>:

- Utility chicks
- Table type chicks, intended to be fattened and slaughtered for meat before reaching sexual maturity
- Laying chicks, intended to be raised with a view to the production of eggs for consumption
- Dual-purpose chicks, intended either for laying or for the table, which is to be understood as "chicks the breed of which does not enable the prediction of their utility either for laying or table"
- Chicks for breeding
- Parent stock chicks, intended for the production of utility chicks
- Grandparent stock chicks, intended for the production of parent stock chicks
- Cockerel from sexing, which are the male chicks resulting from the sexing of potential laying chicks.

To avoid double counting, chicks are excluded from IFS as they are not considered agricultural products in the sense that they are not sold outside agriculture. They are products for intermediate consumption, to be reused in agriculture.

### Sexing

Sexing is the process of sorting the chicks either as females, potentially future laying fowls, or as males, definitely unable to produce eggs.

### Pullets

Pullets are female poultry of at least a few weeks (no longer chicks) but which are not yet able to lay eggs (not yet adult).

### Cockerels

Cockerels are young male poultry grown for meat production, with low performance expectancy.

In farms that produce eggs, males are unwanted and cockerels are killed soon after hatching. For meat production separate male and female breeding lines are maintained.

### Selection

Like for other animal production, selection schemes enable to organise production of utility animals based on genetic effects of homogenous breed lines and of positive effects of their crossing. At least four breed lines of grandparents define the most usual genetic abilities of the utility poultry. Grandparents can cover more than one generation in the selection scheme. The selection poultry produce only eggs for hatching.

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<sup>(75)</sup> Regulation (EU) No 1308/2013 of the European Parliament and of the Council of 17 December 2013 establishing a common organisation of the markets in agricultural products and repealing Council Regulations (EEC) No 922/72, (EEC) No 234/79, (EC) No 037/2001 and (EC) No 1234/2007

<sup>(76)</sup> Commission Regulation (EC) No 617/2008 of 27 June 2008 laying down detailed rules for implementing Regulation (EC) No 1234/2007 as regards marketing standards for eggs for hatching and farmyard poultry chicks. OJ L 168, 28.6.2008, p. 5–16.

#### 3.1.4.4.2 Broilers (A5140)

Heads of domestic animals of the species *Gallus gallus* L., which are kept for the production of meat.

##### Excludes

- Pullets
- Laying hens
- Cull layers

#### 3.1.4.4.3 Laying hens (A51100)

Heads of domestic animals of the domestic species *Gallus gallus* L., which have reached laying maturity and are kept for the production of eggs.

##### Includes

- Growing pullets before point of lay if they have been stalled up as laying hens
- Cull hens if they have been stalled as laying hens
- All hens which have started to lay, whether the eggs are for consumption or for breeding.
- Laying hens producing eggs intended for incubation

##### Excludes

- Breeding cocks for laying hens
- Pullets not yet placed for laying
- Cull hens no longer placed for laying

The exclusion of breeding cocks is in line with trade statistics (CN) where only females are of interest. The only exception is the case where breeding cocks are stalled together with the laying hens and cannot be distinguished from them: only in such case they can be included in the counting.

#### 3.1.4.4.4 Other poultry (A5000x5100)

Heads of poultry not mentioned under broilers or laying hens. Chicks are excluded.

##### Excludes

- Pullets not stalled as adults
- Chicks

#### 3.1.4.4.5 Turkeys (A5230)

Heads of domestic animals of the genus *Meleagris*.

#### 3.1.4.4.6 Ducks (A5210)

Heads of domestic animals of the genus *Anas* and species *Cairina moschata* L.

##### Includes

- Ducks for *foie gras*

#### 3.1.4.4.7 Geese (A5220)

Heads of domestic animals of the species *Anser anser domesticus* L.

##### Includes

- Geese for *foie gras*

#### 3.1.4.4.8 Ostriches (A5410)

Heads of ostriches (*Struthio camelus* L.)

##### Includes

- Ostriches for meat or eggs

#### 3.1.4.4.9 Other poultry fowls, n.e.c. (A5240\_5300)

Heads other poultry not elsewhere classified

##### Includes

- Quail (*Coturnix* spp.)
- Pheasants (*Phasianus* spp.)
- Guinea fowl (*Numida meleagris domestica* L.)
- Pigeons (*Columbinae* spp.)

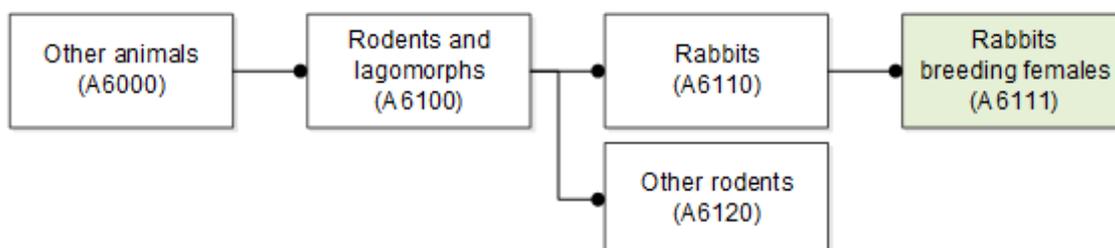
##### Excludes

- Animals reared in confinement for hunting purposes and not for producing meat
- Pullets
- Chicks

**3.1.4.5 RABBITS**

Code	Label	Unit
A6111	Breeding female rabbits	heads

Figure 34 – Rabbits hierarchy

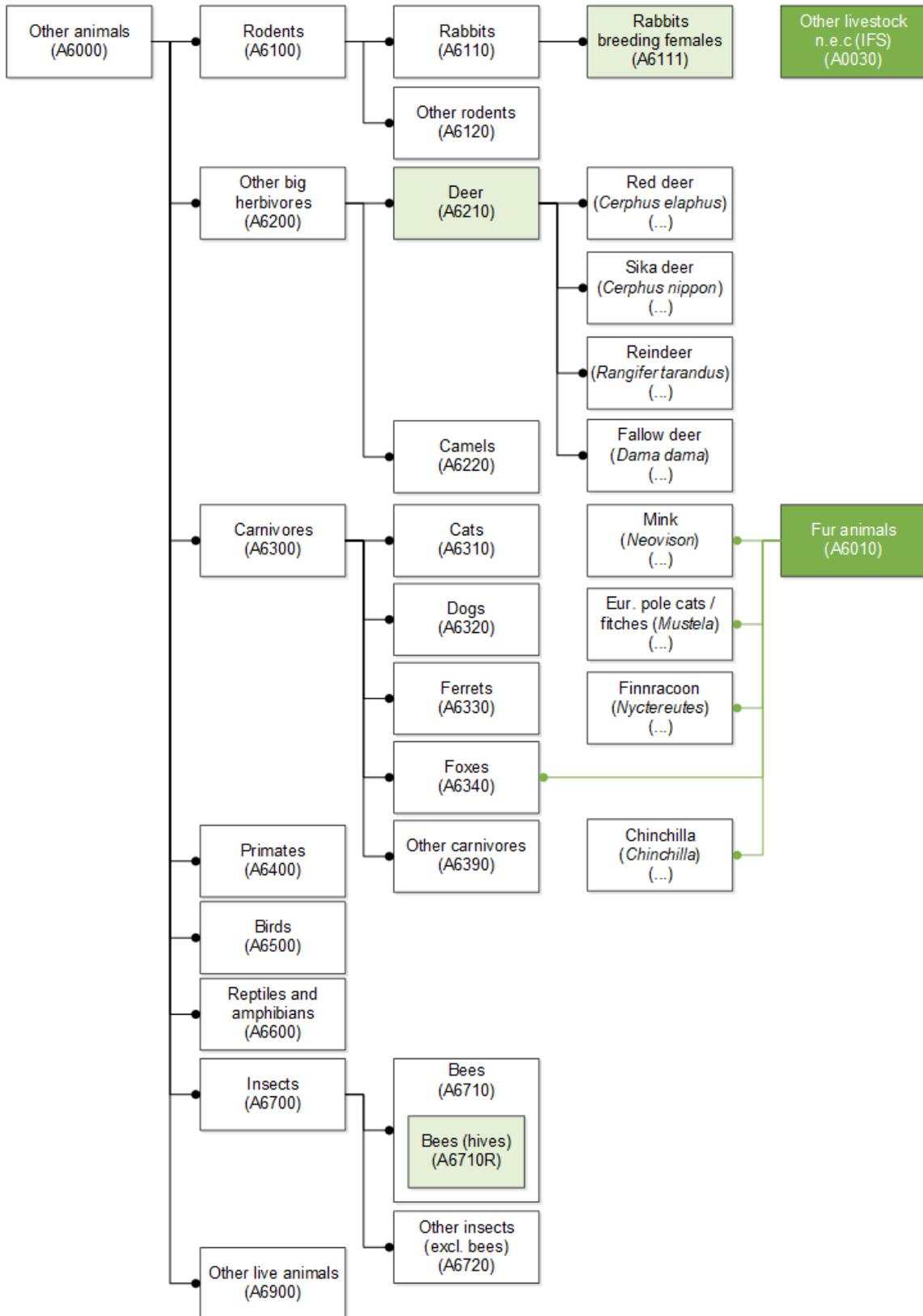
**3.1.4.5.1 Breeding rabbits females (A6111)**

Heads of female rabbits (*Oryctolagus* spp.) for producing rabbits for meat and which have littered.

**3.1.4.6 OTHER LIVESTOCK**

Code	Label	Unit
A6710R	Bees (hives)	number of hives
A6210	Deer	code
A6010	Fur animals	code
A0030	Livestock n.e.c.	code

Figure 35 – Other livestock hierarchy



**3.1.4.6.1 Bees (A6710R)**

Number of hives occupied by bees (*Apis mellifera* L.) kept for the production of honey.

Each colony (swarm) of bees is recorded as one hive, regardless of the nature and the type of the beehive.

**3.1.4.6.2 Deer (A6210)**

Presence of animals such as red deer (*Cervus elaphus* L.), sika deer (*Cervus nippon* Temminck), reindeer (*Rangifer tarandus* L.) or fallow deer (*Dama dama* L.) for the production of meat

- 1 - Yes
- 0 - No

In FSS2016 deer was collected as part of other livestock n.e.c.

**3.1.4.6.3 Fur animals (A6010)**

Presence of animals such as mink (*Neovison vison* Schreber), European pole cats or fitches (*Mustela putorius* L.), fox (*Vulpes* spp. and others), finnraccoon or raccoon dog (*Nyctereutes* spp.) or chinchilla (*Chinchilla* spp.) for the production of fur.

- 1 - Yes
- 0 - No

**Includes**

- Rabbits raised exclusively for the production of fur

**Excludes**

- Rabbits for the production of meat (A6111)

**3.1.4.6.4 Livestock n.e.c. (A0030)**

Presence of livestock not elsewhere classified in this section.

- 1 - Yes
- 0 - No

## Includes

- Male rabbits
- Rabbits for fattening
- Equidae for human consumption
- Equidae used as means of production
- Breeding mares in riding stables for race horses which also have breeding activities
- Live swine wild species (A3200)
- Pig hybrids
- European mouflon (*Ovis orientalis musimon* Pallas) if raised for the production of meat
- Camels and camelids

## Excludes

- Pets and animals, not used in the production or not used for income generating activities, i.e. used only for the holder's own family leisure purposes
- Raising and breeding of semi-domesticated or other live animals such as other birds (except poultry), insects and other fur animals
- Raising and breeding of pet animals such as cats and dogs, birds such as parakeets or hamsters
- Deer (A6210)
- Production of fur skins, reptile or bird skins from ranching operation
- Operation of worm farms, land mollusc farms or snail farms
- Raising of silk worms and/or production of silk worm cocoons
- Reared animals in confinement for hunting purposes
- Pullets
- Chicks
- Batrachians (such as frogs)
- Aquatic animals, molluscs or fish

### 3.1.4.7 ORGANIC HEADS OF LIVESTOCK

Code	Label	Unit
A2000_ORG	Organic farming stock of bovine animals	heads
A2300F_ORG	Organic farming stock of dairy cows	heads
A2300G_ORG	Organic farming stock of non-dairy cows	heads
A2410_ORG	Organic farming stock of buffalo cows	yes/no
A4100_ORG	Organic farming stock of sheep (all ages)	heads
A4200_ORG	Organic farming stock of goats (all ages)	heads
A3000_ORG	Organic farming stock of pigs	heads
A5000_ORG	Organic farming stock of poultry	heads
A5140_ORG	Organic farming stock of broilers	heads
A51100_ORG	Organic farming stock of laying hens	heads

#### 3.1.4.7.1 Organic production methods applied to animal production

For the purpose of European statistics, organic stock farming refers to heads of animals under organic farming production methods specified in:

- [Regulation \(EC\) No 834/2007](#) or
- [Regulation \(EU\) 2018/848](#),
- or where applicable, in the most recent legislation, and
- the corresponding national rules for organic production are used

including during the conversion period.

This is different to data previously collected under FSS where only fully compliant (certified converted) animals were included.

The [Council Regulation \(EC\) No 834/2007](#) states that normally all animal production on a holding must be reared in accordance with the rules on organic production. However, in accordance with specific conditions a holding may be split up into clearly separated units which are not all managed under organic production.

As regards animals, different species can be involved. The operator shall keep the animals, and products used for, or produced by, the organic units separate from those used for, or produced by, the non-organic units and keep adequate records to show the separation.

Animal production can be under conversion and meet the basic requirements of [Council Regulation \(EC\) No 834/2007](#), but to be fully compliant they must be converted to organic.

#### 3.1.4.7.2 Organic farming stock of bovine animals (A2000\_ORG)

Heads of organic farming stock of bovine animals.

#### 3.1.4.7.3 Organic farming stock of dairy cows (A2300F\_ORG)

Heads of organic farming stock of dairy cows.

#### 3.1.4.7.4 Organic farming stock of non-dairy cows (A2300G\_ORG)

Heads of organic farming stock of non-dairy cows.

#### 3.1.4.7.5 Organic farming stock of buffalo cows (A2410\_ORG)

Presence of organic farming stock of buffalo cows.

#### 3.1.4.7.6 Organic farming stock of sheep (all ages) (A4100\_ORG)

Heads of organic farming stock of sheep.

### **3.1.4.7.7 Organic farming stock of goats (all ages) (A4200\_ORG)**

Heads of organic farming stock of goats.

### **3.1.4.7.8 Organic farming stock of pigs (A3000\_ORG)**

Heads of organic farming stock of pigs.

### **3.1.4.7.9 Organic farming stock of poultry (A5000\_ORG)**

Heads of organic farming stock of poultry.

Heads of domestic chickens (*Gallus gallus* L.), turkeys (*Meleagris* spp.), ducks (*Anas* spp. and *Cairina moschata* L.), geese (*Anser anser domesticus* L.), ostriches (*Struthio camelus* L.) and other poultry fowls not elsewhere classified

### **3.1.4.7.10 Organic farming stock of broilers (A5140\_ORG)**

Heads of organic farming stock of broilers.

### **3.1.4.7.11 Organic farming stock of laying hens (A51100\_ORG)**

Heads of organic farming stock of laying hens.

## **Reaching comparability of number of animals raised organically with official statistics on animals in Sweden**

The first stage is to link the holdings in the registers of the control bodies on organic farming with the statistical farm register. The registers of the control bodies have information on type of animal from each farm that is reared using organic production methods. If a holding, according to the control body, have for example organic dairy cows, then the number of dairy cows from the statistical farm register is used as number of organic dairy cows on the farm. By using this method, the statistics on the number of organic livestock are comparable with the statistics on the number of animals in total.

## 3.2 IFS2020 Labour force & other gainful activities

### 3.2.1 Labour force

Farm labour force in the European Union (EU) is difficult to describe because agriculture is still dominated by family farms, where family members provide labour input at different times of the year, not always in a regular manner. Family members contributing to farm work do not always receive a salary but rather participate in the profit made by the holding. Many farmers and farm workers pursue agriculture as a part-time activity and agriculture is characterised by seasonal labour peaks, where large numbers of workers may be hired for a relatively short period of time.

The most commonly used sources of statistical data on labour use in EU agriculture are the national accounts (NA), the farm structure survey (FSS) and the labour force survey (LFS).

The farm structure data is used when a detailed analysis of the farm labour force is needed. Labour force data in IFS is provided in number of persons in different categories by gender, age class (holder and manager only) and the work time on the holding. Work time is assessed in annual work units (AWU) due to the high share of part-time work in agriculture. However the details of the information vary by survey year, country and legal personality of the holding.

#### 3.2.1.1 LABOUR FORCE ON THE AGRICULTURAL HOLDING

Labour force on the agricultural holding includes all persons having completed their compulsory education (having reached school-leaving age) who carried out farm work on the agricultural holding during the 12 months ending on the reference day of the survey. All persons of retirement age who continue to work on the agricultural holding are also included in the farm labour force.

##### Age of compulsory education

If national legislation does not indicate the minimum age of full-time and part-time compulsory education, 15 years is to be taken as the conventional school-leaving age.

Figure 36 – Duration of compulsory education/training and student's age-groups (2016/17)

	Full-time education/training											Additional compulsory part-time	
	Starting age					Leaving age							Duration (in years)
	3	4	5	6	7	14	15	16	17	18	19		
BE fr				6						18		12	na
BE de				6						18		12	na
BE nl				6						18		12	na
BG			5		7			16				11	na
CZ				6			15					9	na
DK				6				16				10	na
DE (12 Länder)				6						18		12	na
DE (5 Länder)				6							19	13	na
EE					7			16				9	na
IE				6				16				10	na
EL			5	6			15					10	na
ES				6				16				10	na
FR				6				16				10	na
HR				6	7		15					9	na
IT				6				16				10	na
CY		4y8m	5y8m				15					10	na
LV			5		7			16				11	na
LT				6	7			16				10	na
LU		4		6				16				12	na
HU	3			6				16				13	na
MT			5					16				11	na
NL			5	6						18		13	na
AT			5	6			15					10	18
PL				6	7			16				10	18
PT				6						18		12	na
RO				6					17			11	na
SI				6			15					9	na
SK				6				16				10	na
FI				6	7			16				10	na
SE					7			16				9	na
UK-ENG			5					16				11	18
UK-WLS			5					16				11	na
UK-NIR		4						16				12	na
UK-SCT			5					16				11	na
AL				6				16				9	na
BA				6			15					9	na
CH (1 cantons)				6			15					9	na
CH (8 cantons)			5	6			15					10	na
CH (17 cantons)		4		6			15					11	na
IS				6				16				10	na
LI				6			15					9	na
ME				6			15					9	na
MK*			5y8m							19y6m		13	na
NO				6				16				10	na
RS			5y5m	6y6m		14y5m						9	na
TR			5y6m						17y6m			12	na

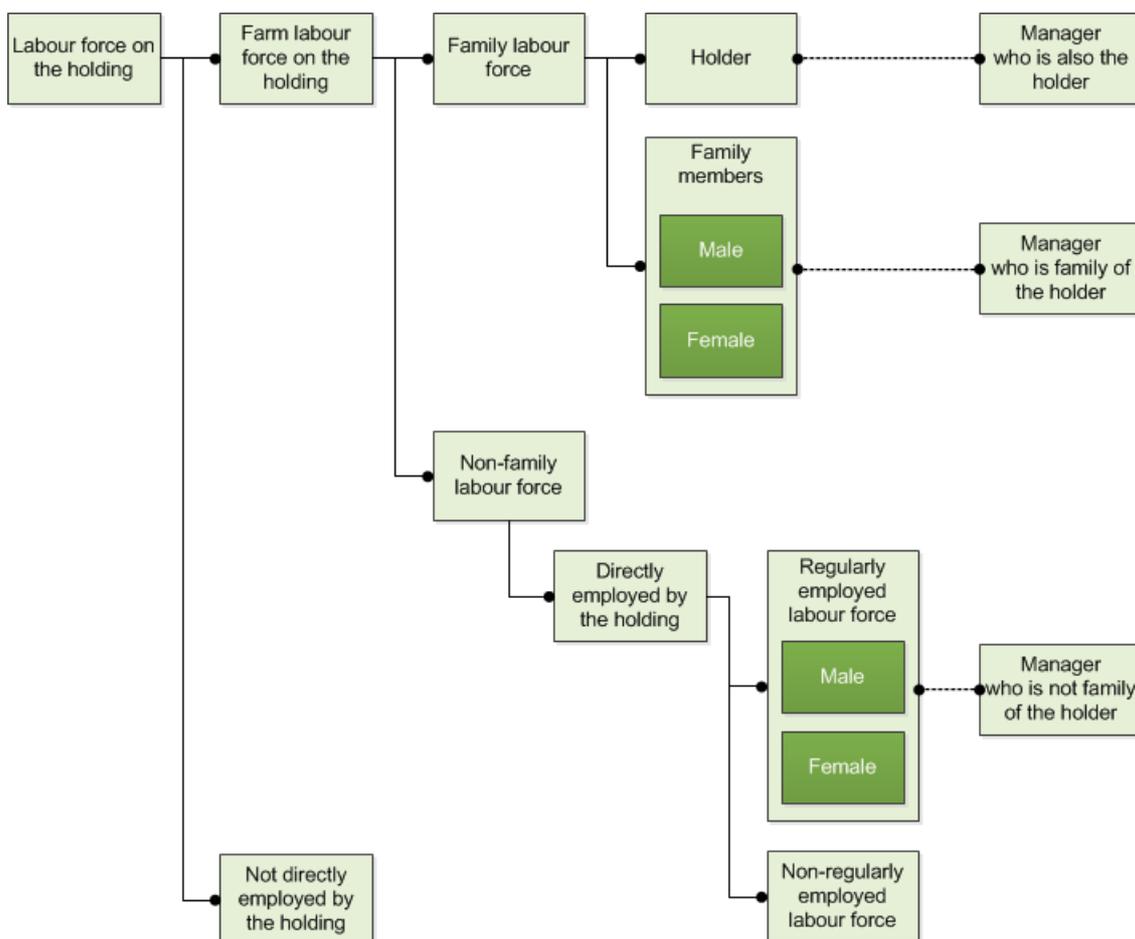
■ ISCED 2011 level 0 ■ ISCED 2011 level 1 | na Not applicable

Source: Compulsory education in Europe 2016/17 (<https://publications.europa.eu/en/publication-detail/-/publication/2f15cd79-9a83-11e6-9bca-01aa75ed71a1>)

The observation period for the farm labour force may be less than 12 months, but the information to be provided has to be given on a 12-month basis.

The labour force on the holding is separated into farm labour force and labour force that is not directly employed by the holding.

Figure 37 – Labour force categories



### 3.2.1.1.1 Farm labour force on the holding

The term farm labour force refers to direct labour force i.e. persons directly employed by the holding. Within the farm labour force on the holding, we distinguish the work of the manager, the work of the holder and their family members and non-family labour force directly employed by the holding (which is either regularly employed or non-regularly employed).

The distinction between family workers and employees does not follow the guidelines used in the Labour Force Survey nor in the Economic Accounts for Agriculture. In the Economic Accounts for Agriculture, if a family member receives a salary, they are considered as salaried, if not they are considered self-employed (non-salaried).

## Family workers vs. employees in Labour Force Survey<sup>(77)</sup>

### Family workers

Persons who help another member of the family to run an agricultural holding or other business, provided they are not considered as employees.

Persons working in a family business or on a family farm without pay should be living in the same household as the owner of the business or farm, or in a slightly broader interpretation, in a house located on the same plot of land and with common household interests. Such people frequently receive remuneration in the form of fringe benefits and payments in kind. However, this applies only when the business is owned or operated by the individual themselves or by a relative. Thus, unpaid voluntary work done for charity should not be included.

The category includes:

- A son or daughter living inside the household and working in the parents' business or on the parents' farm without pay.
- The spouse who assists their partner in a business, e.g. a haulage contractor, without receiving any formal pay.

The category does not include:

- A relative living elsewhere but coming to help with the business, e.g. during the harvesting season, without pay in money or kind should not be included. If the relative receives any remuneration (including benefits in kind) the professional status should be coded [in LFS] as an employee.

### Employees

Persons who work for a public or private employer and who receive compensation in the form of wages, salaries, fees, gratuities, payment by results or payment in kind; non-conscripted members of the armed forces are also included.

An employee is usually working for an outside employer, but a son or daughter, for example, who is working in a parent's farm and receives a regular monetary wage is classified [in LFS] as an employee.

### Manager labour input

The information for the farm work of the manager is to be collected under the core variables.

Note that for the collection of other gainful activities, in the context of the IFS, if the manager is a member of the holder's family, then they are considered to be family labour force. Otherwise, the manager is considered to be non-family labour force regularly working on the holding (see Figure 38).

### Holder labour input

Sole holders who do not carry out farm work on the holding are recorded in the survey, but are not counted for the labour input variables.

<sup>(77)</sup> <http://ec.europa.eu/eurostat/documents/1978984/6037342/EU-LFS-explanatory-notes-from-2017-onwards.pdf>

### Family members carrying out farm work

This item refers to the family members of the holder (and of the holder's spouse) on sole holder holdings carrying out farm work. This item applies only to sole holder holdings, because holding-groups and legal persons are considered not to have family labour force.

Family members carrying out farm work (apart from housework) include holder's spouse, their relatives in ascending and descending line, and siblings of the holder and holder's spouse on sole holder holdings. When relevant, includes the manager who is a member of the holder's family. They do not need necessarily to live on the holding. Other relatives (e.g. cousins being engaged in the farm work) could also be included if they are living and working at the agricultural holding together with the family of the manager, or as mentioned above for the labour force survey "have common household interests".

In the context of IFS, holding-groups are considered not to have family labour force. As a consequence for holding-groups, data on family members who work regularly for the farm are attributed to non-family labour regularly employed, regardless of their family relation to the manager.

### 3.2.1.1.2 Labour force directly employed by the holding

#### Labour force regularly employed

Regularly employed labour force refers to persons other than the manager, the holder and family members who carried out farm work every week on the holding during the 12 months ending on the reference day of the survey, irrespective of length of the working week and received any kind of remuneration (salary, wages, profits or other payments, including payments in kind) from the agricultural holding. It also includes persons that were not able to work for the entire period, for reasons such as:

- special conditions of production on specialised holdings;
- absence by reason of holidays, military service, sickness, accident or death;
- commencement or cessation of employment with the holding;
- complete stoppage of work on the holding due to accidental causes (flooding, fire, etc.)

#### Non-family labour force employed on a non-regular basis

Non-family labour employed on a non-regular basis are all persons other than the holder and members of his family doing farm work and receiving any kind of remuneration from the agricultural holding who did not work each week on the agricultural holding in the 12 months ending on the reference day of the survey for a reason other than those listed under labour force regularly employed. This category usually covers seasonal work that depends on the natural development of the crops or animals.

### 3.2.1.1.3 Labour force not directly employed by the holding

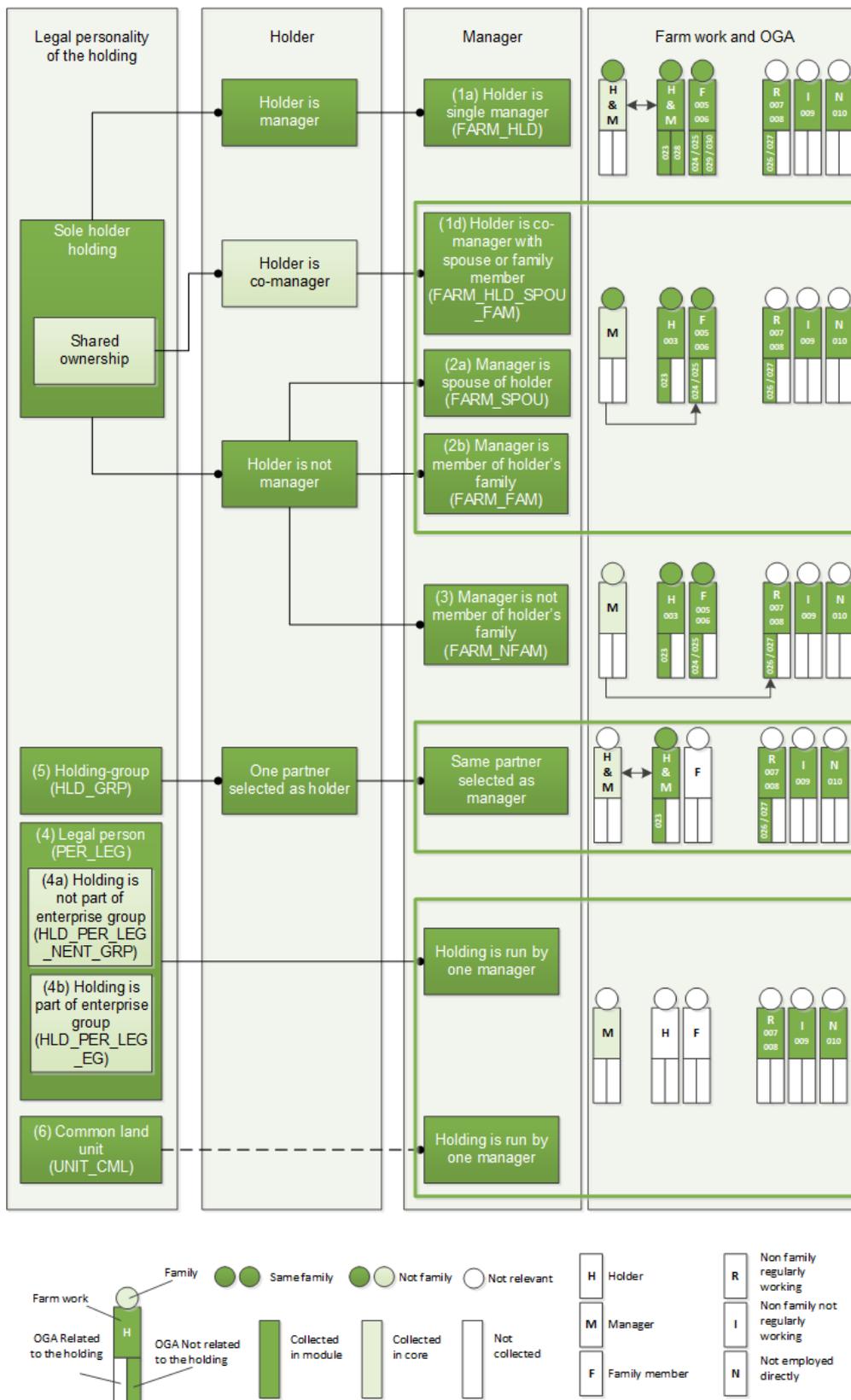
Persons working on the holding but employed by a third party or under mutual-aid arrangements (e.g. labour supplied by agricultural contractors or cooperatives) are not included in the farm labour force and should be considered only for the labour force not directly employed by the holding.

#### Labour force not directly employed

Farm labour force not directly employed by the holding refers to the persons who are not directly employed by the [agricultural holding](#), but are self-employed or employed by third parties, e.g. contractors or cooperatives.

Activities being collected in IFS under farm labour force not directly employed by the holding are only those that correspond to the definition of [farm work](#).

Figure 38 – Farm work and other gainful activities in the agricultural holding



## 3.2.1.2 HOLDER

Code	Label	Unit
SEX_HLD	Sex of the holder	code
Y_BIRTH_HLD	Year of birth of the holder	date
WH_HLD_AWU_PC	Holder's farm work on the agricultural holding	%band AWU

### 3.2.1.2.1 Sex of holder of the holding (SEX\_HLD)

The sex of the holder of the holding:

- M - Male
- F - Female

### 3.2.1.2.2 Year of birth of the holder (Y\_BIRTH\_HLD)

The year of birth of the holder of the agricultural holding in the format YYYY

### 3.2.1.2.3 Holder's farm work on the agricultural holding (WH\_HLD\_AWU\_PC)

Percentage band of [annual work units \(AWU\)](#) of [farm work](#) on the agricultural holding for the holder, apart from household work.

- (0)
- (> 0-< 25)
- (≥ 25-< 50)
- (≥ 50-< 75)
- (≥ 75-< 100)
- (100)

## 3.2.1.3 SAFETY MEASURES, INCLUDING FARM SAFETY PLAN

Code	Label	Unit
FARM_SPLAN	Farm safety plan	code

### 3.2.1.3.1 Farm safety plan (FARM\_SPLAN)

The farm has carried out a workplace risk assessment with the aim of reducing the work-related hazards, resulting in a written document (such as a 'farm safety plan').

A template of a farm safety plan can be found in the appendixes of the publication on [protection of the health and safety of workers in agriculture, livestock farming, horticulture and forestry](#)<sup>(78)</sup>.

<sup>(78)</sup> <https://osha.europa.eu/en/tools-and-publications/publications/protecting-health-and-safety-workers-agriculture-livestock/view>

### 3.2.1.4 FAMILY MEMBERS CARRYING OUT FARM WORK

Code	Label	Unit
FLF_D_RFAM_M_PC1T24	Male family members carrying out farm work (1-24)	number per % band of AWU
FLF_D_RFAM_M_PC25T49	Male family members carrying out farm work (25-49)	number per % band of AWU
FLF_D_RFAM_M_PC50T74	Male family members carrying out farm work (50-74)	number per % band of AWU
FLF_D_RFAM_M_PC75T99	Male family members carrying out farm work (75-99)	number per % band of AWU
FLF_D_RFAM_M_PC100	Male family members carrying out farm work (100)	number per % band of AWU
FLF_D_RFAM_F_PC1T24	Female family members carrying out farm work (1-24)	number per % band of AWU
FLF_D_RFAM_F_PC25T49	Female family members carrying out farm work (25-49)	number per % band of AWU
FLF_D_RFAM_F_PC50T74	Female family members carrying out farm work (50-74)	number per % band of AWU
FLF_D_RFAM_F_PC75T99	Female family members carrying out farm work (75-99)	number per % band of AWU
FLF_D_RFAM_F_PC100	Female family members carrying out farm work (100)	number per % band of AWU

#### 3.2.1.4.1 Male family members carrying out farm work (1-24) (FLF\_D\_RFAM\_M\_PC1T24)

Number of male family members on the ( $> 0 < 25$ ) percentage band of annual work units carrying out farm work.

#### 3.2.1.4.2 Male family members carrying out farm work (25-49) (FLF\_D\_RFAM\_M\_PC25T49)

Number of male family members on the ( $\geq 25 < 50$ ) percentage band of annual work units carrying out farm work.

#### 3.2.1.4.3 Male family members carrying out farm work (50-74) (FLF\_D\_RFAM\_M\_PC50T74)

Number of male family members on the ( $\geq 50 < 75$ ) percentage band of annual work units carrying out farm work.

#### 3.2.1.4.4 Male family members carrying out farm work (75-99) (FLF\_D\_RFAM\_M\_PC75T99)

Number of male family members on the ( $\geq 75 < 100$ ) percentage band of annual work units carrying out farm work.

**3.2.1.4.5 Male family members carrying out farm work (100)  
(FLF\_D\_RFAM\_M\_PC100)**

Number of male family members (100) percentage band of annual work units carrying out farm work.

**3.2.1.4.6 Female family members carrying out farm work (1-24)  
(FLF\_D\_RFAM\_F\_PC1T24)**

Number of female family members on the (> 0-< 25) percentage band of annual work units carrying out farm work.

**3.2.1.4.7 Female family members carrying out farm work (25-49)  
(FLF\_D\_RFAM\_F\_PC25T49)**

Number of female family members on the ( $\geq 25$ -< 50) percentage band of annual work units carrying out farm work.

**3.2.1.4.8 Female family members carrying out farm work (50-74)  
(FLF\_D\_RFAM\_F\_PC50T74)**

Number of female family members on the ( $\geq 50$ -< 75) percentage band of annual work units carrying out farm work.

**3.2.1.4.9 Female family members carrying out farm work (75-99)  
(FLF\_D\_RFAM\_F\_PC75T99)**

Number of female family members on the ( $\geq 75$ -< 100) percentage band of annual work units carrying out farm work.

**3.2.1.4.10 Female family members carrying out farm work (100)  
(FLF\_D\_RFAM\_F\_PC100)**

Number of female family members on the (100) percentage band of annual work units carrying out farm work.

### 3.2.1.5 LABOUR FORCE DIRECTLY EMPLOYED

Code	Label	Unit
FLF_D_RNFAM_M_PC1T24	Male non-family labour force regularly working on the farm (1-24)	number per % band of AWU
FLF_D_RNFAM_M_PC25T49	Male non-family labour force regularly working on the farm (25-49)	number per % band of AWU
FLF_D_RNFAM_M_PC50T74	Male non-family labour force regularly working on the farm (50-74)	number per % band of AWU
FLF_D_RNFAM_M_PC75T99	Male non-family labour force regularly working on the farm (75-99)	number per % band of AWU
FLF_D_RNFAM_M_PC100	Male non-family labour force regularly working on the farm (100)	number per % band of AWU
FLF_D_RNFAM_F_PC1T24	Female non-family labour force regularly working on the farm (1-24)	number per % band of AWU
FLF_D_RNFAM_F_PC25T49	Female non-family labour force regularly working on the farm (25-49)	number per % band of AWU
FLF_D_RNFAM_F_PC50T74	Female non-family labour force regularly working on the farm (50-74)	number per % band of AWU
FLF_D_RNFAM_F_PC75T99	Female non-family labour force regularly working on the farm (75-99)	number per % band of AWU
FLF_D_RNFAM_F_PC100	Female non-family labour force regularly working on the farm (100)	number per % band of AWU

#### 3.2.1.5.1 Labour force directly employed

A farm labour force directly employed by the agricultural holding refers to the persons who are employed by the agricultural holding either as regularly or non-regularly employed labour force.

#### 3.2.1.5.2 Male non-family labour force regularly working on the farm (1-24) (FLF\_D\_RNFAM\_M\_PC1T24)

Number of non-family labour force males on the (> 0-< 25) percentage band of annual work units.

#### 3.2.1.5.3 Male non-family labour force regularly working on the farm (25-49) (FLF\_D\_RNFAM\_M\_PC25T49)

Number of non-family labour force males on the ( $\geq 25$ -< 50) percentage band of annual work units.

#### 3.2.1.5.4 Male non-family labour force regularly working on the farm (50-74) (FLF\_D\_RNFAM\_M\_PC50T74)

Number of non-family labour force males on the ( $\geq 50$ -< 75) percentage band of annual work units.

#### 3.2.1.5.5 Male non-family labour force regularly working on the farm (75-99) (FLF\_D\_RNFAM\_M\_PC75T99)

Number of non-family labour force males on the ( $\geq 75$ -< 100) percentage band of annual work units.

**3.2.1.5.6 Male non-family labour force regularly working on the farm (100)  
(FLF\_D\_RNFAM\_M\_PC100)**

Number of non-family labour force males on the (100) percentage band of annual work units.

**3.2.1.5.7 Female non-family labour force regularly working on the farm (1-24)  
(FLF\_D\_RNFAM\_F\_PC1T24)**

Number of non-family labour force females on the (> 0-< 25) percentage band of annual work units.

**3.2.1.5.8 Female non-family labour force regularly working on the farm (25-49)  
(FLF\_D\_RNFAM\_F\_PC25T49)**

Number of non-family labour force females on the ( $\geq 25$ -< 50) percentage band of annual work units.

**3.2.1.5.9 Female non-family labour force regularly working on the farm (50-74)  
(FLF\_D\_RNFAM\_F\_PC50T74)**

Number of non-family labour force females on the ( $\geq 50$ -< 75) percentage band of annual work units.

**3.2.1.5.10 Female non-family labour force regularly working on the farm (75-99)  
(FLF\_D\_RNFAM\_F\_PC75T99)**

Number of non-family labour force females on the ( $\geq 75$ -< 100) percentage band of annual work units.

**3.2.1.5.11 Female non-family labour force regularly working on the farm (100)  
(FLF\_D\_RNFAM\_F\_PC100)**

Number of non-family labour force females on the (100) percentage band of annual work units.

**3.2.1.6 NON-REGULAR LABOUR FORCE EMPLOYED BY THE FARM**

Code	Label	Unit
FLF_D_NR	Non family labour employed on a non-regular basis: male and female	full time working days

**3.2.1.6.1 Non family labour employed on a non-regular basis: male and female  
(FLF\_D\_NR)**

Total of full time working days of persons not regularly employed on the holding.

**3.2.1.7 LABOUR INPUT BY CONTRACTORS**

Code	Label	Unit
FLF_ND	Persons not employed directly by the agricultural holding and not included in previous categories	full time working days

### 3.2.1.7.1 Persons not employed directly by the agricultural holding and not included in previous categories (FLF\_ND)

Total of full time working days undertaken on the agricultural holding by the persons who are not directly employed by the holding (e.g. sub-contractors employed by third parties)

## 3.2.2 Other gainful activities

Other gainful activity refers to:

- other gainful activities directly related to the holding
  - on the holding, such as tourism, handicraft, processing of farm products or forestry
  - out of the holding, such as agricultural and non-agricultural contractual work
- other gainful activities not related to the holding
  - on the holding (non-farm work on the holding)
  - out of the holding, such as working in a bank or teaching

If only the farm labour force (family and non-family) and no other resources of the holding are used for the other gainful activities, the workers are seen as working under two separate arrangements, and these other gainful activities are thus not seen as being directly related to the holding.

Information on other gainful activities directly related to the holding is recorded for:

- the holders of sole holder holdings and holding-groups
- the family members in sole holder holdings
- non-family labour force regularly working on the farm

Information on other gainful activities not directly related to the holding is recorded for

- the holders who are also the managers of sole-holder holdings
- the family members (when the sole holder is the manager of the agricultural holding) in sole holder holdings

No information on other gainful activities is collected for legal holdings.

### 3.2.2.1 MAIN ACTIVITY AND SECONDARY ACTIVITY

Other gainful activities can be performed as a main or a secondary activity.

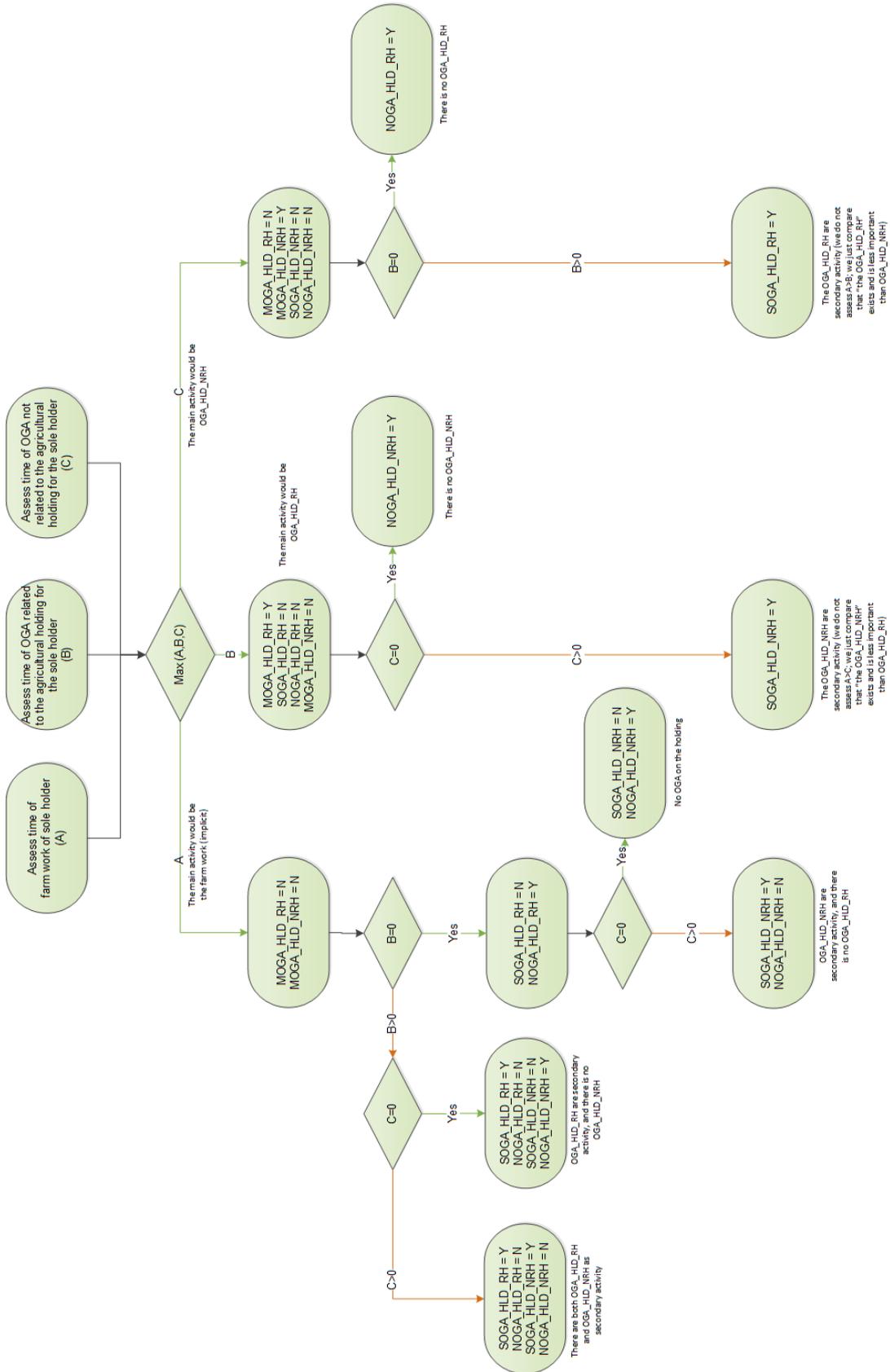
#### Main activity

Activities which occupy equal or more time than the farm work done for the holding.

#### Secondary activity

Activities which occupy less time than the farm work done for the holding.

Figure 39 – Other gainful activities in the agricultural holding: main vs. secondary



### Minimum level of farm work or of other gainful activities directly related to the farm

The minimum level can be interpreted as the input of a person who was replaced, or if they would need to be replaced if they would stop or interrupt her activity. For example, if the farmer's son helps with the farm work from time to time, but has to interrupt to go to university and the farmer would need to hire another person to carry out the work, then the information on the other gainful activities of the son has to be recorded.

The threshold to exclude a family member from the data collection on other gainful activities not directly related to the holding can be approximately one month of work, either continuously or distributed throughout the year.

### 3.2.2.2 TYPE OF OTHER GAINFUL ACTIVITIES DIRECTLY RELATED TO THE AGRICULTURAL HOLDING

Code	Label	Unit
OGA_HSES	Provision of health, social or educational services	code
OGA_TAOLA	Tourism, accommodation and other leisure activities	code
OGA_HC	Handicraft	code
OGA_FPRDPRC	Processing of farm products	code
OGA_NRGRPRD	Production of renewable energy	code
OGA_WPRC	Wood processing	code
OGA_AQUA	Aquaculture	code
OGA_ACW	Agricultural contractual work (using production means of the agricultural holding)	code
OGA_NACW	Non-agricultural contractual work (using production means of the agricultural holding)	code
OGA_FOR	Forestry	code
OGA_AGRHLD	Other gainful activities directly related to the agricultural holding n.e.c.	code

#### 3.2.2.2.1 Types of other gainful activities directly related to the agricultural holding

Other gainful activities directly related to the holding are activities (other than farm work) where either the resources of the agricultural holding (area, buildings, machinery, etc.) or its products are used in the activity. Non-agricultural, as well as agricultural work for other agricultural holdings is included. Pure financial investments (such as mutual funds, fixed deposits, bonds, equities, real estate, precious stones or other asset where money is invested with the hope that it will appreciate into a larger sum of money) are excluded. Renting of the land for diverse activities without further involvement in the activities is also excluded.

---

## Includes

- Provision of health, social or educational services
- Tourism, accommodation and other leisure activities
- Handicraft
- Processing of farm products
- Production of renewable energy
- Forestry
- Wood processing
- Aquaculture
- Contractual work using production means of the holding (agricultural or non-agricultural work)

## Excludes

- Pure financial investments
  - Renting out the land for diverse activities without being further involved in these activities
  - Commercial activity localised on the holding but not linked to any agricultural activity (for example a hairdresser, an insurance company)
  - Renting agricultural machinery that is not used on the holding
  - Shops where no own products are sold
  - Hunting activities
- 

### **3.2.2.2 Provision of health, social or educational services (OGA\_HSES)**

Presence of any activity, which is linked to the provision of health, social or educational services and/or socially related business activities, in which either the holding's resources or its primary products are used.

- 1 - Yes
- 0 - No

**Includes**

- Activities linked to the provision of health, social or educational services
- Socially related business activities using the holdings resources or its primary products
- Educational or pedagogical farms
- Provision of eldercare, childcare and other care-type services (e.g. for handicapped or disabled people, for drug addicts, maternity services, including transport and mobility services)
- Day care centres
- Health care centres or health care facilities
- Pet therapy or animal-assisted therapy
- Pet accommodation

**Excludes**

- Veterinary services

**3.2.2.2.3 Tourism, accommodation and other leisure activities (OGA\_TAOLA)**

Presence of any tourism-related activities, accommodation services, showing the holding to tourists or other groups, sport and recreation activities, etc. where either land, buildings or other resources of the holding are used.

- 1 - Yes
- 0 - No

**Includes**

- All tourism related activities
- Showing the holding to tourists or other groups
- Sport and recreation activities
- Activities that use mainly buildings originally built for agricultural purposes
- Activities which use mainly buildings originally built for other than agricultural purposes when they improve other activities already available on the holding.

**Excludes**

- Activities which use mainly buildings originally built for other than agricultural purposes and which do not improve other activities already available on the holding (for example a new building for a camping), as these are considered a separate commercial activity already available on the holding

#### 3.2.2.2.4 Handicraft (OGA\_HC)

Presence of manufacture of handicraft items, manufactured on the holding either by the holder or the family members, or by non-family labour force, regardless of how the products are sold.

- 1 - Yes
- 0 - No

##### Includes

- Manufacture of handicraft items, manufactured on the holding by the holder or the family members or by non-family labour force, regardless of how the products are sold
- Advanced wood processing, such as producing furniture from the timber
- Pottery

#### 3.2.2.2.5 Processing of farm products (OGA\_FPRDPRC)

Presence of any processing of a primary agricultural product to a processed secondary product on the holding, regardless of whether the raw material is produced on the holding or bought from outside.

- 1 - Yes
- 0 - No

##### Includes

- Processing of a primary agricultural product to a secondary product on the holding, regardless whether the raw material is produced on the holding or bought from the outside.
- The sale of farm products directly to the consumers where the processing of the product is taking place on the holding
- The package of the products where it significantly increases the marketing possibilities (if it is not a standard marketing characteristic in the region)
- Processing of meat
- Making cheese
- Wine processing if the bought-in proportion of wine is significant
- Olive oil processing if the bought-in proportion of olive oil is significant

##### Excludes

- Sale of farm products directly to consumers, where the processing of the product is not taking place on the holding as this is considered a farm activity
- Sale of milk directly to neighbours (as no processing is required)
- Sale of surplus of farm products originally meant for self-consumption only
- Activities which are regarded as part of the agricultural activity, such as wine processing or olive oil production when the bought-in part of wine or olive oil is not significant.

According to the FADN manual (RI CC1680), all processing of farm products are considered as other gainful activities, unless the processing is regarded as part of the agricultural activity.

Wine processing and olive oil production are considered as agriculture unless the bought-in proportion of wine or olive oil is significant, in which case they become OGA. All processing of a primary agricultural product to a processed secondary product on the holding, regardless of whether the raw material is produced on the holding or bought from outside are considered as OGA.

The same manual states that the processing of wine products will be considered as an agricultural activity as long as it is mainly based on grapes from the farm with rules agreed and summarised in paragraphs below (this approach between agricultural activity vs. OGA was presented to and accepted by MS in the 185<sup>th</sup> FADN Committee Meeting. Reference document RI CC 1662):

- Processing wine and olive oil is considered as an agricultural activity unless the bought-in proportion of wine or olive oil is significant. The significant level is defined as 10% or higher share in value.
- The 10% ceiling for wine and olive oil production would apply for the normal situation and in exceptional circumstances a higher share of purchased products is allowed. In duly justified case and at the request of a Member State, the Commission services may authorise exception from the 10% ceiling when in a specific area it is a common practice to purchase a larger share of products. The share of purchased inputs may not exceed 33%.
- For wine and olive oil production, if the share of grapes and/or olives purchased to incorporate into further processing into wine or olive oil is 10% or more (in value), this activity is not considered as an agricultural activity but as an OGA directly related to the farm.

#### **3.2.2.2.6 Production of renewable energy (OGA\_NRGRPRD)**

Presence of production of renewable energy for the market including biogas, biofuels or electricity, by wind turbines, other equipment or from agricultural raw materials. Renewable energy produced only for the holding's own use is not included.

It also includes energy produced from non-agricultural products of the farm (wood logs, chips), but if the farm is exclusively selling those products for energy to be produced elsewhere, the farm is not considered to be "producing renewable energy".

- 1 - Yes
- 0 - No

**Includes**

- Farms producing renewable energy in the holding that is sold to a company, including biogas, biofuels, electricity produced by wind turbines or other equipment or from agricultural raw materials
- Farms producing renewable energy on the holding from non-agricultural raw materials, such as wood logs, chips, pellets and briquettes, or short rotation coppice

**Excludes**

- Farms renting out the land for the establishment of wind mills
- Farms that sell agricultural inputs (such as wastes, straw, rice husks, nut shells, poultry litter, crushed grape dregs, etc.) that are used to produce renewable energy elsewhere
- Farms that produce renewable energy for the holding's own use

**3.2.2.2.7 Wood processing (OGA\_WPRC)**

Presence of raw wood processing on the holding for the market (sawing timber, etc.).

- 1 - Yes
- 0 - No

**Includes**

- Processing of raw wood on the holding, for the market, such as sawing timber (NACE C16.1)
- Manufacture of wooden containers (NACE C16.24)
- Manufacture of fire logs and pellets for energy, made of pressed wood (NACE C16.29)
- Manufacture of mirror or picture frames (NACE C16.29)

**Excludes**

- Logging (NACE A02.20) (OGA\_FOR)
- Further processing of wood, such as producing furniture (NACE C31 and C32) (OGA\_HC)
- 

**3.2.2.2.8 Aquaculture (OGA\_AQUA)**

Presence of fish, crayfish etc. production on the holding. Activities involving only fishing are excluded.

- 1 - Yes
- 0 - No

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**Includes**

- Production of fish, crayfish, etc. in artificial environment on the holding
- Production of fish in rivers, sea, etc. if either the resources of the holding (land, buildings, machinery, agricultural products) or the products of the holding are used for the activity

**Excludes**

- Activities involving only fishing
- 

**3.2.2.2.9 Contractual work (using production means of the holding)**

Refers to contractual work using the equipment of the holding, differentiating between work that is within or outside the agricultural sector.

**3.2.2.2.10 Agricultural contractual work (using production means of the holding) (OGA\_ACW)**

Presence of work that is within the agricultural sector

- 1 - Yes
- 0 - No

**3.2.2.2.11 Non-agricultural contractual work (using production means of the holding) (OGA\_NACW)**

Presence of work that is outside the agricultural sector

- 1 - Yes
- 0 - No

---

## Includes

- Clearing snow
- Haulage work
- Land terracing
- Drainage
- Preparation of rice paddies
- Agricultural / environmental services
  - Landscape care and maintenance
  - Gardening

## Excludes

- Landscape architecture
  - Activities of agronomists and agricultural economists
  - Organisation of agricultural shows and fairs
  - Research to develop or modify new forms of seeds
- 

### 3.2.2.2.12 Forestry (OGA\_FOR)

Presence of forestry work using both the farm labour force and the machinery and equipment of the holding which is generally used for agricultural purposes.

- 1 - Yes
  - 0 - No
- 

## Includes

- Silviculture and other forestry activities (NACE A02.10)
  - Logging (NACE A02.20)
- 

### 3.2.2.2.13 Other gainful activities directly related to the agricultural holding n.e.c. (OGA\_AGRHLD)

Presence of other gainful activities directly related to the agricultural holding not elsewhere classified.

- 1 - Yes
- 0 - No

**Includes**

- Use of agricultural holding buildings to store caravans, boats and other objects for part of the year, but for agricultural purposes for the rest of the year
- Shops where own produce is sold
- Breeding of animals, not covered by IFS and using the resources of the farm (such as cats, dogs or silkworms)

**Excludes**

- Landscape maintenance [non-agricultural contract work]
- First treatment of farm products (washing, cutting, sorting) (OGA\_FPRDPRC)

**3.2.2.3 IMPORTANCE TO THE AGRICULTURAL HOLDING**

Code	Label	Unit
PC_OGA_OUT	Percentage of other gainful activities directly related to the agricultural holding on the final output of the agricultural holding	code

**3.2.2.3.1 Percentage of other gainful activities directly related to the agricultural holding on the final output of the agricultural holding (PC\_OGA\_OUT)**

The percentage band of the other gainful activities directly related to the agricultural holding in the output of the agricultural holding. The share of the OGA directly related to the agricultural holding in the output of the agricultural holding is estimated as the share of the OGA directly related to the agricultural holding turnover in the sum of total turnover of the agricultural holding and direct payments of that agricultural holding under Regulation (EU) No 1307/2013 or more recent legislation.

$$RATIO = \frac{\text{Turnover of other gainful activities directly related to the holding}}{(\text{Total holding turnover (agricultural + OGA directly related to the holding)} + \text{direct payments})}$$

- ( $\geq 0 - \leq 10$ )
- ( $> 10 - \leq 50$ )
- ( $> 50 - < 100$ )

**3.2.2.4 LABOUR INPUT TO OTHER GAINFUL ACTIVITIES RELATED TO THE HOLDING**

N	Label	Unit
MOGA_HLD_RH	Holder having other gainful activities (related to the agricultural holding) as main activity	code
SOGA_HLD_RH	Holder having other gainful activities (related to the agricultural holding) as secondary activity	code
NOGA_HLD_RH	Holder not having other gainful activities (related to the agricultural holding)	code
MOGA_FAM_RH	Family members working on the agricultural holding and having other gainful activities (related to the agricultural holding) as their main activity	number
SOGA_FAM_RH	Family members working on the agricultural holding and having other gainful activities (related to the agricultural holding) as their secondary activity	number
MOGA_NFAM_RH	Non-family labour force regularly working on the agricultural holding	number

	and having other gainful activities (related to the agricultural holding) as their main activity	
SOGA_NFAM_RH	Non-family labour force regularly working on the agricultural holding having other gainful activities (related to the agricultural holding) as their secondary activity	number

Information on other gainful activities related to the holding is collected for

- the holder of sole holder holdings and holding-groups
- the family members in sole holder holdings
- the non-family members regularly working on the farm

No information on other gainful activities related to the holding is collected if the holding is a legal entity.

#### 3.2.2.4.1 Holder having other gainful activities (related to the agricultural holding) as main activity (MOGA\_HLD\_RH)

The holder of sole holder holdings or holding-groups has other gainful activities directly related to the agricultural holding as main activity

- 1 - Yes
- 0 - No

The activities can be carried out on the holding itself (non-farm work on the holding), or outside the holding.

#### 3.2.2.4.2 Holder having other gainful activities (related to the agricultural holding) as secondary activity (SOGA\_HLD\_RH)

The holder of sole holder holdings or holding-groups has other gainful activities directly related to the agricultural holding as secondary activity

- 1 - Yes
- 0 - No

The activities can be carried out on the holding itself (non-farm work on the holding), or outside the holding.

#### 3.2.2.4.3 Holder not having other gainful activities (related to the agricultural holding) (NOGA\_HLD\_RH)

The holder of sole holder holdings or holding-groups does not have other gainful activities directly related to the agricultural holding:

- 1 - Yes
- 0 - No

Select 1 if the holder does not have other gainful activities directly related to the holding; for all other cases 0 should be selected.

#### 3.2.2.4.4 Family members working on the agricultural holding and having other gainful activities (related to the agricultural holding) as their main activity (MOGA\_FAM\_RH)

Number of family members undertaking other gainful activities directly related to the agricultural holding as their main activity.

If relevant, includes the manager who is a member of the holder's family.

#### 3.2.2.4.5 Family members working on the agricultural holding and having other gainful activities (related to the agricultural holding) as their secondary activity (SOGA\_FAM\_RH)

Number of family members undertaking other gainful activities directly related to the agricultural holding as their secondary activity.

If relevant, includes the manager who is a member of the holder's family.

#### 3.2.2.4.6 Non-family labour force regularly working on the agricultural holding and having other gainful activities (related to the agricultural holding) as their main activity (MOGA\_NFAM\_RH)

Number of non-family members undertaking other gainful activities directly related to the agricultural holding as their main activity, in sole holder holdings or holding-groups.

#### 3.2.2.4.7 Non-family labour force regularly working on the agricultural holding having other gainful activities (related to the agricultural holding) as their secondary activity (SOGA\_NFAM\_RH)

Number of non-family members undertaking other gainful activities directly related to the agricultural holding as their secondary activity in sole holder holdings or holding-groups.

### 3.2.2.5 LABOUR INPUT TO OTHER GAINFUL ACTIVITIES NOT RELATED TO THE AGRICULTURAL HOLDING

Code	Label	Unit
MOGA_HLD_NRH	The sole holder who is also the manager of the sole holder agricultural holding having other gainful activities (not related to the holding) as main activity	code
SOGA_HLD_NRH	The sole holder who is also the manager of the sole holder agricultural holding having other gainful activities (not related to the holding) as secondary activity	code
NOGA_HLD_NRH	The sole holder who is also the manager of the sole holder agricultural holding not having other gainful activities (not related to the holding)	code
MOGA_FAM_NRH	Family members of sole holders (when the holder is the manager of the agricultural holding), who are working on the agricultural holding and have other gainful activities (not related to the agricultural holding) as their main activity	number
SOGA_FAM_NRH	Family members of sole holders (when the holder is the manager of the agricultural holding), who are working on the agricultural holding and have other gainful activities (not related to the holding) as their secondary activity	number

### 3.2.2.5.1 Other gainful activities not related to the agricultural holding

Other gainful activities not related to the agricultural holding refer to non-farm work on the agricultural holding and work outside the agricultural holding. This includes every activity carried out for remuneration (salary, wages, profits or other payment, including payment in kind) other than

- the farm work on the agricultural holding,
- other gainful activities of the holder directly related to the agricultural holding

Other gainful activities not related to the agricultural holding refer to other gainful activities:

- on the agricultural holding (non-farm work on the agricultural holding)
- out of the agricultural holding

#### Includes

- A hairdresser on the farm
- Activities using only human resources from the holding labour force and no other type of resources from the farm
- Work in the bank
- Teaching
- Accountancy

#### Excludes

- Farm work on the holding
- Other gainful activities of the holder, directly related to the holding

### 3.2.2.5.2 The sole holder, who is also the manager of the sole holder agricultural holding having other gainful activities (not related to the agricultural holding) as main activity (MOGA\_HLD\_NRH)

The holder has other gainful activities not directly related to the agricultural holding as main activity:

- 1 - Yes
- 0 - No

The activities can be carried out on the holding itself (non-farm work on the holding), or outside the holding.

### 3.2.2.5.3 The sole holder, who is also the manager of the sole holder agricultural holding having other gainful activities (not related to the agricultural holding) as secondary activity (SOGA\_HLD\_NRH)

The holder has other gainful activities not directly related to the agricultural holding as secondary activity:

- 1 - Yes
- 0 - No

The activities can be carried out on the holding itself (non-farm work on the holding), or outside the holding.

#### **3.2.2.5.4 The sole holder, who is also the manager of the sole holder agricultural holding not having other gainful activities (not related to the agricultural holding) (NOGA\_HLD\_NRH)**

The holder does not have other gainful activities not directly related to the agricultural holding:

- 1 - Yes
- 0 - No

Select 1 if the holder does not have other gainful activities (not related to the holding); for all other cases 0 should be selected.

#### **3.2.2.5.5 Family members of sole holders (when the sole holder is the manager of the agricultural holding), who are working on the agricultural holding and have other gainful activities (not related to the agricultural holding) as their main activity (MOGA\_FAM\_NRH)**

Number of family members undertaking other gainful activities not related to the agricultural holding as their main activity.

If relevant, includes the holder who is a member of the manager's family.

Other gainful activities not related to holding will be recorded only for the family members who undertake a minimum level of either farm work on the holding or of other gainful activities directly related to the holding.

#### **3.2.2.5.6 Family members of sole holders (when the sole holder is the manager of the agricultural holding), who are working on the agricultural holding and have other gainful activities (not related to the agricultural holding) as their secondary activity (SOGA\_FAM\_NRH)**

Number of family members undertaking other gainful activities not related to the agricultural holding as their secondary activity.

Other gainful activities not related to holding will be recorded only for the family members who undertake a minimum level of either farm work on the holding or of other gainful activities directly related to the holding.

## **3.3 IFS2020 Rural development**

### **3.3.1 Rural development measures**

The holding is considered to have benefited during the last 3 years from the rural development measures laid out in Title III, Chapter 1 of [Regulation \(EU\) No 1305/2013 of the European Parliament and of the Council of 17 December 2013](#), according to certain set standards and rules specified in the most recent legislation, irrespective of whether or not the payment has been made by the time of the survey, as long as a positive decision regarding awarding such measure has been made (e.g. the application for a subsidy has been accepted).

Payments to farms relative to similar measures but under Regulation (EC) No 1698/2005 are not relevant for the present data collection.

### 3.3.1.1 RURAL DEVELOPMENT

Code	Label	Unit
RDEV_15_02	Advisory services, farm management and farm relief services	code
RDEV_16_03	Quality schemes for agricultural products and foodstuffs	code
RDEV_17_04	Investment in physical assets	code
RDEV_18_05	Restoring agriculture production potential damaged by natural disasters and catastrophic events and introduction of appropriate prevention actions	code
RDEV_19A1_061	Business start-up support for young farmers	code
RDEV_19A3_063	Business start-up support for development of small farms	code
RDEV_40_18	Financing of complementary national direct payments for Croatia	code
RDEV_21_08	Investments in forest area development and improvement of the viability of forests	code
RDEV_28_10	Agri-environment-climate	code
RDEV_34_15	Forest-environmental and climate services and forest conservation	code
RDEV_29_11	Organic farming	code
RDEV_30_12	Natura 2000 and the water framework directive payments	code
RDEV_31_13	Payments to areas facing natural or other specific constraints	code
RDEV_33_14	Animal welfare	code
RDEV_36_17	Risk management	code

#### 3.3.1.1.1 Advisory services, farm management and farm relief services (RDEV\_15\_02)

The holding has benefited from rural development measures under Article 15 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

Even if the measure is not directed at farmers, they indirectly benefit from it by having access to the provided services. The paying agencies normally need to keep a record of which farmers benefited indirectly from the measure.

#### 3.3.1.1.2 Quality schemes for agricultural products and foodstuffs (RDEV\_16\_03)

The holding has benefited from rural development measures under Article 16 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

#### 3.3.1.1.3 Investment in physical assets (RDEV\_17\_04)

The holding has benefited from rural development measures under Article 17 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

#### **3.3.1.1.4 Restoring agriculture production potential damaged by natural disasters and catastrophic events and introduction of appropriate prevention actions (RDEV\_18\_05)**

The holding has benefited from rural development measures under Article 18 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

#### **3.3.1.1.5 Farm and business development**

Rural development measures under Article 19 of [Regulation \(EU\) No 1305/2013](#) and complementary payments for Croatia under Article 40 of the same Regulation.

#### **3.3.1.1.6 Business start-up support for young farmers (RDEV\_19A1\_061)**

The holding has benefited from rural development measures under Article 19 a) (i) of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

#### **3.3.1.1.7 Business start-up support for development of small farms (RDEV\_19A3\_063)**

The holding has benefited from rural development measures under Article 19 a) (iii) of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

#### **3.3.1.1.8 Complementary national direct payments for Croatia (RDEV\_40\_18)**

The holding has benefited from rural development measures under Article 40 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

#### **3.3.1.1.9 Investments in forest area development and improvement of the viability of forests (RDEV\_21\_08)**

The holding has benefited from rural development measures under Article 21 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

**3.3.1.1.10 Agri-environment-climate (RDEV\_28\_10)**

The holding has benefited from rural development measures under Article 28 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

**3.3.1.1.11 Forest-environmental and climate services and forest conservation (RDEV\_34\_15)**

The holding has benefited from rural development measures under Article 34 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

**3.3.1.1.12 Organic farming (RDEV\_29\_11)**

The holding has benefited from rural development measures under Article 29 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

**3.3.1.1.13 Natura 2000 and the water framework directive payments (RDEV\_30\_12)**

The holding has benefited from rural development measures under Article 30 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

**3.3.1.1.14 Payments to areas facing natural or other specific constraints (RDEV\_31\_13)**

The holding has benefited from rural development measures under Article 31 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

**3.3.1.1.15 Animal welfare (RDEV\_33\_14)**

The holding has benefited from rural development measures under Article 33 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

**3.3.1.1.16 Risk management (RDEV\_36\_17)**

The holding has benefited from rural development measures under Article 36 of [Regulation \(EU\) No 1305/2013](#)

- 1 - Yes
- 0 - No

## 3.4 IFS2020 Animal housing & manure management

Animal housing and manure management are important for a large number of policies (such as UNFCCC, the nitrates directive and the national emissions ceiling directive) as nitrogen is readily lost from agriculture through a number of pathways including leaching and run-off of nitrate (NO<sub>3</sub><sup>-</sup>) and organic nitrogen to water and gaseous emissions to air. Leaching and run-off of phosphorus (P) are also important.

From the perspective of agriculture's role in air pollution, ammonia (NH<sub>3</sub>) and the greenhouse gas nitrous oxide (N<sub>2</sub>O) are of the most concern (UNECE, 2015).

Greenhouse gases (such as N<sub>2</sub>O and CH<sub>4</sub>) can be produced and emitted at each stage of the 'manure management continuum', from the livestock building, to manure stores, manure treatment facilities and manure spreading to land (Chadwick, et al., 2011). And although excrements from ruminants in pastures release negligible amounts of CH<sub>4</sub>, because no CH<sub>4</sub> is produced in aerobic environment, they may release significant amounts of NH<sub>3</sub> and N<sub>2</sub>O depending on the composition of the urine and faeces.

Techniques such as ammonia stripping, liquid-solid separation, acidification, timing and type of manure application techniques and covering of manure may decrease emissions.

### 3.4.1 Policy overview

#### 3.4.1.1 NATIONAL EMISSION CEILING DIRECTIVE (NECD)

The National Emission Ceilings Directive sets national emission reduction commitments for Member States and the EU for five important air pollutants: nitrogen oxides (NO<sub>x</sub>), non-methane volatile organic compounds (NMVOCs), sulphur dioxide (SO<sub>2</sub>), ammonia (NH<sub>3</sub>) and fine particulate matter (PM<sub>2.5</sub>). These pollutants contribute to poor air quality, leading to significant negative impacts on human health and the environment.

A new National Emissions Ceilings (NEC) Directive ([2016/2284/EU](#)<sup>(79)</sup>) entered into force on 31 December 2016. The new directive transposes the reduction commitments for 2020 agreed by the EU and its Member States under the 2012 revised [Gothenburg Protocol](#)<sup>(80)</sup> under the Convention on Long-range Transboundary Air Pollution ([CLRTAP Convention](#)<sup>(81)</sup>).

To help ensure that information on emissions reported by Member States is consistent and harmonised with international requirements, the NEC Directive requires Member States to follow the methodologies agreed upon by the UNECE LRTAP Convention. It also requires that Member States

<sup>(79)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32001L0081>

<sup>(80)</sup> [http://www.unece.org/env/lrtap/multi\\_h1.html](http://www.unece.org/env/lrtap/multi_h1.html)

<sup>(81)</sup> <http://www.unece.org/env/lrtap/welcome.html>

use the [EMEP/EEA air pollutant emission inventory guidebook<sup>\(82\)</sup>](#) in preparing their inventories (EEA, 2017).

### 3.4.1.2 UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC)

Data on greenhouse gas emissions and removals is sent by countries to UNFCCC and the EU Greenhouse Gas Monitoring Mechanism (EU Member States). They concern annual emissions of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), fluorocarbons (PFCs), unspecified mix of HFCs and PFCs, sulphur hexafluoride (SF<sub>6</sub>) and nitrogen trifluoride (NF<sub>3</sub>) from individual EU countries. Sectoral data (IPCC classification) is provided for the following main source categories: Energy, Industrial Processes and Product Use, Agriculture, Land use change and forestry, Waste, Other, CO<sub>2</sub> emissions from Biomass, indirect CO<sub>2</sub> and International bunkers and Multilateral Operations.

As it is impractical to measure emissions from all the sources that, together, comprise an emissions inventory, the most common estimation approach is to combine information on the extent to which a human activity takes place (called activity data or AD) with coefficients that quantify the emissions or removals per unit activity, called emission factors (EF). The basic equation is therefore: Emissions = AD x EF. For example, in the simplest (Tier 1) approach of [IPCC<sup>\(83\)</sup>](#), methane emission could be assessed by multiplying the population of animals in a livestock category (AD) by an emission factor (EF) in kg\*CH<sub>4</sub>\*head<sup>-1</sup>\*yr<sup>-1</sup> specific for the given category, and country or region. This basic equation can, in some circumstances, be modified to include other estimation parameters than emission factors, for example, to accommodate the effects of additional, secondary, abatement (EEA, 2016).

### 3.4.1.3 NITRATES DIRECTIVE (ND)

The Nitrates Directive (1991) aims to protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices (EEA, 2016). Member States have designated territories draining into waters that are or could be affected by high nitrate levels or eutrophication as vulnerable zones. Member States had to establish codes of good practice for farmers, to be implemented on a voluntary basis throughout their territory, and develop specific action programmes for compulsory implementation by farmers located in nitrate-vulnerable zones.

Periodically, they have to revise their designation of vulnerable zones, to monitor the effectiveness of action programmes and amend them to ensure they match up to the Directive's objectives, and submit their findings to the European Commission.

Action programmes have to include a set of measures laid down in the Directive, relating to, for example, periods when fertilisation is prohibited, minimum storage capacity for livestock manure, and rules to control the spread of nutrients near water or on slopes, to reduce the risk of contamination.

The Nitrates Directive has close links with other EU policies concerning water, air, climate change and agriculture (such as the water framework directive). DG Environment makes available [studies<sup>\(84\)</sup>](#) supporting the implementation of the directive.

In Nitrate Vulnerable Zones (which can cover the whole country), the permissible amount of total N in livestock manures applied to land each year, including by the animals themselves, must not exceed 170 kg ha<sup>-1</sup> yr<sup>-1</sup>, and may be required to be less than this amount in order to reduce the risk of polluting watercourses. The Nitrates Directive allows for the possibility of a derogation with respect to

<sup>(82)</sup> <https://www.eea.europa.eu/publications/emep-eea-guidebook-2016>

<sup>(83)</sup> [https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4\\_Volume4/V4\\_10\\_Ch10\\_Livestock.pdf](https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_10_Ch10_Livestock.pdf)

<sup>(84)</sup> <http://ec.europa.eu/environment/water/water-nitrates/studies.html>

the maximum amount of 170 kg N ha<sup>-1</sup> yr<sup>-1</sup> for livestock manure, provided it is demonstrated that the objectives of the Directive can still be achieved and that the derogation is based on objective criteria such as long growing seasons, crops with large N uptake, high net precipitation or soils with a high denitrification capacity. In addition to the requirements of the Nitrates Directive, it may be necessary to limit organic-manure applications on some fields, in order to avoid excessive enrichment of soil P levels. In Nitrate Vulnerable Zones, it is mandatory to follow the restrictions on the application of organic manures and mineral fertilisers included in the Action Programme (Webb, et al., 2013).

### 3.4.2 Animals

Animals' variables are collected in the core livestock component of IFS. For this module not all details are needed and the details are collected only for relevant aggregates. Chosen aggregations are depending of user requirements, namely for ammonia and greenhouse gas emissions. Some alignment to previous data collections (namely SAPM) was sought.

The separation of dairy cattle (NFR 3B1a) and non-dairy cattle (NFR 3B1b) in different types of housing is relevant for assessment of Tier 2 ammonia emissions and non-methane volatile organic compounds (EEA, 2017).

The separation of sows (NFR 3B3) and fattening pigs (NFR 3B3) in different types of housing is relevant for assessment of Tier 2 ammonia emissions and non-methane volatile organic compounds (EEA, 2017).

The separation of layers (NFR 3B4gi) and broilers (NFR 3B4gii) in different types of housing is relevant for assessment of Tier 2 ammonia emissions (EEA, 2017).

### 3.4.3 Animal housing

Besides its importance as a structural element, the share of animals in different housing systems is a supporting indicator of the EU agri-environmental indicator AEI 11.3 [manure storage](#)<sup>(85)</sup>.

The combination of type of animal housing system and the manure management (for example whether the management system is slurry or solid based) is important for assessment of ammonia emission in CLRTAP Tier 2 methodologies (EEA, 2017).

#### 3.4.3.1 TIME SPENT GRAZING

While storage and outdoor livestock each typically account for 10–20 % of the total emissions, the emissions during grazing tend to be fairly small because the total ammoniacal nitrogen (TAN) in urine deposited directly on pastures is quickly absorbed by the soil. The proportion of emission from buildings and after manure spreading will decrease as the proportion of the year spent at pasture increases (EEA, 2017).

Emissions from field-applied manure (NFR 3Da2a) and from excreta deposited by grazing animals (NFR 3Da3) are reported separately from those of livestock buildings, outdoor yards and manure storage (NFR 3B – Manure management). This separation allows emissions to be reported to the current nomenclature for reporting (NFR) structure (under the United Nations Economic Commission for Europe (UNECE)), which is specifically maintained to be consistent with the common reporting format (CRF) reporting structure (under the United Nations Framework Convention on Climate Change (UNFCCC)) for greenhouse gases (EEA, 2017).

<sup>(85)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Agri-environmental\\_indicator\\_-\\_manure\\_storage](https://ec.europa.eu/eurostat/statistics-explained/index.php/Agri-environmental_indicator_-_manure_storage)

### Grazing day duration

Cattle will normally graze from 6 to 12 hours, depending on the supply of good forage. Sheep and goats will graze from 9 to 12 hours. The bulk of grazing will be done during the day time (unless temperatures and humidity are very high) in two periods: early in the morning and then again at dusk. In the intervals of grazing and during the night the animals will ruminate. The time spent ruminating is also depending on the pasture conditions (more time is spent ruminating if the forage is more mature). The time spent ruminating goes roughly from 4 to 9 hours for cattle and 7 to 10 hours for sheep and goats.

Pigs in "montanera" systems graze roughly from 5 to 8 hours a day.

If the animals are grazing for 2 or less hours a day, do not consider it a grazing day. For grazing times above 2 hours but below the minimum expected for a full grazing day, an approximation to half-day can be considered.

### 3.4.3.2 BOVINE HOUSING

For bovines, it is important to distinguish how much manure is deposited in the house and how much is deposited while grazing both for ammonia (CLRTAP/NECD) and for greenhouse gas emissions (UNFCCC). The types of housing account for different housing emissions in CLRTAP Tier 2 approaches such as the one referenced in Table 3.9 of (EEA, 2017). As mentioned before, the manure management is a continuum, so there is also a need to take also into account different emissions during storage and spreading of solid and slurry management for the referred housing types.

#### Tied stalls

Also known as stanchion-tied stables, these are [animal houses](#) where the animals are tied to their places and are not allowed to move freely. This has an impact on the ammonia emissions, as less area of the stable is soiled.

These types of housing can contain manure separated in the form of solid dung and liquid manure when the floors of the stalls are on sloping concrete with bedding (e.g. straw, chopped straw, sawdust) and a shallow gutter at the rear of the animals to collect part of the faeces and the urine, whilst part is regularly removed as solid manure. In some cases the gutter is equipped with a drainage pipe to collect seepage or there can be a deeper channel instead of a gutter to collect and store the liquid fraction. The manure is normally removed mechanically outside the building as solid dung/farmyard manure.

They can also contain manure in the form of slurry when the floors of the stalls are level concrete with a channel covered by a grid at the rear of the animals or fully slatted floor to collect faeces and urine as slurry. In this case, the manure and urine drop down below the floor into a pit, where they form slurry.

#### Loose and cubicle housing

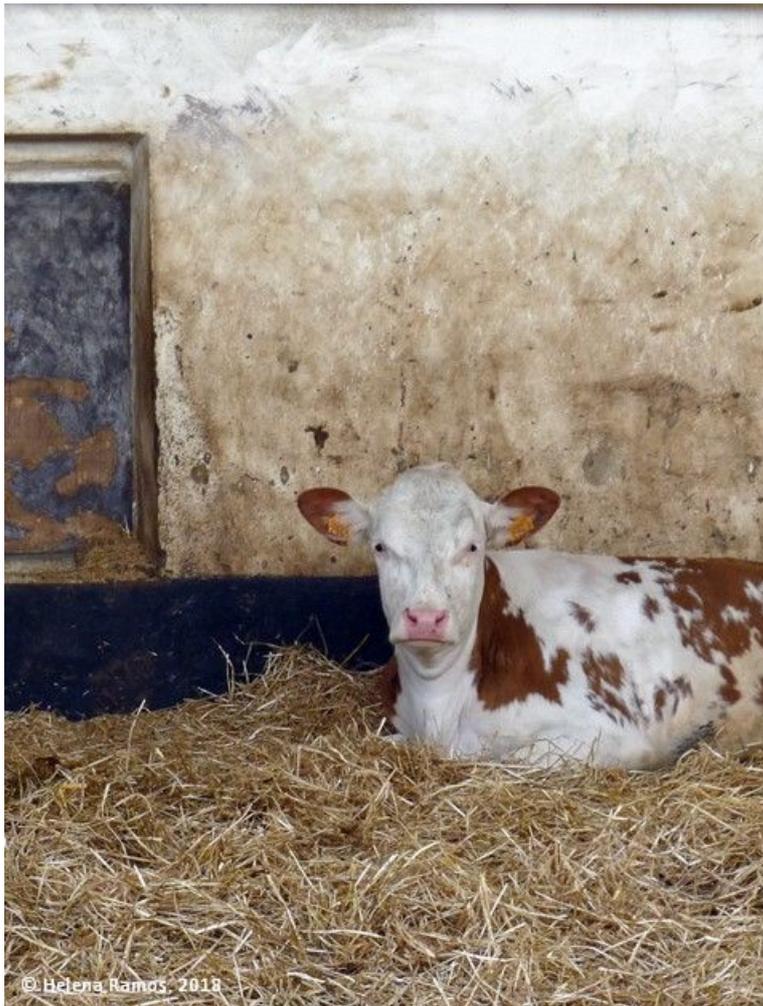
Loose housing refers to animal houses where the animals are allowed to move freely and have free access over the whole area of the building or pen (a small enclosure for livestock).

Loose housing may contain manure in the solid form when there is a concrete floor which is cleaned more frequently by scraping in the area where the animals stand to feed and/or drink. It is common for a deep layer of bedding (usually straw) to be spread over the floor. This bedding is removed from the building, typically once or twice per winter, as farmyard manure.

Loose housing may also contain manure in the form of slurry when the manure and urine drop down below the floor into a pit, where they form slurry or when it is scraped from concrete passageways and collected in storage tanks or lagoons.

For the purpose of IFS, this type of housing includes also cubicle housing, which are buildings divided into rows of individual stalls or cubicles in which animals lay when at rest but are not restrained.

Figure 40 – Loose housing with a layer of deep litter



## Other types of housing

Types of housing different from the ones mentioned above.

### Includes

- Igloos
- Calf huts

## Outdoor

Includes pasture, free range and paddock.

## Exercise yards

Outdoor areas, normally with impermeable floor, where animals can exercise for part of the day. If an exercise yard exists on the holding, but the animals are not using it, then do not consider it.

Figure 41 – Exercise yard for bovines, with impermeable surface



Figure 42 – Exercise yard for bovines, covered in grass



### 3.4.3.3 BOVINE HOUSING – DAIRY COWS

Code	Label	Unit
A2300F_AVGNR	Dairy cows	average number
A2300F_TS_SL	Dairy cows in tied stalls (slurry)	places
A2300F_TS_SO	Dairy cows in tied stalls (solid manure)	places
A2300F_LH_SL	Dairy cows in loose / cubicle housing (slurry)	places
A2300F_LH_SO	Dairy cows in loose / cubicle housing (solid manure)	places
A2300F_OH_SL	Dairy cows in other types of housing (slurry)	places
A2300F_OH_SO	Dairy cows in other types of housing (solid manure)	places
A2300F_T_ALW	Dairy cows always outdoors	places
A2300F_T_PART	Dairy cows partly outdoors (grazing)	months
A2300F_EXRY	Dairy cows with access to exercise yards)	code

#### 3.4.3.3.1 Dairy cows (A2300F\_AVGNR)

Average number of dairy cows in the reference year

#### 3.4.3.3.2 Dairy cows in tied stalls (slurry) (A2300F\_TS\_SL)

Number of places for dairy cows in tied stalls, with slurry management

#### 3.4.3.3.3 Dairy cows in tied stalls (solid manure) (A2300F\_TS\_SO)

Number of places for dairy cows in tied stalls with solid manure management

**3.4.3.3.4 Dairy cows in loose / cubicle housing (slurry) (A2300F\_LH\_SL)**

Number of places for dairy cows in loose / cubicle housing with slurry management

**3.4.3.3.5 Dairy cows in loose / cubicle housing (solid manure) (A2300F\_LH\_SO)**

Number of places for dairy cows in loose / cubicle housing with solid manure management

**3.4.3.3.6 Dairy cows in other types of housing (slurry) (A2300F\_OH\_SL)**

Number of places for dairy cows in other types of housing not elsewhere classified with slurry management

**3.4.3.3.7 Dairy cows in other types of housing (solid manure) (A2300F\_OH\_SO)**

Number of places for dairy cows in other types of housing, not elsewhere classified, with solid manure management

**3.4.3.3.8 Dairy cows always outdoors (A2300F\_T\_ALW)**

Number of places for dairy cows always outdoors

**3.4.3.3.9 Dairy cows partly outdoor (grazing) (A2300F\_T\_PART)**

Months that dairy cows spend outdoors grazing

**3.4.3.3.10 Dairy cows partly outdoor (on yards) (A2300F\_EXRY)**

Presence of exercise yards for dairy cows

- 1 - Yes
- 0 - No

### 3.4.3.4 BOVINE HOUSING – OTHER BOVINE ANIMALS

Code	Label	Unit
A2000X2300F_AVGNR	Other bovine animals	average number
A2000X2300F_TS_SL	Other bovine animals in tied stalls (slurry)	places
A2000X2300F_TS_SO	Other bovine animals in tied stalls (solid manure)	places
A2000X2300F_LH_SL	Other bovine animals in loose / cubicle housing (slurry)	places
A2000X2300F_LH_SO	Other bovine animals in loose / cubicle housing (solid manure)	places
A2000X2300F_OH_SL	Other bovine animals in other types of housing (slurry)	places
A2000X2300F_OH_SO	Other bovine animals in other types of housing (solid manure)	places
A2000X2300F_T_ALW	Other bovine animals always outdoors	places
A2000X2300F_T_PART	Other bovine animals partly outdoors (grazing)	months
A2000X2300F_EXRY	Other bovine animals with access to exercise yards	code

#### 3.4.3.4.1 Other bovine animals (A2000X2300F\_AVGNR)

Average number of other bovine animals in the reference year

#### 3.4.3.4.2 Other bovine animals in tied stalls (slurry) (A2000X2300F\_TS\_SL)

Number of places for other bovine animals in tied stalls with slurry manure management

#### 3.4.3.4.3 Other bovine animals in tied stalls (solid manure) (A2000X2300F\_TS\_SO)

Number of places for other bovine animals in tied stalls with solid manure management

#### 3.4.3.4.4 Other bovine animals in loose / cubicle housing (slurry) (A2000X2300F\_LH\_SL)

Number of places for other bovine animals in loose / cubicle housing with slurry management

#### 3.4.3.4.5 Other bovine animals in loose / cubicle housing (solid manure) (A2000X2300F\_LH\_SO)

Number of places for other bovine animals in loose / cubicle housing with solid manure management

**3.4.3.4.6 Other bovine animals in other types of housing (slurry) (A2000X2300F\_OH\_SL)**

Number of places for other bovine animals in other housing, not elsewhere classified, with slurry management

**3.4.3.4.7 Other bovine animals in other types of housing (solid manure) (A2000X2300F\_OH\_SO)**

Number of places for other bovine animals in other housing, not elsewhere classified, with solid manure management

**3.4.3.4.8 Other bovine animals always outdoors (A2000X2300F\_T\_ALW)**

Number of places for other bovine animals always outdoors

**3.4.3.4.9 Other bovines partly outdoors (grazing) (A2000X2300F\_T\_PART)**

Months that other bovine animals spend outdoors grazing

**3.4.3.4.10 Other bovine animals with access to exercise yards (A2000X2300F\_EXRY)**

Presence of exercise yards for other bovine animals

- 1 - Yes
- 0 - No

**3.4.3.5 PIG HOUSING**

As for bovines, the need to distinguish different types of housing for pigs such as slatted floor vs. partially slatted floor is due to different ammonia emissions that can be accounted for either system. In what respects N<sub>2</sub>O emissions, however, this distinction is not as relevant, as both slatted and partly slatted floors are operated as pit stores under animal confinement (IPCC, 2006).

Schematic drawings of pig housing can be found in the 2017 JRC document on [best available techniques for intensive rearing of poultry or pigs<sup>\(86\)</sup>](#) (JRC, 2017).

**Slatted floor housing**

Refers to animal houses where the floors are completely slatted. The whole floor has slats where the manure and urine drop down below the floor into a pit, where they form slurry.

**Partially slatted floor**

Refers to animal houses where the floors are partially slatted. Part of the floor has slats where the manure and urine drop down below the floor into a pit, where they form slurry

<sup>(86)</sup> [http://eippcb.jrc.ec.europa.eu/reference/BREF/IRPP/JRC107189\\_IRPP\\_Bref\\_2017\\_published.pdf](http://eippcb.jrc.ec.europa.eu/reference/BREF/IRPP/JRC107189_IRPP_Bref_2017_published.pdf)

### Solid floor housing (excluding deep litter)

Refers to a flat, solid floor usually made from non-polished cement (to avoid slipping) or hard soil. The floor normally slopes away to the rear to make cleaning easier.

### Deep litter

Pig housing on straw-beds (deep litter-loose housing) refers to animal houses where the floor is covered with a thick layer of litter (straw, peat, sawdust, or other similar material binding the manure and urine) that is removed only at intervals that may be several months apart.

### Other types of housing

Types of housing different from the ones mentioned above.

### Free range

Free range is a method of farming husbandry where the animals, for at least part of the day, can roam freely outdoor, rather than being confined in an enclosure for 24 hours each day.

Figure 43 – Breeding sows (outdoor)



### Exercise yards

Outdoor areas, normally with impermeable floor, where animals can exercise for part of the day. If an exercise yard exists on the holding, but the animals are not using it, then do not consider it.

### 3.4.3.6 PIG HOUSING – BREEDING SOWS

Code	Label	Unit
A3120_AVGNR	Breeding sows	average number
A3120_SLT_F	Breeding sows in fully slatted floor	places
A3120_SLT_PART	Breeding sows in partially slatted floor	places
A3120_SOHXDPLT	Breeding sows in solid floor housing (excluding deep litter)	places
A3120_DPLT	Breeding sows where entire surface is deep litter	places
A3120_OH	Breeding sows in other types of housing	places
A3120_T_PL	Breeding sows outdoors (free range)	places
A3120_T_MTH	Breeding sows outdoors (free range)	months

#### 3.4.3.6.1 Breeding sows (A3120\_AVGNR)

Average number of breeding sows in the reference year

#### 3.4.3.6.2 Breeding sows in fully slatted floor (A3120\_SLT\_F)

Number of places for breeding sows in fully slatted floor housing

#### 3.4.3.6.3 Breeding sows in partially slatted floor (A3120\_SLT\_PART)

Number of places for breeding sows in partially slatted floor housing

#### 3.4.3.6.4 Breeding sows in solid floor housing (excluding deep litter) (A3120\_SOHXDPLT)

Number of places for breeding sows in solid floor housing (excluding deep litter)

#### 3.4.3.6.5 Breeding sows where entire surface is deep litter (A3120\_DPLT)

Number of places for breeding sows in deep litter housing

#### 3.4.3.6.6 Breeding sows in other types of housing (A3120\_OH)

Number of places for breeding sows in other types of housing

#### 3.4.3.6.7 Breeding sows outdoors (free range) (A3120\_T\_PL)

Number of places for breeding sows outdoors in free range systems

For the purpose of IFS it is not requested that the animals are always outdoors to consider them as free range. Some free range systems assume that animals come to a sheltered area at the end of the day.

#### 3.4.3.6.8 Breeding sows outdoors (free range) (A3120\_T\_MTH)

Months that breeding sows spend outdoors in free range systems

This refers only to the animals mentioned in A3120\_T\_PL.

#### 3.4.3.7 PIG HOUSING – OTHER PIGS

Code	Label	Unit
A3100X3120_AVGN R	Other pigs	average number
A3100X3120_SLT_F	Other pigs in fully slatted floor	places
A3100X3120_SLT_P ART	Other pigs in partially slatted floor	places
A3100X3120_SOHX DPLT	Other pigs in solid floor housing (excluding deep litter)	places
A3100X3120_DPLT	Other pigs where entire surface is deep litter	places
A3100X3120_OH	Other pigs in other types of housing	places
A3100X3120_T	Other pigs outdoors (free range)	places
A3100X3120_EXRY	Other pigs with access to exercise yards	code

##### 3.4.3.7.1 Other pigs (A3100X3120\_AVGNR)

Average number of other pigs in the reference year

##### 3.4.3.7.2 Other pigs in fully slatted floor (A3100X3120\_SLT\_F)

Number of places for other pigs in fully slatted floor housing

##### 3.4.3.7.3 Other pigs in partially slatted floor (A3100X3120\_SLT\_PART)

Number of places for other pigs in partially slatted floor housing

##### 3.4.3.7.4 Other pigs in solid floor housing (excluding deep litter) (A3100X3120\_SOHXDPLT)

Number of places for other pigs in solid floor housing (excluding deep litter)

##### 3.4.3.7.5 Other pigs where entire surface is deep litter (A3100X3120\_DPLT)

Number of places for other pigs in deep litter housing

##### 3.4.3.7.6 Other pigs in other types of housing (A3100X3120\_OH)

Number of places for other pigs in other types of housing

**3.4.3.7.7 Other pigs outdoors (free range) (A3100X3120\_T)**

Number of places for other pigs outdoors in free range systems

**3.4.3.7.8 Other pigs with access to exercise yards (A3100X3120\_EXRY)**

Presence of exercise yards for other pigs (free range excluded)

- 1 - Yes
- 0 - No

**3.4.3.8 POULTRY HOUSING**

Schematic drawings of poultry housing can be found in the 2017 JRC document on [best available techniques for intensive rearing of poultry or pigs](#) (JRC, 2017).

**Deep litter housing (straw beds)**

Laying hen housing on straw-beds (equivalent to deep litter-loose housing) are animal houses where the floor is covered with a thick layer of litter (straw, peat, sawdust, or other similar material binding the manure) that is removed only at intervals that may be several months apart. A simple closed building that is thermally insulated and with forced ventilation or natural ventilation. At least a third of the floor area must be covered with bedding (e.g. chopped straw, wood shavings) and two thirds arranged as a pit covered with slats to collect droppings (waste voided by poultry) over the 13 – 15 month egg laying period. Laying nests, feeders and water supply are placed over the slatted area to keep the litter dry. Corresponds to management systems of poultry manure with litter (IPCC, 2006).

**Aviary housing**

Aviaries are also called multi-level systems or percheries. They consist of a ground floor plus one or more levels of perforated platforms, from which manure cannot fall on birds below. At some point across the system there will be at least two levels available for birds. An aviary house is a construction with thermal insulation, forced ventilation and either natural or artificial light. They can be combined with free range and outside scratching area. Birds are kept in large groups and are free to move over the entire house area over multiple levels. The space is subdivided into different areas: feeding and drinking, sleeping and resting, scratching, egg laying. Because animals can use several levels, higher stock densities are allowed in comparison to the deep litter regime. Droppings are removed by manure belts or collected in a manure pit. Corresponds to management systems of poultry manure without litter (IPCC, 2006).

For the purposes of IFS, aviaries with deep litter should be classified as deep litter housing.

**Cages with manure belts**

Battery cages are animal housing systems where the laying hens are kept in cages, one or more in each, inside closed buildings with forced ventilation and with or without a lighting system. Birds are kept in tiered cages, usually made of steel wire, arranged in long rows. Droppings fall through the bottom of the cages and are collected and stored underneath in a deep pit or channel or are removed by a belt or scraper system. The droppings from laying hens in battery systems are not mixed with other material such as litter and may be dried or have water added to make the manure easier to manage. Battery cages with manure belt are battery cages where the manure is removed mechanically by a belt below the cages to outside the building to form solid dung/farmyard manure. Movable belts, e.g. made of “non –stick” polypropylene, below the cages on which droppings are collected and are transported outside the house to a closed storage. In improved systems, there is

provision to dry the manure on the belts by forced air through perforated pipes or drying tunnels over the cages.

### Cages without manure belts

Two types can be mentioned:

- with deep pit: battery cages where the manure falls into a deep pit beneath cages where it forms slurry. The birds are housed in cages in one or more tiers. Droppings fall into a manure pit (deep pit) or a channel beneath the cages by themselves or with the aid of a scraper together with spilled water from the drinkers. The layer of manure is removed once a year or less frequently by scraper or front loader on a tractor. In some systems, the ventilation system for the house is designed so that warm air is used to dry the wet manure in the deep pit or a channel
- with stilt house: battery cages where the manure falls on the floor below the cages where it forms solid dung/farmyard manure and is mechanically removed regularly. This is similar to a deep pit house except that there is a variable valve between the cage and dropping storage areas and large openings in the dropping store walls that allow wind to pass through and assist drying. Cage and dropping areas of the building are separated so droppings can be removed at any convenient time without disturbing the birds.

### Free range

Free ranges can be covered with grass. The birds have access to this area from houses via pop-holes in the wall and from the covered veranda, if present. They will use the area if they feel there is sufficient shelter. The shelter may be trees or bushes, but it can also be artificial shelter (elevated nets, tents, mobile hen houses). Also, a fence can be used as cover to walk along. Providing a sand bath is another way to attract poultry to use these facilities. Areas near the house may be covered with free-draining material, in order to maintain good hygiene both outside and inside the house.

For the purposes of IFS, aviaries where the animals have access to outdoor areas can be classified as free range.

### 3.4.3.9 POULTRY HOUSING – LAYING HENS

Code	Label	Unit
A5110O_AVGNR	Laying hens	average number
A5110O_DPLTH	Laying hens in deep litter housing	places
A5110O_AHXLT	Laying hens in aviary house (without litter)	places
A5110O_C_BLT	Laying hens in cages with manure belts	places
A5110O_C_DPPIT	Laying hens in cages with deep pits	places
A5110O_C_STLH	Laying hens in cages with stilt house	places
A5110O_OH	Laying hens in other types of housing	places
A5110O_T	Laying hens outdoors (free range)	places

#### 3.4.3.9.1 Laying hens (A5110O\_AVGNR)

Average number of laying hens in the reference year

#### 3.4.3.9.2 Laying hens in deep litter housing (A5110O\_DPLTH)

Number of places for laying hens in deep litter housing

**3.4.3.9.3 Laying hens in aviary house (without litter) (A51100\_AHXLT)**

Number of places for laying hens in aviary housing

**3.4.3.9.4 Laying hens in cages with manure belts (A51100\_C\_BLT)**

Number of places for laying hens in cages with manure belts

**3.4.3.9.5 Laying hens in cages with deep pits (A51100\_C\_DPPIT)**

Number of places for laying hens in cages with deep pits

**3.4.3.9.6 Laying hens in cages with stilt house (A51100\_C\_STLH)**

Number of places for laying hens in cages with stilt house

**3.4.3.9.7 Laying hens in other types of housing (A51100\_OH)**

Number of places for laying hens in other types of housing

**3.4.3.9.8 Laying hens outdoors (free range) (A51100\_T)**

Number of places for laying hens on free range systems

**3.4.4 Nutrient use and manure on the farm****3.4.4.1 FERTILISERS, AMENDMENTS AND CONDITIONERS****Fertiliser**

A fertiliser is a natural or artificial substance containing chemical elements (such as Nitrogen (N), Phosphorus (P) and Potassium (K)) that improve growth and productiveness of plants. Some synonyms include the terms "enrichment" or "plant nutrient".

A fertiliser can be made of different combinations of materials such as:

- virgin material substances and their mixtures
- non-processed or mechanically processed plants, plant parts and extracts
- compost
- energy crop digestate
- other digestate
- food industry by-products
- micro-organisms
- agronomic additives
- nutrient polymers or other polymers

- certain animal by-products

### Mineral fertilisers

Fertilisers manufactured by a chemical/industrial process or mined as opposed to organic material that contains carbon. They are also called chemical fertilisers, artificial fertilisers or inorganic fertiliser.

They include:

- simple mineral fertilisers such as urea, ammonium nitrate and sulphate
- complex mineral fertilisers such as NP, NK and NPK mixtures
- mineral-organic fertilisers such as calcium cyanamid

### Organic fertilisers

Fertilisers derived from organic origin such as animal products (e.g. livestock manure, dried blood, hoof and bone meal), plant residues or human origin (e.g. sewage sludge). Organic fertilisers contain carbon (C) and nutrients of solely biological origin and exclude material which is fossilized or embedded in geological formations.

Organic fertilisers include:

- livestock manure
- other organic fertilisers such as compost, sewage sludge or industrial waste.

### Organo-mineral fertiliser

An organo-mineral fertiliser is a co-formulation of one or more inorganic fertilisers and organic fertilisers.

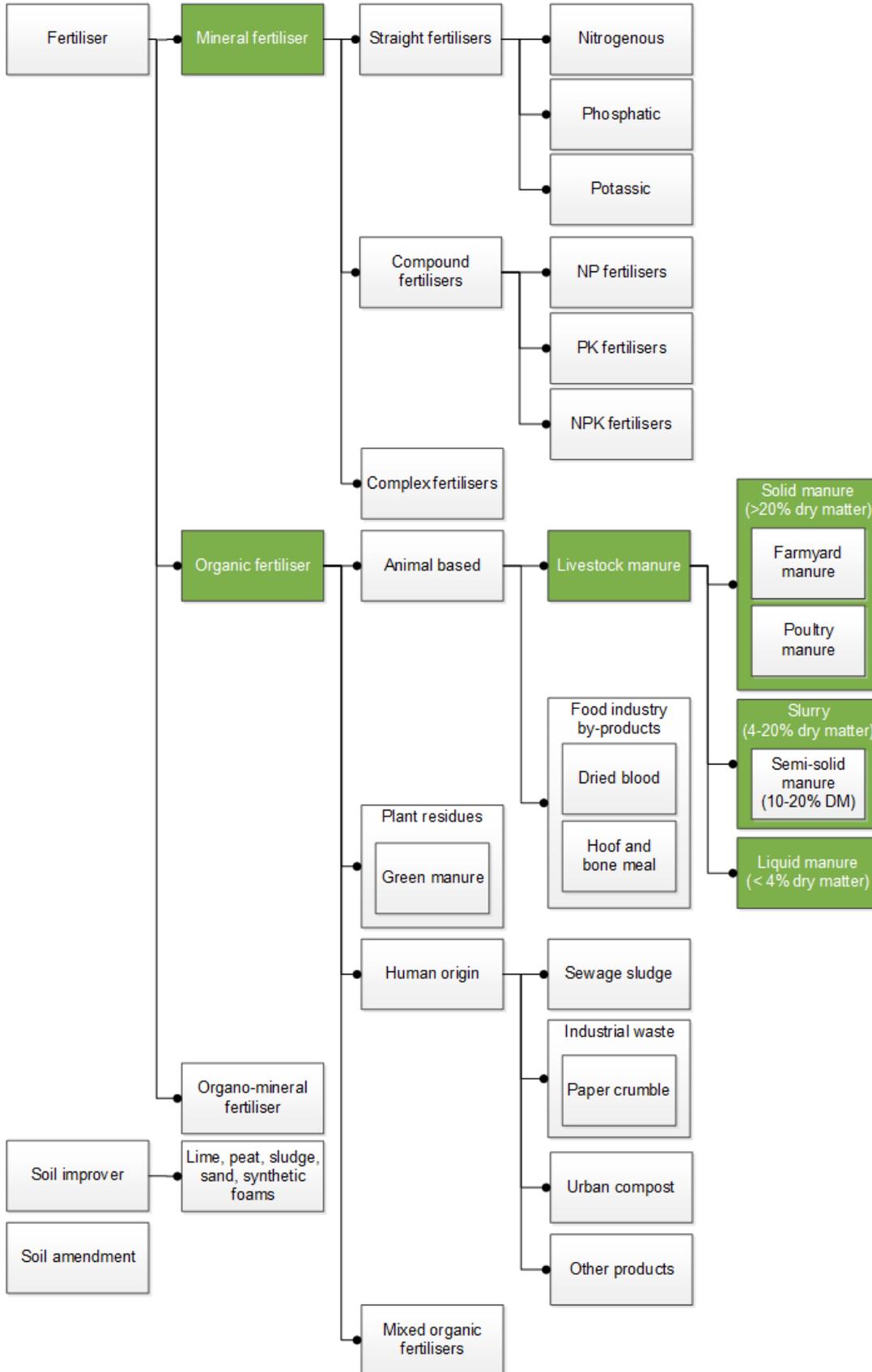
### Soil amendments

Compositions capable of modifying the chemical (pH) or physical (structure) condition of soils for agricultural purposes. Products destined to correct soil acidity are called liming materials and contain oxides, hydroxides, carbonates or silicates of calcium (Ca) or magnesium (Mg).

### Soil conditioners (or soil improvers)

Mixtures of fertilisers with other compounds mainly to maintain improve or protect the physical structure, the chemical properties or water retention capacity of soils for agricultural purposes. These compounds are e.g. water retaining polymers, sand or clay materials.

Figure 44 – Fertilisers, soil amendments and soil improvers



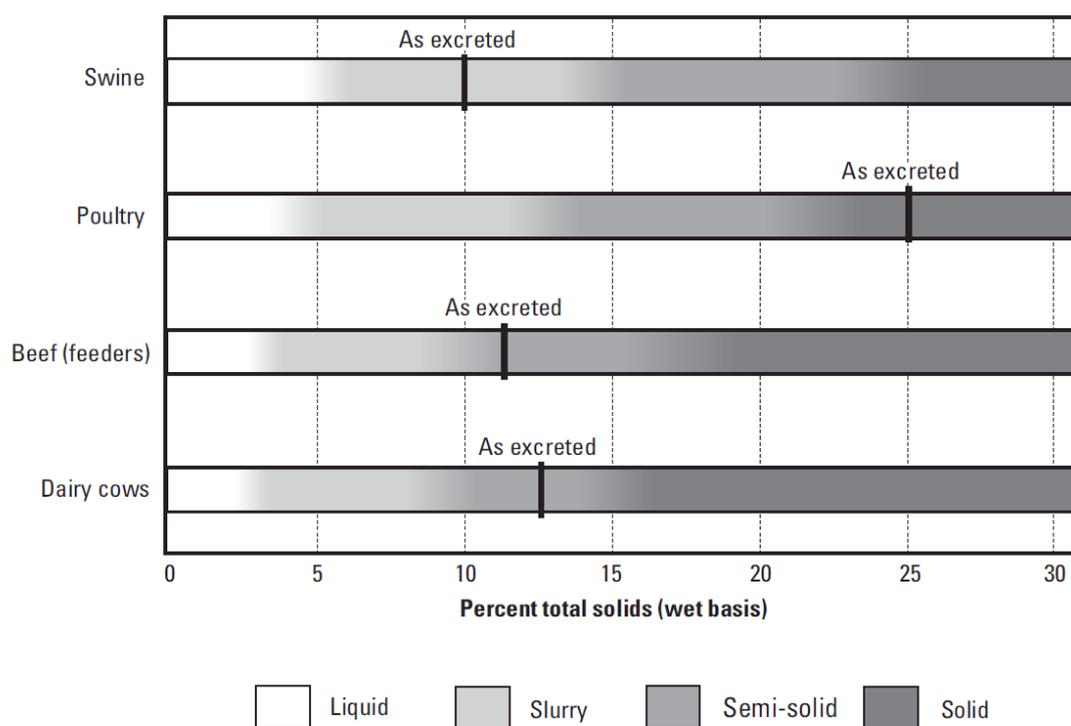
### 3.4.4.2 LIVESTOCK MANURE

#### Livestock manure

Livestock manure is organic matter, mostly derived from animal faeces and urine, but normally also contains plant material (often straw), which has been used as bedding for animals and has absorbed the faeces and urine. In the [nitrate directive<sup>\(87\)</sup>](#) it is defined as "waste products excreted by livestock or a mixture of litter and waste products excreted by livestock, even in processed form".

Dairy, beef and swine manure may be either solid or slurry. Horse and poultry manures are solid.

Figure 45 – Relative handling characteristics of different types of manure for various species ("as excreted" represent the common solids content of manure excreted from a healthy animal).



Source: (MWPS, 2004)

The distinction between solid manure, liquid manure and slurry is in part related to how they are handled in the farm. But the need to separate for these different types while collecting IFS data is also related to their different chemical environments and consequent effect on emissions. When the conditions are insufficiently aerobic (for nitrification) or insufficiently anaerobic (for denitrification) nitrous oxide is likely to be formed. As liquid animal manure is a strict anaerobic substrate (due to its very low redox potential, its high biochemical oxygen demand and the slow oxygen diffusion into animal manure), nitrification cannot occur, apart from the superficial surface layer. As a result, nitrate is absent in liquid animal manure. Solid animal manure, on the other end, is accessible for diffusion of oxygen, so nitrification and denitrification will occur. Because nitrous oxide production requires an initial aerobic reaction and then an anaerobic process, it is theorized that dry, aerobic management systems may provide an environment more conducive for nitrous oxide production (Jun, et al.).

<sup>(87)</sup> <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:31991L0676>

## Solid manure

Solid dung, including farmyard manure, are excrements of domestic animals, with or without litter, including possibly a small amount of urine. Solid manure has at least 20% dry matter. It is handled with front-end loaders and/or pitchforks.

## Farmyard manure

Farmyard manure is a decomposed mixture of dung and urine with straw and litter used as bedding material and residues from the fodder fed to cattle, sheep and other livestock (excluding chicken). It is a form of solid manure.

## Liquid manure

Liquid manure is urine from domestic animals including possibly a small amount of excrement and/or water. Liquid manure has up to 4% dry matter and can be handled as a liquid with normal irrigation equipment. Liquid manure with less than 1% solids (such as in properly designed anaerobic and aerobic lagoons) can be handled using conventional centrifugal pumps (MWPS, 2004). For the purposes of CLRTAP, in situations in which manure is separated into liquid and solid fractions, the liquid fraction can be treated as slurry (EEA, 2017).

## Slurry

For the purposes of IFS, this includes both slurry (manure with 4 to 10% solids) and semi-solid manure, with dry matter content that can go from about 10 to 20%, which may require special pumps to be handled.

### 3.4.4.3 WASTE, COMPOST AND DIGESTATE

#### Waste

According to the [waste directive<sup>\(88\)</sup>](#), refers to any substance or object which the holder discards or intends to discard or is required to discard.

#### Bio-waste

According to the [waste directive](#), refers to biodegradable garden and park waste, food and kitchen waste from households, restaurants, caterers and retail premises and comparable waste from food processing plants.

Note that the waste directive excludes faecal matter, straw and other natural non-hazardous agricultural or forestry material used in farming, forestry or for the production of energy from such biomass through processes or methods which do not harm the environment or endanger human health. It also excludes animal by-products including processed products covered by Regulation (EC) No 1774/2002, except those which are destined for incineration, landfilling or use in a biogas or composting plant. Carcasses of animals that have died other than by being slaughtered, including animals killed to eradicate epizootic diseases, and that are disposed of in accordance with Regulation (EC) No 1774/2002 are also excluded.

#### Compost

Compost is a fertilising product that is obtained by aerobic composting of one or more of the following materials: bio-waste and low risk animal by-products as the ones mentioned in categories 2

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<sup>(88)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0098&from=EN>

and 3 of the animal by-products [Regulation 1069/2009<sup>\(89\)</sup>](#) (which include manure, non-mineralised guano, digestive tract content, some carcasses, blood or parts of terrestrial and aquatic animals, products of animal origin, pet food, or foodstuffs no longer intended for human consumption, that present no risks for public or animal health, or products from live animals that show no signs of disease communicable to humans or animals). Composting additives may also be used. Compost is rich in nutrients (such as potash K<sub>2</sub>O) and is also used as a soil conditioner.

### Digestate

Digestate is the material remaining after the anaerobic digestion (the other main product is biogas, which is used to produce electricity or heat, or is compressed to use as transport fuel). It is usual to distinguish two types of digestate: energy crop digestate, which is obtained from plants not used for any other purpose eventually with additives and other digestate, where bio-waste and animal products and by-products (including livestock manure) are used. It has readily available nitrogen and contains useful amounts of phosphate, potash, sulphur (SO<sub>3</sub>) and trace elements.

#### 3.4.4.4 UAA FERTILISED

Code	Label	Unit
UAA_FER_M	Total UAA fertilised with mineral fertilisers	hectares
UAA_FER_O_LM	Total UAA fertilised with manure	hectares

##### 3.4.4.4.1 Total UAA fertilised with mineral fertilisers (UAA\_FER\_M)

Hectares of utilized agricultural area fertilised with mineral fertilisers

It includes the natural mineral fertilisers used in organic farming.

##### 3.4.4.4.2 Total UAA fertilised with manure (UAA\_FER\_O\_LM)

Hectares of utilized agricultural area fertilised with livestock manure

#### Excludes

- Food industry by-products
- Plant residues
- Sewage sludge
- Industrial waste

#### 3.4.4.5 MANURE EXPORTED FROM AND IMPORTED TO THE AGRICULTURAL HOLDING

Code	Label	Unit
NETEXP_FER_O_LM_LQ_SL	Net export of slurry/liquid manure from the farm	m <sup>3</sup>
NETEXP_FER_O_LM_SO	Net export of solid manure from the farm	tonnes

<sup>(89)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32001L0081>

**3.4.4.5.1 Net export of slurry/liquid manure from the farm (NETEXP\_LQ\_SL)**

Cubic meters of slurry/liquid manure imported to, or exported from, the agricultural holding for direct use as fertiliser or intended for industrial processing regardless whether it is sold, bought, or exchanged for free. Also includes slurry/liquid manure that was used for energy production and at a later stage is to be re-used in agriculture.

The manure which is exported for simple disposal is also to be included.

If a farm imports 10Kg and exports 20kg the result is positive + 10kg

If a farms imports 20kg and exports 10kg the result is negative - 10kg

**3.4.4.5.2 Net export of solid manure from the farm (NETEXP\_SO)**

Tonnes of solid manure imported to, or exported from, the agricultural holding for direct use as fertiliser or intended for industrial processing regardless whether it is sold, bought, or exchanged for free. Also includes solid manure that was used for energy production and at a later stage is to be re-used in agriculture.

The manure which is exported for simple disposal is also to be included.

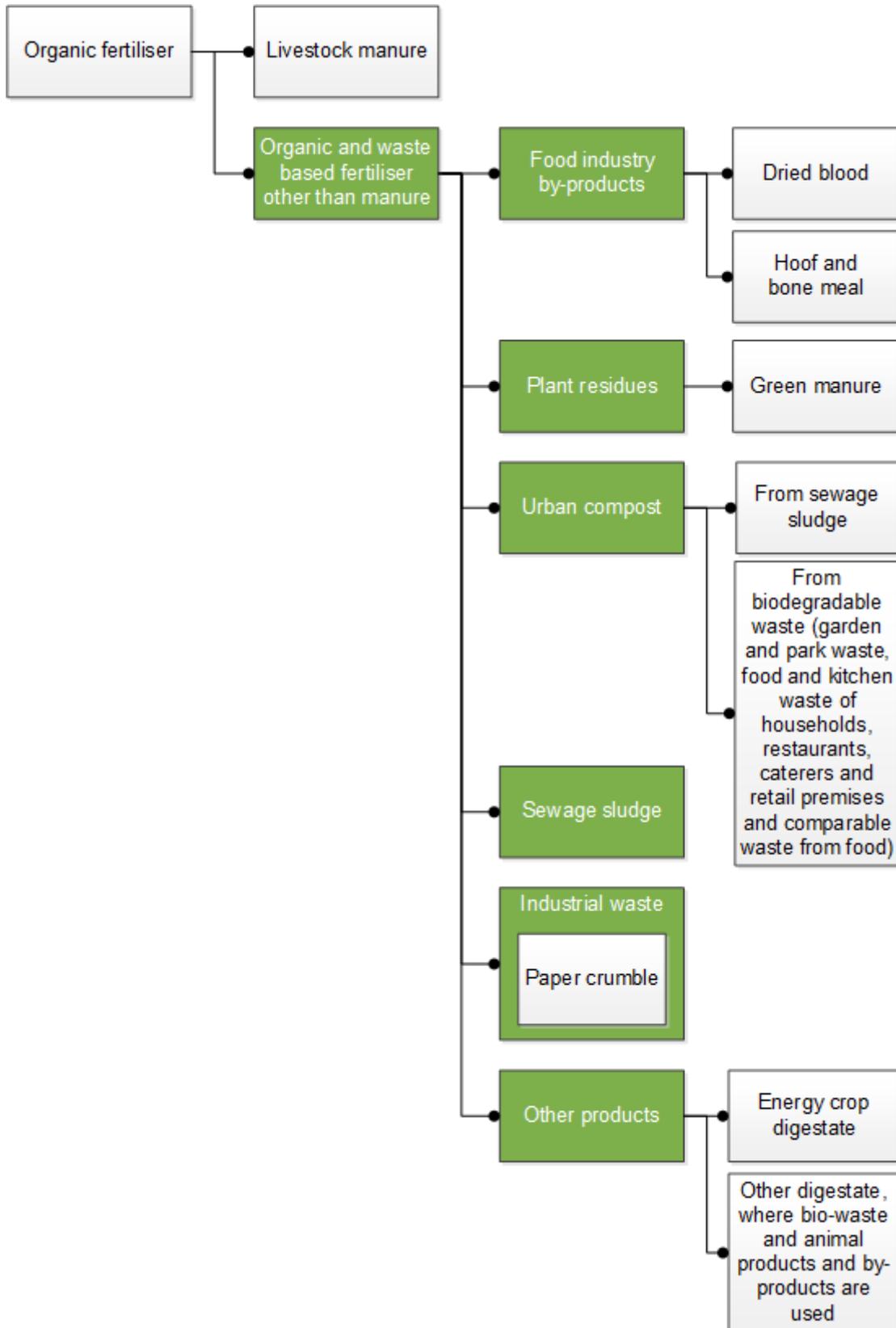
**3.4.4.6 ORGANIC AND WASTE BASED FERTILISERS OTHER THAN MANURE**

Code	Label	Unit
FER_O_XLM	Organic and waste based fertilisers other than manure used on the agricultural holding	tonnes

**3.4.4.6.1 Organic and waste based fertilisers other than manure (FER\_O\_XLM)**

Tonnes of organic and waste based fertilisers, other than livestock manure, used in agriculture on the agricultural holding.

Figure 46 – Organic and waste based fertilisers other than manure



## Includes

- Organic fertilisers other than livestock manure
- Industrial waste used on the agricultural holding
- Sewage sludge used on the agricultural holding
- Compost from sewage sludge used on the agricultural holding

## Excludes

- Livestock manure
- Green manure

## 3.4.5 Manure management systems

Manure management works in a continuum, from animal housing, to storage, to treatment and finally spreading. Therefore it is not always easy to separate "housing" from "storage", or "storage" from "treatment".

In the guidelines for national greenhouse inventories (IPCC, 2006) a characterization of different management systems (and their relation to methane conversion factors) is given. These different systems are described below and, where relevant, correspondence is made to CLRTAP in line with EEA (EEA, 2017).

### Outdoor (pasture, range and paddock)

The manure from pasture and range grazing animals is allowed to lie as deposited and is not managed. For the purpose of CLRTAP, "outdoor" it is considered a form of housing.

### Solid manure used for fuel

The dung and urine are excreted in the fields. The sun dried dung cakes are burned for fuel.

### Daily spread

Manure is routinely removed from a confinement facility and is applied to cropland or pasture within 24 hours of excretion.

### Solid storage and dry lot

Both these systems are used for storage of solid manure.

- Solid storage refers to the storage of manure, typically for a period of several months, in unconfined piles or stacks. Manure is able to be stacked due to the presence of a sufficient amount of bedding material or due to loss of moisture by evaporation.
- Dry lot refers to a paved or unpaved open confinement area which is impermeable and without any significant vegetative cover, from where accumulating manure may be removed periodically. It is expected that a storage facility for storing solid dung has an impermeable surface with run-off containment. The facilities may or may not have a roof, or be covered.

### Liquid/slurry storage (tanks, ponds or lagoons)

Manure is stored as excreted or with some minimal addition of water, either in tanks or earthen ponds outside the animal housing, usually for periods less than one year.

- Tanks are open or covered watertight tanks, usually made of impermeable material (such as steel or concrete), used for the storage of slurry; it does not include the watertight pits or cellars beneath or integrated in the livestock houses (slurry pits); tanks have low surface area to depth ratio.
- Ponds or lagoons are pits dug in the soil, usually lined, normally a large rectangular or square-shaped structure with sloping earth bank walls with large surface area to depth ratio; may be lined with water impermeable material; they are normally emptied with a pump or by mechanised digger

### Uncovered anaerobic lagoon

A type of liquid storage system designed and operated to combine waste stabilization and storage. Lagoon supernatant is usually used to remove manure from the associated confinement facilities to the lagoon. Anaerobic lagoons are designed with varying lengths of storage (up to a year or more), depending on the climate region, the volatile/solids loading rate, and other operational factors. The water from the lagoon may be recycled as flush water or used to irrigate and fertilise fields.

### Pit storage below animal confinement

Also called in-house slurry pit in CLRTAP; refers to the collection and storage of manure usually with little or no added water, typically below a slatted floor in an enclosed animal confinement facility, usually for periods of less than one year.

### Cattle and swine deep bedding

As manure accumulates, bedding is continually added to absorb moisture over a production cycle. It is also called in-house deep litter.

### Poultry manure with litter

Similar to cattle and swine deep bedding, but usually not combined with a dry lot or pasture. It is typically used for all poultry breeder flocks and for the production of broilers and other fowl.

### Poultry manure without litter

Similar to open pits in enclosed animal confinement facilities.

### High rise

A sort of poultry manure management system without litter that is designed and operated to dry the manure as it accumulates. In practice it is a form of passive windrow composting (see below).

### Composting

Composting is the biological oxidation of manure, usually with bedding or another organic carbon source. Normally it happens at high temperatures, resulting from the activity of microbes. Four different types are distinguished (IPCC, 2006):

- in vessel composting, typically in an enclosed channel with forced aeration and mixing
- static pile, with forced aeration but no mixing
- intensive windrow, with regular turning (at least daily) for mixing and aeration

- passive windrow, with infrequent turning for mixing and aeration

Differences for these four systems in terms of methane conversion factors are small.

Simple devices presenting aeration merely caused by natural draft are not taken into account for classification in this group. Illustrations can be found on the [FAO website<sup>\(90\)</sup>](#).

### Anaerobic digester

Animal excreta, with or without straw are collected and anaerobically digested in a large containment vessel or covered lagoon. Digesters are designed and operated for waste stabilization by the microbial reduction of complex organic compounds to CO<sub>2</sub> and CH<sub>4</sub>, which is captured and flared or used as fuel. It is also called biogas treatment and is considered as a manure storage type for the purposes of CLRTAP.

Figure 47 – Biogas treatment facility



### Aerobic treatment

The biological oxidation of manure collected as a liquid, with either natural or forced aeration. Natural aeration is limited to aerobic and facultative ponds and wetland systems and is due primarily to photosynthesis. Hence these systems typically become anoxic during periods without sunlight.

## 3.4.6 Manure application techniques

Application techniques are relevant for reduction of ammonia emissions, greenhouse gas emissions and for leaching of nitrogen. Both timing of incorporation into the soil, and the method used have implications on the amount of emissions.

<sup>(90)</sup> <http://www.fao.org/3/y5104e/y5104e07.htm>



Figure 49 – Broadcasting liquid manure/slurry (vacuum tanker with splash plate)



### Band spread

Band spreading is the placement of fertiliser in a concentrated layer or location (band) in the soil, commonly 8-15 cm below the surface. Fertiliser bands can be placed with the seed, below the seed, or both.

Surface banding requires half the power of injection units to pull around the field. Also, there is no root pruning with banding, unlike with injectors. Placing manure on the soil surface where it is exposed to sun and air may also reduce pathogens. Trailing hose and trailing shoe are types of band spreaders.

### Trailing hose

Slurry is discharged at ground level to grass or arable land through a series of flexible hoses. Application between the rows of a growing crop is feasible (CLRTAP, 2014).

### Trailing shoe

Slurry is normally discharged through rigid pipes which terminate in metal "shoes" designed to ride along the soil surface, parting the crop so that slurry is applied directly to the soil surface and below the crop canopy. Some types of trailing shoes are designed to cut a shallow slit in the soil to aid infiltration (CLRTAP, 2014).

### Injection

Injection methods are beneficial as they place liquid manure below the soil surface, eliminating both surface runoff on sloping soils, and volatilization of ammonia from the manure on any soil. It also reduces odour. However, injection can significantly increase loss of nitrogen by

denitrification and leaching to groundwater. Injection equipment can be added to liquid and slurry spreaders.

The following types of injection can be distinguished:

- shallow injection: the application of liquid manure by placement in shallow, vertical slots, typically about 50mm deep and 25-30 cm apart, cut into the soil by a tine or disc; they are more commonly used on grassland

deep injection: the application of slurry or liquid manure by placement in deep, vertical slots, typically about 150mm deep, cut into the soil by specially designed tines; the tines are fitted with lateral wings which aid the dispersion in the soil; typically these are used on arable land as they have an increased risk of physically damaging the grass swards (CLRTAP, 2014)

Figure 50 – Spreading of manure (Manure band spreader)



Figure 51 – Injection of manure (open slot shallow injector)



### 3.4.6.3 INCORPORATION TIME PER TYPE OF SPREAD

Code	Label	Unit
INC_BC_LE4H_PC	Manure broadcast incorporation within 4 hours	code
INC_BC_GT4H_PC	Manure broadcast incorporation after 4 hours	code
NINC_BC_PC	Manure broadcast no incorporation	code
INC_BSTH_PC	Manure band spread trailing hose	code
INC_BSTS_PC	Manure band spread trailing shoe	code
INJ_SOL_PC	Manure injection shallow/open slit	code
INJ_DPCL_PC	Manure injection deep/closed slit	code

#### 3.4.6.3.1 Manure broadcast incorporation within 4 hours (INC\_BC\_LE4H\_PC)

Percentage band of the total applied manure that has been mechanically incorporated into the soil within 4 hours after broadcast

- (0)
- (> 0-< 25)
- (≥ 25-< 50)
- (≥ 50-< 75)
- (≥ 75-< 100)
- (100)

#### 3.4.6.3.2 Manure broadcast incorporation after 4 hours (INC\_BC\_GT4H\_PC)

Percentage band of the total applied manure that has been mechanically incorporated into the soil between 4 and 24 hours after application.

- (0)
- (> 0-< 25)
- (≥ 25-< 50)
- (≥ 50-< 75)
- (≥ 75-< 100)
- (100)

#### 3.4.6.3.3 Manure broadcast no incorporation (NINC\_BC\_PC)

Percentage band of the total applied manure where no incorporation into the soil was performed or if the manure has not been incorporated within 24 hours after broadcast.

- (0)
- (> 0-< 25)
- (≥ 25-< 50)
- (≥ 50-< 75)
- (≥ 75-< 100)
- (100)

**3.4.6.3.4 Manure band spread trailing hose (INC\_BSTH\_PC)**

Percentage band of liquid manure or slurry applied with a trailing hose spreader.

- (0)
- (> 0-< 25)
- (≥ 25-< 50)
- (≥ 50-< 75)
- (≥ 75-< 100)
- (100)

**3.4.6.3.5 Manure band spread trailing shoe (INC\_BSTS\_PC)**

Percentage band of liquid manure or slurry applied with a trailing shoe spreader.

- (0)
- (> 0-< 25)
- (≥ 25-< 50)
- (≥ 50-< 75)
- (≥ 75-< 100)
- (100)

**3.4.6.3.6 Manure injection shallow/open slit (INJ\_SOL\_PC)**

Percentage band of liquid manure or slurry applied in shallow slits (typically around 50 mm deep) regardless whether the slits are left open or closed after application

- (0)
- (> 0-< 25)
- (≥ 25-< 50)
- (≥ 50-< 75)
- (≥ 75-< 100)
- (100)

**3.4.6.3.7 Manure injection deep/closed slit (INJ\_DPCL\_PC)**

Percentage band of liquid manure or slurry applied in deep slits (typically around 150 mm deep) which are closed after application.

- (0)
- (> 0-< 25)
- (≥ 25-< 50)
- (≥ 50-< 75)
- (≥ 75-< 100)
- (100)

### 3.4.7 Manure storage facilities and capacity

Storage facilities are another potential source for emissions of pollutants. The agro-environmental indicator AEI 11.3 [manure storage](#) is very important for ammonia emissions, but also for emissions of nitrous oxide and methane (GHG emissions), as well as for leaching and run off of nitrate and phosphorus.

In some cases storage facilities are also part of treatment systems (e.g. lagoons of anaerobic digesters).

A reduction in gaseous emissions can be achieved by practices such as adequate coverage.

#### 3.4.7.1 COVER OF STORAGE FACILITIES

Cover of storage facilities for manure means the way a storage facility is covered (with a cover such as a concrete lid, a tent or tarpaulin) in order to be protected from rain or other precipitation and therefore be able to reduce ammonia emissions.

##### Includes

- roofs of concrete, wood or corrugated metal, usually supported on poles at the periphery of the store
- plastic, wood or concrete covers, usually supported by the walls of the store
- tents, designed to float on slurry, normally of reinforced plastic sheet attached to the rim of an above ground circular store and supported by a central pole
- floating sheets, normally made of reinforced plastic sheet, sometimes incorporating floats of e.g. polystyrene used for both above ground circular store and lagoons. The sheet may either be attached to the rim of the store and large enough to account for the rise and fall in the level of slurry in the store or float freely on the surface, sometimes supported by floats or sliding up and down vertical poles at the inner wall of an above ground store
- natural surface crusts which forms when a quite solid upper layer of material is developed due to no stirring
- semi-natural surface crusts, obtained by adding material such as straw, clay, or other material to the storage

##### Impermeable covers

Impermeable covers made from flexible synthetic materials provide ammonia and odour emissions control. Impermeable covers block the vast majority of odours, gases, and water from moving into or out of the manure storage structure, and they eliminate the effect of solar radiation and wind on emission rates.

Manure stored in above-ground storage tanks can be covered with rigid, impermeable concrete and steel caps that may last for 10-15 years or flexible covers that serve the same purpose.

It is also possible to store liquid manure in earthen structures and to cover the area with high density polyethylene (HDPE) flexible membrane, plastic covers that are inflated over or float on the surface of the stored liquid manure or negative pressure lagoon covers that capture gases beneath the plastic.

### Permeable Covers

Permeable covers typically reduce ammonia emissions 40-80%, depending on the material, its thickness, and long-term maintenance practices. They are not as effective as impermeable covers at reducing ammonia emissions.

Some permeable covers are thought to act as bio filters on the top of stored liquid manure. Bio filters reduce emissions by simultaneously trapping emissions, preventing exposure to sun and wind, and creating conditions that promote the growth of microorganisms that utilize and degrade trapped compounds, including ammonia. Commonly used materials include straw, cornstalks, woodchips, foam, or lightweight expanded clay aggregate (LECA) rock. Permeable covers made of organic materials such as straw or cornstalks typically begin to degrade and lose effectiveness after 6 to 8 months and then must be replaced. For this reason, permeable covers are most effective when applied just before the springtime, in anticipation of higher ammonia volatilization rates and greater odour production during warm spring and summer months. Degraded and waterlogged cover materials need to be pumped out of the manure storage with the liquid manure, and pumping the cover materials may require different pumping equipment than that used for non-covered lagoons.

A natural (though permeable) cover occurs when liquid manure develops a crust which can help to reduce emissions. Research suggests that such crusting can be enhanced and promoted by (1) feeding cattle a high fibre diet (i.e., corn or grass silage); (2) managing slurries so they contain more than 1% dry matter; and (3) storing manure in deep tanks, with lower surface area to volume ratios, providing more crust forming materials under the exposed surface (Lupis, et al., 2012).

#### 3.4.7.2 STORAGE FACILITIES FOR MANURE

As mentioned before, it is not always easy to separate the different components of the manure management continuum. Some of the housing systems are also important as manure storage facilities, and treatment facilities can double as storage also.

The separation of solid and liquid/slurry systems is important for assessment of emissions of NO and N<sub>2</sub> (EEA, 2017).

Storage facilities not used during the 12-month reference period are not to be recorded.

Code	Label	Unit
ST_SO_HEAP	Manure solid storage in heaps	%
ST_COMP	Manure stored in compost piles	%
ST_PIT	Manure stored in pits below animal confinement	%
ST_DPLT	Manure stored in deep litter systems	%
ST_LQ_SL_NC	Liquid manure / slurry storage without cover	%
ST_LQ_SL_PC	Liquid manure / slurry storage with permeable cover	%
ST_LQ_SL_IC	Liquid manure / slurry storage with impermeable cover	%
ST_OF	Manure stored in other facilities n.e.c.	%
NST_DSPR	Daily spread	%

##### 3.4.7.2.1 Manure solid storage in heaps (ST\_SO\_HEAP)

The percentage of manure which is stored in unconfined piles or stacks or in open confinement area, normally for a period of several months.

This variable covers for manure management systems for the storage of solid manure where “solid storage” or “dry lot” are used. These facilities may or may not have a roof, or be covered.

---

**Includes**

- Manure solid storage in unconfined piles
  - Manure solid storage in open confinement area
- 

**Unconfined piles**

Corresponds to "solid storage" which refers to the storage of solid manure, typically for a period of several months, in unconfined piles or stacks. Manure is able to be stacked due to the presence of a sufficient amount of bedding material or due to loss of moisture by evaporation.

Figure 52 – Unconfined manure pile

**Open confinement area**

Corresponds to "dry lot" which refers to an open confinement area, without any significant vegetative cover, from where accumulating manure may be removed periodically. It is expected that such a storage facility for storing solid dung has an impermeable surface with run-off containment.

Figure 53 – Open confinement area in Luxembourg



Figure 54 – Open confinement area in Austria



#### 3.4.7.2.2 Manure stored in compost piles (ST\_COMP)

The percentage of manure which is stored in confined compost piles, which are aerated and/or mixed.

Figure 55 – Compost pile



#### 3.4.7.2.3 Manure stored in pits below animal confinement (ST\_PIT)

The percentage of manure which is stored with little or no added water, typically below a slatted floor in an enclosed animal confinement facility, usually for periods of less than 1 year.

Includes cattle and swine deep litter and poultry manure without litter

#### 3.4.7.2.4 Manure stored in deep litter systems (ST\_DPLT)

The percentage of manure which is accumulated over a production cycle, which can extend to 6 or 12 months.

Includes cattle, swine and poultry manure with litter systems.

#### 3.4.7.2.5 Liquid manure / slurry storage without cover (ST\_LQ\_SL\_NC)

The percentage of manure which is stored in uncovered tanks, or ponds, usually for a period of less than 1 year.

Includes uncovered anaerobic lagoons and aerobic treatment lagoons.

#### 3.4.7.2.6 Liquid manure / slurry storage with permeable cover (ST\_LQ\_SL\_PC)

The percentage of manure which is stored in tanks or ponds, usually for a period of less than 1 year and that is covered with a permeable cover (such as clay, straw or natural crust)

#### 3.4.7.2.7 Liquid manure / slurry storage with impermeable cover (ST\_LQ\_SL\_IC)

The percentage of manure which is stored in tanks or ponds, usually for a period of less than 1 year and that is covered with an impermeable cover (such as high density polyethylene or negative pressure covers).

Includes manure that is fed into an anaerobic digester

#### 3.4.7.2.8 Manure stored in other facilities n.e.c. (ST\_OF)

The percentage of manure (regardless of whether solid or liquid/slurry) stored in other facilities not elsewhere classified.

#### 3.4.7.2.9 Daily spread (NST\_DSPR)

The percentage of manure which is routinely removed from a confinement facility and is applied to cropland or pasture within 24 hours of excretion.

### 3.4.7.3 MANURE STORAGE CAPACITY

Emissions during storage depend on slurry composition and volume, temperature and storage time. Emissions of CH<sub>4</sub> from slurry storages have increased following the introduction of prohibition periods for slurry application in the EU, making farmers to store slurries for more extended periods.

Item 2 in Annex III of the [Council Directive 91/676/EEC of 12 December 1991](#) (also known as the Nitrate Directive) indicates the measures to be included in [action programmes](#) referred in Article 5 (a), and refers specifically to the capacity of storage vessels for livestock manure. This capacity must exceed that required for storage throughout the longest period during which land application in the vulnerable zone is prohibited, except where it can be demonstrated to the competent authority that

any quantity of manure in excess of the actual storage capacity will be disposed of in a manner which will not cause harm to the environment.

### Vulnerable zone

Member States designate as vulnerable zones all known areas of land in their territories which drain into ground waters and which contribute to pollution. Member States review or if necessary revise or add to the designation of vulnerable zones as appropriate, and at least every four years, to take into account changes and factors unforeseen at the time of the previous designation. Member States are exempt from the obligation to identify specific vulnerable zones, if they establish and apply action programmes throughout their national territory.

#### 3.4.7.3.1 Storage capacity

For the purposes of IFS, capacity of storage facilities for manure is defined as the number of months the storage facilities can hold the manure produced on the holding, without any risk of runoff, and without any occasional emptying.

It is also important to note that the storage time of manure in pits or in deep litter systems influences the methane conversion factors for manure management (IPCC, 2006).

Code	Label	Unit
STCAP_COMP	Manure solid storage in compost piles	months
STCAP_PIT	Manure storage in pits below animal confinement	months
STCAP_DPLT	Manure storage in deep litter systems	months
STCAP_LQ_SL	Liquid manure / slurry storage	months
STCAP_OF	Manure stored in other facilities n.e.c.	months

#### 3.4.7.3.2 Manure solid storage in compost piles (STCAP\_COMP)

The number of months for which the solid manure can be stored in confined compost piles.

#### 3.4.7.3.3 Manure storage in pits below animal confinement (STCAP\_PIT)

The number of months for which the slurry pits on the farm can store manure.

#### 3.4.7.3.4 Manure storage in deep litter systems (STCAP\_DPLT)

The number of months that the manure can be stored on deep litter systems.

#### 3.4.7.3.5 Liquid manure / slurry storage (STCAP\_LQ\_SL)

The number of months that the manure can be stored on liquid/slurry storage, regardless of cover.

#### 3.4.7.3.6 Manure stored in other facilities n.e.c. (STCAP\_OF)

The number of months that the manure (regardless of whether solid or liquid/slurry) can be stored in other facilities not elsewhere classified.

---

**Includes**

- Manure solid storage in open confinement area (dry lot)

**Excludes**

- Manure solid storage in unconfined piles
-

## 3.5 IFS2020 Sampling design and extrapolation factors

Each country delivers a single dataset with core and modules' data.

For the reference year 2020, the core data may also be provided for holdings in the frame extension (Art 3(4) of Regulation 2018/1091). The dataset includes the field *HLD\_FEF* ( *Holding in frame extension flag*) which flags holdings that belong to the frame extension. Eurostat should be able to distinguish between holdings in the main frame and holdings in the frame extension in the dataset, in order to make possible the publication of data on various degrees of population coverage as well as the meaningful analysis of trends (over 2020-2026) on the same population coverage.

The modules are to be collected for all holdings for which core data is collected or for a sub-sample of holdings of the core.

In order to ensure in Eurostat a clear understanding and a proper use of the correct fields for weighting the data and calculating the variance estimates for various variables belonging to core and modules, the dataset will contain a *separate set of sampling design and extrapolation factor fields for core and for each module*. See the table in section 3.5.1.

For each data collection (core and each module):

- There are three foreseen extrapolation factor fields, but in most cases (census or one-stage stratified random sampling), only one extrapolation factor field should be filled in.
- There are many foreseen sampling design data fields, but in most cases either no data field should be filled in (census) or only the stratum identification number should be filled in (one-stage stratified random sampling).

Eurostat has foreseen these fields in order to make possible variance estimation for more complex sampling designs than *one-stage stratified random sampling*. In FSS 2013 and FSS 2016, Hungary and North Macedonia (for rural areas) used *stratified one-stage cluster sampling*, while North Macedonia (for urban areas) used *stratified two-stage sampling*. The present fields allow recording information for sampling designs up to *three-stages*.

### 3.5.1 Extrapolation factors and sampling design fields

	Code	Label
M	HLD_FEF	Holding in frame extension flag
M	EXTPOL_FACT1_CORE	Extrapolation factor 1 for the core
V	EXTPOL_FACT2_CORE	Extrapolation factor 2 for the core
V	EXTPOL_FACT3_CORE	Extrapolation factor 3 for the core
V	STRA_ID_CORE	Stratum identification number (core)
M	STRA_IDF_CORE	Stratum identification number flag (core)
V	PSU_CORE	Primary sampling unit (core)
M	PSUF_CORE	Primary sampling unit flag (core)
V	SSU_CORE	Secondary sampling unit (core)
M	SSUF_CORE	Secondary sampling unit flag (core)
V	OSU_S1_CORE	Order of selection of the unit in the first stage (core)
M	OSU_SF1_CORE	Order of selection of the unit in the first stage flag (core)
C	EXTPOL_FACT1_LAFO	Extrapolation factor 1 for labour force and other gainful activities
V	EXTPOL_FACT2_LAFO	Extrapolation factor 2 for labour force and other gainful activities
V	EXTPOL_FACT3_LAFO	Extrapolation factor 3 for labour force and other gainful activities
V	STRA_ID_LAFO	Stratum identification number (labour force and other gainful activities)
M	STRA_IDF_LAFO	Stratum identification number flag (labour force and other gainful activities)
V	PSU_LAFO	Primary sampling unit (labour force and other gainful activities)
M	PSUF_LAFO	Primary sampling unit flag (labour force and other gainful activities)
V	SSU_LAFO	Secondary sampling unit (labour force and other gainful activities)
M	SSUF_LAFO	Secondary sampling unit flag (labour force and other gainful activities)
V	OSU_S1_LAFO	Order of selection of the unit in the first stage (labour force and other gainful activities)
M	OSU_SF1_LAFO	Order of selection of the unit in the first stage flag (labour force and other gainful activities)
C	EXTPOL_FACT1_RDEV	Extrapolation factor 1 for rural development
V	EXTPOL_FACT2_RDEV	Extrapolation factor 2 for rural development
V	EXTPOL_FACT3_RDEV	Extrapolation factor 3 for rural development
V	STRA_ID_RDEV	Stratum identification number (rural development)
M	STRA_IDF_RDEV	Stratum identification number flag (rural development)
V	PSU_RDEV	Primary sampling unit (rural development)
M	PSUF_RDEV	Primary sampling unit flag (rural development)
V	SSU_RDEV	Secondary sampling unit (rural development)
M	SSUF_RDEV	Secondary sampling unit flag (rural development)
V	OSU_S1_RDEV	Order of selection of the unit in the first stage (rural development)
M	OSU_SF1_RDEV	Order of selection of the unit in the first stage flag (rural development)
C	EXTPOL_FACT1_AHMM	Extrapolation factor 1 for animal housing and manure management
V	EXTPOL_FACT2_AHMM	Extrapolation factor 2 for animal housing and manure management
V	EXTPOL_FACT3_AHMM	Extrapolation factor 3 for animal housing and manure management
V	STRA_ID_AHMM	Stratum identification number (animal housing and manure management)
M	STRA_IDF_AHMM	Stratum identification number flag (animal housing and manure management)
V	PSU_AHMM	Primary sampling unit (animal housing and manure management)
M	PSUF_AHMM	Primary sampling unit flag (animal housing and manure management)
V	SSU_AHMM	Secondary sampling unit (animal housing and manure management)
M	SSUF_AHMM	Secondary sampling unit flag (animal housing and manure management)
V	OSU_S1_AHMM	Order of selection of the unit in the first stage (animal housing and manure management)
M	OSU_SF1_AHMM	Order of selection of the unit in the first stage flag (animal housing and manure management)

In the above table M=Mandatory i.e. the fields should always be filled in (they are always applicable). C=Conditional, the fields are mandatory only for holdings with module data. The fields should be set to null if holdings do not have module data. V=Voluntary i.e. the fields can be either filled in (if applicable) or set to null (if not applicable).

## 3.5.2 Sampling strategies

When the data for both core and a module are collected on samples, two strategies are identified to draw the samples: positive coordination and two-phase sampling.

### 3.5.2.1 POSITIVE COORDINATION

The core and module samples are drawn with positive coordination from the same frame and at the same time using the Permanent Random Number technique to obtain maximum overlapping among the samples. All holdings in the module sample are included in the core sample.

For calculating the extrapolation factors and the variance estimates for core and module data, the usual procedures for *one-stage stratified sampling* are used. The positive coordination among samples does not change the procedures.

### 3.5.2.2 TWO-PHASE SAMPLING

The core sample is selected from the frame ***in the first phase*** and the module sub-sample is selected from the core sample ***in the second phase***.

There are at least two fundamental differences between ***multi-stage sampling*** and ***multi-phase sampling***:

- In ***multi-stage sampling***, the units of selection are generally *different* at different stages, forming some kind of hierarchy. Most frequently, this hierarchy is determined by different levels of spatial units (e.g. enumeration areas, holdings). In ***multi-phase sampling***, on the other hand, selection units are the *same* at each phase.
- In ***multi-stage sampling***, information is collected only from the units selected at the last stage of sampling (from holdings). In ***multi-phase sampling***, on the other hand, information is collected *after each phase*, and information collected in the previous phase(s) of sampling is used in the later procedures. There are two main ways in which information from the previous phase(s) can be used:
  - Information is used for the later phase of the sampling procedure (e.g. for stratification). Some core variables collected with the core sample (e.g. utilised agricultural area, livestock) can be used for the stratification necessary for the selection of the modules' sub-sample(s).
  - Information is used as auxiliary information (e.g. for ratio estimators) in the estimation procedure. The estimates of the totals of main variables in the larger core sample can be used in the procedure for calibrating the modules' smaller (sub) samples.

#### 3.5.2.2.1 Assumption to simplify point and variance estimation

Two-phase sampling can be **simplified** to one-stage sampling i.e. the selection of a module sub-sample from a core sample can be considered a direct selection of the module sub-sample from the sampling frame.

This simplification can be done if the independence condition is fulfilled. Independence basically means that the information collected for the core sample is not used in selecting or calibrating the module sub-sample. If the module sub-sample is selected at the same time as the core sample, the data for both the core sample and the module sub-sample are collected in parallel, and the collected core data is not used for calibrating the module data, the independence condition is met. In such a case, the theory is straightforward, since we are dealing with two independent sampling mechanisms and the inclusion probabilities for the module are products of two unconditional probabilities.

Taking into consideration that in practice similar assumptions are already made:

- Unit non-response is a case of two-phase sampling, where the sample is selected in the first phase and the respondent 'sample' is self-selected in the second phase. In practice, the Missing Completely at Random or the Missing at Random response mechanism assumption is accepted. This means that **independent sampling in the second phase (more explicitly, for generating the response mechanism) is assumed, and the re-weighting formulae in fact assume direct sampling of respondents.**
- In some cases, the estimates of a data collection are calibrated to the totals estimated in another data collection based on a larger sample size. **The additional variability caused by the sampling errors of those calibration totals is assumed not significant and neglected in practice.**

**we propose to assume the above-mentioned independence condition for the module data.** Namely:

- **The estimation of module data** is based on the product of the extrapolation factor(s) corresponding to the selection of the core sample from the frame and the extrapolation factor(s) corresponding to the selection of the module sub-sample from the core sample. This extrapolation factor is equivalent to the one calculated as if the module sub-sample is selected from the sampling frame, as long as the same stratification is used in the core sample and module sub-sample.
- **The variance estimation of module data** assumes that the module sub-sample is selected from the sampling frame, of course taking into account all the relevant sampling design information. [Otherwise, a more complicated approach for the variance estimation (usually model-based) must be employed.]

**For example**, suppose that the core sample is selected from the frame using one-stage stratified random sampling and that the module sub-sample is selected from the core sample, using random sub-selection of units in each stratum.

- **The estimation of module data** is based on the product of two extrapolation factors (corresponding to the selection of the core sample from the frame and to the selection of the module sub-sample from the core sample, respectively). The field `EXTPOL_FACT1_*` for the module should record this product.
- **The variance estimation of module data** assumes that the module sample was selected using one-stage stratified sampling from the frame (and not two-phase stratified sampling from the frame). Of course, the variance estimation takes into account the strata (which are common for the selection of the core sample and the module sub-sample).

Independently of the sampling strategy, calibration procedures are welcome. In case calibration is used, it is recommended to estimate variance by considering the effect of calibration on variance. For Eurostat this recommendation is not feasible. In order to correctly estimate the variance in the presence of calibration, Eurostat needs the residuals of the regression between the target variable and the calibration variables. This should be the case for each target variable. Countries use multitude of different set of variables and calibration methods. According to the conclusions for FSS in the Working Group meeting in October 2017 and for other domains (e.g. Labour Market Statistics Working Group in December 2015), calibration variability can be ignored when estimating variance in Eurostat. Still, the final calibrated weights are considered in Eurostat when estimating variance.

### 3.5.2.3 EXTRAPOLATION FACTOR FIELDS

This section presents the principles for filling in the extrapolation factor fields.

#### 3.5.2.3.1 Extrapolation factors for the core (EXTPOL\_FACT\*\_CORE)

The first extrapolation factor field for the core (EXTPOL\_FACT1\_CORE) should be always filled in (is always mandatory), irrespective of the national coverage of the core data (main frame or main frame plus frame extension).

In case of a census, it is completed in principle with 1. Values different from 1 are accepted as non-response adjustment and calibration are done via the extrapolation factors.

In case of a sample-based data collection, it is completed with values in principle higher than or equal to 1 (depending on whether the sampled holdings belong or not to take-all strata). Where calibration is applied, some values can be lower than 1.

For the reference year 2020, the core data collection on the main frame should be carried out as a census. Therefore, in IFS 2020, the field EXTPOL\_FACT1\_CORE is in principle 1 for all holdings in the main frame (HLD\_FEF = 0). Values different from 1 are accepted.

The subsequent extrapolation factor fields for the core (EXTPOL\_FACT2\_CORE and EXTPOL\_FACT3\_CORE) should be completed only when applicable depending on the sampling design. Where not applicable, they should be set to null.

As for the reference year 2020, the core data collection on the main frame should be carried out as a census, the fields EXTPOL\_FACT2\_CORE and EXTPOL\_FACT3\_CORE should be null for all holdings in the main frame (HLD\_FEF = 0).

#### 3.5.2.3.2 Extrapolation factors for the modules

According to art 7(2) of Regulation 2018/1091, modules shall be collected only on the main frame. However, where countries collect modules on the frame extension, Eurostat accepts such data in 2020. Module data on extended frame would probably be disseminated in ad-hoc tables only<sup>(91)</sup>; this is the case only in 2020. Therefore, in 2020, only in principle holdings in the frame extension (HLD\_FEF = 1) have all extrapolation factors for the modules null and all module data null.

A module should be collected **from all or from a sub-sample of holdings for which core data are collected**. The following applies irrespective of the national coverage of the module data (main frame or main frame plus frame extension):

1. If a module is collected for all holdings for which core data are collected, then **for all holdings**:

- the first extrapolation factor field(s) of the module should copy the information from the extrapolation factor field(s) of the core,
- any remaining subsequent extrapolation factor field of the module should be null.

See example 1 for the main frame from section 3.5.4.

2. If a module is collected for a sub-sample of the core, then **only for the holdings in the sub-sample**:

- the first extrapolation factor field(s) of the module should cover for the selection of the holdings *from the frame* into the module sample.

<sup>(91)</sup> Eurostat has not decided a dissemination strategy yet.

Suppose that the core is collected on *census* and the module sample is selected from the core population. Then the `EXTPOL_FACT1_*` of the module should record the extrapolation factors corresponding to the selection of the module sample from the frame population.

Suppose that the core sample is selected from the frame using *one-stage stratified random sampling* and that the module sub-sample is selected from the core sample, using random sub-selection of holdings in each stratum. Then the `EXTPOL_FACT1_*` of the module should record the product of two extrapolation factors of the holdings (corresponding to the selection of the core sample from the frame and to the selection of the module sub-sample from the core sample, respectively). This is equivalent to the extrapolation factor calculated as if the module sub-sample is selected from the frame, as the same stratification is used in the core sample and module sub-sample.

- any remaining subsequent extrapolation factor field of the module should be null.

See examples 2 and 3 for the main frame and examples 4 and 5 for the main frame and frame extension, from section 3.5.4.

Therefore the following rules are valid:

- all holdings **with module data**:
  - should have at least the first extrapolation factor (`EXTPOL_FACT1_*`) filled in;
  - should have each filled in extrapolation factor (`EXTPOL_FACT1_*`, `EXTPOL_FACT2_*`, `EXTPOL_FACT3_*`) higher or equal to the corresponding extrapolation factor for the core (`EXTPOL_FACT1_CORE`, `EXTPOL_FACT2_CORE`, `EXTPOL_FACT3_CORE`).
- all holdings **without module data** should have all extrapolation factors fields for the module null.

## How to report the extrapolation factors when we sub-sample within the core or within a module?

The previous rules allow for different samples between core and modules.

There is however the possibility that within the core or within a module, there are different sub-samples for different groups of variables.

In 2020, all core variables should be carried out on a census therefore this possibility cannot happen within the core collected on the main frame.

### Example 1:

The core is collected on a census. Suppose that within the “Labour force and other gainful activities” module, the variables related to farm management are collected on a census while the variables related to non-family labour force are collected on a sample (using stratified random selection).

Keeping consistency with the previous rules, the extrapolation factors for the module should be filled in as follows:

- For the holdings in the census of the module, the EXTPOL\_FACT1\_LAFO should be 1 or a different value (as a consequence of adjusting the value 1 for non-response and calibration),  
For the holdings in the sample of the module, the **same** EXTPOL\_FACT1\_LAFO should be filled in with the extrapolation factors corresponding to the selection of the sample from the frame.
- Any remaining subsequent extrapolation factor field of the module should be null.

### Example 2:

The core is collected on a census. Suppose that within the “Labour force and other gainful activities” module, the variables related to farm management are collected on a sample (using stratified random sampling) while the variables related to non-family labour force are collected on a sub-sample of the sample (using a further random selection of the holdings from each stratum).

Keeping consistency with the previous rules, the extrapolation factors for the module should be filled in as follows:

- For the holdings in the sample of the module, the EXTPOL\_FACT1\_LAFO should be filled in with the extrapolation factors corresponding to the selection of the sample from the frame;  
For the holdings in the sub-sample of the module, the **same** EXTPOL\_FACT1\_LAFO should be filled in with the product of the two extrapolation factors corresponding to the selection of the sample from the frame and to the selection of the sub-sample from the sample. This is equivalent to the extrapolation factor calculated as if the sub-sample is selected from the frame, as the same stratification is used in the sample and sub-sample.
- Any remaining subsequent extrapolation factor field of the module should be null.

Please note that these rules will allow Eurostat to calculate the extrapolated aggregate for any variable in the core or in a module **by multiplying the value of the variable with the product EXTPOL\_FACT1\_\* x EXTPOL\_FACT2\_\*x EXTPOL\_FACT3\_\*** (once null values are replaced with 1). This is valid in all cases, disregarding whether some variables in the core/module are collected on a sample and other variables are collected on a sub-sample. In the past (FSS), we used either one or another extrapolation factor (A09\_Number or A10\_Number) for different sets of variables which caused problems related to programming.

### 3.5.2.4 SAMPLING DESIGN FIELDS

This section presents the principles for filling in the sampling design fields.

The **sampling design fields** are of two types: **data fields** and **flag fields**. In the table in section 3.5.1, the data fields are highlighted in yellow and the flag fields are highlighted in light yellow.

For example, STRA\_ID\_CORE (Stratum identification number (core)) is a data field, while STRA\_IDF\_CORE (Stratum identification number flag (core)) is a flag field.

Depending on the national sampling design for a data collection, data are required in no field, one, some or all **data fields**. Therefore, the data fields can be either filled in (where applicable) or set to null (where not applicable).

All **flag fields** should be filled in all cases. They should indicate the applicability of the data fields and where relevant the specific meaning of the data fields.

#### 3.5.2.4.1 Sampling design fields for the core

For the reference year 2020, the core data collection on the main frame should be carried out as a census. Therefore, in IFS 2020, all data fields should be set to null and all flag fields should be **\_Z** (not applicable) for all holdings in the main frame (HLD\_FEF = 0).

See examples 1, 2, 3, 4 and 5 for the main frame from section 3.5.4.

#### 3.5.2.4.2 Sampling design fields for the modules

According to art 7(2) of Regulation 2018/1091, modules shall be collected only on the main frame. However, where countries collect modules on the frame extension, Eurostat accepts such data in 2020. Module data on extended frame would probably be disseminated in ad-hoc tables only; this is the case only in 2020. Therefore, only in principle, holdings in the frame extension (HLD\_FEF = 1) have all data fields and flag fields for the modules null and **\_Z**, respectively.

A module should be collected from all or from a sub-sample of holdings for which core data are collected. The following applies irrespective of the national coverage of the module data (main frame or main frame plus frame extension):

1. If a module is collected for all holdings for which core data is collected, then **for all holdings**:
  - the first data field(s) and flag field(s) of the module should copy the information (if any) from the data field(s) and flag field(s) of the core,
  - any remaining subsequent data field(s) of the module should be null and any remaining subsequent flag field(s) of the module should be **\_Z** (not applicable).

See example 1 for the main frame from section 3.5.4.

2. If a module is collected for a sub-sample of the core, then **only for the holdings in the sub-sample**:

- the first data field(s) and flag field(s) of the module should include relevant information on the selection of the holdings *from the frame* into the module.

Suppose that the core is collected on *census* and the module sample is a part of the core population. Then the STRA\_ID\_\* of the module should record the strata used for the selection of the module sample from the frame population (assuming that stratification was applied for the selection of the module sample).

Suppose that the core sample is selected from the frame using *one-stage stratified random sampling* and that the module sub-sample is selected from the core sample, using random sub-selection of units in each stratum. Then the STRA\_ID\_\* of the module should record the same information as the STRA\_ID\_CORE.

- any remaining subsequent data field(s) of the module should be null and any remaining subsequent flag field(s) of the module should be \_Z (not applicable).

See examples 2, 3, 4 and 5 for the main frame and frame extension, from section 3.5.4.

Therefore the following rules are generally valid:

- all holdings **with module data**:
  - should in principle copy the completed data field(s) and the flag field(s) of the core (and possibly have additional data fields filled in) for the module. "In principle" and not always because the stratification of the core and module samples can be different.
- all holdings **without module data** should have all data fields null and all flag fields \_Z (not applicable) for the module.

### 3.5.3 Description of sampling design fields

#### 3.5.3.1 STRATUM IDENTIFICATION NUMBER (STRA\_ID\_\*)

Identification code for the stratum of the holding

Stratifying a population means dividing it into non-overlapping subpopulations, called strata. Independent samples are then selected in each stratum.

The population is usually stratified before the units are selected in the first stage. The units selected in the first stage are either:

- holdings when *one-stage (not cluster) sampling* is used OR
- primary sampling units (PSUs) i.e. the hierarchical clusters superior to the holdings and to which the holdings belong, when *one-stage cluster sampling* or *two- or more-stage sampling* is used. Example of PSUs: districts, municipalities etc.

The code indicates the primary stratum each holding belongs to. The code should **uniquely** identify all primary strata in the dataset.

The code refers to the original strata at the time of the selection, except for:

- the large holdings (for which strata may be updated to take-all strata);
- the case of self-representing PSUs which become themselves strata (see 3.5.3.2);
- the case when strata are collapsed due to a single unit in the stratum (see 3.5.3.2).

The code does not refer to the strata used for post-stratification or calibration.

The code refers to explicit strata. Systematic sampling with implicit stratification will be accounted for through the use of field OSU\_S1\_\* (see 3.5.3.7).

### 3.5.3.2 STRATUM IDENTIFICATION NUMBER FLAG (STRA\_IDF\_\*)

Flag indicating the applicability and the origin of the stratum

- 1 - Original stratum or updated stratum for large units
- 2 - Self-representing PSU
- 3 - Collapsed stratum due to a single unit selected in the first stage in the stratum
- \_Z - Not applicable (no strata)

#### Self-representing PSU

Self-representing PSUs are PSUs selected with certainty (with a probability of 1). For example, a self-representing PSU is a municipality selected in the first sampling stage from a stratum with one municipality.

For the purpose of estimating variance, **self-representing PSUs should be treated as primary strata**.

**Therefore, for a self-representing PSU, a separate, unique value is assigned to STRA\_ID\_\* for its identification. STRA\_IDF\_\* should receive the flag 2.**

See example 6 from section 3.5.4.

#### Collapsed stratum due to a single unit in the stratum

If a stratum consists of only one unit selected in the first stage (among a larger number of units in the stratum population), or if a stratum contains only one respondent unit selected in the first stage (among a larger number of selected units), primary strata have to be collapsed such that every stratum consists of at least two units. For doing so, strata should be grouped with strata that are most similar in terms of the main variables. The decision of which strata are collapsed should be based on information that is available in the sampling frame. Preferably, strata similar in terms of holding size or farm type are collapsed. The stratum code of the collapsed stratum is equal to the stratum code of the stratum that before collapsing already contained more than one unit. The holdings in the collapsed stratum receive STRA\_IDF\_\* equal to 3.

See example 7 from section 3.5.4.

### 3.5.3.3 PRIMARY SAMPLING UNIT (PSU\_\*)

Code of the primary sampling unit

A population is divided into clusters (i.e. disjoint sub-populations) in case direct-element sampling is either impossible (due to lack of sampling frame) or its implementation too expensive (the population is widely distributed geographically). A sample of clusters (PSUs) is then selected at the first stage of sampling.

Primary sampling units (PSUs) refer to *hierarchical clusters superior to agricultural holdings* selected in the first stage of sampling.

The code should **uniquely** identify all PSUs in the dataset, irrespective of the strata which they belong to.

The field is applicable in case of *one-stage cluster sampling* or *two- or more- stage sampling*.

For example:

- in a *one-stage cluster sampling*, municipalities are PSUs selected in the first stage and all holdings from the selected municipalities are included;

- in a *two-stage sampling*, municipalities are PSUs *selected* in the first stage and then *some* holdings from each PSU are *selected* in the second stage;
- in a *three-stage sampling*, municipalities are PSUs *selected* in the first stage, enumeration areas are SSUs *selected* in the second stage and then *some* holdings from each SSU are *selected* in the third stage.

If PSUs are selected several times (i.e. they are sampled with replacement), at each selection the selected PSU should receive a separate **unique** code. This is due to the fact that if PSUs are drawn with replacement, the variance estimation procedure treats repeated instances of the same PSU as separate PSUs.

**The case of self-representing PSUs** (see 3.5.3.2 for their definition).

For the purpose of estimating variance, self-representing PSUs should be treated as primary strata and **their secondary sampling units (SSUs) should be treated as PSUs**. The field PSU\_\* is filled with the SSUs, as follows:

- If SSUs are selected in the second stage, they should be treated as if they are PSUs and should receive a unique PSU code (PSU\_\*).

If holdings are selected in the second stage, they should receive a unique PSU code (PSU\_\*). Even if holdings are not SSUs in their correct meaning (a SSU is hierarchically superior to agricultural holdings), this is done so as to keep a consistent structure of the completed dataset.

### 3.5.3.4 PRIMARY SAMPLING UNIT FLAG (PSUF\_\*)

Flag indicating the applicability of primary sampling unit

- 1 - Filled (one-stage cluster sampling or two- or more- stage sampling)
- \_Z - Not applicable (other cases )

### 3.5.3.5 SECONDARY SAMPLING UNIT (SSU\_\*)

Code for the secondary sampling unit

Secondary sampling units (SSUs) are clusters which form the PSUs and which are hierarchically superior to agricultural holdings. SSUs are disjoint sub-populations independently drawn from each PSU.

The field should **uniquely** identify all SSUs in the dataset, irrespective of the strata and PSUs which they belong to.

The completion of this field is applicable only in case of *two-stage cluster sampling* or *three- or more-stage sampling*.

For example:

- in a *two-stage cluster sampling*, municipalities are PSUs *selected* in the first stage, enumeration areas are SSUs *selected* in the second stage and *all* holdings from the selected enumeration areas are included.
- in a *three-stage sampling*, municipalities are PSUs *selected* in the first stage, enumeration areas are SSUs *selected* in the second stage and then *some* holdings from each SSU are *selected* in the third stage.

If SSUs are selected several times (i.e. they are sampled with replacement), at each selection the selected SSU should receive a separate code. This is due to the fact that if SSUs are drawn with

replacement, the variance estimation procedure treats repeated instances of the same SSU as separate SSUs.

**The case of self-representing PSUs** (see 3.5.3.2 for their definition):

For the purpose of estimating variance, self-representing PSUs should be treated as primary strata, their SSUs should be treated as PSUs **and their tertiary sampling units (TSUs) should be treated as SSUs**. The field SSU\_\* is filled with the TSUs, as follows:

- If TSUs are selected in the third stage, they should be treated as if they are SSUs and should receive a unique SSU code (SSU\_\*).
- If holdings are selected in the third stage, they should receive a unique SSU code (SSU\_\*). Even if holdings are not TSUs in their correct meaning (a TSU is hierarchically superior to agricultural holdings), this is done so as to keep a consistent structure of the completed dataset.

### 3.5.3.6 SECONDARY SAMPLING UNIT FLAG (SSUF\_\*)

Flag indicating the applicability of secondary sampling unit

- 1 - Filled (two-stage cluster or three- or more-stage sampling)
- \_Z – Not applicable (other cases)

### 3.5.3.7 ORDER OF SELECTION OF THE UNIT IN THE FIRST STAGE (OSU\_S1\_\*)

Rank of the selection of the units in the first stage

The unit selected in the first stage is the:

- holding itself when *one-stage (not cluster) sampling* is used OR
- primary sampling unit – PSU (i.e. the hierarchical cluster superior to the holding and to which the holding belongs) when *one-stage cluster* or *two- or more-stage sampling* is used.

This information is important for variance estimation purposes as a systematic drawing from a judiciously ordered sampling frame may substantially decrease sampling errors. The order of sampling units is relevant only when it is by a variable correlated with the main variables.

This information makes possible to consider the effect of implicit stratification to the overall variance. For this purpose, Eurostat plans to compute an additional field 'computational' strata in the dataset (see also 9.4.1).

### 3.5.3.8 ORDER OF SELECTION OF THE UNIT IN THE FIRST STAGE FLAG (OSU\_SF1\_\*)

Flag indicating the applicability of systematic sampling

- 1 - Filled (systematic selection)
- \_Z - Not applicable (no systematic selection)

## 3.5.4 Examples for IFS 2020

For the reference year 2020, the core data collection on the main frame should be carried out as a census. Therefore, the examples from 1 to 5 consider samples possible only for core on frame extension and/or for modules.

Example 6 shows how to fill in the dataset in case of self-representing PSUs while example 7 shows how to fill in the dataset in case of collapsed strata.

As illustrated in the examples from 1 to 7, the following general rules apply for core and modules, irrespective of the population coverage (main frame or main frame plus frame extension):

- If only the first extrapolation factor (EXTPOL\_FACT1\_\*) is completed, then
  - PSU\_\* should not be completed and PSUF\_\* should be flagged \_Z,
  - SSU\_\* should not be completed and SSUF\_\* should be flagged \_Z.

This is the case of census or one-stage sampling.

- If only the first two extrapolation factors (EXTPOL\_FACT1\_\* and EXTPOL\_FACT2\_\*) are completed, then
  - PSU\_\* should be completed and PSUF\_\* should be flagged 1,
  - SSU\_\* should not be completed and SSUF\_\* should be flagged \_Z.

This is the case of two-stage sampling or one-stage cluster sampling.

- If the three extrapolation factors (EXTPOL\_FACT1\_\*, EXTPOL\_FACT2\_\* and EXTPOL\_FACT3\_\*) are completed, then
  - PSU\_\* should be completed and PSUF\_\* should be flagged 1,
  - SSU\_\* should be completed and SSUF\_\* should be flagged 1.

This is the case of three-stage sampling or two-stage cluster sampling.

**Example 1 - Census for core and for modules on main frame as well as for core on frame extension**

Table 7 – Coverage and sampling strategy of the data collections for Example 1

	Core variables	Module variables
<b>Main frame</b>	Census	Census
<b>Frame extension</b>	Census	

The dataset should be filled in as presented below:

	HLD_FEF	EXTPOL_FACT1_CORE	EXTPOL_FACT2_CORE	EXTPOL_FACT3_CORE	STRA_ID_CORE	STRA_IDF_CORE	PSU_CORE	PSUF_CORE	SSU_CORE	SSUF_CORE	OSU_S1_CORE	OSU_SF1_CORE
<b>Main frame</b>	0	1	(null)	(null)	(null)	_Z	(null)	_Z	(null)	_Z	(null)	_Z
<b>Frame extension</b>	1	1	(null)	(null)	(null)	_Z	(null)	_Z	(null)	_Z	(null)	_Z

EXTPOL_FACT1_MODULE	EXTPOL_FACT2_MODULE	EXTPOL_FACT3_MODULE	STRA_ID_MODULE	STRA_IDF_MODULE	PSU_MODULE	PSUF_MODULE	SSU_MODULE	SSUF_MODULE	OSU_S1_MODULE	OSU_SF1_MODULE	
1	(null)	(null)	(null)	_Z	(null)	_Z	(null)	_Z	(null)	_Z	<b>Main frame</b>
(null)	(null)	(null)	(null)	_Z	(null)	_Z	(null)	_Z	(null)	_Z	<b>Frame extension</b>

**Example 2 - Census for core on main frame, stratified one-stage random sampling for modules on main frame and stratified one-stage cluster sampling for core on frame extension**

Table 8 – Coverage and sampling strategy of the data collections for Example 2

	Core variables	Module variables
<b>Main frame</b>	Census	Stratified one-stage random sampling
<b>Frame extension</b>	Stratified one-stage cluster sampling (see 3.5.3.3 for an example of one-stage cluster sampling)	

The dataset should be filled in as presented below:

	HLD_FEF	EXTPOL_FACT1_CORE	EXTPOL_FACT2_CORE	EXTPOL_FACT3_CORE	STRA_ID_CORE	STRA_IDF_CORE	PSU_CORE	PSUF_CORE	SSU_CORE	SSUF_CORE	OSU_S1_CORE	OSU_SF1_CORE
<b>Main frame</b>	0	1	(null)	(null)	(null)	_Z	(null)	_Z	(null)	_Z	(null)	_Z
<b>Frame extension</b>	1	weight of the PSU the holding belongs to	1	(null)	code of the stratum from which the PSU is extracted	1	code of the PSU which the holding belongs to	1	(null)	_Z	(null)	_Z

EXTPOL_FACT1_MODULE	EXTPOL_FACT2_MODULE	EXTPOL_FACT3_MODULE	STRA_ID_MODULE	STRA_IDF_MODULE	PSU_MODULE	PSUF_MODULE	SSU_MODULE	SSUF_MODULE	OSU_S1_MODULE	OSU_SF1_MODULE	
weight of the holding	(null)	(null)	code of the stratum from which the holding is extracted	1	(null)	_Z	(null)	_Z	(null)	_Z	<b>Main frame</b>
(null)	(null)	(null)	(null)	_Z	(null)	_Z	(null)	_Z	(null)	_Z	<b>Frame extension</b>

**Example 3 – Census for core on main frame, stratified one-stage systematic sampling for the modules on main frame and stratified two-stage sampling for core on frame extension**

Table 9 – Coverage and sampling strategy of the data collections for Example 3

	Core variables	Module variables
<b>Main frame</b>	Census	Stratified one-stage <i>systematic</i> sampling
<b>Frame extension</b>	Stratified two-stage sampling (see 3.5.3.3 for an example of two-stage sampling)	

The dataset should be filled in as presented below:

	HLD_FEF	EXTPOL_FACT1_CORE	EXTPOL_FACT2_CORE	EXTPOL_FACT3_CORE	STRA_ID_CORE	STRA_IDf_CORE	PSU_CORE	PSUF_CORE	SSU_CORE	SSUF_CORE	OSU_S1_CORE	OSU_SF1_CORE
<b>Main frame</b>	0	1	(null)	(null)	(null)	_Z	(null)	_Z	(null)	_Z	(null)	_Z
<b>Frame extension</b>	1	weight of the PSU the holding belongs to	weight of the holding extracted from the PSU	(null)	code of the stratum from which the PSU is extracted	1	code of the PSU which the holding belongs to	1	(null)	_Z	(null)	_Z

EXTPOL_FACT1_MODULE	EXTPOL_FACT2_MODULE	EXTPOL_FACT3_MODULE	STRA_ID_MODULE	STRA_IDf_MODULE	PSU_MODULE	PSUF_MODULE	SSU_MODULE	SSUF_MODULE	OSU_S1_MODULE	OSU_SF1_MODULE	
weight of the holding	(null)	(null)	code of the stratum from which the holding is extracted	1	(null)	_Z	(null)	_Z	the rank of selection of the holding in the stratum (in each stratum, the rank goes from 1 to n)	1	<b>Main frame</b>
(null)	(null)	(null)	(null)	_Z	(null)	_Z	(null)	_Z	(null)	_Z	<b>Frame extension</b>

**Example 4 – Census for core on main frame, stratified one-stage sampling for modules and for core on frame extension**

Table 10 – Coverage and sampling strategy of the data collections for Example 4

	Core variables	Module variables
<b>Main frame</b>	Census	Stratified one-stage sampling
<b>Frame extension</b>	Stratified one-stage sampling	The module sub-sample is selected from the core sample using random sub-selection of units in each stratum

The dataset should be filled in as presented below:

	HLD_FEF	EXTPOL_FACT1_CORE	EXTPOL_FACT2_CORE	EXTPOL_FACT3_CORE	STRA_ID_CORE	STRA_IDF_CORE	PSU_CORE	PSUF_CORE	SSU_CORE	SSUF_CORE	OSU_S1_CORE	OSU_SF1_CORE
<b>Main frame</b>	0	1	(null)	(null)	(null)	_Z	(null)	_Z	(null)	_Z	(null)	_Z
<b>Frame extension</b>	1	<b>weight of the holding</b>	(null)	(null)	<b>code of the stratum from which the holding is extracted</b>	1	(null)	_Z	(null)	_Z	(null)	_Z

EXTPOL_FACT1_MODULE	EXTPOL_FACT2_MODULE	EXTPOL_FACT3_MODULE	STRA_ID_MODULE	STRA_IDF_MODULE	PSU_MODULE	PSUF_MODULE	SSU_MODULE	SSUF_MODULE	OSU_S1_MODULE	OSU_SF1_MODULE	
<b>weight of the holding</b>	(null)	(null)	<b>code of the stratum from which the holding is extracted</b>	1	(null)	_Z	(null)	_Z	(null)	_Z	<b>Main frame</b>
<b>weight of the holding (product of core holding weight and the module sub-selection holding weight)</b>	(null)	(null)	<b>code of the stratum from which the holding is extracted</b>	1	(null)	_Z	(null)	_Z	(null)	_Z	<b>Frame extension</b>

**Example 5 – Census for core on main frame, stratified one-stage sampling for modules and stratified two-stage sampling for core on frame extension**

Table 11 – Coverage and sampling strategy of the data collections for Example 5

	Core variables	Module variables
<b>Main frame</b>	Census	Stratified one-stage sampling
<b>Frame extension</b>	Stratified two-stage sampling	The module sub-sample is selected from the core sample using random sub-selection of units in each stratum

The dataset should be filled in as presented below:

	HLD_FEF	EXTPOL_FACT1_CORE	EXTPOL_FACT2_CORE	EXTPOL_FACT3_CORE	STRA_ID_CORE	STRA_IDF_CORE	PSU_CORE	PSUF_CORE	SSU_CORE	SSUF_CORE	OSU_S1_CORE	OSU_SF1_CORE
<b>Main frame</b>	0	1	(null)	(null)	(null)	_Z	(null)	_Z	(null)	_Z	(null)	_Z
<b>Frame extension</b>	1	weight of the PSU the holding belongs to	weight of the holding extracted from the PSU	(null)	code of the stratum from which the PSU is extracted	1	code of the PSU which the holding belongs to	1	(null)	_Z	(null)	_Z

EXTPOL_FACT1_MODULE	EXTPOL_FACT2_MODULE	EXTPOL_FACT3_MODULE	STRA_ID_MODULE	STRA_IDF_MODULE	PSU_MODULE	PSUF_MODULE	SSU_MODULE	SSUF_MODULE	OSU_S1_MODULE	OSU_SF1_MODULE	
weight of the holding	(null)	(null)	code of the stratum from which the holding is extracted	1	(null)	_Z	(null)	_Z	(null)	_Z	<b>Main frame</b>
weight of the PSU the holding belongs to	weight of the holding (product of core holding weight and the module sub-selection holding weight)	(null)	code of the stratum from which the PSU is extracted	1	code of the PSU which the holding belongs to	1	(null)	_Z	(null)	_Z	<b>Frame extension</b>

**Example 6 - Self-representing PSUs**

Let's consider example 5, where the core variables on frame extension are collected using **stratified two-stage sampling**.

In the first stage, from a stratum (STRA\_ID\_\* =3000) with two municipalities (PSUs) in the population, both municipalities are selected with certainty. Their EXTPOL\_FACT1\_\* is 1. They are self-representing PSUs. The codes of the PSUs (PSU\_\*) are 1 and 2.

In the second stage, from *each* municipality, two holdings are *selected* with weights (EXTPOL\_FACT2\_\*) equal to 3.00, respectively 4.00.

There are therefore 4 holdings belonging to 2 PSUs in the dataset:

HLD_ID	EXTPOL_FACT1_*	EXTPOL_FACT2_*	EXTPOL_FACT3_*	STRA_ID_*	STRA_IDF_*	PSU_*	PSUF_*	SSU_*	SSUF_*
16	1.00	3.00		3000	1	1	1		_Z
17	1.00	3.00		3000	1	1	1		_Z
18	1.00	4.00		3000	1	2	1		_Z
19	1.00	4.00		3000	1	2	1		_Z

Now let's apply the rules on self-representing PSUs:

- The 2 PSUs (municipalities) should become strata and receive different and **unique** values in STRA\_ID\_\* (these values should not be already in use for indicating some other stratum). In this example, the PSU\_\* codes (1 and 2) can be simply transferred to STRA\_ID\_\* (assuming that the codes 1 and 2 are not already in use for indicating some other stratum).
- STRA\_IDF\_\* receives code 2 for the 2 PSUs and all 4 holdings belonging to them.
- The holdings receive **unique** PSU\_\* codes, let's say 100, 110, 200 and 210.
- The information from EXTPOL\_FACT2\_\* moves to EXTPOL\_FACT1\_\*.
- EXTPOL\_FACT2\_\* receives values 1, in order to keep a consistent structure of the completed dataset.

Therefore, the dataset will display the following information:

HLD_ID	EXTPOL_FACT1_*	EXTPOL_FACT2_*	EXTPOL_FACT3_*	STRA_ID_*	STRA_IDF_*	PSU_*	PSUF_*	SSU_*	SSUF_*
16	3.00	1.00		1	2	100	1		_Z
17	3.00	1.00		1	2	110	1		_Z
18	4.00	1.00		2	2	200	1		_Z
19	4.00	1.00		2	2	210	1		_Z

### Example 7 - Collapsed strata

Let's consider example 5, where the core variables on frame extension are collected using **stratified two-stage sampling**.

In the first stage,

- from a stratum (STRA\_ID\_\* =3000), 1 municipality (PSU) having code PSU\_\* =1 is selected with EXTPOL\_FACT1\_\* equal to 2.5.
- from another stratum (STRA\_ID\_\* =4000), 2 municipalities (PSUs) having code PSU\_\* 2 and 3 are selected with EXTPOL\_FACT1\_\* equal to 2.0.

To keep the table short, 3 holdings belonging to PSU\_\* =1, 2 holdings belonging to PSU\_\* =2 and 2 holdings belonging to PSU\_\* =3 were selected and answered.

The dataset includes 7 selected holdings belonging to 3 selected PSUs:

HLD_ID	EXTPOL_FACT1_*	EXTPOL_FACT2_*	EXTPOL_FACT3_*	STRA_ID_*	STRA_IDF_*	PSU_*	PSUF_*	SSU_*	SSUF_*
16	2.50	3.00		3000	1	1	1		_Z
17	2.50	3.00		3000	1	1	1		_Z
18	2.50	3.00		3000	1	1	1		_Z
19	2.00	4.00		4000	1	2	1		_Z
20	2.00	4.00		4000	1	2	1		_Z
21	2.00	3.50		4000	1	3	1		_Z
22	2.00	3.50		4000	1	3	1		_Z

The stratum of PSU\_\* =1 is collapsed, by receiving the code 4000 (STRA\_ID\_\*) of another stratum, which let's say is the most similar in terms of holding size or farm type. The Stratum identification number flag becomes 3 for holdings belonging to the collapsed stratum.

HLD_ID	EXTPOL_FACT1_*	EXTPOL_FACT2_*	EXTPOL_FACT3_*	STRA_ID_*	STRA_IDF_*	PSU_*	PSUF_*	SSU_*	SSUF_*
16	2.50	3.00		4000	3	1	1		_Z
17	2.50	3.00		4000	3	1	1		_Z
18	2.50	3.00		4000	3	1	1		_Z
19	2.00	4.00		4000	1	2	1		_Z
20	2.00	4.00		4000	1	2	1		_Z
21	2.00	3.50		4000	1	3	1		_Z
22	2.00	3.50		4000	1	3	1		_Z

## 3.6 ADM2020

Code	Label	Unit
DATA_COLLECTION	Data collection	String
TIME_PERIOD	Reference year	Time
REF_AREA	Country	Code
VARIABLE	Variable	Code
SRC_METHOD	Source or method	Code
SRC_METHOD_COMMENTS	Comments on source or method	String
PURPOSE_QUALITY	Quality or purpose	Code
PURPOSE_QUALITY_COMMENTS	Comments on quality or purpose	String

### 3.6.1.1.1 Data collection (DATA\_COLLECTION)

The data collection.

The data collection will be ADM

### 3.6.1.1.2 Reference year (TIME\_PERIOD)

The reference year.

The reference year will be 2019 for PT and 2020 for other countries

### 3.6.1.1.3 Country (REF\_AREA)

The code for the country.

### 3.6.1.1.4 Variable (VARIABLE)

The list of relevant variables from the full list of variables for the core and modules.

Duplicates are accepted. They will mean that more than one source is used to complete a variable. The full list is expected.

### 3.6.1.1.5 Source or method (SRC\_METHOD)

The type of administrative source or innovative approach for the variable

- 00 Not relevant (no administrative source or innovative approach)
- 01 IACS - Integrated Administration and Control System
- 02 Bovine register
- 03 Ovine register
- 04 Caprine register
- 05 Vineyard register
- 06 Organic farming register
- 07 Genetically modified crops register
- 08 Rural development measures
- 09 Cadastre
- 19 Other administrative source (specify in comments)

- 21 Modelling
- 22 Remote sensing
- 23 Imputation
- 24 Estimation
- 29 Other innovative approach (specify in comments)

#### **3.6.1.1.6 Source or method comments (SRC\_METHOD\_COMMENTS)**

Additional comments to be provided in case SRC\_METHOD = 19 (other administrative source) or 29 (other innovative approach)

#### **3.6.1.1.7 Purpose or quality (PURPOSE\_QUALITY)**

The purpose of the administrative source (SRC\_METHOD in (01 TO 19))

- 51 Directly replacing the values of the characteristic
- 52 Prefilling
- 53 Imputing unit/item non-response
- 54 Validating the data
- 59 Other (please specify in comments)

or information on quality for the innovative approach (SRC\_METHOD in (21 TO 29))

- 71 Model diagnosis
- 72 External validation
- 73 Sensitivity analysis
- 74 Check of a sub-sample
- 79 Other (please specify in comments)

#### **3.6.1.1.8 Purpose or quality comments (PURPOSE\_QUALITY\_COMMENTS)**

Additional comments to be provided in case PURPOSE\_QUALITY = 59 (other purpose) or 79 (other information on quality of the innovative source).

## 3.7 NSNE2020

Code	Label	Unit
DATA_COLLECTION	Data collection	Code
TIME_PERIOD	Reference year	Time
REF_AREA	Country	Code
VARIABLE	Variable code	Code
OBS_VALUE	Value	Integer
OBS_STATUS	Observation status flag	Code
ALT_VARIABLE	Variable where non-significant is reported	Code
SOURCE	Source of information	String
JUSTIFICATION	Justification	Code
JUSTIFICATION_COMMENTS	Comments on quality or purpose	String

### 3.7.1.1.1 Data collection (DATA\_COLLECTION)

The data collection identification.

- NSNE

### 3.7.1.1.2 Reference year (TIME\_PERIOD)

The reference year.

The reference year will be 2019 for PT and 2020 for other countries

### 3.7.1.1.3 Country (REF\_AREA)

The code for the country.

### 3.7.1.1.4 Variable (VARIABLE)

The selection of variables from the list of the core and module variables.

Duplicates are not accepted. Partial lists are expected.

### 3.7.1.1.5 Value (OBS\_VALUE)

The value for low prevalence variables (non-existent, non-significant) is by default 0

### 3.7.1.1.6 Observation status (OBS\_STATUS)

The observation status flag for the variable

- LVariable is not collected
- NVariable is not significant
- MVariable does not exist (true zero)

### 3.7.1.1.7 Alternative variable (ALT\_VARIABLE)

The variable where the value of a non-significant variable is reported.

The variable can be the same as the one reported in VARIABLE (in FSS2016 corresponds to NS1) or another (normally the variable on a hierarchical upper level) from the list of variables (this case would correspond to the reported NS2 in FSS2016).

#### **3.7.1.1.8 Source (SOURCE)**

The source of the information that allows deciding that the variable is non-significant or non-existing.

This is a free text field, but the users should strive to harmonise the information provided (same description for the same source).

#### **3.7.1.1.9 Justification (JUSTIFICATION)**

The code for the justification for the classification as non-significant/non-existing

- NAT Not authorised (e.g. genetically modified crops) or not existing in the current legislation
- CLI Unsuitable climatic and agronomic conditions
- NPR Not profitable
- OTH Other (please specify in comments)

#### **3.7.1.1.10 Justification comments (JUSTIFICATION\_COMMENTS)**

Justification needed for the case where the JUSTIFICATION is OTH

A justification (free text) is required for the cases where JUSTIFICATION given is "other".

# 4

## Data processing

### 4.1 Introduction

This chapter refers to specific instructions for processes that are run by Member States.

### 4.2 Data integration

Not applicable

### 4.3 Revision

Revision at national level; to be developed

### 4.4 Validation

Not applicable. For validation at Eurostat level check chapter 7 - Data validation

### 4.5 Editing

Not applicable.

### 4.6 Imputation

Not applicable.

### 4.7 Calculation of weights

#### 4.7.1 Extrapolation factors

For details on how to prepare the data transmission please see further instructions and examples on chapter 3.5 - IFS2020 Sampling design and extrapolation factors

## 4.7.2 Variance estimation and quality rating system

### 4.7.2.1 VARIANCE ESTIMATION

Starting with 2020, variance will be estimated in SAS by invoking the built-in procedures *proc surveymeans* and *proc surveyfreq*:

- the *proc surveymeans* procedure<sup>(92)</sup> will be used to estimate the **coefficients of variation** for ***totals and means of continuous variables***,
- the *proc surveyfreq* procedure<sup>(93)</sup> will be used to estimate the **standard errors** for ***proportions***.

**Counts**<sup>(94)</sup> are first converted to proportions and then the standard errors are estimated for the corresponding proportions. A count is converted to a proportion by considering the total number of holdings as denominator.

The following section presents some specific issues which should be considered when estimating variance, according to the [discussion](#)<sup>(95)</sup> and [conclusions](#)<sup>(96)</sup> of the 2017 Working Group.

#### 4.7.2.1.1 Sampling design and extrapolation factors

The estimation of variance should take into account the sampling design information and the extrapolation factor fields.

The SAS procedures require indicating the parameters related to the **sampling design** and **extrapolation factors**.

The SAS procedures also require indicating the population **domain** for which variance is estimated. A domain is a subgroup of the whole population for which specific estimates are needed. A domain may consist of a geographical area, such as a NUTS2 region, or a specified population breakdown such as the agricultural holdings whose managers are between 25 and 34 years old. According to the [handbook on precision requirements and variance estimation for ESS households surveys](#)<sup>(97)</sup>, domains are of two types:

- planned domains:
- unplanned domains

#### Planned domains

The planned domains are separate strata from which independent samples are taken. Stratification ensures a satisfactory level of representativeness of the planned domain in the final sample. For example, a planned domain is a NUTS2 region, when the sample is stratified by NUTS2 regions.

<sup>(92)</sup> SAS/STAT® 9.2 User's Guide. The SURVEYMEANS Procedure:  
<http://support.sas.com/documentation/cdl/en/statugsurveymeans/61837/PDF/default/statugsurveymeans.pdf>

<sup>(93)</sup> SAS/STAT® 9.2 User's Guide. The SURVEYFREQ Procedure:  
<https://support.sas.com/documentation/cdl/en/statugsurveyfreq/61835/PDF/default/statugsurveyfreq.pdf>

<sup>(94)</sup> The number of holdings with certain characteristics

<sup>(95)</sup> [https://circabc.europa.eu/sd/a/554a60f3-c4f6-4678-9d2d-242d11295b75/FSS\\_WG\\_2017\\_1\\_10\\_A%20more%20harmonised%20variance%20estimation%20in%20FSS.pdf](https://circabc.europa.eu/sd/a/554a60f3-c4f6-4678-9d2d-242d11295b75/FSS_WG_2017_1_10_A%20more%20harmonised%20variance%20estimation%20in%20FSS.pdf)

<sup>(96)</sup> [https://circabc.europa.eu/sd/a/940ad716-3c66-4ce4-b27e-d4886556d6e4/FSS\\_WG\\_2017\\_Final\\_minutes-Ares\(2018\)244136.pdf](https://circabc.europa.eu/sd/a/940ad716-3c66-4ce4-b27e-d4886556d6e4/FSS_WG_2017_Final_minutes-Ares(2018)244136.pdf)

<sup>(97)</sup> <https://ec.europa.eu/eurostat/documents/3859598/5927001/KS-RA-13-029-EN.PDF/a3155d11-4bf0-48d2-943d-2b1e9d096442>

### Unplanned domains

The unplanned domains are not separate strata of the sampling design. The statistician cannot control the size of the sample falling in an unplanned domain, which is needed to ensure a certain level of precision. For example, an unplanned domain consists of all agricultural holdings whose managers are between 25 and 34 years old, when the sample is not stratified by age of managers of agricultural holdings.

The precision of estimates over unplanned domains can be improved by post-stratification. However, bias can be introduced at the same time.

The random size of the sample in an unplanned domain creates an additional component of variability into the domain estimates.

The SAS procedures take into consideration both the strata and the domains. In case they coincide, then the same parameter is indicated for strata and for domain.

### Systematic sampling with implicit stratification

Some countries use systematic sampling within (formal) strata.

Systematic sampling (as opposed to random sampling) entails implicit stratification when holdings are ordered within strata by a variable correlated with the main variables of interest. If implicit stratification is disregarded in the variance estimation, then the variance is overestimated.

There is no unbiased variance estimator in the case of systematic sampling. There are several possible options to use variance estimators that are (under certain assumptions) close to being unbiased.

An option is to explicitly define small strata - usually called 'computational strata' - in the dataset. Eurostat plans to create a new variable called 'computational stratum' in the dataset on the basis of the information provided by countries in the field *OSU\_S1\_\**. For example, suppose that a country stratifies by size class (using the standard output), and within each size class, the country uses systematic sampling by ordering the holdings by UAA. Then, Eurostat will define the 'computational' strata by pairing the holdings by UAA within each original strata constructed by size class, ensuring that each 'computational' stratum has at least two holdings. The relation between original strata and 'computational' strata is one to many. The variance will therefore be calculated using the information from the 'computational' strata, or from the updated strata field.

### Updated allocation of holdings to strata

Some holdings change attributes related to stratification between the sampling design and the reference period.

The holdings changing strata (as well as the non-respondents) can significantly distort the population structure and consequently lead to bias in the final results. The most common way to deal with the change of strata is to implement some sort of the calibration procedure, like post-stratification. This procedure takes the original extrapolation factors (according to the original strata) and adjusts them in such way that the population structure is reflected properly. There is one exception to this rule that is however frequently used in practice. In the cases when a take-all stratum is used during the sample selection procedure, the holdings that were not included into the take-all stratum, but after data collection are found to be large holdings, are usually changed into self-representative holdings for weighting purposes, meaning that their extrapolation factor is changed to 1.

The following approach is proposed:

- determine the sampling extrapolation factors (sampling weights);
- detect the large holdings that were sampled in small strata and re-allocate them into take-all strata, assigning them extrapolation factor 1;

- adjust the extrapolation factors for the unit non-response;
- calibrate the extrapolation factors by taking into account the population structure<sup>(98)</sup>;
- for variance estimation, consider the final extrapolation factors of the responding holdings and the initial sampling design with the original (where relevant computational strata), except that the holdings which are reallocated to the take-all stratum should be considered in the new (take-all) stratum.

#### 4.7.2.1.2 Ineligible holdings

The ineligible holdings are not part of the relevant (target) population and their values are disregarded in the point estimation. Consistently, the values of ineligible holdings should be disregarded in variance estimation, too.

#### 4.7.2.1.3 Eligible holdings with value 0 for a target variable

When estimating variance for a target variable (e.g. flowers and ornamental plants), the 0 values for that variable, recorded for holdings which belong to the relevant (target) population should be considered. 0 values are observed values (e.g. those holdings do not cultivate flowers and ornamental plants).

#### 4.7.2.1.4 Eligible holdings with outlier values

If outlier values are taken into account in the estimation of the data, they should also be taken into account when estimating the variance for the data. Sometimes the extrapolation factor of the outlier is set to 1 (the outlier is changed to a self-representative holding) or is trimmed. Also in this case the outlier value should be taken into account, of course with the adjusted extrapolation factor.

Only when the outlier value is excluded, it is reasonable that its value is not taken into account when estimating variance.

#### 4.7.2.1.5 Imputation

The imputation procedure creates additional variability which should be considered when estimating variance. When imputed values are treated as observed values, the variance of the estimator is underestimated.

Variance estimation in case of imputation is very widely discussed and theoretically elaborated, but the theoretical solutions are very rarely implemented in practice. Several different procedures have been developed for variance estimation in the presence of imputation, but they are quite rarely used in the practice of official statistics. There are several reasons for that, the most distinctive probably the fact that these approaches are theoretically quite demanding and are not easy to implement on a general level. Moreover, there is no standard software for that purpose.

Generally speaking, the following options can be used:

1. Treat imputed values as reported values. This approach is acceptable when the rate of imputed values is small (e.g. 1-2%), but can lead to a serious underestimation of the variance in the case of high imputation rate.
2. Employ one of the procedures described in the literature and correctly estimate variance due to imputations.

<sup>(98)</sup> Available macros developed by INSEE: <https://www.insee.fr/fr/information/2021902> and <https://www.insee.fr/fr/information/2021904>.

3. Disregard the imputed values and consider only the observed values in the variance estimation. This approach would (in most cases) lead to overestimation of the variance.

Options 2 and 3 require transmitting additional field for each variable marking the imputed values, and some countries do not keep track of the imputed values. Taking this into consideration but also the demanding efforts for implementation of variance estimation procedure in the presence of imputation it was concluded at the Working Group in 2017 to further analyse the problem.

### 4.7.2.1.6 Calibration

Calibration variability should be included in the estimated variance.

Correct procedures for variance estimation when calibration is used, are quite complex and not easy to implement in practice. In order to correctly estimate the variance, Eurostat needs either the residuals of the regression between the variable of interest and the calibration variables or the sample values of the calibration variables (so as to calculate the residuals). This should be the case for each variable of interest and therefore this would mean significant additional burden.

It is proposed that Eurostat takes a pragmatic approach which considers the calibrated extrapolation factors, the initial sampling design and not in addition the residuals. In general, over all statistical domains<sup>(99)</sup>, many countries implement this approach. Eurostat commissioned a simulation study which concludes that bias that is introduced into the variance estimation by this approach is not significant<sup>(100)</sup>. The study is based on Monte Carlo repeated sample simulations which consider different kinds of sample non-response patterns (being known that calibration is meant to reduce bias and variance caused by non-response). The study compares the Monte Carlo variance ("true" variance) with the variance of the Taylor linearization estimator of calibrated total ("the classical approach") not using the residuals and with the variance of the Taylor linearization estimate of calibrated total using the residuals. Although there are cases when "the classical approach" is overestimating the real variance much more than the "residual's estimator", there are also vice-versa cases and the study cannot conclude that the residuals approach generally works better. It is also worth noticing that in the case of larger variance, which is important from the point of view of detection of non-reliable results, both estimators give similar results. Therefore, the "classical approach" can be used, with no major reservations.

Countries are encouraged of course to use estimators incorporating the residuals' effect.

### 4.7.2.2 QUALITY RATING SYSTEM

This section presents the quality rating system which was adopted in the 2016 Working Group<sup>(101)</sup>.

The quality rating system guides which estimates should be:

- disseminated without warning,
- disseminated with warning,
- suppressed,

for all types of population breakdowns (geographical or not).

The quality rating system is two-fold:

<sup>(99)</sup> For example, Eurostat (2015), Variance estimation in the Labour Force Survey, Internal document for item 4.1 of the agenda, Working Group Labour Market Statistics, Luxembourg.

<sup>(100)</sup> Eurostat (2017). Variance estimation. Simulation study – calibration, <https://circabc.europa.eu/w/browse/23b74369-364e-4c55-9041-d017495d8787>

<sup>(101)</sup> [https://circabc.europa.eu/sd/a/df07d42e-ae9b-4e63-a792-1389c1360051/FSS\\_WG\\_2016\\_1\\_11\\_Quality%20rating%20system%20for%20population%20breakdowns.pdf](https://circabc.europa.eu/sd/a/df07d42e-ae9b-4e63-a792-1389c1360051/FSS_WG_2016_1_11_Quality%20rating%20system%20for%20population%20breakdowns.pdf)

1. for **total and means of continuous variables**, the system is based on the values of **coefficients of variation**:

- below 24.99% - estimates are released
- 25.0% - 34.99% - estimates are released with warning, to be used with caution
- 35.0% and more - too unreliable, estimates should not be released

2. for **proportions**, the system is based on the values of **standard errors**:

- below 12.49 percentage points - estimates are released
- 12.5 percentage points - 17.49 percentage points - estimates are released with warning, to be used with caution
- 17.5 percentage points and more -- too unreliable, estimates should not be released

**Counts** are first converted to proportions<sup>(102)</sup>, standard errors are estimated for the corresponding proportions and the quality rating system for proportions is applied.

The quality rating system is consistent with the one used by Statistics Canada for [Farm Management Survey](#).

## 4.8 Calculation of national aggregates

### 4.8.1 Manager

Double counting of the same person when calculating labour input aggregates is avoided as only the data for the holder, the other family and non-family workers are summed up, whereas the data referring to the manager is left aside.

### 4.8.2 Other gainful activities

The data fields of the data records with the number of persons in the family or in the regular non-family labour force having other gainful activities are numeric fields. In the cases in which no information about the Other Gainful Activity of the workers belonging to these categories has to be provided (the holding is part of the sample for labour force), the respective data fields within the record have to be set to '0'.

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<sup>(102)</sup> A count is converted to a proportion by considering the total number of holdings as denominator.

# 5

## Data structure

### 5.1 Introduction

Dataset Structure Definition (DSD) describes how information in a specific dataset is structured. Knowledge of the structure is important, because it allows to later filtering out desired information very precisely based on criteria to limit specific dimensions.

### 5.2 Dataset structure definition

The data structures can be found on the repository under <https://webgate.ec.europa.eu/sdmxregistry/> and have the following artefact IDs:

ESTAT+IFS\_IFS+X.Y

ESTAT+IFS\_ADM+X.Y

ESTAT+IFS\_NSNE+X.Y

### 5.3 Data types

For the data transmission, data will be transmitted as either:

- code
- positive integer
- positive real number

The list of valid codes is given in Annex I.

### 5.4 File formats

It is expected that the data is delivered in comma separated value (csv) format.

Table 12 – CSV specifications

Field delimiter	; (semicolon)
Decimal point character	. (point)
Text qualifier	None
Thousand delimiter	None
Number of header lines	One

# 6

## Data transmission

### 6.1 Deadlines for data transmission

Table 13 – Data transmission

Data collection	
IFS2020	31.03.N+2
ADM2020	31.12.N-1
NSNE2020	31.12.N-1

#### 6.1.1 IFS2020

Article 12 (1) of Regulation (EU) 2018/1091 states that “for the reference year 2020, Member States shall transmit validated core and module data and a quality report to the Commission (Eurostat) within 15 months after the end of the reference year.”

#### 6.1.2 ADM2020

Article 4(3) of Regulation (EU) 2018/1091 states that “Member States which decide to use the sources, methods or innovative approaches referred to in point (c) of paragraph 1 shall inform the Commission (Eurostat) during the year preceding the reference year and shall provide details concerning the quality of the data obtained from that source, method or innovative approach and the data collection methods to be used.”

#### 6.1.3 NSNE2020

Article 5(3) of Regulation (EU) 2018/1091 states that “When a variable listed in Annex III has a low or zero prevalence in a Member State, that variable may be excluded from the data collection subject to the Member State concerned providing information duly justifying its exclusion to the Commission (Eurostat) in the calendar year preceding the reference year.”

Article 7(9) has an equivalent formulation for the variables in the modules.

### 6.2 Templates for data transmission

The templates for data transmission can be obtained on the SDMX register (<https://webgate.ec.europa.eu/sdmxregistry/> -> Data Structures)

## 6.3 Completeness

It is expected that data for all variables are supplied in all relevant records.

Each data supplier will supply the complete record with all fields in the specified order.

- Each value is given in ASCII characters with the full significant precision. The number of decimals to be delivered is not specified by Eurostat. It should be the same as used in the supplying country and may vary between variables.
- Eurostat's programs are case-sensitive. 'x' and 'X', for example, are treated as different values. Data suppliers are asked to respect the codification for alphanumerical values as documented in this manual.

## 6.4 Flags for data transmission

### 6.4.1 Observation status flags

The observation status flags are not applicable for the purpose of the IFS2020, ADM2020 data transmissions.

#### 6.4.1.1 NSNE2020

Table 14 – Observation status flags

Code value	Code description	Detailed explanation
L	Missing value; data exist but were not collected	Used, for example, when some data are not reported/disseminated because the data is not collected.
N	Not significant	Used to indicate an item which has a low prevalence and is hence considered as non-significant.
M	Missing value, data cannot exist	Used to indicate a true zero

### 6.4.2 Confidentiality status flags

The confidentiality status flags are not applicable for the purpose of IFS2020, ADM2020 and NSNE2020.

## 6.5 File naming conventions

For the 2020 reference period, the file names should follow the EDAMIS file naming convention

Table 15 – File naming convention (where CC represents the country code)

Domain name	Dataset name	Examples
IFS	IFS_ADM_N_CC_2020_0000.csv	IFS_ADM_N_IE_2020_0000.csv
		IFS_ADM_N_ES_2020_0000.csv
IFS	IFS_NSNE_N_CC_2020_0000.csv	IFS_NSNE_N_PL_2020_0000.csv
		IFS_NSNE_N_DK_2020_0000.csv
IFS	IFS_IFS_N_CC_2020_0000.csv	IFS_IFS_N_EL_2020_0000.csv
		IFS_IFS_N_LT_2020_0000.csv

## 6.6 Transmission method (EDAMIS)

The tool to be used for delivery of data to Eurostat is Eurostat's data transmission program EDAMIS.

The EDAMIS Web Application (eWA) is installed in all National Statistical Institutes and a number of other organisations. A local coordinator is available in each NSI who can provide access to eWA and offer any assistance that might be necessary.

Where an EDAMIS Web Application is not available, data providers can use the EDAMIS Web Portal (eWP). This is an internet based solution, available through an internet browser, which does not require a local installation.

### 6.6.1 Single User-ID (EU-LOGIN) for all services

In order to access the [EDAMIS4 Info Space](#) an active [EU Login](#) account is required (see chapter 8.3.2 if you need to create an EU Login). You can use the same credentials as for EDAMIS3.

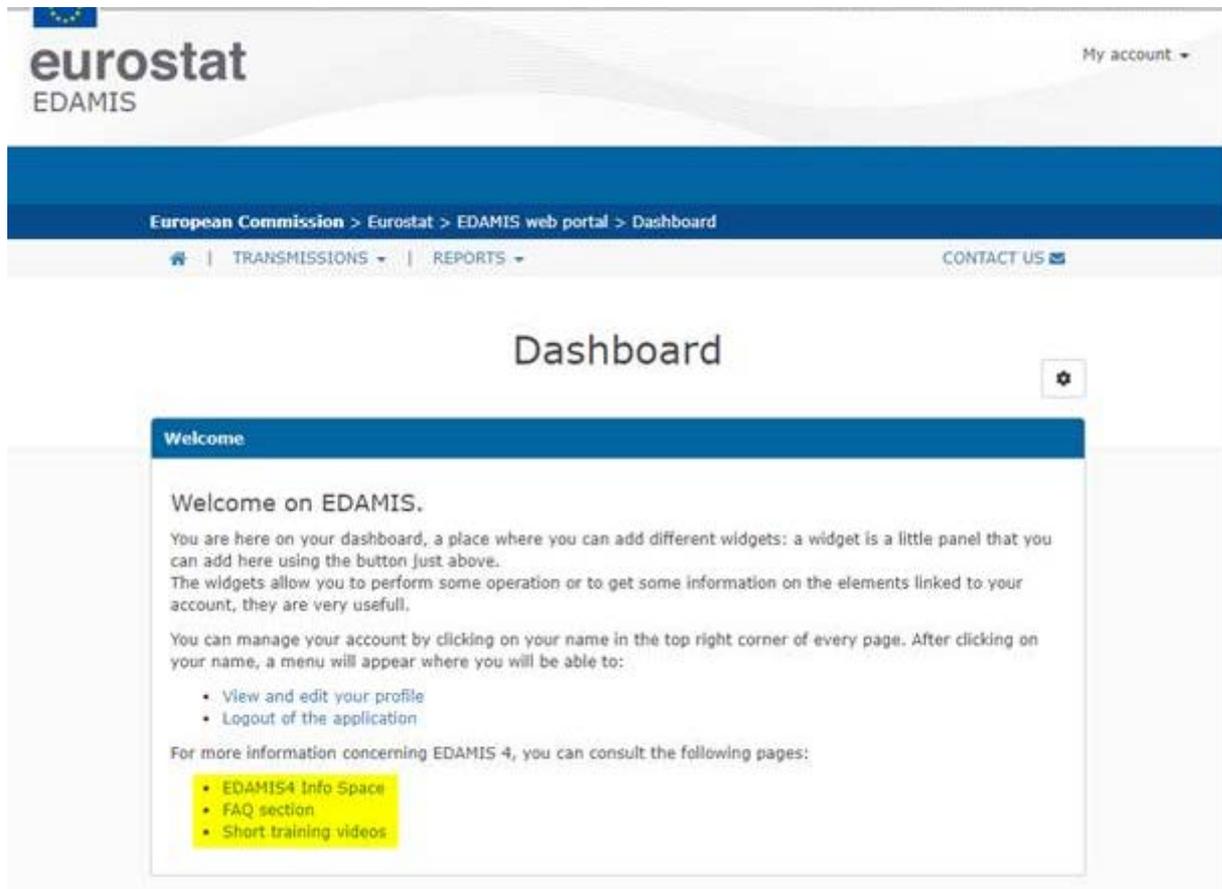
To register an account, the user can open the [EDAMIS Web Portal](#) link and will be forwarded to the Login/Register section. Click the **Create an account** button and follow the instructions. After successfully registering your EU Login account, you will be able to access the EDAMIS4 Info Space. The preliminary registration is required as users are also able to use the forum to ask questions or to comment certain pages.

Please see the [EDAMIS4 How To Videos](#) for further instructions like requesting access rights to specific Domains & Datasets in EDAMIS and many other useful features.

The video tutorials for EDAMIS4 are available at <https://webgate.ec.europa.eu/fpfis/wikis/display/EDAMIS4MIG/EDAMIS+4+How+To+Videos>.

For information concerning EDAMIS, or data transmission to Eurostat in general, you can consult the EDAMIS Information Space listed on the EDAMIS homepage (<https://webgate.ec.europa.eu/edamis4>) or you can contact directly the support team ([estat-support-EDAMIS@ec.europa.eu](mailto:estat-support-EDAMIS@ec.europa.eu)).

Figure 56 – EDAMIS Web Portal front page



## 6.6.2 V-Flows

In order to facilitate the data transmission exercises, Eurostat has set up a pre-validation tool (struval V-flows) that allows testing files and receive precise feedback on their compliance with the validation rules on both structure and content. V-Flows also use EDAMIS for data transmission, however:

- Each EDAMIS production dataset has a corresponding EDAMIS V-flow Dataset (e.g. for pre-validating an IFS\_ADM\_N Dataset, choose the corresponding VIFS\_ADM\_N Dataset in EDAMIS)
- This is not an official transmission: the V-flows data are not processed, further uploaded to the database or used for publications
- Their purpose is to offer a convenient validation service for reporting countries; a report equivalent to the one produced in the normal production flow is created (see 7.2 for further details)
- No local installation or similar is required to pre-validate a dataset

# 7

## Data validation

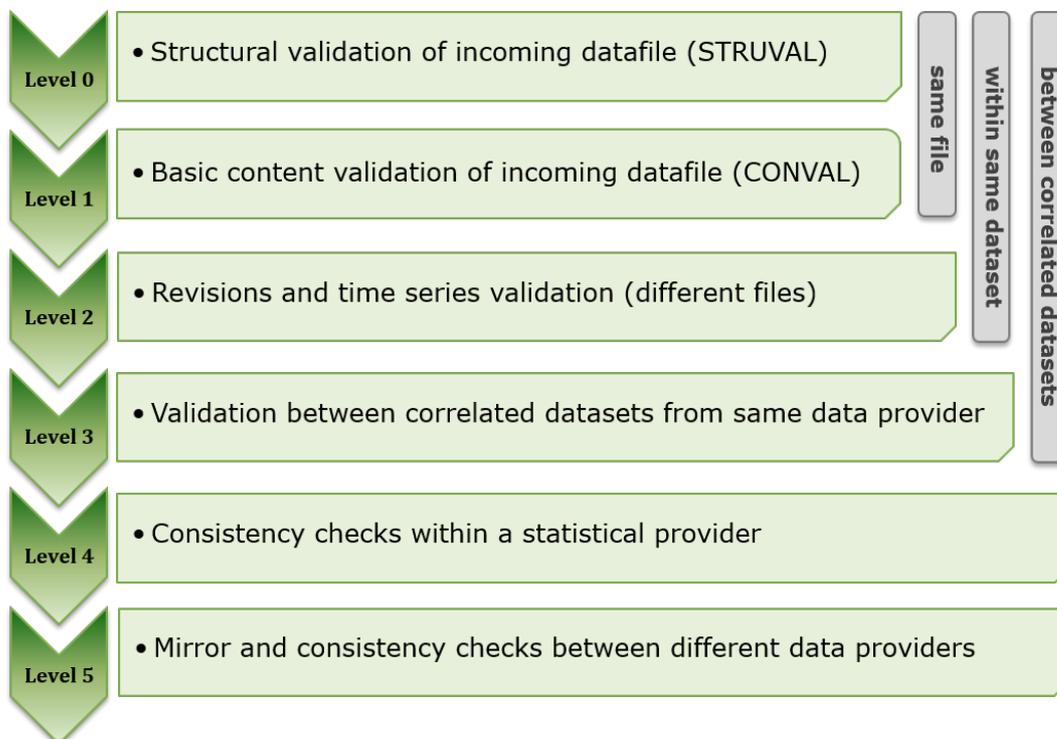
### 7.1 Introduction

Validation is a key task performed in all statistical domains.

Efficient data validation is essential for high quality statistics. Guidelines for assigning validation responsibilities within the whole production chain, standard validation levels, a good selection of validation rules, standards for validation reports and error/warning messages and common documentation standards of the validation process are important elements of a good data validation policy.

In principle, all data validation processes share a common approach, shown in the diagram below.

Figure 57 – Validation



The data are checked in successive steps:

- the structure of the data set
- the internal relationship between fields (validation rules)
- the raw aggregated results (control tables)
- the cross check with other agricultural statistics
- the cross check with farm structure data from previous years.

Only data having been validated at the last step can be disseminated (note that microdata is never disseminated). Afterwards some errors may be detected during a specific analysis and the data set revised.

The consistency of different fields within a single record is checked against the validation rules given in Annex V.

Violation of a validation rule does not in all cases imply that data are invalid. Some rules might only highlight cases which could merit further investigation.

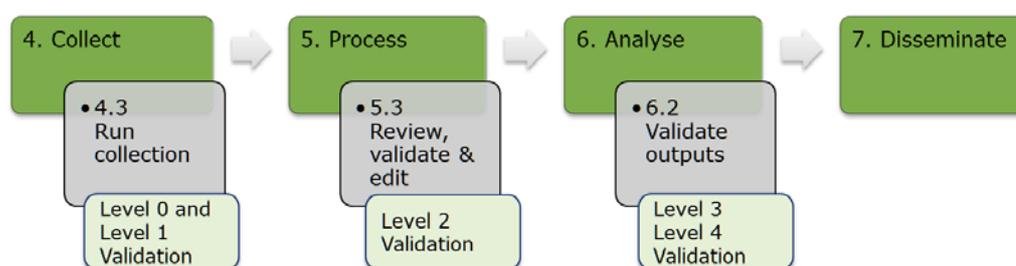
Data suppliers are asked to apply the rules before transmitting data to Eurostat.

Eurostat promotes the discussion of the validation rules in the Working Group. In this occasion, Member States are invited to ask Eurostat to modify the rules in case these rules do not adequately describe the situation in their country.

## 7.2 Validation procedure

The data supplied to Eurostat are validated according to the following procedure:

Figure 58 – Validation process (GSBPM notation)



Step 4.3 is the first sub process of GSBPM where validation checks are done. Those checks are purely related to one instance of a dataset.

Step 5.3 is the part of the process where a level 2 validation takes place. In GSBPM this sub-process is specifically referred to validation, it is in fact named 'review & validate'. This sub-process examines data to try to identify potential problems, errors and discrepancies. It can also be referred to as input data validation. At this stage of the process the new data file is checked against the corresponding time series. The new data are checked using predefined validation rules in a set order. In case problems are found, suspicious or erroneous data are marked for manual inspection. At this stage it is also checked whether all data for the reference year were reported, i.e. a check for completeness.

Step 6.2 is named 'Validate outputs'. In this sub-process statisticians validate the quality of the outputs produced in accordance with a general quality framework and with expectations.

## 7.2.1 Structural validation (STRUVAL)

Once the data arrives in Eurostat's input hall they are verified against the defined SDMX files.

The input hall is not visible to NSI's, but a report will be sent in response to a data delivery. The data files are only accepted and sent for content validation when they are syntactically correct and well formed. This corresponds to a level 0 structural validation.

The Structural Validation Service (STRUVAL) performs the structural validation of statistical data files based on a set of pre-defined validation rules, contained in a Data Structure Definition (DSD).

Structural validation performed by STRUVAL is the first step within a sequence of automated data validation activities conducted by Eurostat before statistical processing and dissemination of the collected data. The STRUVAL service returns a validation report to the data provider listing failures detected in the dataset for correction before resubmission.

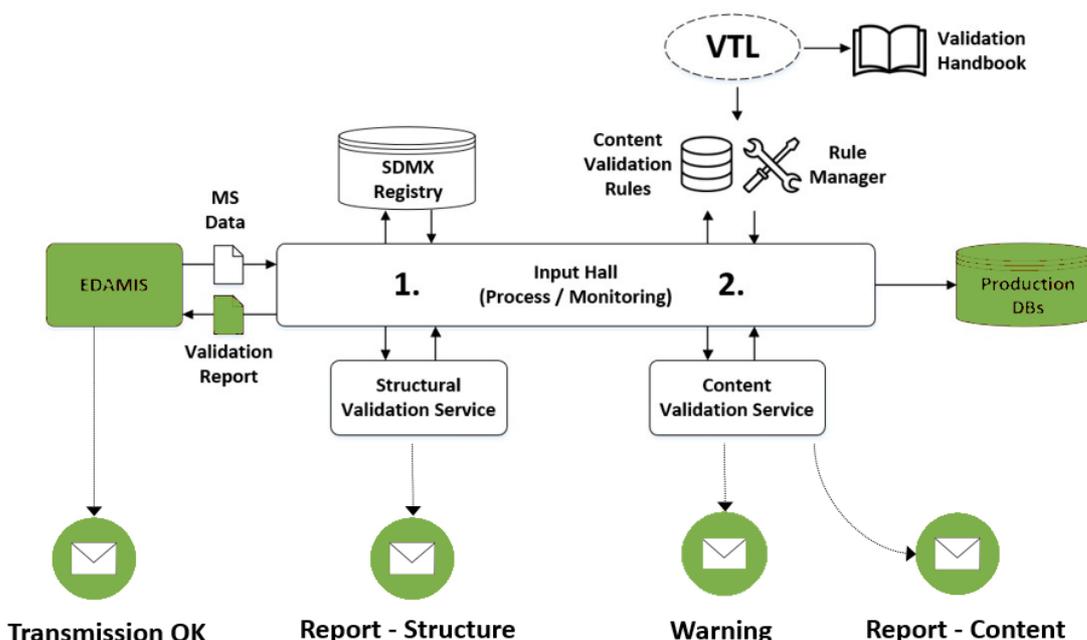
The service verifies

- that the transmitted file is an accepted and processable format (SDMX-ML, SDMX-CSV);
- that the dataset contains the structures as defined in the DSD, including dataflow definition, code lists, concepts, key families and constraints;
- that the values contained within the dataset follow basic requirements defined in terms of completeness, data format, data consistency and constraints applied.

## 7.2.2 Content validation (CONVAL)

Closely linked is a level 1 validation, which is a basic content validation (the EDIT tool is used). There a basic checking of the records within the data file is done. Firstly a semantic check of the records itself is made. Then a set of validation rules for an intra-file check is applied.

Figure 59 – Schematic of the input hall (green highlights are items visible to NSI)



In practice, this is an iterative process, and only after passing all the structure and content steps can the data start to be processed in order to produce dissemination products.

### 7.2.2.1 COMPLETENESS

The completeness of the file is verified.

### 7.2.2.2 CODES

Codes used for categorical fields are checked against the list of valid codes given in this manual.

### 7.2.2.3 COVERAGE

The thresholds defined a priori for IFS (see 2.2 Coverage) are checked against the values delivered.

In-scope holdings are those that meet at least one of the conditions mentioned in Table 16 – Thresholds according to Annex II of Regulation (EU) 2018/1091.

Table 16 – Thresholds according to Annex II of Regulation (EU) 2018/1091

Item	Threshold
Utilised agricultural area UAA = UAAT+UAAS	5 ha
Arable land ARA = ARAT+ARAS = (C0000T + P0000T + R1000T + R2000T + R9000T + I0000T + V0000_S0000T + N0000T + G0000T + E0000T + ARA99T + Q0000T) + (V0000_S0000S + N0000S + ARA09S)	2 ha
Potatoes R1000T	0.5 ha
Fresh vegetables and strawberries V0000_S0000T	0.5 ha
Aromatic, medicinal and culinary plants, flowers and ornamental plants, seeds and seedlings, nurseries I5000T + N0000T+ E0000T + L0000T	0.2 ha
Fruit trees, berries, nut trees, citrus fruit trees, other permanent crops excluding nurseries, excluding vineyards and excluding olive trees F0000T + T0000T + PECR9_H9000T	0.3 ha
Vineyards W1000T	0.1 ha
Olive trees O1000T	0.3 ha
Greenhouses UAAS	100 m <sup>2</sup>
Cultivated mushrooms U1000	100 m <sup>2</sup>
Livestock A2010 * 0.4 + A2020 * 0.7 + A2130 * 1 + A2230 * 0.8 + A2300F * 1 + A2300G * 0.8 + A4100 * 0.1 + A4200 * 0.1 + A3110 * 0.027 + A3120 * 0.5 + A3130 * 0.3 + A5140 * 0.007 + A51100 * 0.014 + A5230 * 0.03 + A5210 * 0.01 + A5220 * 0.02 + A5410 * 0.35 + A5240_5300 * 0.001 + A6111 * 0.02	1.7 livestock units

#### 7.2.2.4 NS/NE VARIABLES

The coherence between reported NS/NE variables and the microdata file is checked.

The validation rules for the cross validation are presented in Annex V.

#### 7.2.2.5 GEOGRAPHIC COMPLIANCE

Cross checks for the geographic units are run (REF\_AREA vs. REGION vs. GEO\_LCT)

#### 7.2.2.6 AGGREGATIONS

Aggregated results are checked for plausibility.

#### 7.2.2.7 SAMPLE DESIGN

The uniqueness of the extrapolation factor within each stratum is checked.

#### 7.2.2.8 TIME SERIES CONSISTENCY

Aggregated results are compared by Eurostat against FSS data from previous surveys.

#### 7.2.2.9 CROSS DOMAIN VALIDATION

Aggregated results are compared to crop statistics data for the same survey year. Important differences will merit further investigation or justification. Data Suppliers are asked to check those differences (for example with more than 10% relative differences as first indication) before transmitting data to Eurostat

## 7.3 Validation rules

The full list of validation rules is presented in Annex V.

## 7.4 Messaging

The data provider may receive the following messages throughout the operation of the validation process via the EDAMIS service.

1. Message in Edamis confirming that the data transmission is successful. The message is sent in all cases of data transmission.
2. Message in Edamis informing the data provider of a service outage. If experienced, please contact your counterpart at Eurostat.
3. Message in Edamis informing the data provider will deliver results outside of the routinely expected timeframe. This may occur in case of service overload due to high traffic. If repeatedly experienced, please contact your counterpart at Eurostat.
4. Email message informing the data provider that the validation process concluded, and the validation report is now available via the EDAMIS user interface.

In case users have to be added to or removed from the list of receivers of any of these messages, please contact your counterpart in Eurostat.

## 7.4.1 Errors, warnings and information messages

According to the [ESS Handbook on Methodology for data validation \(revised 2018 edition\)](#)<sup>(103)</sup>, different degrees of severity are associated to each validation rule:

- Error
- Warning
- Information

### Error

Also called a “fatal error”. A single instance causes the all dataset to be rejected.

### Warning

The data can be accepted, as long as some corrections or explanations have been provided by the data provider.

### Information

A message is provided on the report, but the data can be accepted without any further clarification or correction.

## 7.4.2 Retrieval of the validation report

### 7.4.2.1 RETRIEVING A REPORT WITH EDAMIS WEB APPLICATION

The data provider may access the validation report through the EDAMIS feedback channel. The validation report is never sent directly to data providers due to possible confidentiality constraints. The EDAMIS service may be, however, configured to send an email to inform users of the availability of the report (and any other message received).

For organisations where the EDAMIS Web Application (EWA) has been installed, the feedback will by default be sent to the EWA, regardless of whether EWA or the EWP was used for the specific transmission. The validation report is available in EWA under the Send Datafile > Received Feedbacks menu.

Figure 60 – Retrieval of a report in EDAMIS Web Application



It is possible for users to request for the feedback to be sent to the EWP in case the EWP was used to transmit the data. This change must be requested by contacting the EDAMIS support team at [ESTAT-SUPPORT\\_EDAMIS@ec.europa.eu](mailto:ESTAT-SUPPORT_EDAMIS@ec.europa.eu)

<sup>(103)</sup> [https://ec.europa.eu/eurostat/cros/system/files/ess\\_handbook\\_-\\_methodology\\_for\\_data\\_validation\\_v2.0\\_-\\_rev2018\\_0.pdf](https://ec.europa.eu/eurostat/cros/system/files/ess_handbook_-_methodology_for_data_validation_v2.0_-_rev2018_0.pdf)

### 7.4.2.2 RETRIEVING A REPORT WITH EDAMIS WEB PORTAL

For organisations that do not have an EWA installation, the feedback will be sent to the eDAMIS Web Portal (EWP). The validation report is available in the EWP under the Transmission > Received Feedback menu in EDAMIS.

Figure 61 – Retrieval of a report in EDAMIS Web Portal

The screenshot shows the Eurostat EDAMIS web portal interface. At the top, there is a navigation bar with 'European Commission > Eurostat > EDAMIS web portal > Received feedbacks'. Below this, there are two menu items: 'Send datafile' and 'Received feedbacks', with a red arrow pointing to the latter. The main content area displays a table of validation reports with the following columns: Filename, Dataset, Year, Period, Date, Sent by, Sent from, and Comments. A red arrow points to the 'Date' column in the first row of the table.

Filename	Dataset	Year	Period	Date	Sent by	Sent from	Comments
log VCOMEXT_AGG_M_EU_2018_0011_V002B.LOG (549.00B)	VCOMEXT_AGG_M	2018	nov	2019-02-27T14:26:39	EU	EU	Structural validation errors detected; please see error report in EDAMIS. In case of difficulties to locate error report, please contact your local EDAMIS coordinator. Contact list of coordinators is available in EDAMIS Help Centre.
log VCOMEXT_AGG_M_EU_2017_0009_V002A.LOG (237.00B)	VCOMEXT_AGG_M	2017	sep	2019-02-27T14:26:22	EU	EU	Structural validation: successful
log VCOMEXT_AGG_M_EU_2017_0009_V001C.LOG (541.00B)	VCOMEXT_AGG_M	2017	sep	2019-02-27T12:11:07	EU	EU	Structural validation errors detected; please see error report in EDAMIS. In case of difficulties to locate error report, please contact your local EDAMIS coordinator. Contact list of coordinators is available in EDAMIS Help Centre.
log VCOMEXT_AGG_M_EU_2017_0009_V001B.LOG (968.00B)	VCOMEXT_AGG_M	2017	sep	2019-02-26T17:11:34	EU	EU	The service Struval has failed due to a technical error. Eurostat is investigating the issue with high priority.
log VCOMEXT_AGG_M_EU_2018_0011_V002A.LOG (968.00B)	VCOMEXT_AGG_M	2018	nov	2019-02-26T16:51:36	EU	EU	The service Struval has failed due to a technical error. Eurostat is investigating the issue with high priority.

## 7.5 Structure of the validation report

The validation report consists of a Header section and an Error Listing section. The Header contains validation process metadata and a general overview of the results of the validation. The Error Listing section contains the details of all unique errors detected.

### 7.5.1 Header of the report

#### 7.5.1.1 TOTAL NUMBER OF ERRORS FOUND

Number of all error occurrences encountered during the validation process.

Note: The validation services apply a cap of 2000 individual occurrences; the service concludes and produces a report once it reaches 2000+1 errors. This means that after the correction and resubmission of the dataset further errors may be identified. If the error cap is reached, this is indicated via a message in the Header.

#### 7.5.1.2 ERRORS PER TYPE

Total of all error occurrences broken down by error type. The breakdown is based on Error Code and Message ID.

Error Codes refer to a wider classification of possible errors (e.g. technical issues, validation related issues), while Message IDs refer to a specific type of error (e.g. unexpected code, incorrect data format).

The aggregation in this section groups errors with identical Message IDs together, meaning the subtotal represented by a line item may stem from a number of different root causes. The purpose of

the grouping here is to provide general information on the nature of errors identified, not a detailed breakdown.

Note: A single root cause may trigger multiple error types, and these will be listed separately (e.g. a code is unexpected and also violates a length constraint).

In case the dataset does not contain errors, the Errors Per Type section has no entries.

### 7.5.1.3 DATASET VALIDATED

Name of the input dataset

### 7.5.1.4 SDMX CONVERTED VERSION

Version of the validation service engine used.

### 7.5.1.5 GENERATED ON

Date stamp.

### 7.5.1.6 STRUCTURE INFORMATION

DSD name and version.

Figure 62 – Example error report header, with errors detected

```
-----
STRUCTURAL VALIDATION REPORT
-----
10 Error(s) found

Errors per type:
  150-039: 8 occurrence(s) -> Appears when more than one observation are found in one series
  150-029: 1 occurrence(s) -> An attribute at dataset, series or observation level has a value which is not valid in the referenced code list
  150-030: 1 occurrence(s) -> Appears when reported value of a concept is unexpected

Dataset validated: SDMX_CSV-AIR_C1_M_LU_2016_0001_0004.csv
SDMX Converter version: 7.5.2
Generated on: 07/05/2019 20:33:45
Structure information: ESTAT:Airports table:5.0
```

Figure 63 – Example error report header, with no errors detected

```
-----
STRUCTURAL VALIDATION REPORT
-----

0 Error(s) found

Errors per type:

Dataset validated: SDMX_CSV-AIR_C1_M_LU_2016_0001_0004.csv
SDMX Converter version: 7.5.2
Generated on: 07/05/2019 20:37:32
Structure information: ESTAT:Airports table:5.0
```

## 7.5.2 Error Listing

The Error Listing contains the list of specific errors detected by the validation service, in the order of detection. In case of no errors are detected, this section of the validation report remains empty.

### 7.5.2.1 ERROR CODE

High level error classification, first level of error typology. Serves diagnostic purposes.

**7.5.2.2 MESSAGE ID**

Error type, second level of error typology. Serves diagnostic purposes.

**7.5.2.3 CONCEPT NAME**

Error header. Name of concept affected by error.

**7.5.2.4 CONCEPT TYPE**

Error header. Type of concept affected by error. Value may be: Dimension/Attribute/Measure.

**7.5.2.5 CONCEPT VALUE**

Error header. Value of concept affected by error. Possibly confidential.

**7.5.2.6 ERROR IN CONCEPT**

Name of concept affected by error.

**7.5.2.7 NUMBER OF OCCURRENCES**

Value refers to this unique error (total).

**7.5.2.8 ERROR DESCRIPTION**

Error message, describing the error. Possibly confidential.

**7.5.2.9 DETAIL**

Additional information on the error and its resolution.

**7.5.2.10 SERIES KEY (COLUMN VIEW)**

Location of the error in the dataset, per dimension name and values of the series key.

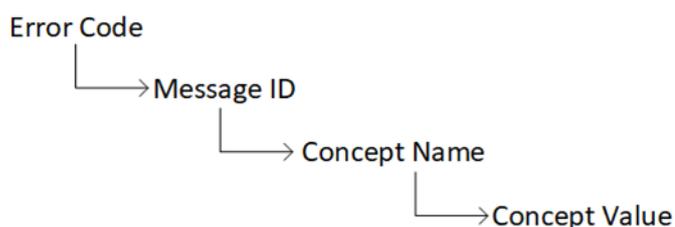
**7.5.2.11 SERIES KEY (HORIZONTAL VIEW)**

Location of the error in the dataset, per dimension values of the series key. The values and sequence of dimensions presented are identical to those of the column view.

**7.5.3 Grouping and display of errors****7.5.3.1 GROUPING OF ERRORS**

Errors are grouped under separate sub-headings per the unique root cause they are generated by. The errors are identified as unique according to the logic presented in

Figure 64 – Grouping of errors



### 7.5.3.2 DISPLAY OF ERRORS

The validation report contains all detected errors (unless the 2000 cap is reached, see above).

Error messages and the dimension list are only displayed for the first error occurrence. For any further occurrences only the series key is listed, with a corresponding header with the names of dimensions available.

In case of business need the number of error occurrences displayed in the report may be limited (e.g. 3 per group).

### 7.5.4 Filtering reports due to confidentiality constraints

Eurostat policy prohibits the inclusion of confidential data in validation reports distributed to external parties, including national statistical institutes. Statistical domains collecting and processing confidential data will receive a report where elements with the possibility of the presence of confidential data are filtered out.

The filtering:

- Does not apply to dimensions
- Applies to the concept types “measure” and “attribute”, as these may contain confidential information
- Applies to concept values in the error header

Applies to error descriptions as these may contain dynamic elements where confidential data (e.g. an OBS\_VALUE) is inserted. In such case the description is completely removed from the report.

Figure 65 – Example of error listing without filtering

```
-----
Error Code: 150 || Message Id: 039 || Concept Name: OBS_VALUE || Concept Type: MEASURE || Concept value: 165143
-----
Error in concept: OBS_VALUE
Number of error occurrences: 8

Error description: Duplicate observation found: Obs 2016-01 = 165143 - Attributes : TRANS_PASSENGERS:1234,TRANSFER_PAX:96,FREIGHT_MAIL:57609141,COMMERCIAL:3913,MOVEMENTS:4087
Detail: Appears when more than one observation are found in one series

- COUNTRY -> LUX
- TABLE -> C1
- FREQ -> M
- AIRPORT -> ELLX

COUNTRY.TABLE.FREQ.AIRPORT
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
```

Figure 66 – Example of error listing with a measure filtered for confidentiality. The concept value and error description fields are removed

```
-----
Error Code: 150 || Message Id: 039 || Concept Name: OBS_VALUE || Concept Type: MEASURE
-----
```

```
Error in concept: OBS_VALUE
Number of error occurrences: 8
```

```
Detail: Appears when more than one observation are found in one series
```

```
- COUNTRY -> LUX
- TABLE -> C1
- FREQ -> M
- AIRPORT -> ELLX
```

```
COUNTRY.TABLE.FREQ.AIRPORT
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
LUX.C1.M.ELLX
```

## 7.6 Compliance

Where evidence for non-compliance of the methodology is found, Eurostat considers the received data as non-publishable. Especially, these data are not comparable with the other series, and therefore non-usable for aggregation of the EU results.

## 7.7 Payment of EU contribution in 2020

### 7.7.1 Documents to be submitted for the payment of the balance

Within 60 calendar days following the end of the last reporting period<sup>(104)</sup>, the Member States must submit to Eurostat:

- The “Request for payment of the balance”<sup>(105)</sup>
- The “Final report on implementation of the action”<sup>(106)</sup>

<sup>(104)</sup> The last reporting period is set in Article I.4.1 of the grant agreement.

<sup>(105)</sup> Model in Annex V of the grant agreement

<sup>(106)</sup> Model in Annex IV of the grant agreement

- **Only in case methodological changes trigger a decrease of total costs of a data collection (CORE<sup>(107)</sup>, CORE\_FEF<sup>(108)</sup>, LAFO<sup>(109)</sup>, RDEV<sup>(110)</sup>, AHMM<sup>(111)</sup>) by more than 20% compared to the grant application**, then the Member State must send the revised Excel file "*Technical breakdown of estimated real costs*". In this file, the Member State has to update **only and any** of the following input parameters **for the data collection in question**:
  - *Fixed costs (cell I13),*
  - *Share of variables collected from administrative sources (cell H20),*
  - *Average share of holdings for which variables are taken from administrative sources (cell H21),*
  - *Shares of data collection modes (cells from B29 to F29).*

Following that update, the Excel file automatically updates the total costs for the data collection in question as well as the total costs and the total eligible costs for all data collections.

## 7.7.2 Quantity and quality controls and payment of the balance

Eurostat applies quantity and quality controls to prevent overspending of the EU budget, as follows:

### 7.7.2.1 QUANTITY CONTROLS

Eurostat recalculates the total costs, the total eligible costs and the EU contribution in the following 3 cases:

#### 7.7.2.1.1 Case 1

**The total costs of a data collection decrease by more than 20% compared to the grant application.**

Please note that only in this case the country should send the revised Excel file "Technical breakdown of estimated real costs" to Eurostat. The revised file includes the updated total costs **for the data collection in question**.

#### 7.7.2.1.2 Case 2

**The final number of records of a data collection decrease by more than 10%** compared to the grant application, or if case 1 above is applicable, compared to the revised file.

Eurostat calculates the final number of records from the dataset as follows:

**CORE:** COUNT \* where (HLD\_FEF=0 and EXTPOL\_FACT1\_CORE is not missing)  
**CORE\_FEF:** COUNT \* where (HLD\_FEF=1 and EXTPOL\_FACT1\_CORE is not missing)  
**LAFO:** COUNT \* where (HLD\_FEF=0 and EXTPOL\_FACT1\_LAFO is not missing)  
**RDEV:** COUNT \* where (HLD\_FEF=0 and EXTPOL\_FACT1\_RDEV is not missing)  
**AHMM:** COUNT \* where ((HLD\_FEF=0 and EXTPOL\_FACT1\_AHMM is not missing and SUM (A2300F, A2300G, A2010, A2120, A2220, A2130, A2230,

<sup>(107)</sup> Core data on the main frame

<sup>(108)</sup> Core data on frame extension

<sup>(109)</sup> Data on module "Labour force and other gainful activities", on the main frame

<sup>(110)</sup> Data on module "Rural development", on the main frame

<sup>(111)</sup> Data on module "Animal housing and manure management", on the main frame

A3110, A3120, A3130, A4100, A4200, A5140, A51100, A5230, A5210, A5220, A5410, A5240\_5300)>0<sup>(112))</sup>

**In case 2, countries should not send the revised Excel file "Technical breakdown of estimated real costs" to Eurostat.**

### 7.7.2.1.3 Case 3

#### The sampling rate for CORE\_FEF exceeds 10%

If for CORE\_FEF, the number of records exceeds 10% of the number of holdings in the population frame (from the grant application or - if case 1 above is applicable - from the revised file), then Eurostat considers the final number of records in the CORE\_FEF as being 10%, except for proper justifications<sup>(113)</sup>.

**In case 3, countries should not send the revised Excel file "Technical breakdown of estimated real costs" to Eurostat.**

### 7.7.2.1.4 Cost recalculation

Eurostat recalculates the total costs for the data collection in question using the final number of records and the already available fixed costs and variable costs per record (from the grant application or, if case 1 above is applicable, from the revised file).

Further on, Eurostat recalculates the total costs over all data collections and - using the available *Share of non-eligible costs* - the total eligible costs over all data collections.

Please note that **the recalculated total eligible costs might not affect the EU contribution:**

$$\begin{aligned} & \text{(Revised) EU contribution following quantity controls} \\ & = \text{MIN} (75\% \times \text{(Revised) Total eligible costs for all data collections,} \\ & \text{The maximum amount set in Regulation (EU)2018/1091}) \end{aligned}$$

## 7.7.2.2 QUALITY CONTROLS

Eurostat calculates the share of the eligible cases not compliant to precision requirements<sup>(114)</sup>, over all data collections, using the dataset. Please see chapter *Precision Requirements*.

In case that share is higher than 10%, Eurostat reduces the (Revised) EU contribution following quantity controls, as indicated in the table below, except for proper justifications<sup>(115)</sup>.

Share of non-compliant eligible cases, over all data collections	Corresponding reduction (%) of the EU contribution
10<p<20%	10%
20≤p<30%	20%
30≤p<40%	30%
40≤p<50%	40%
50≤p<60%	50%
60≤p<70%	60%
70≤p<80%	70%
80≤p<90%	80%
≥90%	90%

<sup>(112)</sup> With at least one of the following: bovine animals, pigs, sheep, goats, poultry according to Regulation (EU) 2018/1091

<sup>(113)</sup> Justifications mentioned in the "Final report on implementation of the action"

<sup>(114)</sup> According to Regulation (EU) 2018/1091

<sup>(115)</sup> Justifications mentioned in the "Final report on implementation of the action"

### 7.7.2.3 CALCULATION OF THE FINAL PAYMENT

Eurostat calculates the final payment (the payment of the balance) as follows:

*Final payment =*

*(Revised)EU contribution following quality controls – the prefinancing amount*

# 8

## Quality reports

### 8.1 Introduction

Regulation (EC) No 223/2009 provides a reference framework for European statistics and requires Member States to comply with the statistical principles and quality criteria specified in that Regulation. Quality reports are essential for assessing, improving and communicating on the quality of European statistics. The ESSC has endorsed a European Statistical System (ESS) standard for Quality Reports Structure, in accordance with Article 12 of Regulation (EC) No 223/2009. That ESS standard should contribute to the harmonisation of quality reporting under Regulation (EU) 2018/1091.

The [Commission Implementing Regulation \(EU\) 2020/405 of 16 March 2020](#) specifies the arrangements for, and contents of, the quality reports to be transmitted under Regulation (EU) 2018/1091 of the European Parliament and of the Council on integrated farm statistics.

### 8.2 Quality reports

Member States shall provide the Commission (Eurostat) with reference metadata in accordance with the Euro SDMX Metadata Structure.

Member States shall provide the required metadata (including quality) in accordance with an exchange standard specified by the Commission (Eurostat). The metadata shall be provided to Eurostat through the single entry point (also known as the [Metadata Handler](#)<sup>(116)</sup>).

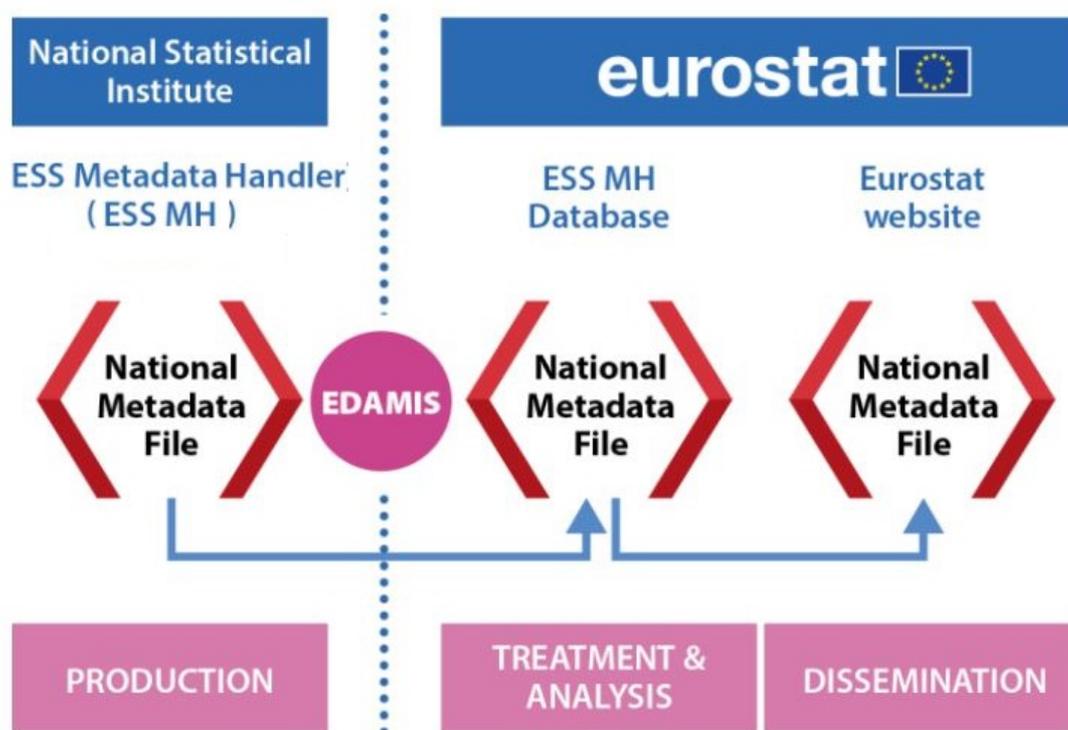
The reports are published on [Eurostat's website](#)<sup>(117)</sup>.

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<sup>(116)</sup> <https://webgate.ec.europa.eu/estat/spe/metaconv/>

<sup>(117)</sup> [https://ec.europa.eu/eurostat/cache/metadata/en/ef\\_esms.htm](https://ec.europa.eu/eurostat/cache/metadata/en/ef_esms.htm)

Figure 67 – High level business process for reporting SDMX compliant reference metadata



## 8.2.1 ESS Standard for Quality Reports

The ESS Standard for Quality Reports Structure (ESQRS) contains the description and representation of statistical metadata concepts to be used for providing detailed information for assessing data quality. The broad concepts used are compatible with the SDMX cross-domain concepts and with the common terminology as published within the SDMX Glossary (2016). The detailed quality concepts are based on the ESS Standard for Quality Reports (ESQR) from 2009.

The ESQRS is addressed to the European Statistical System. It is implemented at Eurostat and at national level: the application of the concepts and sub concepts at European level and at national level are provided in the [ESS Handbook for Quality Reports \(EHQR\) from 2014<sup>\(118\)</sup>](#) and the [ESS Guidelines for the implementation of the ESS Quality and Performance Indicators from 2014<sup>\(119\)</sup>](#).

The [Single Integrated Metadata Structure v2.0<sup>\(120\)</sup>](#) combines both underlying reporting structures (ESMS 2.0 and ESQRS 2.0), and is the standard for quality reporting according to Article 12 of Regulation 223/2009 on European statistics.

## 8.2.2 Report structure

The report structure and guidelines for filling the report can be found on the [Metadata Handler<sup>\(121\)</sup>](#) directly.

<sup>(118)</sup> <https://ec.europa.eu/eurostat/documents/3859598/6651706/KS-GQ-15-003-EN-N.pdf>

<sup>(119)</sup> <https://ec.europa.eu/eurostat/documents/64157/4373903/02-ESS-Quality-and-performance-Indicators-2014.pdf/5c996003-b770-4a7c-9c2f-bf733e6b1f31>

<sup>(120)</sup> <https://ec.europa.eu/eurostat/documents/64157/4373903/SIMS-2-0-Revised-standards-November-2015-ESSC-final.pdf/47c0b80d-0e19-4777-8f9e-28f89f82ce18>

## 8.2.3 Report content details

While completing the quality report take into consideration the following instructions.

### 8.2.3.1 STATISTICAL POPULATION (2.6)

It shall include information on compliance with the minimum requirements for coverage, as laid down in Regulation (EU) 2018/1091.

### 8.2.3.2 SOURCE DATA (3.1)

It shall include information on the administrative sources used, as laid down in Regulation (EU) 2018/1091.

### 8.2.3.3 COMPLETENESS (5.3)

It shall include information on variables with a low or zero prevalence, as laid down in Regulation (EU) 2018/1091.

### 8.2.3.4 SAMPLING ERROR (6.2)

Information shall include the variance estimation method used and the relative standard errors of the estimates as detailed in Annex V of Regulation (EU) 2018/1091.

## 8.3 Transmission method (ESS-MH)

The methodological reports of the national system for Integrated Farms Statistics are submitted by filling the Quality Report template available at the [ESS Metadata Handler](#)<sup>(122)</sup>.

Due to issues encountered in the past, we advise to use Firefox or Google Chrome instead of Internet Explorer for editing your quality report.

### 8.3.1 Logging in with EU Login

Use you EU Login UID and password to access the ESS Metadata Handler.

---

<sup>(121)</sup> <https://webgate.ec.europa.eu/estat/spe/metaconv/>

<sup>(122)</sup> <https://webgate.ec.europa.eu/estat/spe/metaconv/>

Figure 68 – Welcome screen of the ESS Metadata Handler

The EU login is using your email address as a user name. However, access to the ESS MH can currently only be provided using your unique identifier (UID).

This UID usually consists of the first 5 letters of your last name and the first 2 letters of your name, for example: Sarah Anybody -> anybosa.

You can find your UID after logging in to the EU Login

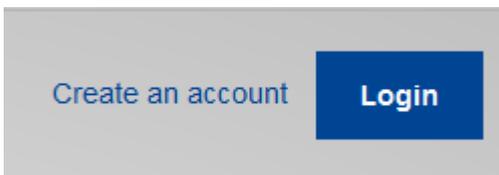
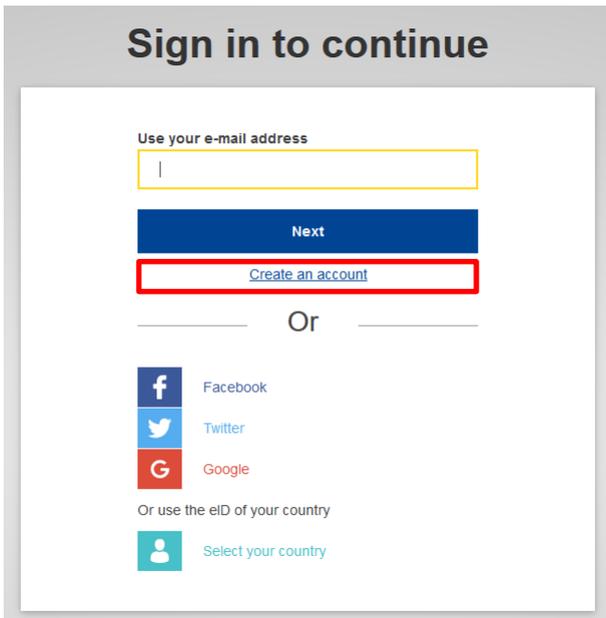
<p>Go to your name on the upper right side of the page and click on the icon next to it</p>	
---------------------------------------------------------------------------------------------	--

<p>Click on 'My Account' and subsequently on "my account details"</p>	 <p><a href="#">My account details</a></p>
<p>Find your UID on the third line of the details provided ("anybosa")</p>	

Please send your EU Login UID to [ESTAT-metadata@ec.europa.eu](mailto:ESTAT-metadata@ec.europa.eu) to be granted access to the ESS MH. Note that no access can be granted without the UID. An email address is not sufficient.

### 8.3.2 Creating an EU Login

If you do not have an EU Login yet, you can create an account

<p>On the top right corner</p>	
<p>Or on the main screen</p>	

### 8.3.3 Editing the metadata handler template

Once you are logged in, you will find your country file prefilled with information from your previous quality report.

Please fill the report as thoroughly as possible.

For many of the concepts used, we have added guidelines, which you can find directly in the Metadata Handler.

Use the 'Edit' button to modify the prefilled answers.	
The (i) button gives access to further guidelines	

Do not forget to save all data entries and submit your final report for validation.

### 8.3.4 Validating the quality report

After validation, your national statistics quality report will be published on the Eurostat public database.

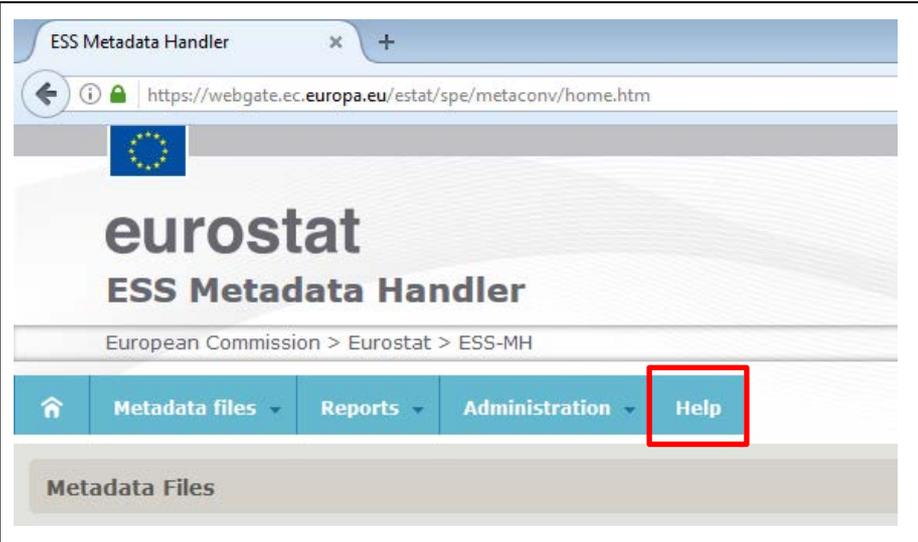
For any information that you do not want to be published, you must tick the appropriate box	<input checked="" type="checkbox"/> <b>Restricted from publication</b>
---------------------------------------------------------------------------------------------	------------------------------------------------------------------------

For further help on the EU Login go to <https://webgate.ec.europa.eu/cas/help.html>.

### 8.3.5 ESS-MH support

Should you experience difficulties with the ESS MH tool, please contact [ESTAT-Metadata@ec.europa.eu](mailto:ESTAT-Metadata@ec.europa.eu).

The general user guide of the ESS-MH can be found on the 'Help' page of the tool



# 9

## Data dissemination

### 9.1 Confidentiality

Regulation (EU) 2018/1091 states that “the Commission is to respect the confidentiality of the data transmitted in line with Regulation (EC) No 223/2009 of the European Parliament and of the Council. The necessary protection of confidentiality of data should be ensured, among other means, by limiting the use of the location parameters to spatial analysis of information and by appropriate aggregation when publishing statistics. For that reason a harmonised approach for the protection of confidentiality and quality aspects for data dissemination should be developed, while making efforts to render online access to official statistics easy and user-friendly”.

#### Regulation (EC) No 223/2009 Article 3

‘Confidential data’ means data which allow a statistical unit (i.e. the person, company or organisation to which the data refers) to be identified, either directly or indirectly, thereby disclosing individual information.

To determine whether a statistical unit is identifiable, account shall be taken of all relevant means that might reasonably be used by a third party to identify the statistical unit.

The risk of a statistical unit being identified is the *only* factor that qualifies data as confidential. It is not important *which* information is disclosed and if this information is sensitive or not.<sup>(123)</sup> In this light, one cannot argue that some variables (e.g. crops, livestock) are less sensitive than others (labour force).

#### 9.1.1 GDPR

On the 8<sup>th</sup> of February 2018 the Directors-General and Presidents of the National Statistical Institutes (NSIs) and of the European Union's statistical authority (Eurostat) met at an informal workshop on the implications of the GDPR in European statistics and the following conclusions were issued:

1. acknowledged the high relevance of the GDPR implementation for the production of high quality official statistics and for maintaining the confidence of the respondents providing personal data for statistical purposes;
2. recognised that in almost all Member States procedures have been initiated to enact

<sup>(123)</sup> *European Business Statistics Manual*, [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=European\\_business\\_statistics\\_manual\\_-\\_Statistical\\_Disclosure\\_Control#SDC\\_rules\\_and\\_methods\\_for\\_tabular\\_data](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=European_business_statistics_manual_-_Statistical_Disclosure_Control#SDC_rules_and_methods_for_tabular_data)

derogations from the data subjects' rights referred to in some or all of the following Articles of the GDPR: 15 (access), 16 (rectification), 18 (restriction) and 21 (objection);

3. agreed that the same derogations should apply across all statistical domains and should not be domain-specific;
4. acknowledged that the NSIs and other statistical authorities (ONAs) are responsible for the protection of all personal data they process, both those collected in the framework of an EU regulation and those collected for purely national interests;
5. noted that appropriate derogations in national law, when granted, could in the most cases be sufficient to effectively address the potential ramifications of the GDPR and the specific needs of the statistical production in each Member State;
6. agreed that, in the interest of harmonising the protection of the data subjects' rights in the field of official statistics, additional uniform derogations at EU level, notably in Regulation 223/2009, could be useful and should be considered once enough experience in the application of the GDPR has been collected; in this respect discussion at expert level should be organised at a later stage;
7. agreed to share experience and best practice in addressing the implications of the GDPR for official statistics at the national level; to this end, a collaborative platform will be created by Eurostat to store and share examples of national provisions and justifications for derogations;
8. emphasised the need to establish constructive dialogue with data protection authorities at national and European level in order to clarify the specificities of statistical production, including a better understanding of statistical methodology and existing safeguards.

## 9.1.2 Data storage and dissemination

To be developed

## 9.1.3 Confidentiality measures for microdata

See 9.5.3 - Scientific use files

## 9.1.4 Confidentiality measures for location

In the presence of geospatial data, disclosure control experts must face a paradox. On the one hand, such data need more protection because they allow more identification, and on the other hand they offer many possibilities for analysis, that users don't want to distort too much by suppressing data.

Disclosure risk is higher when considering geospatial data:

- firstly, because belonging to a geographical area may give information to the intruder about some attributes (e.g. 100 percent of inhabitants of a square are unemployed). This is called categorisation risk, and it increases in the case of spatial data because of Tobler's "first law of geography" which states that "everything interacts with everything, but two close objects are more likely to do so than two distant objects";

- secondly, because of so-called identification risk. Indeed, among the characteristics shared with someone, a common geographic area leads to a higher probability of identifying the person (one probably knows better our neighbour than someone who one shares any other characteristic with). Moreover, identification of addresses has recently become possible with the development of open access tools like Google Street View. As a result, population density is a fundamental predictor of disclosure risk: the lower the density, the higher the disclosure risk. That is why confidentiality thresholds can differ between countries;
- finally, disclosure risk can increase with the geographic differencing issue, when data is disseminated at different levels (hierarchical or not).

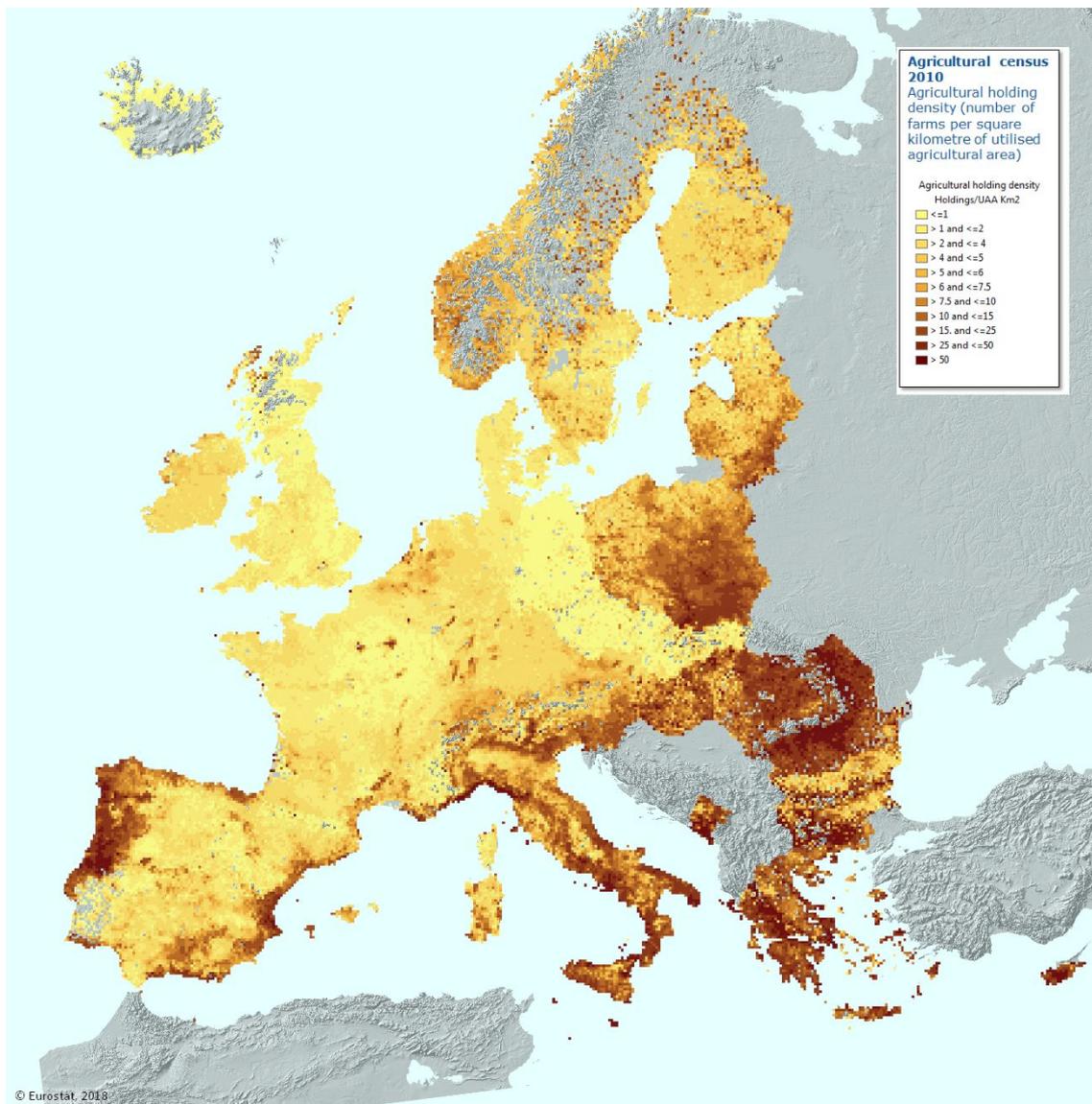
Technically, the dissemination classification (zoning, administrative boundaries, or regular tessellations such as grid squares) is a categorical variable like any another one (an additional dimension of tabular data). It is therefore possible to deal with disclosure risk with no geographical consideration. Nevertheless, a geographically intelligent management of disclosure issues will preserve the underlying spatial phenomenon. A risk-utility compromise has to be made, using relevant distortion indicators (EFGS & Eurostat, 2017).

In the past Eurostat did not publish data at grid level for FSS. Moreover, publication of gridded data is foreseen only for census data as sample survey data is not suited for gridded dissemination.

The risk for identifying holdings by crossing census gridded data with the proposed scientific use files (see 9.5.3 - Scientific use files) is close to zero. This is due to the following facts:

- Gridded information does not include the number of holdings explaining each characteristic. Only aggregated number of holdings is provided
- Gridded information is tabular information; it represents more than one holding; it is therefore treated with the standard method for disclosure control as any other tabulation, using the following algorithm:
  - If the value of the cell is explained by 4 or less holdings, or if more than 85% of the value is explained by 1 or 2 holdings, then the information is not disclosed
  - the minimum value that a user will observe is 10 holdings
  - the minimum observed total data in any variable that is not disclosed in the grids due to disclosure control represents 10% of the total of the variable in the EU (a strict disclosure control algorithm is used)
- The method used for locating the holding has a high uncertainty. It is not guaranteed that the holding is actually located in the grid cell where it is shown. This is due to:
  - Coordinates are rounded to a 10km INSPIRE grid.
  - Holdings are represented as points, while they represent polygons; in the case of big farms, they are present in more than one grid, but only one X,Y coordinate pair represents the holding

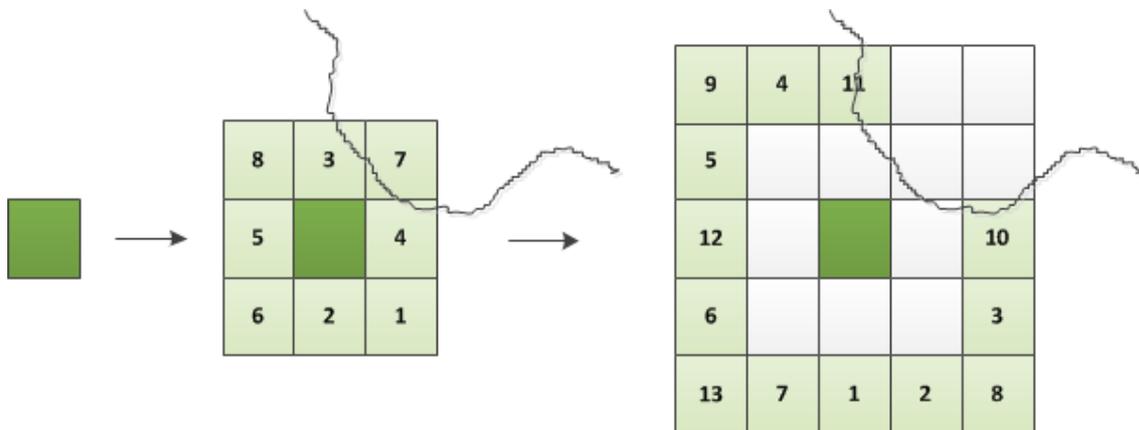
Figure 69 – Agricultural holding density (number of farms per square Km of UAA)



In order to protect the confidentiality in case of very large holdings, when it is possible that only one farm exists in one of the cells of the grid, it will be possible to allocate the position of a farm to the nearest neighbouring cell with at least one other holding. If none of the 8 neighbouring cells (chosen in random order) has at least one other holding, the neighbouring locations have to be extended until a grid cell is located. As much as possible the chosen cell should be such that the location is within the same NUTS3 region of the original cell.

A cell is considered to belong to a NUTS3 region if the lower-left coordinate is inside the polygon that defines the NUTS3 region at the 1:100.000 scale.

Figure 70 – If only one farm at a location, assign it to a random neighbouring cell within the same NUTS3; if still not possible, enlarge the area.



### Multi-resolution grids

Multi resolution grids are represented by a hierarchical structure through two associations. Each *StatisticalGrid* instance can be associated with a lower and/or an upper resolution grid through the *Hierarchical relation* association. A *StatisticalGridCell* belonging to a given *StatisticalGrid* is composed of the overlapping cells its grid's lower resolution grid, and composes the cell it overlaps in its grid's higher resolution grid. Lower and upper *StatisticalGridCells* are associated through the *Hierarchical composition*.

Figure 71 – INSPIRE Grid

EXAMPLE 1 When each grid cell is linked to four grid cells of the lower level, this structure is a quad tree (see Figure 5).

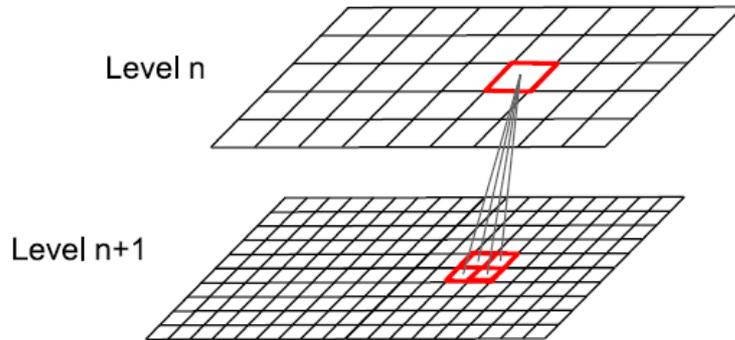


Figure 5 - Example of multi-resolution grid: A quad tree structure

EXAMPLE 2 Figure 6 shows an example of multi-resolution grid. Bigger cells (1 km resolution) are aggregations of 4\*4 smaller cells (250m resolution).

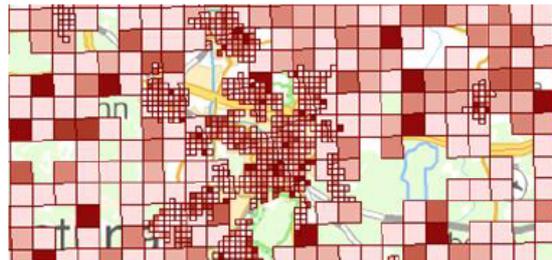


Figure 6 - Example of multi resolution grid: Display from the Swedish geoportal

Source: <https://inspire.ec.europa.eu/id/document/tg/su><sup>(124)</sup>

<sup>(124)</sup> <https://ec.europa.eu/eurostat/documents/64157/4373903/SIMS-2-0-Revised-standards-November-2015-ESSC-final.pdf/47c0b80d-0e19-4777-8f9e-28f89f82ce18>

## 9.1.5 Confidentiality for tabular data

Eurostat disseminates a high number of statistical tables on its website and through specific user requests. All these tabular data are treated for primary confidentiality.

**Primary confidentiality** concerns tabular cell data, whose dissemination would permit attribute disclosure. The two main reasons for declaring data to be primary confidential are: too few units in a cell and dominance of 1 or 2 units in a cell<sup>(125)</sup>. These two reasons have been considered for FSS and are going to be considered for IFS.

The following section presents the procedure used by Eurostat starting with 2020 IFS.

### 9.1.5.1 EUROSTAT PROCEDURE STARTING WITH 2020 IFS

The procedure consists of the following methods:

1. **suppression due to small counts:** suppression of *extrapolated number of holdings* and of *extrapolated aggregated values of variables* describing those holdings;
2. **suppression due to dominance by one or two units:** suppression of *extrapolated number of holdings* and of *extrapolated aggregated values of variables* describing those holdings;
3. **rounding:** all *extrapolated aggregated values of variables* are rounded to the nearest multiple of 10.

The methods are applied in the order indicated above.

A method is applied only if the data have not been already suppressed following the previous method. However if the data have been already suppressed following the previous method, applying the subsequent method should not make any difference to the results.

#### 9.1.5.1.1 Notation

cell $c$	Any category or breakdown in which the records fall following application of one or more dimensions; in case of more dimensions, the cell is formed at the intersection of the dimensions (e.g. NUTS2 regions and economic size of holdings)  <i>In Eurobase tables, the cell is formed at the intersection of the classifying dimensions.</i>
$w_i$	The extrapolation factor (the weight) of holding $i$ in the sample of holdings $n_c$ falling into a specific cell $c$
$x_i$	The value of variable $x$ of the holding $i$ in the sample of holdings $n_c$ falling into a specific cell $c$  $x$ is a quantitative (numeric) variable (e.g. number of hectares of cereals)
A total $Y = \sum_{i=1}^{n_c} w_i x_i$	The extrapolated aggregated value of variable $x$ describing the holdings falling in cell $c$ .

<sup>(125)</sup> Handbook on Statistical Disclosure Control, version 1.2, Jan 2010, [https://ec.europa.eu/eurostat/cros/system/files/SDC\\_Handbook.pdf](https://ec.europa.eu/eurostat/cros/system/files/SDC_Handbook.pdf)

<p>An average:</p> $\bar{Y} = \frac{\sum_{i=1}^{n_c} w_i x_i}{W}$	<p>The majority of indicators published in tables are totals.</p> <p>The formulae at left consider the case of <b>a total</b> and the case of <b>an average</b>.</p> <p><i>In Eurobase tables, the extrapolated aggregated value of a variable is in the dimension 'unit'. This dimension is used for the computation of the indicators.</i></p>
<p>For a total:</p> $W = \sum_{i=1}^{n_c} w_i$ <p>where <math>x_i &gt; 0</math></p> <p>For an average:</p> <ul style="list-style-type: none"> <li>- If the denominator of the average is holdings with <math>x_i &gt; 0</math></li> </ul> $W = \sum_{i=1}^{n_c} w_i$ <p>where <math>x_i &gt; 0</math></p> <ul style="list-style-type: none"> <li>- If the denominator of the average is holdings disregarding whether they have <math>x_i &gt; 0</math> or <math>x_i = 0</math></li> </ul> $W = \sum_{i=1}^{n_c} w_i$	<p>The extrapolated number of holdings in cell <math>c</math>, <b>whose values are contributing to the extrapolated aggregated value of variable <math>x</math></b> for that cell.</p> <p>In the case of a <b>total</b> (<math>Y</math>) a holding value <math>x_i = 0</math> does not contribute to , therefore that holding (and the other holding(s) represented by that holding) are not counted in <math>W</math>.</p> <p>In the case of <b>an average</b> (<math>\bar{Y}</math>), there are two possibilities, depending on the 'definition' of the average <math>\bar{Y}</math>:</p> <ul style="list-style-type: none"> <li>- If the average is computed by using only holdings with <math>x_i &gt; 0</math>, then <math>W</math> is computed as for a total.</li> <li>- If the average is computed by using holdings with <math>x_i &gt; 0</math> and <math>x_i = 0</math>, then <math>W</math> is counting all holdings. This because holdings with <math>x_i = 0</math> contribute (influence) the average.</li> </ul> <p><b><math>W</math> is rounded to 0 decimals.</b></p>
$X_{MAX}$	<p>the highest value <math>x_i</math> (the highest non-extrapolated value) of the holdings falling in cell <math>c</math></p>
$X_{MAX2}$	<p>the second highest value <math>x_i</math> (the second highest non-extrapolated value) of the holdings falling in cell <math>c</math></p> <p><b><math>X_{MAX2}</math> can be equal to <math>X_{MAX}</math></b></p>
$W_{MAX}$	<p>the extrapolation factor (the weight) <math>w_i</math> of <math>X_{MAX}</math></p> <p><b><math>W_{MAX}</math> is rounded to 0 decimals.</b></p>
$W_{MAX2}$	<p>the extrapolation factor (the weight) <math>w_i</math> of <math>X_{MAX2}</math></p> <p><b><math>W_{MAX2}</math> is rounded to 0 decimals.</b></p>
$Y_{MAX}$	<p>the extrapolated value <math>W_{MAX} \times X_{MAX}</math></p>
$Y_{MAX2}$	<p>the extrapolated value <math>W_{MAX2} \times X_{MAX2}</math></p> <p><b><math>Y_{MAX2}</math> can be equal to <math>Y_{MAX}</math></b></p>

The following sections present the procedure for totals, as most indicators are totals.

For averages, the procedure is the same, except that the definition  $W$  should be adjusted to include the holdings whose values are affecting the average (as described in details in the above table).

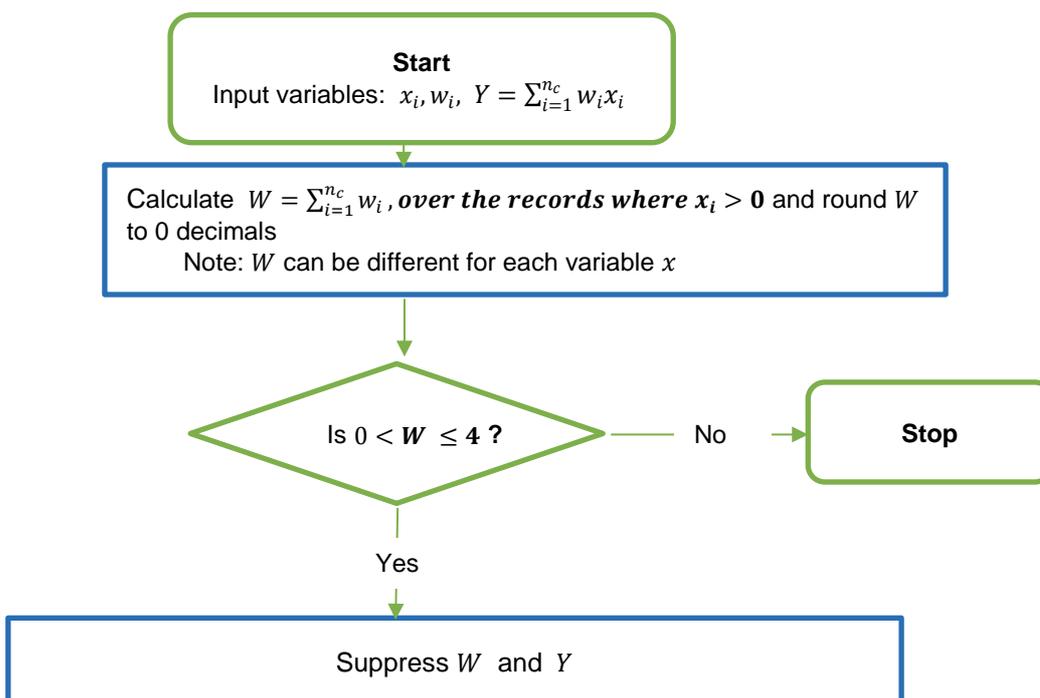
### 9.1.5.1.2 Cell suppression due to small counts

This method is also called "threshold rule" or "frequency rule".

Tables display aggregated values  $Y$  for variables  $x_1, x_2, \dots, x_n$  calculated over certain population cells  $c_1, c_2, \dots, c_n$ . The aggregates are calculated using the extrapolation factors.

For each total  $Y$  (for each aggregated extrapolated value of variable  $x$ ), calculated for a cell  $c$ :

- First, the programme computes the **extrapolated number of holdings** ( $W$ ) which contribute to  $Y$  i.e. which have a non-zero record value for  $x$  and rounds  $W$  to 0 decimals.
- Then, if that extrapolated number of holdings is higher than 0 and lower than or equal to 4, the programme suppresses:
  - the extrapolated number of holdings ( $W$ ) for cell  $c$  (if planned to be disseminated) and
  - the extrapolated aggregated value of variable  $x$  ( $Y$ ) for cell  $c$ .



As can be seen from above, what is evaluated is the pairs: **extrapolated number of holdings** contributing to variable  $X$  and **aggregated extrapolated value** of variable  $X$ . The result of the evaluation is that either both components of the pair are published or both components of the pairs are suppressed. However, tables typically include the total extrapolated number of holdings (with no specific characteristic, such as contributing to or having the variable  $X$  e.g. cultivating cereals where  $X$  is cereals). Also this total extrapolated number of holdings should be suppressed if it is  $> 0$  AND  $\leq 4$ .

The *flag attribution stored process* assigns the standard flag **A** to the suppressed data. In the code list on "confidentiality status" defined by the SDMX Statistical Working Group<sup>(126)</sup>, the flag **A** stands for "Primary confidentiality due to small counts".

Subsequently, the *dissemination stored process* assigns the standard flag **:c** to the suppressed data.

The tables disseminated on Eurostat website and following user requests use only the standard flag **:c**.

#### Example:

Suppose that in the *microdata*, there are 3 sampled holdings (records) belonging to certain NUTS 2 region, farm type and farm size:

Holding identifier	$w_i$ (extrapolation factor)	$x_i$ (cereals)	$y_i = w_i \times x_i$
1	2	430	860
2	3	0	0
3	2	10	20

Using the *microdata*, a *table* displays the aggregated value of several variables for this breakdown (cell). One of the variables is cereals (variable  $x$ ). The total aggregated value for cereals is:

$Y = 860 + 0 + 20 = 880$ . We have to decide whether to disseminate or suppress this value.

Only 2 sampled holdings cultivate cereals.

Let's calculate  $W = 2 + 2 = 4$ . Only 4 population holdings contribute to the total  $Y = 880$  of the cell.

As  $W = 4$ , the value  $Y = 880$  is suppressed and flagged confidential in the table.

If the extrapolated number of holdings with cereals ( $W = 4$ ) is planned to be disseminated in the table, this number is also suppressed and flagged confidential.

#### Remarks:

- *The method suppresses data when the number of holdings in the population is less than or equal to 4 compared to other domains where the suppression is applied when that number is less than or equal to 3. This would overprotect the data in our domain.*
- *The method suppresses data depending on the extrapolated number of holdings and not on the number of holdings in the sample.*

The reason is that the data are about the population in the cell and the purpose is to protect the population data in the cell. Users do not know how many units are in the sample of the cell and the sample size is not important, because the data concerns the population of the cell. If for example, 3 sampled holdings with flowers represent 20 population holdings with flowers in the cell, then the method does not protect the total number of hectares of flowers which is associated to the 20 holdings (the threshold is 4 and 20 is higher than 4).

The method does not and should not unnecessarily protect the data (which can occur for a high number of population holdings when there is a low number of sampled holdings).

<sup>(126)</sup> [http://sdmx.org/wp-content/uploads/CL\\_CONF\\_STATUS\\_v1\\_1\\_26-6-2014.doc](http://sdmx.org/wp-content/uploads/CL_CONF_STATUS_v1_1_26-6-2014.doc)

- *The method suppresses data depending on the number of holdings that **contribute** to the aggregated value (for totals, having a nonzero value) of a variable in a cell.*

In the above numeric example, 7 population holdings fall in a certain breakdown, but only 4 population holdings of that breakdown cultivate cereals. The method protects the total number of hectares of cereals associated to the 4 holdings with cereals.

The table may be designed to display 7 population holdings in the cell or 4 population holdings with cereals in the cell, depending for example on whether the table covers only the holdings cultivating cereals or additionally covers other aspects of agriculture. If the table is designed to display 4 as number of holdings with cereals, this number is suppressed.

It is noted that even if  $x$  is defined as a quantitative variable, the treatment implicitly covers also for variables which are counts (number of holdings with certain variables higher than 0 e.g. cereals).

### 9.1.5.1.3 Cell suppression due to dominance by one or two units

This method is also called "**dominance rule**".

In agricultural statistics, the distribution of a variable is often skewed: big farms are fewer than small farms and within a particular cell, 1 or 2 farms might be dominant. This would make it easy to disclose the information on the dominant farm with a high level of accuracy. That is why cells with dominant farms are confidential.

For each total  $Y$  (for each aggregated extrapolated value of variable  $x$ ), calculated for a cell  $c$ :

- First, the programme computes the **extrapolated number of holdings** ( $W$ ) which contribute to  $Y$  (i.e. which have a non-zero record value for  $x$ ) and rounds  $W$  to 0 decimals;
- Then, if that extrapolated number of holdings is less than 10, the programme:
  - sorts the records by the values  $x_i$ , names the highest value  $x_i$  by  $X_{MAX}$ , its corresponding weight by  $W_{MAX}$ , the second highest value by  $X_{MAX2}$  and its corresponding weight by  $W_{MAX2}$
  - rounds  $W_{MAX}$  and  $W_{MAX2}$  to 0 decimals
  - and
  - if

$$[ ( X_{MAX} \times W_{MAX} \text{ where } W_{MAX} \leq 2 )$$

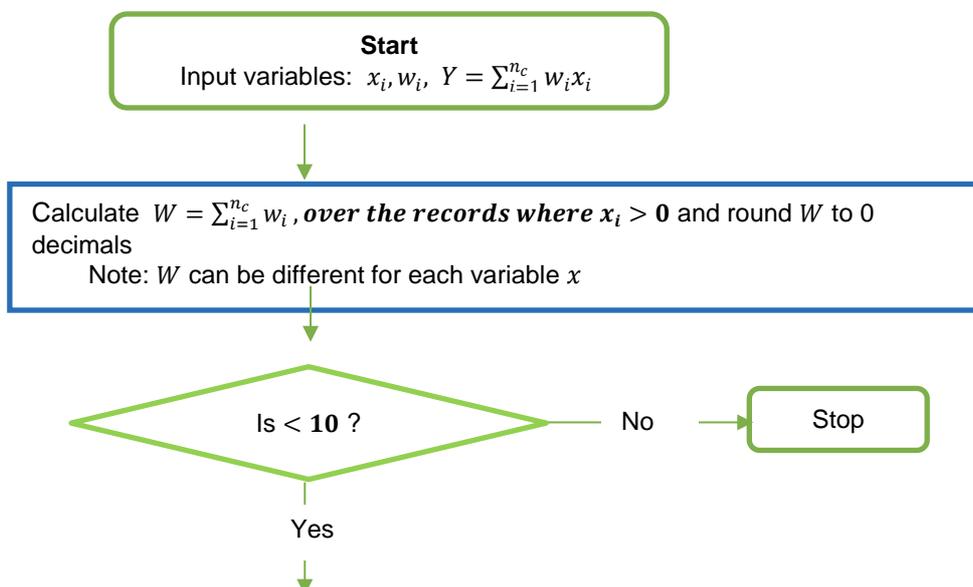
OR

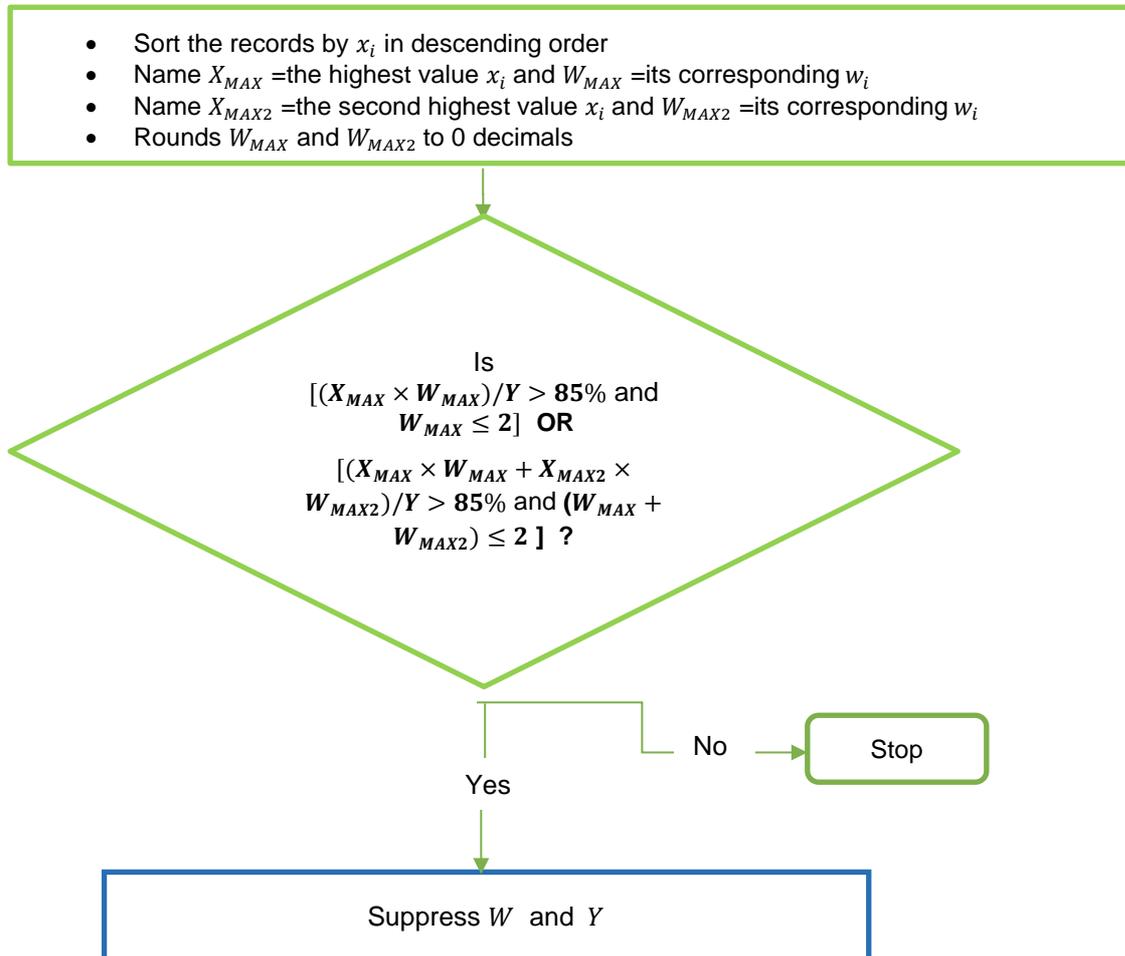
$$( X_{MAX} \times W_{MAX} + X_{MAX2} \times W_{MAX2} \text{ where } W_{MAX} + W_{MAX2} \leq 2 ) ]$$

represents more than 85% of the extrapolated aggregated value of that cell ( $Y$ ),

then the programme suppresses:

- the extrapolated number of holdings ( $W$ ) for cell  $c$  (if planned to be disseminated) and
- the extrapolated aggregated value of variable  $x$  ( $Y$ ) for cell  $c$ .





The *flag attribution stored process* assigns the standard flag **T** to the suppressed data. In the code list on "confidentiality status" defined by the SDMX Statistical Working Group<sup>(127)</sup>, the flag **T** stands for "Primary confidentiality due to dominance by two units". This code lists an additional flag **O** which stands for "Primary confidentiality due to dominance by one unit". However in our domain we do not make the distinction: we use a single flag **T** for dominance by one unit and for dominance by two units.

Subsequently, the *dissemination stored process* assigns the standard flag **:c** to the suppressed data.

The tables disseminated on Eurostat website and following user requests use only the standard flag **:c**.

<sup>(127)</sup> [http://sdmx.org/wp-content/uploads/CL\\_CONF\\_STATUS\\_v1\\_1\\_26-6-2014.doc](http://sdmx.org/wp-content/uploads/CL_CONF_STATUS_v1_1_26-6-2014.doc)

**Example 1:**

Suppose that in the *microdata*, there are 3 sampled holdings (records) belonging to a specific NUTS 2 region, farm type and farm size:

Holding identifier	$w_i$ (extrapolation factor)	$x_i$ (cereals)	$y_i = w_i \times x_i$
1	2	430	860
2	3	40	120
3	2	10	20

Using the microdata, a *table* displays the aggregated value of several variables for this breakdown (cell). One of the variables is cereals (variable  $x$ ). The total aggregated value for cereals is:

$$Y = 860 + 120 + 20 = 1000$$

There are clearly two dominant farms which together account for more than 85% of the total 1 000, and the cell is expected to be confidential.

Let's calculate  $W = 2 + 3 + 2 = 7$ . As  $W < 10$ , we continue:

$$X_{MAX} = 430, W_{MAX} = 2$$

$$X_{MAX2} = 40, W_{MAX2} = 3$$

The condition  $[(X_{MAX} \times W_{MAX})/Y > 85\% \text{ and } W_{MAX} \leq 2]$  is met so the value  $Y = 1000$  is suppressed and flagged confidential in the table.

If the extrapolated number of holdings ( $W = 7$ ) is planned to be disseminated in the table, this number is also suppressed and flagged confidential.

**Example 2:**

Suppose that in the *microdata*, there are 3 sampled holdings (records) belonging to a specific NUTS 2 region, farm type and farm size:

Holding identifier	$w_i$ (extrapolation factor)	$x_i$ (cereals)	$y_i = w_i \times x_i$
1	0.6	300	180
2	1.4	200	280
3	5.0	30	150

The first sampled holding has the weight lower than 1 because of calibration.

Using the microdata, a *table* displays the aggregated value of several variables for this breakdown (cell). One of the variables is cereals (variable  $x$ ). The total aggregated value for cereals is:

$$Y = 180 + 280 + 150 = 610$$

Let's calculate  $W = 0.6 + 1.4 + 5.0 = 7$ . As  $W < 10$ , we continue:

$$X_{MAX} = 300, W_{MAX} = 0.6$$

$$X_{MAX2} = 200, W_{MAX2} = 1.4$$

None of the conditions  $[(X_{MAX} \times W_{MAX})/Y > 85\% \text{ and } W_{MAX} \leq 2]$  and  $[(X_{MAX} \times W_{MAX} + X_{MAX2} \times W_{MAX2})/Y > 85\% \text{ and } (W_{MAX} + W_{MAX2}) \leq 2]$  is fulfilled. The conditions related to the weights are fulfilled in both cases but the conditions related to the 85% thresholds are not fulfilled in any case. So the data are not suppressed and not flagged as confidential.

**Remarks:**

- The method suppresses data depending on the extrapolated number of holdings and not on the number of holdings in the sample.
- The reason is that the data are about the population in the cell and the purpose is to protect the population data.
- The method is applied only when the extrapolated number of holdings is less than 10.
- For example, if 12 holdings contribute, but only 2 of them have a substantial contribution (over 85%) to the aggregate value of a cell, the aggregate value is not suppressed. It is not clear why as one of the first 2 largest holdings can deduct the value of the other large holding with a certain margin.
- The condition might have been introduced for the practical reason that it reduces calculation time. It should not make a big difference in the numbers of cells identified as confidential.
- From Example 2, it is noted that while  $X_{MAX}$  is associated to the first holding, the corresponding extrapolated value  $Y_{MAX} = W_{MAX} \times X_{MAX}$  is not the highest  $y_i$ .  $y_i$  is the highest for the second holding. It depends on the weights. Therefore,  $Y_{MAX}$  is not necessarily the highest  $y_i$ .

*For the identification of the dominant farms, the method considers the highest value  $x_i$  (and not the highest value  $y_i$ ) because  $x_i$  is the value at unit (farm) level (it is  $x_i$  that serves to identify the most dominant single farms).*

- The dominance rule identifies as confidential those cases where the sum of the extrapolation factors is less than or equal to 2. Let's suppose that in a cell, the extrapolation factor attached to the highest value (let's say 100) is higher than 2, let's say 3. So there are 3 holdings with the highest value in the population: 100, 100, 100. This situation is not identified by the dominance rule to need protection (since 3 is higher than the threshold 2). However there is no need of a protection, because 2 values (100 and 100) cannot account together for more than 85% of the total of the cell, because there is at least the third same value 100 contributing to the cell. So the first two values can account at most for 66.7%, and never more than 85% of the total of the cell. In addition, if the weights are higher the sampling errors are typically higher and there is additional 'perturbation' of the true value because of sampling errors. Moreover, the users do not know which holdings were included in the sample and which ones provided the data.
- Weights can be slightly higher than 1. For instance the largest has value 100 and weight 1.1 and the second largest has value 100 and weight 1.2. The estimated value for these two units (230) is over 85% of the total cell value of let's say, 260. In this case protection is needed, as they will probably represent only 2 holdings in the population (and not 3). That is why  $W_{MAX}$  and  $W_{MAX2}$  are rounded to 0 decimals, as mentioned in the **Notation** section. After they are rounded to 0 decimals, the condition  $(W_{MAX} + W_{MAX2}) \leq 2$  is met.

#### 9.1.5.1.4 Rounding

Where not suppressed in the previous steps:

- the extrapolated number of holdings in cells remains unchanged, and
- the extrapolated aggregated values of all variables in cells are rounded to the nearest multiple of 10.

#### 9.1.5.2 OVERALL ASSESSMENT OF THE PROCEDURE AND POSSIBLE IMPROVEMENTS

The procedure generally ensures a good data treatment related to primary confidentiality.

However there are some specific issues which can be improved. The following table presents the problems identified, the possible improvements and the current analysis and proposals.

Table 17 – Problems, possible improvements and proposals for application of primary confidentiality

Problem description	Possible improvement	Analysis / Proposal
<p>The procedure suppresses data when the number of holdings in the population is less than or equal to 4 compared to other domains where the suppression is applied when that number is less than or equal to 3.</p> <p>When the extrapolated number of holdings is in the interval [3; 4], the data is overprotected, as the risk of a holding (knowing its contribution and the total of a cell) to derive the other individual contributions is not realistic, except maybe if that holding is part of an enterprise operating more holdings.</p>	<p>No longer suppress data when the extrapolated number of holdings is in the interval [3; 4].</p>	<p>This improvement can be easily applied.</p>
<p>Data rounding causes inconsistencies (sums do not add up to totals). The reason is that rounding is applied to individual cells and totals in independent way. Totals on rows or columns are not calculated as the sum of the cells concerned.</p>	<p>To render the totals consistent with the sums of cells, a possible solution is the implementation of <i>controlled rounding</i> (using Tau-Argus). This involves rounding the tabular data to a pre-specified base while ensuring additivity of totals.</p>	<p>The <i>controlled rounding</i> procedure causes loss of accuracy in individual cells, by trying to maintain accuracy of totals. It might therefore be more appropriate to instead limit to warn users that cells do not add up to totals because of cells' data rounding (and suppression).</p>
<p>Knowing its own contribution and the total of a cell, the second largest contributor can estimate the minimum and maximum value of the first larger contributor.</p> <p>The minimum value of the first largest contributor is the value of the second largest contributor while the maximum value of the first largest contributor is the difference between the total and the second largest contributor.</p>	<p>A solution is applying the <i>p% rule</i>, according to which a cell is safe if the cell total minus the two largest contributors exceeds p% of the largest. This rule gives sufficient uncertainty that the second largest contributor cannot determine the size of the largest contributor.</p>	<p>It has to be assessed whether this rule provides some value added (if any), considering the very small likelihood of the risk of this disclosure in our domain, but also considering the dominance rule already in place (which is a concentration rule as the <i>p% rule</i>).</p>

Problem description	Possible improvement	Analysis / Proposal
A suppressed cell can be recalculated with some margin by the difference between the total and the sum of the other cells.	A solution is applying <i>secondary confidentiality</i> . Secondary confidentiality is treating a non-confidential cell as confidential, to prevent disclosure of a confidential cell, by making it impossible for a user to recalculate the values of confidential cells.	Secondary confidentiality would need to be implemented for multiple tables at the same time. It is not clear that this is technically possible and feasible

### Limitations to the application of secondary confidentiality

As mentioned in Table 17, secondary confidentiality would need to be implemented for several tables at the same time. This may not be feasible, considering:

- the numerous tables disseminated on Eurostat website and through ad-hoc requests;
- that the whole publication programme should be reviewed in an integrated way. When a new table is created, the other tables need updating.
- the suppression of cells should have the same pattern for different reference periods. A value for a confidential cell from other reference periods is usually a good basis for estimating and therefore disclosing data.

It is to be noted that:

- The rounding to the nearest multiple of 10 would prevent recalculation of the exact values to some extent.
- When data are estimated from a sample, estimated values deviate from the true values, which would additionally prevent recalculation of the exact values to some extent.

Eurostat made an analysis of the possibility for recalculations and found in 1993 that<sup>(128)</sup>:

- most of the derived values are not reliable; there are negative solutions and solutions outside an interval of  $\pm 50\%$  in relation to the true value;
- a few derivations come very close to the real value.

It was concluded not to suppress data in cells, because *"the procedure involves iterations of treatment of derivation while no possibility of derivation can be realistically excluded. It also entails loss of data involving no risk of disclosure"*.

Besides the methods already implemented (suppression, rounding) or discussed in the above table, there are other methods e.g. table redesign (collapsing rows/columns), controlled tabular adjustment (selectively adjust cell values: unsafe cells are replaced by either of their closest safe values; other cell values are adjusted to restore additivity), perturbation (add random noise to cell values).

Application of methods have pros and cons. For deciding on the most suitable solution, a balance has to be struck between confidentiality and reliability i.e. to which point the confidentiality treatment is effective and does not jeopardize the accuracy and usability of the results, unnecessarily.

<sup>(128)</sup> Eurostat (1993). Working Party "Statistics of the structure of agricultural holdings of the Agricultural Statistical Committee". Meeting on 14 and 15 January 1993, Luxembourg

### 9.1.5.3 CHANGES OF THE PROCEDURE COMPARED TO PREVIOUS FSS

#### 9.1.5.3.1 IFS 2020 compared to FSS 2016

Until 2017/FSS 2016, the confidentiality treatment included specific methods related to cell suppression due to small counts and due to dominance by one or two units for the data from United Kingdom, as described below.

General method	Specific method for United Kingdom
<b>Cell suppression due to small counts</b>	
The general method evaluates if the extrapolated number of holdings ( $W$ ) which contribute to $Y$ (i.e. which have a non-zero record value for $Y$ ) is less than or equal to 4.	The specific method evaluates if the sampled number of holdings which contribute to $Y$ (i.e. which have a non-zero record value for $Y$ ) is less than 3.
<b>Cell suppression due to dominance by one or two units</b>	
The general method evaluates if the extrapolated number of holdings ( $W$ ) which contribute to $Y$ (i.e. which have a non-zero record value for $Y$ ) is less than 10.	The specific method evaluates if the extrapolated number of holdings ( $W$ ) which contribute to $Y$ (i.e. which have a non-zero record value for $Y$ ) is less than 50.

Starting with 2017/IFS 2020, the general method has been applied to all countries, including United Kingdom.

#### 9.1.5.3.2 FSS 2016 compared to FSS 2013

##### Suppression vs “0” values

Until FSS 2013, the data in confidential cells were not suppressed but replaced with 0. Users could not distinguish between a real “0” and a confidential value and related to that, also had difficulties to understand why sums of cells did not match the totals.

Starting with FSS 2016, the data in confidential cells have been suppressed and flagged as confidential.

##### Cell suppression due to small counts

Until FSS 2013, for those cells where the extrapolated number of holdings ( $W$ ) which contribute to  $Y$  was 5, 6, 7, 8 or 9,  $W$  was replaced with either 0 or 10, based on a pseudo-probabilistic method. When  $W$  was replaced with 0,  $Y$  was also replaced with 0.

Starting with FSS 2016, this additional confidentiality treatment was dropped because:

- The data had been overprotected
- The average value of some variables (calculated by users considering the disseminated  $W$ ) was misleading.

## 9.2 Codes in data dissemination

As much as possible, the codes which are used for data collection are also used in data dissemination. But there are many cases where exceptions need to be applied. For example, the term sole holder holding is replaced by "natural person" in the disseminated data, and instead of legal type or legal personality, the term chosen for dissemination was "legal form".

## 9.3 Calculation of EU aggregates

### 9.3.1 Irrigable areas

For dissemination purposes, it is assumed that areas under glass or high accessible cover are irrigated and therefore are aggregated to the total irrigable area (only outdoor area is collected under "total irrigable area").

## 9.4 Preparation of dissemination products

### 9.4.1 Computational strata (for variance estimation)

In the cases where a country stratifies the sample by (for example) size class (using the standard output), and within each size class, the country uses systematic sampling by ordering the holdings by UAA, then Eurostat defines the "computational strata" by pairing the holdings considering their order (by UAA) within each original strata constructed by size class, ensuring that each "computational stratum" has at least two holdings.

The relation between original strata and 'computational' strata is one to many.

The "computational strata" are recorded in a dataset field, additionally to the original strata field.

## 9.5 Production of dissemination products

### 9.5.1 Standard output

The [Farm Accountancy Data Network](#)<sup>(129)</sup> (FADN) aims at evaluating the income of agricultural holdings and the impacts of the Common Agricultural Policy (CAP). The services responsible in the Union for the operation of the FADN [collect](#) every year accountancy data from a sample of the agricultural holdings in the European Union. The Commission does not directly [collect data](#) itself, but Eurostat collects the Standard Output Coefficients (SOC) defined under the legal acts of FADN. The Commission Implementing Regulation (EU) 2015/220 lays down rules for the application of Council Regulation (EC) No 1217/2009 setting up a network for the collection of accountancy data on the incomes and business operation of agricultural holdings in the European Union and it is supplemented by Commission Delegated Regulation (EU) No 1198/2014

<sup>(129)</sup>

[http://ec.europa.eu/agriculture/rca/diffusion\\_en.cfm?VersionGENTF=11990&VersionTF8=11990&VersionTF14=11990&VersionSIZECLAS=14609&VersionES6=11990#sg](http://ec.europa.eu/agriculture/rca/diffusion_en.cfm?VersionGENTF=11990&VersionTF8=11990&VersionTF14=11990&VersionSIZECLAS=14609&VersionES6=11990#sg)

of 1 August 2014 (namely the thresholds, reference period, types of farming and collection of accountancy data).

### 9.5.1.1 STANDARD OUTPUT COEFFICIENTS

The **standard output coefficient**<sup>(130)</sup> of an agricultural product (crop or livestock), abbreviated as SOC, is the average monetary value of the agricultural output at farm-gate price, in euro per hectare or per head of livestock.

There is a regional SO Coefficient (SOC) for each product, which is calculated as an average value over a reference period (5 years, except for the SOC 2004 which was calculated using the average of 3 years). The sum of all the standard output coefficients multiplied by (respectively) hectare of crop and head of livestock in a farm is a measure of its overall economic size, expressed in euro.

Standard output coefficients are made publicly available [online](#)<sup>(131)</sup>.

For the present campaign (2020) Standard Output Coefficients calculated on an average of 5 years (2015 to 2019) will be used. These are subject to a separate data collection (SOC2017).

Figure 72 – Standard Output Coefficient timetable

		Reference data																																		
		Typology	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026		
IFS	2026	SO																																		
	2023	SO																																		
	2020	SO																																		
	2016	SO																																		
FSS	2013	SO																																		
	2010	SO																																		
	2007	SO																																		
	2007	SGM																																		
	2005	SO																																		
	2005	SGM																																		
	2003	SO																																		
	2003	SGM																																		
	2000	SO																																		
	2000	SGM																																		

2013 and 2010 data and recalculation of 2007 and 2005 data with SO coefficients  
 Historical data SGM and typology calculated with SGM coefficients

According to the FADN legislation, once every 10 years, when the farm structure survey is carried out in the form of a census, the basic data for determining the SO coefficients shall be renewed on the basis of the direct observation method (meaning that more detailed data is collected). This is relevant for SOC2017 which will be applied to the IFS2020 data.

### 9.5.1.2 STANDARD OUTPUT

Eurostat calculates the values of Standard Output using the farm structure data. Standard output is in turn used to determine the “farm type” and “economic size”.

## 9.5.2 Farm type

Once again the FADN legislation<sup>(132)</sup> is the base for the rules for calculating the farm types, but the processing is done by Eurostat.

<sup>(130)</sup> [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Standard\\_output\\_\(SO\)](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Standard_output_(SO))

<sup>(131)</sup> [https://ec.europa.eu/eurostat/c/portal/layout?p\\_l\\_id=6764354&p\\_v\\_l\\_s\\_g\\_id=0](https://ec.europa.eu/eurostat/c/portal/layout?p_l_id=6764354&p_v_l_s_g_id=0)

<sup>(132)</sup> Commission Implementing Regulation (EU) 2015/220 lays down rules for the application of Council Regulation (EC) No 1217/2009 setting up a network for the collection of accountancy data on the incomes and business operation of agricultural holdings in the European Union and it is supplemented by

The typology is used as a variable for dissemination of data (for example: area, livestock, labour force and standard output per type of farming).

### 9.5.3 Scientific use files

According to [Commission Regulation \(EU\) No 557/2013<sup>\(133\)</sup>](#) regarding access to confidential data for scientific purposes, scientific use files are files to be used for scientific purposes, to which methods of statistical disclosure control have been applied, in order to reduce the risk of identification of statistical unit to an appropriate level, in accordance with the current best practices. According to this definition, the risk of identification of a single unit is reduced, but not completely eliminated.

Farm Structure Survey data is specific because the identification of the holdings on the basis of its production is relatively easy. The type of production is usually visible (crops growing, elevation of cows etc.). The focus of anonymisation is on limiting the additional information that the researchers will get on holdings in scientific use files. On the other hand agricultural production change over time (especially crops production) and the identification of holdings after 2, 3 or 5 years can be difficult or even misleading.

The users of the scientific use files are researchers. They do not use the data to get information about individual holdings but to draw general conclusions. The researchers go through the eligibility procedure to get access to the data. Their organisations have to be recognized as research entities and their projects validated by Eurostat and national statistical institutes. The researchers sign several commitments where it is stated that "they will not attempt to identify any individual record (individual, household, business etc.) in the dataset, or claim to have done so". They also commit to "preserve the confidentiality of information pertaining to identifiable individuals, households and/or organisations that are recorded in the dataset". Additional safeguards are signed at the level of research entities.

The approach for treatment was agreed in the FSS WG 2018.

## 9.6 Dissemination of tabular data

Tables published by Eurostat are [available online<sup>\(134\)</sup>](#).

Data for farm structure is available under the Agriculture, forestry and fisheries theme.

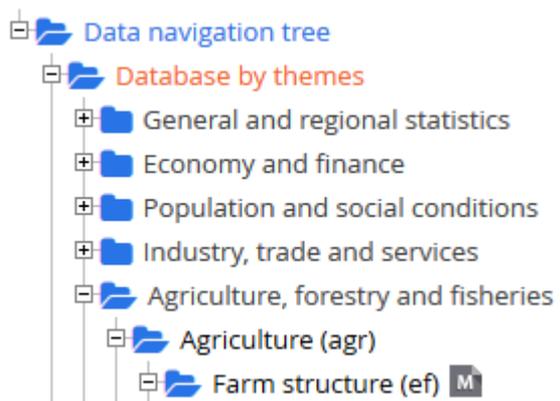
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Commission Delegated Regulation (EU) No 1198/2014 of 1 August 2014 (namely the thresholds, reference period, types of farming and collection of accountancy data)

<sup>(133)</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32013R0557&from=EN>

<sup>(134)</sup> <https://ec.europa.eu/eurostat/data/database>

Figure 73 – Navigation tree on Eurostat database showing the farm structure (ef) theme

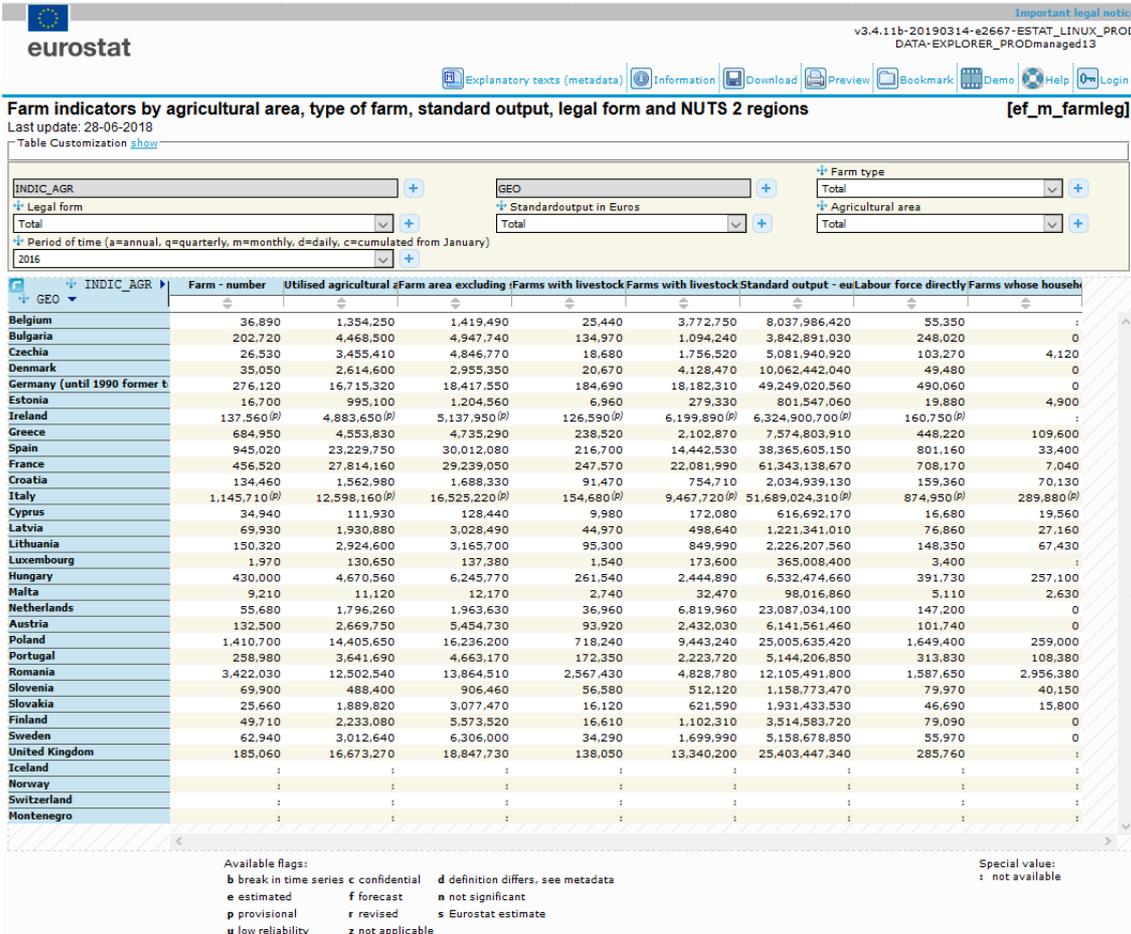




A number of buttons allows access to different views of the information

	Access the data explorer
	Download the complete (compressed) table in TSV (tab separated values) format
	Access information on the leaf
	Access to explanatory texts (metadata)

Figure 75 – General aspect of a table on the data explorer



The screenshot shows the Eurostat data explorer interface. At the top, there is the Eurostat logo and navigation links for Explanatory texts (metadata), Information, Download, Preview, Bookmark, Demo, Help, and Login. The main title is "Farm indicators by agricultural area, type of farm, standard output, legal form and NUTS 2 regions" with the code [ef\_m\_farmleg]. Below the title, there are filters for "INDIC\_AGR" (Legal form), "GEO" (Standard output in Euros), and "Farm type" (Total, Agricultural area). The "Period of time" is set to 2016. The table below shows data for various countries, including Belgium, Bulgaria, Czechia, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden, and United Kingdom. The columns include Farm - number, Utilised agricultural area, Farm area excluding, Farms with livestock, Standard output - eu, Labour force directly, and Farms whose househ.

GEO	INDIC_AGR	Farm - number	Utilised agricultural area	Farm area excluding	Farms with livestock	Standard output - eu	Labour force directly	Farms whose househ
Belgium		36.890	1,354,250	1,419,490	25,440	3,772,750	8,037,986,420	55,350
Bulgaria		202,720	4,468,500	4,947,740	134,970	1,094,240	3,842,891,030	248,020
Czechia		26,530	3,455,410	4,846,770	18,680	1,756,520	5,081,940,920	103,270
Denmark		35,050	2,614,600	2,955,350	20,670	4,128,470	10,062,442,040	49,480
Germany (until 1990 former t		276,120	16,715,320	18,417,550	184,690	18,182,310	49,249,020,560	490,060
Estonia		16,700	995,100	1,204,560	6,960	279,330	801,547,060	19,880
Ireland		137,560 (p)	4,883,650 (p)	5,137,950 (p)	126,590 (p)	6,199,890 (p)	6,324,900,700 (p)	160,750 (p)
Greece		684,950	4,553,830	4,735,290	238,520	2,102,870	7,574,803,910	448,220
Spain		945,020	23,229,750	30,012,080	216,700	14,442,530	38,365,605,150	801,160
France		456,520	27,814,160	29,239,050	247,570	22,081,990	61,343,138,670	708,170
Croatia		134,460	1,562,980	1,688,330	91,470	754,710	2,034,939,130	159,360
Italy		1,145,710 (p)	12,598,160 (p)	16,525,220 (p)	154,680 (p)	9,467,720 (p)	51,689,024,310 (p)	874,950 (p)
Cyprus		34,940	111,930	128,440	9,980	172,080	616,692,170	16,680
Latvia		69,930	1,930,880	3,028,490	44,970	498,640	1,221,341,010	76,860
Lithuania		150,320	2,924,600	3,165,700	95,300	849,990	2,226,207,560	148,350
Luxembourg		1,970	130,650	137,380	1,540	173,600	365,008,400	3,400
Hungary		430,000	4,670,560	6,245,770	261,540	2,444,890	6,532,474,660	391,730
Malta		9,210	11,120	12,170	2,740	32,470	98,016,860	5,110
Netherlands		55,680	1,796,260	1,963,630	36,960	6,819,960	23,087,034,100	147,200
Austria		132,500	2,669,750	5,454,730	93,920	2,432,030	6,141,561,460	101,740
Poland		1,410,700	14,405,650	16,236,200	718,240	9,443,240	25,005,635,420	1,649,400
Portugal		258,980	3,641,690	4,663,170	172,350	2,223,720	5,144,206,850	313,830
Romania		3,422,030	12,502,540	13,864,510	2,567,430	4,828,780	12,105,491,800	1,587,650
Slovenia		69,900	488,400	906,460	56,580	512,120	1,158,773,470	79,970
Slovakia		25,660	1,889,820	3,077,470	16,120	621,590	1,931,433,530	46,690
Finland		49,710	2,233,080	5,573,520	16,610	1,102,310	3,514,583,720	79,090
Sweden		62,940	3,012,640	6,306,000	34,290	1,699,990	5,158,678,850	55,970
United Kingdom		185,060	16,673,270	18,847,730	138,050	13,340,200	25,403,447,340	285,760
Iceland		:	:	:	:	:	:	:
Norway		:	:	:	:	:	:	:
Switzerland		:	:	:	:	:	:	:
Montenegro		:	:	:	:	:	:	:

Available flags: b break in time series c confidential d definition differs, see metadata e estimated f forecast n not significant p provisional r revised s Eurostat estimate u low reliability z not applicable Special value: ! not available

## 9.7 Interpretation of results

To be developed



# Annex I

## Code lists

For the latest version of the codelists please consult the SDMX registry

## Variables to modules / topics / detailed topics

## Annex II

### Statistical allocation of common land

At the Farm Structure Working Group in October 2017 Eurostat proposed that the utilised agricultural area from the common land units could be allocated to the agricultural holdings and subsequently these common land units would be removed from data dissemination.

The recommended method suggests an allocation done proportionally on the basis of the grazing livestock at the lowest geographical level available in the records (for both common land units and agricultural holdings). This would allow that:

- The common land area will be included in area totals and breakdowns.
- The common land units will not be counted in the number of holdings as they are artificial units.
- The average size of holdings and other indicators will have reduced bias.

NSI would be better placed than Eurostat to do the allocation. They might have better information regarding which agricultural holdings have sent livestock to graze on common land in the same geographical area. In the absence of this information, countries or Eurostat can do the allocation to all agricultural holdings with cattle, sheep, goats and equidae in the geographical area of the common land unit.

Below you will find an example on how to allocate common land recorded under common land units to the relevant agricultural holdings, proportionally on the basis of the livestock (bovine, sheep, goats, swine and poultry) in the case of a sample survey. The allocation in case of a sample survey is less intuitive than in the case of a census because of the need to use weights.

The example also illustrates the change in the average area when the proposal is implemented as compared to the situation when common land units are kept in the records.

#### STATISTICAL ALLOCATION

The example is given for a very reduced number of common land units and agricultural holdings and for only one variable - utilised agricultural area (UAA), but the procedure is the same for large numbers of common land units and agricultural holdings and for the other variables.

##### Step 1

Identify the lowest geographical level available in the records for which user agricultural holdings can send livestock to graze on common land.

##### Step 2

Group the records by the identified geographical level.

##### Step 3

Calculate the weighed UAA that is going to be allocated to the agricultural holdings of the same group / geographical area.

The example table below considers a group where there are 3 common land units (calculated values are presented in **green**).

Holding ID	Legal personality	Weighting factor 1	UAA (ha)	Weighted UAA (ha)
	(1)	(2)	(3)	(4)=(2)*(3)
1	6	5	800	4000
2	6	6	250	1500
3	6	7	350	2450
<b>Total</b>		(T2) <b>18</b>		(T4) <b>7950</b>

#### Step 4

Distribute the UAA among the agricultural holdings of the same group/geographical area that have at least one grazing animal.

The example table below shows the data for a hypothetical case, where 50 agricultural holdings are in such conditions.

Holding ID	Weighting factor 1	UAA (ha)	Equidae (LSU)	Cattle (LSU)	Sheep (LSU)	Goats (LSU)
	(5)	(6)	(7)	(8)	(9)	(10)
4	4	10.0	0.8	12.0	2.0	3.5
5	10	12.5	1.6	0.0	3.1	0.8
6	15	7.0	0.0	0.0	1.2	0.0
7	8	16.2	1.6	0.0	0.0	0.0
8	25	2.5	0.0	5.0	0.0	0.0
9	18	35.0	3.2	0.0	0.0	2.6
10	7	25.0	0.8	800.0	0.0	1.2
11	13	27.3	0.0	0.0	260.0	0.8
12	2	130.0	0.0	7.0	0.0	0.0
13	35	4.0	3.2	55.0	0.0	0.0
14	8	12.5	6.4	0.0	8.0	0.0
15	12	2.5	0.0	0.0	0.5	0.0
16	15	3.0	0.0	14.0	1.0	0.5
17	28	4.5	7.2	0.0	0.0	5.0
18	7	1.0	0.8	0.0	0.5	0.6
19	6	0.5	0.0	8.0	0.0	800.0
20	8	0.3	0.8	0.0	0.6	0.2
21	16	0.1	1.6	9.2	0.2	0.0
22	14	0.2	1.6	0.0	0.0	0.0
23	7	120.0	4.0	0.0	0.0	0.3
24	35	3.4	4.0	0.0	0.0	0.2
25	2	5.5	0.0	420.0	0.0	0.0
26	17	2.3	0.0	0.0	0.0	0.2
27	1	1300.0	0.8	5.0	120.0	0.0
28	4	4.5	0.0	0.0	150.0	7.0
29	3	2.5	1.6	50.0	0.0	100.0
30	1	1200.0	3.2	0.0	0.0	0.0
31	6	0.5	0.0	12.0	0.0	0.0
32	9	28.0	4.0	13.0	0.0	0.0
33	10	45.0	1.6	0.0	0.0	0.0
34	2	25.0	0.0	45.0	0.0	1.2
35	5	36.0	8.0	0.0	2.0	1.0
36	5	200.0	8.8	2.0	0.0	0.0
37	4	34.0	0.0	0.0	3.0	400.0
38	3	0.5	7.2	1.0	5.0	0.0
39	2	1.5	0.8	3.0	0.0	8.0
40	20	3.5	0.0	1.0	0.0	0.0
41	25	4.5	0.0	0.0	0.5	0.7
42	12	8.9	4.0	1.0	12.0	0.0

Holding ID	Weighting factor 1	UAA (ha)	Equidae (LSU)	Cattle (LSU)	Sheep (LSU)	Goats (LSU)
	(5)	(6)	(7)	(8)	(9)	(10)
43	2	1.2	0.0	1.0	0.0	0.0
44	3	260.0	0.0	12.0	14.0	0.0
45	7	3.5	0.0	0.0	250.0	0.0
46	12	3.4	0.0	15.0	0.0	0.0
47	23	2.8	0.0	0.0	12.0	0.0
48	15	3.4	1.6	16.0	0.0	0.0
49	2	12.0	0.0	0.0	230.0	0.0
50	3	5.6	0.8	0.0	0.0	0.0
51	4	8.9	0.8	0.0	0.0	0.0
52	8	9.0	0.0	2.0	0.0	0.0
53	2	10.0	0.8	0.0	0.0	0.0
<b>Total</b>	(T5) <b>505</b>					

The following table shows how to calculate the adjusted values of UAA corresponding to the agricultural holdings after addition of the common land from common land units.

Holding ID	Sum LSU over the 4 categories	Weighted sum of LSU over the 4 categories	Additional weighted UAA (ha) allocated from common land units	Additional unweighted UAA (ha) to allocate to holdings from common land units	Final adjusted UAA (ha)
	$(11) = (7)+(8)+(9)+(10)$	$(12) = (5)*(11)$	$(13) = (12)*((T4)/(T12))^{1(135)}$	$(14) = (13)/(5)$	$(15) = (6)+(14)$
4	18.3	73.2	23.4	5.9	15.9
5	5.5	55.0	17.6	1.8	14.3
6	1.2	18.0	5.8	0.4	7.4
7	1.6	12.8	4.1	0.5	16.7
8	5.0	125.0	40.0	1.6	4.1
9	5.8	104.4	33.4	1.9	36.9
10	802.0	5614.0	1796.1	256.6	281.6
11	260.8	3390.4	1084.7	83.4	110.7
12	7.0	14.0	4.5	2.2	132.2
13	58.2	2037.0	651.7	18.6	22.6
14	14.4	115.2	36.9	4.6	17.1
15	0.5	6.0	1.9	0.2	2.7
16	15.5	232.5	74.4	5.0	8.0
17	12.2	341.6	109.3	3.9	8.4
18	1.9	13.3	4.3	0.6	1.6
19	808.0	4848.0	1551.1	258.5	259.0
20	1.6	12.8	4.1	0.5	0.8
21	11.0	176.0	56.3	3.5	3.6
22	1.6	22.4	7.2	0.5	0.7
23	4.3	30.1	9.6	1.4	121.4
24	4.2	147.0	47.0	1.3	4.7
25	420.0	840.0	268.7	134.4	139.9
26	0.2	3.4	1.1	0.1	2.4
27	125.8	125.8	40.2	40.2	1340.2
28	157.0	628.0	200.9	50.2	54.7
29	151.6	454.8	145.5	48.5	51.0
30	3.2	3.2	1.0	1.0	1201.0
31	12.0	72.0	23.0	3.8	4.3
32	17.0	153.0	49.0	5.4	33.4
33	1.6	16.0	5.1	0.5	45.5

<sup>(135)</sup> Column (13) is equal to column (12) multiplied by the fraction 7950/24848.7

Holding ID	Sum LSU over the 4 categories	Weighted sum of LSU over the 4 categories	Additional weighted UAA (ha) allocated from common land units	Additional unweighted UAA (ha) to allocate to holdings from common land units	Final adjusted UAA (ha)
	$(11) = (7) + (8) + (9) + (10)$	$(12) = (5) * (11)$	$(13) = (12) * ((T4) / (T12))^{1(135)}$	$(14) = (13) / (5)$	$(15) = (6) + (14)$
34	46.2	92.4	29.6	14.8	39.8
35	11.0	55.0	17.6	3.5	39.5
36	10.8	54.0	17.3	3.5	203.5
37	403.0	1612.0	515.7	128.9	162.9
38	13.2	39.6	12.7	4.2	4.7
39	11.8	23.6	7.6	3.8	5.3
40	1.0	20.0	6.4	0.3	3.8
41	1.2	30.0	9.6	0.4	4.9
42	17.0	204.0	65.3	5.4	14.3
43	1.0	2.0	0.6	0.3	1.5
44	26.0	78.0	25.0	8.3	268.3
45	250.0	1750.0	559.9	80.0	83.5
46	15.0	180.0	57.6	4.8	8.2
47	12.0	276.0	88.3	3.8	6.6
48	17.6	264.0	84.5	5.6	9.0
49	230.0	460.0	147.2	73.6	85.6
50	0.8	2.4	0.8	0.3	5.9
51	0.8	3.2	1.0	0.3	9.2
52	2.0	16.0	5.1	0.6	9.6
53	0.8	1.6	0.5	0.3	10.3
<b>Total</b>		<b>(T12) 24848.7a</b>	<b>(T4) 7950.0</b>		

### ANALYSIS OF THE OVERALL AVERAGE AREAS IN DIFFERENT SCENARIOS

The table below shows additional data used to compute the averages.

Holding ID	Initial weighted UAA (ha)	Final weighted UAA (ha)
	(16)=(5)*(6)	(17)=(5)*(15)
4	40	63.4
5	125	142.6
6	105	110.8
7	129.6	133.7
8	62.5	102.5
9	630	663.4
10	175	1971.1
11	354.9	1439.6
12	260	264.5
13	140	791.7
14	100	136.9
15	30	31.9
16	45	119.4
17	126	235.3
18	7	11.3
19	3	1554.1
20	2.4	6.5
21	1.6	57.9
22	2.8	10.0
23	840	849.6
24	119	166.0
25	11	279.7
26	39.1	40.2
27	1300	1340.2
28	18	218.9
29	7.5	153.0
30	1200	1201.0
31	3	26.0
32	252	301.0
33	450	455.1
34	50	79.6
35	180	197.6
36	1000	1017.3
37	136	651.7
38	1.5	14.2
39	3	10.6
40	70	76.4
41	112.5	122.1
42	106.8	172.1

Holding ID	Initial weighted UAA (ha)	Final weighted UAA (ha)
	<i>(16)=(5)*(6)</i>	<i>(17)=(5)*(15)</i>
43	2.4	3.0
44	780	805.0
45	24.5	584.4
46	40.8	98.4
47	64.4	152.7
48	51	135.5
49	24	171.2
50	16.8	17.6
51	35.6	36.6
52	72	77.1
53	20	20.5
<b>Total</b>	<b>(T16) 9370.7</b>	<b>(T17) 17320.7</b>

### Scenario 1 – Average UAA considering common land units and their land

$$\frac{\text{Final weighted UAA}(\text{holdings and common land units})}{\text{Weighed number of holdings and common land units}} = \frac{(T16 + T4)}{(T5 + T2)} =$$

$$= \frac{(9370.7 + 7950.0) \text{ ha}}{(505 + 18) \text{ holdings}} = 33.1 \text{ ha/holding}$$

### Scenario 2 – Average UAA disregarding common land units and their land

$$\frac{\text{Initial weighted UAA}}{\text{Weighed number of holdings}} = \frac{(T16)}{(T5)} =$$

$$= \frac{9370.7 \text{ ha}}{505 \text{ holdings}} = 18.6 \text{ ha/holding}$$

### Scenario 3 – Average UAA after allocation of common land from common land units and removal of common land units

$$\frac{\text{Final weighted UAA}}{\text{Weighed number of holdings}} = \frac{(T17)}{(T5)}$$

$$= \frac{17320.7 \text{ ha}}{505 \text{ holdings}} = 34.3 \text{ ha/holding}$$

It results that by implementing the proposal of allocating the common land from common land units to agricultural holdings and removing the common land units, the average UAA increases from 33.1 hectares to 34.3 hectares. This increase is not significant. The increase can be significant for the breakdowns, as illustrated in the following two sub-sections.

On the other hand, if common land units are simply removed from the records without doing the allocation, the average UAA is 18.6 hectares.

### ANALYSIS OF THE AVERAGE AREAS BY AGE OF MANAGER IN DIFFERENT SCENARIOS

Consider that the average areas are disseminated by age of manager and that the first 8 agricultural holdings (holding IDs from 4 to 11) have a manager whose age falls in the same age band.

Common land units should not have recorded information on managers. Thus, the average UAA under **scenario 1** cannot be computed because it is unclear how to distribute the number and area of common land units by age bands.

For **scenario 2** and **scenario 3**, the same computations as above but now only for the first age band lead to the following results.

#### Scenario 2 – Average UAA disregarding common land units and their land

$$\frac{\textit{Initial weighted UAA}}{\textit{Weighed number of holdings}} = \frac{1622 \textit{ ha}}{100 \textit{ holdings}} = 16.2 \textit{ ha/holding}$$

#### Scenario 3 – Average UAA after allocation of common land from common land units and removal of common land units

$$\frac{\textit{Final weighted UAA}}{\textit{Weighed number of holdings}} = \frac{4627 \textit{ ha}}{100 \textit{ holdings}} = 46.3 \textit{ ha/holding}$$

### ANALYSIS OF THE AVERAGE AREAS BY SIZE OF AGRICULTURAL AREA IN DIFFERENT SCENARIOS

Consider that the average areas are disseminated by size of agricultural area. 6 agricultural holdings have the utilised agricultural area of 100 hectares and over.

The same computations as above but now only for the largest size group lead to the following results.

#### Scenario 1 – Average UAA considering common land units and their land

$$\frac{\textit{Final weighted UAA(holdings and common land units)}}{\textit{Weighed number of holdings and common land units}} = 360.3 \textit{ ha/holding}$$

#### Scenario 2 – Average UAA disregarding common land units and their land

$$\frac{\textit{Initial weighted UAA}}{\textit{Weighed number of holdings}} = 283.2 \textit{ ha/holding}$$

### Scenario 3 – Average UAA after allocation of common land from common land units and removal of common land units

$$\frac{\textit{Final weighted UAA}}{\textit{Weigthed number of holdings}} = 288.3 \textit{ ha/holding}$$

### CONCLUSION

There are two possible ways of disseminating the UAA averages, both of which being correct as long as the meaning of the averages are communicated to the user:

- The average area over agricultural holdings, disregarding common land units and their land (scenario 2 in the given example)
- The average area over agricultural holdings, after allocation of common land from common land units and removal of common land units (scenario 3 in the given example).

When using scenario 1, the bias is not likely to be significant when the averages are computed over the whole population but can be significant when the averages are computed over population breakdowns.

## Annex III

### Average number of animals calculator

To use the calculator (in Word):

- change the values in any of the first 3 lines of the B column
- right click on the highlighted cells of the B column and select "update field"

1	A	B	
2	Days alive	365	
3	Number of animals produced annually	1000	
4	Number of rounds	1	
5	Number of places	<b>!Zero Divide</b>	=B3/B4
6	Number of empty days	365	=365-(B4*B2)
7	IPCC average number of animals	0.0	=B2*B3/365
8	CLRTAP average number of animals	0.0	=B5*(1-(B6/365))

## Annex IV

### Manure conversions

In order to make conversions, the chemical composition of the different manures is needed.

The American Society of Agricultural Engineers (ASAE) provides a set of equations for predicting nutrient excretion (nitrogen and phosphorus) and dry matter depending on livestock species ([ASAE standards S384.2<sup>\(136\)</sup>](#)). Eurostat has based this summary on typical or average values of manure excreted which could become obsolete due to changes in animal genetics, performance potential, feeding program strategies and available feeds.

Nutrient content of manure varies depending on source (type of animal, animal diet), moisture content, storage, and handling methods. In addition to livestock excreta, manure and processed, waste water collected may contain other materials, soil, animal bedding, waste feed, waste milk, weed seeds, etc.

Dairy, beef and swine manure may be either solid or liquid.

Horse and poultry manures are solid.

#### Solid manure

Corresponds to farmyard manure or the separated solid fraction of manure having at least 20% dry matter

#### Liquid manure

Corresponds to slurry or separated liquid fraction of manure with less than 20% dry matter (80% or more of water content).

### CONVERT DRY WEIGHT TO WET WEIGHT

Figure 76 – Example for solid bovine (for beef) manure

	Laboratory analysis for beef manure		Calculated
	Dry basis (%)	Wet basis "as received" (%)	Wet basis "as received" Kg/tonne
Moisture content		69.5	
Total N	1.7	0.52	<b>5.2</b>
Phosphorus	0.2	0.06	<b>0.6</b>
Potassium	1.08	0.33	<b>3.3</b>

The dried basis is detailed because it is necessary to dry the sample in the lab for analysis. To convert back to a wet-weight "as received" and/or "as excreted" the moisture content (%) must be known.

**wet-weight value = dry-weight value x (1 – (% moisture/100))**

wet-weight value = 1.7 x (1 - (69.5/100))

<sup>(136)</sup> <https://extension.psu.edu/animals-and-livestock/dairy>

wet-weight value =  $1.7 \times (1 - 0.695)$

wet-weight value =  $1.7 \times 0.305$

wet-weight value = 0.52% total N

### CONVERT PERCENTAGE TO KG/TONNES

In the above example, the total N content of the solid beef manure is 0.52% total N on a wet-weight, or as-received, basis. This means that there is 0.52 kg of total N in every 100 kg of manure. There are 1,000 kg in a tonne. Therefore, there are 5.2 kg total N in 1,000 kg of manure.

kg/tonne = value (%)  $\times 10$

kg total N/tonne =  $0.52 \times 10$

kg total N/tonne = 5.2

### CONVERT PERCENTAGE TO KG/M<sup>3</sup>

Figure 77 – Example for liquid swine manure

	Laboratory analysis for liquid Swine		Calculated
	Dry basis (%)	Wet basis "as received" (%)	Wet basis "as received" Kg/tonne
Moisture content		96	
Total N	9.25	0.37	<b>3.7</b>
Phosphorus	2.75	0.11	<b>1.1</b>
Potassium	3.75	0.15	<b>1.5</b>

The total N content of the liquid manure is 0.37% total N on a wet-weight, or as-received, basis. This means that there is 0.37 kg of total N in every 100 kg of manure; or 3.7 kg total N in 1,000 kg.

To convert liquid manure from a weight to a volume, estimate the density.

The density of water is 1,000 kg/m<sup>3</sup>. However, the higher the dry matter content of the manure, the lower the density of the manure. Since the liquid swine manure has a very low solids content, we can assume that the density of the liquid swine manure is very close to the density of water. For the purpose of this calculation, assume the density of the liquid swine manure is 1,000 kg/m<sup>3</sup>.

To calculate the volume of 1,000 kg of manure:

**Density = Mass/Volume**

$1,000 \text{ kg/m}^3 = 1,000 \text{ kg/Volume (m}^3)$

Volume =  $1,000/1,000 \text{ m}^3$

Volume = 1.0 m<sup>3</sup>

Since there are 3.7 kg total N in 1,000 kg of manure and 1,000 kg equals 1.0 m<sup>3</sup> of manure, then there are 3.7 kg total N/m<sup>3</sup> of manure.

Therefore, the simple factor from percentage to kg/m<sup>3</sup> is 10, as follows:

**kg/m<sup>3</sup> = value (%)  $\times 10$**

## Annex V

### Validation rules for IFS2020 (struval and conval)

The present table is based on version 5.15

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE001	Error	REF_AREA = 'PT'	TIME_PERIOD = '2019'	For Portugal the reference year should be 2019
VR_IFS2020_CORE001c	Error		TIME_PERIOD = strToNumber(FILENAME_YEAR)	Time period needs to be consistent with the filename
VR_IFS2020_CORE001b	Error	REF_AREA <> 'PT'	TIME_PERIOD = '2020'	The reference year should be 2020
VR_IFS2020_CORE002	Error	FILENAME_COUNTRY <> "C1"	REF_AREA = FILENAME_COUNTRY	REF_AREA needs to be consistent with file name
VR_IFS2020_CORE003	Error		Check duplicates	There are duplicates in the holding ID
VR_IFS2020_CORE004	Info	HLD_FEF = 1	EXTPOL_FACT1_LAFO = 'null' AND EXTPOL_FACT1_RDEV = 'null' AND EXTPOL_FACT1_AHMM = 'null'	IF a holding is in the frame extension module data is not expected
VR_IFS2020_CORE005				
VR_IFS2020_CORE006	Info	TIME_PERIOD IN ('2019', '2020', '2021', '2022') AND HLD_FEF = 0	EXTPOL_FACT1_CORE = '1'	IF TIME_PERIOD is (2019 or 2020 or 2021 or 2022) and HLD_FEF is 0 (holding not part of the frame extension) the EXTPOL_FACT1_CORE is expected to be 1 (unless the extrapolator is used to compensate for non-response or is calibrated)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE007	Error	TIME_PERIOD IN ('2019', '2020', '2021', '2022') AND HLD_FEF = 0	EXTPOL_FACT2_CORE = 'null'	IF TIME_PERIOD is (2019 or 2020 or 2021 or 2022) and HLD_FEF is 0 (holding not part of the frame extension) the EXTPOL_FACT2_CORE must be null
VR_IFS2020_CORE008	Error	TIME_PERIOD IN ('2019', '2020', '2021', '2022') AND HLD_FEF = 0	EXTPOL_FACT3_CORE = 'null'	IF TIME_PERIOD is (2019 or 2020 or 2021 or 2022) and HLD_FEF is 0 (holding not part of the frame extension) the EXTPOL_FACT3_CORE must be null
VR_IFS2020_CORE009	Error	TIME_PERIOD IN ('2019', '2020', '2021', '2022') AND HLD_FEF = 0	STRA_ID_CORE = 'null'	IF TIME_PERIOD is (2019 or 2020 or 2021 or 2022) and HLD_FEF is 0 (holding not part of the frame extension) then no strata ID is needed
VR_IFS2020_CORE010	Error	TIME_PERIOD IN ('2019', '2020', '2021', '2022') AND HLD_FEF = 0	STRA_IDF_CORE = '_Z'	IF TIME_PERIOD is (2019 or 2020 or 2021 or 2022) and HLD_FEF is 0 (holding not part of the frame extension) then the stratum ID flag has to be _Z for not applicable
VR_IFS2020_CORE011	Error	TIME_PERIOD IN ('2019', '2020', '2021', '2022') AND HLD_FEF = 0	PSU_CORE = 'null'	IF TIME_PERIOD is (2019 or 2020 or 2021 or 2022) and HLD_FEF is 0 (holding not part of the frame extension) then no primary sampling unit is needed
VR_IFS2020_CORE012	Error	TIME_PERIOD IN ('2019', '2020', '2021', '2022') AND HLD_FEF = 0	PSUF_CORE = '_Z'	IF TIME_PERIOD is (2019 or 2020 or 2021 or 2022) and HLD_FEF is 0 (holding not part of the frame extension) then the primary sampling unit flag has to be _Z for not applicable

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE013	Error	TIME_PERIOD IN ('2019', '2020', '2021', '2022') AND HLD_FEF = 0	SSU_CORE = 'null'	IF TIME_PERIOD is (2019 or 2020 or 2021 or 2022) and HLD_FEF is 0 (holding not part of the frame extension) then no secondary sampling unit is needed
VR_IFS2020_CORE014	Error	TIME_PERIOD IN ('2019', '2020', '2021', '2022') AND HLD_FEF = 0	SSUF_CORE = '_Z'	IF TIME_PERIOD is (2019 or 2020 or 2021 or 2022) and HLD_FEF is 0 (holding not part of the frame extension) then the secondary sampling unit flag has to be _Z for not applicable
VR_IFS2020_CORE015	Error	TIME_PERIOD IN ('2019', '2020', '2021', '2022') AND HLD_FEF = 0	OSU_S1_CORE = 'null'	IF TIME_PERIOD is (2019 or 2020 or 2021 or 2022) and HLD_FEF is 0 (holding not part of the frame extension) then no order of selection of the unit is needed
VR_IFS2020_CORE016	Error	TIME_PERIOD IN ('2019', '2020', '2021', '2022') AND HLD_FEF = 0	OSU_SF1_CORE = '_Z'	IF TIME_PERIOD is (2019 or 2020 or 2021 or 2022) and HLD_FEF is 0 (holding not part of the frame extension) then the order of selection of the unit flag has to be _Z for not applicable
VR_IFS2020_CORE017		-		
VR_IFS2020_CORE018				
VR_IFS2020_CORE019				
VR_IFS2020_CORE020				
VR_IFS2020_CORE021	Error		LEFT(GEO_LCT, 2) = REF_AREA	GEO_LCT has to be compatible with REF_AREA
VR_IFS2020_CORE022	Error			GEO_LCT has to be compatible with REGION
VR_IFS2020_CORE023				

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE024	Info	Y_BIRTH_MAN <> 'null'	Y_BIRTH_MAN < 2003 OR Y_BIRTH_MAN > 1920	Manager was born before 1920 or after 2003
VR_IFS2020_CORE025	Error	Y_BIRTH_MAN <> 'null'	Y_BIRTH_MAN < Y_FARM_MAN	The year of birth of the manager cannot be after the year the manager took over the management of the farm
VR_IFS2020_CORE026	Error	LEG_FORM IN ('FARM_HLD', 'FARM_HLD_SPOUFAM', 'FARM_SPOU', 'FARM_FAM', 'FARM_NFAM', 'PER_LEG_NEG', 'PER_LEG_EG', 'HLD_GRP')	SEX_MAN <> '_Z'	Sex of manager cannot be not relevant when the holding is not a common land unit (UNIT_CML)
VR_IFS2020_CORE027	Error	LEG_FORM IN ('FARM_HLD', 'FARM_HLD_SPOUFAM', 'FARM_SPOU', 'FARM_FAM', 'FARM_NFAM', 'PER_LEG_NEG', 'PER_LEG_EG', 'HLD_GRP')	SEX_MAN IN ('M', 'F')	Sex of manager must be either female OR male (except for common land units (UNIT_CML))
VR_IFS2020_CORE028	Error	LEG_FORM IN ('FARM_HLD', 'FARM_HLD_SPOUFAM', 'FARM_SPOU', 'FARM_FAM', 'FARM_NFAM', 'PER_LEG_NEG', 'PER_LEG_EG', 'HLD_GRP')	WH_MAN_AWU_PC <> '_Z'	Manager working hours cannot be not relevant when the holding is not a common land unit
VR_IFS2020_CORE029	Error	LEG_FORM IN ('FARM_HLD', 'FARM_HLD_SPOUFAM', 'HLD_GRP')	WH_MAN_AWU_PC NOT IN ('_Z','PC0')	IF Sole holder is also the manager OR Farm co-managed by holder and spouse or family member OR holding is a group holding then the percentage bands of the working hours of the manager cannot be not relevant and must be > 0

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE030	Error	LEG_FORM IN ('FARM_HLD', 'FARM_HLD_SPOUFAM', 'FARM_SPOU', 'FARM_FAM', 'FARM_NFAM', 'PER_LEG_NEG', 'PER_LEG_EG', 'HLD_GRP')	Y_FARM_MAN <> 'null'	Year when manager took up duties cannot be not relevant when the holding is not a common land unit
VR_IFS2020_CORE031	Error	LEG_FORM IN ('FARM_HLD', 'FARM_HLD_SPOUFAM', 'FARM_SPOU', 'FARM_FAM', 'FARM_NFAM', 'PER_LEG_NEG', 'PER_LEG_EG', 'HLD_GRP')	TNG_MAN <> '_Z'	Training of the manager cannot be not relevant when the holding is not a common land unit
VR_IFS2020_CORE032	Error	LEG_FORM IN ('FARM_HLD', 'FARM_HLD_SPOUFAM', 'FARM_SPOU', 'FARM_FAM', 'FARM_NFAM', 'PER_LEG_NEG', 'PER_LEG_EG', 'HLD_GRP')	VT_MAN_M12 <> '_Z'	Vocational training of the manager cannot be not relevant when the holding is not a common land unit
VR_IFS2020_CORE033				
VR_IFS2020_CORE034				
VR_IFS2020_CORE035				
VR_IFS2020_CORE036				
VR_IFS2020_CORE037				
VR_IFS2020_CORE038	Error		$\text{nvl}(\text{UAAT},0) = \text{nvl}(\text{ARAT},0) + \text{nvl}(\text{J0000T},0) + \text{nvl}(\text{PECRT},0) + \text{nvl}(\text{K0000T},0)$	Utilised Agricultural Area (ha) outdoor is not = SUM ha of (Arable land outdoor + Permanent grassland outdoor + Permanent crops outdoor + Kitchen gardens)
VR_IFS2020_CORE039	Error		$\text{nvl}(\text{UAA},0) \geq \text{nvl}(\text{UAAXK0000_ORGF},0) + \text{nvl}(\text{UAAXK0000_ORGU},0)$	Utilised Agricultural Area (ha) is not > = SUM ha of (Farming system: Organic farming certified + Conversion to organic farming )

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE040	Error		$\text{nvl}(\text{UAAT},0) + \text{nvl}(\text{UAAS},0) + \text{nvl}(\text{U1000},0) + \text{nvl}(\text{NUAA},0) + \text{nvl}(\text{WA},0) + \text{nvl}(\text{FA9},0) > 0$	Total holding area (utilised agricultural area + mushrooms area + unutilised agricultural land + wooded area + other land) has to be larger than 0 even if the holding has only animals
VR_IFS2020_CORE041	Error		$\text{nvl}(\text{UAAS},0) = \text{nvl}(\text{V0000\_S0000S},0) + \text{nvl}(\text{N0000S},0) + \text{nvl}(\text{ARA09S},0) + \text{nvl}(\text{PECRS},0) + \text{nvl}(\text{UAA09S},0)$	Utilised agricultural area under glass or high accessible cover (ha) is not = Fresh vegetables (including melons) and strawberries under glass or high accessible cover + Flowers and ornamental plants under glass or high accessible cover + Other arable land crops n.e.c. under glass or high accessible cover + Permanent crops under glass or high accessible cover + Other utilised agricultural area under glass or high accessible cover
VR_IFS2020_CORE042	Error		$\text{nvl}(\text{UAAT},0) + \text{nvl}(\text{UAAS},0) = \text{nvl}(\text{OWN\_UAA},0) + \text{nvl}(\text{RENT\_UAA},0) + \text{nvl}(\text{SHROTH\_UAA},0) + \text{nvl}(\text{CMNL\_UAA},0)$	Utilised Agricultural Area (ha) is not = SUM ha of ( Agricultural area utilised for farming by owner+ Agricultural area utilised for farming by tenant + Agricultural area utilised for shared farming or other modes + Common land)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE043	Error		$\text{nvl}(\text{ARAT},0) = \text{nvl}(\text{C0000T},0) + \text{nvl}(\text{P0000T},0) + \text{nvl}(\text{R0000T},0) + \text{nvl}(\text{I0000T},0) + \text{nvl}(\text{G0000T},0) + \text{nvl}(\text{V0000\_S0000T},0) + \text{nvl}(\text{N0000T},0) + \text{nvl}(\text{E0000T},0) + \text{nvl}(\text{ARA99T},0) + \text{nvl}(\text{Q0000T},0)$	Arable land outdoor (ha) is not = SUM ha of (cereals outdoor + dry pulses and protein crops outdoor + root crops outdoor + industrial crops outdoor + Plants harvested green outdoor + fresh vegetables (including melons) and strawberries outdoor + Flowers and other ornamental plants outdoor + Seeds and seedlings outdoor + other arable land crops n.e.c. outdoor + Fallow land outdoor)
VR_IFS2020_CORE044	Error		$\text{nvl}(\text{UAATXK0000\_ORG},0) = \text{nvl}(\text{ARAT\_ORG},0) + \text{nvl}(\text{J0000T\_ORG},0) + \text{nvl}(\text{PECRT\_ORG},0)$	Organic utilised agricultural area outdoor (ha) is not = SUM ha of (organic arable land outdoor + organic permanent grassland outdoor + organic permanent crops outdoor)
VR_IFS2020_CORE045				
VR_IFS2020_CORE046	Error		$\text{nvl}(\text{ARAT\_ORG},0) \geq \text{nvl}(\text{C0000T\_ORG},0) + \text{nvl}(\text{P0000T\_ORG},0) + \text{nvl}(\text{R0000T\_ORG},0) + \text{nvl}(\text{I0000T\_ORG},0) + \text{nvl}(\text{G0000T\_ORG},0) + \text{nvl}(\text{V0000\_S0000T\_ORG},0) + \text{nvl}(\text{E0000T\_ORG},0)$	Organic arable land outdoor is not $\geq$ organic cereals outdoor + organic dry pulses and protein crops outdoor + organic root crops outdoor + organic industrial crops outdoor + organic plants harvested green outdoor + organic fresh vegetables (including melons) and strawberries outdoor + organic seeds and seedlings outdoor

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE047	Error		$\text{nvl}(\text{C0000T},0) = \text{nvl}(\text{C1110T},0) + \text{nvl}(\text{C1120T},0) + \text{nvl}(\text{C1200T},0) + \text{nvl}(\text{C1300T},0) + \text{nvl}(\text{C1400T},0) + \text{nvl}(\text{C1500T},0) + \text{nvl}(\text{C1600T},0) + \text{nvl}(\text{C1700T},0) + \text{nvl}(\text{C1900T},0) + \text{nvl}(\text{C2000T},0)$	Cereals outdoor (ha) is not = SUM ha of (Common wheat and spelt outdoor + Durum wheat outdoor + Rye and winter cereal mix (maslin) outdoor + Barley outdoor + Oats and spring cereal mix outdoor + Grain maize and corn-cob-mix outdoor + Triticale outdoor + Sorghum outdoor + Rice outdoor + Other cereals n.e.c. outdoor)
VR_IFS2020_CORE048	Error		$\text{nvl}(\text{P0000T},0) \geq \text{nvl}(\text{P1000T},0)$	Dry pulses outdoor (ha) is not $\geq$ ha of field peas + beans + sweet lupins
VR_IFS2020_CORE049	Error		$\text{nvl}(\text{R0000T},0) = \text{nvl}(\text{R1000T},0) + \text{nvl}(\text{R2000T},0) + \text{nvl}(\text{R9000T},0)$	Root crops outdoor (ha) is not = SUM ha of (potatoes incl. Seed outdoor + sugar beet excl. seed outdoor + other root crops n.e.c. outdoor)
VR_IFS2020_CORE050	Error		$\text{nvl}(\text{I0000T},0) \geq \text{nvl}(\text{I1100xI1150T},0) + \text{nvl}(\text{I2000T},0) + \text{nvl}(\text{I3000T},0) + \text{nvl}(\text{I4000T},0) + \text{nvl}(\text{I5000T},0) + \text{nvl}(\text{I6000T},0) + \text{nvl}(\text{I9000T},0)$	Industrial plants outdoor (ha) is not $\geq$ SUM ha of (oilseeds excl. cotton outdoor + fibre crops outdoor + tobacco outdoor + hops outdoor + aromatic medicinal and culinary plants outdoor + Energy crops n.e.c. outdoor + other industrial crops n.e.c. outdoor)
VR_IFS2020_CORE051	Error		$\text{nvl}(\text{I1100xI1150T}) = \text{nvl}(\text{I1110T},0) + \text{nvl}(\text{I1120T},0) + \text{nvl}(\text{I1130T},0) + \text{nvl}(\text{I1140T},0) + \text{nvl}(\text{I1190T},0)$	Oilseeds excluding cotton outdoor (ha) is not = SUM ha of (rape and turnip rape seeds outdoor + sunflower seed outdoor + soya outdoor + linseed (oilflax) outdoor + other oilseed crops n.e.c. outdoor)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE052	Error		$\text{nvl}(I2000T,0) = \text{nvl}(I2100T,0) + \text{nvl}(I2200T,0) + \text{nvl}(I1150\_2300T,0) + \text{nvl}(I2900T,0)$	Fibre crops outdoor (ha) is not = SUM ha of (fibre flax outdoor + hemp outdoor + cotton outdoor + other fibre crops n.e.c. outdoor)
VR_IFS2020_CORE053	Error		$\text{nvl}(V0000\_S0000T,0) = \text{nvl}(V0000\_S0000TO,0) + \text{nvl}(V0000\_S0000TK,0)$	Fresh vegetables (including melons) and strawberries outdoor (ha) is not = SUM ha of (fresh vegetables (including melons) and strawberries open field + market garden)
VR_IFS2020_CORE054	Error		$\text{nvl}(G0000T,0) = \text{nvl}(G1000T,0) + \text{nvl}(G2000T,0) + \text{nvl}(G3000T,0) + \text{nvl}(G9100T,0) + \text{nvl}(G9900T,0)$	Plants harvested green outdoor (ha) is not = SUM ha of (temporary grasses and grazings outdoor + leguminous plants harvested green outdoor + Green maize outdoor + other cereals harvested green (excl. green maize) outdoor + other plants harvested green n.e.c. outdoor)
VR_IFS2020_CORE055	Error		$\text{nvl}(F0000T,0) \geq \text{nvl}(F1100T,0) + \text{nvl}(F1200T,0) + \text{nvl}(F2000T,0) + \text{nvl}(F3000T,0) + \text{nvl}(F4000T,0)$	Fruits and berries and nuts outdoor (ha) is not $\geq$ SUM ha of ( Pome fruits outdoor + Stone fruits outdoor + Sub-tropical and tropical fruits outdoor + Berries excluding strawberries outdoor + Nuts outdoor)
VR_IFS2020_CORE056	Error		$\text{nvl}(W1000T,0) \geq \text{nvl}(W1100T,0) + \text{nvl}(W1200T,0) + \text{nvl}(W1300T,0)$	Grapes outdoor (ha) is not $\geq$ SUM ha of (grapes for wines outdoor + grapes for table use outdoor + grapes for raisins outdoor)
VR_IFS2020_CORE057	Error		$\text{nvl}(W1100T,0) = \text{nvl}(W1110T,0) + \text{nvl}(W1120T,0) + \text{nvl}(W1190T,0)$	Grapes for wines outdoor (ha) is not $\geq$ SUM ha of (grapes for wines PDO outdoor + grapes for wines PGI outdoor + grapes for other wines n.e.c. outdoor)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE058	Info		$(K0000T \leq 1)$	Surface of kitchen gardens is expected to be below 1 ha
VR_IFS2020_CORE059	Error		$nvl(J0000T,0) = nvl(J1000T,0) + nvl(J2000T,0) + nvl(J3000TE,0)$	Permanent grassland and meadow outdoor (ha) is not = SUM ha of (pasture and meadow + rough grazings + not used for production but eligible for subsidies)
VR_IFS2020_CORE060	Error		$nvl(PECRT,0) = nvl(F0000T,0) + nvl(T0000T,0) + nvl(W1000T,0) + nvl(O1000T,0) + nvl(PECR9_H9000T,0) + nvl(L0000T,0)$	Permanent crops outdoor (ha) is not = SUM ha of (Fruits berries and nuts outdoor + Citrus fruits outdoor + Grapes outdoor + Olives outdoor + Other permanent crops including other permanent crops for human consumption) + Nurseries outdoor
VR_IFS2020_CORE061	Error		$nvl(WA,0) \geq nvl(SRCAA,0)$	Wooded area (ha) is not $\geq$ Wooded area with short rotation coppice (ha)
VR_IFS2020_CORE062	Error		$nvl(C0000T\_ORG,0) \leq nvl(C0000T,0)$	Organic farming cereals outdoor (ha) is not $\leq$ Cereals outdoor (ha)
VR_IFS2020_CORE063	Error		$nvl(C0000T\_ORG,0) \geq nvl(C1110T\_ORG,0) + nvl(C1120T\_ORG)$	Organic farming cereals outdoor (ha) is not $\geq$ SUM ha of (organic common wheat and spelt outdoor + organic durum wheat outdoor)
VR_IFS2020_CORE064	Error		$nvl(P0000T\_ORG,0) \leq nvl(P0000T,0)$	Organic farming dried pulses outdoor (ha) is not $\leq$ Pulses outdoor (ha)
VR_IFS2020_CORE065	Error		$nvl(R0000T\_ORG,0) \leq nvl(R0000T,0)$	Organic farming root crops outdoor (ha) is not $\leq$ Root crops outdoor (ha)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE066	Error		$\text{nvl}(\text{R0000T\_ORG},0) \geq \text{nvl}(\text{R1000T\_ORG},0) + \text{nvl}(\text{R2000T\_ORG})$	Organic farming root crops outdoor (ha) is not $\geq$ SUM ha of (organic farming potatoes (incl. seed potatoes) outdoor + organic sugar beet (excl. seed) outdoor)
VR_IFS2020_CORE067	Error		$\text{nvl}(\text{R1000T\_ORG},0) \leq \text{nvl}(\text{R1000T},0)$	Organic farming potatoes outdoor (ha) is not $\leq$ Potatoes outdoor (ha)
VR_IFS2020_CORE068	Error		$\text{nvl}(\text{R2000T\_ORG},0) \leq \text{nvl}(\text{R2000T},0)$	Organic farming sugar beet outdoor (ha) is not $\leq$ Sugar beet outdoor (ha)
VR_IFS2020_CORE069	Error		$\text{nvl}(\text{I0000T\_ORG},0) \leq \text{nvl}(\text{I0000T},0)$	Organic farming industrial crops outdoor (ha) is not $\leq$ Industrial crops outdoor (ha)
VR_IFS2020_CORE070	Error		$\text{nvl}(\text{I0000T\_ORG},0) \geq \text{nvl}(\text{I1100XI1150T\_ORG},0)$	Organic farming industrial crops outdoor (ha) must be $\geq$ than organic oilseeds except cotton outdoor (ha)
VR_IFS2020_CORE071	Error		$\text{nvl}(\text{I1100XI1150T\_ORG},0) \leq \text{nvl}(\text{I1100XI1150T},0)$	Organic farming oilseeds except cotton outdoor (ha) must be $\leq$ Oilseeds except cotton outdoor (ha)
<del>VR_IFS2020_CORE072</del>				
VR_IFS2020_CORE073	Error		$\text{nvl}(\text{G0000T\_ORG},0) \leq \text{nvl}(\text{G0000T},0)$	Organic plants harvested green outdoor (ha) is not $\leq$ plants harvested green outdoor (ha)
VR_IFS2020_CORE074	Error		$\text{nvl}(\text{G0000T\_ORG},0) \geq \text{nvl}(\text{G1000T\_ORG},0) + \text{nvl}(\text{G2000T\_ORG},0)$	Organic plants harvested green outdoor (ha) is not $\geq$ SUM of ha (organic temporary grasses and grazings outdoor + organic leguminous plants harvested green outdoor)
VR_IFS2020_CORE075	Error		$\text{nvl}(\text{V0000\_S0000T\_ORG},0) \leq \text{nvl}(\text{V0000\_S0000T},0)$	Organic fresh vegetables (including melons) and strawberries outdoor (ha) is not $\leq$ fresh vegetables (including melons) and strawberries outdoor (ha)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE076	Error		$\text{nvI}(\text{E0000T\_ORG},0) \leq \text{nvI}(\text{E0000T},0)$	Organic seeds and seedlings outdoor (ha) is not $\leq$ seeds and seedlings outdoor (ha)
VR_IFS2020_CORE077	Error		$\text{nvI}(\text{J0000T\_ORG},0) \leq \text{nvI}(\text{J0000T},0)$	Organic permanent grassland outdoor (ha) is not $\leq$ permanent grassland outdoor (ha)
VR_IFS2020_CORE078	Error		$\text{nvI}(\text{J0000T\_ORG},0) \geq \text{nvI}(\text{J1000T\_ORG},0) + \text{nvI}(\text{J2000T\_ORG},0)$	Organic permanent grassland outdoor (ha) is not $\geq$ SUM of ha (organic pasture and meadow outdoor + organic rough grazings outdoor)
VR_IFS2020_CORE079	Error		$\text{nvI}(\text{J1000T\_ORG},0) \leq \text{nvI}(\text{J1000T},0)$	Organic pasture and meadow outdoor (ha) is not $\leq$ pasture and meadow outdoor (ha)
VR_IFS2020_CORE080	Error		$\text{nvI}(\text{J2000T\_ORG},0) \leq \text{nvI}(\text{J2000T},0)$	Organic rough grazings outdoor (ha) is not $\leq$ rough grazings outdoor (ha)
VR_IFS2020_CORE081	Error		$\text{nvI}(\text{PECRT\_ORG},0) \leq \text{nvI}(\text{PECRT},0)$	Organic permanent crops outdoor (ha) is not $\leq$ permanent crops outdoor (ha)
VR_IFS2020_CORE082	Error		$\text{nvI}(\text{PECRT\_ORG},0) \geq \text{nvI}(\text{F0000T\_ORG},0) + \text{nvI}(\text{T0000T\_ORG},0) + \text{nvI}(\text{W1100T\_ORG},0) + \text{nvI}(\text{O1000T\_ORG},0)$	Organic permanent crops outdoor (ha) is not $\geq$ SUM of ha (organic fruits and berries and nuts outdoor + organic citrus outdoor + organic grapes outdoor + organic olives outdoor)
VR_IFS2020_CORE083	Error		$\text{nvI}(\text{F0000T\_ORG},0) \leq \text{nvI}(\text{F0000T},0)$	Organic fruits and berries and nuts outdoor (ha) is not $\leq$ fruits and berries and nuts outdoor (ha)
VR_IFS2020_CORE084	Error		$\text{nvI}(\text{T0000T\_ORG},0) \leq \text{nvI}(\text{T0000T},0)$	Organic citrus fruits outdoor (ha) is not $\leq$ citrus fruits outdoor (ha)
VR_IFS2020_CORE085	Error		$\text{nvI}(\text{W1100T\_ORG},0) \leq \text{nvI}(\text{W1100T},0)$	Organic grapes for wines outdoor (ha) is not $\leq$ grapes for wines outdoor (ha)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE086	Error		$\text{nvl}(\text{O1000T\_ORG},0) \leq \text{nvl}(\text{O1000T},0)$	Organic olives outdoor (ha) is not $\leq$ olives outdoor (ha)
VR_IFS2020_CORE087	Error		$\text{nvl}(\text{A2000\_ORG},0) \geq (\text{nvl}(\text{A2300F\_ORG},0) + \text{nvl}(\text{A2300G\_ORG},0))$	Organic bovine animals (heads) is not $\geq$ SUM of heads organic dairy cows + organic non-dairy cows
VR_IFS2020_CORE088	Error		$\text{nvl}(\text{A3000\_ORG},0) \leq \text{nvl}(\text{A3110},0) + \text{nvl}(\text{A3120},0) + \text{nvl}(\text{A3130},0)$	Organic pigs (heads) is not $\leq$ piglets <20kg + breeding sows $\geq$ 50kg + other pigs
VR_IFS2020_CORE089	Error		$\text{nvl}(\text{A4100\_ORG},0) \leq \text{nvl}(\text{A4100},0)$	Organic sheep (heads) is not $\leq$ sheep (heads)
VR_IFS2020_CORE090	Error		$\text{nvl}(\text{A4200\_ORG},0) \leq \text{nvl}(\text{A4200},0)$	Organic goats (heads) is not $\leq$ goats (heads)
VR_IFS2020_CORE091	Error		$\text{nvl}(\text{A5000\_ORG},0) \geq \text{nvl}(\text{A5110O\_ORG},0) + \text{nvl}(\text{A5140\_ORG},0)$	Organic poultry (heads) is not $\geq$ SUM of heads (organic laying hens + organic broilers)
VR_IFS2020_CORE092	Error		$\text{nvl}(\text{A5110O\_ORG},0) \leq \text{nvl}(\text{A5110O},0)$	Organic laying hens (heads) is not $\leq$ laying hens (heads)
VR_IFS2020_CORE093	Error		$\text{nvl}(\text{A5140\_ORG},0) \leq \text{nvl}(\text{A5140},0)$	Organic broilers (heads) is not $\leq$ broilers (heads)
VR_IFS2020_CORE094	Error		$\text{nvl}(\text{A2020},0) \geq \text{nvl}(\text{A2120},0) + \text{nvl}(\text{A2220},0)$	Bovine animals 1 to less than 2 years old is not $\geq$ SUM of heads (male bovines 1 to less than 2 years old + heifers 1 to less than 2 years)
VR_IFS2020_CORE095	Error		$\text{nvl}(\text{A2300},0) = \text{nvl}(\text{A2300F},0) + \text{nvl}(\text{A2300G},0)$	Cows (heads) is not = SUM of heads (dairy cows + non-dairy cows)
VR_IFS2020_CORE096	Error		$\text{nvl}(\text{A2410},0) \leq \text{nvl}(\text{A2300},0)$	Breeding female buffaloes (heads) is not $\leq$ Cows (heads)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE097	Error		$\text{nv}(A2230\_2300,0) = \text{nv}(A2230,0) + \text{nv}(A2300,0)$	Female bovine 2 years or over including all cows is not = SUM of heads (heifers 2 years or over + cows)
VR_IFS2020_CORE098	Error		$\text{nv}(A4100,0) \geq \text{nv}(A4110K,0) + \text{nv}(A4120,0)$	Sheep (heads) must be $\geq$ SUM of heads (ewes and ewe lambs put to the ram + other sheep)
VR_IFS2020_CORE099	Error		$\text{nv}(A4200,0) \geq \text{nv}(A4210K,0) + \text{nv}(A4220,0)$	Goats (heads) must be $\geq$ SUM of heads (goats breeding females + other goats)
VR_IFS2020_CORE100	Error		$\text{nv}(A5000X5100,0) = \text{nv}(A5210,0) + \text{nv}(A5220,0) + \text{nv}(A5230,0) + \text{nv}(A5410,0) + \text{nv}(A5240\_5300,0)$	Live poultry excluding chicken (species) (heads) is not = SUM of heads (ducks + geese + turkeys + ostriches + other poultry fowls n.e.c.)
VR_IFS2020_CORE101	Error		$\text{nv}(UAAT\_IB,0) \leq \text{nv}(UAAT,0)$	Total irrigable area outdoor (ha) is not $\leq$ Utilised agricultural area outdoor (ha)
VR_IFS2020_CORE102				
VR_IFS2020_CORE103				
VR_IFS2020_CORE104				
VR_IFS2020_CORE105				
VR_IFS2020_CORE106				
VR_IFS2020_CORE107				
VR_IFS2020_CORE108				
VR_IFS2020_CORE109				
VR_IFS2020_CORE110				
VR_IFS2020_CORE111				More detailed checks are possible if a list of correspondence exists for GEO_LCT and NUTS
VR_IFS2020_CORE112				GEO_LCT has to be compatible with FROM token in filename

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE113	Info	HLD_FEF = 1	UAA < 5 AND ARA < 2 AND R1000T < 0,5 AND V0000_S0000T < 0,5 AND I5000T + N0000T + E0000T + L0000T < 0,2 AND F0000T + T0000T + PECR9_H9000T < 0,3 AND W1000T < 0,1 AND O1000T < 0,3 AND UAAS < 0,01 AND U1000 < 0,01 AND LIVESTOCK_LSU < 1,7	The holding is in the main frame but is below all thresholds
DR_IFS2020_CORE114			LIVESTOCK_LSU = (A2010*0,4 + A2020*0,7 + A2130*1 + A2230*0,8 + A2300F*1 + A2300G*0,8) + ((A4100)*0,1) + ((A4200)*0,1)+(A3110*0, 027 + A3120*0,5 + A3130*0,3) + (A5140*0,007 + A51100*0,014 + A5230*0,03 + A5210*0,01 + A5220*0,02 + A5410*0,35 + A5240_5300*0,001) + (A6111*0,02)	Calculated variable LIVESTOCK_LSU
DR_IFS2020_CORE115			UAA = UAAT + UAAS	Calculated variable UAA
DR_IFS2020_CORE116			ARA = ARAT + ARA09S + V0000_S0000S + N0000S	Calculated variable ARA
DR_IFS2020_CORE117			DECODE('A2410_ORG=Y', 1, 'A2410_ORG=N',0)	
LR_IFS2020_CORE118				LIST OF LAFO VARIABLES = LIST_LAFO
LR_IFS2020_CORE119				LIST OF RDEV VARIABLES = LIST_RDEV
LR_IFS2020_CORE120				LIST OF AHMM VARIABLES = LIST_AHMM
VR_IFS2020_CORE121	Error	REF_AREA = 'AL'	TIME_PERIOD = '2022'	For Albania the reference year should be 2022

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE122	Error	REF_AREA = 'RS'	TIME_PERIOD = '2021'	For Serbia the reference year should be 2021
VR_IFS2020_CORE123	Error	REF_AREA = 'BA'	TIME_PERIOD = '2021'	For Bosnia and Herzegovina the reference year should be 2021
VR_IFS2020_CORE124	Error	REF_AREA = 'XK'	TIME_PERIOD = '2023'	For Kosovo* the reference year should be 2023 *This designation is without prejudice to positions on status and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence
VR_IFS2020_CORE125	Error	REF_AREA = 'TR'	TIME_PERIOD = '2022'	For Turkey the reference year should be 2022
VR_IFS2020_CORE126	Error	REF_AREA = 'MK'	TIME_PERIOD = '2020'	For North Macedonia the reference year should be 2020
VR_IFS2020_CORE127	Error	REF_AREA = 'ME'	TIME_PERIOD = 'YYYY'	For Montenegro the reference year should be YYYY
<del>VR_IFS2020_CORE128</del>				
VR_IFS2020_CORE129	Error		$\text{nv}(\text{V0000\_S0000T},0) \geq \text{nv}(\text{V0000\_S0000T\_ORG},0)$	Fresh vegetables (including melons) and strawberries - outdoor is not $\geq$ organic fresh vegetables (including melons) and strawberries - outdoor
VR_IFS2020_CORE130	Error		$\text{nv}(\text{V0000\_S0000S},0) \geq \text{nv}(\text{V0000\_S0000S\_ORG},0)$	Fresh vegetables (including melons) and strawberries - under glass or high accessible cover is not $\geq$ organic fresh vegetables (including melons) and strawberries - under glass or high accessible cover
VR_IFS2020_CORE131	Error	EXTPOL_FACT2_CORE = 'null'	EXTPOL_FACT3_CORE = 'null'	If the extrapolation factor 2 for core is null then the extrapolation factor 3 for core must be also null

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE132	Error	ETPOL_FACT1_CORE <> 'null' AND ETPOL_FACT2_CORE ='null' AND ETPOL_FACT3_CORE ='null'	PSU_CORE = 'null' AND SSU_CORE = 'null'	If the only extrapolation factor completed is 1 then the fields of PSU and SSU are not relevant
VR_IFS2020_CORE133	Error	ETPOL_FACT1_CORE <> 'null' AND ETPOL_FACT2_CORE <> 'null' AND ETPOL_FACT3_CORE ='null'	PSU_CORE <> 'null' AND SSU_CORE = 'null'	If the only extrapolation factors completed are 1 and 2 then the field of PSU is relevant and the field of SSU is not relevant
VR_IFS2020_CORE134	Error	ETPOL_FACT1_CORE <> 'null' AND ETPOL_FACT2_CORE <> 'null' AND ETPOL_FACT3_CORE <> 'null'	PSU_CORE <> 'null' AND SSU_CORE = 'null'	If all 3 extrapolation factors are completed then the fields of PSU and SSU are relevant
VR_IFS2020_CORE135	Error	STRA_ID_CORE ='null'	STRA_IDF_CORE = '_Z'	If the stratum is not filled in then the flag of the stratum indicates NOT APPLICABLE
VR_IFS2020_CORE136	Error	STRA_ID_CORE <> 'null'	STRA_IDF_CORE in ('1','2','3')	If the stratum is filled in then the flag of the stratum is filled in with the code indicating its meaning
VR_IFS2020_CORE137	Error	PSU_CORE ='null'	PSUF_CORE = '_Z'	If the PSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_CORE138	Error	PSU_CORE <> 'null'	PSUF_CORE ='1'	If the PSU is filled in then the corresponding flag is filled in with 1
VR_IFS2020_CORE139	Error	SSU_CORE ='null'	SSUF_CORE = '_Z'	If the SSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_CORE140	Error	SSU_CORE <> 'null'	SSUF_CORE ='1'	If the SSU is filled in then the corresponding flag is filled in with 1

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE141	Error	OSU_S1_CORE ='null'	OSU_SF1_CORE ='_Z'	If the OSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_CORE142	Error	OSU_S1_CORE <>'null'	OSU_SF1_CORE ='1'	If the OSU is filled in then the corresponding flag is filled in with 1
VR_IFS2020_CORE143	Error	for 2 records PSU_CORE is equal	for the same records, STRA_ID_CORE is equal	There should not be 2 records with the same PSU and different strata
VR_IFS2020_CORE144	Error	for 2 records SSU_CORE is equal	for the same records, PSU_CORE is equal and STRA_ID_CORE is equal	There should not be 2 records with the same SSU and different PSU or different strata
VR_IFS2020_CORE145	Error		UAAT>=nvl(UAATXK0000_ORG,0)	Utilised Agricultural Area (ha) outdoor must be >= Organic UAA (excluding kitchen gardens) outdoor (ha)
VR_IFS2020_CORE146	Error		ARAT>=ARAT_ORG	Arable land outdoor (ha) must be >= Organic Arable outdoor (ha)
VR_IFS2020_CORE147	Error		C1110T>=C1110T_ORG	Common wheat and spelt outdoor (C1110T) must be >= Organic common wheat and spelt outdoor (C1110T_ORG)
VR_IFS2020_CORE148	Error		C1120T>=C1120T_ORG	Durum wheat outdoor (C1120T) must be >= Organic durum wheat outdoor (C1120T_ORG)
VR_IFS2020_CORE149	Error		I1130T>=I1130T_ORG	Soya outdoor (I1130T) must be >= Organic soya outdoor (I1130T_ORG)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE150	Error		$G1000T \geq G1000T\_ORG$	Temporary grasses and grazings outdoor (G1000T) must be $\geq$ Organic temporary grasses and grazings outdoor (G1000T_ORG)
VR_IFS2020_CORE151	Error		$G2000T \geq G2000T\_ORG$	Leguminous plants harvested green outdoor (G2000T) must be $\geq$ Organic leguminous plants harvested green outdoor (G2000T_ORG)
VR_IFS2020_CORE152	Error		$J1000T \geq J1000T\_ORG$	Permanent pastures and meadow outdoor (J1000T) must be $\geq$ Organic permanent pastures and meadow outdoor (J1000T_ORG)
VR_IFS2020_CORE153	Error		$J2000T \geq J2000T\_ORG$	Permanent rough grazings outdoor (J2000T) must be $\geq$ Organic permanent rough grazings outdoor (J2000T_ORG)
VR_IFS2020_CORE154	Error		$V0000\_S0000S \geq V0000\_S0000S\_ORG$	Fresh vegetables (including melons) and strawberries under glass or high accessible cover must be $\geq$ Organic fresh vegetables (including melons) and strawberries under glass or high accessible cover
VR_IFS2020_CORE155	Error		$A2000\_ORG \leq A2010 + A2020 + A2230\_2300 + A2130$	Organic bovine animals (A2000_ORG) must be $\leq$ SUM of Bovine animals less than 1 year old (A2010) + Bovine animals 1 to less than 2 years old (A2020) + Female bovine 2 years old or over (including all cows) (A2230_2300) + Male bovine animals 2 years old or over (A2130)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_CORE156	Error		A5000_ORG<=A51100+A5140+A5000X5100	Organic poultry (A5000_ORG) must be <= SUM of Laying hens (A51100) + Broilers (A5140) + Other poultry excluding chicken (species) (A5000X5100)
VR_IFS2020_CORE157	Error	Y_BIRTH_MAN <> 'null'	Y_BIRTH_MAN < 2019 OR Y_BIRTH_MAN > 1903	Manager cannot be born after 2019 nor before 1903
VR_IFS2020_LAFO001	Error	EXTPOL_FACT1_LAFO <> 'null'	EXTPOL_FACT1_LAFO >= EXTPOL_FACT1_CORE	For farms with LAFO data the extrapolation factor 1 of LAFO module has to be larger than or equal to the extrapolation factor 1 in the CORE
VR_IFS2020_LAFO002	Info	EXTPOL_FACT1_LAFO <> 'null' AND STRA_ID_CORE <> 'null'	STRA_ID_LAFO = STRA_ID_CORE	If the stratum ID is completed for the core we expect the same stratum ID in the module for each holding. However exceptions might occur when strata are collapsed in the smaller module sub-sample due to a single responding holding in a stratum
VR_IFS2020_LAFO003	Error	EXTPOL_FACT2_LAFO <> 'null' AND PSU_CORE <> 'null'	PSU_LAFO = PSU_CORE	IF the primary sampling unit is completed for the core we expect the same PSU in the module for each holding
VR_IFS2020_LAFO004	Error	EXTPOL_FACT3_LAFO <> 'null' AND SSU_CORE <> 'null'	SSU_LAFO = SSU_CORE	IF the secondary sampling unit is completed for the core we expect the same in the module for each holding
VR_IFS2020_LAFO005	Error	EXTPOL_FACT1_LAFO <> 'null' AND OSU_S1_CORE <> 'null'	OSU_S1_LAFO = OSU_S1_CORE	IF the order of the selection of the holding or of the primary sampling unit in the first stage is completed in the core the same is expected in the module for each holding
VR_IFS2020_LAFO006				

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO007	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'PER_LEG_NEG', 'PER_LEG_EG', 'UNIT_CML' )	SEX_HLD = ' _Z'	IF legal form is a legal person or common land then sex of the holder is not applicable
VR_IFS2020_LAFO008	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM NOT IN ( 'PER_LEG_NEG', 'PER_LEG_EG', 'UNIT_CML' )	SEX_HLD IN ( 'M', 'F' )	IF legal form is NOT (a legal person (PER_LEG_NEG or PER_LEG_EG) OR common land (UNIT_CML)) THEN the sex of the holder must be either female OR male
VR_IFS2020_LAFO009	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_HLD', 'HLD_GRP' )	SEX_MAN = SEX_HLD	The sex of the manager is not = the sex of the holder in a sole holder holding or a group holding
VR_IFS2020_LAFO010	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'PER_LEG_NEG', 'PER_LEG_EG', 'UNIT_CML' )	Y_BIRTH_HLD = 'null'	IF legal form is a legal person or common land then the year of birth of the holder must be null
VR_IFS2020_LAFO011	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM NOT IN ( 'PER_LEG_NEG', 'PER_LEG_EG', 'UNIT_CML' )	Y_BIRTH_HLD <> 'null'	IF legal form is NOT a legal person (PER_LEG_NEG or PER_LEG_EG) NOR common land (UNIT_CML) THEN the year of birth of the holder must not be null
VR_IFS2020_LAFO012	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_HLD', 'HLD_GRP' )	Y_BIRTH_HLD = Y_BIRTH_MAN	IF Sole holder is also the manager OR the holding is a group holding THEN the year of birth of the manager = the year of birth of the holder

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO013	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_HLD', 'FARM_HLD_SPOUFA M', 'HLD_GRP' )	WH_HLD_AWU_PC NOT IN ( 'Z', 'PC0' )	IF Sole holder is also the manager OR Farm co- managed by holder and spouse or family member OR holding is a group holding then the percentage bands of the working hours of the holder cannot be not relevant and are > 0
VR_IFS2020_LAFO014	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_SPOU', 'FARM_FAM', 'FARM_ NFAM' )	WH_HLD_AWU_PC IN ( 'PC0', 'PC1T24', 'PC25T49', 'PC50T74', 'PC75T99', 'PC100' )	IF Holder spouse is the manager of the holding OR Manager is a member of the holder family but not his spouse OR manager is not a member
VR_IFS2020_LAFO015	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'PER_LEG_NEG', 'PER_LEG_EG', 'UNIT _CML' )	WH_HLD_AWU_PC = 'Z'	IF legal form is a legal person (PER_LEG_NEG or PER_LEG_EG) OR common land (UNIT_CML) THEN the percentage bands of the work of the holder must be not applicable
VR_IFS2020_LAFO016	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_HLD', 'HLD_GRP' )	WH_HLD_AWU_PC = WH_MAN_AWU_PC	IF sole holder is also the manager OR holding is a group holding THEN the percent band of work the manager must be = the percent band of work of the holder
VR_IFS2020_LAFO017	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_SPOU', 'FARM_FAM' ) AND ( SEX_MAN = 'M' ) AND ( WH_MAN_AWU_PC = 'PC1T24' )	FLF_D_RFAM_M_PC1T24 > 0	IF (the holder spouse is the manager of the holding OR the manager is a member of the holder family but not his spouse) AND the manager is a male AND the manager work time is in 1- 24 percent band THEN the number of male family members with Work time 1-24 has to be > 0

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO018	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_SPOU', 'FARM_FAM' ) AND ( SEX_MAN = 'M' ) AND ( WH_MAN_AWU_PC = 'PC25T49' )	FLF_D_RFAM_M_PC25T4 9 > 0	IF (the holder spouse is the manager of the holding OR the manager is a member of the holder family but not his spouse) AND the manager is a male AND the manager work time is in 25-49 percent band THEN the number of male family members with Work time 25-49 has to be > 0
VR_IFS2020_LAFO019	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_SPOU', 'FARM_FAM' ) AND ( SEX_MAN = 'M' ) AND ( WH_MAN_AWU_PC = 'PC50T74' )	FLF_D_RFAM_M_PC50T7 4 > 0	IF (the holder spouse is the manager of the holding OR the manager is a member of the holder family but not his spouse) AND the manager is a male AND the manager work time is in 50-74 percent band THEN the number of male family members with Work time 50-74 has to be > 0
VR_IFS2020_LAFO020	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_SPOU', 'FARM_FAM' ) AND ( SEX_MAN = 'M' ) AND ( WH_MAN_AWU_PC = 'PC75T99' )	FLF_D_RFAM_M_PC75T9 9 > 0	IF (the holder spouse is the manager of the holding OR the manager is a member of the holder family but not his spouse) AND the manager is a male AND the manager work time is in 75-99 percent band THEN the number of male family members with Work time 75-99 has to be > 0

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO021	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_SPOU', 'FARM_FAM' ) AND ( SEX_MAN = 'M' ) AND ( WH_MAN_AWU_PC = 'PC100' )	FLF_D_RFAM_M_PC100 > 0	IF (the holder spouse is the manager of the holding OR the manager is a member of the holder family but not his spouse) AND the manager is a male AND the manager work time is in 100 percent band THEN the number of male family members with Work time 100 has to be > 0
VR_IFS2020_LAFO022	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_SPOU', 'FARM_FAM' ) AND ( SEX_MAN = 'F' ) AND ( WH_MAN_AWU_PC = 'PC1T24' )	FLF_D_RFAM_F_PC1T24 > 0	IF (the holder spouse is the manager of the holding OR the manager is a member of the holder family but not his spouse) AND the manager is a female AND the manager work time is in 1-24 percent band THEN the number of female family members with Work time 1-24 has to be > 0
VR_IFS2020_LAFO023	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_SPOU', 'FARM_FAM' ) AND ( SEX_MAN = 'F' ) AND ( WH_MAN_AWU_PC = 'PC25T49' )	FLF_D_RFAM_F_PC25T49 > 0	IF (the holder spouse is the manager of the holding OR the manager is a member of the holder family but not his spouse) AND the manager is a female AND the manager work time is in 25-49 percent band THEN the number of female family members with Work time 25-49 has to be > 0

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO024	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_SPOU', 'FARM_FAM' ) AND ( SEX_MAN = 'F' ) AND ( WH_MAN_AWU_PC = 'PC50T74' )	FLF_D_RFAM_F_PC50T74 > 0	IF (the holder spouse is the manager of the holding OR the manager is a member of the holder family but not his spouse) AND the manager is a female AND the manager work time is in 50-74 percent band THEN the number of female family members with Work time 50-74 has to be > 0
VR_IFS2020_LAFO025	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_SPOU', 'FARM_FAM' ) AND ( SEX_MAN = 'F' ) AND ( WH_MAN_AWU_PC = 'PC75T99' )	FLF_D_RFAM_F_PC75T99 > 0	IF (the holder spouse is the manager of the holding OR the manager is a member of the holder family but not his spouse) AND the manager is a female AND the manager work time is in 75-99 percent band THEN the number of female family members with Work time 75-99 has to be > 0
VR_IFS2020_LAFO026	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_SPOU', 'FARM_FAM' ) AND ( SEX_MAN = 'F' ) AND ( WH_MAN_AWU_PC = 'PC100' )	FLF_D_RFAM_F_PC100 > 0	IF (the holder spouse is the manager of the holding OR the manager is a member of the holder family but not his spouse) AND the manager is a female AND the manager work time is in 100 percent band THEN the number of female family members with Work time 100 has to be > 0

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO027	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_NFAM', 'PER_LEG_NEG', 'PER _LEG_EG') AND (SEX_MAN = 'M') AND (WH_MAN_AWU_PC = 'PC1T24')	FLF_D_RNFAM_M_PC1T2 4 > 0	IF (the manager of the holding is not a family member of the holder OR holding is a legal person (PER_LEG_NEG or PER_LEG_EG)) AND the manager is a male AND the manager work time is in 1- 24 percent band THEN the number of male non- family members (directly employed by the holding) with Work time 1-24 has to be > 0
VR_IFS2020_LAFO028	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_NFAM', 'PER_LEG_NEG', 'PER _LEG_EG') AND (SEX_MAN = 'M') AND (WH_MAN_AWU_PC = 'PC25T49')	FLF_D_RNFAM_M_PC25T 49 > 0	IF (the manager of the holding is not a family member of the holder OR holding is a legal person (PER_LEG_NEG or PER_LEG_EG)) AND the manager is a male AND the manager work time is in 25-49 percent band THEN the number of male non- family members (directly employed by the holding) with Work time 25-49 has to be > 0
VR_IFS2020_LAFO029	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_NFAM', 'PER_LEG_NEG', 'PER _LEG_EG') AND (SEX_MAN = 'M') AND (WH_MAN_AWU_PC = 'PC50T74')	FLF_D_RNFAM_M_PC50T 74 > 0	IF (the manager of the holding is not a family member of the holder OR holding is a legal person (PER_LEG_NEG or PER_LEG_EG)) AND the manager is a male AND the manager work time is in 50-74 percent band THEN the number of male non- family members (directly employed by the holding) with Work time 50-74 has to be > 0

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO030	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('FARM_NFAM','PER_LEG_NEG','PER _LEG_EG') AND (SEX_MAN = 'M') AND (WH_MAN_AWU_PC = 'PC75T99')	FLF_D_RNFAM_M_PC75T 99 > 0	IF (the manager of the holding is not a family member of the holder OR holding is a legal person (PER_LEG_NEG or PER_LEG_EG)) AND the manager is a male AND the manager work time is in 75-99 percent band THEN the number of male non-family members (directly employed by the holding) with Work time 75-99 has to be > 0
VR_IFS2020_LAFO031	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('FARM_NFAM','PER_LEG_NEG','PER _LEG_EG') AND (SEX_MAN = 'M') AND (WH_MAN_AWU_PC = 'PC100')	FLF_D_RNFAM_M_PC100 > 0	IF (the manager of the holding is not a family member of the holder OR holding is a legal person (PER_LEG_NEG or PER_LEG_EG)) AND the manager is a male AND the manager work time is in 100 percent band THEN the number of male non-family members (directly employed by the holding) with Work time 100 has to be > 0
VR_IFS2020_LAFO032	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('FARM_NFAM','PER_LEG_NEG','PER _LEG_EG') AND (SEX_MAN = 'F') AND (WH_MAN_AWU_PC = 'PC1T24')	FLF_D_RNFAM_F_PC1T24 > 0	IF (the manager of the holding is not a family member of the holder OR holding is a legal person (PER_LEG_NEG or PER_LEG_EG)) AND the manager is a female AND the manager work time is in 1-24 percent band THEN the number of female non-family members (directly employed by the holding) with Work time 1-24 has to be > 0

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO033	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('FARM_NFAM','PER_LEG_NEG','PER _LEG_EG') AND (SEX_MAN = 'F') AND (WH_MAN_AWU_PC = 'PC25T49')	FLF_D_RNFAM_F_PC25T4 9 > 0	IF (the manager of the holding is not a family member of the holder OR holding is a legal person (PER_LEG_NEG or PER_LEG_EG)) AND the manager is a female AND the manager work time is in 25-49 percent band THEN the number of female non-family members (directly employed by the holding) with Work time 25-49 has to be > 0
VR_IFS2020_LAFO034	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('FARM_NFAM','PER_LEG_NEG','PER _LEG_EG') AND (SEX_MAN = 'F') AND (WH_MAN_AWU_PC = 'PC50T74')	FLF_D_RNFAM_F_PC50T7 4 > 0	IF (the manager of the holding is not a family member of the holder OR holding is a legal person (PER_LEG_NEG or PER_LEG_EG)) AND the manager is a female AND the manager work time is in 50-74 percent band THEN the number of female non-family members (directly employed by the holding) with Work time 50-74 has to be > 0
VR_IFS2020_LAFO035	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('FARM_NFAM','PER_LEG_NEG','PER _LEG_EG') AND (SEX_MAN = 'F') AND (WH_MAN_AWU_PC = 'PC75T99')	FLF_D_RNFAM_F_PC75T9 9 > 0	IF (the manager of the holding is not a family member of the holder OR holding is a legal person (PER_LEG_NEG or PER_LEG_EG)) AND the manager is a female AND the manager work time is in 75-99 percent band THEN the number of female non-family members (directly employed by the holding) with Work time 75-99 has to be > 0

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO036	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_NFAM', 'PER_LEG_NEG', 'PER _LEG_EG' ) AND (SEX_MAN = 'F') AND (WH_MAN_AWU_PC = 'PC100')	FLF_D_RNFAM_F_PC100 > 0	IF (the manager of the holding is not a family member of the holder OR holding is a legal person (PER_LEG_NEG or PER_LEG_EG)) AND the manager is a female AND the manager work time is in 100 percent band THEN the number of female non-family members (directly employed by the holding) with Work time 100 has to be > 0
VR_IFS2020_LAFO037	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'PER_LEG_NEG', 'PER_LEG_EG', 'HLD_GRP', 'UNIT_CML' )	FLF_D_RFAM_M_PC1T24 + FLF_D_RFAM_M_PC25T4 9 + FLF_D_RFAM_M_PC50T7 4 + FLF_D_RFAM_M_PC75T9 9 + FLF_D_RFAM_M_PC100 + FLF_D_RFAM_F_PC1T24 + FLF_D_RFAM_F_PC25T49 + FLF_D_RFAM_F_PC50T74 + FLF_D_RFAM_F_PC75T99 + FLF_D_RFAM_F_PC100 = 0	IF the holding is a legal person (PER_LEG_NEG or PER_LEG_EG) OR the holding is a group holding (HLD_GRP) OR the holding is a common land unit (UNIT_CML) THEN the farm work of family members of the holder is 0 (zero)
VR_IFS2020_LAFO038				
VR_IFS2020_LAFO039				
VR_IFS2020_LAFO040				
VR_IFS2020_LAFO041				
VR_IFS2020_LAFO042	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'UNIT_CML', 'PER_LEG_NEG', 'PER_LEG_EG' )	NOGA_HLD_RH = 1	IF holding is of type (Holding is a legal person (PER_LEG_NEG or PER_LEG_EG) OR Holding is common land (UNIT_CML)) must have NOGA_HLD_RH = 1

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO043	Error	EXTPOL_FACT1_LAFO <> 'null' AND MOGA_HLD_RH = 1	(SOGA_HLD_RH = 0) AND (NOGA_HLD_RH = 0)	For OGA of the holder (MLFO023) which are directly related to the holding, only one option can be true out of MOGA or SOGA or NOGA
VR_IFS2020_LAFO044	Error	EXTPOL_FACT1_LAFO <> 'null' AND SOGA_HLD_RH = 1	(MOGA_HLD_RH = 0) AND (NOGA_HLD_RH = 0)	For OGA of the holder (MLFO023) which are directly related to the holding, only one option can be true out of MOGA or SOGA or NOGA
VR_IFS2020_LAFO045	Error	EXTPOL_FACT1_LAFO <> 'null' AND NOGA_HLD_RH = 1	(MOGA_HLD_RH = 0) AND (SOGA_HLD_RH = 0)	For OGA of the holder (MLFO023) which are directly related to the holding, only one option can be true out of MOGA or SOGA or NOGA
VR_IFS2020_LAFO046				
VR_IFS2020_LAFO047	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('PER_LEG_NEG', 'PER_LEG_EG', 'HLD_GRP', 'UNIT_CML')	(MOGA_FAM_RH = 0) AND (SOGA_FAM_RH = 0)	Legal holdings (PER_LEG_NEG OR PER_LEG_EG), holding-groups (HLD_GRP) or common land units (UNIT_CML) must have MOGA_FAM_RH = 0 AND SOGA_FAM_RH = 0
VR_IFS2020_LAFO048				
VR_IFS2020_LAFO049				
VR_IFS2020_LAFO050				
VR_IFS2020_LAFO051				
VR_IFS2020_LAFO052	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('FARM_HLD', 'FARM_HLD_SPOUFAM', 'FARM_SPOU', 'FARM_FAM', 'FARM_NFAM', 'FARM_HLD_SPOU', 'HLD_GRP')	SOGA_NFAM_RH >= 0	Other gainful activities of non-family members (related to the holding) as secondary activity (MLFO027) are collected for sole holder holdings and holding-groups

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO053	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('PER_LEG_NEG', 'PER_LEG_EG', 'UNIT_CML')	MOGA_NFAM_RH = 0	Other gainful activities of family members (related to the holding) as main activity (MLFO026) are NOT collected for legal holdings ((PER_LEG_NEG or PER_LEG_EG) NOR common land units ((UNIT_CML))
VR_IFS2020_LAFO054	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('PER_LEG_NEG', 'PER_LEG_EG', 'UNIT_CML')	SOGA_NFAM_RH = 0	Other gainful activities of family members (related to the holding) as secondary activity (MLFO027) are NOT collected for legal holdings ((PER_LEG_NEG or PER_LEG_EG) NOR common land units ((UNIT_CML))
VR_IFS2020_LAFO055				
VR_IFS2020_LAFO056				
VR_IFS2020_LAFO057	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_HLD_SPOUFAM', 'FARM_SPOU', 'FARM_FAM', 'FARM_NFAM', 'PER_LEG_NEG', 'PER_LEG_EG', 'HLD_GRP', 'UNIT_CML')	MOGA_FAM_NRH = 0	Other gainful activities of family members (not related to the holding) as main activity (MLFO029) are only collected for sole holder holdings where the holder is the manager
VR_IFS2020_LAFO058	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_HLD_SPOUFAM', 'FARM_SPOU', 'FARM_FAM', 'FARM_NFAM', 'PER_LEG_NEG', 'PER_LEG_EG', 'HLD_GRP', 'UNIT_CML')	SOGA_FAM_NRH = 0	Other gainful activities of family members (not related to the holding) as secondary activity (MLFO030) are only collected for sole holder holdings where the holder is the manager
VR_IFS2020_LAFO059				

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO060	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('PER_LEG_NEG', 'PER_LEG_EG', 'UNIT_CML')	(OGA_HSES = 0) AND (OGA_TAOLA = 0) AND (OGA_HC = 0) AND (OGA_FPRDPRC = 0) AND (OGA_NRGRPRD = 0) AND (OGA_WPRC = 0) AND (OGA_AQUA = 0) AND (OGA_ACW = 0) AND (OGA_NACW = 0) AND (OGA_FOR = 0) AND (OGA_AGRHLD = 0)	Type of other gainful activities is NOT collected (= 0) for legal persons ((PER_LEG_NEG or PER_LEG_EG)) NOR common land units (UNIT_CML)
<del>VR_IFS2020_LAFO061</del>	Error			
VR_IFS2020_LAFO062	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ('PER_LEG_NEG', 'PER_LEG_EG', 'UNIT_CML')	PC_OGA_OUT = '_Z'	Percent band of other gainful activities directly related to the agricultural holding on the final output of the holding is NOT collected (PC_OGA_OUT = _Z) for legal persons ((PER_LEG_NEG or PER_LEG_EG)) NOR common land units (UNIT_CML)
VR_IFS2020_LAFO063	Error	EXTPOL_FACT1_LAFO <> 'null' AND (OGA_HSES = '0') AND (OGA_TAOLA = '0') AND (OGA_HC = '0') AND (OGA_FPRDPRC = '0') AND (OGA_NRGRPRD = '0') AND (OGA_WPRC = '0') AND (OGA_AQUA = '0') AND (OGA_ACW = '0') AND (OGA_NACW = '0') AND (OGA_FOR = '0') AND (OGA_AGRHLD = '0')	PC_OGA_OUT = 'PC0T10'	IF there are no other gainful activities in the holding THEN the importance of other gainful activities in the holding must be >=0 AND <=10
<del>VR_IFS2020_LAFO064</del>				
<del>VR_IFS2020_LAFO064</del>				
VR_IFS2020_LAFO065	Error	EXTPOL_FACT1_LAFO = 'null'	All variables in LIST_LAFO = 'null' AND EXTPOL_FACT2_LAFO = 'null' AND EXTPOL_FACT3_LAFO = 'null'	If extrapolation factor 1 for the module LAFO is null extrapolation factors 2 and 3 must be null
VR_IFS2020_LAFO066	Error	EXTPOL_FACT2_LAFO = 'null'	EXTPOL_FACT3_LAFO = 'null'	If extrapolation factor 2 for the module LAFO is null then extrapolation factor 3 must be null

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO067	Error	EXTPOL_FACT1_LAFO <> 'null' AND LEG_FORM IN ( 'FARM_HLD_SPOUFAM' )	(FLF_D_RFAM_M_PC1T2 4 + FLF_D_RFAM_M_PC25T4 9 + FLF_D_RFAM_M_PC50T7 4 + FLF_D_RFAM_M_PC75T9 9 + FLF_D_RFAM_M_PC100 + FLF_D_RFAM_F_PC1T24 + FLF_D_RFAM_F_PC25T49 + FLF_D_RFAM_F_PC50T74 + FLF_D_RFAM_F_PC75T99 + FLF_D_RFAM_F_PC100) > 0	IF the holders spouse or family member is co- manager of the holding THEN the farmwork (in AWU) of family members of the sole holder has to be > 0 (zero)
VR_IFS2020_LAFO068	Error	EXTPOL_FACT2_LAFO <> 'null'	EXTPOL_FACT2_LAFO >= EXTPOL_FACT2_CORE	For farms with LAFO data the extrapolation factor 2 of LAFO module has to be larger than or equal to the extrapolation factor 2 in the CORE
VR_IFS2020_LAFO069	Error	EXTPOL_FACT3_LAFO <> 'null'	EXTPOL_FACT3_LAFO >= EXTPOL_FACT3_CORE	For farms with LAFO data the extrapolation factor 3 of LAFO module has to be larger than or equal to the extrapolation factor 3 in the CORE
VR_IFS2020_LAFO070	Error	EXTPOL_FACT1_LAFO <> 'null' AND EXTPOL_FACT2_LAFO ≠ 'null' AND EXTPOL_FACT3_LAFO ≠ 'null'	PSU_LAFO = 'null' AND SSU_LAFO = 'null'	If the only extrapolation factor completed is 1 then the fields of PSU and SSU are not relevant
VR_IFS2020_LAFO071	Error	EXTPOL_FACT1_LAFO <> 'null' AND EXTPOL_FACT2_LAFO <> 'null' AND EXTPOL_FACT3_LAFO ≠ 'null'	PSU_LAFO <> 'null' AND SSU_LAFO = 'null'	If the only extrapolation factors completed are 1 and 2 then the field of PSU is relevant and the field of SSU is not relevant
VR_IFS2020_LAFO072	Error	EXTPOL_FACT1_LAFO <> 'null' AND EXTPOL_FACT2_LAFO <> 'null' AND EXTPOL_FACT3_LAFO <> 'null'	PSU_LAFO <> 'null' AND SSU_LAFO <> 'null'	If all 3 extrapolation factors are completed then the fields of PSU and SSU are relevant

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO073	Error	STRA_ID_LAFO ='null'	STRA_IDF_LAFO = '_Z'	If the stratum is not filled in then the flag of the stratum indicates NOT APPLICABLE
VR_IFS2020_LAFO074	Error	STRA_ID_LAFO <>'null'	STRA_IDF_LAFO in ('1','2','3')	If the stratum is filled in then the flag of the stratum is filled in with the code indicating its meaning
VR_IFS2020_LAFO075	Error	PSU_LAFO ='null'	PSUF_LAFO = '_Z'	If the PSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_LAFO076	Error	PSU_LAFO <>'null'	PSUF_LAFO ='1'	If the PSU is filled in then the corresponding flag is filled in with 1
VR_IFS2020_LAFO077	Error	SSU_LAFO ='null'	SSUF_LAFO = '_Z'	If the SSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_LAFO078	Error	SSU_LAFO <>'null'	SSUF_LAFO ='1'	If the SSU is filled in then the corresponding flag is filled in with 1
VR_IFS2020_LAFO079	Error	OSU_S1_LAFO ='null'	OSU_SF1_LAFO = '_Z'	If the OSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_LAFO080	Error	OSU_S1_LAFO <>'null'	OSU_SF1_LAFO ='1'	If the OSU is filled in then the corresponding flag is filled in with 1
VR_IFS2020_LAFO081	Error	for 2 records PSU_LAFO is equal	for the same records, STRA_ID_LAFO is equal	There should not be 2 records with the same PSU and different strata
VR_IFS2020_LAFO082	Error	for 2 records SSU_LAFO is equal	for the same records, PSU_LAFO is equal and STRA_ID_LAFO is equal	There should not be 2 records with the same SSU and different PSU or different strata

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO083	Error	At least one variable in LIST_LAFO <> 'null'	EXTPOL_FACT1_LAFO <> 'null'	All holdings with LAFO module data should have EXTPOL_FACT1_LAFO completed
VR_IFS2020_LAFO084	Error	EXTPOL_FACT1_LAFO = 'null'	All variables in LIST_LAFO = 'null' and (STRA_IDF_LAFO, PSUF_LAFO, SSUF_LAFO, OSU_SF1_LAFO) = '_Z'	All holdings without LAFO module data shall have all data fields and sampling design fields for the LAFO module null. Flag fields excepted (they need to be filled in)
<del>VR_IFS2020_LAFO085</del>				
DR_IFS2020_LAFO086		DECODE(WH_MAN_AWU_PC,'_Z',0,'PC1T24',1,'PC25T49',25,'PC50T74',50,'PC75T99',75,'PC100',100)		
DR_IFS2020_LAFO087		DECODE(WH_HLD_AWU_PC,'_Z',0,'PC0',0,'PC1T24',1,'PC25T49',25,'PC50T74',50,'PC75T99',75,'PC100',100)		
VR_IFS2020_LAFO088	Info	Y_BIRTH_HLD <> 'null'	Y_BIRTH_HLD < 2003 OR Y_BIRTH_HLD > 1920	Holder was born before 1920 or after 2003
VR_IFS2020_LAFO089	Error	Y_BIRTH_HLD <> 'null'	Y_BIRTH_HLD < 2019 OR Y_BIRTH_HLD > 1903	Holder cannot be born after 2019 nor before 1903
VR_IFS2020_LAFO090	Error	EXTPOL_FACT1_LAFO <> 'null' AND MOGA_HLD_NRH = 1	(SOGA_HLD_NRH = 0) AND (NOGA_HLD_NRH = 0)	For OGA of the holder (MLFO028) which are not directly related to the holding, only one option can be true out of MOGA or SOGA or NOGA
VR_IFS2020_LAFO091	Error	EXTPOL_FACT1_LAFO <> 'null' AND SOGA_HLD_NRH = 1	(MOGA_HLD_NRH = 0) AND (NOGA_HLD_NRH = 0)	For OGA of the holder (MLFO028) which are not directly related to the holding, only one option can be true out of MOGA or SOGA or NOGA

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_LAFO092	Error	EXTPOL_FACT1_LAFO <> 'null' AND NOGA_HLD_NRH = 1	(MOGA_HLD_NRH = 0) AND (SOGA_HLD_NRH = 0)	For OGA of the holder (MLFO028) which are not directly related to the holding, only one option can be true out of MOGA or SOGA or NOGA
VR_IFS2020_LAFO093	Error	EXTPOL_FACT1_LAFO <> 'null' AND MOGA_HLD_RH = 1	MOGA_HLD_NRH = 0	If the holder has OGA (MLFO023) which are directly related to the holding as main activity (MOGA_HLD_RH = 1) then it is not possible to have OGA (MLFO028) which are not related to the holding also as main activity.
VR_IFS2020_LAFO094	Error	EXTPOL_FACT1_LAFO <> 'null' AND MOGA_HLD_NRH = 1	MOGA_HLD_RH = 0	If the holder has OGA (MLFO028) which are not directly related to the holding as main activity (MOGA_HLD_NRH = 1) then it is not possible to have OGA (MLFO023) which are related to the holding also as main activity.
VR_IFS2020_LAFO095	Error	EXTPOL_FACT1_LAFO <> 'null'	All variables in LIST_LAFO <> 'null'	All holdings with LAFO module data shall have all fields and sampling design data fields for the LAFO module filled in
<del>VR_IFS2020_RDEV001</del>				
VR_IFS2020_RDEV002	Error	EXTPOL_FACT1_RDEV <> 'null'	EXTPOL_FACT1_RDEV >= EXTPOL_FACT1_CORE	For farms with RDEV data the extrapolation factor 1 of RDEV module has to be larger than or equal to extrapolation factor 1 in the CORE

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_RDEV003	Info	EXTPOL_FACT1_RDEV <> 'null' AND STRA_ID_CORE <> 'null'	STRA_ID_RDEV = STRA_ID_CORE	IF the stratum ID is completed for the core we expect the same stratum ID in the module for each holding however exceptions might occur when strata are collapsed in the smaller module sub-sample due to a single responding holding in a stratum
VR_IFS2020_RDEV004	Error	EXTPOL_FACT2_RDEV <> 'null' AND PSU_CORE <> 'null'	PSU_RDEV = PSU_CORE	When the core is sample-based having PSUs and a module is a sub-sample of the core the holdings in the sub-sample (with both core and module data) shall have the same code in PSU_RDEV and PSU_CORE
VR_IFS2020_RDEV005	Error	EXTPOL_FACT3_RDEV <> 'null' AND SSU_CORE <> 'null'	SSU_RDEV = SSU_CORE	IF the secondary sampling unit is completed for the core we expect the same in the module for each holding
VR_IFS2020_RDEV006	Error	EXTPOL_FACT1_RDEV <> 'null' AND OSU_S1_CORE <> 'null'	OSU_S1_RDEV = OSU_S1_CORE	IF the order of the selection of the holding or of the primary sampling unit in the first stage is completed in the core the same is expected in the module for each holding
VR_IFS2020_RDEV007				
VR_IFS2020_RDEV008	Error	EXTPOL_FACT1_RDEV <> 'null' AND RDEV_40_18 = 1	REF_AREA = 'HR'	Measure 18 applies only to Croatia
VR_IFS2020_RDEV009	Error	EXTPOL_FACT1_RDEV = 'null' '	All variables in LIST_RDEV = 'null' and (STRA_IDF_RDEV, PSUF_RDEV, SSUF_RDEV, OSU_SF1_RDEV) = '_Z'	All holdings without RDEV module data shall have all data fields and sampling design fields for the RDEV module null. Flag fields excepted (they need to be filled in)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_RDEV010	Error	EXTPOL_FACT2_RDEV = 'null' '	EXTPOL_FACT3_RDEV = 'null' '	If extrapolation factor 2 for the module RDEV is null then extrapolation factor 3 must be null
VR_IFS2020_RDEV011	Error	At least one variable in LIST_RDEV <> 'null'	EXTPOL_FACT1_RDEV <> 'null'	All holdings with RDEV module data should have <del>at least the first two</del> <del>extrapolation factors for the module</del> (EXTPOL_FACT1_RDEV and EXTPOL_FACT2_RDEV) completed
VR_IFS2020_RDEV012				
VR_IFS2020_RDEV013	Error	EXTPOL_FACT2_RDEV <> 'null'	EXTPOL_FACT2_RDEV >= EXTPOL_FACT2_CORE	For farms with RDEV data the extrapolation factor 2 of RDEV module has to be larger than or equal to extrapolation factor 2 in the CORE
VR_IFS2020_RDEV014	Error	EXTPOL_FACT3_RDEV <> 'null'	EXTPOL_FACT3_RDEV >= EXTPOL_FACT3_CORE	For farms with RDEV data the extrapolation factor 3 of RDEV module has to be larger than or equal to extrapolation factor 3 in the CORE
VR_IFS2020_RDEV015	Error	EXTPOL_FACT1_RDEV <> 'null' AND EXTPOL_FACT2_RDEV = 'null' AND EXTPOL_FACT3_RDEV = 'null'	PSU_RDEV = 'null' AND SSU_RDEV = 'null'	If the only extrapolation factor completed is 1 then the fields of PSU and SSU are not relevant
VR_IFS2020_RDEV016	Error	EXTPOL_FACT1_RDEV <> 'null' AND EXTPOL_FACT2_RDEV <> 'null' AND EXTPOL_FACT3_RDEV = 'null'	PSU_RDEV <> 'null' AND SSU_RDEV = 'null'	If the only extrapolation factors completed are 1 and 2 then the field of PSU is relevant and the field of SSU is not relevant
VR_IFS2020_RDEV017	Error	EXTPOL_FACT1_RDEV <> 'null' AND EXTPOL_FACT2_RDEV <> 'null' AND EXTPOL_FACT3_RDEV <> 'null'	PSU_RDEV <> 'null' AND SSU_RDEV <> 'null'	If all 3 extrapolation factors are completed then the fields of PSU and SSU are relevant
VR_IFS2020_RDEV018	Error	STRA_ID_RDEV = 'null'	STRA_IDF_RDEV = '_Z'	If the stratum is not filled in then the flag of the stratum indicates NOT APPLICABLE

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_RDEV019	Error	STRA_ID_RDEV <>'null'	STRA_ID_RDEV in ('1','2','3')	If the stratum is filled in then the flag of the stratum is filled in with the code indicating its meaning
VR_IFS2020_RDEV020	Error	PSU_RDEV ='null'	PSUF_RDEV ='_Z'	If the PSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_RDEV021	Error	PSU_RDEV <>'null'	PSUF_RDEV ='1'	If the PSU is filled in then the corresponding flag is filled in with 1
VR_IFS2020_RDEV022	Error	SSU_RDEV ='null'	SSUF_RDEV ='_Z'	If the SSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_RDEV023	Error	SSU_RDEV <>'null'	SSUF_RDEV ='1'	If the SSU is filled in then the corresponding flag is filled in with 1
VR_IFS2020_RDEV024	Error	OSU_S1_RDEV ='null'	OSU_SF1_RDEV='_Z'	If the OSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_RDEV025	Error	OSU_S1_RDEV <>'null'	OSU_SF1_RDEV ='1'	If the OSU is filled in then the corresponding flag is filled in with 1
VR_IFS2020_RDEV026	Error	for 2 records PSU_RDEV is equal	for the same records, STRA_ID_RDEV is equal	There should not be 2 records with the same PSU and different strata
VR_IFS2020_RDEV027	Error	for 2 records SSU_RDEV is equal	for the same records, PSU_RDEV is equal and STRA_ID_RDEV is equal	There should not be 2 records with the same SSU and different PSU or different strata
VR_IFS2020_RDEV028	Info	EXTPOL_FACT1_RDEV <> 'null' AND RDEV_29_11 = '1'	UAATXK0000_ORG > 0	The farm has received support under rural development for organic farming (RDEV_29_11) but has no organic area (UAATXK0000_ORG)

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_RDEV029	Info	EXTPOL_FACT1_RDEV <> 'null' AND RDEV_33_14 = '1'	SUM(A2010,A2020,A2130,A2230_2300,A4100,A4200,A3110,A3120,A3130,A5140,A51100,A5000X5100,A6111,A6210,A6010,A0030)>0	The farm has received support under rural development for animal welfare (RDEV_33_14) but has no livestock
DR_IFS2020_RDEV030		DECODE(A6210,'0',0,'1',1)		
DR_IFS2020_RDEV031		DECODE(A6010,'0',0,'1',1)		
DR_IFS2020_RDEV032		DECODE(A0030,'0',0,'1',1)		
VR_IFS2020_RDEV033	Error	EXTPOL_FACT1_RDEV = 'null'	EXTPOL_FACT2_RDEV = 'null' AND EXTPOL_FACT3_RDEV = 'null'	If extrapolation factor 1 for the module RDEV is null extrapolation factors 2 and 3 must be null
<del>VR_IFS2020_AHMM001</del>				
VR_IFS2020_AHMM002	Error	EXTPOL_FACT1_AHMM <> 'null'	EXTPOL_FACT1_AHMM >= EXTPOL_FACT1_CORE	For farms with AHMM data the extrapolation factor 1 of AHMM module has to be larger than or equal to the extrapolation factor 1 in the CORE
VR_IFS2020_AHMM003	Info	EXTPOL_FACT1_AHMM <> 'null' AND STRA_ID_CORE <> 'null'	STRA_ID_AHMM = STRA_ID_CORE	IF the stratum ID is completed for the core we expect the same stratum ID in the module for each holding however exceptions might occur when strata are collapsed in the smaller module sub-sample due to a single responding holding in a stratum
VR_IFS2020_AHMM004	Error	EXTPOL_FACT2_AHMM <> 'null' AND PSU_CORE <> 'null'	PSU_AHMM = PSU_CORE	IF the primary sampling unit is completed for the core we expect the same PSU in the module for each holding

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_AHMM005	Error	EXTPOL_FACT3_AHMM <> 'null' AND SSU_CORE <> 'null'	SSU_AHMM = SSU_CORE	IF the secondary sampling unit is completed for the core we expect the same in the module for each holding
VR_IFS2020_AHMM006	Error	EXTPOL_FACT1_AHMM <> 'null' AND OSU_S1_CORE <> 'null'	OSU_S1_AHMM = OSU_S1_CORE	IF the order of the selection of the holding or of the primary sampling unit in the first stage is completed in the core the same is expected in the module for each holding
VR_IFS2020_AHMM007	Error	EXTPOL_FACT1_AHMM <> 'null' AND UAA_FER_M > 0	UAA_FER_M <= UAAT + UAAS	The area fertilised with mineral fertilisers cannot be bigger than the total utilised agricultural area
VR_IFS2020_AHMM008	Error	EXTPOL_FACT1_AHMM <> 'null' AND UAA_FER_O_LM > 0	UAA_FER_O_LM <= UAAT + UAAS	The area fertilised with livestock manure cannot be bigger than the total utilised agricultural area
VR_IFS2020_AHMM009	Info	EXTPOL_FACT1_AHMM <> 'null' AND UAA_FER_M > 0 OR UAA_FER_O_LM > 0	nvl(UAA_FER_M,0) + nvl(UAA_FER_O_LM,0) <= nvl(UAAT,0) + nvl(UAAS,0)	The sum of area fertilised with mineral fertilisers + area fertilised with livestock manure can be bigger than the total utilised agricultural area if there are areas that are fertilised both with mineral fertilisers and livestock manure
DR_IFS2020_AHMM010		DECODE(INC_BC_LE4H_PC, 'PC100',100,'PC0',0,'_Z',0,'PC1T24',1, 'PC25T49',25,'PC50T74',50,'PC75T99',75)		DECODE RULES explanation: for INC_BC_LE4H_PC take 100 in place of PC100 take 0 in place of PC0 etc

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
DR_IFS2020_AHMM011		DECODE(INC_BC_GT4H_PC, 'PC100',100,'PC0',0,'_Z',0,'PC1T24',1, 'PC25T49',25,'PC50T74',50,'PC75T99',75)		DECODE RULES
DR_IFS2020_AHMM012		DECODE(NINC_BC_PC, 'PC100',100,'PC0',0,'_Z',0,'PC1T24',1, 'PC25T49',25,'PC50T74',50,'PC75T99',75)		DECODE RULES
DR_IFS2020_AHMM013		DECODE(INC_BSTH_PC, 'PC100',100,'PC0',0,'_Z',0,'PC1T24',1, 'PC25T49',25,'PC50T74',50,'PC75T99',75)		DECODE RULES
DR_IFS2020_AHMM014		DECODE(INC_BSTS_PC, 'PC100',100,'PC0',0,'_Z',0,'PC1T24',1, 'PC25T49',25,'PC50T74',50,'PC75T99',75)		DECODE RULES
DR_IFS2020_AHMM015		DECODE(INJ_SOL_PC, 'PC100',100,'PC0',0,'_Z',0,'PC1T24',1, 'PC25T49',25,'PC50T74',50,'PC75T99',75)		DECODE RULES
DR_IFS2020_AHMM016		DECODE(INJ_DPCL_PC, 'PC100',100,'PC0',0,'_Z',0,'PC1T24',1, 'PC25T49',25,'PC50T74',50,'PC75T99',75)		DECODE RULES
VR_IFS2020_AHMM017	Error	EXTPOL_FACT1_AHMM <> 'null'	sum of (INC_BC_LE4H_PC, INC_BC_GT4H_PC, NINC_BC_PC, INC_BSTH_PC, INC_BSTS_PC, INC_SOL_PC, INJ_DPCL_PC) <= 100	The sum of percentage bands of manure application techniques must be smaller or equal to 100
VR_IFS2020_AHMM018	Error	EXTPOL_FACT1_AHMM <> 'null'	sum of (ST_SO_HEAP, ST_COMP, ST_PIT, ST_DPLT, ST_LQ_SL_NC, ST_LQ_SL_PC, ST_LQ_SL_IC, ST_OF, NST_DSPR) <=100	The sum of storage must be <=100

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_AHMM019	Error	EXTPOL_FACT1_AHMM <> 'null' AND (ST_SO_HEAP + ST_COMP + ST_PIT + ST_DPLT + ST_LQ_SL_NC + ST_LQ_SL_PC + ST_LQ_SL_IC + ST_OF + NST_DSPR) < 100	(NETEXP_FER_O_LM_LQ_ SL > 0) OR (NETEXP_FER_O_LM_SO > 0)	IF sum of storage <100 THEN net export NETEXP_FER_O_LM_LQ_SL must be positive (> 0) or net export NETEXP_FER_O_LM_SO must be positive (> 0)
VR_IFS2020_AHMM020	Error	EXTPOL_FACT1_AHMM = 'null'	All variables in LIST_AHMM = 'null' and (STRA_IDF_AHMM, PSUF_AHMM, SSUF_AHMM, OSU_SF1_AHMM) = '_Z'	All holdings without AHMM module data shall have all data fields and sampling design fields for the AHMM module null (flag fields excepted as they need to be filled in)
VR_IFS2020_AHMM021	Error	EXTPOL_FACT2_AHMM = 'null'	EXTPOL_FACT3_AHMM = 'null'	If extrapolation factor 2 for the module is null then extrapolation factor 3 must be null
VR_IFS2020_AHMM022	Error	At least one variable in LIST_AHMM <> 'null'	EXTPOL_FACT1_AHMM <> 'null'	All holdings with AHMM module data should have EXTPOL_FACT1_AHMM and EXTPOL_FACT2_AHMM) completed
VR_IFS2020_AHMM023				
VR_IFS2020_AHMM024	Error	EXTPOL_FACT2_AHMM <> 'null'	EXTPOL_FACT2_AHMM >= EXPOL_FACT2_CORE	For farms with AHMM data the extrapolation factor 2 of AHMM module has to be larger than or equal to the extrapolation factor 2 in the CORE
VR_IFS2020_AHMM025	Error	EXTPOL_FACT3_AHMM <> 'null'	EXTPOL_FACT3_AHMM >= EXPOL_FACT3_CORE	For farms with AHMM data the extrapolation factor 3 of AHMM module has to be larger than or equal to the extrapolation factor 3 in the CORE

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_AHMM026	Error	EXTPOL_FACT1_AHMM <> 'null' AND EXPOL_FACT2_AHMM ='null' AND EXPOL_FACT3_AHMM ='null'	PSU_AHMM = 'null' AND SSU_AHMM = 'null'	If the only extrapolation factor completed is 1 then the fields of PSU and SSU are not relevant
VR_IFS2020_AHMM027	Error	EXTPOL_FACT1_AHMM <> 'null' AND EXPOL_FACT2_AHMM <>'null' AND EXPOL_FACT3_AHMM ='null'	PSU_AHMM <> 'null' AND SSU_AHMM= 'null'	If the only extrapolation factors completed are 1 and 2 then the field of PSU is relevant and the field of SSU is not relevant
VR_IFS2020_AHMM028	Error	EXTPOL_FACT1_AHMM <> 'null' AND EXPOL_FACT2_AHMM <>'null' AND EXPOL_FACT3_AHMM <> 'null'	PSU_AHMM <> 'null' AND SSU_AHMM <> 'null'	If all 3 extrapolation factors are completed then the fields of PSU and SSU are relevant
VR_IFS2020_AHMM029	Error	STRA_ID_AHMM ='null'	STRA_IDF_AHMM = '_Z'	If the stratum is not filled in then the flag of the stratum indicates NOT APPLICABLE
VR_IFS2020_AHMM030	Error	STRA_ID_AHMM <>'null'	STRA_IDF_AHMM in ('1','2','3')	If the stratum is filled in then the flag of the stratum is filled in with the code indicating its meaning
VR_IFS2020_AHMM031	Error	PSU_AHMM ='null'	PSUF_AHMM ='_Z'	If the PSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_AHMM032	Error	PSU_AHMM <>'null'	PSUF_AHMM ='1'	If the PSU is filled in then the corresponding flag is filled in with 1
VR_IFS2020_AHMM033	Error	SSU_AHMM ='null'	SSUF_AHMM ='_Z'	If the SSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_AHMM034	Error	SSU_AHMM <> 'null''	SSUF_AHMM ='1'	If the SSU is filled in then the corresponding flag is filled in with 1

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
VR_IFS2020_AHMM035	Error	OSU_S1_AHMM ='null'	OSU_SF1_AHMM='_Z'	If the OSU is not filled in then the corresponding flag indicates NOT APPLICABLE
VR_IFS2020_AHMM036	Error	OSU_S1_AHMM <>'null'	OSU_SF1_AHMM='1'	If the OSU is filled in then the corresponding flag is filled in with 1
VR_IFS2020_AHMM037	Error	for 2 records PSU_AHMM is equal	for the same records, STRA_ID_AHMM is equal	There should not be 2 records with the same PSU and different strata
VR_IFS2020_AHMM038	Error	for 2 records SSU_AHMM is equal	for the same records, PSU_AHMM is equal and STRA_ID_AHMM is equal	There should not be 2 records with the same SSU and different PSU or different strata
VR_IFS2020_AHMM039	Error	EXTPOL_FACT1_AHMM = 'null'	EXTPOL_FACT2_AHMM = 'null' AND EXTPOL_FACT3_AHMM = 'null'	If extrapolation factor 2 for the module AHMM is null then extrapolation factor 3 must be null

## Cross-validation rules IFS2020 x NSNE2020

To be developed

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
				The following checks are only relevant for variables that the country ([IFS2020].[REF_AREA]) declared as part of [NSNE2020]
1	Information	[NSNE2020].[VARIABLE]=0 AND [NSNE2020].[OBS_STATUS] = N AND [NSNE2020].[ALT_VARIABLE] = [NSNE2020].[VARIABLE]	SUM ([IFS2020].[VARIABLE]) = 0	All values of [IFS2020].[VARIABLE] were 0 although the variable [IFS2020].[VARIABLE] was indicated as non significant reported on the same cell
2	Error	[NSNE2020].[VARIABLE]=0 AND [NSNE2020].[OBS_STATUS] = L	[IFS2020].[VARIABLE] > 0	The record [IFS2020].[HLD_ID] has a value different of 0 for the variable [IFS2020].[VARIABLE] which was declared as not collected for the country
3	Error	[NSNE2020].[VARIABLE]=0 AND [NSNE2020].[OBS_STATUS] = M	[IFS2020].[VARIABLE] > 0	The record [IFS2020].[HLD_ID] has a value different of 0 for the variable [IFS2020].[VARIABLE] which was declared as true zero for the country



## Validation rules for ADM2020 (struval and conval)

The present table is based on version 3.6

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
1	Error			REF_AREA needs to be consistent with file name
2	Error			YEAR needs to be consistent with file name
3	Error		COMPLETENESS CHECK FOR VARIABLE (CL_VARIABLE)	Variable is missing
4	Error	IF SRC_METHOD IN ('01' TO '19')	PURPOSE_QUALITY IN ('51' TO '59')	Missing purpose for administrative source
5	Error	IF SRC_METHOD IN ('19' OR '29')	SRC_METHOD_COMMENTS NOT EMPTY	Missing comment for administrative source or innovative approach
6	Error	IF SRC_METHOD IN ('21' TO '29')	PURPOSE_QUALITY IN ('71' TO '79')	Missing quality for innovative approach
7	Error	IF PURPOSE_QUALITY IN ('59' OR '79')	PURPOSE_QUALITY_COMMENTS NOT EMPTY	Missing comment for other administrative source or innovative approach
8	Error	IF REF_AREA NOT 'PT'	TIME_PERIOD = 2020	The year must be 2020
9	Error	IF REF_AREA 'PT'	TIME_PERIOD = 2019	The year must be 2019
10	Error		SRC_METHOD IN SRC_METHOD_CODES	The code for administrative source or innovative approach is not correct
11	Error		PURPOSE_QUALITY IN PURPOSE_QUALITY_CODES	The code for purpose quality is not correct
12	Error	IF SRC_METHOD IN ('02')	LEFT (VARIABLE; 2) = 'A2'	The bovine register should only be used for bovine variables
13	Error	IF SRC_METHOD IN ('03')	LEFT (VARIABLE; 3) = 'A41'	The ovine register should only be used for ovine variables
14	Error	IF SRC_METHOD IN ('04')	LEFT (VARIABLE; 3) = 'A42'	The caprine register should only be used for caprine variables
15	Error	IF SRC_METHOD IN ('05')	LEFT (VARIABLE; 2) = 'W1'	The vineyard register should only be used for vineyard variables
16	Error	IF SRC_METHOD IN ('06')	CONTAINS 'ORG'	The organic register should only be used for organic variables
17	Error	IF SRC_METHOD IN ('00')	PURPOSE_QUALITY EMPTY	No purpose quality to be specified for surveys

## Validation rules for NSNE2020 (struval and conval)

The present table is based on version 1.8

VRNUM	SEVERITY	PRECONDITION	CONDITION	ERROR MESSAGE
1	Error			REF_AREA needs to be consistent with file name
2	Error			YEAR needs to be consistent with file name
3	Error			No duplicate DATA_COLLECTION+VARIABLE
4	Error	IF REF_AREA NOT 'PT'	TIME_PERIOD = 2020	The year must be 2020
5	Error	IF REF_AREA 'PT'	TIME_PERIOD = 2019	The year must be 2019
6	Error	IF OBS_STATUS IN ('N')	ALT_VARIABLE <> NULL	When a variable is not significant, the variable where it is reported (ALT_VARIABLE) is needed
7	Error	IF OBS_STATUS IN ('L' or 'M')	ALT_VARIABLE = NULL	When a variable is not collected or is a true zero, (ALT_VARIABLE) must be null
9	Error	IF OBS_STATUS IN ('L' or 'M')	JUSTIFICATION IN ('NAT' OR 'CLI' OR 'OTH')	Justification cannot be NPR (not profitable) for non-existing variables (not collected or true zeros)
10	Error	IF OBS_STATUS IN ('N')	JUSTIFICATION IN ('NPR' OR 'CLI' OR 'OTH')	Justification cannot be NAT (not authorised) for non-significant variables
11	Error	IF JUSTIFICATION IN ('OTH')	JUSTIFICATION_COMMENT NOT EMPTY	When justification is OTHER, a comment is required
12	Error		OBS_VALUE = 0	Observation value must be zero

## Annex VI

### STRUVAL error types

The following list contains all possible error types detected and reported by the STRUVAL service.

Error Code	Message ID	Description of Error	Details of Error
500		Internal server error. Validation service not available.	The STRUVAL service is not able to process the inputs due to an internal server error.
140		<Message from XML Parser>	The SDMX-ML file is not a well-formed XML file. It may contain invalid characters, tags that are not closed or are closed out of order. Well formedness of an XML file can be checked using different tools, such as the advanced text editors or online.
150	003	The dataset contains a series with a missing concept {0}	The data file contains series with dimensions or attributes which are not defined in DSD.
150	004	The DSD {0} used does not define a time dimension, required for the time series data.	When building a time-series dataset, one must use a DSD that includes a time dimension.
150	005	The dataset includes primary measure {0}, not expected by the DSD.	When building a time-series dataset, one must use a DSD that has a primary measure.
150	904-1	Series key {0} is not defined in DSD (unexpected size).	Dataset contains series keys with unexpected size.
150	904-2	Series key {0} is not defined in DSD (incorrect codes).	Dataset contains series keys which unexpected size.
150	007	The dataset contains a concept {0} that is not defined in DSD.	All concepts used in a dataset must be defined in a DSD.

Error Code	Message ID	Description of Error	Details of Error
150	008	Attribute {0} defined as mandatory in DSD is missing from the dataset.	The dataset contains a mandatory series level attribute which is not present in the data file.
150	009	Series attribute {0} is not defined in DSD.	The encountered attribute at the series level in data file does not exist in the DSD.
150	010	Attribute {0} defined as mandatory in DSD is missing from the group.	The dataset contains a mandatory group level attribute which is not present in the data file.
150	011	Attribute {0} is assigned to the incorrect group.	The encountered attribute at the dataset level in data file does not exist in DSD.
150	012	Attribute {0} defined as mandatory in DSD is missing from the observation.	The dataset contains a mandatory observation level attribute which is not present in the data file.
150	013	Attribute {0} is not defined in DSD for observation.	The encountered observation attribute is not defined in the DSD.
150	014	Dataset group {0} is not defined in the DSD.	Dataset contains group keys with unexpected size.
150	015	Dataset group {0} is not defined in the DSD.	Data Structure Definition does not define a Group.
150	016	The mandatory concept {0} in DSD is currently missing from the group.	The dataset contains a group missing mandatory concept(s) as defined in the DSD.
150	017	Concept {0} is assigned to the incorrect group.	The encountered group in the dataset contains a concept which is not defined in the DSD.
150	018	XML error - The dataset contains an invalid node.	Appears when an unexpected node exists in the dataset file.

Error Code	Message ID	Description of Error	Details of Error
150	021	XML error - Unexpected text "{0}" found at node "{1}"	Unexpected text is found as children of one SDMX node which does not contain text. SDMX node names are kept in an internal structure and has the names such as Header, Series, OBS or Group. This error message appears when the dataset contains children of these elements.
150	022	XML error - Dataset header fails to reference a provision agreement, dataflow, or DSD.	Dataset header fails to reference a provision agreement, a dataflow, or a DSD.
150	023	XML error - Dataset does not contain a header.	Dataset does not contain a header.
150	024	XML error - Dataset structure reference incomplete.	The message appears if the referenced structure is incomplete, i.e. the agencyId, ID or maintainable ParentId are missing or empty.
150	025	XML error - Invalid DSD reference.	Dataset structure reference invalid, could not process reference, no RefNode or URN node found.
150	026	Attribute {0} is not defined in DSD.	An attribute at dataset level is present in data file but it is not defined in the DSD.
150	027	Expected component {0} must be an attribute but is {1}.	Another component appears as a dataset attribute in data file.
150	028	Attribute {0} incorrectly attached to {2} instead of to {1}.	The dataset has an attribute with different attachment level.
150	029	{0} "{1}" is reporting value "{2}" which is not a valid representation in referenced code list "{3}".	An attribute at dataset, series or observation level has a value which is not valid in the referenced code list.

Error Code	Message ID	Description of Error	Details of Error
150	030	{0} {1} is reporting invalid value {3} which is not of expected type {2}.	Appears when reported value of a concept is unexpected.
150	031	Component {0} in group {1} not defined in DSD {2}.	The dataset contains groups which contains components that are not defined as group components in the DSD.
150	032	Observation missing time dimension for time series data.	Observation missing the time dimension for time series data.
150	033	Observations not allowed for this dataset.	Appears if there is a constraint on the dataset which does not allow observations.
150	034	Observation time "{0}" is before the expected reporting period start date "{1}".	Appears if there is a constraint which specify report start date and the observation time is before this date.
150	035	Observation Time "{0}" is after the expected reporting period end date "{1}".	Appears if there is a constraint which specify report end date and the observation time is after this date.
150	036	Series not allowed in this dataset.	Appears if there is a constraint on the dataset which does not allow series.
150	037	Series key {0} not allowed.	Appears if the dimension is not allowed in the key due to an existing constraint.
150	038	Illegal Series key {0} contains invalid value "{1}" not defined in DSD for {2} {3}.	Appears when the series key contains some value which is disallowed by constraints in DSD.
150	039	Duplicate observation found: {0}	Appears when more than one observation is found in one series.
150	040	Data validation failed: {0}	It appears when a custom validation rule does not pass.

Error Code	Message ID	Description of Error	Details of Error
150	041	Cross-sectional component {0} is incorrectly attached to {2} instead of to {1}.	The cross-sectional component is attached to a wrong level.
150	042	Invalid date format "{0}".	Appears if the TIME_PERIOD attribute does not match the TIME_FORMAT.
150	043	Structure type wrongly references {1} instead of {0}.	If the dataset header contains a URN reference to another artefact than expected.
100	044	The dataset references dataflow "{0}" which could not be resolved.	The structure file supplied to the STRUVAL service call does not contain a dataflow (identified by agency, name, and version) that is referenced from the dataset.
100	045	The dataset references DSD "{0}" which could not be resolved.	The structure file supplied to the STRUVAL service call does not contain a DSD (identified by agency, name, and version) that is referenced from the dataset.
501	046	Component attribute {0} with parent {1} not supported.	The XML attribute is in the wrong element.
501	047	Cannot read dataset for structure of type: '{0}'	If the dataset has a structure reference which is neither DSD nor Dataflow.
501	048	The DSD {0} is missing a time dimension.	DSDs that STRUVAL can process must contain a time dimension.
501	049	Cannot validate the header of format {0}.	Appears when STRUVAL tries to validate a header but the given dataset file is not detected as one of the following formats: COMPACT_2_0, GENERIC_2_0, CROSS_SECTIONAL_2_0, UTILITY_2_0, GENERIC_2_1, GENERIC_2_1_XS, COMPACT_2_1 or COMPACT_2_1_XS.
150	050	Property not found {0}	Appears when the validation fails, because of missing input or structure file
140	051	Configuration Error {0}	Appears when Excel Data Reader was not configured correctly.

Error Code	Message ID	Description of Error	Details of Error
140	052	Excel data reader error {0}	Appears when Reading the excel file was not possible.
140	053	Invalid Parameters detected {0}	Appears when misconfiguration exists inside Parameter Sheet or Mapping Sheet.
150	054	Error While Processing XML: {0}	Appears when XML structure validation fails.

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# Integrated farm statistics manual

Integrated farm statistics provide the backbone of agricultural statistics. Here, the framework for European statistics at the level of agricultural holdings is established. It integrates data on structure, such as areas per crop or number of animals, with information on production methods, farm labour, rural development measures and agro-environmental aspects.

Regarded as one of the main building blocks of Eurostat's Strategy on Agricultural Statistics 2020 and beyond, the Regulation (EU) 2018/1091 of the European Parliament and the Council of 18 July 2018 on Integrated Farm Statistics entered into force on 27th August 2018.

The collection of structural statistics related to farms and farmers have undergone a strategic revision and moved on from the Farm Structure Surveys, latest carried out in 2016. Agriculture is changing due to globalisation, climate and societal change. Partly in reaction, the Common Agricultural Policy (CAP) and other EU policies related to agriculture are changing. This creates important new data needs for agricultural statistics where technological progress and the availability of new data sources can be better exploited. The Integrated Farm Statistics should remain dynamic enough to respond to new policy requirements.

In 2020, farm statistics are collected in the form of an agricultural census. This is the only way to get updates on the full agricultural population of the EU, by casting the widest net to cover the farming sector as a whole. It is the only data collection instrument that produces statistical information on farms at the most detailed geographical level. The agricultural census is an essential source of information for governments, scientists, the general public and decision-makers.

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