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FSS WG/2015/1/20
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# Joint meeting of the Working Group Structure of Agricultural Holdings and Working Group Crop Statistics

## Luxembourg, 13 October 2015

# COMMON METHODOLOGICAL BASIS FOR INTEGRATED FARM STATISTICS (IFS) AND STATISTICS ON AGRICULTURAL INPUT AND OUTPUT (SAIO)

**ITEM 20 OF THE FSS AGENDA**
**ITEM 07 OF THE CROP AGENDA**
**LIMITED**

Available at
https://circabc.europa.eu/w/browse/6fdae406-1e87-4f35-a6af-9d36dc1c1a70

https://circabc.europa.eu/w/browse/a63ea622-df6e-41a9-97ae-50622149c10a

# EXECUTIVE SUMMARY

This document presents preliminary plans about the common conceptual and methodological basis for the new generation of agricultural statistics which should be implemented through Integrated Farm Statistics (IFS) and Statistics on Agricultural Input/output (SAIO).

A common conceptual and methodological basis is needed to ensure that all statistical domains work as parts of the same integrated system. The basic definitions defining e.g. the scope, main concepts such as area, production and animal population and how to establish non-significant items should be shared. Another key aspect is to use the same nomenclatures for crops and animals in all domains of agricultural statistics. All these issues are planned to be included in a common methodological basis to which all agro-statistical domains should refer.

## 1. RECOMMENDATION FOR ACTION

The Working Group is invited to

- express their views on the plans to introduce a common conceptual and methodological basis for the new generation of agricultural statistics: Integrated farm statistics (IFS) and Statistics on Agricultural Input/output (SAIO)

- make proposals concerning what should be included in the common methodological basis

## 2. BACKGROUND

The Agricultural Statistics 2020 Strategy[1] aims at merging the currently fragmented agricultural statistics into a more integrated system. In the new system the various domains should be linked in a way which produces synergies and improves the efficiency by cutting overlaps and by improving the common conceptual and methodological basis.

Three out of the six aims of the Agricultural Statistics 2020 Strategy are directly linked to the 'system thinking', mainly

- improving the coherence between the agricultural statistics sub-domains
- clarifying and streamlining the concepts and definitions
- improving the quality of agricultural statistics

The preparatory work for establishing a common methodological basis for various statistical domains has started and will be part of the new IFS[2] and SAIO[3] Framework Regulations. A large number of cross-validations have been done between the Farm Structure Survey (FSS) 2013 data and the Annual Crop Statistics (ACS) 2013 data[4] and between the FSS 2013 data and Animal Production Statistics (APS) 2013 data. The analyses prove the need for developing a common methodological basis for statistical domains that will be part of the new IFS and SAIO Regulations.

In parallel Eurostat is running an overall code harmonising exercise which reached the agricultural domains two years ago. It became soon evident that this exercise is a good opportunity to analyse in more detail the similarities in and differences between various agricultural statistics domains. In the end it turned out to be a starting point for setting up the joint methodological basis for the new generation of agricultural statistics.

A Eurostat internal audit on the FSS and ACS (in 2013) also called for a clear common methodological basis for these two data collections as they are so much inter-connected.

The objective of this document is to present the preliminary ideas how to develop the common methodological basis for the IFS and SAIO Regulations.

[1] Document: FSS WG/2015/1/17 & CROP WG/2015/1/04: Agricultural Statistics Strategy 2020

[2] Integrated Farm Statistics

[3] Statistics on Agricultural Input/Output

4 Document: FSS WG_2015_1_21/ Doc. CROP_WG/2015/1/08: Cross-check-validation

## 3. SYSTEM THINKING

It is important to acknowledge from the beginning the need to consider all aspects of agricultural statistics as part of the same system aiming at producing as accurate as possible a picture of European agriculture in the most cost-efficient way.

There are some basic principles of system thinking which need to be applied to the agricultural statistics. Firstly, all components of agricultural statistics (Figure 1) are linked together. They share the same scope geographically and content-wise: Agriculture in the EU-countries and in the other concerned countries. The backbone is the structural data collected from farms (IFS data). Most other domains of Agricultural Statistics are linked to the structural data collected directly from the farms. However, the other domains are more conjunctural, having a relatively short time span to which they are linked (from monthly data to yearly data). All other domains have also a more focused and deeper point of view from which they observe the agriculture: it can be land, animals, a specific production type, production, markets, etc. There are some interconnections between the other domains (e.g. the annual production statistics feed the Supply Balance Sheets etc.). All this boils down to the fact that all agricultural statistics benefit from having a common conceptual and methodological basis.

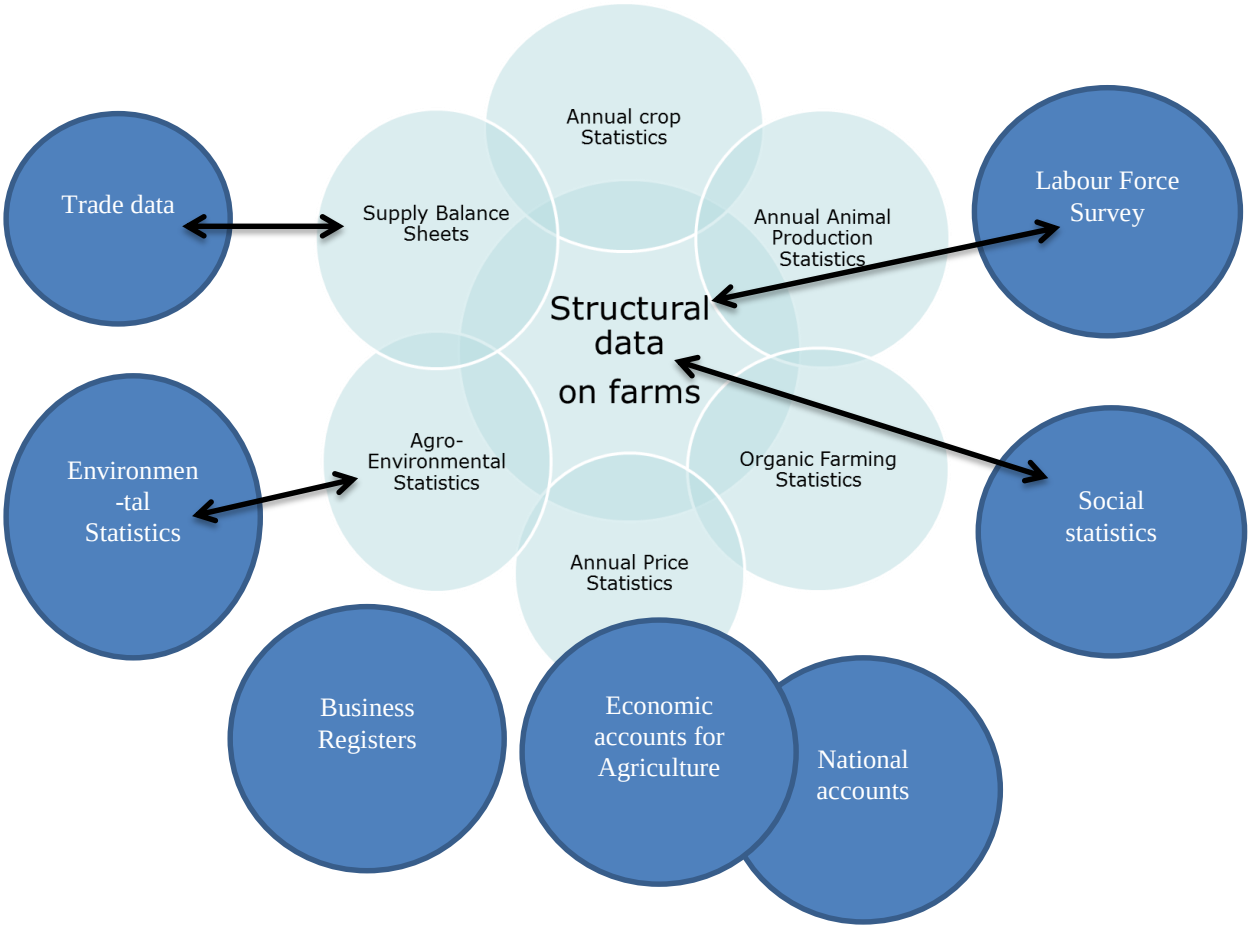


**Figure 1**. Components of Agricultural Statistics.

As all agricultural statistics are to some extent interconnected it is important to ensure that the figures are cross-validated before the submission to Eurostat. A good example are annual data (both animal and crop production) and the structural FSS data. Ideally they should be very close to each other except if the measured phenomenon and/or the survey coverage and/or the reference period are different. If there are differences it

should possible to explain them by e.g. different concepts (e.g. main area - harvested area), various methodological explanations rather highlight quality issues.

Secondly, Agricultural Statistics don't exist in a vacuum but they interact with other statistical domains. These lineages require that all agricultural domains need to interact also with domains outside the agriculture and to ensure that concepts are as inter-changeable as possible.

Thirdly, it is important to ensure that all components are complementary to each other and that there are no overlaps (e.g. the same data being asked or provided several times). This is also linked to the system efficiency requirement. The necessary data should be collected only once and in such a way that it has sufficient quality to meet all related data needs.

Fourthly, a sustainable system is flexible and it should be adjustable so that redundant or outdated data needs can be replaced by new relevant ones without replacing the whole system.

## 4. CONVERGING DEFINITIONS

Currently each agricultural statistics domain has its own Handbook, or sometimes legislation, with definitions and methodological instructions. The Handbooks are in principle kept updated continuously but the update cycles differ to some extent between the domains.

For the new integrated system of agricultural statistics it is important to improve the common basis of definitions so that all domains share to the greatest possible extent the basic definitions. The following main concept definitions should be harmonised as much as possible (the list is not exhaustive):

- Main scope
    - What is agriculture (inclusions/exclusions, etc.)?
    - Which part of it is covered/excluded by the statistics (e.g. market-oriented/subsistence farming/kitchen gardens)?
- What needs to be measured?
    - Area definitions (main area, sown/harvested area, production area, abandoned areas, areas not yet in production)
    - Definition of production (how to assess the losses, humidity degree, etc.)
    - How, which and when to count animals
- How to define what is non-significant at national/regional/EU-level?
    - Definition of non-existing crops at national/regional level
    - Definition of non-significant crops at national/regional level

The new generation of agricultural statistics should draw the definitions from a commonly agreed (cross domain) methodological basis. In case some deviations from the main definitions are needed in a specific domain, the reasons need to be clearly explained to the data producers, respondents and data users. At the moment the lack of clarity creates a lot of unnecessary questions from the data users and makes the cross-domain validation challenging.

## 5. SHARED NOMENCLATURES FOR CROPS AND ANIMALS

In agricultural statistics the vast majority of all observed variables are linked to land (crops) or animals. Harmonised crop and animal nomenclatures[5], which include clearly defined and accurate definitions, are important to a more integrated system of agricultural statistics.

The Eurostat crop code harmonisation project has proven to be a very useful exercise for detecting potential sources of inconsistencies between various agricultural domains. The crop nomenclature harmonisation project has covered the following domains:

- Farm Structure Survey (FSS)
- Annual Crop Statistics (ACS)
- Permanent crop statistics (orchard and vineyard statistics)
- Agricultural prices
- Agricultural accounts
- Organic farming
- Regional agricultural statistics

Several inconsistencies in the used nomenclatures have been detected between the FSS and ACS domains, but they are relatively easy to solve. The economic domains (prices and in particular economic accounts) are much more challenging to be harmonised with the FSS & ACS as their approach is different. In many cases the Handbooks for the economic aspects of agriculture (Prices and Economic Accounts for Agriculture (EAA)) don't include detailed definitions of the items. Another complicating aspect is the structure of aggregates in the EAA, which is very different form the FSS and the ACS. This has led to a creation of separate classes and aggregates in the codification tables to satisfy the needs of the economic accounts for agriculture.

A major novelty resulting from the code harmonisation exercise is the introduction of clear hierarchical trees in the new ACS Handbooks (which will also be part of the FSS Handbook). They help in understanding the composition of aggregates and the relations between single class variables. A lot of efforts have also been invested in labelling the classes clearly and creating easy-to understand codes for the classes (see an overview in Annex1).

The new harmonised code list is gradually being taken into use for the FSS 2016 and for the updated ACS data collection. If necessary, further harmonisation work will be done after some experience is gathered from the use of the new code lists in the 2016 data collections.

[5] Nomenclature is here referring to a hierarchical list of aggregates and single items composed of a code and a corresponding label.

## 6. NEXT STEPS

1. Development of the shared conceptual and methodological basis for the new generation of agricultural statistics

2. Discussions with the Member States (in WGs and DGAS meetings)

3. Finalisation of the documentation of the shared conceptual and methodological basis

4. Transfer of the new conceptual and methodological basis into the domain specific Handbooks (IFS 2020 and SAIO Handbooks).

**Annex1a.** New code letters indicating the type of crops.

| Letter | Type of crop |
|---|---|
| **UAA** | Utilised Agricultural area |
| **ARA** | Arable land |
| **C** | Cereals for the production of grain |
| **P** | Dry pulses and protein crops |
| **R** | Root crops |
| **I** | Industrial crops |
| **G** | Plants harvested green from arable land |
| **V** | Fresh vegetables (including melons) |
| **S** | Strawberries |
| **N** | Flowers and ornamental plants |
| **E** | Seeds and seedlings |
| **J** | Permanent grassland |
| **PECR** | Permanent crops |
| **H** | Permanent crops for human consumption |
| **F** | Fruits berries and nuts (excluding citrus fruits, grapes and strawberries) |
| **T** | Citrus fruits |
| **W** | Grapes, must and wine |
| **O** | Olives |
| **L** | Nurseries |
| **K** | Kitchen gardens |
| **U** | Cultivated mushrooms |

**Annex1b.** Example of a hierarchical tree of nomenclature