



Strategy for Agricultural Statistics 2020 and beyond: for the future European Agricultural Statistics System (EASS)

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ABSTRACT

Many important policies of the European Union, such as the Common Agricultural Policy, depend on agricultural statistics. These statistics need to be of high quality, coherent, comparable and flexible, and should be produced efficiently based on users' needs in order to best serve evidence-based policy making and monitoring. The current EU agricultural statistics system does not fulfil these requirements well enough. To address this, Eurostat launched the "New legislation on Agricultural Statistics for a strategy towards 2020 and beyond" initiative in 2014. It aims to introduce two new legal frameworks stepwise: an "Integrated Farm Statistics" Regulation which will provide the basis for collecting farm level micro-data, based on a modular approach with core, module and ad hoc surveys; and a "Statistics on Agricultural Input/Output" Regulation which will provide aggregated statistics in tabular form. These frameworks will contain basic elements such as scope, precision and quality requirements and will use common definitions and classifications, while more technical elements will be covered by secondary legislation. EU Member States will be free to choose data sources, including administrative and other new data sources.

This paper presents the Strategy for agricultural statistics 2020 and beyond and shows its suitability to meet technical and methodological requirements as well as to successfully navigate the complex institutional, legal and political context within the European Union and its 28 Member States. It can therefore serve as an instructive example for a cross-border implementation of the United Nations Global Strategy to improve agricultural and rural Statistics.

Keywords: Global Strategy to improve agricultural and rural statistics, modernisation, flexibility, comparability

1. Context of European Union agricultural statistics

The current European Agricultural Statistics System (EASS) has been developed since the early 1950s. Agricultural statistics are the oldest European Union (EU) statistics still being produced, many of them provided under legal obligations. The EASS covers more than 50 data sets sent to Eurostat, the statistical authority of the EU, by National Statistical Institutes (NSIs) or other national statistical authorities (ONAs). 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. The Farm Structure Surveys (FSS) with a decennial agricultural census and regular interim sample surveys form the backbone of the EASS, because they are its biggest individual collections and provide reliable data on the structure of agricultural holdings in the EU. This makes it possible to analyse the state of EU agriculture, monitor changes, trends and policy impacts, and build statistical farm registers.

The main aim of the EASS is to support decision-making, policy design, implementation, monitoring and evaluation in several policy areas related to agriculture, such as the EU Common Agricultural Policy (CAP), climate change and environmental policies. Agriculture accounts for almost 40% of the EU's institutional budget (currently about 59 billion Euro annually), the EU's single highest common expenditure area, and covers 47% of the EU's territory, resulting in a very high environmental impact.

The EASS needs to fulfil a number of **requirements** because it is a part of global, regional (EU) and national agricultural statistics systems. In order from global to national, these are:

- Implement the United Nations **Global Strategy** to improve agricultural and rural statistics. This initiative aims to improve the availability and use of agricultural and rural data necessary for evidence-based decision making by 1) producing a minimum set of core data, 2) better integrating agriculture into national statistical systems and 3) improving governance and statistical capacity building (GSARS 2016).
- Support the monitoring and evaluation of the **United Nations Sustainable Development Goals** (SDG) by providing high-quality, coherent and comparable agricultural data for the SDG indicator framework (ECOSOC 2016).
- Serve **users' information needs** by producing high-quality, coherent, comparable and flexible agricultural data for the effective and efficient design, implementation, monitoring and evaluation of policies, laws and other interventions. These users are mainly policy- and decision makers at EU, national and regional levels, but also scientific researchers, businesses and citizens.

In addition, certain global, regional and national changes are acting as **problem drivers** for the EASS, exerting pressure on it to respond in order to continue fulfilling its main functions. These drivers are:

- **Changes in world agriculture** such as volatility in prices and food safety and security, changing dietary habits, e.g. Asia's growing appetite for dairy and meat, a growing and increasingly less poor world population requiring more food (60% more by 2050, according to the Food and Agriculture Organization of the United Nations (FAO)), increasing urbanisation leading to significant consequences for food consumption and food flows, and increasing agricultural concentration. These phenomena are particularly important for the EU, as agricultural exports from its 28 Member States amounted to 120 billion Euro in 2013 (in particular value-added products), with imports of just over 100 billion Euro (concentrated around animal feed and tropical products). The increasing global interconnectedness of agricultural production structures, prices, yields and supply chains can lead to complex "butterfly effects" and calls for detailed data in this area to make rapid crisis responses and generally more effective policy making possible.

- **Climate change and environmental effects** will impact food security, while more frequent extreme weather events such as droughts, floods and ensuing possible conflicts are expected to lead to food shortages and volatile prices. As agriculture has a strong environmental and climate change impact and is itself strongly affected by climate change, a thorough knowledge of what is produced where by whom and how is needed to target agricultural, environmental and related policy interventions to where they are most needed. Therefore, good data on these aspects of agriculture is needed to enable environmentally sustainable action, such as a low-carbon transition in rural areas. Moreover, the links between agriculture, the environment and the climate are complex and dynamic, and the impact of agricultural practices and products on human and animal health and welfare is strong, but not fully understood yet. Depicting all these interlinkages requires a lot from statistics.
- **The CAP has recently been reformed** and will continue to be reformed in response to changing national, European and global conditions and evolving policy. Some examples are the growing popularity of organic food, the abolition of milk quotas, and the increasing diversity of EU agriculture. The European Commission's recent work on developing the CAP for 2014-2020 demonstrated the central role of statistics in designing, implementing, monitoring and evaluating this policy. Reforms of the CAP and other relevant EU policies should therefore be reflected in agricultural statistics data collection.
- **Official statistics are also changing.** New data sources such as administrative data, various registers, results of research projects and Big Data have become more readily available. Information and communication technology and other new technologies enable modernised data collection. At the same time, national and EU budgets are more constrained, and calls to reduce the burden of data collection and production are becoming more frequent. These changes in the sources and ways of collecting and producing data require changes in the framework for agricultural statistics so they can stay up to date and avoid becoming obsolete, inaccurate or too costly.

All these developments put pressure on adapting the EASS to respond to the important growing and changing requirements and objectives. But despite many integration and modernisation efforts, the **EASS has not changed enough** yet, as a recent ex-post evaluation and problem analysis found:

- New and emerging data needs are not addressed adequately because their provision is not included in the legislative acts, the acts are not flexible and integrated enough to respond to new needs in a timely manner, and changes in official statistics are not accounted for;
- The EASS is not flexible enough and is not reacting quickly enough to emerging needs, partly due to the inherent functioning of statistics, partly due to the way the regulations have been set up, but also because of a lack of budgetary and human resources;
- The data collections are not harmonised and coherent enough because new data needs are emerging, legislation has been developed separately over many years, and there are partly different definitions, concepts and aims in different agricultural domains;
- Agricultural statistics could be produced more efficiently if the legislation is adapted so that various sources of information can be used and if Member States adopt more modern technology, but the burden and cost are appropriate considering the substantial budget of the CAP and its impact on the social, economic and environmental situation in agriculture;
- The burden of providing data is perceived as high because data needs are increasing, data collection is not harmonised, and resources continue to shrink both at EU and national level.

If these problems remain unaddressed, and the requirements detailed above therefore only partly fulfilled, continuing changes in global agriculture, the global climate, the CAP and official statistics will make the current EASS progressively obsolete and less useful. This will have more and more urgent and far-reaching consequences for Eurostat, the EU and Member States' policies, reputations and positions in a highly dynamic global order.

Therefore, the **legal basis of the EASS** needs to be updated to respond to these challenges. This is because European statistics are produced within the European Statistical System (ESS), a partnership between Eurostat and the NSIs for the development, production and dissemination of European statistics. In general, NSIs and/or ONAs collect and produce these statistics according to EU-wide statistical regulations prescribing variables, deadlines, methodologies and other aspects of statistics production in order to achieve harmonisation, comparability and full coverage. The NSIs then disseminate the data and send them to Eurostat, which validates them and disseminates official European statistics on its website. Within this system, new proposals for statistical regulations at EU level are discussed at expert, director and Head of NSIs level before they are adopted by the European Commission, the EU's executive. The draft proposal then enters the "ordinary legislative procedure" of the EU, in which the European Parliament (elected representatives from all EU Member States) and the Council of the European Union (ministers of the concerned departments from all EU Member States) discuss, possibly change and agree on laws so they can enter into force. In addition, assigned committees and the Commission can adopt "implementing acts" specifying implementing rules and details of EU laws, and the Commission is additionally empowered to adopt "delegated acts", i.e. acts that supplement or amend non-essential elements of legislative acts.

2. Strategy for Agricultural Statistics 2020 and beyond

2.1. Objectives

In response to the requirements, problem drivers and problems of the EASS and to benefit its main stakeholders, Eurostat developed the agricultural statistics strategy for 2020 and beyond in 2014, with the following specific objectives:

- Produce high-quality statistics that meet users' needs efficiently and effectively. The EASS needs to deliver the statistical knowledge base needed for the CAP and other important EU policies, while reacting to evolving data needs. The scope of agricultural statistics should be widened to include e.g. land cover, and the data must be validated in a streamlined way.
- Increase the flexibility and reaction speed of the agricultural statistics system. It should be possible to introduce new needs, statistics and methodological approaches in an easier and more responsive way. In line with the subsidiarity principle, the exact form of data collection, e.g. the choice of preferred data sources and survey methods, is up to the Member States.
- Improve the integration between agricultural, forestry, land use and environmental statistics. The EASS needs to interact with and be linked to other statistical domains, for example primary production, environmental, social and economic statistics.
- Develop a responsive and responsible governance structure for agricultural statistics. The EASS needs periodic performance assessments to ensure that it is fit for purpose, delivered within a proactive and efficient governance structure that represents the interests of data users and data providers in the ESS context.
- Improve the harmonisation and coherence of European agricultural statistics. The EASS needs a solid shared basis of common definitions and concepts to link the existing statistical domains. Furthermore, statistical thresholds need to be recalibrated to improve coverage and lower the burden of data collection, and administrative and other data need to be reused.

- Produce more statistics while lowering the burden on respondents by exploring alternative data sources and possibilities to improve efficiency. Data sets that are possibly no longer needed should be deleted, and modern information and communication technology should be used to lower the perceived burden of data collection and production.

2.2. Two-step integration approach

To achieve these objectives, Eurostat developed several possible policy options and formally analysed them based on several criteria such as legal, technical and political feasibility, coherence with other EU policy objectives, and effectiveness and efficiency. In the end, it was determined that a two-step integration process for agricultural statistics would best achieve the stated objectives.

This means that two new framework regulations will be introduced stepwise: an Integrated Farm Statistics regulation (IFS) to be in place before the end of 2018 to ensure the agricultural census scheduled for 2020, and another framework regulation on Statistics on Agricultural Input and Output (SAIO) to be adopted and in place before 2022. Together, both framework regulations will cover all aspects of the new statistical programme for agriculture and replace nine current laws. The basic legal acts include common objectives and definitions (periodicity, scope, precision etc.) and also specify, in general, the required core statistical outputs. Secondary legal acts will define technical elements necessary for a harmonised implementation of the basic acts such as descriptions of characteristics. The European Commission will have the power to amend non-essential elements of the basic act in order to ensure the flexibility needed to respond to changing policy and data needs.

The IFS regulation will provide a legal basis for the structural data on farms, including certain more detailed data on permanent crops. In addition, parts of agri-environmental statistics, for which data are needed at farm level (such as irrigation, manure or nutrient use), will be integrated into this framework regulation, as they are presently not under legislation. All IFS data will be sent to Eurostat as micro-data.

The SAIO regulation will contain aggregated crop and animal production statistics, agri-environmental statistics on fertilisers, nutrient balances and pesticides, and potentially agricultural price statistics. All these data are aggregated statistics, and no micro-data will be sent to Eurostat. They deal with agricultural inputs (prices of feed, pesticides etc.) and outputs (crop and animal production and prices). The data can be collected from farms, administrative sources, intermediaries, wholesale entities, market organisations and other sources, and can include a certain amount of expert estimates.

2.3. Methodology

Following the approach recommended by the FAO's World Programme for the Census of Agriculture 2010 (FAO 2005), both framework regulations will consist of (i) a core set of data (essential structural and production variables, e.g. farm size and land use, crops, livestock), which are to be sent to Eurostat with regular frequency (i.e. every three years), depending on the domain, either resulting from a census or a sample survey, on farms above a minimum threshold; (ii) modules that are subsamples of the core and focus on certain thematic aspects from the current list of variables (such as animal housing, irrigation or vineyards) that are needed either at lower frequency (i.e. every six or every ten years), for smaller samples, or at different thresholds than the core, but which can be directly linked to the core data and shall always be conducted together with the core; and (iii) flexible ad-hoc surveys that focus on special topics which are not traditionally part of the EASS, i.e. surveys which aim to cover the variables that fulfil new and emerging data

needs. Their exact contents will be determined later, prior to their implementation, and they are not planned to be carried out at a fixed frequency, but may be repeated as needed.

An agricultural census is needed because it is still the most appropriate way to update information on the full agricultural population in the EU. The census is the only data collection instrument that produces sufficiently reliable statistical information on farms at the lowest geographical level, and is therefore an essential source of information for governments and decision-makers. The FAO also expects its member countries to follow the standards, concepts and definitions guidelines of its World Programme for the Census of Agriculture 2020 in order to achieve harmonised and internationally comparable results and allow countries to benchmark their performance against other countries, among other advantages (FAO 2015). This and other international obligations detailed above are further reasons explaining the need for an agricultural census. However, in order to reduce the burden on the countries with a high number of very small farms, or rather households, it is planned not to oblige carrying out a census on these small units, but to allow carrying out a sample survey instead. In addition, the core, module and ad-hoc survey structure is expected to lead to a reduction of the burden of data collection on all EU Member States while fulfilling all obligations. For the census carried out under IFS, these actions are expected to lead to a reduction in the number of farms surveyed of around 30% overall (3.5 of 12 million farms), and to a reduction of the total required budget of around 18% (56 of 320 million Euro).

In order to further reduce the burden on the farmers and other respondents, the various elements of agricultural statistics should form a statistical system. i.e. data collected for production statistics, permanent crops statistics and organic farming statistics should also be used for farm structure surveys. Member States are also encouraged to use administrative data sources and to set up farm registers, and efforts are being made to harmonise definitions and reference periods across data sources. For this systematic approach to work, definitions need to be identical, and unique farm identification numbers should be introduced.

3. The future European Agricultural Statistics System

The two-step integration of agricultural statistics serves to create an effective and efficient future EASS by fulfilling the requirements and the objectives detailed above, while navigating various complex contexts and constraints, in the following manner.

Table 1: *Requirements, objectives and responses of the agricultural statistics strategy 2020*

Requirement	Response
Implement the UN Global Strategy to improve agricultural and rural statistics	<ul style="list-style-type: none"> – Collection of better integrated core data – Improved governance and self-assessment
Support monitoring and evaluation of the UN Sustainable Development Goals	<ul style="list-style-type: none"> – Collection of new and emerging data needs – Focus on data quality and validation – More legal flexibility, coherence and speed
Serve information needs of EASS users	<ul style="list-style-type: none"> – Collection of new and emerging data needs – Focus on data quality and validation – More legal flexibility, coherence and speed – Frequent, regular exchanges with stakeholders
Navigate the legal system of the EU	<ul style="list-style-type: none"> – Two-step instead of single-step integration to achieve needed new FSS legislation faster – Balanced legal architecture respecting concerns

	<ul style="list-style-type: none"> – Frequent, regular exchanges with stakeholders – Improved governance and self-assessment
Respect subsidiarity and proportionality	<ul style="list-style-type: none"> – Strategy confined to minimum required – Method of data collection left up to Member States
Objective	Response
Produce high-quality statistics that meet users' needs efficiently and effectively	<ul style="list-style-type: none"> – Collection of new and emerging data needs – Method of data collection left up to Member States – Focus on data quality and validation – More legal flexibility, coherence and speed
Increase the flexibility and reaction speed of the agricultural statistics system	<ul style="list-style-type: none"> – More legal flexibility, coherence and speed – Method of data collection left up to Member States
Improve integration between agricultural, forestry, land use and environmental statistics	<ul style="list-style-type: none"> – Common definitions and documentation – Unique identifiers and new data sources – Frequent, regular exchanges with stakeholders
Develop a responsive and responsible governance structure for agricultural statistics	<ul style="list-style-type: none"> – Improved governance and self-assessment – Frequent, regular exchanges with stakeholders – More legal flexibility, coherence and speed
Improve the harmonisation and coherence of European agricultural statistics	<ul style="list-style-type: none"> – Common definitions and documentation – Unique identifiers and new data sources
Produce more statistics while lowering the burden on respondents by exploring alternative data sources and possibilities of efficiency improvement	<ul style="list-style-type: none"> – Core, modules and ad-hoc survey system – New thresholds and special sample surveys – More use of IT, new data sources, fewer variables – Frequent, regular exchanges with stakeholders

4. Conclusions

The following general conclusions and recommendations can be drawn from the European Commission's experience in developing and starting to implement the agricultural statistics strategy 2020.

- Bold reform can lead to better outcomes than a more incremental approach, even in a complex political, legal and financial context. This also gives a better opportunity for needed changes and improvements.
- Change is necessary to remain relevant. Agricultural statistics are affected by many important and significant global developments, and the world is becoming much more interconnected and complex. This requires faster and more flexible reactions, tools and procedures from official statistics, or they risk becoming obsolete and not fulfilling their data users' needs.
- Even in statistics, political considerations need to be taken into account when designing new laws and initiatives. For example, EU Member States are sceptical of European Commission powers to adapt elements of the legislation, but these are needed to ensure the required flexibility of the agricultural statistics strategy 2020. Therefore, a compromise was struck to preserve flexibility while ensuring easier legislative passage of the IFS initiative.
- The difficult resource situation of many national governments and NSIs needs to be taken into account from the beginning in designing, implementing and evaluating statistical systems so the best possible performance, flexibility and data quality can be ensured even under heavy constraints. The EASS' Strategy 2020 is meant to accomplish

this with its structure of core, module and ad-hoc surveys and several other actions. A plan not adapted to such conditions, while possibly more attractive on paper, may not be able to deliver as well as a system better adapted to reality.

- Comparable and coherent outputs count for more than homogenous inputs, especially in a highly diverse situation as in the EU with 28 Member States that have very different agricultural, social and economic development levels, survey methods, databases and data sources, statistical traditions etc. Data collection can be conducted with the subsidiarity principle in mind in ways that are best suited to regional or national conditions, while harmonisation and comparability can be achieved by common definitions and validation at supranational or intergovernmental level.
- Cooperation and a good working atmosphere can go a long way towards making even difficult decisions more palatable than if they had been presented as *faits accomplis*.

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