

Final Report

(for period: 09/2021 – 08/2024)

Action title: Administrative data sources for agricultural statistics

Modernization of agricultural statistics

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Contact person: Radek Matějka (radek.matejka@csu.gov.cz)

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Introduction

The Czech Statistical Office (CZSO) has implemented a Grant Action (further called also a project) aimed at modernizing the system of agricultural statistics by establishing and implementing a sustainable system for the regular use of data from administrative data sources (ADS).

The primary aim of the project was to reduce the response burden of agricultural units and rationalize available resources while maintaining the high quality of agricultural statistics. Another equally important goal was to establish new or deepen existing cooperation between CZSO and other state institutions that own and administer the administrative data sources, which are to replace existing data collection systems - statistical sample surveys.

Project activities were divided into 3 Objectives:

Objective A (Tasks A.1 – A.7): Mapping and analyses of ADS

Objective B (Tasks B.1 – B.6): Identification and specification of requirements for a sustainable system for the use of administrative data

Objective C (Tasks C.1 – C.4): Establishing and implementation of a sustainable system for export and integration of administrative data

Overview of the tasks

Task No.	Task name	Description	Animal statistics	Crop statistics
A	Analysis	<p>Analysis of administrative data sources IACS:</p> <p>for crop production statistics:</p> <ul style="list-style-type: none"> • LPIS (Land Parcel Identification System) • IS SAIF (information system of the State Agricultural Intervention Fund) <p>for animal production statistics:</p> <ul style="list-style-type: none"> • Identification and registration system: IAR (Integrated Animal Register) 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
A.1	Analysis of ADS technical elements	<ul style="list-style-type: none"> • Concepts, definitions of variables, code list items. • Detection of main differences between the current legislation (Reg. (EC) 543/2009 (crop statistics), Reg. (EC) 1165/2009 (animal statistics), SAIO Regulation/SAIO Implementing acts) and ADS. • Assessment of differences, the definition of measures to eliminate or manage detected differences. • Estimating the possible limitations and negative impacts of using data from administrative sources. • Definition of measures to avoid or reduce negative impacts on data quality. 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
A.2	Analysis of user needs	Analysis and evaluation of user needs (user satisfaction surveys).	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
A.3	ADS item/variable analysis	Item/variable analysis, evaluation of completeness of variables/items, identification of variables/items extractable from ADS and those missing in ADS.	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
A.4	ADS Coverage	<ul style="list-style-type: none"> • Description of the ADS coverage degree at the level of individual statistical units (holdings/farms) and UAA (utilized agricultural area). • Description of the minimum entry thresholds for ADS. • Impact evaluation of different minimum entry thresholds for ADS and for crop production statistics. 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed

A.5	Updating of ADS	<ul style="list-style-type: none"> • Description and frequency of the ADS updating process. • The timeliness of recording changes to ADS and their impact on data quality. • For crop production statistics: Assessment of data processing and publishing systems (with or without regular data revisions). • For animal statistics: Setting of a sufficient degree of data updating for provisional and/or final data, the alignment of reference date with time limits as set out in the legislation in force. • Determining the optimal date for data extraction from ADS to match data quality requirements and deadlines laid down by the legislation in force. 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
A.6	Data analysis	<ul style="list-style-type: none"> • Analysis of data available in ADS: Data comparison at the level of individual statistical units (holdings/farms). • Comparison with data available in sample sets for CZSO statistical surveys and in the Farm Register kept by the CZSO. 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
A.7	Study visits	Exchange of experience and good practice in the analysis of ADS in more experienced Member States.	<input type="checkbox"/> not realized	<input type="checkbox"/> not realized
B	Requirement formulation	<p>A follow-up procedure of formulating requirements based on analyses described in Objective A:</p> <ul style="list-style-type: none"> • for external working group (state institutions owning the administrative data sources) • for internal working group (involved departments of the CZSO) 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
B.1	Requirements for external working group	<ul style="list-style-type: none"> • Proposal of requirements for the supplementation and modification of data collection systems for IS SAIF (administration of subsidies) and IAR based on Objective A analyses. • Defining the requirements for ADS data usage: structure and description of the data record, data format. Determination of a suitable method for data usage. • Contract on the data usage and on the provision of access to micro-data. 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
B.2	Output table preparation	<ul style="list-style-type: none"> • Defining the structure of output tables according to the requirements of national data users' needs and of the legislation in force. • Mapping of the CZSO and ADS code list items. • Setting/programming of aggregate items in output tables. • Basic checks setting/programming. 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed

		<ul style="list-style-type: none"> • Prevention of duplicated records. • Basic data checks between LPIS (main area) and IS SAIF (individual crop area). • Data cross-validation against data recorded in the previous period. • Setting rules for the confidential data protection. 		
B.3	Preparation of adjustments to the Statistical Metainformation System	<ul style="list-style-type: none"> • Preparation of adjustments to be implemented in the CZSO Statistical Metainformation System (SMS), related to the use of ADS (code lists, definitions, data processing, output tables, preparation of the system for the data use from ADS, modification of the statistical survey system). 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
B.4	Preparation of the solution for missing items	<ul style="list-style-type: none"> • Identification and proposing other data sources for missing variables / items. • Determining the suitable data source for missing variables / items: <ul style="list-style-type: none"> ▪ Additional sample survey - elaboration of methodology. ▪ Expert estimation of missing variables / items - elaboration of methodology. ▪ Modelling of missing variables / items - elaboration of methodology. 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
B.5	Methodology for updating the Farm Register	Elaboration of the methodology for updating the Farm Register (kept by the CZSO) with data exported from ADS.	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
B.6	Update of the methodology for linked statistical surveys	Modification and extension of the methodology for linked statistical surveys in the crop production statistics (harvest estimate surveys, final harvest survey) and animal production statistics (surveys on cattle production, pig production and poultry production).	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed

B.7	Study visits	Exchange of experience, studying the methodology and good practice applied in the implementation of pilot data exercise in more experienced Member States.	<input checked="" type="checkbox"/> partially realized	<input checked="" type="checkbox"/> partially realized
C	Implementation	Simultaneous implementation of sample statistical surveys in full and use of data from administrative data sources.	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
C.1	Pilot data processing	<ul style="list-style-type: none"> • Export of data from administrative data sources and their processing according to the developed methodology. • Preparation of output tables. 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
C.2	Comparative data analysis from the two data sources	<ul style="list-style-type: none"> • Data analysis. • Evaluation of differences between the two data sources at the level of statistical units and aggregated data in the structure of output tables. • Evaluation of possible non-compliances (time series interruption) due to source changes. 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
C.3	Quality assessment of data from administrative sources	Overall quality assessment of data from administrative data sources (availability, coverage, completeness, punctuality and coherence (a comparison with outputs from crop and animal statistics) of data coming from the administrative data sources.	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed
C.4	Final decision	<p>Final decision on the use of administrative data sources.</p> <p>4 options for follow-up scenarios:</p> <ul style="list-style-type: none"> • full replacement of statistical surveys for crop and animal statistics in the statistical system • partial replacement of statistical surveys for crop and animal statistics in the statistical system • continuation of the system of statistical surveys 	<input checked="" type="checkbox"/> completed	<input checked="" type="checkbox"/> completed

		<ul style="list-style-type: none">• update of the Farm Register - support for the selection of basic and sample sets for statistical surveys in crop and animal statistics		
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Outputs of the Grant Action - Animal production statistics

In cooperation with the Ministry of Agriculture CZSO focused on defining and verifying reliable methods to eliminate inactive enterprises.

B1 Requirements for external working group

1. Elimination of inactive enterprises (holdings/farms)

CZSO tried to eliminate inactive enterprises and over-aged animals registered in the IAR applying the algorithm used internally at the Ministry of Agriculture (MoA). Unfortunately, this method proved not to be reliable enough; the results were very weak (for details see the Progress Report from August 2023). Therefore, CZSO tried to verify its own system for their elimination. For the 2023 data, CZSO modified the requirement for the MoA and asked for providing also data on the latest date when the change in animal numbers was reported for each registered farm (internal unit of the holding) and each animal species (cattle, sheep, goats).

Datasets combining data on the age of registered animals and the dates of the latest change reports were analyzed with the following outputs:

- a close relation was found in case of holdings/farms, which (i) kept over-aged animals (e.g. over 12 years, alternatively over 15 years) and, at the same time,(ii) which reported any change in the animal numbers more than one or two years ago prior to the reference date. Such holdings/farms can be considered as inactive.
- when the condition (parameter) of the date of the latest reported change in animal numbers was applied to active holdings/farms, the occurrence of over-aged animals was reduced in the dataset
- the activity of a holding/farm was defined as a combination of 2 parameters: (i) non-zero number of animals on the reference day, and (ii) at least one reported change in the animal numbers during 24 months prior to the reference day

The length of the period when no change in the number of animals was reported (24 months) was verified and applied to sheep and goats in 2023; for cattle, it will still be verified on the 2024 data.

In cooperation with the MoA, the content, structure and format of data to be taken from IAR were finalized:

- a) record of the registered animal
 - ID, date of birth, date of registration, sex, data on parturitions of females, species, breed
 - Information about the breeder (enterprise) – ID, name
 - Information about the holding/farm – ID, cadastral territory
- b) Record of the holding/farm
 - ID, date of last report to the animal register
 - Breeder details – ID, name

Format of transferred data: csv

Estimated range of transferred files:

Individual animal records will be divided into files by species:

- Cattle - about 1.5 million records divided into 2 files
- Sheep - approx. 240 thousand records
- Goats - approx. 40 thousand records

Individual records for holdings/farms will be transferred in one file (all species together):
Cattle, sheep, goats - approx. 80 thousand records

The contract for the provision of data from the animal register between the Czech Statistical Office and the Ministry of Agriculture will be signed before the end of 2024.

2. Distinguishing *dairy cows* and *other cows*

As already described in the August 2022 Progress Report, large differences in data were detected in the distinction of *dairy cows* and *other cows* between the results from the existing data source (statistical survey) and the animal register. Also, the modification of the algorithm for distinguishing these two breeding systems applied to the IAR data before their transmission to the CZSO gave only unstable results (see Progress Report from August 2023). Therefore, the CZSO contacted the State Veterinary Administration of the Czech Republic (SVA CR) with a request to provide a list of registered milk collection room. A milk collection room is a farm device for storing milk in bulk before it is sold to a dairy or a sales organization or directly sold to customers or sold from a vending machine. Cows raised on a farm with a registered milk collection room are considered *dairy cows*, ewes and ewe-lambs from a farm with a registered milk collection room are considered *Milk ewes and ewe-lambs*.

The distinction of cows and female sheep into *dairy/milk* will be verified on the 2024 data from IAR.

In cooperation with the the State Veterinary Administration, the content, structure and form of the data to be taken from the SVA CR were finalized:

- Data on a farm with registered milk collection room – holding/farm ID, milk collection room ID, registration date, address of the milk collection room, ID number (IČO), activity of the farm, animal species

B2 Output table preparation

B3 Preparation of adjustments to the Statistical Metainformation System

Output tables and descriptions of variables in the Statistical Metainformation System (SMS) have been modified for publishing data according to the definitions and classification requirements as set in the SAIO regulation (classification requirements for animal categories and their aggregates).

B4 Preparation of the solution for missing items

During the work on the grant project, the CZSO also verified various variants of how the additional data could be used to model the missing items.

Cattle

Category for slaughter - modelling would be based on the slaughter statistics data and foreign trade with calves and heifers data in the previous period

Dairy cows - the determination of this category would be based on the presence of a milk collection room registered by the State Veterinary Administration on the farm where the cow is kept

Sheep

Ewes and ewe-lambs – modelling would be based on IFS data, with coefficients being used for the whole IFS interim period.

B6 Update of the methodology for linked statistical surveys

The subject and the aim of this task, which was in detail described in August 2023 Progress Report, was to verify the possibility of using a method combining a sample survey data and data from the IAR to determine sheep and goat populations. However, problems with linking both sources via a common identifier of the holding/farm would not allow to obtain sufficiently high-quality data in terms of eliminating inactive enterprises. That is why this method was abandoned and another solution mentioned above was used (see point B1).

B7 Study visits

Study visits to advanced member states did not take place. CZSO only took part in the workshop on Modernization of agricultural statistics organized by the Hungarian Statistical Office in Budapest in October 2023.

C1 Pilot data processing

During the work on the grant project, the CZSO also focussed on the search, verification and selection of an efficient variant of the procedure to deal with those characteristics of the administrative data source (animal register) that would cause the interruption in data series during the transition from statistical surveys to administrative data sources (e.g.: missing items, continuous updating of the IAR, inactive enterprises, over-aged animals, distinguishing *dairy/other cows*).

Cattle

Pilot processing of selected solution variants will be carried out on 2024 data (30 June data and 31 December data).

1. Items missing in the administrative source (result of tasks A1, A6, B4)
 - *Categories for slaughter* - modelling

- *Dairy cows* – linkage with the list of milk collection rooms registered by the SVA CR

2. Continuous IAR updating and selection of a reference day (result of task A5)

- The reference day will be kept as it was until now: 30 June and 31 December
- The time gap between the date of providing definitive data and the selected reference day is sufficient for the updating of data (numbers of animals registered in the IAR) to be considered completed as of the reference day

3. Inactive enterprises and over-aged animals (result of tasks A6, B1)

- To eliminate inactive enterprises and over-aged animals, the date of the last report of the change in the animal numbers to the IAR will be used, and the maximum delay between this date and the reference day will also be determined

The full use of the animal register as a source for statistics on cattle numbers is planned for the reference year 2025.

Sheep and goats

Pilot processing of 2023 data (as of 31 December) was carried out using the following solution variants:

1. Items missing in the administrative source (result of tasks A1, A6, B4)

- *Ewes and ewe-lambs* - modelling based on IFS results

2. Continuous IAR updating and selection of a reference day (result of task A5)

- The reference day was set as 31 December – it was verified that moving the reference date closer to 1 November did not contribute to higher completeness of statistics; furthermore, using this date means that there is a uniform reference date for all animal species, which is an additional advantage

3. Inactive enterprises and over-aged animals (result of tasks A6, B1)

- To eliminate inactive enterprises and over-aged animals, the date of the last report of the change in the animal numbers to the IAR and the maximum delay between this date and the reference day (24 months) will be used

Data for the year 2023 were published as required in the SAIO regulation.

C2 Comparative data analysis from the two data sources

Comparative analysis of both data sources was always carried out during testing and examination of possible variants.

Cattle

The comparison was always carried out on data with the same reference date. Based on the results, the examined variant was either modified or left as satisfactory for the next round.

Detailed results of the comparison of the pilot processing of data from the IAR and the current sample survey will be available in 2025. However, it can already be assumed that the use of modeling to determine the animal numbers in the categories for slaughter will cause substantial differences compared to the values from the sample survey.

Explanation:

When classifying an animal as *for slaughter*, the respondent only expresses his intention to send the animal to slaughter, but this intention may not be fulfilled. Linking to the statistics of already slaughtered animals provides a more realistic result and better describes the situation; this applies especially to heifers not intended for breeding purposes but for the meat production. The category *bovines less than 1 year old for slaughter* is not significant in the Czech Republic and the breeding of these animals is not very widespread. Even for this category, the modeling result is more realistic than the data from the statistical survey.

Sheep and goats

Data from the pilot processing (as of 31 December 2023) were compared with data from the last statistical survey (as of 1 April 2022). The following table shows the results.

	2022	2023	100%=2022
Sheep	174 196	179 158	+2,8%
Ewes and ewe-lambs	112 982	115 291	+2,0%
Milk ewes and ewe-lambs	5 100	2 856	-44,0%
Non milk ewes and ewe-lambs	107 882	112 435	+4,2%
Other sheep	61 214	63 867	+4,3%
Goats	24 607	28 757	+16,9%
Breeding female goats	16 661	17 579	+5,5%
Other goats	7 946	11 178	+40,7%

A slight difference in the definitions of *Ewes and ewe-lambs* contributed to the difference between data sources for data on *Milk ewes and ewe-lambs*. The correct distinction of *milk and non-milk sheep* in the animal register depends on the attribute used. Compared to the existing data source, the results for sheep are less reliable than for cows.

Differences between data sources are more significant in goats than in sheep. However, in case of the most important category *Breeding female goats*, the difference is the lowest. In case of *Other goats*, the fact that this is a very diverse category of animals contributes to the differences. A large difference between sources is also influenced by the IAR guidelines for breeders regarding the reporting of changes in animal numbers and the content of these reports.

C3 Quality assessment of data from administrative sources

The quality assessment focused on full compliance of category definitions with SAIO requirements. In case the administrative source did not contain the necessary information, missing item modelling was used in accordance with the SAIO regulation.

In terms of definitions, the produced statistics will be fully compatible with SAIO requirements.

C4 Final decision

- The implementation of the grant project enabled the full transfer of data from the Integrated Animal Register for the compilation of statistics on sheep and goat numbers from 2023; for cattle, it is planned from 2025.
- Partial transfer of data on pigs and poultry from the IAR will be used to update the Farm Register

Outputs of the Grant Action - Crop production statistics

C4 Final decision – Follow-up activities and implementation

As described in the Progress Report from August 2023, the follow-up scenario for the crop production statistics was chosen based on the positive results of the 2022 pilot data processing.

The implementation of the grant project enabled the replacement of the sample statistical survey with data from IACS (LPIS). Due to unavailability of some items in IACS, these missing items will be collected with a supplementary statistical survey using a standard statistical questionnaire.

The supplementary survey will include holdings/farms growing special crops that are not subject to subsidies in CZ (for example: flowers, Christmas trees, mushrooms, growing vegetables in greenhouses, etc.) or holdings/farms that, although engaged in crop production, they do not receive subsidies and therefore are not covered in IACS.

In the period August 2023 – August 2024, the following activities were carried out:

- The Ministry of Agriculture updated the Central subsidy crop code nomenclature in line with the updated CAP subsidy rules.
- This step was followed with the update of the converter (mapping) between the Central subsidy crop code nomenclature (IACS) and the crop production statistics items (CZSO).
- In connection with this, the CZSO code list and other crop production statistics items were updated and the definitions of items in the CZSO Statistical Metainformation System were specified
- Analytical and publication output tables according to SAIO requirements were defined and programmed
- It also included the implementation of a new system for flagging confidential data

B7 Study visits

Study visits to advanced member states did not take place. CZSO only took part in the workshop on Modernization of agricultural statistics organized by the Hungarian Statistical Office in Budapest in October 2023, where an overview of the use of administrative data sources in other EU countries was obtained.

Outputs of the Grant Action - the Farm Register

B5 Methodology for updating the Farm Register

The goal of the grant action, i.e. the extension of the updating method of the Farm Register with administrative data sources, was fulfilled.

The project began with analyses of existing resources and of mechanisms for updating the Farm Register. The update was based mainly on data obtained from regular CZSO statistical surveys on crop and animal production statistics. The largest sources of data were agricultural censuses and Farm Structure Surveys (FSS), later Integrated Farm Surveys (IFS), within which it was possible to address high numbers of respondents and obtain a full range of data and information, which served subsequently as a data resource for several years.

As time progressed, however, this mechanism for updating the Farm Register proved to be more and more cumbersome and inefficient due to increasingly rapid development in agricultural and environmental policies, technologies and procedures. It was therefore decided to change the method of updating data in the Farm Register.

The next step was therefore an analysis of the availability of current administrative data sources and their usability for the Farm Register updating. The focus was primarily on the possibilities of the Ministry of Agriculture (MoA), as it uses several registers with data on agricultural enterprises to manage its agricultural policy. Negotiations on the use of the MoA's registers for the needs of the CZSO's Farm Register took place at the same time as negotiations on the transfer of information and data for crop and animal production statistics.

In the course of negotiations between the Ministry of Agriculture and the Czech Statistical Office, it was proven that the ideal source for the Farm Register is the land register LPIS and the animal register (IAR). In the next phase, these resources were analyzed in detail in order to determine the attributes that will participate in the Farm Register update. It was also necessary to analyze the timeline from the moment the subject/enterprise was registered in these registers, through the updating of data for registered subjects/enterprises to the expiry of the validity or removal of the subject/enterprise from the registers. Finally, the range of attributes to be transferred and the appropriate time periods when it would be most efficient to download updating data from the MoA registers were determined.

In the next stage, the analysis of the mechanisms that ensure the actual updating of the Farm Register from external sources was carried out. It was necessary to harmonize the different data formats of the registers on the MoA's side and on the CZSO's side. It was decided to develop a new interface for connecting data from the MoA's registers. This interface was programmed directly in the Department of Agricultural Statistics by own IT specialists. Once operational, this interface allows receiving data from the LPIS and IAR and creating an update file in a format that allows further processing by the routine processes of the Farm Register.

A partial problem that crystallized during these activities was the problem of subjects/units without ID number. In accordance with the legislation, the Ministry of Agriculture can only maintain subjects/units with ID number in its registers. It was therefore necessary to solve the

issue of updating subjects/units without ID number in a different way than from administrative data sources. The analysis revealed that there is no valid administrative source for these subjects/units. In the end, a solution was found, the CZSO will continue to use the previous procedures for updating subjects/units without ID number, i.e. from the results of agricultural full and sample statistical surveys.

The last step was the modification of the structure of the Farm Register in the existing program environment. The structure was modified in accordance with the newly used data sources to meet all the current needs of the Department of Agricultural Statistics.

Summary evaluation of the Grant Action

The Grant Action 2020-CZ-AGRI had the following objectives:

- From the perspective of continuity with agricultural policies and strategies, there were several objectives in line with the goals of the 'Strategy for agricultural statistics for 2020 and beyond':
 - to collect statistical data once and use them multiple times
 - to rationalize and diversify data sources without any negative impact on the quality of agricultural statistics
 - to produce high-quality statistics that meet users' needs efficiently and effectively
 - to produce more statistics while lowering the burden on respondents by exploring alternative data sources and possibilities of efficiency improvement
- From the national perspective, there were the following goals and expected achievements set at the beginning of the project:
 - achieve the use of IACS administrative data (LPIS, IS SAIF, IAR) for statistical purposes
 - to map and analyse in detail available administrative data sources
 - to harmonize the data definitions and update convertors (mapping) to be able to match data from different sources
 - to formulate methodological requirements for the modifications and updates of administrative data sources and implement them
 - to transfer data from administrative data sources and verify the quality (pilot projects, comparison of outputs, quality assessment of the methodology and the data export results in comparison to the situation before the project)
 - to make necessary adjustments to the CZSO Statistical Metainformation System
 - to set and verify an appropriate method for imputation of missing data
 - to implement a sustainable system for the regular export and integration of administrative data into the agricultural statistics system
 - Elaboration of the methodology for updating the Farm Register (kept by the CZSO) with data exported from administrative data sources
 - to exchange experience and to learn good practice in more experienced Member States in form of study visits

To fulfill these goals and expected achievements, the following stages of work took place:

- In the crop statistics, after a detailed analysis of the administrative sources and the requirements of the SAIO regulation, the list of items used in the crop production statistics was modified. As a next step, the requirements for outputs from the administrative source (IACS) were refined. All changes and updates were implemented into CZSO's and MoA's IT systems. In 2022, the pilot project with 2481 involved entities was carried out where data from the CZSO crop production statistical survey and data obtained from IACS were compared and in detail analyzed. The result of this comparison was so satisfactory that the final decision on changes in the system of compiling plant production statistics could be made a year earlier than originally planned. The standard sample survey was abolished from 2023 and replaced by an administrative data source (IACS), but with a supplementary statistical survey for the collection of missing items, for which the method of collecting missing items was determined, verified and subsequently implemented, using a supplementary statistical survey using the standard statistical questionnaire.
- By using data from IACS for the crop statistics, a significant reduction in the burden on respondents was reached. While in 2022, when the statistical survey was carried out for the last time, 10 thousand reporting units were involved in the sample statistical survey, in 2023 only 350 units were surveyed with a standard questionnaire as a part of the supplementary survey. In 2024, 352 units were included.
- In the animal statistics, a further reduction of the burden for 11.5 thousand respondents was achieved thanks to the cancellation of the statistical survey *Livestock Survey* in 2022. From 2023 onwards, sheep and goat statistics are based on IAR data. The sample survey *Questionnaire on cattle production*, which includes 2 thousand respondents, will have its scope reduced to a third of the original number of questions in 2025 thanks to the use of administrative data sources.
- Data quality for crop statistics has also increased. While the statistical survey only covered a sample of respondent units and a subsequent data processing was needed (until 2022), from 2023 with the use of administrative data source, CZSO received data for approximately 30,000 holdings/farms, which submitted an application for subsidies and are included in IACS (Single Application, LPIS). The classification of crops became more precise, because the items of the MoA's Central subsidy crop code nomenclature and the items of the CZSO crop production statistics were harmonized according to SAIO requirements and a unified automated converter (mapping) was created and started to be used. The programmed pre-defined output from the IACS (Single Application, LPIS) will enable the use of data from this source for other purposes (e.g. the sown and main area of agricultural crops for IFS and organic farming statistics), which is in line with the 'Strategy for Agricultural Statistics for 2020 and beyond' goal to collect data once and use them multiple times. Using a single data source will ensure harmonization across different statistics.
- The definitions of variables and individual items in the CZSO Statistical Metadata System were supplemented, clarified and updated and together with the detailed methodologies for the crop and animal production statistics they were published in SMS, which contributed to an improvement in data transparency and their usability by individual users.
- The transfer of IACS administrative data (Single Application, crop declaration and LPIS) between the Ministry of Agriculture and the Czech Statistical Office is contracted (CZSO Contract number: 008-2024-Z, reference number DMS: 263-2024-12126 dated 7 March 2024). The contract also ensures annual updates of attributes,

definitions, converters in case of any updates both on the side of IACS and CZSO. This ensures the stability of the system over time and its sustainability.

- The contract on the transfer of administrative data from animal register for the use in animal statistics will be concluded by the end of 2024.
- Cooperation with the CISTA (the Central Institute for Supervising and Testing in Agriculture) managing the Orchard Register, was also established. However, due to the delay in the modernization of the Orchard Register, work on the verification the possibilities to transfer data from this register into CZSO statistics could not yet been started.
- Cooperation with the State Veterinary Administration of the Czech Republic has been expanded, and the data needed to replace missing or incomplete data from the IAR were taken from SVA's information system.

Final Conclusion:

CZSO in cooperation with other stakeholders created a functional and sustainable system how to transfer and integrate IACS administrative data into the regular production of the crop production statistics and how to use data from animal registers for livestock statistics. For the crop statistics, IACS data were used for the first time in 2023 and the system's full functionality was verified in the reference year 2024.

In animal production statistics, it was possible to replace statistical surveys with an administrative source of data for sheep and goat populations. Animal register data were used for sheep and goats in 2023; for cattle, the methodology for processing, modeling and deriving the indicators needed to compile livestock statistics (2023) was prepared, the system was verified in 2024 and its full employment will be carried out in 2025.

A new mechanism for updating the Farm Register from the MoA administrative registers was built, including the creation of a new interface for linking data files.

Despite all supposed advantages of using the animal identification and registration system (IAR) as an administrative data source for animal statistics, several problems were faced that arose from the fact that the animal register is kept for other than statistical purposes. For missing items or missing information, auxiliary sources had to be sought and modeling and derivation used. Some procedures have proven to be ineffective (eg. combined method of selection for sheep. One of the priorities was the continuity of statistics over time. If large differences between sources (breaks in the time series) were detected, reasons and explanations for their existence had to be sought in order to be accepted.

A reduction in respondent burden has been successfully achieved, agricultural statistics will be able to be produced at lower costs and with higher data quality.

From the point of view of the time planning of the project, the project was successfully implemented in accordance with the planned work schedule.

The only item on the project agenda that could not be fulfilled were the planned study visits to more experienced Member States. In the course of the Grant Action, it became clear that our own experience and really close cooperation with our stakeholders, an intensive exchange of experience and information and careful work with data files are the key to successfully manage and fulfill the project tasks in our national conditions. On the other hand, when there was an opportunity to learn more about modernization practices in other member countries in

a workshop organized by the Hungarian Statistical Office, CZSO welcomed this opportunity and participated in the workshop to gather ideas for our own work.

As regards the financial management of the grant project, the financial resources were mainly used for staff costs, namely for permanent and temporary staff. The financial resources for study visits were not completely used up. The planned financial resources for IT services were not spent at all, because in the framework of good cooperation with the Ministry of Agriculture, it was possible to pay for the required programming work for the necessary IT adaptations of administrative resources within the annual service costs from the MoA budget, i.e. from national funds, without any financial claims on the budget of the Grant Action.

The CZSO most appreciates the fact that the planned goals of the project were met and the expected achievements were reached; thanks to, in particular, the excellent and active cooperation with other state institutions involved in the Grant Action. Work on the project was demanding, but thanks to regular work meetings (in person, online, by phone), it was possible to solve all the problems that the CZSO was dealing with. The cooperation within the internal and external working group was excellent. The frequency of working meetings was adapted to the needs of project implementation.

The Czech Statistical Office will continue the work started in the follow-up grant project 2023-CZ-AGRI in order to verify the usability of the procedure created by this project (data input) with other administrative sources, including the verification of the possibility of using satellite data for harvest estimates, and to implement data from administrative data sources into the routine processing within the CZSO internal central processing system (data processing and output).