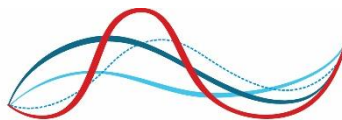REPUBLIC OF CROATIA

„MODERNISATION OF AGRICULTURAL STATISTICS"
EUROSTAT GRANT AGREEMENT NUMBER - 2018.0210

Final report

DRŽAVNI ZAVOD ZA STATISTIKU
REPUBLIKE HRVATSKE
CROATIAN BUREAU OF STATISTICS

Zagreb, 12 August 2020
Prepared by Željko Kanižaj

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1 Executive summary

In the frame of EU grants 2017. Croatian Bureau of statistics (CBS) signed a Eurostat grant agreement No 2018.0210 title name „Modernisation of agricultural statistics".

The grant agreement started on June 27th 2018 and ended on June 26th 2020.

2 Introduction

In the following chapters, the progress achieved will be described, as well as the planned activities for the next reporting period.

The general objective of the action is the preparation for the new Integrated Farm Statistics (IFS).

The specific objectives of the action are:

Modernising the existing statistical systems by updating the farm register systems, adapting existing questionnaires and improving data processing and validation systems.

Improving methodological processes to be compatible with new legal framework of IFS.

3 Project status

3.1. Actions planned

Preparatory actions:
• *Preparing the methodology, questionnaire and other supporting materials,*
• *Analysing the current situation in available administrative sources and investigating possibilities for using administrative data in Agricultural Census 2020 and modules 2023 and 2026,*
• *Updating the Statistical Farm Register with available administrative sources,*
• *Creating tailor made application for data processing, validation and tabulation*
• *Setting up the thresholds for Agricultural Census 2020 based on the Statistical Farm Register*

The second phase activities:
• *Upgrading the existing 2016 FSS IT application for Agricultural Census 2020 data collection.*
• *Development of questionnaires for CAWI and CAPI,*
• *Upgrading the existing CAWI and CAPI software, including questionnaires, data processing, coding, database of Agricultural Census results, tabulation, module for inclusion of data from administrative data sources into 2020 Census database,*
• *Testing of CAWI and CAPI software*

3.2. Activities performed and results

Activity 1: Preparing the methodology, questionnaire and other supporting materials

Within this activity the preparation of the methodology, questionnaire and other supporting materials according to the new Regulation (EU) No 1091/2018 Integrated Farm Statistics (IFS) was performed. The starting point to define the methodology, questionnaire and other supporting materials was the Law of Census of Agriculture laying down in Article 10 that the methodology of the Census of Agriculture and the Control Census of Agriculture is determined by an Ordinance issued by the Director General (Ordinance of methodology of Census of agriculture). Also, the content and layout of questionnaires are laid down by this Ordinance. This Ordinance determines the methodology for the implementation of the Census of Agriculture 2020 and the methodology of the Control Census, the content and layout of questionnaires and instructions for completing, duration and content of training for Census participants, the Confidentiality Statement form, Instructions for enumerators and other issues important for the implementation of the Census of Agriculture. Also, in preparation of this Ordinance the IFS Handbook 2020 was consulted. The main actions to fulfil this activity were:

- drafting the Ordinance of methodology of Census of agriculture
- determining the content of all census questionnaires and auxiliary forms
- drafting other acts necessary for the implementation of the Census of Agriculture

There were no major problems in defining the content, layout and instructions for filling the electronic questionnaires, we just needed to adjust the IFS variables to be understandable to the respondents and we spent a lot of time on that.

The lessons learned are as follows:

- all stakeholders must be involved in the preparation of the methodology, questionnaires and supporting materials
- given that the methodology is complex, the training of all census participants has to be continuous
- it is necessary to insert as many concrete examples as possible into the methodology in order to simulate the real situation on the field

Results of this activity: Methodology, methodological instructions for interviewers, questionnaire and other supporting materials have been prepared. (see Annex III)

Activity 2: Analysis of the current situation in available administrative sources and investigation of possibilities for using administrative data in Agricultural Census 2020 and modules 2023 and 2026 carried out

Within this activity, the current situation in all available administrative data sources for the purpose of updating Statistical Register of Agricultural Holdings (SRAH) and for using administrative data in Agricultural Census 2020 and modules 2023 and 2026, was analysed. CBS has organised meetings with all available administrative sources and the data exchange protocol was signed.

The starting point was to study the list of required IFS variables and availability of these variables in administrative sources. The main actions to fulfil this activity were:

- mapping the variables from the administrative sources on the list of IFS variables
- checking the consistency of definitions

- determination with the Paying Agency a detailed structure of the administrative data transmitted (the structure of datasets, the name of variables, the deadline for data submission, length of the field and so on)
- analysis of data provided by Paying Agency and the preparation of assumptions to supply statistical database with data from administrative sources
- taking a decision of inclusion of variables from administrative source instead of survey

There were problems with standardization of address list and inconsistency in definition of variables (e.g. dried pulses are missing in administrative source) solved using the Spatial statistical Register and internal estimation of variables in question. Also, due to inconsistency in definition and lack of IT solutions we decided not to use administrative data source instead of survey except for dataset concerning rural development measures. The lessons learned are as follows:

- the administrative sources have to be carefully investigated and file format for data transmitting have to be standardized
- the data in administrative sources have to be completed with additional variables in order to use instead of survey
- need to redesign the structure SRAH due to inclusion of new administrative sources (LPIS, Croatian beekeeping register) to simplify data collection

Results of this activity: Analysis of the current situation in available administrative sources (Ministry of Agriculture – Register of organic producers, the Farm Register of the Paying Agency for Agriculture, Fisheries and Rural Development, Croatian Agricultural Agency, Business Register, database of Population Census 2011, LPIS data, IACS and Croatian beekeeping Register) and investigation of possibilities for using administrative data in Agricultural Census carried out. The conclusion is that the data from administrative sources (IACS) will be used for prefilled questionnaires of private family farms and to control the obtained data from respondents. In the future, these data may be used in Croatia as a direct source instead of the survey.

Activity 3: The new data sources examined

In the Agricultural Census, for the first time, we will take over the data for Rural development measures in our database and we will replace the survey data. The work done has remarkably reduced the burden of statisticians and manual tasks have been reduced to a minimum.
Also, for the first time, Croatian beekeeping register is added on the list of administrative sources which will be regularly used for updating of Statistical Register of Agricultural Holdings (SRAH) as well as to control the obtained data and comparisons at the farm level.

The main actions to fulfil this activity were:
- Finding appropriate administrative sources
- Taking over database from Croatian beekeeping register
- Updating SRAH with data from Croatian beekeeping register
- Contacting Paying Agency for new collaboration concerning Rural development measures

There were problems with standardization of address list and missing of unique identifier coming from new data source - Croatian beekeeping register. The problems were solved using the Spatial statistical Register and auxiliary identifiers. The reason that we decided to use data on rural development measures is very good cooperation with Paying Agency from 2016 when we got completed file with users of rural development measures and after renewed collaboration during this activity the conclusion was to use this source again.
The lessons learned are as follows:
- Impact of users of administrative source to adjust their database according to statistical rules
- The dataset of rural development measures is excellent example for taking over from Paying Agency in order to reduce burden for respondents and CBS staff in data processing

Results of this activity: The examination of new data sources (database of users of rural development measures and Croatian beekeeping register) carried out. The conclusion is that the data from administrative sources for Rural Development measures will be used as a direct source of data for Agricultural Census 2020.

Activity 4: Updating the Statistical Farm Register with available administrative sources

Within this activity, the Statistical Register of Agricultural Holdings (SRAH) was updated with all available administrative data sources.

The starting point was a continuation of work on the standardization of administrative register (especially addresses) and updating of SRAH. For this purpose, we used a new version of spatial statistical Register for coding name of streets as one of procedure steps. The Register keeps data for the following types of spatial units: state, county and City of Zagreb, city, municipality, settlement, delivery area of the post office, local self-government units (city district, local committee area), protected areas, data on the areas of territorial jurisdiction of cadastral offices, as well as data on the areas of territorial jurisdiction of municipal courts, cadastral municipality, cadastral area at sea, statistical circle, census circle, street, square and building with corresponding house numbers.
The components of the register are:
1. Graphic part of the register
2. Lists of spatial units
3. Collection of documents

The main actions to fulfil this activity were:
- The standardization of address coming from administrative sources
- Adding in SRAH new characteristics according to experience from previous surveys in order to get better frame for surveys and for making consultation tables needed for data processing
- Establishment of new logic-numeric control in SRAH based on new characteristics

There were problems in coding of streets because in some parts of Croatia the house number is missing, but it is solved by contacting those farmers to identify the exact address.

The lessons learned:
- The standardization of address is most important thing in preparation of Census and to simplify getting a geo coordinates of holdings
- The knowledge of spatial data and support of Spatial statistical register is crucial for updating the SRAH

Results of this activity: The SRAH is updated with all available administrative sources (Ministry of Agriculture – Register of organic producers, the Farm Register of the Paying Agency for Agriculture, Fisheries and Rural Development, Croatian Agricultural Agency, Business Register, database of Population Census 2011, IACS, LPIS data and Croatian beekeeping Register).

Activity 5: The thresholds for Agricultural Census 2020 based on the Statistical Farm Register set up/determined

Within this activity, thresholds for Agricultural Census were defined.
The starting point was the continuation with the regular procedure for updating the data on agricultural holdings by using available administrative sources and current survey data. Updating of list of farms was carried out. It was defined national thresholds in SRAH for Agricultural Census and thresholds according to the new (IFS) Regulation (EU) No 1091/2018 by summing up all the holdings by used agricultural area and number of livestock to satisfy criteria to cover 98% of agricultural area and 98 of LSU. All the axillary characteristics needed to make criteria for breakdown of holdings (area of arable land, area of orchards, vineyards, olive groves, number of livestock) are available in SRAH.
The Census of Agriculture 2020 will cover the agricultural holdings in the Republic of Croatia which, according to the latest statistical data, meet the following criteria:
a) use at least 0.4 ha of utilized agricultural area, or
b) use less than 0.4 ha of utilized agricultural area, but:
• use at least 10 acres of vineyards, orchards and / or olive groves
• raise at least 1 head of cattle
• raise 5 sheep and / or goats
• raise 100 pieces of poultry
• have any number of beehives
• are market producers of vegetables, medicinal herbs, strawberries and cultivated mushrooms and flowers and ornamental plants.

The main actions to fulfil this activity were:

- Updating of SRAH with regular surveys and administrative data sources
- Determination of thresholds based on SRAH
- Creating list of holdings above national threshold for AC 2020

There were problems in this activity.
The lessons learned are as follows
- all characteristic for creating criteria to define threshold have to be in SRAH
- SRAH has to be updated with latest data

Results of this activity: The thresholds for Agricultural Census 2020 based on the Statistical Farm Register determined.

Activity 6: The existing 2016 FSS IT application for Agricultural Census 2020 data collection upgraded

The starting point of this activity was to upgrade existing IT application under the new IFS Regulation. The activity was outsourced to an IT company. The main actions to fulfil this activity were:

- Studying the new IFS regulation and finding best IT solutions for application
- Improvement of existing IT application based on experience from FSS 2020
- Upgrading existing FSS IT application
- The new set of validation rules is added in application

There were no major problems.

The lessons learned:

- Experience from FSS 2016 was useful in improving existing application
- Work on simplification of application to be friendly to interviewers and respondents has to be done
- Including of validation rules in application as much as possible

Results of this activity: Within this activity, the IT application by the IT services was upgraded and implementation initial skip instructions and consistency checking validation rules for Agricultural Census 2020 data collection according to the new Regulation (EU) No 1091/2018 Integrated Farm Statistics (IFS) was performed. (see more in Annex II)

Activity 7: The tailor-made application for data processing, validation and tabulation created

The starting point of this activity was the tailor-made application for data processing, validation and tabulation from FSS 2016 created. The main actions to fulfil this activity were:
- reparations of validations rules,
- coding,
- tabulating,
- creating a module for inclusion of data from administrative sources
- crating a data processing rules,
- integration of validations and logic-arithmetic controls over imputed data.

The layout of the initial tab screen application home screen is shown below:

There were no major problems.

The lessons learned:

- Experience from FSS 2016 was useful in improving tailor-made application for data processing, validation and tabulation
- The new IFS variables caused more validation rules which are added in this application

Results of this activity: Within this activity, the tailor-made application for data processing, validation and tabulation is created.

Activity 8: Questionnaires for CAWI and CAPI developed

The starting point were the questionnaires for CAWI and CAPI from FSS 2016 which have to be developed according to the new Regulation (EU) No 1091/2018 Integrated Farm Statistics (IFS). Development work started in February 2019 and finished by the end of December 2019.

It includes new electronic questionnaires developed for collecting data on private family farms through personal interviewing. The new electronic questionnaire (CAPI) was developed in Blaise and it was integrated with existing Case Management System (CMS). Also, the new web application CAWI was developed for collecting data for legal entities and craftsmen.

The main actions to fulfil this activity were:
- creating a draft of questionnaires for CAPI and CAWI
- submitting draft of new questionnaires to subcontractor,
- integration of questionnaires in CMS

There were no major problems.

The lessons learned:
- Experience from FSS 2016 was useful in improving questionnaires for CAPI and CAWI
- The new IFS variables caused more studying in creating questionnaires

Results of this activity: Within this activity, the questionnaires for CAWI and CAPI were developed according to the new Regulation (EU) No 1091/2018 Integrated Farm Statistics (IFS).

Activity 9: CAWI and CAPI software tested

The starting point was a pilot survey which was conducted in 2019 on a small sample. The main actions to fulfil this activity were:
- creating a sample for pilot survey
- data collection
- observation from field made by interviewers for CAPI and selected business entities
- filling of database with data from pilot survey

During testing, a small number of errors or new feature requests were observed, which were then corrected and developed. The completion of testing created the conditions for setting up a new application on the production environment and preparing for the start of data collection in the AC 2020.

The lessons learned:
- testing on pilot survey is most important to avoid errors

Results of this activity: Within this activity, the questionnaires for CAWI and CAPI were tested.

Activity 10: Questionnaires for CAWI and CAPI adapted

The starting point was existing CMS used by CBS for other surveys of this type of data collection and adaptation of CAPI questionnaire. The CMS system enables:
- Distribution and delivery of sample to each individual interviewer according to the given parameters
- Shows at any time the status of the survey implementation for each interviewer, and which units of the sample he or she has completed, started, or has not yet completed.
- Ensures packing of collected data into one file and sending to CBS via communication system (ftp).

Concerning CAWI the starting point was upgraded web application on client-server platform that enables:
- Collecting data through a web application according to the CBS methodological instructions
- Built-in computing and logical controls on data entered in electronic questionnaires according to Eurostat validation rules
- Linking to the address list of legal entities covered by the survey
- Ability for users to correct their own contact information

- Save the collected data to a relational database, including updating and upgrading the existing database used by the CBS

There were no major problems.
The lessons learned:
- Adapting of questionnaires has proved to be satisfactory for the collection of agricultural data,

Results of this activity: Within this activity, the questionnaires for CAWI and CAPI were adapted.

4 Subcontracting

- IT services –the grant contract envisaged subcontracting of IT services related to design and production of IT application according to the new IFS Regulations. It includes upgrading of the existing 2016 FSS IT application for Agricultural Census 2020 data collection, upgrading the existing CAWI application of collecting and processing data for legal entities and craftsmen (Computer assisted web interviewing - CAWI) and private family farms (Computer assisted personal interviewing - CAPI) including questionnaires, data processing, coding, database of Agricultural Census results, tabulation, module for inclusion of data from administrative data sources into 2020 Census database.

- IT company was engaged as a result of the procurement procedure carried out. The outputs were as follows:
    - CAWI and CAPI questionnaires developed
    - The existing 2016 FSS IT application for the future Agricultural Census on client-server platform upgraded
    - The existing 2016 FSS IT application for Agricultural Census 2020 data collection upgraded,
    - The validation rules and data processing rules prepared,
    - CAWI and CAPI software, including, data processing, coding, tabulation, module for inclusion of data from administrative data sources developed,
    - CAWI and CAPI software tested.
    - Integrated validations and logic-arithmetic controls over inputted data
        - Option to enter data that was collected with paper surveys
    - The Blaise version of electronic survey for collecting Agricultural Census data on private family farms with personal interviewing upgraded. That includes:
        - Blaise survey integrated with existing Case Management System (CMS) application in CBS for managing CAPI surveys
        - Integrated validations and logic-arithmetic controls over inputted data

    - Developed new Excel application for processing collected CAWI and CAPI data, also that includes
        - Uniting CAPI and CAWI data into the database

- Output tables with all data collected with CAWI and CAPI methods
- Pairing collected data with data from administrative sources

- The engagement of IT expert resulted in the following outputs:
  - the SRAH updated with available administrative sources including, application for updating frame with list of potentials farms from database of Population Census created.
  - the tailor-made application for data processing, validation and tabulation created.

5 Findings

Not applicable.

6 Action list of future activities

Not applicable.

7 Conclusion

In the Agricultural Census, for the first time, we will take over the data for Rural development measures in our database and we will replace the survey. The work done has remarkably reduced the burden of statisticians and manual tasks have been reduced to a minimum.

Also, for the first time, Croatian beekeeping register is added on the list of administrative sources which will be regularly used for updating of SRAH as well as to control the obtained data and comparisons at the farm level. CBS improved processing and data collections in the SRAH by adding new characteristics which are necessary for creating sample frame for surveys in the field of agriculture.

List of abbreviations

Acronym	Description
CBS	Croatian Bureau of statistics
CMS	Case Management System
SRAH	Statistical Register of Agricultural Holdings
IACS	Integrated Administration and Control System
IFS	Integrated Farm Statistics

Bibliography

Table of references

List of tables and figures

Annex I

1.1. Timetable

ACTIVITY		2018												2019												2020					
		Q1			Q2			Q3			Q4			Q1			Q2			Q3			Q4			Q1			Q2		
		1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
Activity 1: Preparing the methodology, questionnaire and other supporting materials	planned							■	■	■	■	■	■																		
	completed							■	■	■	■	■	■																		
Activity 2: Analysis of the current situation in available administrative sources and investigation of possibilities for using administrative data in Agricultural Census 2020 and modules 2023 and 2026 carried out	planned							■	■	■	■	■	■																		
	completed							■	■	■	■	■	■																		
Activity 3: The new data sources examined	planned							■	■	■	■	■	■																		
	completed							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Activity 4: Updating the Statistical Farm Register with available administrative sources	planned							■	■	■	■	■	■	■																	
	completed							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Activity 5: The thresholds for Agricultural Census 2020 based on the Statistical Farm Register set up/determined	planned											■	■	■																	
	completed											■	■																		
Activity 6: The existing 2016 FSS IT application for Agricultural Census 2020 data collection upgraded	planned							■	■	■	■	■	■																		
	completed															■	■	■	■	■	■	■	■	■	■						
Activity 7: The tailor-made application for data processing, validation and tabulation created	planned							■	■	■	■	■	■																		
	completed							■	■	■	■	■	■			■	■	■	■	■	■	■	■	■	■						
Activity 8: Questionnaires for CAWI and CAPI developed	planned															■	■	■	■	■	■	■									

Activity		
	completed	(shaded cells weeks 20–27)
Activity 9: CAWI and CAPI software tested	*planned*	(shaded cells weeks 21–25)
	completed	(shaded cells weeks 21–24)
Activity 10: Questionnaires for CAWI and CAPI adapted	*planned*	(shaded cells weeks 31–35)
	completed	(shaded cells weeks 31–35)

Annex II

1.2. Upgrade of CAWI and CAPI application for data collection and processing under IFS Regulation

The main objective of the activity was to upgrade existing data collection and processing applications under the new IFS Regulation. The activity was outsourced to an IT company. Data collection refers to:

1. Legal entities and craftsmen – data collection via Computer Assisted Web Interviewing (CAWI)
2. Private family Farms – data collection via Computer Assisted Personal Interviewing (CAPI)

The expected results at the end of the activity are:

- Upgraded web application on client-server platform that enables:
  - Collecting data through a web application according to the CBS methodological instructions
  - Built-in computing and logical controls on data entered in electronic questionnaires according to Eurostat validation rules
  - Linking to the address list of legal entities covered by the survey
  - Ability for users to correct their own contact information
  - Save the collected data to a relational database, including updating and upgrading the existing database used by the Croatian Bureau of Statistics
- Upgraded database, which includes:
  - Analysis of the existing database of the Croatian Bureau of Statistics and evaluation of its use with the new electronic form
  - Upgrading of the existing database of the Croatian Bureau of Statistics in accordance with the newly created electronic questionnaire
- New electronic questionnaire for data collection for private family farms implemented in the CAPI system developed, including:
  - An electronic questionnaire created in Blaise software, according to CBS methodological instructions
  - The questionnaire must be adapted to use the existing Case Management System (CMS) already implemented in CBS
  - Built-in computing and logical controls over data entered in electronic questionnaires according to Eurostat validation rules
- Upgraded applications for processing, correcting and tabulating aggregated data from CAPI and CAWI sources
- Putting electronic forms into production

- Submission of source code to the Croatian Bureau of Statistics

1 Schedule and overview of implemented activities

Activity	2019										
	2	3	4	5	6	7	8	9	10	11	12
Upgrading web applications on client-server platform	▓	▓	▓	▓	▓	▓	▓	▓			
Upgrading of database	▓	▓	▓	▓	▓	▓	▓				
Customizing CAWI Application with Built-in Logical and Computational Controls	▓	▓	▓	▓	▓	▓	▓				
Development of a new electronic questionnaire for data collection for private family farms and implementing it in the CAPI system	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
Testing and correcting the application							▓	▓	▓	▓	▓
Putting the applications into production									▓	▓	▓
Customizing modules for processing, correcting and tabulating collected data									▓	▓	▓

2 Description of implemented activities

a. Analysis of the existing electronic questionnaire, web application and database

Compared to the form from 2016, according to which the existing electronic form and the related database were created, this year's form differs in several new tables and a larger number of new fields in the existing tables. Some tables are not included in the survey this year while some tables are new compared to the previous survey. The same is true of a number of fields in the tables that were collected in both the previous survey and this year's survey.

These changes to the form also required some adjustments to the existing electronic form and the associated relational database. Changes were made to the user interface, which needed to reflect this year's survey, and which needed to implement the necessary logical controls regarding the modified set of fields in the form from the previous 2016 survey. Also, these changes have been made over the existing database and the business logic behind the existing web application.

This year's survey also implemented a new directory of businesses involved in data collection. The structure and format of the address book is the same as in the previous survey, so in the adaptation of this year's survey, the archives of the last year's address book were archived and a new set of data from the participating business units was imported into the database.

b. Design and development of electronic questionnaire. Customizing the existing electronic form and database. Linking the Address List

Work on adjusting the new electronic form began in February. It was agreed that the design of the application should be in accordance with the existing web application and the existing electronic forms, and that changes over the user interface should be solely at the level of new tables and new fields of this year's form.

The existing web application is built in Microsoft ASP.NET MVC technology, installed on the Microsoft Internet Information Services (IIS) web server and uses the Microsoft SQL Server database. The technology for this year's electronic form has remained the same.

During development, new versions of the application were continually installed on a test server, at a location that was available online to designated persons from the Croatian Bureau of Statistics to monitor the performance of the work.

The new address list was submitted in an Excel file by the CBS, and the data was imported into a relational database while the address list from the previous survey was archived in the same database.

c. Application Testing and Updates. Putting an electronic form on production. Support in data collection

The development of the new electronic form was completed in September and the final new version of the application was uploaded to the test server with a completely new address list to test the functionality of the electronic questionnaire and verify the address list data. The connection to the test server was made available over the Internet and was available for use by responsible persons at the Croatian Bureau of Statistics to test the new application. During testing, a small number of errors or new feature requests were observed, which were then corrected and developed. The completion of testing created the conditions for setting up a new application on the production environment and preparing for the start of data collection in the pilot survey.

In early October, a new application was set up by the Croatian Bureau of Statistics production servers, and new data were imported into the existing database.

The pilot data collection began in mid-October, when, based on the address list data, notices were sent to the e-mails of business entities that were included in the collection with instructions on how to access the electronic form. During the collection, the development team was available as support with a couple of small interventions that emerged through use of the system by businesses.

d. Development of a new electronic data collection questionnaire for private family farms implemented in the CAPI system

In addition to the creation of a new electronic form for collecting data from legal entities and a craftsman through a web application (CAWI), the project also started to create a CAPI version of the form intended for collecting data from private family farms through field surveys.

The electronic questionnaire was developed in Blaise software and is largely identical to the CAWI version of the form. The only difference between the two types of forms is the data structure for the labour force.

The CAPI questionnaire was adapted for use through the existing Case Management System (CMS) system used by the CBS for other surveys of this type of data collection. The CMS system enables:

- Distribution and delivery of sample to each individual interviewer according to the given parameters

- Shows at any time the status of the survey implementation for each interviewer, and which units of the sample he or she has completed, started, or has not yet completed.

- Ensures packing of collected data into one file and sending to CBS via communication system (ftp)

The CAPI electronic questionnaire incorporates all logical and computational controls over data according to Eurostat validation rules.

e. Customizing modules for processing, correcting and tabulating collected data

During the FSS 2016 survey, an application was created to correct and tabulate aggregated collected data from CAWI and CAPI sources.

As part of this project, an adaptation of the existing application was made to support new electronic forms and all new tables and new fields collected in the new survey through CAWI and CAPI forms.

Changes to the application included changes to the user interface to the new form, as well as any necessary changes to the tables and stored procedures in the relational database that contains the aggregated data.

The FSS application enable searching for forms, open them, and correct data. At the same time, there is the possibility of creating new forms and entering data through an electronic form, and deleting existing forms from the database.

The *OkiniFSS* application enables to tabulate consolidated collected data and to initiate logical-computational controls over all forms in the consolidated database.

3 Conclusions and recommendations for future work

The existing IT solution has proved to be satisfactory for the collection of agricultural data, while the changes required on an annual basis due to the nature of the form can be implemented without major problems within a reasonable time.

The pilot data collection was successfully conducted through upgraded CAWI and CAPI applications, indicating that the upgraded applications are ready for final collection in the coming year.

4 Screens showing the IT system functionalities developed during the activity
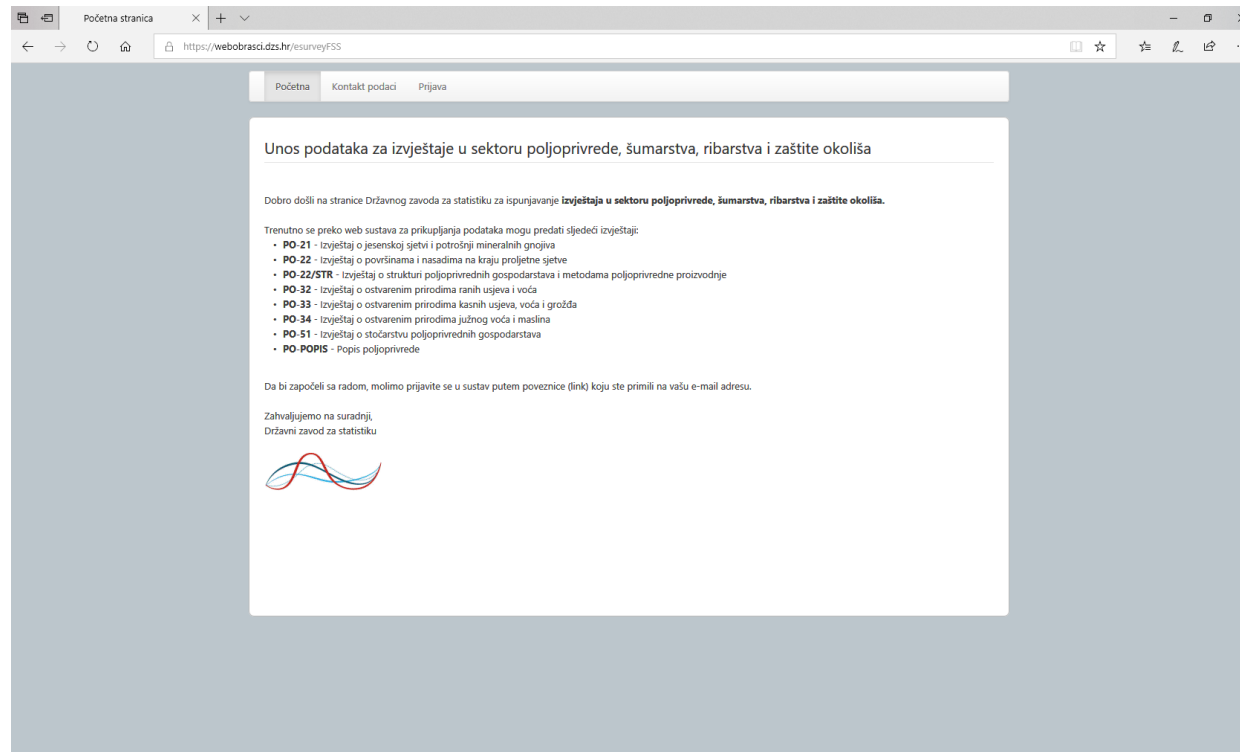
Image 1- eSurveyFSS initial screen
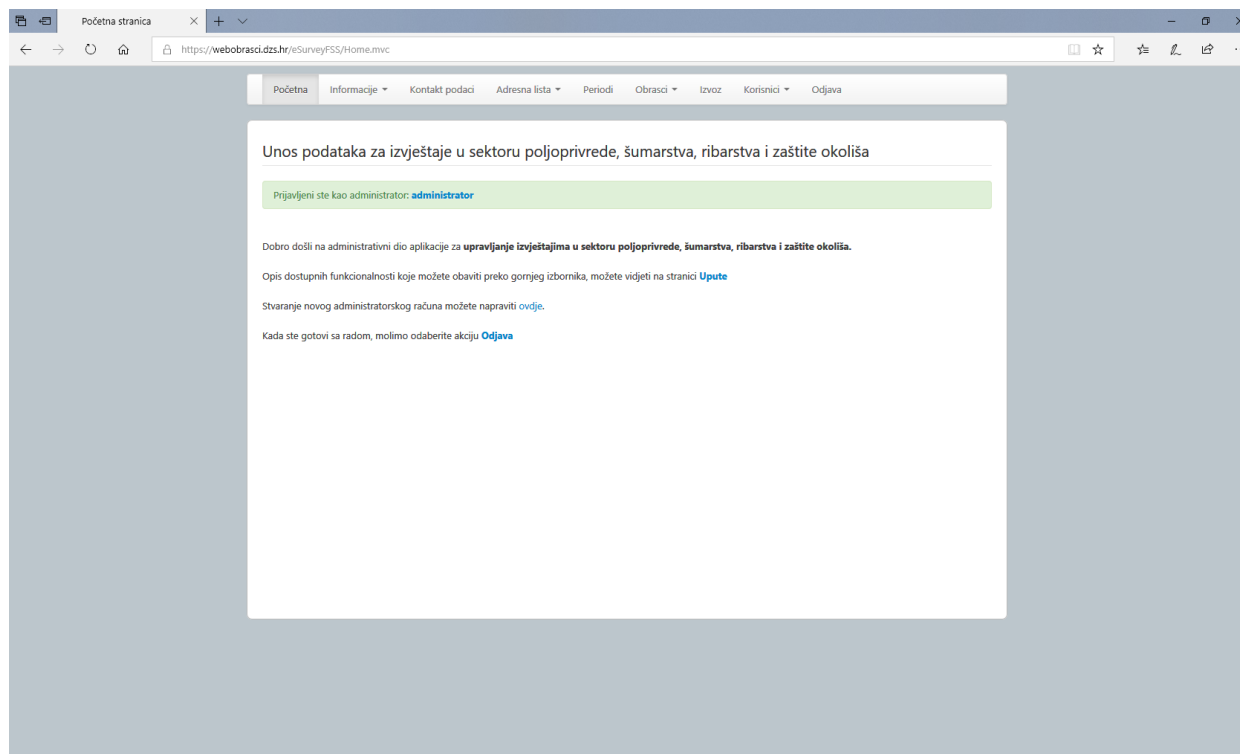
Image 2 - Initial screen after log-in
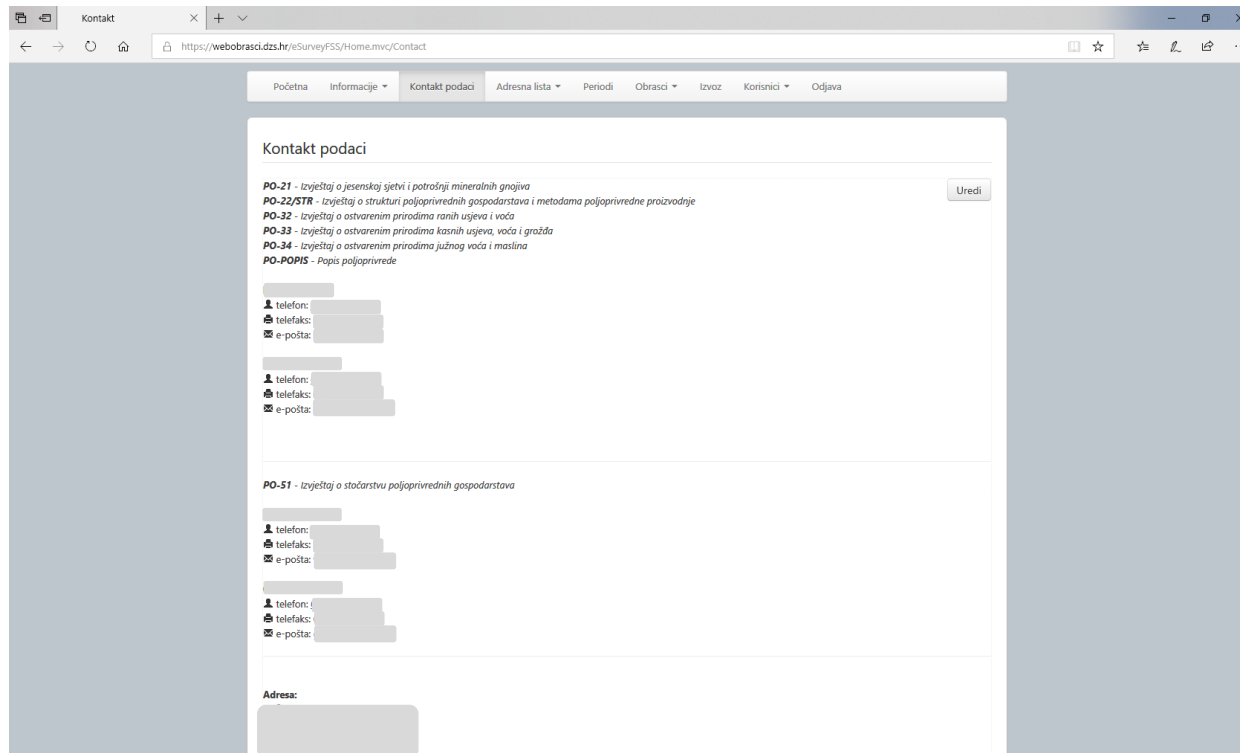
Image 3 - Contact details
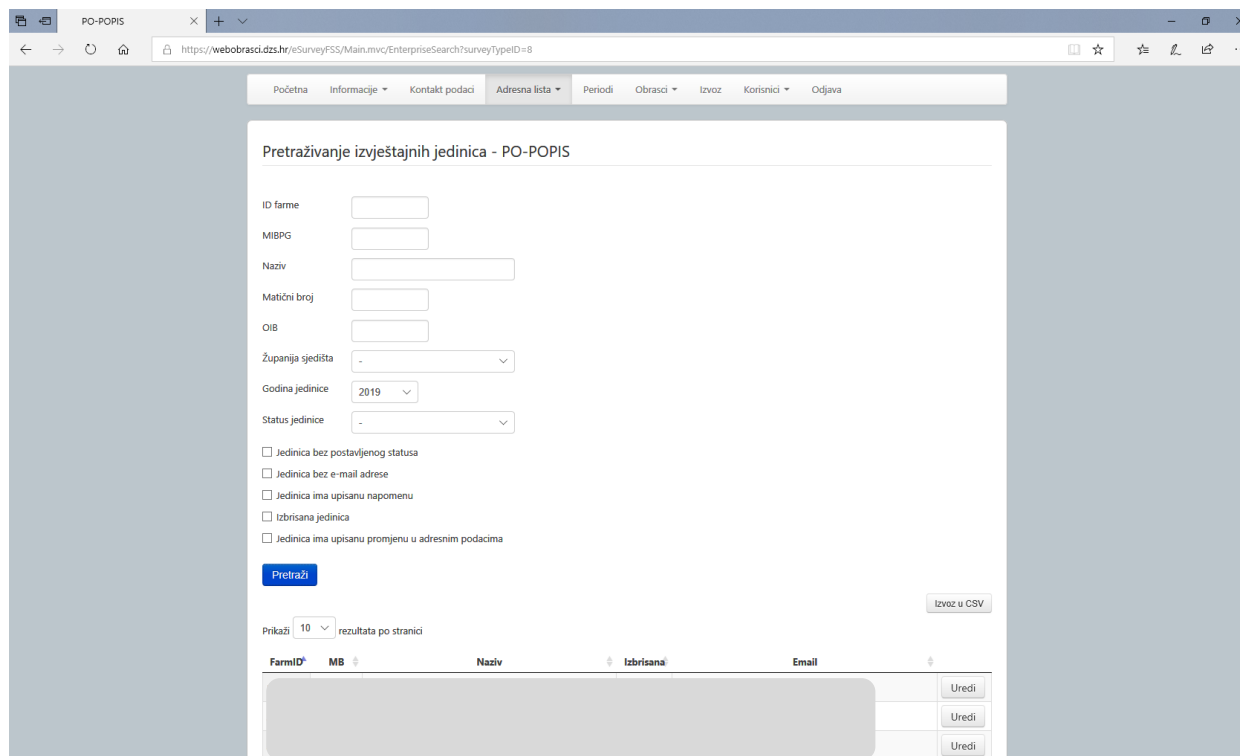
Image 4 - Address list management
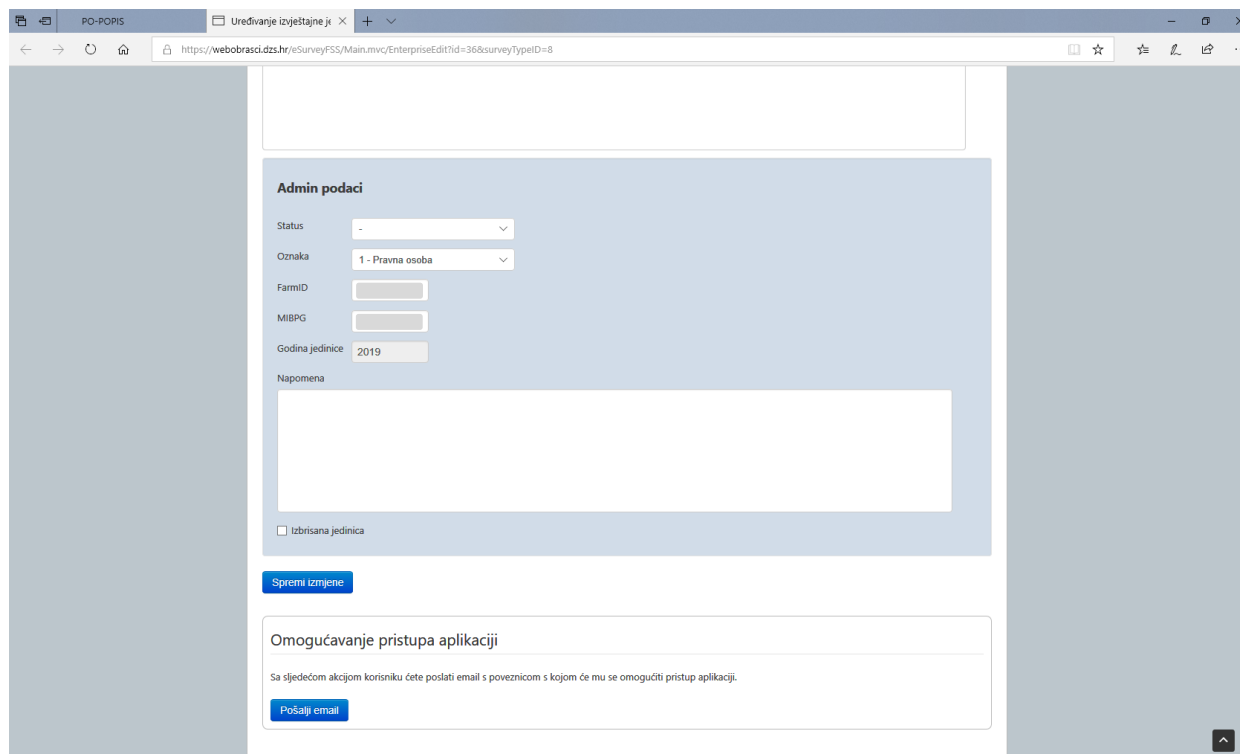
Image 5 - Updating address list
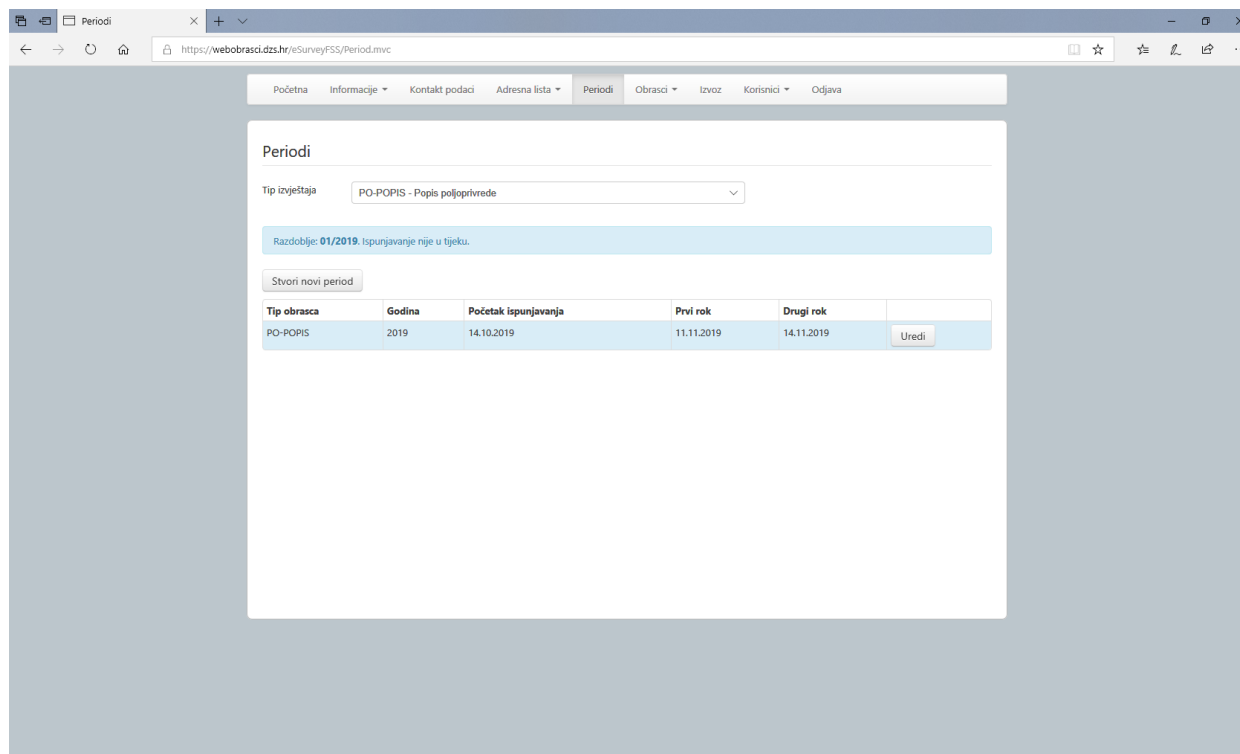
Image 6 - Manage data collection periods and dates

Image 7 - PO-POPIS web form (CAWI)

5.	☐	Potpora za pokretanje poslovanja za mlade poljoprivrednike
6.	☐	Potpora za pokretanje poslovanja za razvoj malih poslovnih subjekata
7.	☐	Dopunska nacionalna izravna plaćanja za Hrvatsku
8.	☐	Ulaganja u razvoj šumskih područja i poboljšanje održivosti šuma
		Plaćanja povezana s poljoprivredom i okolišem – klima
9.	☐	Poljoprivreda, okoliš i klima
10.	☐	Šumarsko-okolišne i klimatske usluge te očuvanje šuma
11.	☐	Ekološki uzgoj
12.	☐	Plaćanja područjima s mrežom Natura 2000. i okvirnom direktivom o vodama
13.	☐	Plaćanja područjima s prirodnim ograničenjima ili ostalim posebnim ograničenjima
14.	☐	Dobrobit životinja
15.	☐	Upravljanje rizicima

19. VRIJEME UTROŠENO NA PRIPREMU PODATAKA I ISPUNJAVANJE UPITNIKA (izraženo u minutama).

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NAPOMENE

Ispiši Pregled poduzeća   Spremi Pošalji

Image 8 - PO-POPIS web form (CAWI)

Image 9 - Search, update and enter forms
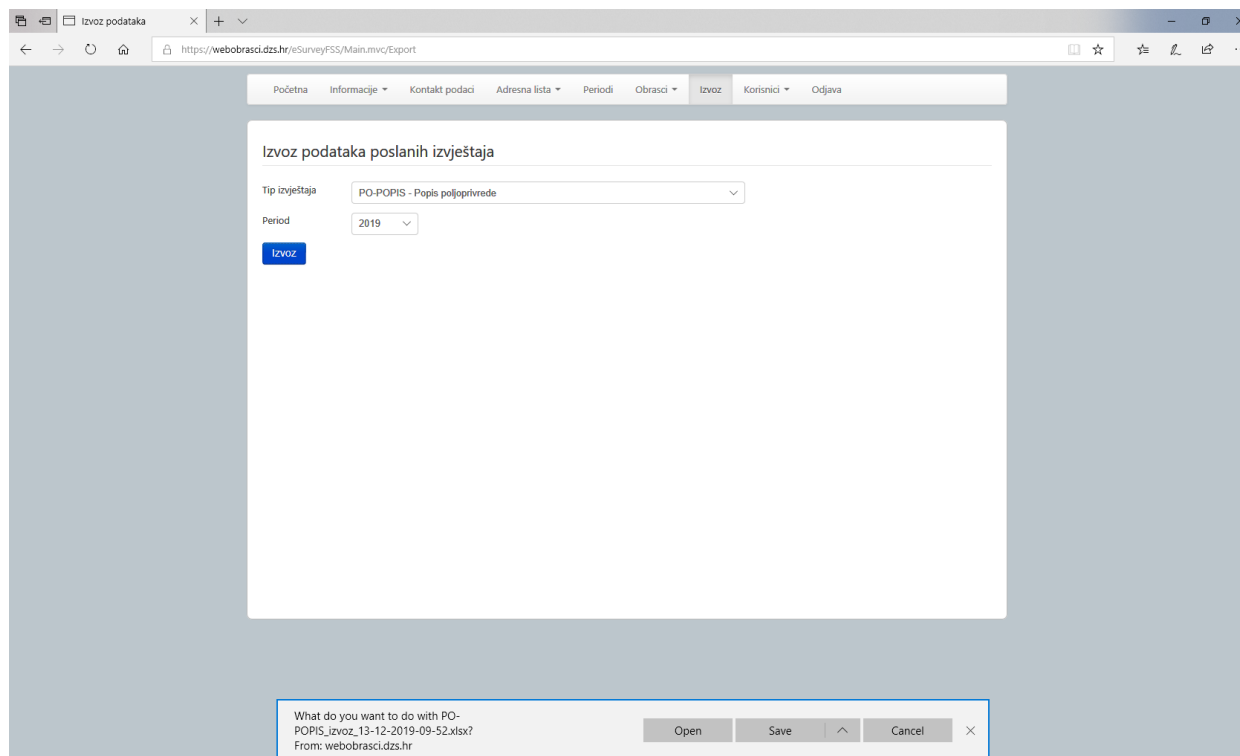
Image 10 - Export completed forms

Image 11 - FSS application for viewing, correcting and entering forms

ID 141   141   ID farme   [ ]   Traži   Najveći

Str.1 | Str.2 (T1) | Str.3 (T1.6) | Str.4 (T2) | Str.5 (T3) | Str.6 (T4) | Str.7 (T5-T6) | Str.8 (T7-T12) | Str.9 (T13-T13.7) | Str.10 (T13.8-T15.1) | Str.11 (T15.2,T15.5) | Str.12 (T16-T16.5) | Str.13 (T16.6-T17) | Str.14 (T18)

2.1. Upravitelj/rukovoditelj u poslovnom subjektu

	spol	Navršene godine starosti (1. lipnja 2019.)	Godina u kojoj je upravitelj poslovnog subjekta preuzeo svoju ulogu	poljoprivredno obrazovanje	Najviše stečeno opće obrazovanje upravitelja	ukupan broj radnih sati	pohađao seminar
1	2. ženski	99	2003	5. fakultet	6. fakultet	100	☑

2.2. Godišnji udio rada u poljoprivredi od punog radnog vremena za stalno zaposlene

		ukupan broj osoba	do 24	25-34	35-44	45-54	55-64	65 i više
1	Muški do 25% (do 56 dana)	39	9	8	7	6	5	4
2	Muški 26 – 50% (od 57 do 113 dana)	30	3	2	1	9	8	7
3	Muški 51 – 75% (od 114 do 169 dana)	21	6	5	4	3	2	1
4	Muški 76 – 100% (od 170 do 225 dana)	21	1	2	3	4	5	6
5	Muški više od 100% (više od 225 dana)	30	7	8	9	1	2	3
6	Ukupan broj muških (1+2+3+4+5)	141	26	25	24	23	22	21
7	Ženski do 25% (do 56 dana)	21	1	2	3	4	5	6
8	Ženski 26 – 50% (od 57 do 113 dana)	42	2	4	6	8	10	12
9	Ženski 51 – 75% (od 114 do 169 dana)	39	9	8	7	6	5	4
10	Ženski 76 – 100% (od 170 do 225 dana)	12	3	2	1	1	2	3
11	Ženski više od 100% (više od 225 dana)	39	4	5	6	7	8	9
12	Ukupan broj žena (7+8+9+10+11)	153	19	21	23	26	30	34

| 141 | 26 | 25 | 24 | 23 | 22 | 21 |
| 153 | 19 | 21 | 23 | 26 | 30 | 34 |

2.3. Sezonska radna snaga

		broj osoba	broj sati
1	muška	1	15
2	ženska	2	35

2.4 Uloženi rad ugovaratelja

		Uk. broj radnih sati
1	Osobe koje nisu izravno zaposlene na poslovnom subjektu	123

2.5. Plan za sigurnost na poslovnom subjektu

1	Mjere sigurnosti, uključujući plan za sigurnost na poslovnom subj...	☐

Briši | Novi obrazac | Promjena identifikacije | Isprazni | Spremi | Izlaz

Image 12 - FSS, labour force tables

Image 13 - FSS table of fresh vegetables, flowers and ornamental plants

Image 14 - FSS, table of mechanization and fuel consumption

Image 15 - CAPI form, initial screen

Image 16 - CAPI Form, Table 2.1

Image 17 - CAPI Form, Table 2.2

Image 18 - CAPI Form, Table 7

Image 19 - CAPI Form Table 7

Annex III

1.3. Methodological instructions for interviewers

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Upute za
popisivače PP2020.p

📄 **PDF**
Obrazac
PO-POPIS2019-UPUT