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## Economic Commission for Europe

### Conference of European Statisticians

#### Group of Experts on Population and Housing Censuses

##### Seventeenth Meeting

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Item 3 of the provisional agenda

#### **Innovations planned for 2020 census round, and results of tests**

## **2021 Population and housing census in the Republic of Serbia – moving forward**

### **Note by the Statistical office of the Republic of Serbia<sup>1</sup>**

#### *Summary*

The 2011 Population Census in the Republic of Serbia was carried out as traditional, door-to-door interview, with paper census forms. This method of data collection requires involvement of a large number of participants (more than 45 000) as well as huge financial resources.

In order to improve data collection process and reduce the costs of implementation of the forthcoming census, the Statistical Office of the Republic of Serbia (SORS), is considering the possibilities of organisational and methodological improvements. One of the aspects of these changes is the use of administrative sources, either in the stage of preparation, data collection or quality and coverage control.

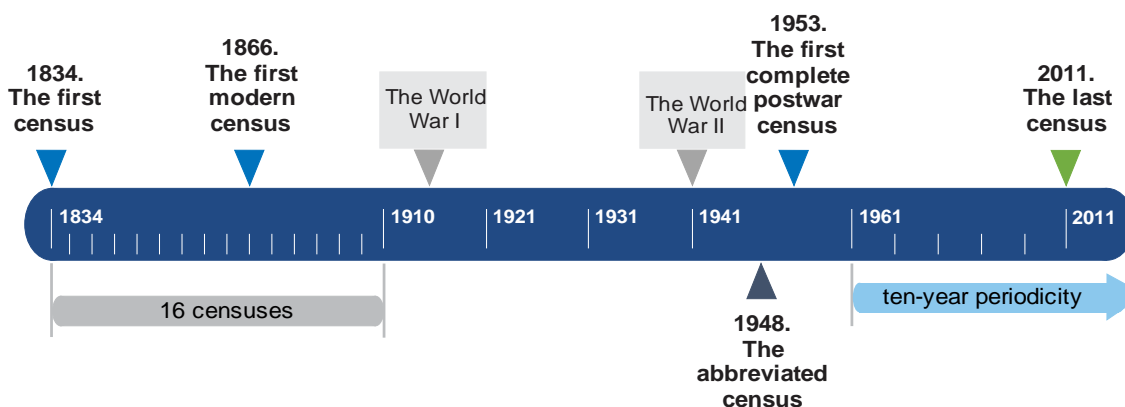
Research is being conducted on the status of registers in the country and testing the possibilities of establishing statistical population register on the basis of existing administrative sources. Otherwise, if results of the research show that the use of administrative sources for census purposes at this moment is limited, the focus will be on creating conditions to combine self-enumeration via the Internet and fieldwork of enumerators (using electronic devices).

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<sup>1</sup> Prepared by Snežana Lakčević and Aleksandra Jovanović.

## I. Introduction

1. Serbia has a long tradition of conducting population census. The first census in the territory of Serbia was conducted back in 1834. The 1866 Census can be considered as the first modern census with greater number of topics, serious preparations on census forms and enumeration rules. Since then all censuses were conducted applying traditional census method.



2. Considering that in the last two census rounds<sup>2</sup> there were significant problems with the lack of financial resources, high costs are imposed as one of the biggest obstacles to successful implementation of census. Additionally great attention is paid to reducing number of direct participants, as well as reducing the respondent's burden, in order to improve the quality of the data obtained.

3. With the aim of reducing the impact of these negative factors and aware of technological developments and changes in the perception of citizens Statistical Office of the Republic of Serbia (SORS) will try to improve data collection process in the 2020 census round.

4. Following the examples of good practice and new tendencies, considering that an increasing number of countries have abandoned the traditional method of enumeration and have introduced using of administrative resources and modern technologies for data collection, at this moment (about 6 years before the Census) two options are being evaluated:

Option A - register based census

Option B - traditional census as combination of self-enumeration via the Internet and fieldwork with enumerators using electronic devices.

<sup>2</sup> In the 2000 census round tradition of conducting Census in the year ending with 1 was abandoned, partly due to political reasons and partly because of lack of funds. Enumeration was conducted in 2002 instead of 2001. Also, owing to the lack of funds in the budget of the Republic of Serbia realization of the 2011 Census had been jeopardized. After an agreement between the Government of the Republic of Serbia and the European Commission (the Delegation of the European Union in the Republic of Serbia) on the joint financing of the census activities the enumeration was postponed by six months (1-15. October 2015)

## II. Lines of thought

5. Introduction of administrative sources in the census process is the main idea. This would present a significant novelty regarding the current practice in Serbia (organizational and methodological changes) and would require cooperation and well-coordinated operations of all state authorities and local government bodies that are in charge of maintaining specialized registers.

6. Depending on the condition of administrative sources and capabilities for their improvement and harmonization with the needs of the enumeration process, the extent of their use in the 2021 Census is going to be defined.

## III. Option A - register based census

7. Taking into account the fact that development of register system and establishment of register-based census is a complex, long term process, for us it is of utmost importance to initiate as soon as possible the harmonization of the actual registers and to create the registers that are missing.

8. We have started by conducting ad-hoc research – Statistical Population Register (SPR) with the main objective to test the possibilities of establishing statistical population register on the basis of existing administrative sources. This Project is being conducted within the Multi-beneficiary IPA 2012 Program, in the period January 2014 – November 2015, on the sample of 20 municipalities (12%).

9. Main stages in this project could be defined as follows:

- Explore which administrative sources exist in the country, on which level, what is their main purpose, who is responsible for maintaining and updating?
- Determine content, quality, coverage – whether the methods of data collecting, classifications and definitions correspond to those in census; are the answers detailed or general (for example occupation – worker), are demographic topics covered.
- Which legal restrictions of using administrative sources in statistics purposes exist? Is it possible to overcome them and how much time this would require
- Establishing cooperation with state authorities
- Defining technical background for system of data exchange (defining the ways and instruments for retrieving data from administrative sources)

10. After a series of meetings with different institutions at national and local level and with local administration we have revealed that in our country there are several specialized registers on the national level, as well as specialized databases created on local level. In most of existing registers (databases) for the same features different definitions and classifications were used, the address system is incomplete and out-of-date.

11. One of the most encouraging facts is existence of the unique key for linking data from deferent databases. This 13-digit PIN (“JMBG”), as unique personal number, is in use since 1976. It is assigned to each person immediately after birth and it is available in most of databases.

12. However, there are some administrative sources which, in the opinion of expert who provided us technical assistance, regarding their quality and coverage can give the basis for the establishment of the SPR which will contain basic demographic topics. The backbone of this research is the Central Register of Compulsory Social Insurance (CROSO) as well as the Ministry of Interior which is responsible for collecting various data such as data on

residence, citizenship, asylum seekers and other relevant indicators. Also, SORS is conducting regular researches in the field of vital statistics, which are based on data from vital records on births and deaths (DEM 1 and DEM 2).

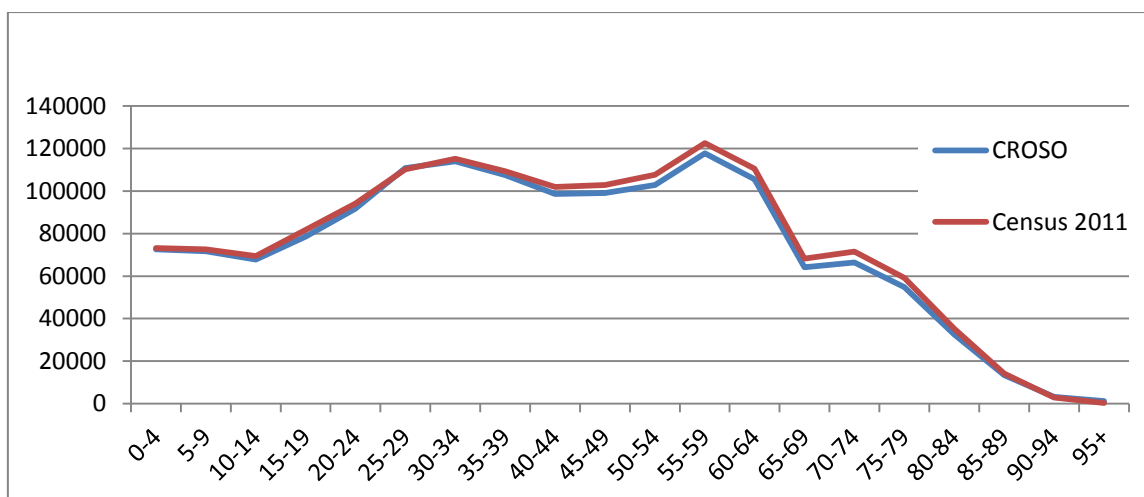
#### IV. Central Register of Compulsory Social Insurance (CROSO)

13. The CROSO has been established in 2013 as a unique electronically guided database of contribution payers of compulsory social insurance, insurers and insured persons. After the initial data migration from the databases of the Republic Pension and Disability Insurance Fund, the Republic Fund of Health Insurance, National Employment Agency and the Tax Administration, all updates are carried out on the basis of personal applications. It contains individual records of employees connected with the legal entities where they work, as well as a lot of characteristics of employees and employer (PIN, municipality of residence, occupation, acquired education, occupation – working position, name of enterprise, institution, industry, municipality of headquarter etc.). It is being updated on a daily basis.

14. There are no legal obstacles due to the cooperation agreement that enables SORS to regularly (weekly) access and retrieve data from the CROSO server. However there is a discrepancy between classifications of occupation and the educational attainment used in CROSO and Census. Also, the updating of record in CROSO is performed when there is a change in status of the insurance. In accordance with the purpose of the register, only data that affect this status are corrected, while other data (for example, education) remain unchanged even if the person acquired a higher level of education in the meantime.

15. When comparing 2011 Census data and CROSO data (at time of the Census) for municipalities selected in the sample, almost identical population coverage in both bases is evident (particular on data by age).

##### Coverage of population by age, CROSO and 2011 Census, SPR survey sample



16. However, distribution of the population by settlements has been done differently in the 2011 Census and CROSO. The major divergences are noted in situations where several settlements belong to the same local community, as well as in settlements located near (or bordering) the municipal centre.

17. For example, for the City of Užice, in CROSO there are 8 settlements (out of 41) without population (or with 1 or 2 inhabitants), while, in the Census, in each of those settlements more than 100 people were enumerated.

18. Analysis of the data of the Ministry of Interior also shows the existence of the same problem, which will be one of the key obstacles to the proper territorial distribution of the population based on administrative sources.

#### Settlements within the municipality of Užice

<i>Settlement</i>	<i>Total population</i>			<i>Local community</i>
	<i>2011 Census</i>	<i>CROSO</i>	<i>Ministry of Interior</i>	
Bioska	422	1227	1671	Bioska
Keserovina	452	2	1	Bioska
Pear	370	2	1	Bioska
<b>Total</b>	<b>1244</b>	<b>1231</b>	<b>1673</b>	
Vitasi	179	0	0	Kremna
Kremna	665	1363	1793	Kremna
Raduša	375	0	0	Kremna
Strmac	225	1	2	Kremna
<b>Total</b>	<b>1444</b>	<b>1364</b>	<b>1795</b>	
Kotroman	123	1	1	Mokra Gora
Kršanje	108	2	13	Mokra Gora
Mokra Gora	549	879	1101	Mokra Gora
Panjak	84	0	7	Mokra Gora
<b>Total</b>	<b>864</b>	<b>882</b>	<b>1122</b>	

## V. Legal bases

19. The key foundation for using administrative data sources for statistical purposes provides legislation. It implies existence of national statistics act that gives the NSI the right to access administrative data at the unit level with identification data and to link them with other administrative registers for statistical purposes. In addition, existence of the signed technical protocols (between the SORS and “owners” of registers) defining the technical details related to the data that are received, periodicity for submission of data, the structure of tables etc., are necessary for successful functioning of the system.

20. According to the Law on Official Statistics the owners of administrative data sources and data collected by constant monitoring and observation, are required to transmit data to the SORS. However, currently there is a problem in the different interpretations of the Law on personal data protection, so that the Commissioner for Information of Public Importance and Personal Data Protection does not allow holders of individual data to make them available even for statistical purposes. We hope that on the upcoming meetings, an adequate solution will be found, in accordance with the Law on Official Statistics and in line with the European legislation which prescribing that “in order to reduce the burden on

respondents, the NSIs, other national authorities shall have the right to access and use, promptly and free of charge, all administrative records and to integrate those administrative records with statistics, to the extent necessary for the development, production and dissemination of European statistics, which are determined in the European Statistical Programme”<sup>3</sup>.

21. In general, our initiative for the establishment/improvement of cooperation with institutions in charge of maintaining the various administrative registers encountered a very good response. They all share the need and understand the importance of "building" the register system which will enable not only their linking, but also the formation of registers missing.

22. Considering that the existing registers are formed with the different aims, their structure, method of data collection, classification, updating, etc. are adapted to their basic goal and not for statistical purposes. Therefore the initiative for amending the Law on Official Statistics was launched. According to these amendments SORS, as one of the pillars of official statistics in Serbia, would take part in all the activities related to introducing new or improvement of existing administrative sources. Also, the SORS would have the task to coordinate activities for the introduction and management of administrative registers at the national level, which are of particular importance for providing data for the decision-making at the highest level. This would enable establishment of an integrated system of national registers.

## **VI. Option B - Combination of self-enumeration via the Internet and fieldwork with enumerators using electronic devices (register supported census)**

23. Transition from traditional census to register-based census is very complex process requiring synchronized action of a number of state institutions in long period of time, during which continuous updating of registers and communication between the register systems must be achieved. Besides, in its first rounds of implementation, register-based census could provide data for a limited number of census topics, while the data on ethno-cultural characteristics does not provide at all. This is serious deficiency due to the fact that many laws and regulations in Serbia (The Law on the official use of language and script, the Law on protection of rights and freedoms of national minorities, etc.) rely on the census data on ethnicity, religion and mother tongue.

24. In order to overcome these problems SORS is considering alternative solution, traditional method combining Internet response option and field work (enumerators and electronic forms). The basic idea for the implementation of this model is to enable respondents to use the corresponding Internet applications for filling-in an electronic questionnaire. The remaining respondents would be enumerated by enumerators using electronic devices.

25. Despite all technical and organizational challenges greatest problem to be solved is how to connect each person with a specific address in conditions where the Address Register and Register on Real Estate are under construction. The Republic Geodetic Authority (RGA) is responsible for creating and maintaining these registers.

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<sup>3</sup> Regulation (EU) 2015/759 of the European Parliament and Council of 29 April 2015 amending Regulation (EC) No 223/2009 on European statistics

26. Address Register was initiated in 2003 when the data were taken from local government units (municipalities and cities). After that, RGA continued to update it. Now Address Register includes 2.5 million house numbers in all cadastral municipalities on the territory of the Republic of Serbia, of which 95% is geo-referenced. The only condition for obtaining a house number is that the object is entered in cadastral map.

27. Regarding to the Real Estate Cadastre, for about 60% of cadastral municipalities, digital cadastral maps are already made, for about 15% of the cadastral municipalities mapping is in progress, while for about 25% of the cadastral municipalities in official use are still analogue cadastral maps. At the maps (analogue or digital), besides legal ones, there is a number of illegal objects (about 1,500,000). The number of illegal buildings that have never been registered cannot be accurately estimated. It is assumed that there are between 200 thousand to one million of these objects.

28. Comparison of address data from the 2011 Census and the Address Register shows greater overlap in urban areas (60-90%). The percentage of overlapping significantly decreases (to about 30%) when the rural settlements were included in the analysis.

## VII. Conclusions

29. At this moment, there is a clear commitment of SORS to improve the census process by using administrative sources. The two current thinking lines (register based census and self-enumeration via the Internet) are not mutually exclusive, but both depend on the same factors:

- Identification system, i.e. linking persons to the settlements, dwellings in which they live and to the household units, is a fundamental precondition for both approaches.
- Restricted use of system of personal identification numbers (JMBG) due to current regulations (or the interpretation of the Commissioner for Information of Public Importance and Personal Data Protection).

30. An accurate and comprehensive Address Register which would be based on use of codes for settlements and streets is precondition for any kind of innovation of the census process. Cooperation between SORS and RGA, which is otherwise very good and successful, defined by the Memorandum of Understanding, has to be continued in the direction of solving this problem.

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