

**Economic and Social Council**Distr.: General  
30 April 2012

English only

---

**Economic Commission for Europe**

## Conference of European Statisticians

**Sixtieth plenary session**

Paris, 6-8 June 2012

Item 3(a) of the provisional agenda

**2010 round of censuses – innovations and lessons learned****Population and Housing Census in Latvia - innovations and lessons learned****Note by the Central Statistical Bureau of Latvia***Summary*

The paper describes the experience of the Central Statistical Bureau of Latvia introducing new technologies, new approaches in organization and methodology for the Population and Housing Census 2011, with special attention paid to strong and weak aspects of these innovations.

Technological innovations presented in this paper include examples of using the Geographical Information Systems in Census calculations, introduction of electronic questionnaires and data transfer by wireless Internet. Organizational innovations enabled self-completion of Census forms, reduced workload of Census enumerators and outsourcing of the fieldwork. Advertising campaigns and cooperation with other institutions were increased. Furthermore, the paper introduces the main methodological innovations carried out in the Census 2011.

## **I. Introduction**

1. The organization and implementation of the Population and Housing Census 2011 in Latvia was realized introducing new Census technologies: an automatic system for the calculation of borders for Census enumeration areas based on the Geographical Information Systems (GIS); use of Internet, computer-based electronic questionnaires (ISDMS CASIS – the Integrated Statistical Data Management System’s subsystem – Computer Assisted Survey Information System, which provides electronic data input, processing and aggregation); data transfer to the Central Statistical Bureau of Latvia (CSB) by wireless Internet (free of charge) in public libraries. Questionnaires can be introduced in the system by defining metadata descriptions, hard code programming is free.
2. New approaches were used regarding the organization of the Census in Latvia: outsourcing of the field work, the possibility of self-completion of Census forms via Internet, an advertising campaign, and cooperation with other institutions and local authorities.
3. The possibilities to use information from registers and other administrative data sources for the data quality control and editing were evaluated.

## **II. Technological innovations**

### **A. An automatic system for the calculation of borders for Census enumeration areas based on the Geographical Information Systems (GIS)**

4. Recommendations for the improvement of data quality and coverage regarding administrative data sources were worked out with the aim of building a good foundation for a registers-based Census in Latvia in 2021.
5. An Automated System for Determination of Census Areas (ASDCA) was developed with the objective of forming the Census areas with a certain enumerator’s workload, depending on the population density, using the GIS tools and cartographic information of the Latvian Geospatial Information Agency (LGIA).

### **B. Computer based electronic questionnaires**

6. The ISDMS-CASIS was also improved with the aim of integrating computer-assisted software necessary for the Census.
7. Two versions of the electronic questionnaire were worked out – one for the Internet (to be filled in by residents themselves), and the second one for computer-assisted interviews at residents’ homes.
8. The electronic questionnaires permitted data validations during data entry, question routing based on previous answers, and also allowed checking of some basic logics during the completion of questionnaires and the use of electronic versions of classifications (occupation, industry, country, ethnicity, language etc.) in order to choose the right answer.

### **C. Data transfer to the Central Statistical Bureau of Latvia by wireless Internet**

9. Data acquired during the field work were sent to the CSB on a regular basis (at least twice a week in urban areas and at least once a week in rural areas) using the library information system or other possibilities of the wireless Internet, or mobile network Internet access.

## **III. Innovations in the organization of the Census**

### **A. The possibility of self-completion of Census forms via Internet**

10. The CSB of Latvia was the first government institution that allowed completion of the Census questionnaire via Internet for the whole population of Latvia.

11. Three authorization methods were developed for the Internet-based Census questionnaire – PIN code and passport number, authorization via 5 commercial banks' Internet banking authorization, and electronic signature.

12. Due to some technical problems, one identification method (PIN code and passport number) was closed on the third day of the Internet Census to ensure the security of personal data.

13. Initially, the Internet Census was planned for just 10 days, but due to the high interest - especially during the last day - it was prolonged for two days.

14. Taking into account the results of the Pilot Census, a response rate via Internet of at least 10% of the population was forecast. Nevertheless, the result was very good – during the 12 days the Census ran, about 30% of the total population's responses were received via Internet.

15. Considering the high interest of the population and their willingness to complete the questionnaires via Internet, and the approval of the Census Commission, the CSB offered an additional opportunity to complete the Census questionnaires via Internet 10 days after the field work.

### **B. Reduction of the workload for Census enumerators**

16. During the four days after the Census Internet stage, the CSB of Latvia took from the enumerators' task lists addresses where all household members had been enumerated via Internet and where there were no members of other households living in the same dwelling.

17. This was possible because two additional questions were included in the Internet questionnaire:

- (a) Is this questionnaire filled for all household members?
- (b) Do members of any other household live in the same housing unit?

### **C. Outsourcing of the fieldwork**

18. Taking into account the government statements on wider attraction of the commercial bodies in the activities of the state institutions, the CSB organised an open

tender "Acquisition of the Census programme information on Latvia population and dwellings with the use of laptop computers". The economically most advantageous offer in this tender was submitted by the "GfK Custom Research Baltic" Ltd. (GfK).

19. In compliance with the contract, the GfK recruited and trained the personnel with support from the CSB.

20. The GfK did the bookkeeping and organised the work of enumerators, supervisors and regional coordinators.

21. The GfK used its own computerised system to follow the field work. In the field work stage of the Census data collection, data on 83% of persons and 97% of dwellings included in the enumerators' task lists were obtained. Since the minimum threshold imposed for the fieldwork was 80% of the population and 95% of dwellings, the result can be evaluated as good.

22. The GfK used quality controllers to verify quality in accordance with guidance from the CSB. The quality of the acquired data was controlled in all 1,960 Census areas, and during the whole Census period 3% of the questionnaires filled in by the enumerators were verified. During the quality control of the data acquired within the Census, a total of more than 26 thousand addresses were verified. The quality was recognized as good.

23. The CSB of Latvia and the GfK had a common Census fieldwork Board with regular weekly meetings, where the actual information was given about the fieldwork, and problems and solutions were discussed.

#### **D. Advertising campaign**

24. For the first time in Latvia, a negotiation procedure was organised to select advertising campaign providers that would inform society about the most significant national statistical survey of 2011.

25. In order to increase the awareness of the Census 2011, its progress and actualities, and to ensure effective communication with the population before the start of the Census as well as during its progress, a major advertising campaign was run. It was integrated and covered advertisements mainly in television and radio, but also on the Internet and in the press, as well as outdoor advertisement and public relations activities.

26. Before the start of the Census, the CSB had ensured the preconditions for the effective communication with society. It was possible to receive answers on various questions on the Census by calling the informative CSB telephone 80000777 free of charge and sending e-mails to the address [tautasskaitisana@csb.gov.lv](mailto:tautasskaitisana@csb.gov.lv). The Census highlights were published on the CSB webpage. During the Census, almost 22 thousand incoming calls were received, and during the time period when residents were able to complete questionnaires on the Internet, there were more than a thousand calls every day.

27. The website [www.tautasskaitisana.lv](http://www.tautasskaitisana.lv) included written and video instructions on how to fill in the questionnaires. Analysis of the received e-mails and calls led to the development of the section "FAQ" on the webpage.

#### **E. Cooperation with other institutions and local authorities**

28. During the Census development stage, a solution of methodological and organizational issues required cooperation between the CSB and ministries, state institutions, local governments, scientific institutions and the larger universities.

29. To obtain the information necessary for the Census, separate interdepartmental agreements were concluded with the Office of Citizenship and Migration Affairs, the State Social Insurance Agency (SSIA), the Health Payment Center (HPC), and the interdepartmental agreement between the CSB and the State Land Service was amended. Additional information exchange was organised also with the State Employment Agency, the Ministry of Education and Science (MES), secondary vocational and higher education institutions. The latest cartographic information necessary to develop the Census areas was provided by the LGIA.

30. During the Census preparation, the CSB established close cooperation with the local governments. Information on residential buildings not suitable for occupation, demolished or burned down was gathered from local governments. Local governments helped to specify the lists of addresses to be included in the enumerators' task lists, the number and location of collective dwellings, and they also assisted with other issues related to the Census organization.

31. The CSB cooperated with the state agency "Information Systems for Culture" and public libraries to ensure that those residents with no Internet access could also fill in the questionnaires on the Internet and use free Internet networks of public libraries.

#### **IV. Methodology - use of administrative data**

32. A part of the information included in the Census Programme could be obtained in Latvia by compiling data from administrative registers – the Population Register (PR), the State Real Estate Cadastre Information System (SREC IS) and the Taxpayers' Register of the State Revenue Service (SRS). But there are certain fields with no such registers, e.g. Latvia does not have an education register, a register of professions and occupations, etc. The only potential method of acquiring information for these statistical fields was to ask relevant questions of the population. Therefore, a combined method – a register-based approach and traditional enumeration – was used for the Census 2011 in Latvia.

33. Within the framework of the Census 2011, the state administrative data were used more widely as prior.

34. Information from the PR, the State Address Register and SREC IS was used during the preparation stage of the Census.

35. During the Census fieldwork, some problems with administrative registers were recognized. The Population Register did not have full information about persons who had emigrated from Latvia, persons declared in non-residential buildings, persons declared on a level of street or village. Additional problems with addresses reported by enumerators were the following: the address was not found, the address was found but there were no living quarters, addresses were changed, a private house instead of a dwelling house or vice versa, not existing or slum houses.

36. Nevertheless, for various reasons, e.g., non-response, unmet respondents or enumerators' mistakes, etc., it was not possible during the Census to obtain information on all persons registered with the PR. Therefore, in order to find out if the persons not surveyed can (cannot) be considered as the resident population of the Republic of Latvia on the Census date (1 March 2011), the information of the state administrative registers was used. The chosen criteria worked out by the CSB of Latvia and accepted by the Census Commission to determine the resident population of Latvia were the following:

(a) A person aged 0 – 17 should be included in the resident population of Latvia, if from 1 March 2010 till 28 February 2011 he/she has been registered with the SSIA

pension data, HPC data about medical services, local government data or data on school attendance of the MES;

(b) A person aged 18 – 61 should be included in the resident population of Latvia, if from 1 March 2010 till 28 February 2011 he/she has been registered with the SRS employees' data bases for at least two months or with the HPC data base at least twice, or with other registers used or administrative SRS self-employed data base or local government data base at least once;

(c) A person aged 62 and over should be included in the resident population of Latvia, if from 1 March 2010 till 28 February 2011 he/she has been registered with the SSIA pension or social service data, HPC data about medical services or local government data.

37. The data quality control was made by comparing the Census data with administrative data from PR, SRS and SREC IS.

38. The coding of the branch of economic activity and occupation was checked by comparing the information from the SRS and the Statistical Enterprise Register of the CSB of Latvia.

## V. Conclusions

39. The Census 2011 in Latvia introduced technological as well as organizational innovations that could be used in other statistical areas afterwards. For example, ISDMS CASIS will be used in data collection and processing for regular surveys of social statistics.

40. Outsourcing of the Census fieldwork was a good practice and such cooperation with social research companies could be continued in the future.

41. Complete enumeration showed a remarkable difference with the Population Register. Recalculations will be done on the base of the Census data in population statistics, employment statistics and statistics on income and living conditions SILC. Methods of improving the population count will be developed.

42. Criteria worked out to determine the resident population of Latvia for the Census purposes, using information from administrative registers, could be used in future for the improvement of migration statistics and for population statistics in general.

43. In addition to the official Census Programme, some information about persons who had emigrated from Latvia on a personal level was collected – the country to which the person had emigrated and the year when the person had left Latvia. This information is very useful to specify the number of resident population. In addition these data provided the necessary information to evaluate the number of undocumented emigrants, which is urgent for Latvia.

44. A vision for the Population and Housing Census 2021 in Latvia - Census taking with all information derived from administrative records and other databases, moving away from population surveys on the Internet or at peoples' homes. The Ministry of Economics of Latvia is organizing an inter-institutional working group to work out proposals for further improvement of administrative data systems to ensure the appropriate data coverage and quality to use these systems in the next Census round.

---