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United Nations Economic Commission for Europe

Conference of European Statisticians

Workshop on Population and Housing Censuses

Geneva, Switzerland

19-20 September 2022

Report

Note by the Secretariat

I. Organization and attendance

1. This capacity development workshop on population and housing censuses was organized by the United Nations Economic Commission for Europe (UNECE). Financial support for the workshop was provided by the United Nations Population Fund (UNFPA).
2. The workshop was attended by participants from the following countries: Armenia, Austria, Azerbaijan, Belarus, Czechia, Georgia, Iceland, Kazakhstan, Kyrgyzstan, Lithuania, Malta, Mexico, Republic of Moldova, Slovakia, Tajikistan, Turkmenistan, the United States of America and Uzbekistan. The European Union was represented by the delegation to Bosnia and Herzegovina. The United Nations Children's Fund (UNICEF), the United Nations Statistics Division (UNSD), the United Nations Population Fund (UNFPA), the United Nations Mission in Kosovo (UNMIK), the Interstate Statistical Committee of the Commonwealth of Independent States (CIS-STAT), and IPUMS International (Census Dissemination Partnership) were also represented. An independent census expert attended at the invitation of the secretariat.
3. The workshop took place immediately before the Meeting of the UNECE Group of Experts on Population and Housing Censuses (21-23 September 2022).

4. The workshop programme and the slides used in the presentations are available in English and Russian on the [meeting page](#) on the UNECE website.

II. Purpose

5. The purposes of the workshop were:

- a. to provide participants with the opportunity to share and learn from each other's experiences of planning and conducting censuses of the 2020 round, including ways in which the challenges created by the Covid-19 pandemic have been tackled
- b. to enhance the capacity of participants:
 - i. to make effective use of administrative sources where available to support census-taking, and to understand both the potential and the challenges of transitioning to the use of registers for censuses
 - ii. to understand and articulate the importance of effective dissemination as an integral part of conducting a census in compliance with the Conference of European Statisticians recommendations
 - iii. to harness the potential of geospatial information to improve the efficiency of census operations at all stages.

6. The workshop was designed principally to benefit experts working on population and housing censuses in national statistical offices (NSOs) in countries of Eastern Europe, the Caucasus and Central Asia.

III. Summary of proceedings

A. Sharing national experiences of censuses of the 2020 round: country reports on progress, challenges and solutions

7. Regional insights on the current state of the 2020 round of censuses in countries of the Commonwealth of Independent States (CIS) were shared by CIS-Stat. Now two years before the end of the period allocated for the 2020 round of censuses (2015-2024), most (six) of the CIS countries have conducted their census, albeit with some having experienced delays due to the pandemic. The pandemic created significant challenges for preparing and conducting censuses, processing data, and publication communications campaigns.

8. In the face of these challenges, the overall picture is one of progress since the previous round. Paper is increasingly being replaced by electronic means of data capture whether by enumerators with electronic devices, or via Internet self-response.

9. Participating countries were invited to report on the current status of census operations or census planning in their countries. They were asked to focus on sharing experiences from which other countries could learn, and to mention any or all of the following, where appropriate;

- a. Date of census, including change of date due to Covid
- b. Use of a pilot: when, why or why not, key findings
- c. Enumeration method
- d. Topics covered; deviation from CES Recommendations, if any
- e. Post-enumeration survey, if conducted/planned, and key findings
- f. Communication with the public
- g. Dissemination of results, including microdata dissemination.

10. **Belarus conducted its census in 2019.** As the first country in the region to offer internet self-response, the observed 22 per cent uptake of this channel was considered a success.

11. **Tajikistan's census took place in 2020.** A combination of electronic and traditional paper-based collection channels were used, taking into account the large share of rural residents among the population, with low Internet penetration.

12. **Kazakhstan conducted its census in 2021.** The postponement necessitated by the pandemic spurred technological innovations around data collection and processing. Forty percent of respondents self-enumerated online, and enumerators who collected data in face-to-face interviews used handheld tablets rather than paper questionnaires.

13. **The census of Kyrgyzstan was conducted in 2022,** with a 'bring your own device' approach which has not been widely applied before.

14. Lessons learned from this group of countries included the value of real-time monitoring and verification which is greatly facilitated by electronic means of collection, permitting rapid adjustment and targeted outreach; and the importance of balancing data needs against respondent burden.

15. Discussion about the completed censuses touched on the challenges of transitioning to online self-response in which there is no enumerator present to guide or assist respondents. Discussion also covered how to tackle the challenges of integrating data collected from different channels and avoiding duplication across different modes.

16. Participants raised questions about how to establish fair systems for remuneration and workload of enumerators when a combination of collection modes is used; enumerator training; and tackling high rates of enumeration staff turnover. There was also discussion about the unique

challenges of developing questionnaires suitable for electronic data collection.

17. Countries planning to conduct their next census in 2022, 2023 or 2024 are Armenia, Turkmenistan, the Republic of Moldova, Uzbekistan and Georgia.

18. Presentations showcased a diversity of census methods planned for the 2020 round but also a convergence around new technologies. **In Armenia**, the 2022 combined census will make use of the newly-established State Population Register, supplemented with information collected in a survey of 25 per cent of households. **Georgia (2024)**, the **Republic of Moldova (2024)**, **Turkmenistan (2022)**, and **Uzbekistan (2023)** will field traditional, questionnaire-based censuses. All these countries will conduct face-to-face interviews using computer-assisted personal interviewing (CAPI). Georgia, the Republic of Moldova, Turkmenistan, and Uzbekistan will also provide respondents the opportunity to complete their census questionnaire online (computer-assisted web interviewing, CAWI). The Republic of Moldova plans to pre-populate some census questions based on administrative data. In Georgia, an agricultural module will integrate the previously separate agricultural and population and housing censuses. Important outcomes of pilot censuses conducted in Uzbekistan and Turkmenistan were refinements to questionnaire content and software.

19. Access to and quality assessment of administrative data were discussed at length. Cooperation with administrative data holders, data protection regulations, missing or incomplete metadata, and inconsistencies across administrative sources and with statistical data were among the challenges shared by countries beginning to work with administrative data.

20. In concluding the session, it was noted that all the contributing countries which have already conducted their censuses had attained a faster rate of data processing and publication of the census results than in previous rounds, thanks to technological innovations.

21. The expansion of uses of administrative data and population registers, including the creation of statistical population registers, continues to be a core theme in the region and can be expected to accelerate. It was noted that while the CES Recommendations describe the criteria by which a census is defined, they are relatively brief on defining the purpose of a census. This existential question may merit deeper reflection in future to avoid focusing efforts too much on ‘conducting a census’ at the expense of ‘collecting data on demographic characteristics’ to inform decision making.

22. The importance of disseminating results was emphasized: this is an integral part of the CES and global recommendations and a census cannot be considered complete until the data are disseminated and made available for use.

23. For the 2030 round of censuses it will be important for the international census community to analyze the impacts of changing methodologies on quality and cost-effectiveness.

B. Developing capacity for censuses

24. This session of the workshop focused on three thematic areas, identified according to the majority responses when participating countries were asked in advance to indicate their priority areas for capacity development.

1. Use of registers and administrative sources for future censuses

25. In this session, Armenia, Austria, and Lithuania shared experiences of the use of registers and administrative data in 2020-round censuses. The three countries offered unique perspectives, reflecting their different stages in the transition from traditional to register-based censuses. The upcoming 2022 census in Armenia will combine population register data and data collected in a sample survey. The 2021 census in Lithuania was the first fully register-based census after a combined approach in 2011. In Austria, both the 2011 and 2021 censuses were entirely register-based.

26. The presentations and discussion illuminated the many factors countries must consider as they move towards combined or register-based censuses. Some of these relate to population groups that may be excluded from registers, and how to deduce usual residence from registers and administrative data. Foreign nationals, cross-border workers, students, and owners of multiple properties were identified as groups that may be missing or inaccurately represented in registers. The ‘signs of life’ approach is often employed for the determination of place of usual residence. Likewise, presenters emphasized the importance of a strong legal basis for accessing administrative data and the need for direct governmental intervention or the development of new legal instruments in some cases. Cooperation with and burden on administrative data holders were also discussed. In Lithuania, for example, administrative data holders have been reluctant to share data due to concerns around misuse. A government resolution on the census and its data sources helped to overcome these barriers.

27. Discussion revealed challenges faced by countries related to linkage across data sources and the development of accurate dwelling and building registers. The need for consistent linking keys across sources was stressed, as well as the advantages of developing multiple registers simultaneously so they share linking keys and other features by design. Austria shared its approach for improving the accuracy of its dwelling and building registry, including through local inspection and cross-references across land, building, and population registers.

28. The limitations of administrative and register data for certain key variables such as nationality and family-type were discussed. As in the preceding session, discussion touched on returning to the central purpose of a census, and the balance between modernization and cost-saving on the one hand, versus complete and high-quality information on the other.

29. Much discussion was devoted to assessing the quality of administrative data. Armenia shared its experience of redirecting resources towards efforts to improve the quality of administrative data for its population register. The need to consider the quality of administrative data as an input but also the quality of results based on these data was emphasized. The circular nature of the relationship between administrative data and statistical data sources was discussed. Administrative data are used to assess the quality of field-based data collection exercises, but survey data are also used for assessing the quality of administrative data. How to assess quality as countries move away from field-based data collection was pointed out as a key question for future consideration. The UNECE *Guidelines for assessing the quality of administrative sources for use in censuses* were acknowledged as a valuable resource.

30. An important message to emerge from the session was that the development of high-quality registers is a significant undertaking that demands financial and human resources and time. Countries were urged to reflect on the best approach for their specific national context and to consider carefully the inclusion of competencies such as data science and data engineering in staff profiles,—to support the transition to combined and register-based censuses.

2. Dissemination and use of census data

31. In this session a presenter from the Integrated Public Use Microdata Series (IPUMS) project at the University of Minnesota showcased some ways in which census microdata have been used for applied policy-relevant research and analysis, and demonstrated how the IPUMS project facilitates such use through adding value to international census microdata. By standardizing file formats, harmonizing code lists and metadata and streamlining access mechanisms, data can be readily located and analyzed.

32. Participants discussed their countries' interactions with the research community, as well as the ways in which they gauge usage of their census data. It was acknowledged that maintaining a comprehensive inventory of all data usage is neither possible nor desirable, but that knowing what is demanded and what is found useful by various stakeholder groups is important information as this helps to adapt to better fulfil users' needs. The importance was noted of conducting surveys of census data users' needs, in the consultation stage, and actual usage, in the post-dissemination stage.

3. Using geospatial information to support census operations

33. In this session of the workshop an invited expert from the United States Bureau of the Census, International Programs Center (IPC), delivered a presentation on the many applications of geospatial technology for supporting census-taking, at all stages in the production cycle including dissemination.

34. Censuses produce a wealth of geospatial information, including legal and statistical boundaries, physical features, and dwelling units, and can form the foundation of a national spatial data infrastructure. Censuses can also give governments an opportunity to formally delineate unmapped areas and areas with hard-to-count populations.

35. Not all of the data that can be useful during a census originate or are maintained by an NSO. Other data producers, such as commercial firms, other government agencies, and even crowd-sourced data can provide useful input to a census mapping programme.

36. The presentation highlighted some use cases in which geospatial data have been used to increase efficiency in a traditional census: e.g. for verifying addresses in the United States census through matching with postal service data.

37. Participants shared their countries' experiences with using geospatial information in their censuses, including the relationship between NSOs and mapping or cadastral agencies, and the increasingly common establishment of specialized in-house geospatial teams.

38. Discussion touched on the potential role of geospatial information for register-based censuses. Such roles could include dissemination, operational control such as visualizing the completeness of registration systems, and using location-based linkage with data from other sources such as administrative or survey data.

IV. Conclusions

39. The workshop was considered by participants to be a valuable opportunity for learning and for sharing knowledge and experience. With a majority of the participating countries having conducted their census for the current round, the focus is now twofold: ensuring effective dissemination of data, and determining approaches to be taken in the 2030 round and beyond.
