

**Economic and Social Council**

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**Economic Commission for Europe****Conference of European Statisticians****Group of Experts on Population and Housing Censuses****Twentieth Meeting**

Geneva, 26–28 September 2018

**Report of the meeting****Note by the Secretariat****I. Attendance**

1. The meeting of the joint UNECE/Eurostat Group of Experts on Population and Housing Censuses was held on 26–28 September 2018 in Geneva, at the Palais des Nations, back-to-back with the UNECE Workshop on Population and Housing Censuses for countries of Eastern Europe, Caucasus and Central Asia (24–25 September).

2. The meeting was attended by participants from Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Canada, China, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Hungary, Iceland, Ireland, Israel, Italy, Japan, Kazakhstan, Kyrgyzstan, Latvia, Luxembourg, Mexico, Netherlands, Norway, Poland, Portugal, Republic of Korea, Republic of Moldova, Romania, Russian Federation, Serbia, Slovakia, Slovenia, Spain, Switzerland, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America and Uzbekistan. The European Union was represented by participants from Eurostat and the Delegation of the European Union to Bosnia Herzegovina. The Food and Agricultural Organization (FAO), United Nations Population Fund (UNFPA), United Nations Mission in Kosovo (UNMIK), Interstate Statistical Committee of the Commonwealth of Independent States (CIS-STAT), and IPUMS International (Census Dissemination Partnership) were also represented. An independent consultant from IntCensus attended at the invitation of the Secretariat.

3. The attendance of a number of participants was supported financially by UNFPA and the European Free Trade Association (EFTA).

**II. Organization of the meeting**

4. Marc Hamel (Canada) was elected as Chairperson of the meeting.

5. The following substantive topics were discussed at the meeting:
  - (a) Methodology, new data sources including big data;
  - (b) Measurement of the quality of administrative sources for use in censuses;
  - (c) Future censuses beyond 2020;
  - (d) Technology;
  - (e) Dissemination;
  - (f) Geo-spatial information;
  - (g) Census content: design of questionnaire; compliance with the CES Recommendations;
  - (h) Relation between censuses and other statistics, such as demographic, labour and regional statistics.
6. The discussion at the meeting was based on 21 papers submitted by the participants. The papers and presentations are available on the UNECE website at the following address: <http://www.unece.org/stats/documents/2018.09.census2.html>.

### **III. Recommendations for future work**

7. The Expert Group recommended that its next meeting will be organized, back-to-back with a workshop on censuses for countries in Eastern Europe, Caucasus and Central Asia, in September 2019, tentatively in the week 16–20 September.
8. The following topics were suggested for discussion in the 2019 Expert Group meeting:
  - (a) Results of tests, pilot and censuses, with regard to methodology, technology and other census aspects;
  - (b) Progress report by the Task Force on Measurement of the quality of administrative sources for use in censuses;
  - (c) Research on the use of administrative data for censuses;
  - (d) Progress report on the work on future censuses beyond 2020;
  - (e) Dissemination.

### **IV. Adoption of the report of the meeting**

9. The present report was adopted with amendments during the closing session.
10. A summary of the discussion in the substantive sessions of the meeting will be presented in an annex to this report, to be prepared by the Secretariat after the meeting.

## Annex

### Summary of the main issues discussed at the substantive sessions

#### A. Methodology, new data sources including big data

Documentation: Papers submitted by Colombia (not presented) Estonia, Israel, Italy, Latvia, Poland, and United Kingdom.

1. Italy spoke about their continuous census (“censimento permanente”), where census data is produced by combining the register system, administrative data and some sample surveys. They use registers of population, labour and places (address, buildings), built up from around 8,000 municipalities. The new strategy has the register at the centre of the process, complemented by surveys covering about 1,000 municipalities per year, which are used to give an indication of register quality.
2. The United Kingdom described their plans for the use of alternative data sources in the next Census in England and Wales, including administrative data (e.g. patient registers, pensions, utility data), survey data, an address frame, and big data (e.g. to determine languages spoken and evaluate the need for translation). The principle is to add value and assure users of the quality of new data sources, not simply to incorporate as much data as possible.
3. Participants were interested in the creation of a ‘hard to count’ index, which allows the UK to predict likelihood/ability to respond and to adjust for non-response through imputation.
4. In Israel, after a combined Census in 2008, and experiments with a rolling census throughout the 2010s, an administrative Census is currently being considered. Administrative records are generally of high quality, entries and exits are well recorded; although there are challenges including the potential double counting of foreign citizens, and difficulties in the application of the concept of ‘usual residence’. In addition to a wide variety of administrative sources, they will also conduct a sample survey to augment this information, assess the quality of the register data, and to target problematic populations.
5. Latvia outlined preparations for their first register-based Census in 2021, and described the process of seeking additional data sources, negotiating with neighbouring countries and building up an accumulative database.
6. Discussion concerned the measurement of educational attainment, which is based on 2011 Census, surveys, and administrative data. There are difficulties with consistently representing educational attainment for people who studied before independence in 1991, and for those who studied overseas, as well as recall errors for those who completed study many years ago. Israel suggested that country of birth and year of immigration could be used to estimate the location of education for immigrants and adjust accordingly, and also added that administrative education records were usually better quality for those who work, because they have an incentive to ensure the data are accurate.
7. Poland described the journey from a paper Census in 2002; to the use of electronic forms, GIS, and a short form / long form system in 2011; to the proposed web-first Census in 2021, and potential use of other sources post-2021.
8. Estonia will conduct their first register-based Census in 2021, for which there was a pilot in 2016 and another is planned in 2019. They described the pre-requisites for the

register-based Census as the presence of: unique address codes, business and personal IDs, free unrestricted access to admin data, and the right to link microdata. They currently have 24 registers, which must meet strict quality criteria in order to be included.

9. They are predicting overcoverage of emigrants to be an issue and are preparing to account for this using a 'signs of life' methodology based on 33 sources. For dwellings, they will be assessing vacancies using electricity consumption data. They also discussed a trial using big data from mobile phone companies, but this will not be used in the Census itself.

10. Questions focused on the signs of life methodology, and the use of electricity consumption, and participants debated the minimum power consumption that would indicate a vacant dwelling, which may differ given climate and use of alternative energy sources. Participants discussed the public perception of changes such as this and expressed the need for public consultation for acceptance of new data sources and methods.

## **B. Measurement of the quality of administrative sources for use in censuses**

Documentation: paper submitted by Eurostat.

11. Eurostat presented the European Statistical System (ESS) Vision 2020 ADMIN project (2015–2019), aimed at facilitating the use of administrative data sources for statistical purposes without compromising on the desired level of output quality. Throughout the ADMIN project, a particular attention is given to social statistics, including population census. One of the instruments for implementing the ADMIN project is ESSnet's work on quality of multisource statistics (also known as KOMUSO) which covers quality measures for statistics using administrative data and quality of frames for social statistics.

12. The presentation focused on various guidelines on quality measures for multisource statistics produced as part of the project. Information was also provided on workshops on quality and social statistics and support services available to NSOs on Eurostat's CROS portal: [https://ec.europa.eu/eurostat/cros/content/ess-vision-2020-admin-helpdesk-0\\_en](https://ec.europa.eu/eurostat/cros/content/ess-vision-2020-admin-helpdesk-0_en)

13. The material produced under the project is publicly available and can be used by everybody, but support services are for EU countries only.

*Report by the Task Force on measuring the quality of administrative sources for use in censuses*

14. There is an increasing trend in the ECE region to move away from traditional census mode and adopt alternative approaches based upon increased use of registers and administrative data. A UNEC task force prepared new guidelines on the use of registers for censuses, endorsed by the CES in June 2018 (expected to be available from December 2018 on <http://www.unece.org/stats/census.html>). A new UNECE Task Force on quality of administrative sources for use in censuses was established in 2018 with the objective to develop guidance on the measurement of quality of administrative sources for use in censuses, building on the work of the first task force and the work done at EU level. The Chair of the task force, Emma Wright, presented the objectives and working plans of the task force.

## C. Future censuses beyond 2020

Documentation: Papers submitted by the United States of America, the United Kingdom and Eurostat.

15. This session examined the possible future directions of census-taking after the upcoming round. The United States gave an overview of the evolution of methods used in the past and current round across countries. Emphasizing that the greatest cost in census-taking arises from efforts to obtain the last few percentage points of coverage, it was hypothesized that most of today's 'modern' technologies will be obsolete by 2030 so the means employed to obtain this coverage will necessarily be different.

16. Discussing the likely scenarios for 2030 and beyond, it was hypothesized that the goal of 100 per cent coverage may diminish, if a change in mindset can be achieved among data users and stakeholders through a conversation about 'how good is good enough?'. It was argued that this would entail a focus on communication with the public and with policymakers to ensure that the cost-benefit tradeoffs are understood—the cost saving of achieving 90 or even 80 per cent coverage rather than 100 per cent would be extremely large in some countries, but it would only be acceptable if there were buy-in from stakeholders.

17. Questions were raised about whether or not the census is necessarily the only or best source for certain types of information, and the variation across countries in what kinds of census data collection is mandated by law. There was discussion about whether census-taking has become overly complex through path-dependent development and whether, if a hypothetical country now received an instruction to collect the same data without having done it previously, they would come up with the same techniques that are now used or would instead develop something more efficient.

18. Following presentations about the United Kingdom's move towards a system of population statistics led by administrative data sources, and Eurostat's goal of improving timeliness and relevance of census, population and migration statistics after 2021, there was discussion about the need to give fair weight to all the dimensions of quality: not only accuracy but also timeliness, relevance etc. Users may not weigh each of these components in the ways we assume they do—NSOs should make efforts to define and document these needs.

19. Discussion also considered how the role of a decennial census would change if administrative data are used to provide annual estimates. It might become the ten-yearly 'big effort' to make up for the necessary shortcomings of more frequent and rapid annual estimates, but is unlikely to be used for adjustment or for backwards correction.

20. Some of the specific challenges of using administrative sources for producing population and migration statistics were discussed. These include the need to form partnerships with providers such as border control agencies or private companies; disparities in definitions among data providers; which sources to combine and how best to integrate them; issues relating to disclosure control; and the costs of obtaining access to privately-held sources.

*Panel session: the future of censuses beyond 2020*

21. A panel composed of experts from Estonia, Italy, the United States of America, the Netherlands, Belarus and Eurostat discussed their thoughts and initiated debate among all participants on the ways in which censuses must and will change to reflect new realities—changes in technology, in the kinds of data users demand, and in the extent to which they value accuracy, rapid delivery, and reduced response burden.

22. It was suggested that NSOs must anticipate demand for data on new topics and recognize that users may not be much concerned with the ways in which data are obtained, but are often more interested only in the end results.
23. Panellists called for a recognition of statistical offices' own limits and a pragmatic approach to what is and is not possible. It was suggested that a historical perspective can shed light on likely future scenarios. For example, no country is likely to return to traditional census methods after moving toward register-based collection.
24. Members of the panel and other participants discussed the likelihood that there will be a diversification of sources and that censuses as we know them will decline in favour of combining administrative and alternative sources. This will necessitate improved, often more suited definitions and clearer standardization and quality guidelines to determine suitability of sources for statistical purposes, along with improved access to metadata for non-standard data sources. Geo-referencing of census data or census-like will become more commonplace.
25. As these changes occur, NSOs will need to reorganize their organizational structures and built-in assumptions about the division of labour. They will need to better understand that users do not necessarily view statistics in terms of 'census' and 'non-census', and hence may be confused by inconsistent estimates of the same thing coming from different sources or different parts of the NSO.
26. Members of the panel stressed the increasing importance of reassessing the cost-quality tradeoff and of making the decision about where to aim for on that tradeoff, based on a public discussion. NSOs must take the responsibility for leading that discussion, proactively asking questions of users rather than awaiting critique. Public opinion and expectations about the capabilities of NSOs may lead the public to increasingly question the need for a census and assume that data can be harvested without the need for burdening respondents at all.
27. The panel touched on the potential shift in roles between NSOs and 'data partners', including those who produce data and those who conduct analyses. Relatedly, it was noted that the ability to perform record linkage is not unique to statistical offices so there will be new challenges to confidentiality as private actors enter the scene.
28. Discussion covered the fact that research into new methodologies is in itself expensive; thus a new approach may be cheaper and more efficient than the status quo, but the costs of the research and development needed to get there must be taken into account. This includes the need for training and recruiting personnel with different skill sets to those currently employed in census work.
29. There was also discussion about the impacts of changing census methodology and changing social realities on established concepts and definitions, such as household and currently preferred population base: usual residence.
30. Some participants noted the potential for learning from new techniques being applied in the least developed countries where traditional census techniques have not been possible; the risks to international comparability as sources and methods diversify; and the importance of recalling that not everyone is urban and/or connected to modern technologies.
31. The discussion returned frequently to the matter of identifying and meeting users' needs. If needs are not met this presents a strategic risk for NSOs. It was hypothesized that in future NSOs may fill less of a 'data collector' role and may become more 'data coordinators'. National and international partnerships will be essential to this as NSOs strive to provide 'information services'.
32. In concluding the panel discussion, the chair noted that if NSOs do not respond to user needs, someone else will. Ultimately it is the users who will define what can and should be done, what is needed, and what is acceptable.

## D. Technology

Documentation: Papers submitted by Colombia (not presented) and Mexico.

33. Mexico discussed their plans for the use of technology in the 2020 Census, including the technical specifications of devices. Interviewers will use tablets with GPS pre-loaded with maps, and data will be uploaded directly back to the office. They have contingencies in the form of back-up USBs and paper forms, and work can continue offline and be uploaded later when the interviewer comes online. Mexico will aim to buy approximately 185,000 devices, which will be used by other government departments following the Census.

## E. Dissemination

Documentation: A paper submitted by the United Kingdom.

34. A paper about plans for disseminating data from the 2021 census of England and Wales provided the basis for discussion about ways of responding to the needs of a diverse variety of user groups and uses. This may entail providing different kinds of products, and striking a balance between meeting the needs of heavy users of census data while also performing outreach to other categories including the general public. In the UK's ONS there is a general move towards engaging the general public more. To this end, interactive tools that allow users to relate census data to their own real-life experiences, such as by comparing with others in their locality, age group etc., are being developed.

35. Relatedly, better responding to user needs when disseminating census data requires increased availability of customizable outputs, such as user-defined tables. Discussion covered the details of methods to ensure confidentiality and security when such tools draw on census data to produce detailed tables. International open-source sharing of software and of research findings is important for advancing these methods.

36. Discussion also covered the importance of providing metadata and terminology in ways that are easily understandable by the intended users.

## F. Geo-spatial information

Documentation. Papers submitted by Colombia (not presented), Italy (two papers) and the United States.

37. The first paper by Italy presented their system of five interconnected base registers continuously updated from administrative sources and integrated surveys. The process produces unique addresses, most of which are geocoded to a point coordinate. The existing information will be supplemented by Census data for further improvement. Discussion concerned the difficulties in maintaining accurate registers of addresses without introducing duplicates through poor identification of address by individuals. Although Istat issues rules on how to properly record addresses, these are not always followed.

38. The second paper by Italy described their geographic information system (GISstat), and the GeoPortal, which was an initiative to make data and geospatial services discoverable and interoperable for statistical users. Data are publicly available and allow users to view and download data for a variety of statistical geographies.

39. The United States presented their efforts to create and validate the address register, beginning with postal service data and updating based on Census and other sources. Accurate addresses are critical to measuring people in the right place in the Census.

40. There was discussion of the use of satellite imagery and light detection to identify new addresses, citizen-driven updates to address information, and electricity consumption data as a sign of life. Many countries are using signs of life indicators, but it is important to combine multiple sources to give an accurate score. There was also discussion about overcrowded dwellings with multiple households, and hidden people who did not want to be found in the Census, such as illegal immigrants. It was noted that there was potential to capture them through administrative data, to the extent that these people interact with government services.

## **G. Census content: design of questionnaire; compliance with the CES Recommendations**

Documentation: A paper submitted by (CIS-Stat).

41. CIS-Stat gave an overview of the plans for the 2020 round of censuses in the CIS region, with a focus on the use of technology, and the addition of new questions.

42. Discussions surrounded the addition of disability questions in some countries, and the difficulties associated with their collection. Some notable issues included:

- (a) The subjective nature of self-reported disability status questions;
- (b) The tendency for older people to over-report and younger people to under-report disability;
- (c) The definition of what constitutes disability and the need for specific questions;
- (d) Possibility to use medical register data to more consistently identify disability;
- (e) The practice of interviewers asking disability questions to the head of the household, rather than to each individual.

## **H. Relation between censuses and other statistics, such as demographic, labour and regional statistics**

Documentation. Papers submitted by Colombia (not presented) and Italy.

43. Italy described the development of Labour Market Areas (LMAs), that are sub-regional geographical areas where the majority of the labour force lives and works, and where establishments can find the largest amount of the labour force necessary to occupy the offered jobs. There are 611 LMAs of varying sizes in Italy, covering the whole country, and sometimes cutting across national borders. The information is used for policy purposes, for example it was useful in identifying the areas worst hit by the global financial crisis. Discussion concerned the importance of having good quality address data for home and work; and the potential use of mobile phone data for this type of analysis, along with the many difficulties faced in accessing big data sources from private companies.

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