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For discussion and recommendations

Item 11(c) of the Provisional Agenda

CES 2012 SEMINAR: CHALLENGES FOR FUTURE POPULATION AND HOUSING CENSUSES

DRAFT OUTLINE

Prepared by Statistics Canada, CIS-STAT and the UNECE secretariat

I. INTRODUCTION

1. **Seminar organizers:** Statistics Canada, CIS-Stat and UNECE.

2. **Contributions offered by:** Austria, Bulgaria, Canada, Czech Republic, Germany, Israel, Italy, Latvia, Mexico, Poland, Portugal, Russia, Spain, Switzerland, United Kingdom, CIS Stat, Eurostat, UNECE. To be confirmed: Australia, Brazil.

3. **Expected results:** The seminar will provide useful information for the planning of future censuses, based on lessons learned from the innovations introduced in this round. It will also present the issues that Censuses are facing and some avenues for the future.

II. PROPOSED STRUCTURE OF THE SEMINAR

4. The seminar will be organized in two sessions covering respectively the innovations and lessons learned from the 2010 round, and the future of censuses. A description of the sessions and their possible structure is presented below. The selection of papers to be considered as invited papers was based on the abstracts received so far and should be considered as tentative. The organizers recommend that the final decision about the selection of invited papers be confirmed when the full papers will be received.

A. SESSION 1: 2010 round of censuses – innovations and lessons learned

Session Chair: Statistics Canada

5. The 2010 round of censuses has seen virtually all countries conduct a census of population and/or dwellings. Major technological and methodological innovations have permitted to transform the way we do Census and made them more efficient than in previous rounds, which responded to challenges of producing high quality data while controlling costs. What are some of these innovations and how successful were they?

6. The session would present some of the innovations in technology and methodology that were used or introduced in the 2010 round of censuses. It would also present some of the challenges faced by census programs in this round. A number of countries have adopted the use of registers to produce census information. Others have innovated to increase the rates of self-response or overall response using emerging collection approaches such as the internet.

Personal Digital Assistants (PDAs) and Short Message Service (SMS) have also been used for census operations. What innovations were introduced and how did they respond to the challenges? What were the lessons learned? The session will build on the discussions at the 2012 session of the United Nations Statistical Commission (UNSC) on the lessons learned with recent censuses.

Organization of the session

7. The chair of the session will summarize the conclusions of the 2012 UNSC session on the experience with the recent population censuses. Then the invited papers will be presented. Among the contributions proposed by countries and international organizations, it is proposed to consider tentatively as invited papers the following three contributions, representing respectively a traditional, a register-based and a combined census (registers plus enumeration).

Invited papers (tentative):

(a) **Austria (register-based census):** Austria conducted in 2011 a register-based census for the first time. The presentation will focus on the over-coverage in population registers, an important issue for all register-based censuses, presenting the Austrian experiences from 2006 to 2011. A central question is how to identify inactive records, defined as records of persons found in the Central Population Register but not in the other registers used for the census. In case of inactive records, in Austria a survey is conducted to find out whether a person had his main residence in Austria on the reference date or not.

(b) **Italy (combined census):** A number of important innovations were introduced in the 2011 census of Italy, including the use of municipal lists of households and individuals for the data collection, the delivery by mail of census forms, a multi-mode data collection approach including web questionnaire, sampling strategy for short/long form to be filled by the households, information system for monitoring and sharing information on field operations. Information will be presented on the outcomes and lessons learned from the implementation of these innovations.

(c) **Canada (traditional census)**: The Census in Canada has undergone significant changes in 2006 and 2011. New collection approaches were introduced in 2011. The internet collection response rate for the 2011 census is 54.4% while self-response is at its highest level in recent Canadian census history at 84.1%. Central mail-out was extended to 79% of dwellings. This paper will describe the methodology used and will include results of its application. The long-form traditionally collected on a sample of households on the Canadian Census was moved to a new voluntary survey collected in parallel to the census. The paper will briefly detail the methods used for the survey, the integration with census processes and some of the results obtained.

8. After the presentation of the invited papers, the Chair will summarize the main points discussed in the other papers presented by the following countries and international organizations:

- Countries with combined census: Czech Republic, Germany, Latvia, Spain, Switzerland.

- Countries with traditional census: Bulgaria, Mexico

- International organizations: CIS-Stat, UNECE

9. The content of these papers is presented in the Annex to the present note.

10. The session will end with a discussion of the lessons learned and introduce the issues and challenges for the future, the subject of the second session.

B. SESSION 2: The future of censuses and their role for national statistics systems

Session Chair: CIS-Stat

11. Increasing concerns over costs, data quality, respondent burden and privacy are challenging the conduct of future censuses in many countries. How can the key information produced from censuses continue to be collected considering these challenges?

12. The second session will identify and discuss the future issues and challenges facing the census in many countries. In a time of fiscal restraint, the need to collect census information or the periodicity of the collection has come into question in some countries. Privacy has also been an increasing concern, either because of some of the information collected, or because it is collected in a mandatory context. Ensuring a high level of participation is becoming even more challenging, either globally or for key sub-groups of the population, impacting the quality of the results. Drawing from the morning session, we will explore how the lessons learned from the 2010 census round can be brought to contribution in facing future challenges. Are 'traditional' ways of collecting censuses obsolete? Should censuses be more closely integrated with other social survey programs? Can and should a lot of information collected on censuses be obtained from registers or other sources? What should core census questions be?

Organization of the session

13. The chair for the session will launch the discussion on the future of censuses and their role for national statistics systems. The session will draw on the issues and challenges identified during the discussion of the first session and will raise important choices that NSO will be facing in the future.

14. The session will start with the presentation of the invited papers, which could tentatively include the following three papers:

Invited papers (tentative):

(a) **Eurostat:** In the past, censuses used to be considered as separate operations from other social statistics, a separation that was often also reflected in the organisational structure of statistical institutes. In times of traditional censuses, this separation was motivated by the sheer size of the census operations, which required a separate organisation, financing and legislation. The 2010 round of censuses has shown that the wall between censuses and other social statistics is starting to crumble. The quest for increased efficiency in statistical production has led several countries to design census operations that contain elements of sample surveys and/or that are built on existing data sources that are also used in the production of other social statistics.

In order to envisage the future of our censuses, we therefore need to turn back to our original targets: What makes a census a census? What are its competitive advantages with regard to geographical detail, capacity to cross-tabulate data and data accuracy? For what user needs should these qualities be preserved, i.e. for what user needs are the essential features of population and housing censuses required, in particular individual enumeration, universality and the availability of small-area data?

Instead of thinking of censuses as burdensome operations, we should rather move to see censuses as a set of requirements for data and quality to be met by our systems of demographic and social statistics. A lot can be won, if we pin-point these requirements better than in the past and adapt our production accordingly.

(b) **United Kingdom:** All of the indications are that the censuses held in 2011 across the countries of the United Kingdom have been highly successful – but there are clear signs that taking the census is becoming increasingly challenging and costly. The dynamic nature of populations, advances in information technology and demand for more frequent and more detailed statistics are driving changes in methods. This trend can be seen across many developed countries.

The UK Statistics Authority set up the 'Beyond 2011' Programme in April 2011 to take a fresh look at alternative approaches to meeting future user needs as an alternative to running a Census in 2021. The 'Beyond 2011' Programme is studying a range of statistical options including: 1) Census-type solutions; 2) Administrative data solutions; and 3) Survey solutions. Since 'census type' solutions are already relatively well understood the majority of the Programme's research work will focus on investigating ways of making more use of existing administrative datasets combined with targeted surveys. Recommendations on the way forward, to be made in 2014, will be informed not only by the statistical viability of the potential solutions, but also by a full understanding of user requirements, public burden, costs and public acceptability.

Russia: The paper will present Russia's plans and perspectives for the next (2020) census round, including in particular some conclusions about possible future implementation of census data collection methods that would allow reducing the burden on the population.

15. After the invited papers, the Chair of the session will summarize the main points discussed in the supporting papers presented by Israel, Italy and Portugal. The content of these papers is presented in the Annex to the present note.

16. The session will end with a summary of the issues and choices facing National Statistics Offices in regard of census and social statistics more broadly.

ANNEX
Summary of contributions to be considered as supporting papers

Supporting papers for Session 1:

Czech Republic (combined census): The Czech Statistical Office (CzSO) organized and carried out Population and Housing Census 2011 as a transition from traditional census to new approaches. New technologies for scanning and mark sensing including fuzzy logic were implemented, administrative data sources as a pillar of the census were used and electronic questionnaires were developed for census project. During the first stage Czech Post as a field operator distributed to households 17,5 millions of census questionnaires from which 14,7 of questionnaires were pre-fulfilled. 17,3 millions of census were collected with the majority by mail back (10,6 millions) following by eQuestonnaires (4,3 millions) and by field operators (2,4 millions). Thus, eCensus represented 25,0 per cent of all collected questionnaires.

Germany (combined census): This paper presents some experience acquired so far in Germany with the 2011 Census, which is based on a new data collection method. The new census method is a combination of administrative register evaluation and field surveys. The biggest challenge posed to German official statistics by the new census model is the fact that combining the data from the different data sources at the level of persons in part requires using plain text information (among other things, name and address) because neither a uniform person identification number (personal ID) nor a uniform building ID is available. The experience acquired with that kind of combining data without numerical identifiers in the 2011 Census can be used to make concrete proposals for the further development of the new German census model. Other countries which have not yet used data from administrative registers for a census and have similar difficult conditions regarding the combined use of administrative data and field surveys for conducting a census may benefit from the German experience.

Latvia (combined census): The organisation and implementation of the last Census in Latvia are realised introducing new Census technologies: automatic system for calculation of borders for Census enumeration districts based on GIS; use of Internet / Computer based electronic questionnaires; data transfer to the CSB by wireless internet (free of charge) in public libraries. The evaluation of possibilities to use information from registers and other administrative data sources for data quality control and editing is presented. Special attention is paid to strong and weak aspects of the new approaches used to Census technologies, organisation and methodology.

Poland (combined census): In Poland, as in other countries, there is the need to reduce census costs and burden on respondents, maintaining high quality results. At the same time, developments in information and communication technology are improvements of alternative sources of information allow the reorganization of the censuses in order to achieve the above purposes. The 2011 census of Poland was conducted for the first time using a mixed model, ie, using data from administrative sources and data collected from respondents using only electronic forms. Thus, paper forms were completely eliminated. The innovations had significant positive impact on the quality of results, reduced response burden, and decreased census costs.

Spain (combined census): The 2011 census in Spain will be based on a combination of different sources of information: administrative registers and a large sample survey. Records from the population register have been linked with Social Security and Tax Agency data, among other registers, to confirm residence in the country at the census reference date. This

process will provide the main part of the enumeration of population, which must be completed with information from the sample.
The frame of dwellings and buildings has been built by linking information from population register and Cadastre, in order to get an initial frame for the Census. This work is complemented with an exhaustive enumeration of buildings, with the aim of comparing and improving the initial frame and capturing the geographical coordinates. Finally, in order to get the variables that are not available in administrative registers and complete the enumeration of the population, a survey of 12.3% of the population will be conducted.

Switzerland (combined census): In 2010, a fundamental change took place in the Swiss census: the census is now conducted and evaluated on an annual basis in a new form by the Federal Statistical Office (FSO). In order to ease the burden on the population, the information is primarily drawn from population registers and supplemented by sample surveys. The first reference day for the new census was 31 December 2010.
The paper outlines the key elements of the new census system which is based on a register survey that evaluates existing administrative data. Only necessary information that is not contained in a register still is collected through additional sample surveys. The paper will also give an overview of the output of the system which includes all the information about persons, households and housing from the basic statistics, structural statistics and detailed topic-based statistics. Finally it will provide lessons learned from this first register-based census and on the experience made with an integrated survey system that complements the administrative data collection.

Bulgaria (traditional census): For the February 2011 census of Bulgaria, the data collection included two methods: in the first phase (from 1 to 9 February 2011) data were collected on-line via Internet, and in the second phase (from 10 to 28 February 2011) the traditional data collection was conducted through visits of interviewers and filling of paper questionnaires. Thanks to this innovative approach, 41% of the population was counted via internet, with a peak of 66% in the capital Sofia.

Mexico (traditional census): This paper aims to present the experience of the 2010 Population and Housing Census as to achieving its goals in a context of budget constraints and a generalized perception of insecurity, which increased reluctance of respondents to provide data. The paper will discuss various aspects related to the census operations (including the adoption of sampling, the use of technology and the length of the data collection period) taking into account the implications on the costs and on quality.
The availability of respondents to participate depends on many factors, including the capacity of communicate with the public, sensitivity about confidentiality, sense of identification and confidence in the Institute. On the other hand, special instructions for handling certain areas and populations, which are considered as problematic, represent an increasingly useful tools to attain coverage objectives.

CIS-Stat: The paper will present a comparison between the 2000 and 2010 rounds of censuses in the CIS countries, based on a short questionnaire sent out by CIS-Stat covering the following topics:
- the analysis of all aspects of census activities: legal base, planning, methodology, organisation, training of personnel, technology, confidentiality, data dissemination, costs, etc.;
- the attitude of population;
- assistance of international organisations and experts, donor countries;
- lessons of last census and plans for the next round 2020.

Up to now 7 CIS countries (including Armenia - in October) have conduct census and the others plan to conduct it during 2012-2013.

UNECE: The paper reviews the census methodology adopted by countries in the UNECE region for the 2010 round of census, also in comparison with the 2000 round, and draws some first conclusions. In Western Europe, and particularly in the European Union, the majority of countries conducted the census using a methodology different from the traditional census, in most cases for the first time. In total, 19 countries adopted an alternative census method in the 2010 round, compared to only 9 countries in the 2000 census round. The traditional census, on the other hand, continues to be adopted in all countries in South Eastern Europe, and in the CIS.
In general, the alternative methodologies adopted make use of data from registers, either as the only source of census data, or in combination with other data sources. However, there are also innovative methods that do not make use of data from registers, like the French "rolling census".
The paper also includes a general discussion of the reasons that pushed many countries to consider alternative census methodologies, and of the advantages, disadvantages and implications of the alternative approaches developed in the region.

Supporting papers for Session 2:

Israel: The rolling integrated census currently being developed in Israel is designed as the first step of the process aiming toward a register based census. It will be conducted as an ongoing evaluation survey, in which a 10% of the population will be sampled in a ten-year span.
The rationale behind it is of budgetary constrains and organizational incentives as well as the need for an ongoing adjustment of current population estimates.
In this paper we will refer to the principles and possible implications of incorporating census activities as an ongoing project.

Italy: Istat is working to develop a future census that will produce regularly updated information with high territorial reference detail, while retaining the features of universality and time consistency. The system will be based on continuous use of registers and geocoded databases, and will benefit from the experience accumulated developing the 2011 census.
The new framework will be based on:

- a central role of local population registers and others administrative archives,
- a sampling approach for coverage adjustment,
- a multi-point time approach survey to provide yearly estimation of socio-economic data on households and housing at municipal and sub-municipal level.

We will ensure ongoing survey activities during time with funding shared along several years as well as encouraging local statistical offices to consolidate their structure in truly permanent staff.
To be implemented, the new framework requires a strengthening of the statistical infrastructures developed for 2011 census (sample design, addresses and house numbers archives, census mapping, output areas, etc.).

Portugal: Implementing a register-based Census - the Portuguese experience
Like other countries, Portugal intends to evaluate and implement a full or partial register-based census to reduce the high financial costs and human resources associated with traditional censuses.

The development of the work programme is oriented towards the identification of administrative sources covering the statistical units used in Census: Housing (residential building and housing unit) and Population (household and person). The guidelines are primarily intended to prepare the basis for the use of administrative information in the 2021 census round.
Statistics Portugal accessed some administrative registers with potential variables for census purposes. Concerning population variables, a group of main registers have been accessed. In these (and other) administrative registers, relevant to the census statistical information, the data must be evaluated in terms of coverage, content, quality and identifiers.
The purpose of this paper is to present and share the results of the analysis of these registers. The starting point is the key question: If we didn't accomplish the 2011 Census using the traditional model, could we obtain consistent and relevant census data on population through administrative sources?
In addition we present a comparison, in terms of geographical coverage, between the preliminary results of the 2011 Census and the existing administrative data.

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