

# **Future censuses beyond 2020**

## **Progress report by the Steering Group**

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# Background

- February 2018: CES Bureau requested the Steering Group to conduct work on future of censuses beyond the 2020 round
- Objective: in-depth analysis on the future of population and housing censuses after the 2020 round
  - to inform the CES recommendations for the 2030 round
  - build on work done by existing Eurostat Task Force on Future Censuses
  - take broader regional perspective ensuring that results are relevant to all UNECE countries
- Final draft to be submitted to CES Bureau by December 2019



- Carried out by UNECE in September 2018
- Objective: explore countries' thinking for the next census after the 2020 round (i.e. the 2030 round)
- Responses from 47 UNECE countries
- Results to be considered unofficial and provisional



# Survey results (1)

## STATISTICS



- The trend of moving towards combined and register-based censuses expected to continue strongly in the 2030 round
- Several countries plan to move in the 2030 round from a traditional to a combined or register-based census (at least 7), or from a combined to a register-based census (at least 8)
- About 70 per cent of the countries are contemplating important changes or innovations for the 2030 round, including:
  - move to a more frequent interval (21 countries)
  - increased geographical detail in the census output (18)
  - increased use of geo-referenced info. for data collection (15)



# Survey results (2)



## STATISTICS

- Use in the 2030 round of “big data” will be considered by at least 11 countries, as part of a combined or register-based census.
- Changes considered necessary in key census concepts:
  - usual residence (11 countries)
  - household (6 countries)
  - current activity status
- Main driver for changes:
  - technology (11 countries)
  - societal changes (8)
  - anticipated user needs (5)
- For most countries, the CES Recommendations for the 2020 round are aligned with their thinking on the 2030 round



# Proposed structure of report



## STATISTICS

- A. Introduction
- B. The situation in the UNECE region - summary of survey results
- C. Evolution of census of population approaches – a paradigm shift?
- D. Population base – various challenges with new methods based on administrative sources
- E. Ensuring coverage and quality with new approaches
- F. Identified needs for modernisation of geospatial statistics
- G. Increased reliance on estimation models in the production of census outputs
- H. Use of Big Data in a census context
- I. Balancing User Requirements
- J. Conclusions



# C. Evolution of census of population approaches – a paradigm shift?



## STATISTICS

- Many countries moving to new census methods, often based on registers and admin. sources
- Move is normally part of a strategic decision by the NSO to develop a register-based statistical system
- “Paradigm shift”, associated with general re-thinking of the overall statistical production process, frequency and timeliness of statistical activities.
- Transition is key step towards the possibility of producing census-type data at a higher frequency and more timely
- Objective can be the production of at least a limited set of basic population and housing statistics on an annual basis.
- Need to re-think population bases and key concepts, considering characteristics of information available in registers, but also to the evolution of the society and of information needs



## D. Population base – various challenges with new methods based on administrative sources



### STATISTICS

#### I. Coherence when produced from multiple sources

- unique and well define time reference period
- > Review essential features of a census in the next Recommendations

#### II. Coherence in concepts for place of residence

- Concept can differ between registers and enumerated population
- Reconciliation can be difficult for combined censuses
- Difficult define place of residence for mobile people, or with multiple residences
- Lack of stability in coverage in some administrative sources
- > Next Recomm. should cover challenges in using multiple sources

#### III. Households having several homes

- > Could be advisable in future to register, in addition to the permanent residence, a secondary residence





## D. Population base – various challenges with new methods based on administrative sources



### STATISTICS

#### IV. The challenges of measuring migration

- Registers tend to underestimate migration, particularly emigration
- Many emigrants do not register leaving the country for several reasons
- Error cumulates during years, distorts assessment of total number of emigrants and the number of population relying on register data

#### V. Pendulum migration

- Generally defined as migration with the duration up to one week
  - International pendulum migration, in border areas, likely to expand
  - The place of residence is the residence of the family
  - Lack of stability in coverage in some administrative sources
- > Next Recomm. should consider phenomenon and answer questions

#### VI. Transnationality

- Living in two (or more) countries, including country of home or origin
- Pendulum migration clearly is a particular case of transnationality<sub>9</sub>



# E. Ensuring coverage and quality with new approaches



## STATISTICS

- Census approaches using registers and administrative sources may require a review of the methods used to measure coverage
- Quality should possibly be approached from a fit for purpose lance
- Measure of population coverage may become more problematic in the context of increase periodicity of census results, e.g. an annual basis
- When admin sources are linked, quality of linkage keys may impact on linkage errors, and on coverage
- Complexity of record linkage operation may grow with increase in the number of sources used

> Next Recommendations should have increased emphasis on measurement of the quality of census results (current UNECE Task Force)



# F. Identified needs for modernisation of geospatial statistics



## STATISTICS

- Growing user demand for territorial flexibility and location-related data
- Linking admin/census data with address coordinates provides information on small areas, functional areas (town/village, coastline, etc.), and grids
- Important to have georeferenced unit data, preferably at the level of x,y coordinates
- Countries should establish a spatial reference framework for statistics, using geocoded administrative address included in building/dwelling register
- Unique identifiers that are stable over time should be used as keys to referencing all relevant information to spatial reference systems
- For the next Recommendations a coherent and systematic approach to combining statistical and geospatial data should be developed
- Example from Poland



## G. Increased reliance on estimation models in the production of census outputs



### STATISTICS

- When registers/admin data are used, in some cases estimation models have to be used, for various reasons
  - E.g.: identification of private household, relationship among household members
- The next Recommendations should include content on the use of estimation approaches in the creation of census variables
- Example from the Netherlands



# H. Use of Big Data in a census context



## STATISTICS

- Many NSOs are already exploring the use of alternative data sources including “big data” for the production of official statistics
- There are various challenges, e.g. legal aspects, lack of metadata, concepts different from statistical or registers’ concepts
- The next Recommendations should address the various aspect of the use of big data and of other unstructured data sources
- Example from Estonia (use of mobile positioning data to identify the place of residence)



# I. Balancing User Requirements



## STATISTICS

- Increasing demand for timeliness in statistics, particularly for censuses
  - Increasing move towards alternative statistical approaches largely based on the administrative registers and other data sources
  - Timeliness and accuracy or comparability over time often cannot be achieved simultaneously
  - New criteria for relevance could shift primarily to the satisfaction of user needs
  - How to assess user satisfaction, in order to adjust the trade-off between accuracy and timeliness?
- The next Recommendations may need to provide direction in considering these potential trade-offs



# Next steps (plans)

## STATISTICS



- |              |   |
|--------------|---|
| Sep-Dec 2019 | Finalize document based on discussion at the Expert Meeting |
| Dec 2019     | Submit final draft for review by CES Bureau                 |
| Feb 2020     | Review by CES Bureau  |
| Feb-Mar 2020 | Electronic consultation among all CES members               |
| Apr 2020     | Submit final draft to the CES plenary session               |
| Jun 2020     | Review and adoption by CES plenary session                  |