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**From the 2010 to the 2020 census round in the UNECE region –
Plans by countries on census methodology and technology**

Note by UNECE¹

Summary

The World Programme on Population and Housing Censuses for the 2010 round ended in 2014, and the ten year period of the new World Programme for the 2020 round (2015-2024) has just begun. This paper presents a brief overview of the 2010 round in the UNECE region, focusing on census methods adopted and the use of an important emerging technology, the internet response. Preliminary results about countries' tentative plans for the next censuses of the 2020 round are also presented, based on information collected by UNECE in Spring 2015 as part of the consultation on the new Conference of European Statisticians Recommendations for the 2020 census round. Finally, some information on demand for support by countries in view of the 2020 round is also presented.

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I. Review of the 2010 census round in the UNECE region²

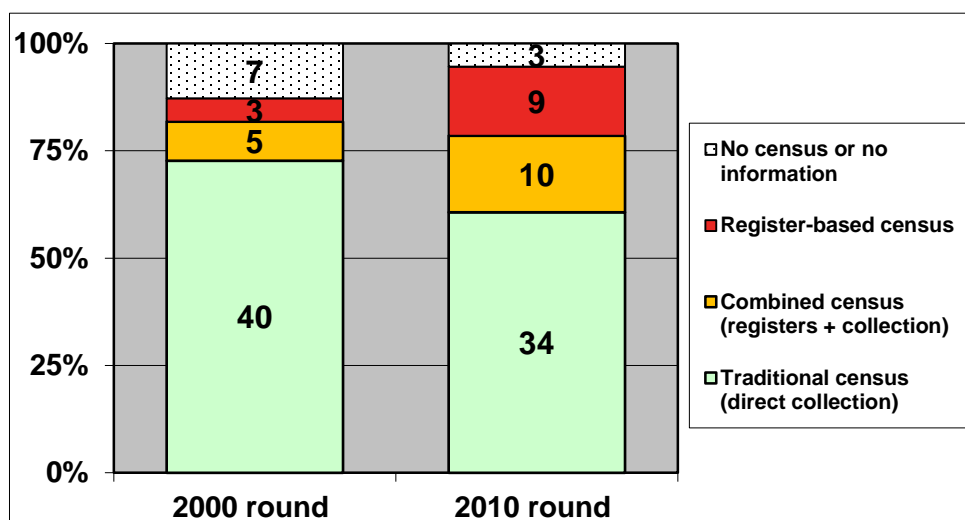
1. For over six decades, the United Nations supported national census-taking worldwide through the decennial World Programme on Population and Housing Censuses. For the 2010 census round, the United Nations Economic and Social Council in 2005 approved the World Programme by adopting resolution 2005/13, which stressed the need for countries to conduct at least one census during the period from 2005 to 2014.

2. Between 2005 and 2014 some 53 out of the total of 56 countries in the UNECE region (95 per cent) carried out a census in one form or another³. A census has not been carried out as part of the 2010 round in Andorra, Ukraine, and Uzbekistan. It is a substantial improvement over the 2000 round, when seven UNECE countries did not conduct a census.

3. With regard to **census methodology**, in the 2010 round the **traditional census** based on direct data collection⁴ was still the most common method, adopted by 34 UNECE countries, but the **register-based** and the **combined census**⁵ methods were also adopted by a large number of countries (9 and 10 respectively).

4. The comparison between the census methods adopted by UNECE countries in the 2000 and 2010 rounds (figure 1) shows that the number of countries conducting a traditional census decreased from 40 to 34 (from 83% to 64% of the countries conducting a census), while the countries conducting a combined census doubled from 5 to 10 (from 10% to 19%), and those conducting a register-based census tripled from 3 to 9 (from 6% to 17%). The total number of countries conducting a combined or register-based censuses more than doubled from 8 to 19 (from 17% to 36%).

Figure 1
Number of UNECE countries by census method used in the 2000 and 2010 census rounds



Source: 2013 UNECE Survey on national census practices

² A more complete and detailed review of the 2010 census round in the UNECE region is presented in “Measuring population and housing – Practices of UNECE countries in the 2010 round of censuses” (UNECE, 2014) (http://www.unece.org/fileadmin/DAM/stats/publications/2013/Measuring_population_and_housing_2010.pdf)

³ Including the Former Yugoslav Republic of Macedonia, where the census was cancelled during the collection.

⁴ For the purpose of this paper, the category “traditional census” includes all census methods based on direct collection of the data (including the so called “rolling census”), with the possible use of registers or administrative data only in support of the data collection.

⁵ A combined census is a census where some data are taken from registers, while others are collected directly from the population, through a field collection and/or internet response. The proportion of data obtained from registers and from direct collection can vary across countries.

5. Figure 2 presents detailed information on the census methods adopted by the various UNECE countries in the 2000 and 2010 rounds. It is interesting to note in particular the countries that changed census method between the two rounds (shaded cells in figure 2).

6. Seven countries moved from a traditional census to a combined census (Estonia, Israel, Liechtenstein, Lithuania, Poland, Switzerland, and Turkey). Moreover in Germany, where no census was taken in the 2000 round, a combined census was conducted for the first time in the 2010 round.

7. Three countries moved from a combined census in the 2000 round to a register-based census in the 2010 round (Belgium, Norway, and Slovenia). Austria moved directly from a traditional census in the 2000 round to a register-based census in the 2010 round.

Figure 2
UNECE countries by census method used in the 2000 and 2010 census rounds

Census method in 2000 round:	Census method in 2010 round:				Total 2000 round:	
	Traditional	Combined	Register-based	(No census)		
Traditional	Albania Armenia Azerbaijan Belarus Bulgaria Canada Croatia Cyprus Czech Republic France (1) Georgia Greece Hungary Ireland Italy Kazakhstan	Kyrgyzstan Luxembourg Malta Monaco Montenegro (2) Portugal Republic of Moldova Romania Russian Federation Serbia (2) Slovakia Tajikistan The FYR of Macedonia Turkmenistan United Kingdom United States (3)	Estonia Israel Liechtenstein Lithuania Poland Switzerland Turkey	Austria	Ukraine	40
Combined		Latvia Spain	Belgium /e Norway Slovenia		5	
Register-based			Denmark Finland Netherlands /e		3	
(No census)	Bosnia and Herzegovina San Marino	Germany	Iceland /e Sweden	Andorra Uzbekistan	(7)	
Total 2010 round:	34	10	9	(3)		

Source: 2013 UNECE Survey on national census practices and UNECE Census Wiki.

Notes: (1) Rolling census in the 2010 round

(2) Serbia and Montenegro in the 2000 round

(3) Traditional enumeration with yearly updates in the 2010 round

/e Register-based census using data from existing sample survey(s)

Countries that changed method between the 2000 and 2010 census rounds

8. From the geographical point of view, the large majority of the countries that conducted a combined or register-based census in the 2010 round are located in Western and Northern Europe (with few exceptions including Israel and Turkey). On the other hand, basically all countries in Eastern Europe, Caucasus and Central Asia, but also in North America, conducted a traditional census.

9. With regard to **census technology**, the 2010 round was marked by the sharp increase of the adoption of the *internet response*, a relatively young technology: 18 UNECE countries provided an internet response option, including 10 countries with a traditional census, and 8 countries with a combined census (out of 10 adopting this methodology). In the 2000 round only five UNECE countries had offered the internet response option.

10. Moreover, while in the 2000 round the internet response was mainly adopted to test the technology on a small proportion of the population (generally under 1%, with the exception of Switzerland where it was almost 4%), in the 2010 round the internet response was actually used in most countries by a significant proportion of the population, and in some cases it was the main data collection method. The highest percentages of internet returns were recorded in Estonia (67%), Canada (55%) and Portugal (50) (see figure 3).

Figure 3
Percentage of information collected online in the 2010 round, by census method

Traditional census	Percentage	Combined census	Percentage
Canada	55	Estonia	67
Portugal	50	Spain	37
Bulgaria	41	Lithuania	34
Italy	33	Latvia	32
Czech Republic	27	Liechtenstein	25
Hungary	19	Poland	12
United Kingdom	16	Germany	5
Slovakia	7	Switzerland	1

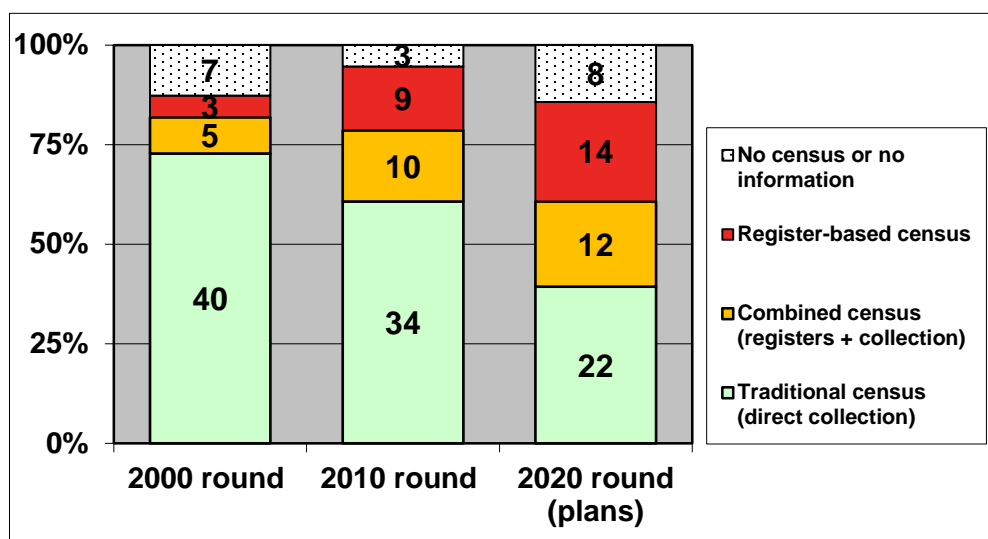
Source: 2013 UNECE Survey on national census practices

II. Plans for the 2020 census round in the UNECE region

11. In April 2015, the UNECE conducted an electronic consultation among the members of the Conference of European Statisticians (CES) on the draft CES Recommendations for the 2020 Censuses of Population and Housing. As part of that consultation, some information was collected from countries on the tentative plans for the next census of the 2020 round, particularly with regard to census methodology and technology. The main results of the survey are presented in this section. It should be stressed, however, that the actual practices that will be adopted by countries for the next census may differ from the tentative plans communicated in April 2015 (when the UNECE consultation was carried out) as result of tests or other reasons. Moreover, several countries did not provide information in the consultation or indicated various alternative options that were under consideration.

12. Concerning the **census methods**, the information provided by UNECE countries indicates that the trend to move away from the traditional census and adopt methods based on registers will continue to be strong also in the 2020 census round (see figure 4). Comparing the 2010 round and the plans for the 2020 round, there would be an increase in the adoption of both combined (from 10 to 12 censuses) and register-based censuses (from 9 to 14). The total number of countries planning in the 2020 round a combined or register-based census (26) is significantly higher than the number of countries planning a traditional census (22, in decline from 34 in the 2010 round). However, it should be considered that information is not available for 8 countries. It can be assumed that some of those 8 countries (tentatively 2-3) will conduct a combined census in the 2020 round, while the majority of them (tentatively 6-7) will conduct a traditional census. Under this assumption, in the 2020 round the number of UNECE countries conducting a combined or register-based census would be approximately the same as the number of countries conducting a traditional census (tentatively 28-29 countries for each category).

Figure 4
Number of UNECE countries by census method in the 2000-2020 census rounds



Source: 2013 UNECE Survey on national census practices; 2015 UNECE Survey on CES Census Rec.; UNECE Census wiki.

13. Information on the census methods adopted by the various UNECE countries in the 2010 round and planned for the 2020 round is presented in figure 5. Also in this case it can be interesting to look at the countries that may change census method between the two rounds, if the plans for the 2020 rounds will be confirmed (shaded areas).

14. Eight countries of the 34 that conducted a traditional census in the 2010 round (almost one fourth) are planning to move to a combined census in the 2020 round. Six of them plan to combine register data with a full field enumeration (Canada, Cyprus, Czech Republic, Luxembourg, Romania and United Kingdom). In Canada and the United Kingdom only selected variables should be taken from administrative sources, while the majority of the data should be obtained through direct collection, based mainly on internet response. Two countries plan to conduct in the 2020 round a combined census with sample field enumeration: Italy and Montenegro, which would be the first country in South-East Europe to use register data and conduct a combined census.

15. About two thirds of the countries planning to conduct a traditional census in the 2020 round plan to use administrative data to support the field enumeration as frame or control. Among these countries, Portugal and Serbia are also evaluating the possibility of using registers for selected variables (in this case it would be a combined census).

16. Five of the 10 countries that conducted a combined census in the 2010 round are planning to move to a register-based census in the 2020 round. The three Baltic countries plan to conduct a pure register-based census, while Spain and Turkey plan to use data from registers and, for selected variables, from existing sample surveys. Among the other countries, Germany, Israel, Poland and Switzerland plan to conduct again a combined census in the 2020 round, while Liechtenstein plans to conduct a traditional census supported by administrative data as frame or control.

17. As mentioned earlier, the large majority of the UNECE countries adopting a combined or register-based census are located in Western and Northern Europe. In the 2020 round, according to the plans, 22 of the 26 countries with a combined or register-based census will be members of the European Union (EU) or the European Free Trade Association (EFTA). The remaining countries will be Canada, Israel and Montenegro (combined census), and Turkey (register-based census).

Figure 5
UNECE countries by census method used in the 2010 round, and planned for the 2020 round

Census method in 2010 round:	Census method in 2020 round (tentative plans):				Total 2010 round:
	Traditional	Combined	Register-based	(No info)	
Traditional	Albania /a Armenia /a Azerbaijan /a Belarus /a Bosnia and Herz. Rep. of Moldova /a Bulgaria /a Croatia France (1) Hungary /a Ireland /a	Kazakhstan /a Kyrgyzstan Malta /a Portugal /a # Rep. of Moldova /a Russian Federation /a Serbia /a # Tajikistan /a The FYR of Macedonia/a United States (2)	Canada /f § Cyprus /f Czech Rep. /f Italy /s Luxembourg /f Montenegro /s Romania /f United Kingdom /f §	Georgia Greece Monaco San Marino Slovakia Turkmenistan	34
Combined	Liechtenstein /a	Germany /fs Israel /s Poland /s Switzerland /s	Estonia Latvia Lithuania Spain /e Turkey /e		10
Register-based			Austria Belgium /e Denmark Finland Iceland Netherlands /e Norway Slovenia Sweden		9
(No census)	Ukraine			Andorra Uzbekistan	(3)
Total 2020 round:	22	12	14	(8)	

Source: 2013 UNECE Survey on national census practices and 2015 UNECE Survey on CES Census Rec.

Notes (referring to census of 2020 round):

- /a Admin. data used to support field enumeration as frame or control
- #Possible use of administrative data for selected variables
- /f Combination of admin data with full field enumeration
- /s Combination of admin data with sample field enumeration
- /fs Combination of admin data with full and sample field enumeration
- §Administrative data used for selected variables
- /e Register-based census using data from existing sample survey(s)
- (1) Rolling census
- (2) Traditional enumeration with yearly updates

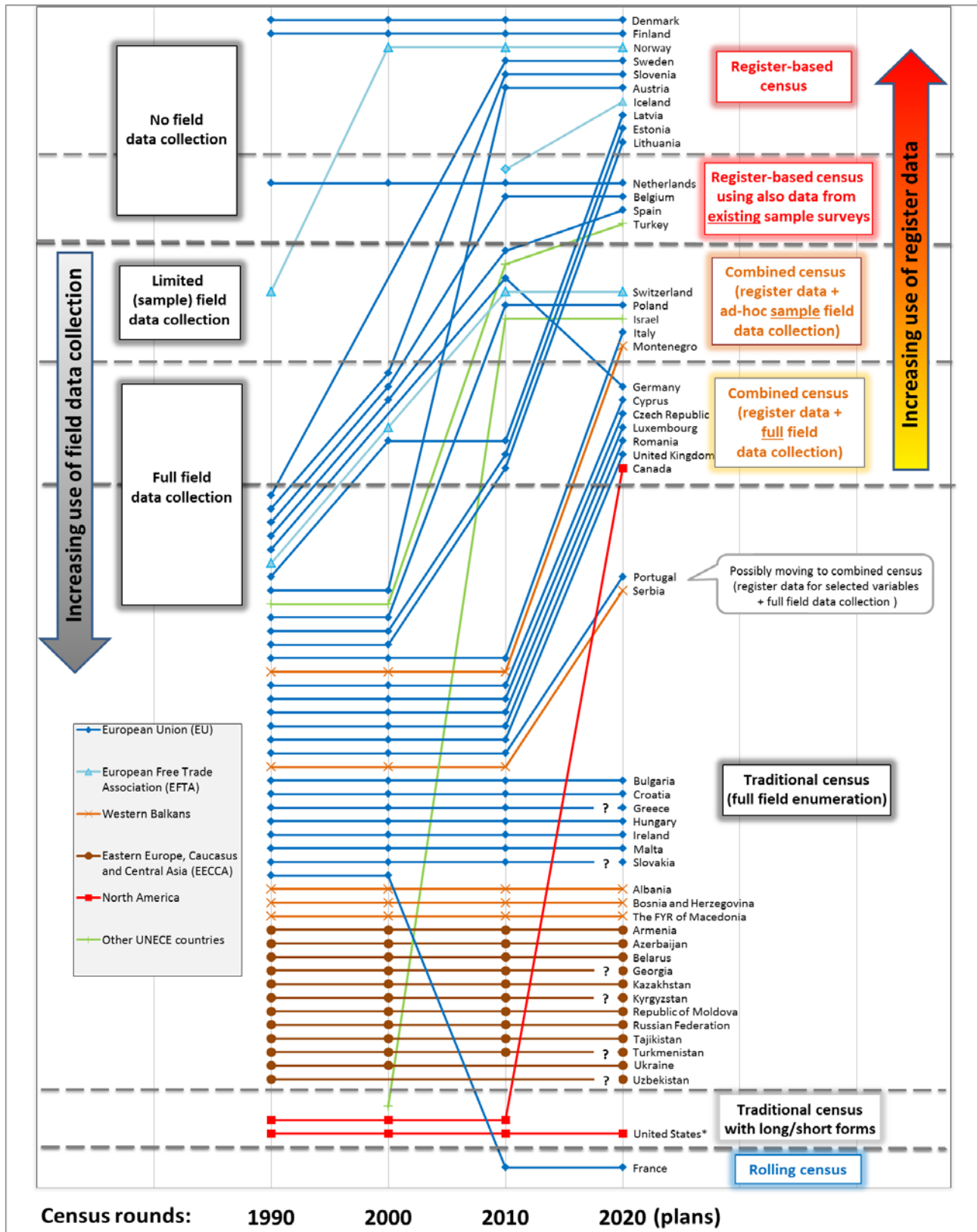
Countries that may change method between the 2010 and 2020 census rounds, if the plans will be confirmed.

18. If only EU and EFTA countries are considered, then the total number of countries planning to conduct in the 2020 round a combined or register-based census (22) is over three times higher than the number of countries planning to conduct a traditional census (7).

19. Figures 2 and 5 presented information on the census methods adopted by countries in two consecutive rounds, showing the countries that changed method between two censuses. It can be interesting to look at the same information with a longer perspective, to see how and when countries changed method over time. For this purpose, figure 6 presents the census methods used by UNECE countries in the last three census rounds (from 1990 to 2010) and those planned to be used in the next 2020 round. The categories of census methods in figure 6 are more detailed than those in figures 2 and 5, since separate categories are showed for combined censuses with full or with only sample field data collection, and for register-based censuses using data from existing sample surveys.

20. Figure 6 allows identifying some common “trajectories” followed by different countries. For instance, at the top of the figure it is possible to see the “early adopters” of the register-based census (from the 1990 or 2000 rounds), that are Denmark, Finland, Norway, and the Netherlands (in the second category, where data from existing sample survey are also used).

Figure 6
Census methods used by UNECE countries in the 1990-2020 census rounds (plans for the 2020 round)



Source: 2013 UNECE Survey on national census practices; 2015 UNECE Survey on CES Census Rec.; UNECE Census wiki.

21. The register-based census “club” was joined in the 2010 round by Belgium and Slovenia (after a traditional census in the 1990 round and a combined census in the 2000 round), Austria and Sweden (directly from a traditional census in the 2000 and 1990 round respectively), and Iceland (where no censuses were taken in the 1990-2000 rounds).

22. In the 2020 round, as already mentioned (para. 16), five more countries are planning to conduct for the first time a register-based census, after having conducted a combined census in the 2010 round: the three Baltic countries, Spain and Turkey.

23. Four countries that in the 2010 round conducted a combined census with sample field collection are planning to use the same method in the 2020 round (Germany, Israel, Poland, and Switzerland), but in Germany for selected variables there will be a full field collection.

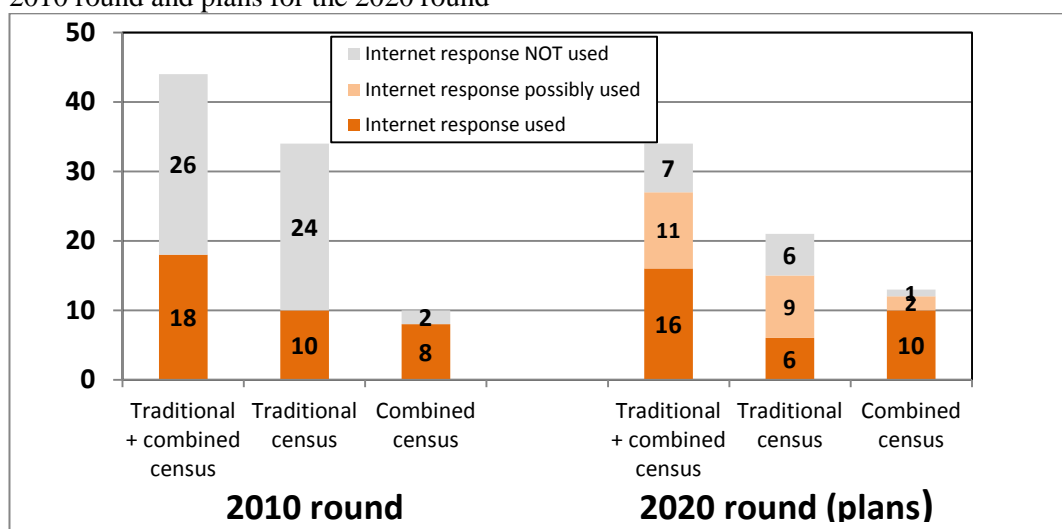
24. Eight countries are planning to move from a traditional census in the 2010 round to a combined census in the 2020 round, most of them adopting a full field collection as mentioned earlier (see para. 14).

25. At the bottom of figure 6, it can be noted that the United States is expected to be the only country that in the 2020 round will conduct a traditional census with long and short forms, after the move of Israel and Canada to a combined census in the 2010 and 2020 rounds respectively. It should be noted, however, that the 2020 US census is planned to use administrative data for a variety of applications in multiple operations, together with an advanced enumeration strategy for the short form (using internet, mail-out/mail-back, telephone, and field interviewing) and the American Community Survey to collect long form data and produce yearly updates of characteristics on a sample basis.

26. Finally, France will continue using in the 2020 round the rolling census (already adopted in the 2010 round) but will try to decrease the census cost mainly by using internet response, and more efficient tools to supervise the enumeration.

27. With regard to **census technology**, as part of the April 2015 UNECE consultation information was collected from countries on whether they are planning or not to use the internet response option. Clearly this information is relevant only for countries with some form or (full or sample) field data collection, and does not apply to countries with register based censuses. The results are presented in figure 7.

Figure 7
Number of UNECE countries using internet response, by census method
 2010 round and plans for the 2020 round



Source: 2013 UNECE Survey on census practices; 2015 UNECE Survey on CES Census Rec.

28. Out of the 34 UNECE countries planning to conduct a traditional or combined census in the 2020 round, 16 countries (47%) are planning to use internet response, and a further 11 countries (32%) may possibly use it, subject to the results of testing or other reasons. So, the percentage of those countries that will use internet response is expected to be between 47% and 79%. In any case it will be higher than in the 2010 round, when only 41% of the countries conducting a traditional or combined census (18 out of 44) used internet response.

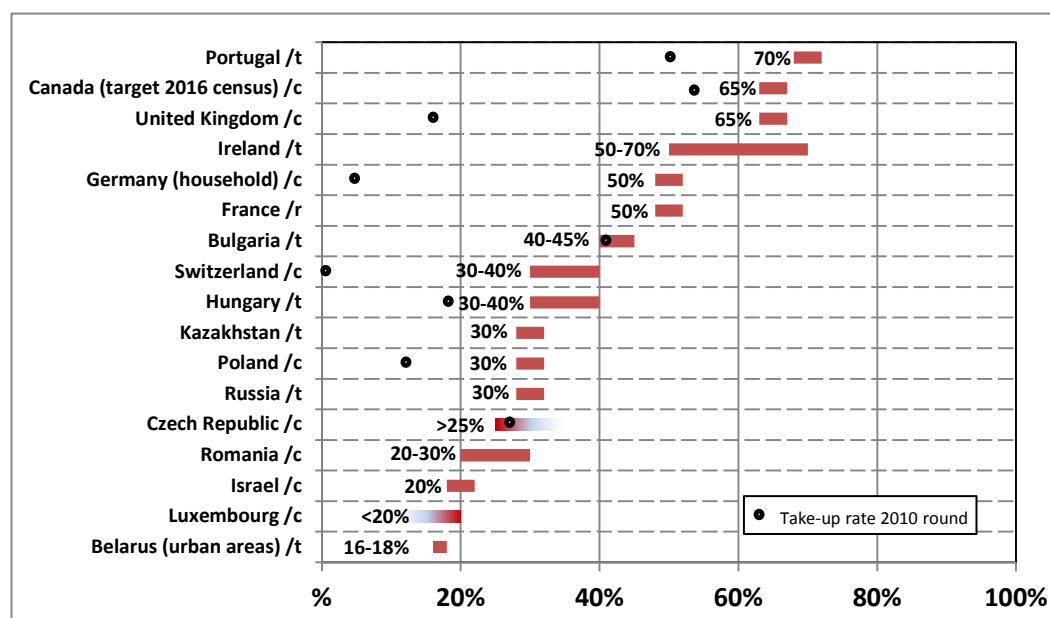
29. The large majority of countries with a combined census use internet response: they were 8 out of 10 countries in the 2010 round, and between 10 and 12 out of 13 in the 2020 round. Concerning the countries with a traditional census, in the 2010 round only 10 out of 24 (29%) used internet response. In the 2020 round, 6 countries out of 21 (29%) are planning to use it for sure, and further 9 countries (43%) may possibly use it. Only 6 countries (29%) are not planning to use internet response.

30. Not only an increasing proportion of countries, among those conducting some field data collection, plan to use the internet response option, but more and more often this is considered a primary data collection method, with the objectives to reduce costs and burden on respondents, and increase quality.

31. This is reflected in the assumptions by countries about the internet take-up rate (that is the proportion of respondents who will eventually provide census data on the internet) in the 2020 round census. These assumptions, collected as part of the 2015 UNECE consultation, are presented in figure 8.

32. Among the countries with highest assumptions about internet take-up in the 2020 round there are some countries that had already high take-up rates in the 2010 round (figure 3), and are expecting to build on that experience. It is the case of Portugal (50% in 2010, 70% in 2020), Canada (55% in 2010, 65% for the 2016 census), and Bulgaria (41% in 2010, 40-45% in 2020).

Figure 8
Assumptions about internet take-up rate, various UNECE countries, 2020 round



Source: 2015 UNECE Survey on CES Census Recommendations.

/t Traditional census

/c Combined census

/r Rolling census

33. Other countries had relatively low take-up rates in the 2010 round but are expecting to increase them substantially in the 2020 round. It is the case of the United Kingdom (from 16% to 65%), Germany (from 5% to 50%), and Switzerland (from 1% to 30-40%). Finally, there are some countries that are planning to use internet response for the first time in the 2020 round and expect very high take-up rates: Ireland (50-70%) and France (50%).

III. Demand for support by countries in view of the 2020 census round

34. As for previous census rounds, the UNECE, together with its international partners, will provide support to countries for planning their censuses of the 2020 round in compliance with the new CES Recommendations. In order to identify countries' needs and plan its future activities following a demand driven approach, in the 2015 consultation on the CES Recommendations information was collected from countries on what kind of support activities they would like UNECE to organize, and in which areas. The information collected is summarized in this section of the paper, divided in four broad areas: methodology, technology, operational aspects and information content (questionnaire design). The information is also presented by broad geographical areas, to identify possible needs that are common to countries in a specific UNECE sub-region.

A. Methodology

35. As shown in table 1, a large number of UNECE countries (at least 10), especially in the EU and South-East Europe (but including also Armenia and the Republic of Moldova) proposed activities related to the use of registers and administrative data for the census (in red in the table). This is clearly consistent with the information presented earlier on the increasing number of countries tentatively planning to use registers for the next census, as part of a combined or register-based census. Given the general strong demand for support in this field, it could be useful to promote some activities targeted to all UNECE countries.

36. Belgium and the Czech Republic also proposed activities with regard to small area estimation (in blue in the table) and sample surveys (in green).

Table 1. Activities proposed by countries to support the next census – Methodology

EU, EFTA:	
Belgium	Technical assistance on <u>small area estimation</u> would be helpful (estimates for occupation based on <u>sample surveys</u>)
Cyprus	Development of a <u>population register</u> (workshop, assistance, exchange of experiences)
Czech Republic	<u>Using administrative data sources</u> , <u>sample surveys</u> (estimation methods, dealing with non-response, <u>small area estimations</u>), big data (workshop)
Iceland	Fitting of <u>administrative data</u> to specific census definitions (workshop)
Latvia	Use of <u>administrative data</u> (workshop)
Lithuania	Use of <u>administrative sources</u> for census (workshop)
Luxembourg	Utilization of <u>administrative data for the census</u> (workshop)
Romania	Integrated system for managing collection of information from several sources (workshop)
South-East Europe:	
Albania	Exchange of experiences with other countries on traditional data collection (study visits)
Bosnia and Herzegovina	Support regarding methodological and organizational topics (workshop, assistance)
Montenegro	We would like to share experience from <u>register based countries</u> .
Serbia	Help on transition to <u>register-based census</u>
Eastern Europe, Caucasus and Central Asia (EECCA):	
Armenia	Methods for planning and conduction of <u>register based census</u> , and data processing (assistance)
Republic of Moldova	Study visits in a country with <u>census based on administrative/register data</u> totally or partial.

B. Technology

37. With regard to census technology (table 2) the subject that was indicated by most countries (8) for possible support activities is internet response (in red in the table). There seems to be demand for support on this technology in various countries of the European Union (Croatia, Cyprus, France), in Eastern Europe and Central Asia (Republic of Moldova, Russia and Tajikistan), but also in Israel and Serbia. Also in this case, the result is consistent with the fact that a large number of countries is planning to adopt this technology.

38. There is also demand for support on the use of GIS (in green), GPS and mobile devices (in blue), particularly from countries in Eastern Europe and Central Asia.

Table 2. Activities proposed by countries to support the next census – Technology

EU, EFTA, other UNECE:	
Croatia	Study visit to countries that used internet enumeration in 2011 census
Cyprus	Support to set up a system to conduct internet-based interviews
France	Exchanges on good practices to develop the internet response
Israel	Internet collection schemes Experience in use of cellphones as internet collection device
Malta	Use of GIS data to facilitate data collection in censuses
Romania	GPS use for recording the geographical coordinates of buildings
South-East Europe:	
Serbia	Help on internet response
EECCA:	
Azerbaijan	Technical equipment (assistance)
Kazakhstan	Use of IT and GIS (workshop)
Republic of Moldova	Support on technology. Study visits in a country with traditional census using internet response option.
Russia	Workshops on the subject of online census , including online census arrangements, data collection process, connection of datasets collected by various means.
Tajikistan	Software development for processing and compiling of pilot census data Training for the compilation of electronic questionnaires (online survey) (Estonia) Methodological and technical support for the preparation of electronic maps
Ukraine	Usage of electronic portable mobile devices in census to support data collection. Application of GIS technologies for census planning and execution and dissemination (workshop)

C. Operational aspects

39. With regard to operational aspects (table 3), many countries (7) proposed support activities to assess the quality of data from administrative sources, or more in general the quality of census data when they are produced using administrative sources, or with multiple sources (in red in the table). This demand is in addition to the demand for support on the *use* of administrative data in the census already mentioned (see section A. Methodology). The majority of the countries requesting support on this topic are located in the EU, but Belarus and the Republic of Moldova also indicated this topic.

40. Statistical disclosure control (SDC) methods and confidentiality were also indicated by various countries (in green), and publicity/information/communication (in blue), particularly in Eastern Europe.

Table 3. Activities proposed by countries to support the next census – Operational aspects

EU, EFTA:	
Bulgaria	Application of different statistical disclosure control methods (workshop)
France	Operational exchanges on how to control the quality of the data produced , especially when you produce so many cells each year as we do with Censuses
Ireland	Assistance on the proper conduct of a post-census coverage survey applying best methodology
Italy	Assessment of the quality of administrative sources for statistical purposes. Build a new framework focused on quality assessment through the use of multiple sources . Measurement of accuracy of the statistics produced from administrative sources, so that concepts such as bias and variance, which we use for survey data, can be applied.
Latvia	Evaluation of administrative data quality (workshop)
Malta	Statistical disclosure control of census data (particularly on pre-tabular methods); Use of post-enumeration surveys to treat non response in census data;
South-East Europe:	
Bosnia and Herzegovina	Support regarding Methodological and Organizational topics
EECCA:	
Armenia	Dissemination activities. Technical assistance to the testing activities (assistance)
Belarus	Possibility of holding population census together with agricultural census Publicity, information and advertising campaign (experience of other countries) Personal data processing and validation. Conducting post census research Quality assessment of population census and its results
Republic of Moldova	Quality management and assurance , field and other operational activities, communication
Ukraine	Ensuring confidentiality and protection of census information (workshop)

D. Information content

41. With regard to census information content (table 4), very few countries (5 in total) proposed some support activities. This depends probably by the fact that most countries are now focusing on the methodology, data sources, and technology for the next census, and are not yet looking in detail at the information content. Moreover, at the time of the survey, the new CES Recommendations specifying information content had not yet been adopted.

42. The topics on which most countries proposed activities are migration (3 countries, in red in the table) and disability (2 countries, in blue). It will be probably useful to review the need for support by countries on the information content at a later stage of the census cycle, when most countries will have decided about the methodology and data sources, and reviewed in detail the new recommendations.

Table 4. Activities proposed by countries to support the next census – Information content

EU, EFTA:	
Slovakia	Usual residence
South-East Europe:	
Albania	Preparation of the questionnaires and other forms Marital status, ethnic group affiliation, disability (workshop)
Montenegro	For items, economic activity, for grid statistics, migration statistics .
EECCA:	
Belarus	Relevance of the data collected (need to include questions on disability , religious affiliation)
Republic of Moldova	Migration
Tajikistan	Methodological support on migration statistics (especially labour)

IV. Conclusions

43. In the last three decades a clear trend was observed in the UNECE region, with an increasing number of countries moving away from the traditional census based on full field enumeration, and adopting alternative methods based on the use of register data, alone or in combination with limited data collection or existing sample surveys.

44. The information presented on plans by UNECE countries for the 2020 census round confirms that this trend will continue, particularly in the EU countries.

45. Although the large majority of countries in South-East Europe, Eastern Europe and Central Asia are still planning to conduct a traditional census in the 2020 round, there is increasing interest also in these regions in assessing the quality of administrative data, that could be used to support the field enumeration in the 2020 round, and possibly as data source for future censuses after the 2020 round.

46. The information presented also allows identifying a number of areas related to the census on which countries may need support in view of the 2020 round. They include:

- a. assessing of the *quality* of administrative sources in view of their possible use in the census;
- b. *uses* of administrative sources in a census, possibly in combination with field enumeration or results from existing sample surveys;
- c. small area estimation for countries using sample surveys for some variables;
- d. Internet response;
- e. GIS, GPS and use of mobile devices.

47. International activities promoted by UNECE and other partners to support countries in the preparations for the 2020 round should take into account as far as possible the demand by the countries.

48. As long as the new census cycle develops, it will be useful to review countries' needs at a later stage, in particular with regard to census information content and questionnaire design.