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Geographic characteristics

Geographic characteristics: Key results of the UNECE Survey on National Census Practices, and first proposals about the CES Recommendations for the 2020 census round

**Note by the UNECE Task Force on Population to be enumerated and
geographic characteristics**

Summary

In early 2013, UNECE conducted an online survey among its member countries on national practices in the 2010 round of population and housing censuses. This document presents an overview of the main results of the survey and some first proposals about the preparation of new Conference of European Statisticians (CES) Recommendations for the 2020 Round of Population and Housing Censuses, with regard to geographic characteristics.

I. Key results of the UNECE Survey on geographic characteristics

1. One of the distinguishing features of censuses of population and housing is the extent to which a comprehensive classification of geographic characteristics can be undertaken. Once the population basis has been determined, it is then possible to examine how this population is geographically distributed. The UNECE Survey thus included a number of questions to enquire into the extent of the geographic characteristics of each country's population.

A. Introduction

2. This report is based on the results from a survey launched by UNECE to analyse national practices during the 2010 round of population and housing censuses. Geographic characteristics are defined in chapter IV in the CES Recommendations for population and housing censuses.

3. There are two core topics in the CES Recommendations: "locality", and "location of place of work". The non-core topic "urban and rural areas" are related to "locality". The remaining non-core topics could, together with "location of place of work", be labelled commuting topics.

4. In total 51 member countries responded to the questionnaire. Some countries however, have not responded to all questions. Non response is reported for each topic.

5. In general, results are reported in accordance with the answers as given in the questionnaires. In a few cases data have been corrected for what seems to be obvious mistakes and inconsistencies; for instance when a country reports that a topic was not included, but information on definitions and classifications used is still provided. These corrections have not been verified by the countries in question, meaning that the results in this report should be regarded as provisional.

B. Comparability between countries

6. The main reason for establishing the CES Recommendations on population and housing censuses is to facilitate international comparison. In this respect, geographic characteristics are among the more difficult topics. When it comes to geography, the UNECE countries are indeed very different in size and population distribution. Regional divisions and subdivisions, even if formally on the same level, may vary substantially in size between countries. As a consequence, definitions and classifications for geographic characteristics should not be too specific. For some topics the CES Recommendations just state that the smallest possible civil division should be used. For the topic "locality", three different definitions of population clusters are given. Therefore, even when countries apply definitions and classifications in compliance with the CES Recommendations, statistics produced may in fact be less comparable between countries.

C. Main results

1. Locality (derived core topic)

7. The definition of locality in the CES Recommendations (paragraphs 181–182) is the following: "For census purposes, a locality is defined as a distinct population cluster, that

is, the area defined by population living in neighbouring or contiguous buildings. Such buildings may either:

- (a) Form a continuous built up area with a clearly recognizable street formation; or
- (b) Though not part of such a built up area, comprise a group of buildings to which a locally recognized place name is uniquely attached; or
- (c) Though not coming within either of the above two requirements constitute a group of buildings, none of which is separated from its nearest neighbour by more than 200 metres.”

8. Of the 49 countries that responded (Israel and Kyrgyzstan did not do so), only nine reported that they were not able to produce data on locality of usual residence as defined (table 1). None of these were register-based censuses, suggesting perhaps that it is generally the case that data taken from registers are geographically well defined. Of the nine, only Liechtenstein offered a reason for not doing so (disclosure control) and noted that the smallest geographical unit for which census data is made available is the commune (see below). Seven of the others are geographically located in Eastern and South Eastern Europe. Although Malta also reported no such data produced, it noted in its response that information on enumeration areas (group of streets) could be produced but that such areas would not comply with any of the CES Recommendations criteria for defining localities as such. In this they would join seven other countries.

Table 1

Locality, definitions*

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	49	9	9	31	30	19
No data about locality	18	9	0	2	7	2	7
Data about locality produced	82	40	9	7	24	28	12
Data about locality based on CES definition	61	30	9	4	17	21	9
a) A continuous built-up area with a clearly recognizable street formation	14	7	1	0	6	3	4
b) A group of buildings to which a locally recognized place name is uniquely attached	20	10	1	3	6	6	4
c) A group of buildings, none of which is separated from its nearest neighbour by more than 200 metres	27	13	7	1	5	12	1
Data about locality based on definition different from those listed in the CES Recommendations	16	8	0	3	5	6	2
Definition not specified	4	2	0	0	2	1	1

* Non-response: two countries

9. More countries (13) adopted criterion (c) above, including seven of the nine register-based countries, and the majority of these (12) were countries in the European Economic Area (EEA). Some 10 other countries adopted criterion (b) and seven adopted criterion (a). Iceland and Ireland both reported adopting each of three of the criteria for different circumstances.

10. Of the eight countries that applied a different definition from those listed in the CES Recommendations, seven reported the reasons for doing so that reflected either legislative impositions or the need for comparability with other data sources and previous censuses (table 2). It is, perhaps, comforting to note that none did so because of ignorance of the CES recommended definitions.

11. Of the 40 countries that reported producing data on locality of usual residence, all are able to classify the population by size of locality according to the CES Recommendations classification (paragraph 187). Even Israel, who had not responded to the enquiry about whether or not information on locality was provided, reported that localities with less than 2,000 inhabitants were classified as rural (see below) but were not then subdivided by size. This suggests that the country did, in fact, provide at least some data on localities according to CES Recommendations.

Table 2

Reasons for using definition different from CES definition *

	<i>Total</i>	<i>Census methodology</i>			<i>Region</i>	
		<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total number of countries	7	0	3	4	5	2
The definition used was imposed by legislation	4	0	1	3	1	3
The definition used reflected requirements and/or needs of some of the main users	4	0	3	1	3	1
The definition used allowed better statistical comparability with previous censuses	5	0	2	3	3	2
The definition used was consistent with other statistical surveys	3	0	0	3	1	2
The definition used was the only one available in the register used	1	0	1	0	1	0
The CES recommended definitions were not known	0	0	0	0	0	0
Other reason	1	0	1	0	1	0

* Non-response: one country

2. Urban and rural areas (derived non-core topic)

12. The CES Recommendations give the following definition (paragraph 189): “For national purposes, as well as for international comparability, the most appropriate unit for distinguishing urban and rural areas is locality as defined in paragraphs 181–182. However, it is left to countries to decide whether to use the locality or the smallest civil division as the unit of classification.”

13. The great majority of countries (46 out of 50) reported that they did produce data for areas classified as either “urban” or “rural”.

14. All four countries that did not report adopting an urban/rural classification of areas are in EEA (Germany, Luxembourg, the Netherlands and Liechtenstein), but there is no European Union (EU) regulatory requirement for them to do so. Because of general nature of the country’s terrain, Liechtenstein classifies all the units of its smallest geography as “rural” regardless of size.

15. Among countries producing data on rural and urban areas, 21 use the locality as the basis of the classification (table 3). This classification is more prevalent among countries conducting register-based censuses, with 7 out of 8 that did so, compared with just 12 out of 31 countries with traditional censuses. Another 15 countries (12 of which conduct traditional censuses), use the smallest administrative unit as the basis of their classification.

16. Although seven countries reported that they use other geographies as the basis of their classifications, the comments provided in the survey suggests that: Turkey in fact uses localities but defines “urban” on the basis of a population of more than 20,000; and that for four of the other countries the classification was based on administrative territorial divisions. The United Kingdom bases its classification on its census-specific output area (OA) geography, creating urban areas from contiguous “urban” OAs.

Table 3

Urban and rural areas, definition*

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	50	9	9	32	29	21
No data on urban and rural areas	8	4	1	2	1	4	0
Data on urban and rural areas	92	46	8	7	31	25	21
Classification by locality	42	21	7	2	12	17	4
Classification by smallest administrative unit	30	15	1	2	12	5	10
Another classification unit	14	7	0	3	4	3	4
Classification not specified	6	3	0	0	3	0	3

* Non-response: one country

17. In total, 15 out of 47 responding countries used a population threshold to distinguish urban and rural areas (table 4). Among these 12 were EEA countries. More than half of these (nine) conducted either register-based or combined censuses.

18. The CES recommended (paragraph 190) that 2,000 should be the threshold, and several countries such as Austria, Greece and Israel reported that this was indeed the case. But elsewhere thresholds ranged from as low as 200 in smaller countries such as Iceland and Norway, to as high as 10,000 in the United Kingdom, and even 20,000 in Turkey.

19. Only two (but very much contrasting) countries used a threshold determined by population density (Malta and the United States). However, the United States, in fact, uses a combination of population size and density thresholds to classify types of urban areas but determines rural areas on the basis of a population threshold of 2,500.

20. More than half of the countries (24 in total) used criteria based on legal acts. Almost all of these (22) conducted traditional censuses, and most of these are geographically situated in the eastern or eastern central part of the UNECE region.

21. Six countries reported that they used other criteria, but elements of a population threshold were adopted by three of them.

22. Reflecting the fact that the classification of areas into urban and rural categories is not a core topic of the CES Recommendations, it is not surprising perhaps that there is little possibility for any degree of comparability in their definition across the region.

Table 4

Criteria used to distinguish urban and rural areas*

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	47	8	8	31	26	21
Population size	32	15	6	3	6	12	3
Population density	4	2	0	0	2	1	1
Legal act	51	24	0	4	20	9	15
Other	13	6	2	1	3	4	2

* Question answered by 46 countries producing data on rural and urban areas and 1 country with non-response in table 3.

3. Location of place of work (core topic)

23. The definition of location of place of work is the following (paragraph 196): “The location of place of work is the precise location in which a ‘currently employed’ persons performs his/her job and where a ‘usually employed’ person currently performs or last performed the job. The location should be coded to the smallest possible civil division.”

24. Most countries (47 out of 51) collected data on location of place of work. Two EEA countries (the Czech Republic and Iceland) and two non-EEA countries (Armenia and Georgia) did not do so (table 5).

25. Half the countries that did so (24) applied a definition based on actual place in which the employed person performed his/her job during census week. Among these countries, 14 used this definition only. This definition was less often adopted in countries conducting register-based censuses (only two out of nine) than in countries with traditional or combined censuses.

26. Slightly more countries (26), including seven of the register-based countries, applied a definition based on the address of the local unit for which the employed person was working during census week. But fewer countries used only this definition (10).

27. Some 18 countries applied a definition based on the headquarters to which the employed persons usually report (for mobile workers). But this definition only refers to that small proportion of the labour force whose workplace is not fixed and was therefore only was adopted in combination with one or more of the other definitions. Indeed many countries (19) reported that they adopted more than one definition (reflecting the different circumstances of some workers), and five countries — Denmark, Montenegro, Serbia, Spain and Sweden — adopted all three.

Table 5
Location of place of work, definitions

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	51	9	10	32	30	21
No data on location of place of work	8	4	1	0	3	2	2
Data on location of place of work collected	92	47	8	10	29	28	19
Definitions applied							
The actual place in which the employed person performed his/her job during census week	47	24	2	5	17	13	11
The address of the local unit for which the employed person was working during the census week	51	26	7	6	13	17	9
The depot or headquarters to which the employed person usually reports (i.e. for drivers, delivery workers, and other outdoor workers)	35	18	4	3	11	12	6
Other definition(s)	10	5	1	2	2	3	2

28. A handful of countries (five) applied other definitions. Two of these countries, Poland and Spain, however, used one or more of the listed definitions as well. Canada used actual place of work in the week before census, which is quite close to the listed definition number one. Slovenia used the address of business or local unit in the business register, which seems to be quite close to the listed second definition. In summary, all countries, possibly with one exception, applied at least one of the listed definitions based on actual place of work or address of local unit or a definition very similar to one of those.

29. For some groups of employed persons it may be difficult to define the location of place of work, and in such cases specific criteria may have to be applied. Table 6 identifies such groups.

30. Four fifths of all countries adopted different criteria to identify persons whose place of work may be more difficult to define. The group most frequently reported (by more than half of the countries) is persons with no fixed place of work. Similarly, persons with more than one workplace may also require special rules to determine a single place of work — and 20 countries reported that they did so.

31. Countries identified workers such as sailors, fishermen, offshore workers and persons with unknown employers as presenting particular difficulties. In some countries, mobile workers and persons with no fixed place of work are considered to work from/at home. In many countries, for people working abroad only country of workplace is generally collected, since area of workplace is not a relevant geographic statistic.

Table 6
Criteria for specific groups of employed persons

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	47	8	10	29	28	19
No criteria applied	4	2	0	0	2	0	2
Not applicable	13	6	1	0	5	2	4
Criteria applied for the following groups	83	39	7	10	22	26	13
Persons with no fixed place of work	55	26	4	6	16	18	8
Persons with several work places during census week	43	20	1	6	13	12	8
Persons with more than one job during census week	40	19	4	3	12	13	6
Persons working at home for some or all of the days during census week	34	16	1	2	13	10	6
Persons working abroad	43	20	3	4	13	10	10
Other	9	4	1	1	2	2	2

32. According to the CES Recommendations, data on place of work should be coded to the smallest possible civil division. Data may be collected directly on this level or collected on a lower level with the possibility to be coded to smallest civil division.

33. Precise addresses or coordinates is the lowest geographical level possible for data collection and this, of course, provides for the most flexible data. Some 15 countries collected data at this level (table 7). This is the most common level for countries with a register-based census but is used by only five countries adopting a traditional approach. Among the latter, the LAU2 is more commonly used as the lowest geographic level for data collection. Census blocks were reported as the lowest level by two countries only (Azerbaijan and Kyrgyzstan). Square kilometre grids have been used only by Ireland.

34. Six countries reported that their lowest level geography for workplace data was higher than the LAU2, but the accuracy of reporting here is questionable, since the Russian Federation reported such data at the “locality” level and the former Yugoslav Republic of Macedonia at the “settlement” level.

35. Other lowest geographies that were reported by countries included the settlement (by Bosnia and Herzegovina and Serbia) the locality (by Greece) and the postcode (by the United Kingdom).

36. Based on detailed information reported by countries with “administrative units on a higher level” and “other level”, the total proportion of countries where data have been collected at the level of the commune or lower can be estimated to be at least four fifths.

Table 7
Place of work, lowest geographical level that the data is collected*

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	46	8	10	28	28	18
Precise address or coordinates	33	15	6	4	5	9	6
Census block (area bounded on all sides by streets, roads, streams, railroad tracks, etc.)	4	2	0	0	2	0	2
1 Km ² grid	2	1	0	0	1	1	0
Local administrative unit (LAU2) (communes)	33	15	1	5	9	12	3
Administrative units on a higher geographical level	13	6	0	0	6	2	4
Other	15	7	1	1	5	4	3

* Non-response: one country

4. Location of school, college or university (non-core topic)

37. The CES Recommendations do not give a precise definition of this topic, suggesting only that, for comparability with area of workplace, data should be coded to the smallest possible civil division (paragraphs 198).

38. Less than half the countries in the UNECE region (22) included this non-core topic (table 8). The coverage rate is almost the same for register-based, combined and traditional censuses.

Table 8
Location of school, college or university, key figures

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	51	9	10	32	30	21
Topic included	43	22	4	4	14	16	6
Definition fully compliant with CES Recommendations	39	20	4	2	14	14	6
Classification fully compliant with CES Recommendations	27	14	3	2	9	8	6
Main data source used							
Full enumeration	27	14	0	1	13	9	5
Sample data	6	3	0	2	1	2	1
Registers/administrative records	10	5	4	1	0	5	0
Other	0	0	0	0	0	0	0

5. Mode of transport to work and to school, college or university (Non-core topics)

39. According to the CES Recommendations “mode of transport to work/school”, relates to the daily journey made (paragraphs 199 and 201). The recommended classifications have four groups on the one-digit level and a further subdivision on the two-digit level.

40. In respect of transport to work this topic was included by 22 countries (table 9); more than half of all countries with a traditional or combined census included this topic, but none of the register-based censuses did so. And those countries with a combined census that included this topic collected the information from either full enumeration or sample data. This clearly shows that ‘mode of transport’ is not a topic that can be readily retrieved from registers.

41. Less than half of the countries that included this topic applied a classification that was in full compliance with the CES Recommendations. From the comments given it is clear that most deviations are on the two-digit level. However, some countries also have a different classification on the one-digit level, for instance by grouping together all kinds of public transportation.

Table 9

Mode of transport to work, key figures

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	51	9	10	32	30	21
Topic included	43	22	0	5	17	13	9
Definition fully compliant with CES Recommendations	37	19	0	2	17	11	8
Classification fully compliant with CES Recommendations	20	10	0	0	10	4	6
Main data source used							
Full enumeration	27	14	0	1	13	9	5
Sample data	16	8	0	4	4	4	4
Registers/administrative records	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0

42. Fewer countries (only 16) included the topic with respect to transport to school, college or university (table 10) and for less than half of these is the classification fully compliant with the CES Recommendations, and most countries use the same classification as for “mode of transport to work”.

Table 10
Mode of transport to school, college or university, key figures

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	51	9	10	32	30	21
Topic included	31	16	0	3	13	10	6
Definition fully compliant with CES Recommendations	25	13	0	0	13	8	5
Classification fully compliant with CES Recommendations	14	7	0	0	7	3	4
Main data source used							
Full enumeration	25	13	0	1	12	8	5
Sample data	6	3	0	2	1	2	1
Registers/administrative records	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0

6. Distance travelled to work/to school, college or university (non-core topics)

43. According to the CES Recommendations, these topics should refer to travelling on a daily basis and that consideration should be given to the address from which the journey commenced (paragraphs 202–203).

44. With regard to distance travelled to work, the topic was included by seven countries only, four with traditional censuses, two with combined censuses and one country with a register-based census (Belgium) (table 11). Unlike “mode of transport”, distance to work can be derived from register-based information. A possible method is to estimate the distance by using the coordinates of the place of residence and the place of work. Indeed, Belgium reported using Euclidean geometry to compute this.

Table 11
Distance travelled to work, key figures

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	51	9	10	32	30	21
Topic included	14	7	1	2	4	4	3
Definition fully compliant with CES Recommendations	12	6	0	2	4	3	3
Classification fully compliant with CES Recommendations	10	5	0	1	4	2	3
Main data source used							
Full enumeration	6	3	0	0	3	2	1
Sample data	6	3	0	2	1	1	2
Registers/administrative records	2	1	1	0	0	1	0
Other	0	0	0	0	0	0	0

45. Only six countries included this topic with regard to distance travelled to place of education (table 12), five of whom collected information on both journeys.

Table 12

Distance travelled to school, college or university key figures

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	51	9	10	32	30	21
Topic included	12	6	1	2	3	3	3
Definition fully compliant with CES Recommendations	6	3	0	1	2	1	2
Classification fully compliant with CES Recommendations	6	3	0	1	2	1	2
Main data source used							
Full enumeration	6	3	0	0	3	2	1
Sample data	2	1	0	1	0	0	1
Registers/administrative records	2	1	1	0	0	1	0
Other	0	0	0	0	0	0	0

7. Time taken for the travel to work/to school, college or university (non-core topics)

46. These topics are a supplement to distance travelled, but clearly is one where information can only be collected from an enumeration or survey. Surprisingly perhaps, 14 countries included this topic with respect to the journey to work (more than double the number that collected information on distance travelled) (table 13). All but three of these countries applied a definition in full compliance with the CES Recommendations.

Table 13

Time taken for travel to work, key figures

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EEA countries</i>	<i>Non-EEA countries</i>
Total	100	51	9	10	32	30	21
Topic included	27	14	0	4	10	9	5
Definition fully compliant with CES Recommendations	22	11	0	2	9	7	4
Classification fully compliant with CES Recommendations	12	6	0	1	5	2	4
Main data source used							
Full enumeration	16	8	0	1	7	6	2
Sample data	12	6	0	3	3	3	3
Registers/administrative records	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0

47. Some 12 countries collected information on time taken to travel to place of education (table 14), and all of these collected information on both journeys.

Table 14

Time taken for travel to school, college or university, key figures

	<i>Total</i>		<i>Census methodology</i>			<i>Region</i>	
	<i>Per cent</i>	<i>Number</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>EU countries</i>	<i>Non-EU countries</i>
Total	100	51	9	8	34	27	24
Topic included	24	12	0	3	9	8	4
Definition fully compliant with CES Recommendations	16	8	0	1	7	6	2
Classification fully compliant with CES Recommendations	8	4	0	1	3	2	2
Main data source used							
Full enumeration	18	9	0	1	8	6	3
Sample data	6	3	0	2	1	2	1
Registers/administrative records	0	0	0	0	0	0	0
Other, unspecified	0	0	0	0	0	0	0

D. Compliance with the CES Recommendations

48. An important goal for the UNECE survey is to identify differences between countries that have applied different census methodology. In this section some of the findings are summarized.

49. In table 15 A and B those countries (among the 51) that have not responded to questions about a topic/a definition/a classification are regarded not to have included this topic or not to have a definition/classification in compliance with the CES Recommendations.

Table 15 A
Geographic characteristics, topics included, definitions and classifications (number of countries)

	<i>Topic included</i>				<i>Full compliance, definition</i>				<i>Full compliance, classification</i>			
	<i>Total</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>Total</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>Total</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>
Total number of countries	51	9	10	32	51	9	10	32	51	9	10	32
Locality	40	9	7	24	30	9	4	17	40	9	7	24
Location of place of work	47	8	10	29	36	7	7	22				
Urban and rural areas	46	8	7	31	36	8	4	24				
Location of school, college or university	22	4	4	14	20	4	2	14	14	3	2	8
Mode of transport to work	22	0	5	17	19	0	2	17	10	0	0	10
Mode of transport to school, college or university	16	0	3	13	13	0	0	13	7	0	0	7
Distance travelled to work	7	1	2	4	6	0	2	4	5	0	1	4
Time taken for travel to work	14	0	4	10	11	0	2	9	6	0	1	5
Distance travelled to school, college or university	6	1	2	3	3	0	1	2	3	0	1	2
Time taken to travel to school, college or university	12	0	3	9	8	0	1	7	4	0	1	3

Table 15 B
Geographic characteristics, topics included, definitions and classifications (per cent)

	<i>Topic included</i>				<i>Full compliance, definition</i>				<i>Full compliance, classification</i>			
	<i>Total</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>Total</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>	<i>Total</i>	<i>Register-based</i>	<i>Combined</i>	<i>Traditional and rolling</i>
Locality	78	100	70	75	59	100	40	53	78	100	70	75
Location of place of work	92	89	100	91	71	78	70	69				
Urban and rural areas	90	89	70	97	71	89	40	75				
Location of school, college or university	43	44	40	44	39	44	20	44	27	33	20	28
Mode of transport to work	43	0	50	53	37	0	20	53	20	0	0	31
Mode of transport to school, college or university	31	0	30	41	25	0	0	41	14	0	0	22
Distance travelled to work	14	11	20	13	12	0	20	13	10	0	10	13
Time taken for travel to work	27	0	40	31	22	0	20	28	12	0	10	16
Distance travelled to school, college or university	12	11	20	9	6	0	10	6	6	0	10	6
Time taken to travel to school, college or university	24	0	30	28	16	0	10	22	8	0	10	9

1. Core topics

Locality

50. Locality is defined as a distinct population cluster and three different types of clusters are listed in the CES Recommendation. 40 out of 51 countries (78 per cent) have included this topic. The coverage rate in the 2000 census round was 73 per cent.¹

51. All countries with register-based censuses included the topic. For countries with traditional censuses the coverage rate was 75 per cent, for countries with combined censuses it was 70 per cent.

52. Countries are regarded to have fully complied with the CES Recommendations when one of the three listed definitions is used. Some 30 countries, 59 per cent, met this criterion. This is an improvement from the 2000 census round where the corresponding figure was only 39 per cent.

53. The coverage rate for register-based censuses was 100 per cent, for traditional censuses 53 per cent, but for combined censuses 40 per cent only. However, from the comments given it is clear that several countries have applied a definition quite close to those listed, for instance by combining elements from two of the definitions. If using the main CES recommended definition in paragraph 181 only, and thereby accepting other types of clusters than listed in paragraph 182, more than these 30 countries could be regarded as having used a definition in compliance with the recommendation.

54. The recommended classification is by size of location. Hence, it is possible to comply with this classification without fully complying with the definition. All 40 countries that included this topic were in full compliance with the classification.

Location of place of work

55. This topic was included by 92 per cent of all countries as compared to 73 per cent in the 2000 round. The coverage rate was 100 per cent for combined censuses and approximately 90 per cent for traditional and register-based censuses.

56. According to the definition, location of place of work should be coded to the smallest possible civil division. Definitions are regarded to be in compliance with the CES recommendation if data are collected for precise address or coordinates, census blocks, one kilometre square grids, or communes (LAU2), in total 33 countries. For countries that have answered "other", the compliance has been estimated from the specifications given and three more countries have been added. In total, 71 per cent of all countries applied definitions in compliance with the CES Recommendations. The coverage rate was highest for combined censuses and lowest for traditional censuses.

57. No specific classification is recommended for this topic.

2. Non-core topics

Urban and rural areas

58. This topic was included by 90 per cent of all countries, 46 out of 51. The coverage rate in the 2000 round was 82 per cent. In 2010 the coverage rate is lowest for countries with a combined census.

¹ UNECE (2008): Measuring Population and Housing. Practices of UNECE countries in the 2000 round of censuses. United Nations, Geneva.

59. According to the CES Recommendations, the most appropriate unit of classification is “locality”, but classification by smallest civil division is also acceptable. Countries that have used one of these criteria are regarded to have a definition in compliance with the recommendations. In total, 71 per cent of all countries applied a definition complying with the recommendations, and 42 per cent applied the preferred criterion based on location. In the 2000 round of censuses, 64 per cent of all countries applied a definition in compliance with the CES Recommendations, but only 25 per cent used the criterion based on location. There has clearly been a shift towards using location instead of smallest civil division as the criterion for distinguishing urban and rural areas.

60. In 2010, the coverage rate was highest for countries with a register-based census and lowest for countries with a combined census. Furthermore, most countries with a register-based census applied the locality criterion, while this is the case for about half of the countries conducting traditional or combined censuses.

Commuting topics

(a) *Location of school, college or university* was included by 43 per cent of all countries and the coverage rate is much lower than for the core topic “location of place of work”. The coverage rate is more or less independent of census methodology.

(b) *Mode of transport to work* was included by 43 per cent of countries, the same percentage as in the 2000 round. None of the countries with a register-based census included this topic, showing clearly that this kind of information cannot be retrieved from registers. The rate for full compliance for classification is rather low. However, comments given indicate that more countries have used a classification in compliance with the recommendations on a one-digit level.

(c) *Mode of transport to school, college or university* was included by 31 per cent of countries.

(d) *Distance travelled to work/school, college or university* is included by very few countries, 14 and 12 per cent respectively. These are the lowest coverage rates for geographic characteristics.

(e) *Time taken for travel to work/school, college or university* was included by 27 and 24 per cent of countries respectively. The coverage rates are somewhat higher than for distance travelled. None of the countries with a register-based census included this topic.

II. Some Proposals for the Revision of the CES Recommendations on Geographic Characteristics

61. The proposals in this section are partly based on the results of the UNECE survey on national practices in the 2010 census round (section I). Some paragraphs are marked as “Points for discussion”. These are proposals of great interest, but it has not been possible for the task force, partly due to time constraints, to formulate recommended proposals.

A. Locality (derived core topic)

62. As noted in paragraph 1 (section I), the definition of locality in the CES Recommendations (paragraphs 181–182) is quite broad. In fact, there are three possible definitions of population clusters:

(a) A continuous built up area with a clearly recognizable street formation

(b) A group of buildings to which a locally recognized place name is uniquely attached; or

(c) A group of buildings, none of which is separated from its nearest neighbour by more than 200 metres.

63. Especially definition b), introducing “a locally recognized place name” may cause differences in interpretation among countries. For international comparisons a more unified definition would be advantageous.

64. However, in the 2010 round all three recommended definitions, as well as some others, were used by a number of countries. Hence, recommending a more unified definition does not seem to be realistic.

B. Urban and rural areas (derived non-core topic)

1. Classification of topic — point for discussion

65. According to the current recommendations, this is a non-core topic. However, the topic is frequently used for international comparisons, also by the United Nations, and it may be considered to include it as a core topic in the 2020 recommendations. This question is, at least partly, related to the decision on definition of urban and rural areas, see B 2.

Note: ILO agrees with the proposal to make the “Urban /rural classification” a core-topic

2. Definition

66. As noted in paragraph 12 (section I) the CES Recommendations (paragraph 189) state that the most appropriate unit for distinguishing urban and rural areas is locality. However, it is left to countries to decide whether to use the locality or the smallest civil division as the unit of classification.

67. Comparability between countries would be improved if locality was the only recommended unit for classification. However, the survey on the 2010 round national practices shows that some countries are not able to identify locality in their censuses. Such countries should nevertheless attempt to classify the lowest level of geography into urban or rural areas. The survey shows that more countries are using a classification by locality in the 2010 round than in the previous round, but still more than half of the countries use other classifications. Furthermore, since locality according to paragraph 182 could be defined in different ways, even comparisons between countries using classification by locality may be difficult.

68. Based on these facts, the task force cannot see that proposing a definition based on locality only is realistic.

Points for discussion

69. The European Union (EU) has recently developed a new classification by degree of urbanization². The principles behind this method could also be used to distinguish urban and rural areas.

² For more information on the EU classification, see:

http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Revision_of_the_degree_of_urbanisation and

http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Revision_of_the_degree_of_urbanisation

70. The EU classification is based on population grids with a resolution of 1 km². Some countries have created population grids based on population registers or other detailed sources (bottom-up method). In countries which do not have such data, disaggregation grids are used (top-down method). The top-down method typically disaggregates local administrative unit 2 (LAU2) population data according to land use or land cover information.

71. The method defines urban clusters as contiguous grid cells of 1 km² with a density of at least 300 inhabitants per km² and a minimum population of 5,000. Urban centres (high density clusters) are defined as contiguous grid cells of 1 km² with a density of at least 1,500 inhabitants per km² and a minimum population of 50,000. Grid cells outside urban clusters are defined as rural areas.

72. The EU classification of LAU2s by degree of urbanisation is as follows:

- (a) Densely populated area: At least half of the population lives in urban centres.
- (b) Intermediate density area: Less than half of the population lives in rural areas and less than half in urban centres.
- (c) Thinly populated area: More than half of the population lives in rural areas.

73. Applying these principles for the CES Recommendations, urban areas could be defined as densely populated and intermediate density areas. Rural areas could be defined as thinly populated areas. The density threshold for defining urban clusters (300 inhabitants per km²) may need to be adjusted according to national conditions.

74. There are different options for using these principles in the CES Recommendations:

- (a) Integrate the principles in the current definition of urban/rural areas.
- (b) Replace the current definition of urban/rural areas.
- (c) Introduce an additional topic "Degree of urbanization".

75. The current definition of urban rural areas is rather complex. Adding a new option for classification units (urban cluster) will make the definition even more complex and thereby possibly causing problems for international comparisons.

76. Replacing the current definition with a new one based on the EU principles probably requires that the new definition is feasible for all or at least the great majority of UNECE countries.

77. Adding "Degree of urbanization" as a new topic would give the possibility to introduce the three-way classification as used by EU (densely populated area, intermediate density area, thinly populated area). It will also be possible to further classify densely populated areas by the size of their urban centre. However, including both the current topic "Urban and rural areas" and a new topic "Degree of urbanization" based on different principles, may be regarded as redundant and may even cause confusion.

3. Classification — points for discussion

78. In paragraph 193 it is recommended that localities or similar units be grouped into the following five categories:

- (1.0) Less than 2,000 inhabitants.
- (2.0) 2,000 to 9,999 inhabitants.
- (3.0) 10,000 to 99,999 inhabitants.
- (4.0) 100,000 to 999,000 inhabitants.

- (5.0) 1,000,000 or more inhabitants.
79. Category (3.0) is wide and the task force proposes to split it in two categories:
- (a) 10,000 to 49,999 inhabitants.
 - (b) 50,000 to 99,999 inhabitants.
80. Category 4.0 is also wide. In many National Travel Surveys the threshold to distinguish between small and large cities is 250 000 inhabitants. Following this principle, the new categories could be:
- (a) 100,000 to 249,999 inhabitants.
 - (b) 250,000 to 999,999 inhabitants.
81. An alternative is to follow the classification for localities:
- (a) 100,000 to 199,999 inhabitants.
 - (b) 200,000 to 999,999 inhabitants.

C. Location of place of work (core topic)

82. As noted in paragraph 23 (section I) the CES Recommendations define location of place of work as the precise location in which an employed person performs his/her job. The location should be coded to the smallest possible civil division (paragraph 196).

83. For this topic no specific classification is recommended. Since this is a core topic, the task force proposes to consider recommending an output classification based on smallest civil division/lowest output geography.

84. According to the current recommendations information on location of place of work should be collected for all employed persons. In fact, some people do not have a fixed place of work. For persons who report to a fixed address at the beginning of the work period, it is recommended to provide information on this address (paragraph 197). This seems reasonable for persons returning to the same address at the end of the day, for instance bus drivers, but less reasonable for other groups of employed persons, for instance sailors, fishermen, offshore workers etc. The task force proposes to include a category “no fixed place of work”. For people belonging to this category, location of place of work should not be reported.

85. Coding location to the smallest civil division seems appropriate for people working in the reporting country. For people working abroad the task force proposes that a classification by country of workplace is sufficient.

86. In paragraph 197 it is stated that the main reason for collecting data on location of place of work is to link it with usual place of residence in order to shed light on commuter flows. On this background, the proposal for a classification is as follows:

- (1.0) Same (lowest level) area as place of residence:
 - (1.1) Working at home.
 - (1.2) Working elsewhere within the same (lowest level) area of residence.
- (2.0) Neighbouring (lowest level) area within higher level area.
- (3.0) Other (lowest level) area within higher level area.
- (4.0) Neighbouring higher level area.
- (5.0) Other higher level area.

(6.0) Abroad.

(7.0) Other:

(7.1) Offshore installation.

(7.2) No fixed place of work.

87. Lowest level area may for instance be LAU 2; higher level area may for instance be the Nomenclature of Territorial Units for Statistics 3 (NUTS 3).

88. The proposed classification, and especially the description of categories, is preliminary and should be discussed further.

Note: ILO agrees with the proposal to include in the recommendations an output classification for location of place of work that would enable assessment of commuter flows, including international flows. ILO also agrees with the inclusion of a category “no fixed place of work” and with the proposal to classify persons working abroad by country of workplace, although a lower level of geographic detail would allow better assessment of frontier workers’ patterns.

D. Mode of transport to work and to school, college or university

89. The recommended classification is as follows (paragraph 200):

(1.0) Rail:

(1.1) National/international rail network.

(1.2) Metro/Underground.

(1.3) Tram/Light railway.

(2.0) Bus, minibus or coach.

(3.0) Car or van:

(3.1) Driver.

(3.2) Passenger.

(4.0) Other:

(4.1) Motorcycle.

(4.2) Pedal cycle.

(4.3) Walk.

(4.4) Boat or ferry.

(4.5) Other.

90. From the point of view of transport planning, it may be useful to clearly distinguish public and private transport. By public transport is meant all kinds of mass transport, operated by public as well as private companies. In the existing classification most categories could be identified as being either public or private transport. However, some categories may be both, for instance minibus, car/van and boat/ferry.

91. The following classification is proposed (corresponding categories in the existing classification in brackets):

(1.0) Public transport:

- (1.1) National/international rail network (1.1).
 - (1.2) Metro/Underground (1.2).
 - (1.3) Tram/Light rail (1.3).
 - (1.4) Bus, minibus or coach (2.0).
 - (1.5) Boat or ferry (part of (4.4).
 - (1.6) Other (for instance aircraft).
 - (2.0) Private transport:
 - (2.1) Car or van as driver (3.1).
 - (2.2) Car or van as passenger (3.2).
 - (2.3) Motorcycle (4.1).
 - (2.4) Pedal cycle (4.2).
 - (2.5) Walk (4.3).
 - (2.6) Boat (part of 4.4).
 - (2.7) Other.
92. Aircraft may be specified as a separate category. (2.6) Boat may be dropped as a separate category and included in (2.7) Other.

Note: ILO agrees with the proposed classification for Mode of transport to work, to school.

Points for discussion

93. The task force has considered a separate category for park-and-ride, meaning a combination of private and public transport. According to the current classification, for persons using more than one mode of transport, the mode of transport used for the greatest distance in the daily journey should be indicated (paragraph 199). Following this principle, introducing a category for combination of different modes of transport (for instance private car and train) may be confusing and cause substantial problems in data collection. However, it may be possible to include park-and-ride as a separate category under (1.0) Public transport in addition to the categories already proposed.

94. For transport planning it would be useful to know the technology of cars used for private transport (2.1); that means to distinguish between conventionally fuelled cars (diesel, petrol) and non-conventionally fuelled ones (hybrids, biofuels, electric, hydrogen).

E. Other non-core topics

95. Location of school, college or university: no changes proposed.

96. Distance travelled to work/school, college and university and time taken: no changes proposed. Even if only a few countries collected data on these topics in their 2010 censuses, they should still be included as non-core topics.