

Distr.  
GENERAL

**Report**

18 December 2007

ENGLISH ONLY

<b>UNITED NATIONS STATISTICAL COMMISSION</b>	<b>EUROPEAN COMMISSION</b>
<b>and ECONOMIC COMMISSION FOR EUROPE</b>	<b>STATISTICAL OFFICE OF THE</b>
<b>(UNECE)</b>	<b>EUROPEAN COMMUNITIES</b>
	<b>(EUROSTAT)</b>

CONFERENCE OF EUROPEAN STATISTICIANS

Joint UNECE-Eurostat Expert Group Meeting on the Implementation  
of the CES Census Recommendations for Register-Based Censuses  
Astana (Kazakhstan), 7-8 June 2007

MAIN RESULTS FROM THE EXPERT GROUP MEETING ON THE IMPLEMENTATION  
OF CES RECOMMENDATIONS IN REGISTER-BASED CENSUSES

**I. Population to be enumerated and geographic characteristics**

1. This is one of the basic elements of a census. The CES recommendations (para.158) advise the adoption of the concept of **usual residence**, which could be the place where the enumerated person actually is at the time of the census, the legal residence, or the residence for voting and other administrative purposes. According to the Recommendations, the place of usual residence is the place where a person has lived or intends to live for at least 12 months.

2. Countries with register-based censuses use the place of legal residence as a proxy for place of usual residence. In most cases, the place of legal residence coincides with the place of usual residence, but some categories are more subject to errors in the identification of their place of usual residence. These categories are:

- Persons with more than one residence (multiple residences): not all administrative record systems are able to identify the principal residence based on the place where people spend most of their time.
- Third level students: in some countries, they are more likely to keep the residence in the parents' home regardless of their length of staying in the place of study. This issue is overcome in a few countries where students can keep two residences or where there are incentives for students to register at the place of study (as suggested by the Recommendations)
- Illegal migrants: they are usually not covered in any registration system and therefore are not counted in the total population based on the registers.
- Homeless: they are often not covered in any registration system and therefore are not counted in the total population based on the registers. In some countries (for example, Norway), they are normally included in the Population register, unless they are, for

instance, illegal immigrants. Some of them are registered as homeless (no fixed abode), and they are registered as residents in a local administrative unit (municipality). Most de facto homeless, however, are registered with a “normal” legal resident address. Therefore, it is not possible to identify the majority of homeless people as such.

- Persons moving abroad: people tend to keep their legal residence in the country of origin if they intend to return at a certain point in time, even if they stay abroad more than 12 months. As a consequence, within the European Union, there are some persons who are registered in more than one country. This seems to be one of the weakest points in counting the total population using registers, since there are many incentives to register, but no incentives to de-register.
- Newcomers: immigrants are registered without reference to their intention to stay for the next 12 months. Legal migrants may be registered according to the duration of the permit.
- Persons living in institutions: in some countries, they are more likely to keep their legal residence with the family of origin.

3. The phenomenon of multiple residences may be particularly relevant in countries where it is common for the inhabitants to spend part of the year in different places (for instance, during summer). Especially in the countries where the funding of the municipalities is linked to the number of inhabitants, both the local authorities and the seasonal residents may be motivated to declare temporary presence as usual residence.

5. ***Suggestions:***

- 1) To ask people with more than one residence which is their main residence at the time of registration;
- 2) To identify secondary/seasonal residences using information such as consumption of water, electricity, etc.;
- 3) To initiate a process to share data among selected EU countries following the example of the Nordic countries. Although experimental, this data exchange could analyze the size of the problem of having persons registered in more than one country.
- 4) To measure the quality of registers. Not all countries are at the same stage of development of their administrative records. In order to understand if registers can be used to provide census population counts, they should be carefully evaluated. Sharing of data among countries could be one of the mechanisms used to measure the quality<sup>1</sup>.

6. In certain countries, the application of specific taxes to residences makes it more economically convenient for movers to report without delay their changes of residence.

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<sup>1</sup> A proposal for a project “Statistical Quality of Administrative Registers” for the EU Seventh Framework Programme has been submitted by Statistics Netherlands. Participating countries are Hungary, Italy, Netherlands and Norway.

## II. Demographic, families and households characteristics

7. The core demographic topics **age** and **sex** are not problematic for register-based censuses as they are among the basic information that is always registered. The register-based census usually permits the gathering of very reliable data on age structure of population, with quality comparable to – and, in some cases, higher than – the traditional census method. However, particular attention should be paid to very old-age population groups to make sure that “residuals”, persons who died abroad for example, are not included.

8. The **legal marital status** presents some difficulties in some countries. For instance, problems arise for migrants when information on legal marital status is not gathered at the time of registration and/or the person is not involved in any kind of vital event(s) where marital status information is normally collected for administrative purposes (marriage, divorce, registration of a legal partnership, birth of a child, etc.).

9. In register-based censuses, the concept used for **private households** is the household-dwelling concept (CES Recommendations, §481). In case of availability of appropriate registers, like a high-quality Household Register, attempts could be made to obtain the number of households according to the housekeeping concept (CES Recommendations, §480). An ideal situation would be to have a Central Population Register where, for each Personal Identification Number (PIN), there is also a Dwelling ID and a Household ID.

10. Problems related to the place of usual residence may have an impact on the breakdown of private households. For instance, if a third-level student keeps his/her family address as usual residence, there will be an over-estimation of households with a child and an under-estimation of one-person households.

11. It may be more difficult to cover **institutional households** (CES Recommendations, §484) in register-based censuses, as not all countries have a suitable register for institutions. Even where the register is available, a common problem is that the persons in institutional households keep their official residence somewhere else, despite their actual or intended duration of stay. Some categories of people living in institutions, such as students, are easier to identify and can be allocated to private or institutional households according to the Recommendations. But there are categories that are harder to identify.

12. Registers can not identify **relationships between household members** which are based on cohabitation and, therefore, some forms of families and households can not be identified directly. Countries use different strategies to overcome this limitation: they estimate co-habitant couples based on certain characteristics of people (such as living in the same dwelling, with common children, certain age-difference, sex), or they impute information on the relationship between household members based on the distribution found in surveys (e.g. the Labour Force Survey). Although these methods have proven to give good results, comparability is affected for countries that move from a traditional census to a register-based census.

### 13. *Suggestions:*

- 1) To explore the possibility of building a household ID.
- 2) To clearly report the rules adopted in a register-based census for the estimation of the type of families and households.

- 3) To try to identify persons who are registered in private households who could be allocated more properly to institutional households. Categories of persons in institutional households that can not be identified should be clearly reported.

14. *Some national practices:*

- 1) Norway estimates different types of families and households based on Dwelling ID and certain characteristics of people.
- 2) The Netherlands and Israel estimate different types of families and households by imputing information on relationships between household members based on the distribution found in surveys.

### III. Migration and ethno-cultural characteristics

15. A problem affecting register-based censuses is the unavailability of information about migration status of migrants who arrived before the set-up of the registers. For this reason, topics such as **ever resided abroad and year of arrival in the country** (CES Recommendations, §379) can suffer from under-coverage. If the registers can cover a sufficient time horizon (for instance, from 1980 onwards), a practical solution could be to consider a residual category “Never resided abroad or resided abroad and arrived before YYYY” in the breakdown of the data provided for this topic. Information on core topic “**Country/place of birth**” could be helpful to partially fill in these gaps.

16. According to the CES Recommendations (para.373), the topic **Country/place of birth** should be based on the international boundaries existing at the time of the census. Since in register-based countries this information is collected at the time of the registration, it might not be possible to identify the current countries of birth (for instance, for persons whose country of birth was registered as USSR, Yugoslavia, etc). The identification of the city of birth can help to map old countries of birth with the new boundaries; however, for many countries this information is not available. A practical solution could be the definition of a category “Country/place of birth according to current borders unknown” specifying, if needed, the country/place of birth at the time of the birth.

17. In some countries, multiple citizenships are recorded in registers. When information needs to be provided by country of citizenship, a decision needs to be taken on which one to select. Options include selecting the first one reported during the registration and giving priority to EU countries.

18. Many of the countries that use registers do not record **ethnicity**. Some countries construct a proxy on the basis of information such as country of birth, country of birth of parents, mother tongue, and religion. In some countries, the combination of this information is labelled as “country background” or “ethnic background”. According to the CES Recommendations (para. 425), ethnicity has a subjective dimension and should be based on self-declaration. Therefore, information constructed on ethical background based on other information such as country of birth and country of birth of parents may be used as a proxy for ethnicity for national needs, but it should be clearly distinguished at international level by ethnicity.

19. **Asylum seekers** are not usually registered in the population registers and they are not normally included in the population census. However, the CES Recommendations (para.175) recommend including them. Technically this should be possible since the asylum seekers are recorded in special registrations.

20. ***Suggestions:***

- 1) To add to the classification of country of birth a category “Country/place of birth according to current boundaries unknown”. This category can be further classified according to the name of the country based on the old boundaries.
- 2) To make all efforts to include asylum seekers in the total population and treat them according to the 12-months rules like all other persons.
- 3) For international comparability, data collected on country background or ethnical background based on combinations of data such as country of birth and country of birth of parents should be distinguished by data on ethnicity. According to the CES Recommendations, these data relate to the topic of foreign/national background (§ 398) rather than ethnicity.

21. ***Some national practices:***

- 1) Netherlands can identify country of birth according to new boundaries for migrants from the former Yugoslavia.
- 2) Norway makes estimates to map some of the old countries of birth into the new existing countries.
- 3) Slovenia uses the mother country of birth concept.
- 4) Finland constructs the topic “country background” on the basis of mother tongue and religion.
- 5) Netherlands constructs the topic “ethnical background” on the basis of country of birth and country of birth of parents.
- 6) Latvia collects information on the topic “ethnicity” by self-declaration of persons at the moment of their registration in the Population Register.

#### **IV. Economic characteristics**

22. This set of topics needs to be covered using several sources, which increases the risk of inconsistencies. As the sources are usually tax and social security registers, the delay of transmission of the data and the non-reporting of events may also play a role in terms of quality and timeliness.

23. Some problems arise in measuring the core topic of **current activity status** since certain data are available from registers only on an annual basis and not with reference to the short period (usually one week).

24. Categories of **employed persons** who are more exposed to classification errors in register-based censuses are:

- Persons not regularly working: if insured, they will be included because of their social security coverage;

- Temporarily absent persons: these persons can be partially covered by maternity leave, sick leave, so long as they are paid, but when they are temporarily absent and not paid, they do not appear in any register;
- Persons working without pay: the jobs performed by these persons are not covered by any register; however, as many of these persons normally have a paid job too, they can be covered by the registers;
- Persons performing informal jobs: by the nature of the jobs, these persons are not registered; however, in the majority of register-based countries, these types of jobs are not very common;
- Persons working abroad: these persons are not covered in any national register.

25. A further complication may come from linking jobs to establishments. In this case, business surveys can provide useful additional information.

26. In general, registers do not provide the full information on **unemployed** persons since they cover only registered unemployment. This may differ from the ILO definition (CES Recommendations para. 247), because there may be persons who are actively looking for a job without registering as unemployed. The persons who are more problematic in this respect are persons who do not have rights to unemployment benefits, mainly those persons who never worked previously.

27. In order to overcome the gaps in the registers in relation to short reference period, unemployment, and the unavailability of information on certain typologies of work, some countries use the Labour Force Survey to benchmark the information on employed and unemployed persons and adjust accordingly the register-based information.

28. The **population not currently active** may also be difficult to cover on registers:

- For students, a complication comes from the students who have a job. This group of students needs to be identified in order to include them in the active and exclude them from the inactive population; a possible solution is to consider a sub-category "students with a job" which could be added to the employed persons but also – for specific purposes like calculating the "total number of students" - to the students in the inactive population. In this case, however, particular care should be taken to prevent the risk of double counting.
- In some countries it could also be a problem to identify students who are actually attending their educational institution. Registers of students may comprise all students *enrolled*, which may include students who do not actually attend the educational institution.
- For pensioners, information comes from tax registers, which are less timely.
- For homemakers, there is no registration system; these persons can be identified only indirectly from the presence of children in household, benefits for taking care of the elderly, disabled, etc.

29. Overall, the total population outside the labour force can be estimated/imputed using data from sample surveys.

30. For **occupation** and **industry**, the information is usually available with a high level of precision, but not for all employed persons. Occupation is missing in many countries for self-

employed persons. Some countries impute the missing information based on educational level and industry; others use the LFS as a benchmark. Data on industry are normally taken from the business registers. For persons who have more than one job, the decision on the main job is taken on the basis of number of hours worked or wages/income. It is good practice for the National Statistical Office to complete the coding on behalf of the register owners.

31. For the **status in employment**, one difficulty is the distinction between employers and own-account workers. Moreover, the identification of contributing family workers is not possible using registers.

32. ***Suggestions:***

- 1) To compare and adjust the data on economic characteristics from registers with alternative sources, such as the Labour Force Survey.
- 2) To include a sub-category for “students with a job” in the employed population; this category could be added to the students in the inactive population for specific purposes, like calculating the “total number of students”. In this case, however, particular care should be taken to prevent the risk of counting this category twice in the total population count.

33. ***Some national practices:***

- 1) Netherlands, Finland and Israel use the LFS to benchmark information coming from registers on current activity status, employed and unemployed persons, inactive population and their sub-categories. Norway uses the LFS to benchmark employed persons.
- 2) Norway estimates the main job based on the number of hours.
- 3) Netherlands estimates the main job based on wages.

## **V. Educational characteristics**

34. The information on educational characteristics is usually drawn from registers kept by NSOs only for statistical purposes.

35. The following categories are the most problematic in this field:

- Students who are enrolled in more than one course;
- Persons with unknown education (usually migrants): they can be surveyed to complete the information;
- Persons who received their education abroad. For these persons the educational attainment is either unknown or is difficult to translate into national levels. In some countries, there are mechanisms (education supported by the government, committee that translates foreign qualifications into national qualifications) which can help to identify some of the education undertaken abroad, but for some of the persons who undertook their education abroad, their attainment remains unknown;
- Information on education attainment may not be available for older people. In some cases, this can be estimated on the basis of the results from the last traditional census.

36. **Literacy** is measured in general as the lack of basic education, although the CES Recommendations (§354) state that there should be no assumed inferences between literacy, school attendance and educational attainment.

37. ***Suggestions:***

- 1) To carry out a survey to target the persons whose educational characteristics are unknown.

38. **Some national practices:**

- 1) Israel measures education attainment taken abroad using a combination of information coming from migration cards and from a committee which translates foreign qualifications into national qualifications.
- 2) Norway undertakes a survey for those persons whose educational attainment is unknown.

## **VI. Housing**

39. Registers for housing censuses usually have limited coverage, since they do not have information on “**other housing units**” and **homelessness** and/or do not contain all core topics (e.g. water supply system, toilet facilities, bathing facilities, type of heating). Also, the data related to the period of construction for old buildings and to the ownership in co-operatives may not be available from registers. In some countries, housing information is collected through building registers, in others dwelling registers have been recently established.

40. Further difficulties may arise for the classification of non-occupied conventional dwellings, since it is difficult to distinguish between seasonal/secondary and vacant dwellings.

41. Data on **useful space/number of room** is also problematic for register-based censuses. In Israel, for example, municipalities collect information on floor space without standardization; in the Netherlands, information relates to the time of construction of the dwelling or to the time of major renovations; Slovenia does not include the kitchen in the total number of rooms.

42. ***Suggestions:***

- 1) To include in the population registers information on secondary residence.
- 2) To use information on consumption of utilities in order to distinguish secondary/seasonal and vacant dwellings.
- 3) To set up a dwelling register (if it has not already been set up).

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