Report prepared by the Republic of Belarus
(IPUMS – Europe Project)

On Organizing and Taking the 2000 Round Population Census
in the Republic of Belarus

[material in brackets are editing remarks and should be removed after the action is taken or question answered.]

1. History of census taking

The history of population censuses held in Belarus was closely linked first to Russia and then to the USSR, of which Belarus was a member. The first general population census in Russia was conducted in February 1897. The results obtained showed for the first time an exact countr of the population of Belarus. In the territory limited by the modern boundaries resided 6 673 000 people, of whom 5 774 000 (87 %) comprised the rural population and 899 000 (13 %) the urban.

As a whole, the ensuing population censuses were conducted in the territory of Belarus while it was part of the USSR: in 1926, 1939, 1959, 1970, 1979, and 1989. Each census made an important contribution to the development of demographic and statistical theory and practice. For example, before the 1939 census, figures for the number and composition of the population were made based on the results of the 1926 population census. Using those results, demographic projections were performed for the first time and detailed mortality tables of the USSR were compiled. The 1939 Population Census is noteable for piloting the use of the control form and certificate of enumeration. Control visiting rounds were carried out after the census for the purpose of checking the completeness of the enumeration. It is important to note that the two subsequent censuses of 1959 and 1970 were based on a wider programme and had a number of methodological innovations. First, the data were processed using punch-cards and computers, which made it possible to obtain basic results in a less than one year. Second, a combination of exhaustive and sample enumerations was introduced, i.e. out of 18 questions included in the census programme, only some questions were asked of the total population and the remaining questions addressed to a 25% sample of the permanent population. This reduced the costs of the census operation and shortened the period of data processing. In 1979, an entirely new census questionnaire was brought into use: responses were entered with graphic symbols and only selected ones - in words. The census programme itself was extended with the following items: the exact date of birth (including the month and the day), a second spoken language for the USSR nationalities, the previous occupation of pensioners, and the duration of employment. Also included were questions on migration, etc.

The 1989 Population Census was the last one for Belarus within the USSR. It is this fact that distinguishes its place in the history of national demography and demographic statistics. Afterwards a new history took its rise - the history of national censuses.

In February 1999, a national population census in the Republic of Belarus was conducted, which became the first population census taken after the declaration of sovereignty in 1999 and after those fundamental changes that took place in the Republic in the subsequent years. [To maintain consistency with the previous sentences in this paragraph, please summarize here in a single sentence the main innovations in the 99 census and insert here.]

2. Census documentation

Census documentation includes specially developed and validated instruments intended to collect data from the population and prepare those for processing in accordance with the census programme. Copies of these instruments are provided to the IPUMS-Europe project according to the Memorandum of Understanding signed in March 2003. They are listed in Table 1 by document type and file name and are attached as appendices to this report.

For the purpose of **collection** of information, the Ministry of Statistics and Analysis of the Republic of Belarus, with the participation of interested data users and in view of recommendations prepared by the UN Statistical Commission and Statistical Office of European Communities, has developed the following census instruments:

1   Census questionnaires:

- form 2П - "List of those usually (permanently) residing in dwelling and their housing conditions" – a housing questionnaire comprising 7 questions;

- form 3Н - " Census questionnaire " – a personal questionnaire comprising 17 questions;

- form 4И - " Census questionnaire for those temporarily present in the territory of the Republic of Belarus" - a personal questionnaire for persons temporarily present in the territory of the Republic of Belarus comprising 7 questions.

2   Instructions on conducting the 1999 Population Census and filling in the enumeration forms.

The Instructions establish the **methodological basis of the census.** They determine the time schedule and methods of the census taking, the procedure of filling in enumeration questionnaires, categories of the population to be enumerated, and the unified rules of recording answers to the census programme questions.

The Instructions explain general issues pertaining to the time and procedure of the population census taking, control arrangements, and requirements for completing enumeration questionnaires.

For the purpose of **preparation** of the census questionnaires for machine **processing** the following classifiers were used, which were developed by the Ministry of Statistics and Analysis with the participation of outsourced agencies:

– National Classifier of the Republic of Belarus "Countries of the World"

The Classifier was developed by the Belarus State Institute of Standardization and Certification.

– National Classifier of the Republic of Belarus "Nomenclature of Administrative-territorial Units and Settlements"

– Glossary of Nationalities and Languages

The Glossary was developed with the participation of the Institute of Art History, Ethnography, and Folklore of the Academy of Sciences of the Republic of Belarus and the State Committee on Religions and Nationalities of the Republic of Belarus

– Alphabetical Index of Occupations

The Index was developed based on the National Classifier of the Republic of Belarus on Professions of Industrial Workers and Positions of Office Workers and the National Classifier of the Republic of Belarus on Occupations in accordance with the International Standard Classification of Occupations released in 1988 (ISCO – 88).

– Register of the Names of Streets (address classifier)

The Register was developed to code geographical characteristics of the questionnaire (names of avenues, streets, by-streets, etc.)

– Codebook

The Codebook describes the structure of the microdata files.

3. History of the census microdata, availability and accessibility (use by external users)

The key component of the information system of the population census is the central database containing all census data.

The data of the population census are stored independently at two levels: republic and region (oblast).

At the republic level, the database, organized in the *Oracle* environment, holds all the microdata of the 1999 Population Census of the Republic of Belarus. The region databases, organized in the *Visual FoxPro* environment, hold microdata of the corresponding region. This means that the databases contain all data collected in the 1999 census in a structured form.

To provide microdata or results of the census to numerous users within the population census information system, several methods of data dissemination were implemented to:

-    produce the essential tables on paper;

- produce equivalent tabulations for machine-readable media (magneto-optical disks, CD-ROM);
- to produce and re-produce spreadsheets (in Excel format).

To enable dissemination of the census results via the Internet, a function of automated preparation of subject pages is realized in the population census automated information system (PCAIS). The function ensures:
- storage of compiled census results as PDF files;
- retrieval of required information from the warehouse of finished reports;
- transmit files retrieved through e-mail service of the global network Internet;
- production of statistical web-pages.

One of PCAIS' most important features is its capability to interface with GIS technologies.

The GIS/ PCAIS interfacing protocols are defined by DBMS Oracle.

For binding the census data collected and results processed to the geographical map of the Republic of Belarus the geographic information system ArcView GIS is used.

4. Contents of microdata files: variables for dwellings, households/family, persons

The information resource of the 1999 Population Census of the Republic of Belarus has a two-level structure with the central database containing all population census data at the first level and six population census regional databases at the second level.

Special divisions were established in the six regional statistical offices to enter data on census questionnaires into computers. Manual data entry was used to enter data to the regional population census microdata bases organized in the Visual FoxPro environment. The regional databases were integrated into the central database containing all population census microdata, which was developed in the Oracle environment.

It should be noted that the base attributes correspond to the census questionnaires' items and fully cover the list of variables forming the basis of the population census programme.

The census microdata are represented by a 10% sample taken from the regional microdata bases. It is known that in the 1999 Population Census of the Republic of Belarus, the individual person was used as the primary unit and the household as the secondary unit. It was the private household that was used as a sample unit in building the sample frame. The **simple (sequential)** sampling method was chosen to select every tenth household for the sample frame. The total sample size is approximately 1,xxx,xxx person records in [yyyyyyy households.]. A description of the sample entrusted to the IPUMS-Europe project and the basic details of the census operations are summarized in Appendix Table 2.

The main information components of the microdata are three base tables developed in dbf-format. The referenced data are given in relevant glossaries.

Let us dwell upon the attributes of the base tables.

The first table contains source information on each sample household:

- type of ownership;
- number of occupied rooms;
- useful and living floor space.

The second table contains source information on the housing units occupied by sample households:

- type of housing unit;
- period of construction;
- construction material of outer walls;
- facilities of housing unit.

The third table contains source information on individual persons comprising households:

- relationship to reference member of household (No 1);
- serial number of mother in the list of residents;
- sex;
- age;
- place of birth;
- language (mother tongue, spoken language, other);
- citizenship;
- nationality;
- marital status;
- educational attainment;
- source of livelihood;
- economic activity;
- occupation;
- status in employment;
- place of previous residence;
- children born alive, children surviving, children living separately (for women);
- number of children the woman is planning to have.

The three tables have one common key attribute. In addition, the information is classified across the six regions of the Republic of Belarus by urban and rural. The large city criterion is also distinguished (100 thousand inhabitants and over).

The structure of the base tables is shown in the **codebook** where each attribute is provided with the following information:

- name of attribute (name of the base table field);

- type and length of field;
- list of values of attribute; if values are listed in indexes, a reference to the relevant index (glossary) is used;
- statistical population: description of units, information for which is presented in the database (for example, the question on marital status was asked of persons aged 15 and over).

The indexes (glossaries) are also presented as tables in dbf-format. These are the indexes of:

- territories;
- nationalities;
- languages;
- countries;
- occupations.

The structure of indexes is also shown in the codebook. Appendix Table 3 lists the variables made available to the IPUMS-Europe project.

5. Harmonization: comparability with other censuses and with international standards

The main mission of the official statistics of the Republic of Belarus is development of a sound, scientifically justified statistical methodology and improvement thereof in accordance with the national and international statistical standards.

The programme of the 1999 Population Census was developed following one of the key principles of official statistics - comparability of statistical data. The construction of questions, which were used in the census, was aimed at preserving historical consistency and facilitating chronological comparisons with the previous population censuses.

At the same time, with the aim of achieving international comparability, the population census programme took into account the following international publications:"Handbook of Population and Housing Censuses", UN 1992 and "Recommendations for the 2000 Censuses of Population and Housing in the ECE Region", 1998. The international definitions were used for such categories as *household, economically active population, employment and unemployment* and also for those characterizing the *status in employment* of respondents.

To attain international comparability of data on occupations, in coding data the national classifier "Occupations" was used, which had been developed in accordance with the International Standard Classification of Occupations of 1988 (ISCO-88).

The table below shows the comparability of the 1999 census programme with the previous census and recommendations of Eurostat:

Variables	1989	1999	Eurostat

Type of ownership	+	+	+
Number of occupied rooms	+	+	+
Useful and living floor space	+	+	+
Type of dwelling	+	+	+
Period of construction	+	+	+
Construction material of outer walls	+	+	+
Amenities in dwelling	+	+	+
Relationship to reference member of household (No 1)	+	+	+
Sex	+	+	+
Age	+	+	+
Place of birth	+	+	+
Language (native, spoken, other)	+	+	+
Citizenship	+	+	+
Nationality	+	+	+
Marital status	+	+	+
Educational attainment	+	+	+
Source of livelihood	+	+	-
Activity status	-	+	+
Occupation	+	+	+
Status in employment	-	+	+
Place of previous residence	+	+	+
Children born alive, children surviving, children living separately	+	+	+
Number of children the woman is planning to have	-	+	-

6. Completeness of enumeration

In order to assess the completeness of enumeration in the 1999 Population Census of RB a practice of control visits covering 10% of households was used. The control visits were carried out immediately after the conclusion of the census within four days, which allowed checking the work of enumerators and introducing corrections into the census documents. Due to this practice both the completeness of enumeration and the quality of filling in forms was checked. As a result of the control visits, 42.7 thousand people (0.4% of the population) were enumerated in addition and included in the basic results of the population census.

To assess the quality of the 1999 Population Census:

    1.   The method of visual check of census data was applied.

2.   A comparative analysis of the 1999 population census data and total population estimates based on the current vital statistics (registration of births, deaths, and net migration) was performed in the intercensal period.

3.   The age groupings obtained in the census and in the estimates based on the natural and mechanical population movement were compared.

4.   The census results for a number of the population's characteristics were compared with other sources like current household surveys and existing data banks.

7. Publications

Based on the 1999 Population Census results, 13 subject collections were published, which also contained basic indicators of other population censuses starting from 1959:

− Statistical book "Population of the Republic of Belarus", 2000
− Statistical book "Population of the Republic of Belarus by sex, age and marital status", 2000
− Statistical book "Educational attainment of the population of the Republic of Belarus", 2001
− Statistical book "National composition of the population of the Republic of Belarus and languages used by the population" (Volume 1), 2001
− Statistical book "National composition of the population of the Republic of Belarus, its demographic characteristics and educational attainment"(Volume 2), 2001
− Statistical book "National composition of the population of the Republic of Belarus and its economic characteristics" (Volume 3), 2001
− Statistical book "Number and composition of households of the Republic of Belarus", 2001
− Statistical book "Economically active and not economically active population, employment and unemployment in the Republic of Belarus", 2001
− Statistical book "Housing conditions of the population of the Republic of Belarus" (Volume 1, 2), 2002
− Statistical book "Migration of the population of the Republic of Belarus", 2002
− Statistical book "Fertility in the Republic of Belarus", 2002
− Statistical book "Population temporarily present in the territory of the Republic of Belarus", 2003
− Statistical book "Occupations of the population of the Republic of Belarus", 2003

8. Research possibilities

With the purpose of efficient use of the population census aggregated data the Ministry of Statistics and Analysis and its territorial offices afford equal and timely access to those for all users. Both macro- and microdata of the census are provided on request with the assurance of confidentiality of personal data by means of their anonymization.

As stated above, the Ministry of Statistics and Analysis prepared and published 13 thematic statistical books. The population census results are also placed on the Minstat's web site where the information is given both in Russian and in English: [http://www...].

The information collected in the census and publications prepared in accordance with its results are of great interest to a wide range of users. Not only is the scientific community of the Republic of Belarus, but also scholars from other countries are among their consistent users. This number includes scientific research institutes, higher education establishments, research-and-development facilities, and private individuals engaged in scientific work. Population census data are an important source of information for preparing analytical reports on trends in the demographic situation of the Republic, for working out programmes of socioeconomic development of the Republic, for estimating the number and composition of the population and making demographic forecasts, and for analyzing changes in the population development. The census data are used by undergraduate and postgraduate students in their graduation and research papers. The census statistical data were used in preparing maps for the National Atlas of Belarus published by the Belarus State University. Below is the list of main users among the republican and foreign institutions.

Republican Research Institutions

Institute for Social and Political Research
Research Economic Institute
Research Institute of the Ministry of Labour and Social Protection
Research Institute of the Ministry of Statistics and Analysis
Institute of Art History, Ethnography, and Folklore of the Academy of Sciences of the Republic of Belarus
Research Institute of Maternity and Childhood
Research and Practice Centre of Pediatric Oncology and Haematology
Research Clinical Institute of Radiation Medicine and Endocrinology
Others

Foreign Research Institutions

Centre of Studies on Estonian Diaspora
Euromonitor, London
"New Experiment of Russia on Division of Powers" Project, Watson Institute at Brown University, USA and Institute of Ethnology and Anthropology, Russia

Academy of Sciences, Hungary
Hokkaido University, Japan
Others