

**ADDRESS BASED POPULATION REGISTRATION SYSTEM**  
**2007 POPULATION CENSUS in TURKEY**  
(Enver TAŞTI<sup>1</sup>)

**Introduction**

The population and housing census as an integral part of a country's national statistical system is the principal source of statistics on population and housing characteristics at the smallest local level. The fundamental purpose of the census is to provide the information essential to governmental policy-making, planning and administration. Information on the size, distribution and characteristics of a country's population is essential for describing and assessing its economic, social, and demographic circumstances and for developing sound policies and programs aimed at fostering the welfare of a country and its population.

The value of a population and housing census is increased if the results can be used in connection with the results of other data collections. These could take the form of use of the census data as a basis or benchmark for statistics in the same field, or to furnish the information needed for conducting other statistical investigations. It can, for example provide a statistical frame for other censuses like agriculture and sample surveys. Also, it can be used as a base for a registration system.

Some countries rely on registers to produce population and housing statistics. In these countries there is an opportunity to provide an integrated view of the country where social, demographic and economic characteristics are linked together.

There are different methods of conducting a census all over the world. Recently, many countries including Turkey have attempted to change the method of census from traditional to register based census mainly in order to produce more frequent data and decrease the cost of the census.

Main purpose of the paper is to present the experiences of Turkey on establishing the Address Based Population Registration System (ABPRS) which can be used as a basis for population and housing census and more importantly used by other governmental organizations for their official purposes.

**Methods of Population and Housing Censuses**

There are four primary approaches to conducting a census, based on the method of data collection:

- a) The traditional method of universal enumeration based on field operations at a given moment, either with an exhaustive collection of all characteristics or an exhaustive collection of basic characteristics with a collection of selected characteristics on a sampler basis (long/short form),
- b) Traditional enumeration with yearly updates of characteristics on a sample basis,
- c) The method of using registers and other administrative sources,

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<sup>1</sup> Turkish Statistical Institute, Head of Social Statistics Department

- d) A combination of registers and other administrative sources and surveys (complete enumeration or sample surveys).

Registers and other administrative sources are an alternative to the traditional census as far as they contain the relevant topics, use similar definitions and classifications and cover the entire population. Sample surveys used alone can not provide equivalent data but they can be used in combination with a census or to supplement census information on specific topics.

### **History of Population Census in Turkey**

Until the last census in 2000, 14 Population Censuses were conducted in Turkey. All population censuses were carried out in one day by application of a curfew according to the de-facto population definition which means that persons were enumerated at localities where they were present on the census day. Obtaining usual residence population is not possible from the population censuses that are main data sources on population size and the characteristics of population of Turkey.

There were two main problems with the traditional census of Turkey: periodicity and its cost. Information with ten years interval is usually considered as out of date and the users need to have more frequent data. Also, it is very costly for a single operation which provides data on specific time. In addition, one of the main problems in the census was over counting of population (imaginary population) due to the population based budget share to municipalities. Therefore, Turkish Statistical Institute (TurkStat) aimed to change the method of population census in order to produce more reliable and updated information particularly on population size and distribution.

### **New System of the Census**

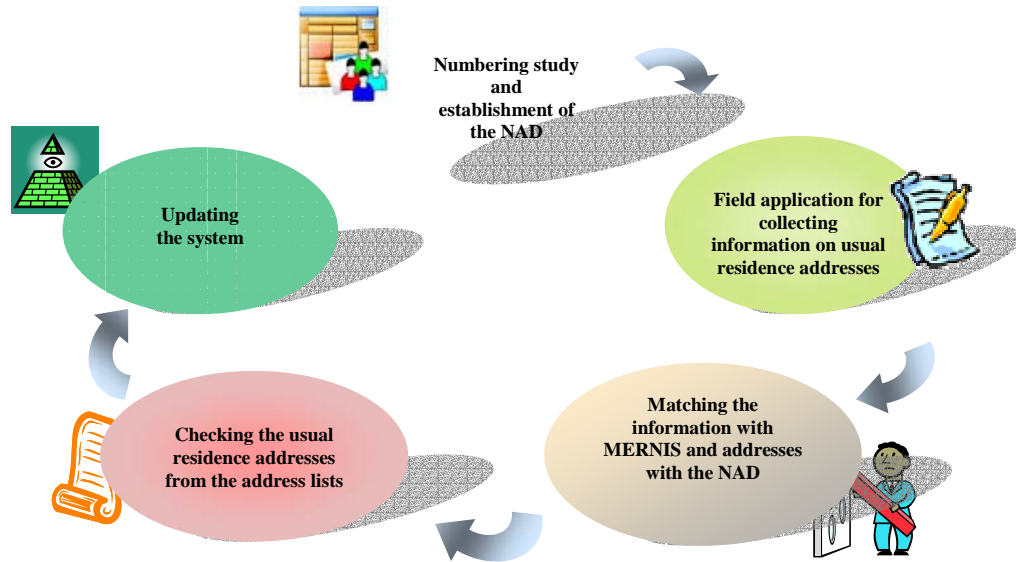
In Turkey, the General Directorate of Population and Citizenship Affairs (GDPCA) of the Ministry of Interior are responsible for keeping and updating population registers in the form of family ledgers on the MERNIS (Central Population Registration System) database. The registration of births, deaths, marriages, divorces, citizenships and adoptions as well as other vital events is also the responsibility of the GDPCA. Population registers are kept in the form of family ledgers with each family identified by the father's name. Due to the fact that the information on changes in usual residence were not kept in these family ledgers, it was impossible to derive information on the distribution of population by locality, therefore existing population registers has to be improved from the standpoint of population statistics

Population Services Law No. 5490 dated April 25, 2006 is the legal base for the ABPRS. The purposes of establishing the ABPRS are to establish National Address Database (NAD) that covers all addresses within the boundaries of the country, to obtain the address information of Turkish citizens and foreigners living in Turkey, to match the address information and the registers of the MERNIS database by using the Turkish Republic identification numbers for Turkish citizens, to match the address information and passport numbers of foreigners and to keep this information on a separate database.

This law charged TurkStat for establishing the Address Based Population Registration System and Ministry of Interior, General Directorate of Population and Citizenship Affairs for developing and maintaining the system. All studies related to establishing the system were coordinated by TurkStat and carried out by the executive committees of provinces and districts,

headed by the governor or the district governor. Studies on establishing the system were started in May, 2006 and the following studies were carried out.

### General Stages



#### ***1. Numbering Studies and Establishment of the National Address Database***

Numbering studies, which were the source for the National Address Database, were carried out by municipalities in localities having municipal organizations, and by special provincial administrations in villages. After infrastructural studies of the NAD were implemented by the TurkStat, the database was established. Addresses on the NAD were controlled and problems related with addresses which were wrong or not found in the field or were not present in the NAD were solved and corrections were done on the database. In this manner, the NAD and addresses in the field were identical.

#### ***2. Field Application for Collecting Information on Usual Residence Addresses***

The field application was carried out by TurkStat in order to collect the usual residence addresses of Turkish citizens and foreigners living in Turkey. Field application was realized by the enumerators by visiting all addresses and filling in the forms in the localities, where the numbering studies had been finished.

#### ***3. Matching the Information with MERNIS and Addresses with the NAD***

Usual residence addresses, which were collected in the field, and MERNIS registers were matched by using the Turkish Republic identification numbers in electronic format through a web-based program developed by TurkStat. Information of foreign citizens and their usual residence addresses were matched by using passport numbers and this information was kept in a separate database.

#### ***4. Checking the Usual Residence Addresses from the Address Lists***

After the matching process, the address lists that include personal information by usual residence addresses were presented at the offices of the heads of the quarters and the villages for 60 days as stated in the Law, and persons controlled their information on the lists. In addition to that, controlling the usual residence addresses was also possible from the web site of TurkStat. The applications for changing the information or registration which were made during this period were evaluated in the localities. During this period, advertising film, brochure, poster and press release were prepared to advocate people about the new system and duties of people living in the country. Also the penalty for not registering in the system and not declaring new address on time according to the Law was mentioned in the advertisement activities.

ABPRS registers were controlled by taking into account other administrative records. The ABPRS registers were compared with the records of Ministry of National Education, students and academicians of the universities, the records of Social Security Institution, High Election Council, etc. TurkStat informed the universities and working places about persons who were not included in the ABPRS to register in the system. In addition, persons who were included in MERNIS registers but not included in the ABPRS were tried to reach by using the computer assisted telephone interviewing (CATI) technology. CATI study is done by the central and regional offices of TurkStat.

#### ***5. Updating the System***

After ABPRS was established by TurkStat, it was transferred to the Ministry of Interior, General Directorate of Population and Citizenship Affairs. Changes in usual residence addresses are entered to the system by the Provincial and District Directorates of Population of the GDPCA. Address Based Population Registration System is updated by three ways;

- Updating the addresses in the NAD by municipalities,
- Updating the changes in administrative units by the General Directorate of Population and Citizenship Affairs,
- Updating the usual residence of persons by the General Directorate of Population and Citizenship Affairs.

#### **Results of the New System**

First population census results referring December 31, 2007 based on the new system were announced to the public on January 21, 2008 by the press conference. Results were announced based on the following detail;

- Population by localities (province, district, sub-district and village),
- City and village population,
- Age and sex structure,
- Nationality of persons living in Turkey (Turkish citizens and foreigners).

All information is available on the web site of TurkStat ([www.turkstat.gov.tr](http://www.turkstat.gov.tr)) and the database for the ABPRS is available on the web site to allow the users preparing their own tables. According to the Law, governmental organizations and establishments will use this

system in all their administrative works. In addition, updated information on population size and the basic characteristics of population will be obtained from the system.

In addition, National Education Database (NED) was established based on information related to the completed level of education available in the ABPRS. NED has been updated by collecting records related to students and graduates from Ministry of Education and all universities. Registers on education database will be updated every year and the database of the statistics on the level of education will be available in 2009.

According to the results of 2007 ABPRS;

- 71% of the population has been living in province and district center (city),
- Male and female population are almost equal,
- Istanbul province is the most populated province with 12.5 million population,
- Median age is 27.7 years for males and 28.8 years for females,
- Population density is 92 persons per kilometer for Turkey it differs from 11 to 2,420 persons between provinces.

More information is given in Annex.

## **Conclusion**

The new system has many advantages compared to the traditional census. Using administrative register sources reduced the costs of producing statistics without question. This is one of the important advantages of the system. More importantly, ABPRS is used to produce basic population statistics every year. Population size by administrative units, sex and age group is announced at the beginning of every year. In addition, vital statistics and marriage/divorce statistics are also produced based on the information available in the system.

One of the biggest advantages is that the system can be connected to other official records which have Turkish Identification Number. TurkStat already established National Education System and the study on matching with records of Social Security Institution is going on. And also, it is planned to produce internal migration statistics from ABPRS after analyzing data for several years.

On the other hand, the use of administrative data sources involves certain drawbacks that need to be taken into account. One such drawback is the fact that register-based descriptions have to rely exclusively on the information contents that can be formed on the basis of the registers available. This imposes some restrictions with respect to the variables that are available for analysis and may also some deficiencies both internal and international comparability.

One of the critical issues for statistical reliability is that change events are accurately recorded according to their true date. Information on dates of death and birth is usually accurate because it is recorded on the basis of certificates issues by the authorities, in most cases the reference time point is therefore right. In the event of a change of address the person who is moving may neglect to provide notification on time or be late in doing so. It will affect the reliability of statistical production.

For the use of registers, it is extremely important that the general public appreciates and understands the benefits of using register sources for statistical purposes and that there is broad public acceptance of the use of these administrative data for purposes of statistics production.

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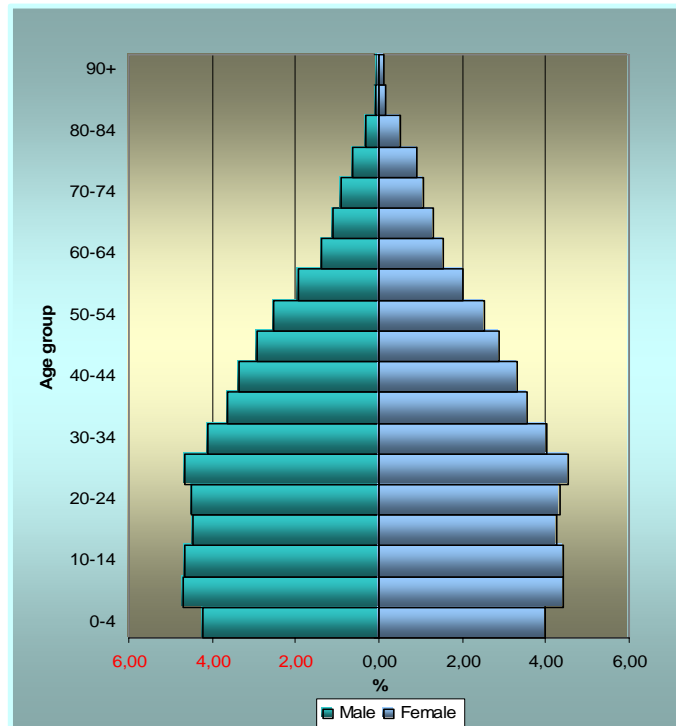
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## ANNEX

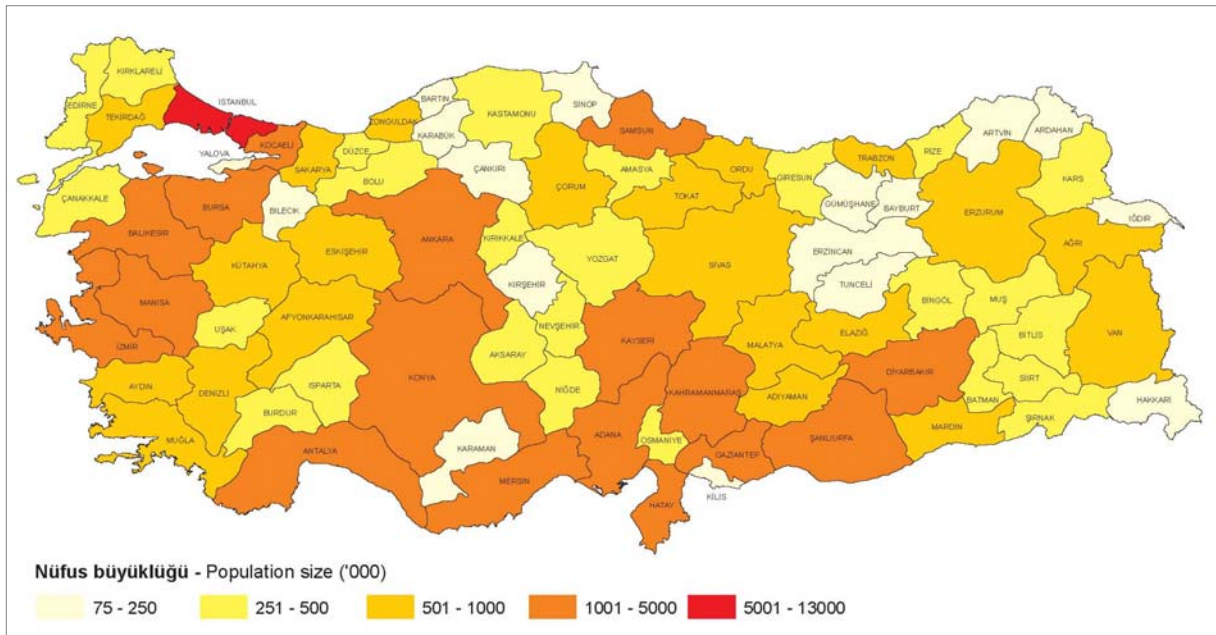
**Table 1: City and village population by sex**

Sex	Total	City	%	Village	%
<b>Total</b>	<b>70 586 256</b>	<b>49 747 859</b>	<b>70,5</b>	<b>20 838 397</b>	<b>29,5</b>
<b>Male</b>	<b>35 376 533</b>	<b>24 928 985</b>	<b>70,5</b>	<b>10 447 548</b>	<b>29,5</b>
<b>Female</b>	<b>35 209 723</b>	<b>24 818 874</b>	<b>70,5</b>	<b>10 390 849</b>	<b>29,5</b>

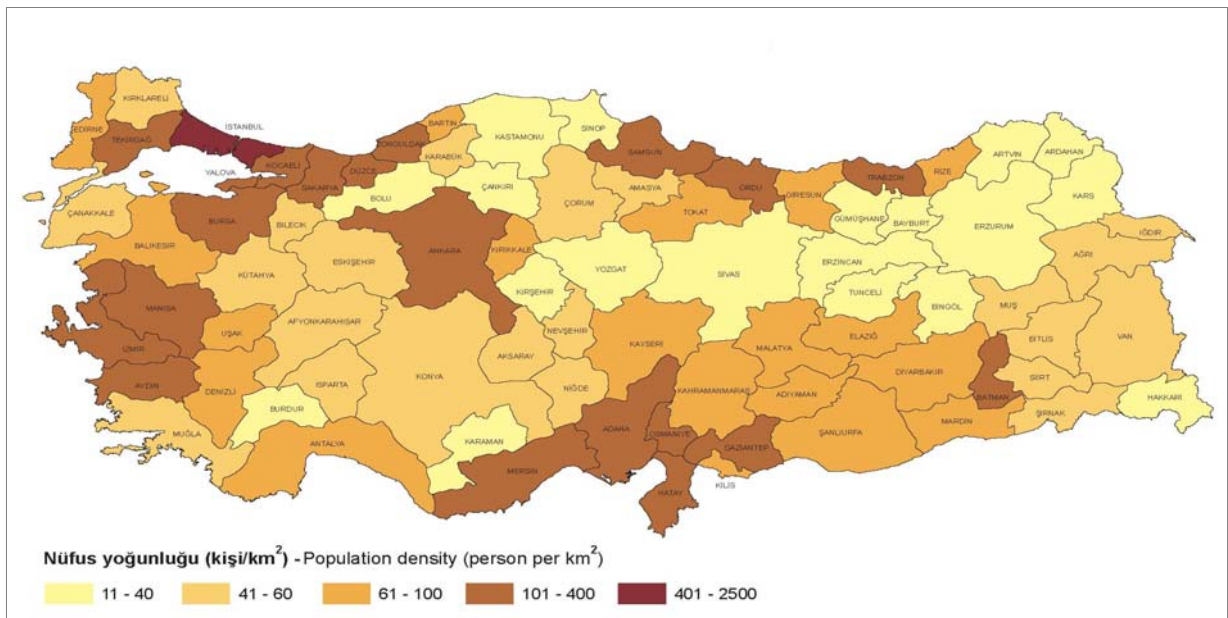
**Graph 1: Population pyramid, 2007**



**Graph 2: Population size**



**Graph 3: Population density**



**Graph 4: Median age**

