

National Statistics Office of Georgia – GEOSTAT

Vital Statistics Report
(2015)

Tbilisi 2017

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I. Preface

The present document was prepared by the National Statistics Office of Georgia (Geostat) with the support of the Bloomberg Philanthropies Data for Health Initiative and the Statistics Division of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and the within the framework of Sustainable Development Goals (SDG), in particular to strengthen the National Capacity in Producing and Disseminating Vital Statistics.

The aim of the report is to inform the statistical data users for about collection and analysis of vital statistics data in Georgia. The aim of the report is to discuss the vital statistics data, its quality and linkages to the existing registration system of civil acts. The recent data analysis of births, deaths, marriages and divorces are also presented in the document.

II. Definitions

Divorce – one of the grounds for termination of marriage of spouses.

Early neonatal mortality – deaths of infants under first week (under 7 days).

Infant mortality – deaths of infants under one year of age (0-12 months).

Late maternal death – death of a woman while pregnant or from the 43rd day of the pregnancy within one year irrespective of the duration of pregnancy, from any cause related to or caused by the pregnancy or its management, but not from accidental or any other causes, that are not related to the pregnancy.

Late neonatal mortality – deaths of infants from the first week of life till 28th day (7-27 days).

Legitimacy - the status of a child born to parents who are legally married to each other, and of a child conceived before the parents obtain a legal divorce. Conversely, illegitimacy is the status of a child born outside marriage.

Live birth - complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life - e.g. beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles - whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered live born.

Maternal death – death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Marriage - a voluntary union of a woman and a man for the purpose of creating a family, which is registered with a territorial office of the Legal Entity under Public Law (LEPL) - Public Service Development Agency of the Ministry of Justice of Georgia ('a territorial office of the Agency').

Post-neonatal mortality - deaths of infants from 28th day of life till one year of age (28-365 days).

Stillborn - a fetus, whose death is prior to the complete expulsion or extraction from its mother, from the 22nd week of pregnancy, the fetus does not breathe or show any other signs of life, such as beating of the heart, pulsation of the umbilical cord, or contraction of certain groups of skeletal muscles.

Rural - a settlement the boundaries of which mainly include agricultural land and other natural resources, and the infrastructure of which is essentially focused on carrying out agricultural activities;

Urban (city, small town) – a settlement in the territory of which industrial enterprises or tourist and resort establishments or medical and socio-cultural institutions are located, and which carries out the functions of a local economic and cultural center. Urban infrastructure is not essentially focused on carrying out agricultural activities. A settlement with a registered population of over 5,000 may fall within the category of a city.

III. About the National Statistics Office of Georgia

National Statistics Office of Georgia (Geostat), the legal entity of public law, carries out its activities in accordance with the UN Fundamental Principles. It is an institution established to produce the statistics and disseminate the statistical information according to the Georgian legislation. National Statistics Office of Georgia is established by the Law of Georgia on “Official Statistics”, on 11 December 2009.

In accordance with the Law of Georgia on “Official Statistics”, the Geostat is authorized to request from the administrative bodies and other physical and legal entities and receive all the statistical and other information (including confidential information and/or information containing personal data, in line with the “Law on Personal Data Protection”) necessary for carrying out its functions.

Upon the request and according to the legislation of Georgia, the administrative bodies are obliged to provide the Geostat with the information on physical and private entities (including confidential information).

The data collected for the purpose of producing official statistics is confidential if it allows for identification of individual data. Confidential statistical data cannot be disseminated or used for non-statistical purposes, except for the cases envisaged by the Georgian legislation.

IV. General information about Georgia

Georgia is located in Western part of the Caucasus, on the east coast of the Black Sea. It is bounded to the north by Russia, to the south by Turkey and Armenia, and to the southeast by Azerbaijan. The total area is 69,700 sq.km.¹ The capital city is Tbilisi (population – 1,118.3 thousand persons, 2016).

Time zone is UTC+4. National currency - Georgian Lari, 1 USD – 2.58 Lari (23.02.2017). Official language – Georgian, while in the Autonomous Republic of Abkhazia – Georgian and Abkhaz languages. GDP per capita – 3,766.6 USD (2015). Unemployment rate – 12% (2015).

Figure 1: Map of Georgia



¹ Including the area of the occupied territories (Autonomous Republic of Abkhazia and Tskhinvali region)

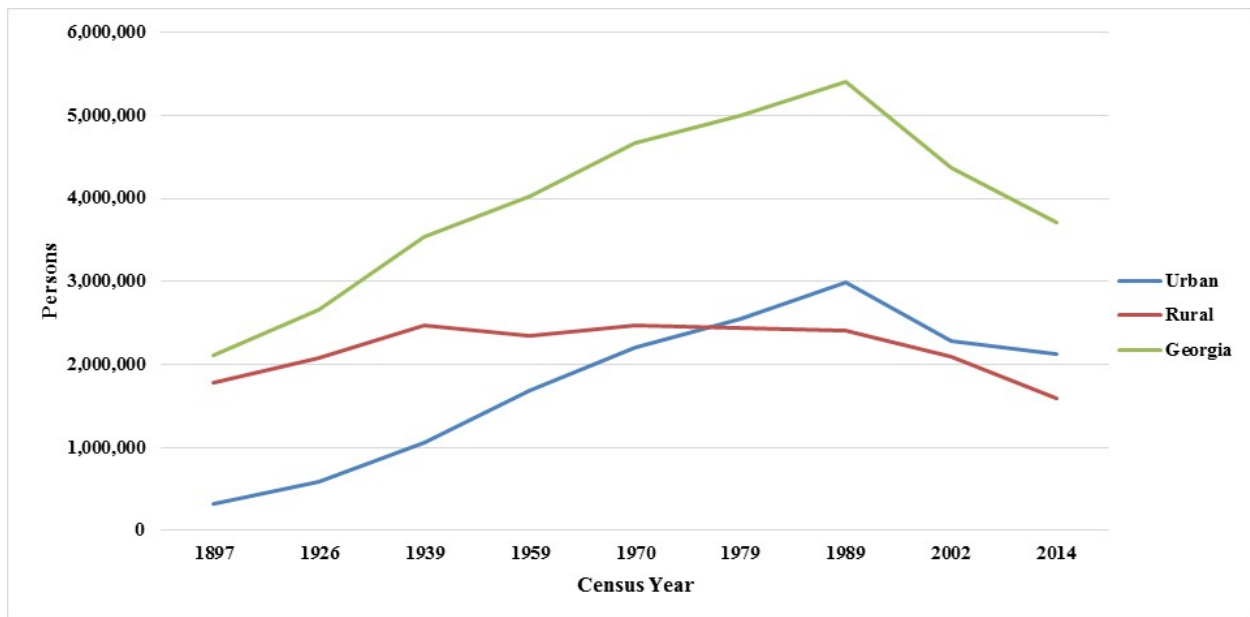
V. Population Dynamics

The present chapter discusses the population dynamics of Georgia, based on the results of the 2014 General Population Census.

The Census covered 82% (57 thousand sq. km.) of the whole area of the country. The Census could not be carried out in the occupied territories, in particular, in the Autonomous Republic of Abkhazia and Tskhinvali Region (former South Ossetia) - total area of 13 thousand sq.km.

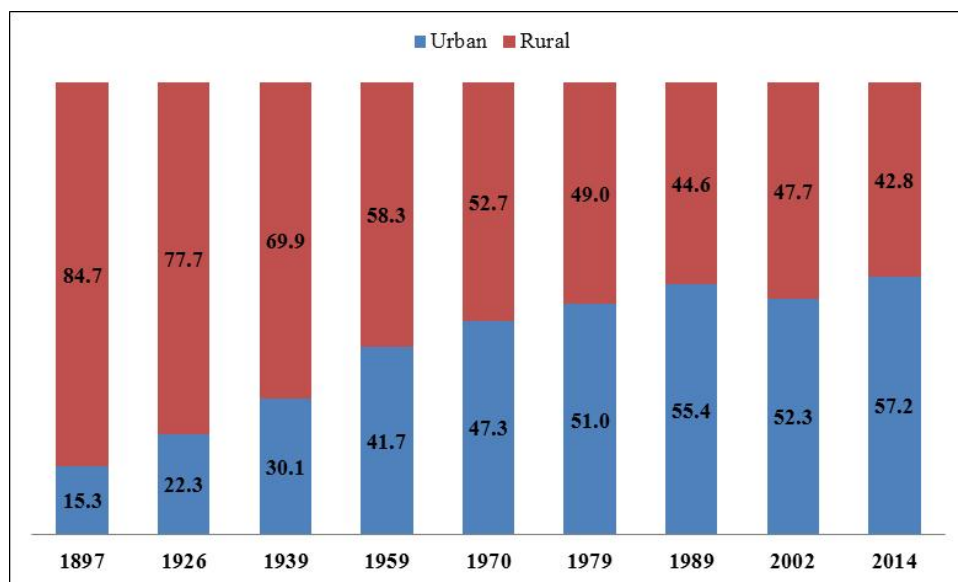
According to the 2014 Population Census, the number of the population of Georgia totaled 3,713,804 persons, or 15% (657,731 persons) less compared to the previous 2002 Census data (4,371,535 persons). According to the results of the 2014 Census, the urban population was 2,122,623, and the rural population was 1,591,181.

Figure 2: Number of population according to population censuses



The decrease was much more pronounced in the rural population equaling 23.7%, whereas the urban population shrank by 7.1%. As a result, the urban/rural pattern of the population changed significantly compared to the previous Censuses: the share of urban population in the total population increased by 4.9 percentage points and equaled 57.2%.

Figure 3: Distribution of urban/rural population according to the Censuses, 1897-2014 (%)



According to the results of the 2014 Population Census, Tbilisi population equaled 1,108,717 persons posting a 2.5 percent increase compared to the previous Census. However, this increase was mainly due to the expansion of the territory of Tbilisi at the expense of former rural areas of Mtskheta and Gardabani municipalities.

In of the other regions, the most significant decrease in population, compared to the 2002 Population Census, occurred in Racha-Lechkhumi and Kvemo Svaneti (37.4%) and Samegrelo-Zemo Svaneti (29%), while the smallest population decline - in the Autonomous Republic of Adjara (10.6%).

Table 1: Number of population by regions, 2002-2014

	Number of population (in thousands)		Increase of population by regions, 2002-2014(%)
	2014	2002	
Tbilisi	1,108.7	1,081.7	2.5
Adjara A.R.	334.0	376.0	-10.6
Kvemo Kartli	424.0	497.5	-14.6
Shida Kartli	263.4	314.0	-15.7
Guria	113.4	143.4	-21.0
Kakheti	318.6	407.2	-21.6
Samtskhe-Javakheti	160.5	207.6	-22.8
Imereti	533.9	699.7	-23.4
Mtskheta-Mtianeti	94.6	125.4	-24.8
Samegrelo-Zemo Svaneti	330.8	466.1	-29.0
Racha-Lechkhumi and Kvemo Svaneti	32.1	51.0	-37.4

According to the results of the General Population Census, male constitute 47.7% of the population of Georgia and female - 52.3%. In urban settlements male constitute 46.2%, while female - 53.8%. In

rural settlements the shares of male and female in the total population equaled 49.8% and 50.2%, respectively.

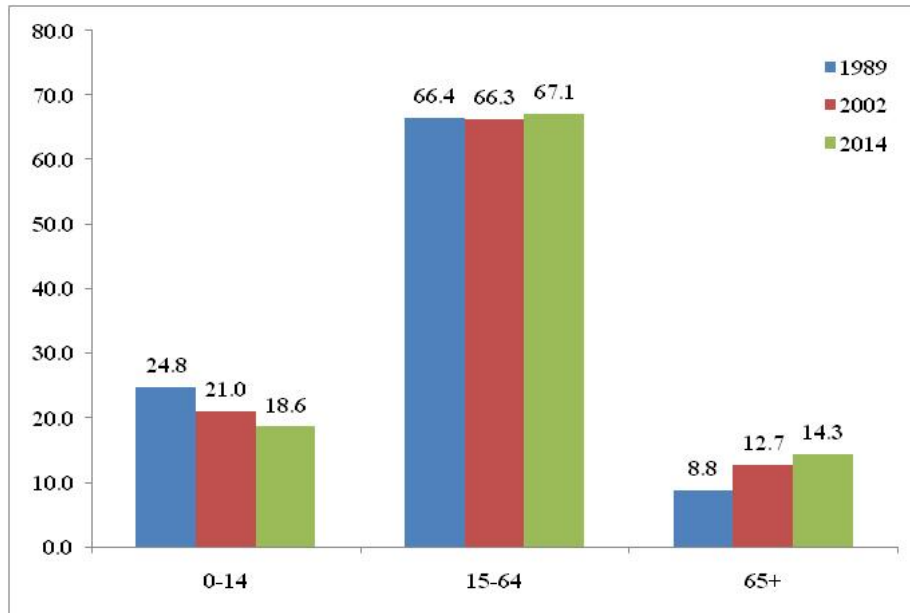
Table 2: Population by age and sex (thousand persons)

Age	Both sexes	Males	Females
Total	3,713.8	1,772.9	1,940.9
0-4	255.1	132.7	122.4
5-9	230.0	121.2	108.8
10-14	206.2	109.5	96.7
15-19	226.0	118.9	107.1
20-24	266.1	135.3	130.8
25-29	278.7	139.9	138.7
30-34	262.1	129.9	132.1
35-39	248.5	121.9	126.6
40-44	243.3	118.3	125.0
45-49	239.4	114.0	125.4
50-54	271.4	126.7	144.7
55-59	245.4	111.6	133.8
60-64	211.4	92.4	119.0
65-69	155.7	64.9	90.8
70-74	123.6	48.5	75.1
75-79	135.8	49.9	85.9
80-84	71.7	25.1	46.6
85-89	34.5	10.2	24.3
90-94	7.5	1.6	5.9
95-99	1.2	0.2	1.0
100+	0.3	0.0	0.3

Source: 2014 General Population Census

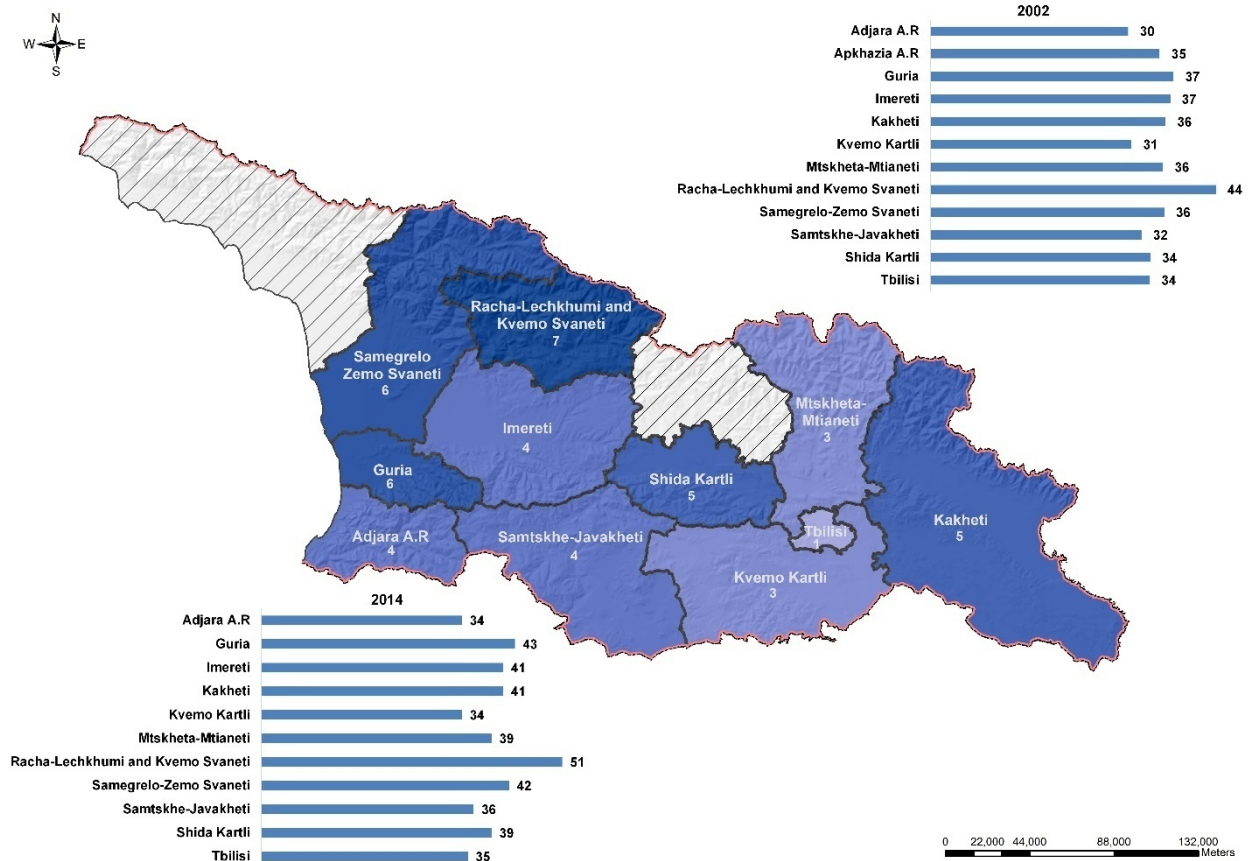
The share of persons aged 0-14 in the total population decreased by 2.4 percentage points compared to the 2002 Census data and equaled 18.6%. Analogously, the share of persons aged 15-64 and 65 and above increased by 0.8 and 1.6 percentage points, respectively.

Figure 4: Population by Major Age Groups (%) according to population censuses 1989, 2002 and 2014



The median age of population equaled 37 years in 2014 increasing by 3 years compared to the 2002 Population Census. The median age significantly changed across regions. The most significant increase occurred in Racha-Lechkhumi and Kvemo Svaneti (7 years) and Samegrelo-Zemo Svaneti (6 years), while the smallest change occurred in Tbilisi (1 year).

Figure 5: Increase in Median Age by Regions in 2002-2014



The 2014 General Population Census results revealed the necessity of re-estimation of basic demographic data of previous years. The re-estimation of data in the inter census period is recommended by the international organizations.

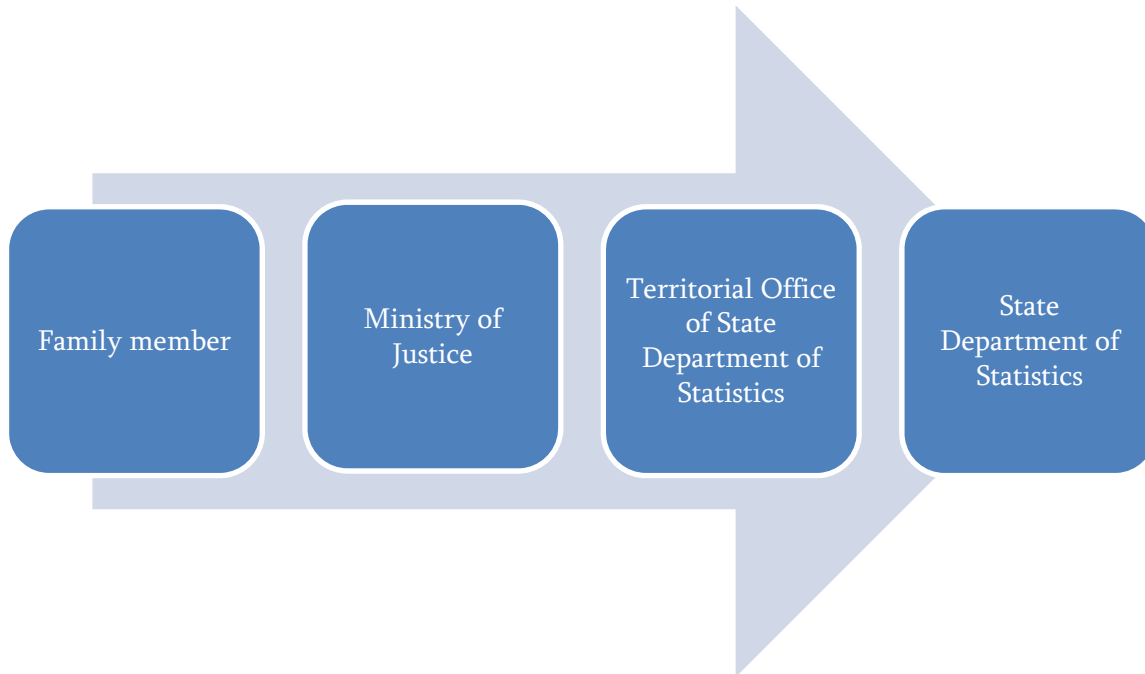
Currently, Geostat implements the re-estimation of the main demographic indicators of previous years with support of the United Nations Population Fund (UNFPA), whereby the harmonization of historical data with 2014 Census data will be available.

VI. Registration system of Civil Acts and Vital Statistics

The Central Historical Archive of Georgia keeps Church Metrical Books from 1819 until 1921. The books include records about the persons born, died and married for that period. The official registration system of civil acts started in 1921.

A. Registration system before 2003

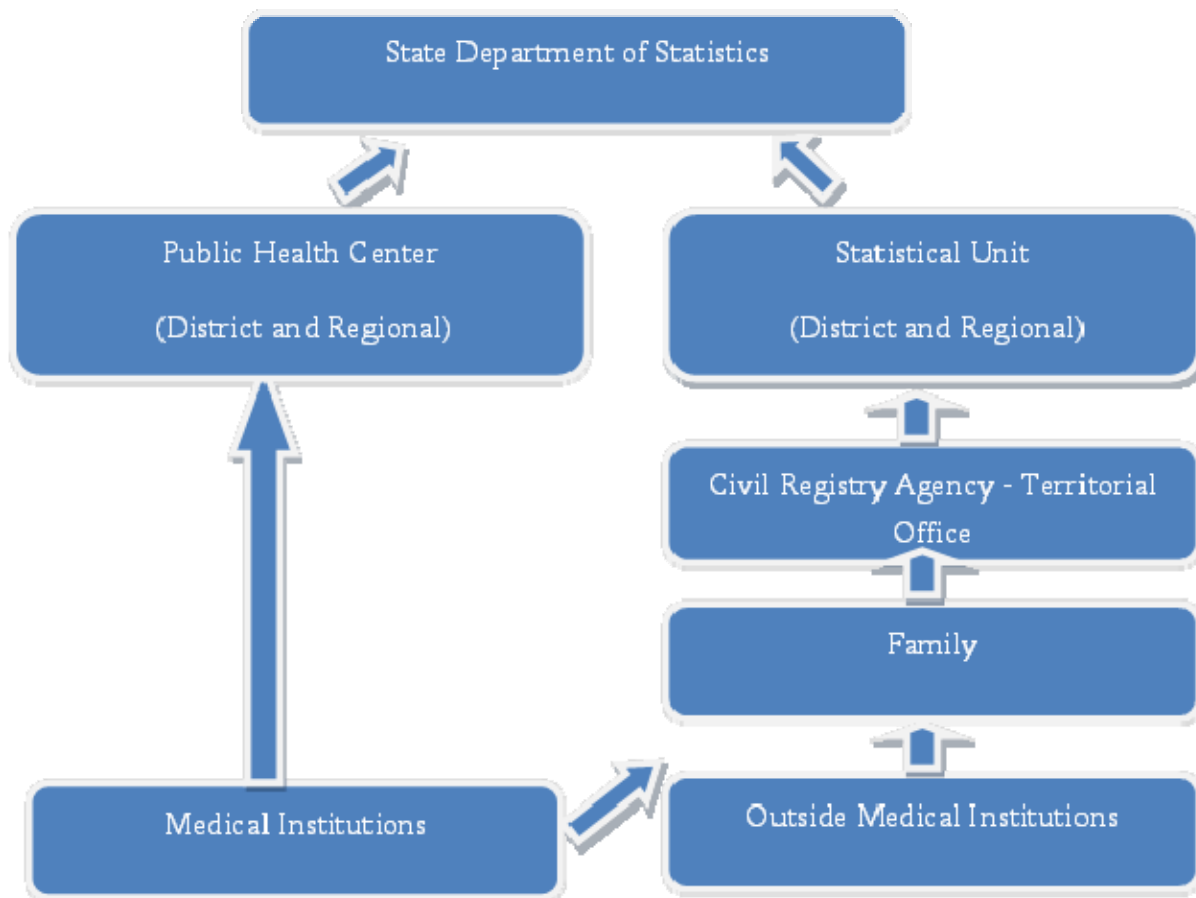
Figure 6: Registration System before 2003



In 1990s, after the collapse of the Soviet Union, the existing registration system of demographic events deteriorated. The existing registration system, which was based on the information from the Ministry of Justice, did not adequately reflect the situation and had quantitative, as well as qualitative drawbacks. During these years a family member registered the act with the relevant authorities. There was a registration fee which created disincentives for citizens to register civil acts. Territorial offices provided primary data to the State Department of Statistics with significant delays. Registered acts were provided on a quarterly basis for further processing. Afterwards, they were returned to the territorial offices of Civil Registry Agency.

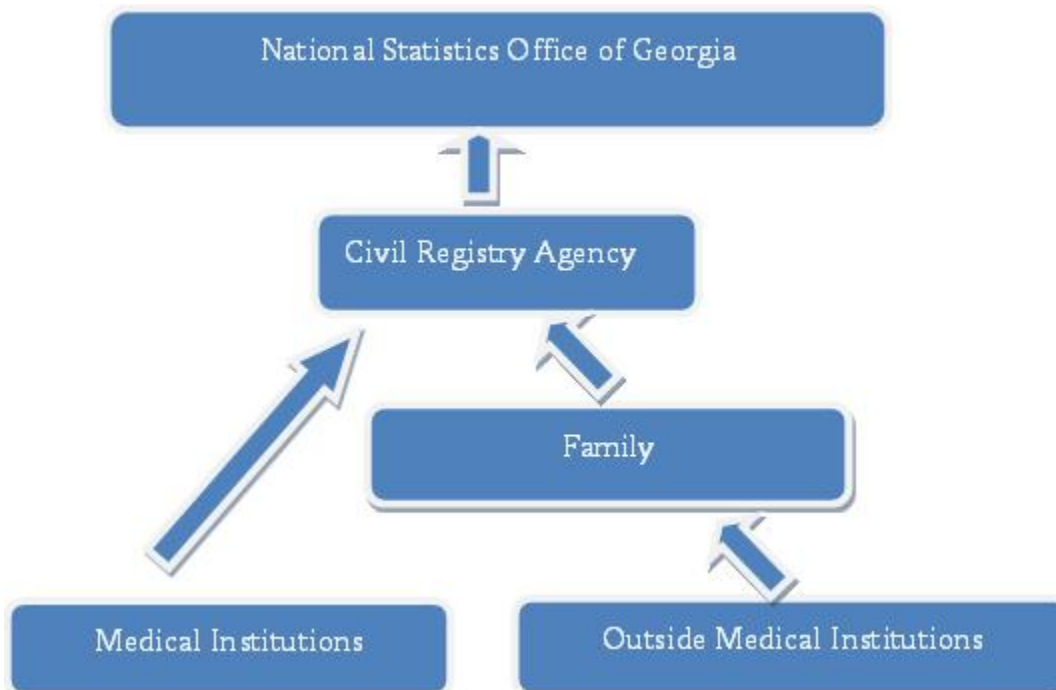
B. Registration system in 2003-2010

Figure 7: Registration System in 2003-2008



In 2003 a new system of collecting vital statistics data was introduced by the Presidential Decree. Under the new system, apart from receiving civil acts from the CRA, SDS would obtain primary data on births and deaths directly from medical institutions. A medical institution was obliged to fill in a medical certificate of death and birth prepared in line with the UN recommendations in two copies. One copy was sent to the family for registration, while the other one was sent to the SDS via Public Health offices, which collected data at local levels. SDS matched and merged data from both sources, thus producing final statistics.

Figure 8: Registration System in 2009-2010



It was found that by means of merging two sources of data a much bigger amount of births and deaths was captured compared to the official civil registration system. As a result, with the view of improving registration of civil acts, it became obligatory for medical institutions to provide the copy of medical certificate to the CRA instead of SDS.

At the same time, other medical institutions were added to the list of entities responsible for issuing the certificates, in particular, ambulance services, family doctors, etc.

Family members were now obliged to register respective births (deaths) occurred outside a medical institution. In case of absence of registration, the family would not be allowed to bury the deceased person.

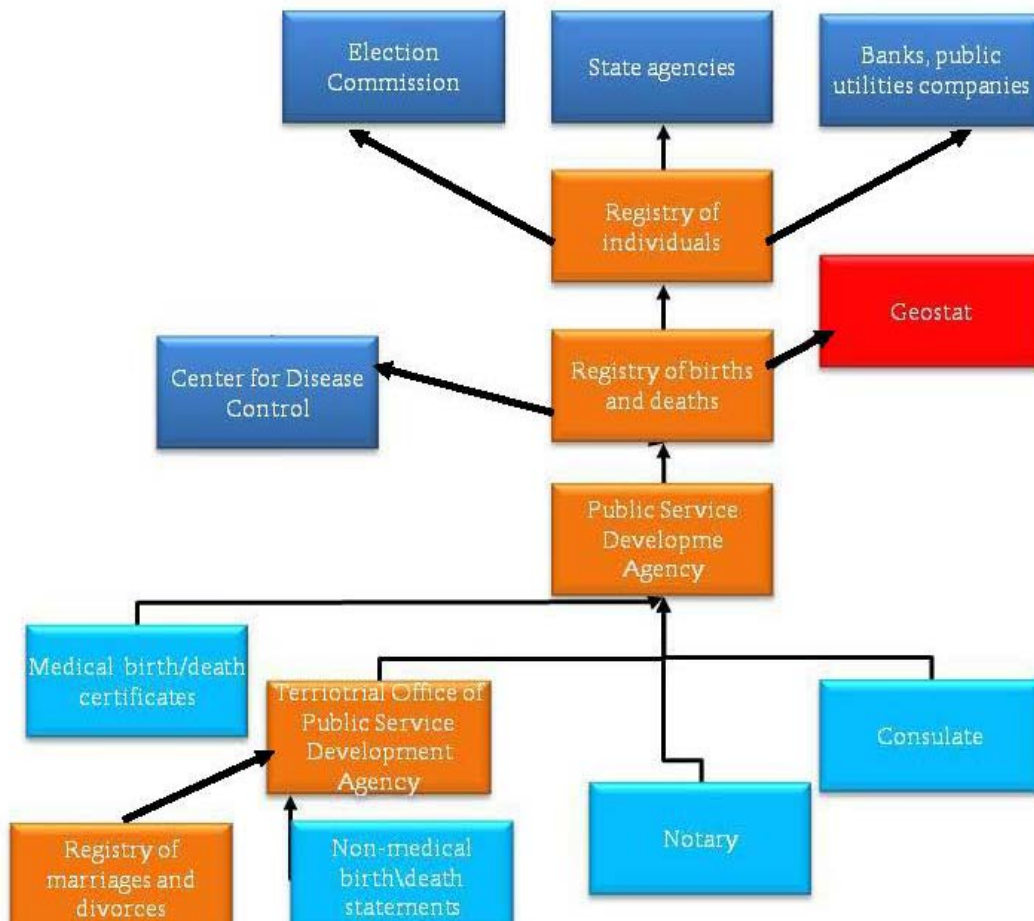
Despite the fact that regulations related to assigning a personal identification number (PIN) existed already in 1998, actual implementation of PIN assignment to a newborn child started in 2008. Without a PIN a child cannot be accepted to a kindergarten or a school. This has drastically improved registration in urban areas; however, in rural settlements the situation improved only partially.

In the mentioned period the SDS received medical certificates from the CRA both in electronic and paper form.

C. Current registration system

In 2011 new changes to the system were made. In particular, medical certificates are filled electronically and automatically sent to the Public Service Development Agency (PSDA, former Civil Registry Agency).

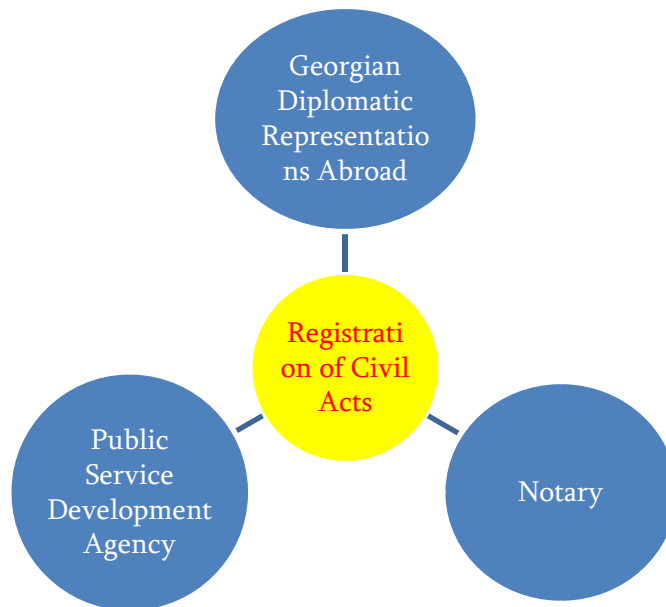
Figure 9: Diagram of Current Registration System of Civil Acts



The objective of the current system represents development of a unified registration system of Civil Acts.

Civil acts are registered by:

- Public Service Development Agency, under the Ministry of Justice of Georgia which exercises its powers through territorial offices (74 Territorial Offices);
- Georgian Diplomatic Representations Abroad, Georgian interests section set up within Diplomatic Missions of third states and Consular offices;
- Notaries (only registration of marriages and divorces).



The following main normative acts regulate registration facts related to births, deaths, marriages and divorces:

- Law of Georgia on “Civil Status Acts”;
- “On Approval of the Procedures for Civil Registration“ Minister of Justice Order N18 31 January, 2012;
- Joint order of the Minister of Labor, Health and Social Affairs and the Minister of Justice, №01-5/ n- № 19 January 31, 2012 on approval of “Birth and death medical certificate details, forms, their completion and sending rules”.

The Geostat receives individual databases on births, deaths, marriages and divorces electronically on a quarterly basis from the PSDA since 2011.

D. Birth registration

One of the following documents proving the fact of birth is used for birth registration:

- Medical certificate of birth;
- Decision of a competent authority for the establishment of a legal significance fact of a person’s birth at a certain time and in certain circumstances;
- Document of birth issued by a competent authority of another country based on the laws of this country.

The following persons are required to apply to the civil registration authority for birth registration:

1. A head of a medical institution or his/her authorized representative, provided a child was born in that institution;
2. A person authorized to issue a medical certificate of birth but is not employed by any medical institution, provided he/she assisted a child's mother in delivery outside a medical establishment;
3. A parent of a child, if the persons indicated in 1-2 subparagraphs of this article have not announced the child's birth or if a child was born in another country or outside a medical institution without the assistance of a person authorized to issue a medical certificate of birth;
4. An authorized representative of a local administrative body, if a child was born outside a medical institution without the assistance of a person authorized to issue a medical certificate of birth;
5. The head of a guardianship authority or an educational institution, if the person whose birth has not been registered is the ward of such institution or is under its guardianship.

The required data for birth registration in civil records is indicated on the basis of a medical certificate on birth issued by the joint Order of the Minister of Labor, Health and Social Affairs and the Minister of Justice.

The medical certificate on birth includes the following information:

Mother	Child	Father
1. Name, surname	1. Name, surname	1. Name, surname
2. PIN	2. Sex (Female, Male)	2. PIN
3. Date of birth	3. Weight (G)	3. Date of birth
4. Place of birth	4. Height (Cm)	4. Place of birth
5. Citizenship	5. The date of occurrence	5. Citizenship
6. Place of registration	6. The place of occurrence	6. Place of registration
7. The usual place of residence	(medical institution, house, etc.)	7. The usual place of residence
8. Marital status (married, single, divorced, widow)	7. Place of birth	
9. Birth order	8. Place of registration	
10. Pregnancy duration (number of weeks)	9. Surname (father's, mother's, both)	
11. Status of delivery (stillbirths, live births)		
12. Type of birth (i.e. single, twin or higher-multiple delivery)		

Medical certificate is filled electronically by an institution providing obstetric inpatient services or a primary healthcare provider with independent medical practice. The system is administered by the PSDA.

The medical institutions are obliged to send an electronic notification about the birth to the PSDA within 5 working days and the latter completes the registration on the basis of this notification. No receiving of the notification in PSDA envisages penalty of 500 Lari.

In case of software malfunctions and no possibility to submit a medical certificate electronically, it can be represented in paper form. Submission in paper form is acceptable if software malfunction lasts at least for 2 working days.

Completion of a medical certificate is prohibited if the birth fact was outside a medical institution, except for the cases when a person with independent medical practice assisted the childbirth outside a medical institution. At the same time, it is not allowed to establish the fact of birth in absentia the medical person (doctor, midwife, nurse).

A head of a medical institution authorizes a person/persons to fill in a medical certificate in the medical institution.

In case of a stillbirth only a medical birth certificate is filled, indicating the relevant status. In case of errors in a certificate, a medical institution must make necessary corrections and send the new certificate to the PSDA.

One paper copy of a medical certificate (hard copy of an electronic form, signed and sealed) is kept in the medical institution.

The paper copy of a certificate is kept in the medical institution for 3 years.

Factors enhancing registration of births

Registration of births is directly related to a number of state programs and it encourages stakeholders to perform comprehensive registration of newborns, further to involve in various programs, including:

- A universal healthcare program;
- Financial social assistance program;
- Target program for improving demographic situation.

It also has to be mentioned that a universal healthcare program covers pregnancy and childbirth expenses; thus, a pregnant has incentives to register at a medical institution in order to get free services.

E. Death registration

It is obligatory to register the death of a citizen of Georgia, a stateless person with status and any person deceased in Georgia

The following persons are required to apply to the civil registration authority for a person's death registration:

- A head of a medical, anatomic pathology (clinical pathology) or forensic institution or his/her authorized representative, within five business days from a person's death, provided he/she died at the above mentioned institution or the fact of death was established/confirmed by the same institution;
- An individual who is authorized to issue a medical certificate of death but is not employed by any medical, anatomic pathology (clinical pathology) or forensic institution, within five business days from a person's death, provided that the individual has issued a medical certificate of death or established the fact of death;
- A representative of local administrative body, within five working days from the notification of a person's death;
- The Ministry of Internal Affairs of Georgia, with respect to an officer killed in any military action or natural calamity, within 30 calendar days from the notification of a person's death;
- The Ministry of Defense of Georgia, with respect to an officer killed under martial law, or during participation in any mission for the preservation and restoration of international peace and safety, or during other peacekeeping missions, within 30 calendar days from the notification of a person's death;
- A parent (an adoptive parent), a spouse or a child (an adoptee) if he/she can assume that the persons specified in this paragraph are not aware of the fact of a person's death;
- The State Security Service of Georgia, with respect to an officer killed in any military action or natural calamity, within 30 calendar days from the notification of a person's death;
- Any legally capable person of full age or an administrative body may apply to the civil registration authority for the registration of a person's death;
- If a person dies in another country, any competent authority in the country of residence of the deceased person may also apply to the consular office for the registration of a person's death.

One of the following documents proving the fact of death is used for death registration:

- A medical certificate of death;
- A decision of a competent authority establishing the legal significance fact of a person's death;
- A court decision of declaring a person dead;
- A report drafted by a representative of a local administrative body confirming the death of a person;
- A notification of the Ministry of Defense of Georgia, the Ministry of Internal Affairs of Georgia or State Security Service of Georgia regarding the death of an officer during peacekeeping missions, in war or combat operations, as well as during natural calamity;
- A document issued by a competent authority of any other country under the laws of the same country evidencing the death.

The head of any medical, anatomic pathology (clinical pathology), or forensic institution, or his/her authorized representative, as well as a person authorized to issue a medical certificate of death, not being, however, employed by any of the above-mentioned institutions is required to submit a medical certificate of death to the PSDA in electronic form.

The joint order of the Minister of Labour, Health, and Social Affairs of Georgia and the Minister of Justice of Georgia defines the details of a medical certificate of death and the procedures for drafting and sending thereof. An entity/person sending a medical certificate of death to the PSDA shall be responsible for the accuracy and completeness of the medical certificate sent except when it is impossible to fully complete the certificate due to failure to obtain relevant information. Failure to send a death certificate to the PSDA results in a penalty of 500 Lari.

The medical death certificate includes the following information:

- I. Name of self-governing unit;
- II. Name of medical institution;
- III. Information of a deceased person:
 1. Name and surname;
 2. PIN;
 3. Date of birth (hour and minute is indicated only in case of infant death);
 4. Date of occurrence (hour and minute is indicated only in case of death in 24 hours);
 5. Place of birth;
 6. Citizenship;
 7. Place of registration;
 8. The usual place of residence;
 9. Source to complete personal information;

10. Marital status (married, single, divorced, widow);
 11. Gender (female, male);
 12. Site of occurrence (medical institution, house, other);
 13. Causes of death (disease or pathological process, which directly led to the death);
 14. Other important diseases;
 15. Cause of death (illness, accident, murder, suicide, iatrogenic disease, unknown causes of death);
- IV. Information of violence death:
1. Site of occurrence (educational institution, house, road, workplace, sport event, other) of violent death ;
 2. Date of occurrence of violence death;
 3. Circumstances of violence death;
- V. The death of a pregnant, parturient (maternity, obstetric) or puerperal:
1. Duration of gestation (number of weeks, unknown) of pregnant, parturient (maternity, obstetric) or puerperal death
 2. Pregnancy in the last 12 months (yes, no, unknown);
 3. Death is related to complications of abortion, intraperitoneal pregnancy, pregnancy, childbirth, puerperium – including 42 days, other;
- VI. Under-5 mortality:
1. Gestational age (22-27 weeks, 28 week and more);
 2. Type of birth (i.e. single, twin or higher-multiple delivery);
 3. Height at birth (more or less than 47 cm.);
- VII. Death was established by a doctor, pathologist, forensic expert, other independent medical staff;
- VIII. The cause of death was established by corpse examination, on the basis of medical documentation, autopsy.

VII. Data quality

Data quality assurance plays an important role in collecting, processing and analyzing vital statistics. Starting from 2011 changes in normative acts and transition to the electronic issuance of medical certificates increased the coverage of death and birth facts, use of personal identification numbers and introduction of the electronic system eliminated duplicates and improved quality of personal information (name, surname, sex, date of birth).

Use of personal identification number (PIN):

The PSDA assigns a PIN to a person at birth registration, or during registration by place of usual residence, or by time of issuance of Identity (Residence) cards. It is prohibited to assign two or more PINs to the same person, the same PIN to different persons, or to change or reuse a PIN of a deceased person. A PIN consists of eleven digits. First two digits (from 01 to 99) denote an administrative unit code; the subsequent digit (from 1 to 9) is the control digit calculated from the other ten digits based on a certain formula. The following two digits (from 01 to 99) represent a code of a territorial office that assigned the PIN and the last six digits denote the serial number of the PIN record (from 000001 to 999999). The Chairperson of the PSDA approves the formula for calculating the control digit.

The PSDA, via its territorial authorities, performs logical checks of birth and death certificates sent from the medical institution. In case of missing information and/or inconsistencies within variables the certificates are sent back to respective medical institutions for clarification.

Since 1998 Causes of death are coded according to the ICD-10 (the 10th revision of the International Statistical Classification of Diseases and Related Health Problems). The IRIS software recommended by the WHO for determining causes of death is used in Geostat since 2012. The software automatically selects the main cause of death and assigns a code according to the ICD-10. Additional quality checks for causes of death are performed using the ANACOD software, also recommended by the WHO.

Improvement in data quality was greatly facilitated by the introduction of the online system. Additional controls and validations were added to the system, for example, mothers' age (15-49 years).

Despite this, there are still some variables in birth and death databases which are not completely filled for certain reasons.

Missing values in the 2015 birth database:

Child length – 1.0%

Child weight – 3.2%
Gestational age – 1.3%
Number of fetus during delivery – 1.0%
Age of father – 2.7%

Missing values in the 2015 death database:

Marital status – 20.7%
Main cause of death – 9.7%

Since unknown causes of death may contain cases of maternal mortality, in 2009 the Geostat started to compare the birth and death databases with the view of identifying women who died within 1 year of child birth. Geostat and the MoLHSA collaborate to improve data quality of maternal mortality by means of sharing and comparing their data sources.

Data quality improvement

With the purpose of improving medical services and related statistical data, birth and death medical certificates will be administered by the Ministry of Labor, Health and Social Affairs instead of PSDA starting from 2017. The MoLHSA also plans to establish a new online system for the maternal and newborn health surveillance. The system contains information on mothers, fetuses and newborns with the view to formulating comprehensive statistical and epidemiological analysis. Any pregnant woman addressing an antenatal clinic will be registered using the PIN, and pertinent information about the pregnant will be available in the system. Providers of medical services/maternity houses will be informed about the details of gestational age.

The system will also contain information about child delivery. PIN assignment for a newborn will be performed through this system. PINs of a mother and her child will be linked.

VIII. Births

A. Data availability and definitions

The number of live births in Georgia in urban and rural terms is available for 1940 and for the period after 1950 whereas the number of stillbirths is available from 1960 with 5-year intervals. The data on the number of live births and stillbirths by regions and sex are available only since 1969. In the Soviet time the statistical data on stillbirths was not disseminated.

In 1990s the data quality of demographic statistics deteriorated suffering not only from problems in vital registration but also from challenges related to soared migration flows.

Table 3: Number of live births according to different sources and completeness rate

	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014
(1) Geostat ²	373,442	265,562	238,760	263,536	296,143
(2) UN ³	408,134	311,866	274,525	303,076	282,324
Completeness rate (1):(2)	91.5	85.2	87.0	87.0	104.9

The second problem of data quality is related to the definition of births. Georgia used the Soviet definition of live births and stillbirths until 1996, which did not correspond to the WHO recommendations.

Table 4: Soviet and WHO definitions of live births

Infant born after the end of the 28 th week of pregnancy				
	No signs of life	No breath but other signs	Died during the first	Survived first 7 days
USSR	<i>Stillbirth</i>		<i>Live birth</i>	
WHO	<i>Stillbirth</i>	<i>Live birth</i>		
Infant born before the end of the 28 th week of pregnancy, or with weight under 1 000 gr. Or length under 35 cm				
	No signs of life	No breath but other signs	Died during the first	Survived first 7 days
USSR	<i>Miscarriage</i>			<i>Live birth</i>
WHO	<i>Stillbirth</i>	<i>Live birth</i>		

Source : (Anderson & Silver, 1986)

Introduction of the online registration system in 2011 led to improvements in the coverage and quality of vital statistics. The birth databases contain different birth-related variables, such as the number of births by sex, birth date, birth place, registration date, registration place, birth order⁴,

² Tsuladze G. et al, *Demographic yearbook of Georgia, 2014. Tbilisi, 2015, UNFPA Georgia*

³ *The World Population Prospects: 2015 Revision, UN, 2016*

⁴ *this indicator entirely depends on the answer of mother*

weight and length of child, age of mother, legitimacy status of a child and mother's marital status. These variables are available by regions, municipalities and urban and rural areas. At this stage data such as parent's education level and economic status are not collected.

Table 5: Number of stillbirth since 1960

	1960	1970	1980	1990	1995	2000	2005	2010	2015
Stillbirths	544	696	783	861	654	876	739	653	589

Source: National Statistics Office of Georgia

In recent years there was a drastic decline in the number of stillbirths, largely owing to improved accessibility and quality of the healthcare system. The number of stillbirths equaled 589 persons in 2015, 10% less compared to 2010.

Amendments to the current legislation and the introduction of the online birth registration system practically eliminated the problem of late registrations. The absolute majority (93.4 % in 2015) of newborns are born and registered in the same month, indicating efficiency of the registration system.

B. Live births

Various indicators are used for fertility measurement. Some of them will be used to analyze recent fertility trends in Georgia.

The number of live births as well as the crude birth rate⁵ (CBR) tended to decrease over the last decades.

Table 6: Number of live births and crude birth rate, 1960-2015

	1960	1970	1980	1990	1995	2000	2005	2010	2015
Live Birth	102,866	90,207	89,458	92,815	56,341	48,800	46,512	62,585	59,249
CBR	24.7	19.2	17.6	17.1	11.9	11.0	10.7	14.1	15.9

Source: National Statistics Office of Georgia

The number of live births equaled 59,249 in 2015, a 2.3% decrease from the previous year. The largest number of live births was recorded in Tbilisi (17,509 in 2015) while the lowest numbers were registered in the small mountainous regions (379 in Racha-Lechkhumi and Kvemo-Svaneti and 1,280

⁵ Number of births over a given period divided by the average number of population. It is expressed as average annual number of births per 1,000 population.

in Mtskheta-Mtianeti Region). In regional terms the biggest decline was observed in the Samegrelo-Zemo Svaneti region, while the number of births remained unchanged in the Adjara A.R.

Table 7: Live birth by regions

	2014	2015	Increase/decrease 2014-15
Georgia	60,635	59,249	-2.3
Tbilisi	18,048	17,509	-3.1
A.R of Adjara	6,305	6,299	-0.1
Guria	1,577	1,559	-1.2
Imereti	8,593	8,515	-0.9
Kakheti	5,261	5,212	-0.9
Mtskheta-Mtianeti	1,329	1,280	-3.8
Racha-Lechkumi and Kvemo-Svaneti	379	367	-3.3
Samegrelo-Zemo Svaneti	5,200	4,998	-4.0
Samtskhe-Javakheti	2,315	2,268	-2.1
Kvemo Kartli	7,354	7,103	-3.5
Shida Kartli	4,274	4,139	-3.3

Source: National Statistics Office of Georgia

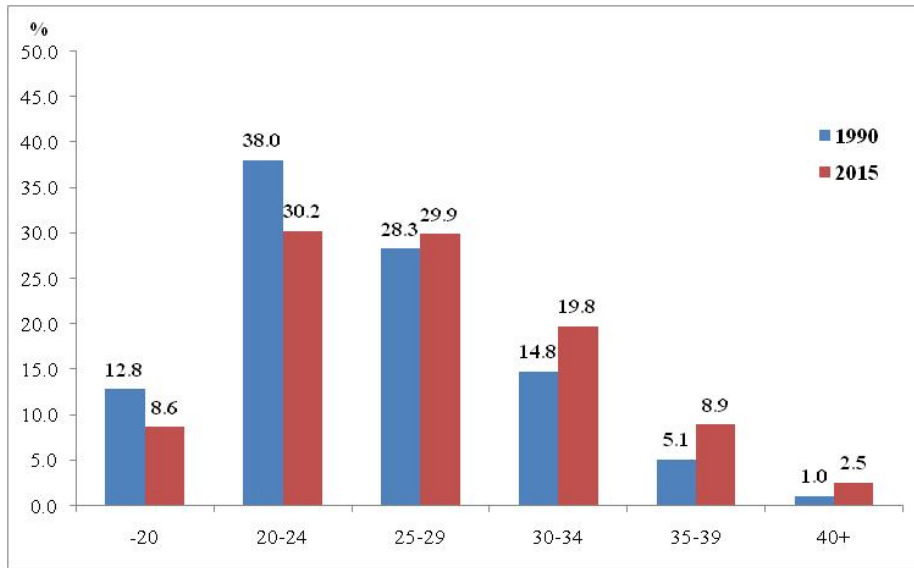
With the exception of Tbilisi, for the majority of newborns the place of occurrence and the place of usual residence of mother are the same. However, in Tbilisi these two variables match only in 65% of cases. The reasons for this discrepancy are related to i) higher level of medical (delivery) services in Tbilisi; ii) domestic migration to Tbilisi not fully reflected in the data on usual residence.

Table 8: Distribution of Live births by place of occurrence and place of usual residence of mother

	Percentage of live births with matched place of occurrence and place of usual residence (%)
Tbilisi	65.0
Adjara A.R.	89.3
Guria	93.2
Imereti	84.2
Kakheti	95.6
Mtskheta-Mtianeti	88.2
Racha-Lechkumi and Kvemo Svaneti	85.0
Samegrelo-Zemo Svaneti	94.8
Samtskhe-Javakheti	95.4
Kvemo Kartli	92.1
Shida Kartli	90.7

Source: National Statistics Office of Georgia

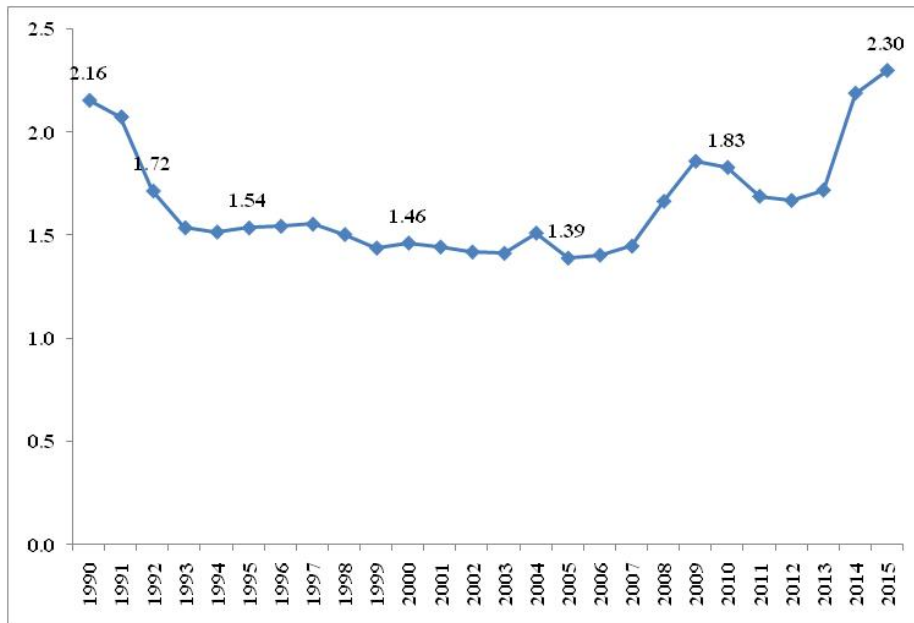
Figure 10: Distribution of live births by age of mother (%)



Source: National Statistics Office of Georgia

The age structure of fertility has changed since 1990 following the collapse of the Soviet Union. In 2015 the number of births declined for women aged less than 25, rose for women aged 30 years and older, and remained unchanged for women aged 25-29. The mean age of mothers at first birth equaled 24.7 years in 2015, up from 23.7 in 1990.

Figure 11: Total fertility rate in Georgia



Source: National Statistics Office of Georgia

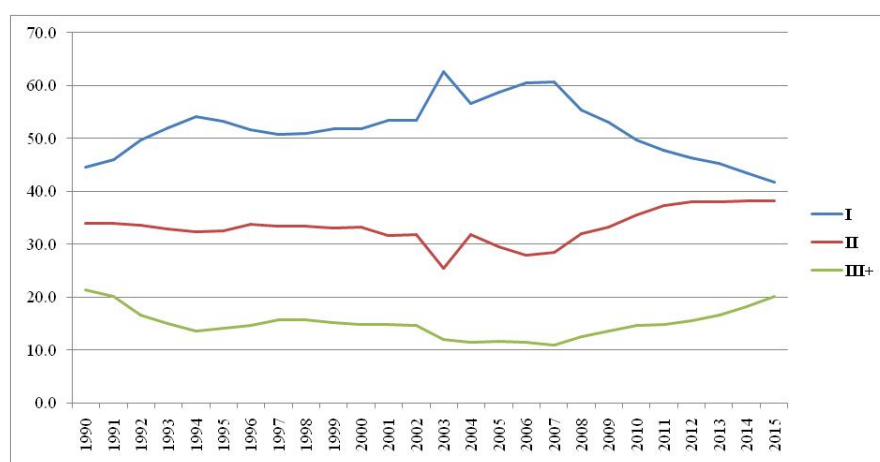
Analysis of the total fertility rate (the average number of children born per woman at the reproductive age) presents a challenge due to the above-mentioned problems with demographic data after 1990. It can be asserted with higher confidence that the TFR dropped during 1990, while there was a marked increase in the TFR following a surge in the number of births in the middle of 2000s. New demographic data obtained after the 2014 General Population Census makes estimates of the TFR not comparable at this stage due to large differences in the overall population estimates before and after the Census. Currently Geostat performs backcasting of demographic series based on the 2014 Census results after which it will be possible to have a clearer picture with regard to the TFR. The introduction of the online registration system resulted in an increase of the number of registered live births. On the other hand, the 2014 Population Census revealed differences between the number of registered live births and the number of census-estimated live births. The completeness rate exceeded 115 in 2013.

Table 9: Live births and birth completeness rate in 2013

	2013
Registered live births	57,878
Number of population born in 2013 according to 2014 General population census	49,693
Infant mortality	640
Net-Migration at 0 ages	410
Birth completeness rate	115.9

The above-mentioned difference in live births from the registration and census sources could be at least partially explained by resident and non-resident births in Georgia. Non-resident citizens of Georgia may prefer to give birth in a medical institution on the territory of Georgia in order to benefit from free healthcare programs.

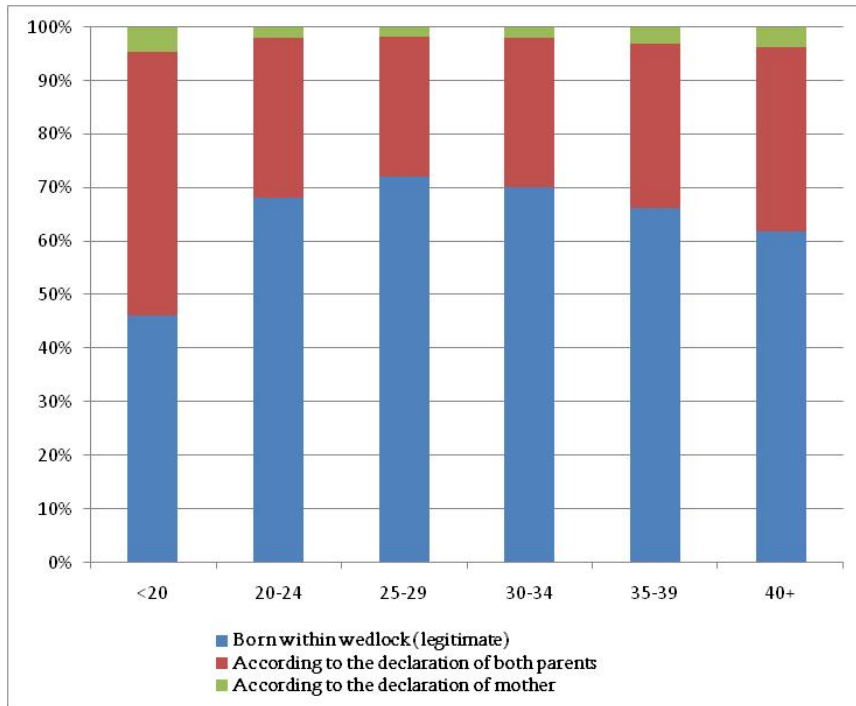
Figure 12: Distribution of live births by order



Source: National Statistics Office of Georgia

Significant changes in the distribution of registered live births by order can be seen since 2008. Compared to 2008, in 2015 the share of the first child decreased from 55.3% to 41.7%, the share of the third and next order child increased from 12.6% to 20.1%, while the share of the second child remained practically unchanged.

Figure 13: Share (%) of live births by legitimacy status in 2015



Source: National Statistics Office of Georgia

The number of child born out of wedlock totaled 19,224, or 32.4% of live births. The share of live birth outside of registered marriages is higher for women under age 20.

Using available data births out of wedlock can be split into two components: live births registered according the joint statement of parents and a statement of mother. The share of children born out of wedlock (registered only by the statement of mother) does not exceed 7%. The high rate of children born out of wedlock can be explained by a widespread practice of religious marriages, which has no legal significance and is considered to be unregistered.

C. Sex ratio at birth

The sex ratio at birth is considered to deviate from conventional norms in Georgia. As a rule, this figure is close to 105 (Hardy, 2002), fluctuating between 103 and 107. In 2015 the sex ratio at birth equaled 109.

Table 10: The number of live births by sex and sex ratio since 2011

	Both sex	Male	Female	Sex ratio at birth
2011	58,014	30,330	27,684	109.6
2012	57,031	29,801	27,230	109.4
2013	57,878	30,027	27,851	107.8
2014	60,635	31,325	29,310	106.9
2015	59,249	30,902	28,347	109.0

Source: National Statistics Office of Georgia

IX. Deaths

The present chapter includes the analysis of the number of deaths. The major documents underlying death registration include i) a medical death certificate, which follows the standards of the World Health Organization (WHO) and the recommendations of the United Nations, and ii) a death certificate which contains only personal data on the deceased person.

Before 2004 death data included only sex, dates of birth and death, main cause of death and permanent place of residence. Starting from 2011 the list of variables was increased, and it currently includes data on place and site of occurrence, up to 8 causes of death, additional fields related to infant and under-5 mortality. It should be noted, however, that death certificates still do not include variables on the level of education and economic activity status of the deceased person as well as data on mothers of a deceased child under 5 years.

A. Data Availability

Similar to birth data, continuous time series for death statistics is available starting from 1950. However, initially the data was broken down only by urban and rural settlements. Before 1996 data on infant and under-5 children mortality did not include any detailed variables. Starting from 1996 the dates of birth and death were included, while since 2005 data was disaggregated by regions and main causes of death.

Data on maternal mortality has been available since 1990, while disaggregation by regions and causes of death was made possible from 2005.

B. Main trends in death statistics

The number of deaths as well as crude death rate (CDR) tended to increase since 1960.

Table 11: Number of deaths and crude death rate since 1960

	1960	1970	1980	1990	1995	2000	2005	2010	2015
Deaths	27,015	34,283	43,346	50,721	49,073	47,410	40,721	47,864	49,121
CDR	6.5	7.3	8.5	9.3	10.4	10.7	9.3	10.7	13.2

Source: National Statistics Office of Georgia

In 2015 the number of deaths increased by 0.1% compared to 2014 and totaled 49,121 persons. In regional terms the biggest increase was observed in the mountainous regions. The regions with the

higher fertility level (Tbilisi, Adjara, Kvemo Kartli) registered the lowest mortality level and the mountainous regions (Racha-Lechkhumi and Kvemo-Svaneti, as well as Zemo Svaneti) with higher average age exhibit the highest mortality level.

Table 12: Number of deaths by regions

	2014	2015	Increase/decrease 2014-15
Georgia	49,087	49,121	0.1
Tbilisi	12,403	12,377	-0.2
Adjara A.R.	3,386	3,475	2.6
Guria	1,820	1,786	-1.9
Imereti	8,822	8,725	-1.1
Kakheti	5,074	4,957	-2.4
Mtskheta-Mtianeti	1,378	1,464	5.9
Racha-Lechkhumi and Kvemo-Svaneti	778	840	7.4
Samegrelo-Zemo Svaneti	5,369	5,397	0.5
Samtskhe-Javakheti	2,067	2,086	0.9
Kvemo Kartli	4,377	4,444	1.5
Shida Kartli	3,613	3,570	-1.2

Source: National Statistics Office of Georgia

In 2015 the home deaths constituted 17.3% of total deaths. The absolute majority of home deaths were registered through ambulance services or medical expertise. As a result, 90.3% of home deaths were registered based on a corresponding medical death certificate. More than 90% of occurred deaths were registered in the same month.

In recent years a number of activities were conducted in order to reduce maternal and children mortality as well as to improve the quality of related data. Such activities included:

- Comparison of maternal mortality data sources jointly by the Geostat and the National Center for Disease Control (NCDC) with a bi-annual periodicity (starting from 2009);
- Starting from 2011 the NCDC initiated regular checks of maternal mortality causes using medical documentation and verbal autopsy methods.
- On the basis of Decree No. 01-30/N of the Minister of Labor, Health and Social Affairs of Georgia “On the mandatory notification of the events of maternal and child mortality/stillbirths”, an urgent notification system (from medical institutions) on maternal and under-5/stillbirth mortality was established⁶.

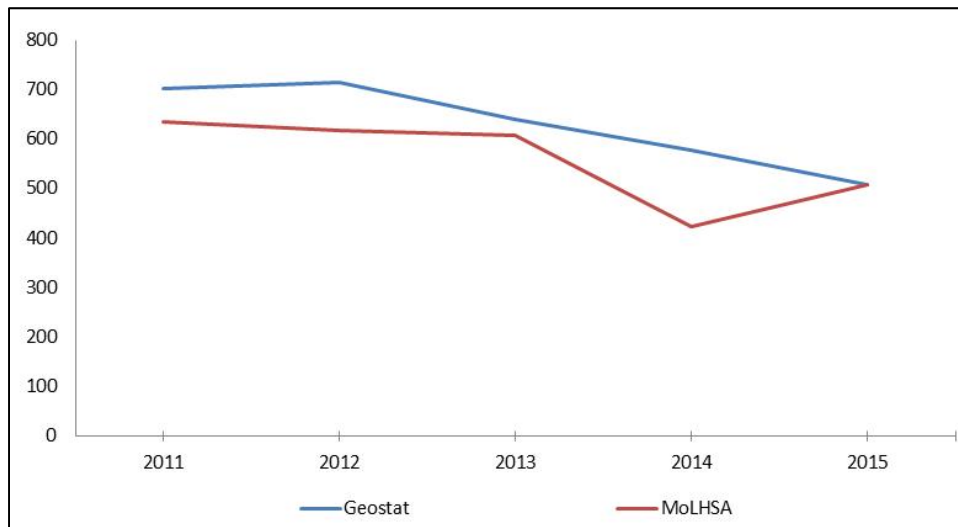
⁶ *Maternal Mortality trends in Georgia, NCDC (available only in Georgian)*

C. Infant and Under 5 Mortality

During 2000-2015 the number of infant mortality tended to decline. According to the official statistics, in 2015 the number of infant deaths decreased by 7.6% compared to the previous year and totaled 507 children. The corresponding infant mortality rate (the number of infant deaths per 1,000 live births) declined by 0.9 points compared to 2014 equaling 8.6‰.

Before 2015 there were differences in infant mortality data of the MoLHSA and the Geostat. Starting from 2015 the data reconciliation between these two data sources was achieved for the first time through mutual work and data exchange.

Figure 14: Infant mortality, Geostat and MoLHSA data



The level of early neonatal mortality (0-6 days) is the highest in the infant mortality, equaling 3.8‰ in 2015. The neonatal mortality rate started to increase in 1990 and reached the record high level in 2005 (17.7‰). This uptrend is essentially related to the improvement in the quality of neonatal mortality data, thus complicating the situational analysis. Starting from 2006 the downtrend in this indicator reversed.

In 2015 the number of under-5 deaths equaled 605 children and decreased by 8.9% compared to the previous year. The corresponding under-5 mortality rate decreased by 0.7 points and totaled 10.2 ‰.

D. Maternal Mortality

Starting from 2010 the official statistics showed an increasing level of maternal mortality owing to improvements in data quality. In 2010 the maternal mortality rate equaled 14.9 per 100,000 live births, while the same indicator stood at 31.2 and 32.1 in 2014 and 2015, respectively. The 2014 Georgia survey on mortality of women of reproductive age (GERAMOS), studied all events of deaths among women aged 15-49 for 2012. The survey was conducted for the second time. According to the survey results, the maternal mortality indicator in 2012 equaled 26.3 per 100,000 live births, while standing at 44.4 per 100,000 live births according to the 2008 GERAMOS survey. This implied a 40% decrease in maternal mortality in the country occurred from 2006 to 2012. The 2014 GERAMOS survey showed that 39% of maternal deaths were not registered as maternal mortality by official statistics, while in 2006 this figure stood at 65%.

E. Leading causes of death

Starting from 1998 Georgia causes of death are classified according to the 10th revision of the International Classification of diseases (ICD-10). Before 1998, Georgia used the Soviet classifications:

Table 13: Available Classifications in use

	Year
Soviet classification 1952 (second version in 1957)	1959-1964
Soviet classification 1952 (based on ICD-7)	1965-1969
Soviet classification 1970 (based on ICD-8)	1970-1981
Soviet classification 1981 (based on ICD-9)	1981-1987
Soviet classification 1981 (revised in 1988)	1988-1998
ICD-10	Since 1998

During the Soviet period very few data on causes of death were published. From 1960 to 1990, some aggregated data for very broad groups of causes of death (only for infectious diseases, cancer, cardiovascular diseases, respiratory diseases and violent deaths) were published in the statistical yearbooks. Starting from 1999, detailed causes of death according to International Classification of Diseases became available.

In Georgia the main causes of death represent cardiovascular diseases. The second largest group is neoplasms, constituting about 11% of all cause of deaths in 1990 and 2015.

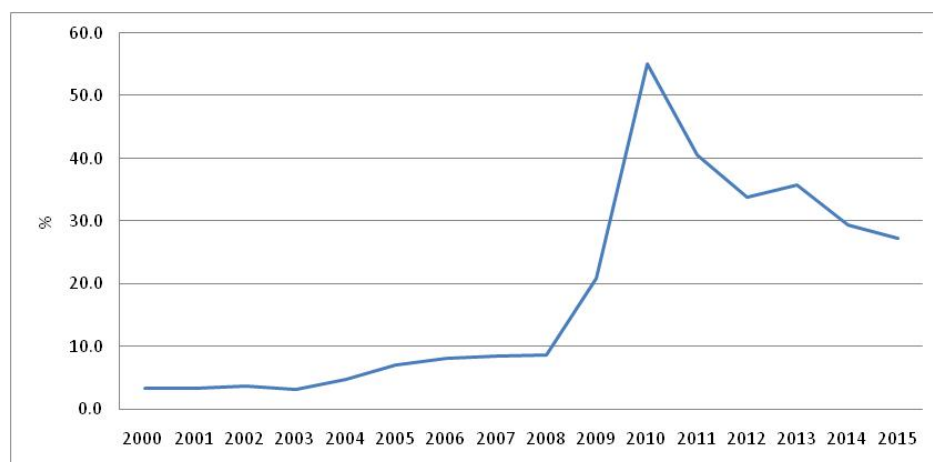
Table 14: Distribution of deaths by main causes of death (%)

	Main causes of death	1990	2000	2010	2015
I	Certain infectious and parasitic diseases	1.4	1.0	0.4	1.0
II	Neoplasms	11.1	11.0	5.8	12.3
III	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	0.1	0.0	0.1	0.6
IV	Endocrine, nutritional and metabolic diseases	1.5	2.0	1.0	2.1
V	Mental and behavioural disorders	0.1	0.1	0.1	0.2
VI	Diseases of the nervous system	0.5	0.3	0.8	1.1
VII	Diseases of the eye and adnexa	0.0	0.0	0.0	0.0
VIII	Diseases of the ear and mastoid process	0.0	0.0	0.0	0.0
IX	Diseases of the circulatory system	60.8	68.3	29.5	41.2
X	Diseases of the respiratory system	5.0	2.8	1.1	3.5
XI	Diseases of the digestive system	3.4	3.2	1.6	2.8
XII	Diseases of the skin and subcutaneous tissue	0.0	0.0	0.0	0.1
XIII	Diseases of the musculoskeletal system and connective tissue	0.0	0.0	0.0	0.1
XIV	Diseases of the genitourinary system	0.9	0.4	0.3	0.9
XV	Pregnancy, childbirth and the puerperium	0.1	0.0	0.0	0.0
XVI	Certain conditions originating in the perinatal period	1.5	1.6	1.1	0.7
XVII	Congenital malformations, deformations and chromosomal abnormalities	0.2	0.1	0.0	0.3
XVIII	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	1.4	3.2	53.8	26.4
XIX	Injury, poisoning and certain other consequences of external causes	6.0	3.0	2.1	3.3
XX	External causes of morbidity and mortality	6.0	3.0	2.1	3.3
Total		100.0	100.0	100.0	100.0

Source: National Statistics Office of Georgia

In 2009 the number of ill-defined deaths (symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified) increased dramatically, owing to the fact that the existing law, in the effort of increasing coverage, also prescribed non-medical institutions such as representatives of local government authorities to register deaths. Due to the fact that non-medical institutions do not have appropriate qualifications, the causes of death field of the death certificate turns out to be missing. It should be noted that activities implemented by the MoLHSA in the recent years contributed to the decrease in the share of XVIII class deaths, as the latter declined from 53.8% in 2010 to 26.4% in 2015.

Figure 15: Share of class XVIII (symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified) in all causes of death



F. Life Expectancy at Birth

The number of boys born exceeds that of girls, with the sex ratio at birth usually nearing 105, but women live longer than men, which results in higher life expectancy for females. This difference in life expectancy has not only biological reasons, but it can also be caused by social and psychological factors. Excess male mortality and its spectacular increase in industrial countries resulted from the emergence of typically male “man-made diseases” (Omran, 1971). Work related risks in industrial activity, alcoholism, smoking, and car accidents were the main factors contributing to excess male mortality.

There are two types of life tables: the cohort (or generation) life table and the period (or current) life table. This report presents an abridged (5 years age-groups) life tables by sex and the term “life table” refers only to the period life table. The most frequently used life table statistic is life expectancy, which is the average number of years of life remaining for persons who have attained a given age (x).

In 2015 the life expectancy at birth for the Georgian population was 72.9 years, up by 1.5 years compared to 1990. The difference in life expectancy between the sexes increased from 7.5 years to 8.6 years from 1990 to 2015.

Table 15: Life Expectancy at birth (year)

	1990	2000	2010	2015
Both sexes	71.4	71.3	74.4	72.9
Male	67.5	67.5	70.0	68.6
Female	75.1	75.0	78.7	77.2
Difference in life expectancy at birth between females and males	7.5	7.4	8.8	8.6

Source: National Statistics Office of Georgia

It should be mentioned that the analysis of life expectancy presents a challenge due to similar reasons as the TFR. Thus, stable time series are necessary for more detailed analysis.

X. Marriages and Divorces

The number of registered marriages and divorces is available only for 1940, 1950 and for the period after 1960. The data on the marriages and divorces by regions and urban/rural settlements are available only since 1969.

During the Soviet times the number of registered marriages tended to increase following the post-World War II baby boom in the Soviet Union. The uptrend in registered marriages was also reinforced due to the fact that that people living in unregistered marriage unions were not eligible for any benefits from the government (Zakharov, 2015).

After the collapse of the Soviet Union the number of registered marriages dropped significantly along with high migration of working age population. In 2000 the number of marriages decreased almost 3 times compared to 1990.

Table 16: Number of registered marriages and registered divorces, 1960-2015

	1960	1970	1980	1990	1995	2000	2005	2010	2015
Marriages	44,075	36,518	50,547	36,812	21,481	12,870	18,012	34,675	29,157
Divorces	1,470	4,943	6,788	7,796	2,685	1,854	1,928	4,726	9,112

Source: National Statistics Office of Georgia

Starting from mid-2000s the downtrend was reversed and in 2010 the total number of marriages equaled 34,675, the record high level after the independence.

There was an increase in the number of divorces as well – in 2015 the total number of divorces equaled 9,112, rising almost 5 times with respect to 2000. An increased number of divorces can be explained by reasons related to legal issues (such as property rights).

The mean age of first marriage equaled 30.0 years for males and 27.1 years for females in 2015, showing respective increases from 27.0 and 23.9 years in 1990.

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