Population Decline in the Central Region of Russian Federation (1990–2010)

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ABSTRACT

After the collapse of the Soviet Union in 1991 the mortality reached 1.807.400 people in 1992, with the birthrate falling to 1.587.600 people. The process of depopulation began. Nearly 2 million people died annually in Russia according to the official data of the Russian Federal State Statistics Service in 1993–2010. A special and a very serious problem is a middle-aged men mortality that is 7–8 times higher, than in the developed countries. From 1992 to 2010 in Russia died 40.812.000 people, born – 26.568.000. Total decline amounted to 13.344.000 people. The present study considers some social-economic and ecological processes which promoted the growth of negative indicators in population dynamics. We compared the mortality and decline of the population in different regions of Russia and showed that there is a correlation between alcohol mortality and decrease of population. A confessional factor is very important also. The mortality rate is far below the average for the country in those territories of Russia, where the population is predominantly Muslim. The demographic transition in Russia is characterized not only by a drop in fertility, as in the other developed countries, but also by increase in mortality. The mortality is a real indicator of the socio-economic and demographic situation for this or that region of Russia and it should be used by the authorities of different levels in the development of the area.

Key words: population decline, life expectancy, dynamics of mortality, birth rate, adaptation, Russia

Introduction

In demographic processes whose principal characteristics are birthrate decrease and mortality growth sharp shifts have been noted in the Russian Federation starting from the 1990s. Mortality grew from 10.4% to 15% in 1986-1994. The birthrate fell from 2 to 1.3 children in 1987-1993. The mortality reached 1.807.400 people in 1992, with the birthrate falling to 1.587.600 people. The process of depopulation which was called »the Russian cross« began^{1,2}. Nearly 2 million people died annually in the country according to the official data of the Russian Federal State Statistics Service (further-FSSS) in 1993-2010. A special and a very serious problem is a middle-aged men mortality that is 7-8 times higher, than in the developed countries³. The population decline dramatically grew from 1993 to 1995 especially in rural areas⁴. Its average value of 861.700 people per year is more than four times high than the population decline in 1992. The decrease became less significant in 1996-1998, while there is another sharp drop with average values of 884.900 people per year in 1999–2005. The loss of population in 2010 was 2.396.000 people. The birthrate has been increasing recently, but it is still less than the mortality. During 2002-2010 the population of the country decreased by 2,2 million people - from 145.166.700 people to 142.905.200 people who permanently live in Russia (with the migration growth concern) according to results of the population census in Russia (October 2010)⁵. But if we summarize the population decline in Russia from 2002 to 2009, according to the FSSS current data, we'll get 5.231.400 people. This discrepancy can be explained by the fact that the data on the population decline are obtained from the difference of fertility and mortality, but census data also take into account migration flows. We can see a growth of population, 1.2% (up to 38.4 million people) and 6.3%, (up to 9.49 million people) respectively only in two Federal regions, the Central Federal district (further -CFD) and a newly formed (January 19, 2010) North Caucasian region. The rest of regions demonstrated a population decline - Volga region -4% (up to 29.9 million), Siberian region – 4% (up to 19.25 million), NorthWest region -2.8% (up to 13.58 million), Ural region -2,4% (up to 12.08 million), Far East region -6.6% (up to 6.29 million), in South region the decline was -0.8% (up to 13.85 million). Moscow population grew to

11.514 million people (by 10.9%) during 2002–2010. The population of the CFD grew up exclusively at the expense of Moscow, receiving a large number of migrants. Experts remark, that »a situation with a fertility, mortality and a natural increase remains invariable and negative for Russia, in spite of the fact that on the whole, for the last two or three years there has been a progress. The natural increase is still negative, at the level of – $1.8\%e^{-6}$. In Russia died 40.812.000 people, born – 26.568.000 people from 1992 to 2010. Total decline amounted to 13.344.000 people (Figure 1). The present study considers some social-economic and ecological processes which promoted the growth of negative indicators in population dynamics.



1940 1950 1960 1970 1980 1990 2000 2010 2020

→ Fertility → Mortality

Fig. 1. Dynamics of birth rate and mortality in Russia (1950–2010) – »The Russian cross«. Data source: FSSS (2011).

Materials and Methods

I have been spending the field research in rural areas of the Upper and Middle Volga applying methods of oral history and involved observation for the last 20 years. This investigation is a part of field research of the Club of Travelers »Ziud-Vest« of Moscow Educational center No. 109. The Club »Ziud-Vest« has been organizing annual comprehensive research in ecological and historical expeditions in rural regions of the Upper and Middle Volga since 1990 (Figure 2-4). These studies are conducted under the integrated program developed by me which includes the historical, socio-economic, ethnographic and environmental issues. The results of these studies allow us to trace the process of adaptation to the changing socio-economic and environmental life conditions. One of the most important and independent factors of adaptation are data on natural movement of population in a given territory which are analyzed in this work. I also used data of the 2010^{th} population census in this study as well as the demographic and socio-economic indexes presented in the official sources of FSSS.

Results and Discussion

Male life expectancy in Russia was 62.77 years in 2009, while female life expectancy was 74.67 with an average life expectancy being 68.7. Thus, Russia is on the 129th place in the world after Bolivia and Gyana. These low rates are a consequence of the extremely low male



Fig. 2. Cadets of the Club of Travelers »Ziud-Vest«. Expedition »Volga-2011«. July 2011. Photo N.I. Grigulevich.



Fig. 3. Village Beleutovo (Tver region). Expedition »Volga-2011«. July 2011. Photo N.I. Grigulevich.



Fig. 4. Cadets of the Club »Zuid-Vest« are interviewing old-timer in the village Beleutovo (Tver region). Expedition »Volga-2011«.

July 2011. Photo N.I. Grigulevich.

life expectancy in Russia. Woman in Russia lives 12 years longer than man an average. This gap has been reducing over time (in 2005 it was 13.5 years). How can we explain such a high level of male mortality in Russia? A share of illegal market of alcohol production in the overall Russia.

TABLE 1
DYNAMICS AND VOLUME OF CONSUMPTION OF PURE ALCOHOL PER CAPITA OF THE POPULATION AT THE AGE OF OVER 15
IN 1994–2002: 1) ALCOHOLIC BEVERAGES; 2) PURE ALCOHOL <i>PER</i> YEAR

Volume of consumption	1994		1996		1998		2000		2002	
	1	2	1	2	1	2	1	2	1	2
Per capita	45.9	11.2	43.9	11.0	40.6	9.9	59.5	15.2	67.9	15.4
Including:										
Per man	89.5	22.5	86.6	22.4	77.0	19.2	116.6	30.6	129.0	30.6
Per woman	11.9	2.3	11.4	2.4	12.9	2.8	17.3	3.8	23.2	4.3

sian market exceeds 30% according to the FSSS. It is possible not only to damage one's health, but even to die using poor-quality, but very cheap alcohol. It led to a sharp mortality growth, first of all, in male population. Mortality from casual alcoholic poisoning increased threefold (from 16.100 to 55.500 people) from 1990 to 1994 and with small fluctuations continues to remain at the same level. Russia is in the fourth place after Moldova, Czech Republic and Hungary respectively in the world alcohol consumption per capita measured in liters of pure alcohol per year. Croatia takes the eleventh place in the world in the consumption of alcohol per capita. In Russia we have 15.76 liters of alcohol per capita, including 6.88 liters of strong alcoholic beverages and 4.73 – unrecorded. It should be noted, that WHO methodology takes into account 15 years-old people and older, while in Russia all the alcohol is taken per capita, including infants and old men. In addition, home-distilled vodka is widely used, especially in rural areas of the country. People believe that this vodka is cheaper and less damaging than the purchased, of which there were many cases of poisoning. The »household alcohol consumption« is difficult taking into account therefore we believe that the figures given in the WHO Report (2011), are understated. In Russia alcohol is allowed to employ persons from 18 years old as well as in the most European countries, but this law is often violated. They often sell alcohol, especially beer, to children at the age of 10-12, and sometimes 7-8 in small shops and trading tents. Consumption of energy drinks has sharply increased for the last years, destroying not only the health but also the psyche of young people.

Data on the dynamics and volume of consumption of pure alcohol *per* capita for the RF population at the age of over 15 in 1994–2002 (Table 1)⁸ show tenfold excess of pure alcohol, which consume men compared to women.

It is possible to see that the first, sharpest growth of the alcohol mortality begins in 1990–1992 (Figure 5), when there was a process of disintegration of the Soviet Union, reaching a maximum of 55.500 people (1994), and the next raise coincides with the default in 1998, reaching the maximum of 45.000 people in 2002, and gradually decreasing by 2010. These drunk "Russian hills" accurately coincide with the crisis moments in the country and define growth of male mortality and the lowest level of their life expectancy: "... early mortality among the population of the Russian regions is, first of all, a derivative of the unnatural reasons caused by distribution of

Mortality from accidental alcohol poisoning in the RF per year (1990–2010)

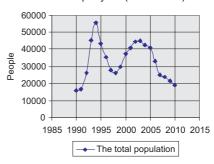


Fig. 5. Dynamics of mortality from accidental alcohol poisoning in Russia (1990–2010). Data source: FSSS (2011).

addictions (smoking, alcohol intake, drugs) and the crimes made under the influence of these addictions«9.

The main contribution to the ultra-high mortality are men of working age. In some regions, the share of deaths under conditions of alcoholic intoxication exceeds 60%. Experts believe that every third death in the Russian Federation is caused by alcohol directly or indirectly and the total loss is 500.000–750.000 people every year¹⁰. As the calculations show¹¹ the excess of male mortality is a factor of the decrease of the birth rate. The mortality of young men of reproductive age automatically increases the percentage of single-parent families. There is a growing number of single women, who do not want to give birth to the second or even the first child. Strong alcoholic drinks and hard drugs not only create the phenomenon of super mortality (especially for men), but also contribute to the reduction of the birth rate and, therefore, are the main causes of the demographic crisis in Russia.

Let's consider FSSS data on the number of people died per 1000 people per year in 1980–2010 in Russian Federation, CFD, Tver region, Dagestan (one of the Caucasian republics) and Bashkortostan (one of the republics of the Volga region). One can see that indicators of mortality were constant for each region and for Russian Federation as a whole from 1980 to 1991 (Figure 6). The minimum figures of mortality (about 7%) are registered in Dagestan, the maximum (about 15%) in Tver region. Mortality in Bashkortostan (about 10%) comes closer to average values across the Russian Federation (12%)

Russia (1980-2010) 30 25 20 E 15 10 5 1975 1980 1985 1990 1995 2000 2005 2010 2015 - RF --- CFD Dagestan Tver region

Mortality in ppm per year in diferent regions of

Fig. 6. Dynamics of total mortality in different regions of Russia (1990–2010). Data source: FSSS (2011).

during those years. There had been a considerable growth of mortality acrooss all subjects since 1991 which reached its peak in 1993-1994 decreasing a little by 1996-1997. Mortality growth reached peak values in 2002-2003 after a default of 1998. A smooth decrease is observed in indicators of mortality only in 2004. Unlike other regions and the whole Russian Federation in Tver region peak values of mortality in the middle of 2000th essentially surpass peak of 1990th (25 and 20%, respectively). The most safe dynamics of mortality is Dagestan with a slight increase of indicators of mortality in 1992-1993 and a following smooth decrease. In 2010 mortality reached 5% that is less than mortality indicators of the Soviet period. Dagestan is the most multi-national Republic of the Russian Federation. 95% population of Dagestan are Muslims, so there is no problem of drunkenness and alcoholism. And as a consequence - the Dagestan showed the highest rates of population growth among the regions of Russia. According to preliminary official data of the population census for 2010, the population of Dagestan grew by 15.6% in comparison with 2002.

Thus, mortality in Tver region in 2010 (20%) was four times as much as mortality in Dagestan (5%) and it is essentially higher than mortality in CFD, in Bashkiria and the whole Russian Federation (15%). In CFD mortality is higher, than in Russian Federation. At the same time in all regions, except Dagestan, we can see two peaks of mortality in the mid-1990s and in the mid--2000s. It is interesting, that in Tver region the peak of mortality in the mid 2000s was more, than the peak of the mid-1990. The first rise of mortality began after the collapse of the USSR, and the second – after the default of 1998. The only region where the mortality rate is less, than in the Soviet period - is Dagestan. Three regions (Dagestan, Bashkortostan and Tver) almost do not differ for the level of birth rate in 2009-2010. The exception is Dagestan, with the high level of birth rate (more than 16%). On the contrary, the mortality rate in Dagestan is very low (5% against 20% in Tver region). As a result, Natural movement of population in Tver region, Dagestan and Bashkortostan rural areas (1990–2010)

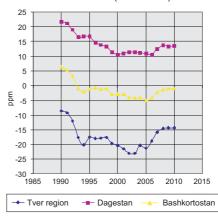


Fig. 7. Dynamics of natural population movement in Dagestan, Bashkortostan and Tver region (1990–2010). Data source: FSSS (2011).

we can see the growth of the population in Dagestan, while there is a decline in other regions (Figure 7). The population growth in Dagestan in rural areas declined after the collapse of the Soviet Union, but continued. In Republic of Bashkortostan decrease has started since 1993. In Tver region where even in the Soviet period there was a decline in population, the collapse began. Tver region is characterized by high indicators of population decline (five times as high as Russian average ones).

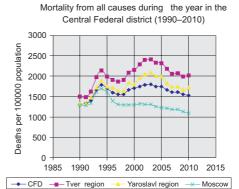


Fig. 8. Dynamics of mortality in Russian Central Federal District (1990–2010). Data source: FSSS (2011).

The level of mortality fluctuated from 13% to 15% in these regions of CFD (Yaroslavl, Tver regions and Moscow) in 1990 (Figure 8). Then it began to grow after the USSR collapse and nowadays variation is from 10% in Moscow up to 20% in Tver region. The only region of the CFD where the death rate decreased (in comparison with the Soviet period), is Moscow. Mortality has decreased almost to the values of the Soviet period (as a whole in the CFD), but in the Tver and Yaroslavl regions it is still much more (20% in 2010; 15% in 1990).

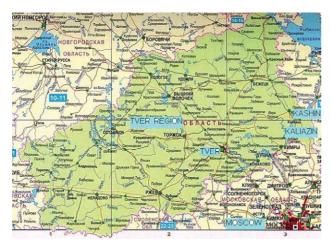


Fig. 9. The map of Tver region.

There is more complicated situation in Tver region, which is located in the North-West of Moscow (Figure 9). The population decreased by 8% here since 2002 to 2012. Currently, the density of the population in Tver region is 16 persons per sq. km. 20 thousand villages in the Tver region have a population of less than 20 people, many less than 5 or 6. Let's consider some socio-economic and demographic processes in the Tver rural areas (Kalyazin, Kashin and Kimry regions) during the last ten-twenty years and which are substantial characteristics for the majority of CFD areas. In some villages the old-timers practically didn't remain, and the majority of inhabitants comes from the cities only in summer. The infrastructure of the Soviet period is destroyed, and new one is being created generally in the regional centers. These processes have affected the countryside in the Central and North-West regions of Russia.

Not later 1434 Saint Makariy Kalyazinskiy (Figure 10) founded the Trinity monastery near the confluence of the river Zabnia to the Volga on the territory of Tver Principality (feudal state of North-Eastern Russia in XII-XV centuries). Through many years around the monastery arose the city of Kalyazin (Figure 11). The ancient town of Kashin is located on the other bank of Volga river (Figure 12). It was called the »city of the Russian heart and the cross« because of the planning peculiarities. It suffered less than Kalyazin from flooding by the waters of the Uglich reservoir, because it is situated not on the Volga River, but on its tributary (the river Kashinka).

Hundreds of big and small villages were submerged, dozens of temples and even some cities, Mologa and Korcheva for example, were blown up and disassembled after damming the Upper Volga by a cascade of hydroelectric power stations constructed in 1935–1941 (Figure 13). Thousands of people were made to leave their homeland and move to the new places. Some villages were located on a high bank of the Volga, nevertheless people left them. The economy of many Volga territories was based on dairy animal husbandry for which water meadows were used where the cattle with high milk yield was

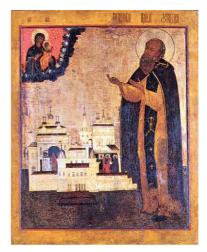


Fig. 10. The icon of the monk Makariy Kalyazinskiy (1400–1483).



Fig. 11. Kalyazin city (Tver region). The flooded belltower of Nicholas Cathedral (1800). June 2011. Photo N.I. Grigulevich.



Fig. 12. Kashin (Tver region) – town of the Russian heart. Photo V.A. Kolotilshikov (early XXI century).

pastured. However these areas went under the water. The fertile soils were completely flooded by reservoirs, with the animal husbandry losing water meadows as its principal basis.



Fig. 13. The scheme of the flooding of the Kalyazin city (Tver region) by the waters of the Uglich reservoir (1939). 1 – Trinity Makariev monastery; 2 – Nicholas Cathedral and the Church of St. John the Baptist; 3 – shopping arcade; 4 – the Church of the Christ Nativity; 5 – the Life-Giving Cross Church 14.

Demographic situation in this region even in the Soviet period was not simple. Thus, if a natural increase per 1000 people was 5.9‰ as a whole across the Russian Federation in 1970, a decrease of -1.0% had already taken place in Tver region. This gap made up for 2.2‰ and -3.4% in 1990, and an appalling fall started in 1992–1993 which reached its maximum (-15.2%) in 2000–2005 while the maximum fall made up for -6.6% (2001) across the Russian Federation during these years. It means that the population of Tver region decreased twice as quick as on the average across Russia.

Especially difficult situation develops in rural areas of the region. There natural population decline is 1.5–2 times as much as an average value in the region. These figures reached -23.1% in Tver region in 2002–2003, that made a peculiar sad record of a decrease in rural areas of Russia¹². The situation has improved a little recently, but decline in population figures in the Tver region in comparison with averages across Russia, nevertheless is very high. It is 5 times as high as an average figures across Russia (-8.9% / -1.8% in 2009).

According to experts, socio-economic and medico-demographic indicators reflect results of rural population adaptation to the living conditions¹³. Mortality growth began in Tver region in 1992/1993, and reached the maximum value 35.410 people in 2002. This increase was followed by mortality growth from the external reasons, from cardiovascular and digestive organs diseases, and alcoholic poisonings while mortality from cancer and respiratory organs diseases decreased (the first since 2000, the second - since 2006). Population decline is defined first of all by high mortality. The birthrate is the same as in other Russian regions. So, the total fertility factor was 1.54 (1.41 in the city and 1.9 in rural areas) across the Russian Federation in 2009. It was 1.49 (1.32 in the city and 2.02 in rural areas) in Tver region in 2009. But families with 5-7, or even with 11 children were frequent in



Fig. 14. Bank of Volga River. The erosion of the sandy coastline. June 2011. Photo N.I. Grigulevich.



Fig. 15. Cottages in the water protection zone. Tver region. Volga, June 2012. Photo N.I. Grigulevich.

this region according to our respondents in pre-war and even hungry post-war period.

It is impossible to explain ultrahigh mortality in Tver region without socio-economic living indexes standards. The income of the most wealthy part of the population is ten times as big as the income of the least wealthy part. The population, having the average income *per* capita which is below a living wage of 2011 (6151 RUB, which by the exchange rate of September 2011 was 141.4 EUR or 192.8 USD) is 14 %. Average *per* capita expenses are almost equal to the income, i.e. many people do not have the opportunity to save many for the treatment and rest.

Environmental problems there are also in Tver region. Fish stocks have sharply decreased as a consequence of the illegal catch in recent decades. The sandy coastline of the Volga River is affected by erosion (Figure 14). The anthropogenic impact on this territory increased. Many cottages have been built illegally in the water protection zone (Figure 15). This region has excellent conditions for tourism and recreation, but it is necessary to create the new modern infrastructure for it.

The population of Tver region has been experiencing enormous pressure due to the consequences of construction of a cascade of hydroelectric power stations on the Upper Volga (1936-1941). There was a relative adaptation of people to the changed living conditions during next fifty years (before early 1990s). The crisis resulting from disintegration of the USSR (1991) and the associated socio-economic changes played a key role in triggering a mechanism of catastrophic population decrease primarily in rural areas of the region. Once rich in soil and human resources, this territory turned into a depressed region which annually loses its population because of high mortality and migration of able-bodied population. A special and a very serious problem is the extinction of rural settlements in the region that existed for more than three hundred years and survived in spite of many wars, ecological and political disasters but now are disappearing from the map of Russia.

Conclusion

The reasons for the population decline in the Russian Central Federal district

The high level of mortality defines the population decline in Russia, which began in 1991 after the collapse of the Soviet Union and is still going on. The mortality rate began to grow after 1991, when the state monopoly on alcohol was abolished. It sharply dropped in price and became available for the majority of the population. Restrictions on the alcohol sale at night were abolished. The authorities of the various regions are trying to "put the Genie in the bottle" in order to correct this situation. Thus, in Chechnya alcohol is allowed to be sold only from 8 to 10 am and is prohibited at weekends and on public holidays. There was entered night ban on the sale of alcohol in Moscow in 2011. The government of Yakutia has announced plans for a complete ban of retail sale of alcohol.

The process of depopulation in Russia takes place because of a high mortality rate (2 mil. people per year). Especially serious situation is in the rural areas of Tver and other regions of the Central Federal district. This is a consequence of a number of socio-economic, environmental and spiritual processes of the last decades in the post-perestroika Russia. The principles which the Russian traditional community was based on were lost during the Soviet period. The infrastructure was destroyed (closed clinics, hospitals, and schools). There were also

closed many industrial enterprises, there are no jobs, especially for young people. There is very low level of life in the majority of the population. Young people are forced to migrate for work to large cities (first of all, to Moscow). The state does not support the development of agriculture in the Central regions of Russia. Private houses and cottages are built on the lands of agricultural purpose discharging waste into the Volga and other rivers. Russian people's spiritual basis of life, when they were guided in there lives by Orthodox Church, was destroyed (Figure 16). The demographic transition in Russia is characterized not only by a drop in fertility, as in the other developed countries, but also by increase in mortality. The mortality is a real indicator of the socio-economic and demographic situation for this or that region of Russia and it should be used by the authorities of different levels in the development of the area.



Fig. 16. Cadets from the Club »Zuid-Vest« setting the Cross in place of the destroyed temple in the name of the Kazan icon of The Virgin Maria. Tver region. June 2012. Photo N.I. Grigulevich.

To stop the catastrophic loss of population in the Russian Central Federal district the authorities should develop and implement the Federal program to support different categories of the population. Restore the destroyed infrastructure (schools, hospitals, roads, water transport). Create new working places, begin the revival of the agricultural sector. Contribute to the development of tourism. Ensure the transparency of the work of local authorities.

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SMANJENJE VELIČINE POPULACIJE U CENTRALNOJ REGIJI RUSKE FEDERACIJE (1990.–2010.)

SAŽETAK

Nakon pada Sovjetskog saveza 1991. godine, mortalitet je dosegnuo 1,807,400 ljudi u 1992. godini, sa stopom nataliteta koja je pala na 1,587,600 ljudi. Proces depopulacije je započeo. Gotovo 2 milijuna ljudi godišnje je umiralo u Rusiji između 1993.–2010. godine, prema službenim podacima Statističke službe Ruske federacije. Poseban i vrlo ozbiljan problem bio je mortalitet muškaraca u srednjoj životnoj dobi, koji je 7–8 puta viši nego u razvijenim zemljama. Od 1992.–2010. u Rusiji je umrlo 40,812,000 ljudi, a rodilo se 26,568,000. Sveukupno smanjenje populacije bilo je za 13,344,000 ljudi. Ova studija uzima u obzir neke socioekonomske i ekološke procese koji potiču povećanje negativnih indikatora u populacijskoj dinamici. Usporedili smo mortalitet i smanjenje populacije u različitim regijama Rusije i pokazala se korelacija između smrtnosti zbog alkohola i smanjenja populacije. Faktor religije isto tako je bitan. Stopa mortaliteta je daleko ispod prosjeka zemlje u onim prostorima Rusije u kojima je populacija predominantno muslimanska. Demografska tranzicija u Rusiji karakterizirana je ne samo sa padom fertiliteta, kao u drugim razvijenim zemljama, nego i povećanjem mortaliteta. Mortalitet je stvarni indikator socioekonomske i demografske situacije za bilo koju regiju Rusije i vlasti na svim razinama trebale bi ga koristiti u razvijanju ovih prostora.