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Outlining Future Society

Ten Billion People on Earth in 100 Years

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Throughout the XXI century, while fluctuations in local population may vary by region and country, the world's overall population will continue to grow, potentially increasing from the current seven billion to ten billion. This will inevitably lead to the exacerbation of such problems as shortages of food and drinking water, ethnic and religious conflicts, and pollution and the depletion of natural resources. In addition, new types of manmade disasters, epidemics, wars, and climate change also lie in store. However, after 100 years' time the world population is likely to stabilize at ten billion, after which it will gradually reduce. Russia's population in particular will continue to decline, falling to about 100 million people.

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Is the Demographic Explosion Over?

Not quite, if by demographic explosion we mean a high birthrate and a high natural population increase. The latter is in a slow but observable decline, although it remains at a relative high rate of 1.2% a year.[1] Meanwhile, almost half of the countries in the world have a total fertility rate[2] no higher than two children born over a female's lifetime. But does this mean that the world's population has stopped growing? Not really. Even if every country in the world was to face a decline in fertility to a level guaranteeing simple reproduction (statistically just over two children per female), the population

would continue to grow for a relatively long period of time: about two generations (50–55 years). The main reason for this is highly inert demographic processes due to the age structure of the population. Therefore, we can say that in 50 years' time, the current world population of seven billion people is likely to increase to ten billion.

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Based on prevailing global population projections,[3] this maximum will be reached by virtue of demographic transition patterns,[4] according to which all countries worldwide experience stages of lower birth and death rates. Thus, in France[5] crude death rate dropped from forty per thousand a year in the mid-XVIII century to nine in the late XX century, while crude birth rate for the same period dropped from forty to thirteen per thousand people per annum. In the XX century in France the total fertility rate also fell from 3 to 1.9 children per female. The speed of this transition and its timing are peculiar to each country; but it is something every country is expected to experience. Therefore, in line with these demographic transition patterns (a decline in fertility follows a reduction in mortality), over the long-term, the global population will begin to decrease.

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How Will Population Growth Differ From Country to Country?

And what about depopulation? These are likely to be the questions at the forefront of the minds of all those who have read the frequent publications on population decline in Russia, Germany, Japan and elsewhere. However, it is not possible to take an individual country or group of countries as the basis for predicting the trajectory of global population trends. Local trends do not necessarily coincide with continental or global tendencies. Contemporary demographic characteristics of different countries vary greatly. For example, an average female in Africa gives birth to 5 children (though even in Angola this figure is higher than 6), while in Bulgaria she gives birth to only 1.5. But non-uniformity, heterogeneity, and disproportion are not particular to fertility; rather they are features of many other indicators as well. Thus, while in Central Africa life expectancy[6] is 50 years, in North America it's 80 years, and in Japan 83 years. Age structure also varies significantly: in Nigeria just 3% of the population is aged 65 or over, while for Europe this figure is 16%, and for Indonesia 6%.

The territorial distribution of the world's population is also very uneven. So while there may be an average population density of 50 people per square kilometer, in Bangladesh this figure is higher than 1,000, in Italy it falls around 200, in Kazakhstan six, and in Mongolia the average population density is just two people per square kilometer.

What conditions will ensure that the world's population continues to grow? First it should be noted that different countries' demographics are not directly related to the availability of vacant land, to resources such as water and food, or to the level of socio-economic development. On the contrary, the highest population growth is actually observed in poverty-stricken regions (especially in the least developed countries of Asia and Africa), despite their economic development level, public health conditions, and resource wealth. Because of this, it is fairly safe to say that in the next 50–60 years many of our current problems will only aggravate. These problems include shortages of potable water and food, ethnic and religious conflicts,[7] environmental pollution, climate change, natural resource depletion, desertification, and deforestation. We can expect some improvement only in the final third of the XXI century, when this growth in world population is likely to stop.

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Life Expectancy and Health

Civilizational development delivers a significant and lasting reduction in mortality rates and an increase in life expectancy. However, this process is irregular across different regions of the world. This may be caused by differences other than economic development, such as religious norms, national customs and traditions, habits like smoking and alcohol drinking, ethnic features (for example in sexual relations), as well as natural environment and climate. At the same time, the generally favourable downward trend in mortality rates gives rise to problems like population ageing, increased demographic pressure on people of working-age, the exacerbation of social conflict, and even the potential for a crisis in the pension system. And unfortunately not all development factors contribute positively to life expectancy trends. Development may lead mankind to face new threats that include obesity, unbalanced nutrition, genetically modified foods, hypodynamia, a heightened tempo of living, increased stress, and the use of new chemicals and medicines. In addition, growth in population density and the intensification of traffic flows may affect the rate and geographical distribution of both old (influenza, tuberculosis, and hepatitis) and new (HIV-AIDS) epidemics.

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What Will Happen to Migration?

In the next 100 years, the global trend of increased migration flows from economically and socially disadvantaged countries to better developed ones will gain momentum, involving millions more people. This seems inevitable due to the growing distinctions

between countries in terms of income level, job opportunities and education, as well as access to social benefits and natural resources.

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With population growth already underway in less developed regions as expected, migration pressure on developed countries will only increase. It would be naïve to assume that countries of origin and host countries share common interests on this. Therefore we should expect new restrictions on population movement: increasing numbers of host countries will pass new laws relating to deportation, registration, naturalization, visas, and quotas for work and residency. This could all generate an additional source of tension in international relations. Already in 1970, France adopted measures to restrict the influx of migrants, developed a procedure for their repatriation, and in 1980 started to deport them. By the end of the century the country had revised the procedure for obtaining citizenship. In Germany restrictions[8] also exist on citizenship for non-Germans.

What Lies in Store for Marriage and Family?

The evolution of marriage as a social institution over the centuries suggests that it is likely to continue to change. Social norms and the concept of marriage are locked in a cycle of permanent change as the spectrum of socially acceptable types of marriage broadens, giving individuals greater freedom of choice in forms of marriage (church, civil, registered, unregistered, same-sex, heterosexual, trial or temporary, etc.). It seems unlikely that over the next 100 years the socially accepted forms of marriage will become more rigid and increasingly regulated. A reduction in registered marriages, an increase in divorce and cohabitation, a rise in the average marriage age (in developed countries it now stands at 30 or older), and a significantly greater share of children born out of wedlock[9] (in 2010 every fourth child in Russia, and in some countries every second) all combine to indicate the opposite. In demography these processes are called the second demographic transition. In many ways they result from the major expansion of marital, sexual, and reproductive behavioral autonomy in modern society.

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What Will Happen to Fertility?

The global trend in this area is one of decline for reasons both objective and numerous. In short, the problem can be formulated in terms of the "time budget". Development means that an individual has less time for family, birth, and parenting, as they spend more time on their own education, work, career, tourism, travel, sports, movies,

the Internet, and general life and leisure. The expansion of citizens' reproductive rights and medical advances simultaneously provide more opportunities for family planning.

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In terms of country-to-country differentiation, at least two main categories can be discerned: developed countries and the rest. In the first group, the birth rate stands at an average of 1.2–2 children per female. In the coming decade these countries are likely to face a further (though largely insignificant) decline in fertility, since their birthrates seem to have reached an all-time low, and most UN population projections predict growth in this indicator. Hopefully, constantly expanding new reproductive technologies (in vitro fertilization, sperm banks, etc.), medical advances in supporting maternal and infant life and health (especially in pregnancies involving multiples), and an expansion of surrogate and professional maternity will provide additional opportunities for increased fertility. In underdeveloped countries, however, where the demographic transition is not yet complete, the global trend of fertility decline will continue.

How Can Demographics Affect International Relations?

The current age structure, shaped by a substantial reduction in the birth rate in the 1990s, threatens to exacerbate demographic problems over the next 10–20 years. Without migration the population will decline because of significant losses due to natural causes.

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Extending into the next 50–80 years, international relations will be at risk of further deterioration. The reasons for this go beyond current issues of uneven economic development, religious diversity, and the struggle for food and natural resources. The shift from a unipolar to a multipolar world will be determined not only by the military strength, economic resources, and infrastructure of the new centres of power, but by their population sizes as well. Over time, this will inevitably lead to a drift in the population centres of gravity. In recent years we have seen signs of this phenomenon in the continued growth of international influence and prestige of China, India and Brazil. More countries are expected to join this list, meaning that the emergence of a stable world multipolar structure is not probable in the near future.

What Lies Ahead for Russia in 100 Years' Time?

Russia will continue to drop in the "List of Countries by Population". Many demographic problems common to most developed countries (i.e. population ageing,

low birthrate, and migration) are exacerbated in Russia by lower life expectancy and higher mortality rate among working-age men. Life expectancy[10] for men in Russia is, for example, 15 years lower than in Japan. And for Russia in particular depopulation carries an additional threat: that its population will be too small for its vast territory. Since the late XX century the ratio of population to landmass has been declining faster than in many neighbouring countries. Now the age structure, shaped by a substantial reduction in the birth rate in the 1990s, threatens to exacerbate demographic problems over the next 10–20 years. Without migration the population will decline because of significant losses due to natural causes.

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Simple demographic calculations[11] show that even if every woman in Russia were to give birth to twice as many children as the current average (1.6 children), the problem of a working-age population that is falling at a rate of about a million people a year would still not be solved by the mid-XXI century. Without a substantial influx of migrants Russia's future seems uncertain. As the migration potential of the former Soviet Union quickly becomes depleted, increased migrant flows from other countries – such as China, Indonesia, Vietnam and even Nigeria – will become more likely. Incidentally, Nigeria recently surpassed Russia in terms of population size.

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Of course, this is not to say that migration will be completely open, spontaneous, unregulated or illegal. To ensure its demographic future the country must develop a sober, balanced, and prudent migration policy. Given existing tolerance levels and migrant assimilation processes, Russia cannot support more than a million immigrants a year. Since the annual migrant flow in 2008–2010 numbered about 200,000 people, it seems reasonable to assume half a million people a year as a relatively realistic maximum. Under this scenario, in 100 years Russia will see a population decline; however this decline will not see its population fall below 100 million people. That said, about half the population in 100 years will consist of immigrants and their descendants.

Conclusions

In the next 100 years the patterns and trends in global demographic development that appeared in the early XXI century (i.e. declining birth rate, increased life expectancy, population ageing, and greater migration flows) will still be present and will lead to the further growth of the world's population. The uneven economic and demographic development of regions and countries that we see today will continue and intensify. This will contribute to the threats and challenges we have to face, including those in

the realm of international relations. However, there is good reason to expect the global population to stabilize at 10 billion by the end of the XXI century, at which point a gradual decline may even begin.

According to most demographic projections, Russia's population will continue to fall. Russia could even become a second tier country in the "List of Countries by Population". Without migration, in 100 years' time its population size could drop to 50–60 million people; migration should be able to support it at about 100 million though.

NOTES

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3 2015 Revision of World Population Prospects. Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. URL: http://esa.un.org/unpd/wpp/

4 *Vishnevsky A.* Selected works on demography. Vol. 1. Theory and history of demography. Moscow, Nauka, 2005. P. 3–214. URL: http://demoscope.ru/weekly/knigi/dem_revol/dem_revol.html (In Russian).

5 Long lines of demographic characteristics over 250 years // Demoscope Weekly. URL: http://demoscope.ru/weekly/app/long_industr.php (In Russian).

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7 Religious diversity on global map // Demoscope Weekly, March 2012. URL: http://demoscope.ru/weekly/2012/0501/tema01.php (In Russian).

8 Muslims and Islam in Western Europe // Demoscope Weekly, March 2012. URL: http://demoscope.ru/weekly/2012/0501/analit02.php (In Russian).

9 Share of extramarital births // Demoscope Weekly. URL: http://demoscope.ru/weekly/app/app4013.php

10 Challenging high mortality // Demoscope Weekly. URL: http://demoscope.ru/weekly/2003/0139/tema01.php (In Russian).

11 Russia's population in 2006: 14th Annual demographic report. Moscow, 2008. URL: http://demoscope.ru/weekly/knigi/ns_r06/sod_r.html (In Russian).