Forecasting the Future of Humankind under the Current Demographic Pressures

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ABSTRACT

The article holds forth forecasting the future of the humankind, with reference to the investigative methods on its further development.

The article presents the current demographic pressures that affect forecasting depending on the land norm per person, the uneven distribution of waters, the rainfall regime, the natural environment, the use of nuclear energy, etc.

In conclusion, the future of humankind is a process threatened by natural, economic, social, technological, epidemiological or military risks, and the developed countries can no longer maintain their advantages if not pushing forward for developing countries.

Keywords: *demographic pressure, forecasting the future of humankind, urban agglomerations, food pressure, human development model.*

1. INTRODUCTION - DOES A FORECAST ON THE FUTURE OF HUMANKIND EXIST TODAY?

We must recognise that humankind has developed so far without a particular strategy, i.e. our civilisation left itself ridden by the tempting, though sometimes misleading wave of the scientific and technical progress.

Under the circumstances of the strong competition across nations, the human society accumulated certain bombs in human development challenges, such as nuclear bombs, environmental pollution, poverty, etc. which, if not being subject to disposal on time, could head the world towards disaster, a disaster which can jeopardise the very existence of life on earth.

Therefore, in the current period people will have to inquire where exactly is the human society moving, what will be the human society tomorrow, which are the sprouts of that change and which are the strategies to support the society in moving on right direction.

When the population is continuously growing and increasingly scarce

natural resources, there is a need for a new conception in the management of the planet, first of all lucidly perceiving where the humankind is going. This requires the most realistic forecasts for the future of humankind, identifying some possible scenarios on a given timeframe that characterise at least the first quarter of the twenty-first century. Of course, this requires firstly a sober perception of the world we live in, with a scientific knowledge on the forces of good propelling the general progress and evil forces hampering the development and whose proliferation needs to be cut out.

The main problem of Romanians is to be aware of the crisis to the real dimension and to try to keep it under control. The costs of delay would be huge and this depends on the following dilemma:

a) how soon the Romanian political class will understand this reality;
b) how will be used the EUR 20 billion lent, as this amount is to be returned in due time and is bearing interest;
c) do the decision makers of Romania have the slightest macroeconomic preparedness to manage this complicated crisis?
d) would national governments be capable to repay this money without charging costs to people?

2. METHODOLOGY - WHICH ARE THE INVESTIGATIVE METHODS OF THE FUTURE?

Ordinary people are living more anchored in the present, being firstly concerned about what happens today and less on what will be happening in the future, which means that humankind cannot develop if not based on scientific guidance, a scientific forecast of the likely evolution in the future.

As rational human beings, the people are concerned about deciphering their future and becoming. The human knowledge strivings could be broken down into three groups, depending on their scientific bases:

a) occult, biblical, doomsday foresights;
b) paranormal foresights (e.g. Nostradamus);
c) scientific forecasts.

Following on from the study of climate and weather, i.e. meteorology, foresights have expanded in knowhow and technology and afterwards in sociology and economy. In international practice, the basic forecasts are:

a) classical explorative methods based on extrapolation of past trends of economic phenomena and processes;
b) morphological research, meaning the analytical approach of each party and then reconstituting the combination;
c) scenario method, i.e. the construction of logical sequences to show how future arises;
d) simulation techniques, i.e. study of various development options;

e) normative methods, where the desired objectives shall be established based on regulatory norms and rules;

f) systemic analysis methods, integrated methods investigating social and technical factors;

g) Delphi method, the most commonly used aims to reach a consensus on an expert group based on an interactive process where the views of the entire group are to be faced with individual views "Experts are anticipated to have access to significant knowledge that enables them to predict the future – or at least, to do so better than nonexperts." (Rowe G.)

It should be noted that demographic projections developed by the UN are among the forecasts with the highest degree of credibility, being the most realistic and scientifically based.

In fact, according to the World Bank, there are today more than 800 million hungry people in the world and nearly half of the world's population is struggling in the direst poverty.

We must recognise that quite often our past dictates upon our decisions, what constitutes a serious approach to refine and modernise the methods of forecasting future.

3. THE CURRENT DEMOGRAPHIC PRESSURES AFFECTING FUTURE

"Humankind is being buffeted by the forces of demographic change' (David E. Bloom, 2016)

If we speak of population growth, many of us immediately imagine scenarios on how will we succeed in procuring living resources. We bear in mind the literate of the nineteenth century Thomas Malthus, who took the view of a population going beyond food supply.

The forecasts of a world exhausted by the humankind occur even in popular culture. In some areas of the globe, the population increase represents a peak of concerns due to increasing pressures on land, the labour market and obviously on government budgets. Multiple demographic phenomena, such as ageing, migration, urbanisation and increased average life duration, make even more complex the overpopulation process."The world continues to experience the most significant demographic transformation in human history. Changes in longevity and fertility, together with urbanisation and migration, are powerful shapers of our demographic future, and they presage significant political, social, economic, and environmental consequences." (David E. Bloom, 2016). Some Member States are facing significant migration of labour force, such as our country. Others are in a position to carry out a "demographic dividend"

based on an expected growth of working-age adults such as China (F. Wang, I. Mason A. Mason). These crossed dynamics define today the demographic changes. In the paper "The Population Bomb" published in 1968, Paul Ehrlich warned upon the global disaster can occur due to overpopulation.

"In July 2014 the UN for the first time issued official probabilistic population projections for all countries to 2100. These projections quantify uncertainty associated with future fertility and mortality trends worldwide" (L. Alkema, P. Gerland, A. Raftery, J. Wilmoth, 2015).

The forecasts made by the UN on the demographic perspectives of the world population were the subject of a regular review carried out since 1951 by the Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. "According to the results of the 2017 Revision, the world's population numbered nearly 7.6 billion as of mid-2017 (table 1), implying that the world has added approximately one billion inhabitants over the last twelve years. Sixty per cent of the world's people live in Asia (4.5 billion), 17 per cent in Africa (1.3 billion), 10 per cent in Europe (742 million), 9 per cent in Latin America and the Caribbean (646 million), and the remaining 6 per cent in Northern America (361 million) and Oceania (41 million). China (1.4 billion) and India (1.3 billion) remain the two most populous countries of the world, comprising 19 and 18 per cent of the global total, respectively".

Population of the world and regions 2017, 2030, 2050 and 2100, according to the medium-variant projection based on U.N. data

Table 1

Region	*Population (millions)*			
	2017	*2030*	*2050*	*2100*
World	7 550	8 551	9 772	11 184
Africa	1 256	1 704	2 528	4 468
Asia	4 504	4 947	5 257	4 780
Europe	742	739	716	653
Latin America and the Caribbean	646	718	780	712
Northern America	361	395	435	499
Oceania	41	48	57	72

Source: United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision. New York: United Nations.

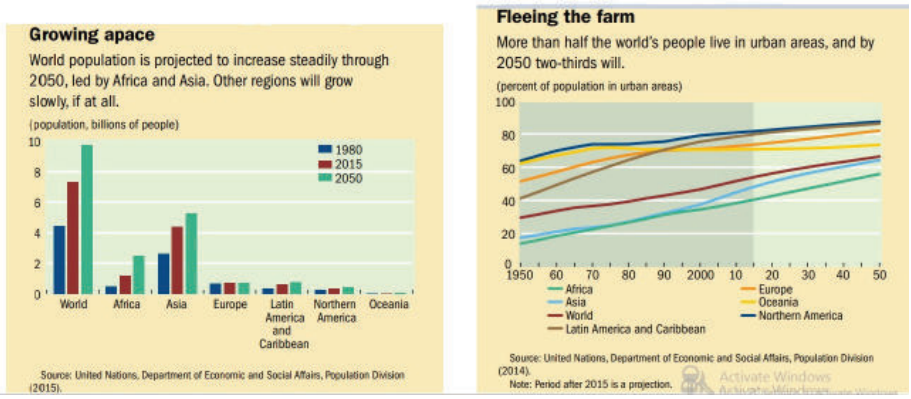
David Bloom (2016, pp. 6-11) states that "ninety-nine percent of projected growth over the next four decades will occur in countries that are classified as less developed—Africa, Asia (excluding Japan), Latin America and the Caribbean, Melanesia, Micronesia, and Polynesia. Africa is currently home to one-sixth of the world's population, but between now and 2050, it will account for 54 percent of global population growth. Africa's population is projected to

catch up to that of the more-developed regions (Australia, Europe, Japan, New Zealand, and northern America—mainly Canada and the United States) by 2018; by 2050, it will be nearly double their size" (figure 1).

On 1 July 1990, the usual resident population in our country was 23,206,720 inhabitants and on 1 July 2015 were 19,819,777 inhabitants. This population will exert increasing pressure on the physical space, food, living space, renewable and non-renewable natural resources, the environment and labour market.

If in 1990 the global population density per square km was approximately 40 inhabitants, this could rise to 59 inhabitants per km² in 2025 and the population growth will continue to put pressure on the environment and emptying villages through migratory exoduses towards city pattern (Food and Agriculture Organisation). Naturally, it would contribute to improving the living conditions of the population and the civilization in general, but it also has multiple implications for the human condition generated by the population concentration in large agglomerations (figure 1).

Figure 1



It should be noted that in recent decades the degree of cities concentration has increased, so that in 1950 there were 90 cities with more than 1 million inhabitants and 512 cities in 2016. The forecast for 2030 is of 662 cities (United Nations Department of Economic and Social Affairs, Population Division (2016)). This requires a reconsideration of the city in terms of size and structure, in order to fight against a giant, monstrous and overcrowded city, with poor living conditions and characterised by the humiliation of human personality.

The forcible mass uprooting of small-scale farmers and the rural population in general, brutally removed from their environment, caused serious economic and social imbalances, thus widening the gap between towns and villages, thus

becoming natural a rural world far lagging behind and the population belonging to urban environment. This puts strong pressures on the environment, soil and waters, agricultural and forestry resources, coastal marine areas and continental shelves, as well as on the diversity and on the global ocean.

Throughout the history, the humankind put pressure on natural agricultural resources, as the main source of food that in return has influenced the typologies for human consumption. This food pressure has led to increased agricultural production, which in turn entailed the multiplication of population over wide areas of the planet. If we take into account the axiom that within the system of human needs food has absolute priority, it is clearly emerging the need for food production to be at the top of the agenda.

Of course, the demographic pressure upon the food area, expressed in the norm of land needed to feed a person decreased continuously. Thus, if during the civilisation of hunting the norm of land was 5,000 hectares per person, in the civilisation of plough was 2 ha, and today, in the period of peak agriculture, the norm of land reached 0.08 ha. It is recognised that we owe the life on earth mostly to green plants, 2/3 being forests. Occupying more than 30 % of the world's surface, forests provide at the same time more than half of the oxygen produced worldwide by photosynthesis. Thus, the forests ensure the dynamic balance through the annual absorption of around 15-20 million tonnes carbon dioxide and, at the same time, the production of some 10-15 billion tonnes of oxygen.

The human development model depends largely on **waters** that, the same with the food, has become a global problem. The relative scarcity of potable water, in combination with the dramatic effect of local shortages on agriculture and livelihood, has put water risks and opportunities among the top sustainability issues (Ernst & Young, 2012; McNally, 2015; PwC, 2011). According to the United Nations - 2012, 783 million people do not have proper access to drinking water, and, in sub-Saharan Africa, water is unavailable to over 40% of the population. More than 850 million people are undernourished and at risk of starvation, and over 1.1 billion do not have access to energy, which necessitates innovative business models for off-grid rural areas (Schillebeeckx, Parikh, Bansal, & George, 2012). Forecasting the future depends on the category of existing waters, as follows.

Natural waters, although representing the most convenient source are unevenly distributed across areas and territories, are restricted to a certain period of use, requires considerable expense for the calibration of their release, their quality has deteriorated due to pollution and on large parts of the planet account for flood hazards.

The **arranged waters** have developed strong economic (high costs) and environmental restrictions, hazards of flooding and earthquakes and limits of use could increase up to 40-50 years.

Groundwater under the form of underground lakes and rivers, have the advantage that are less polluting but they are situated in the arid areas where there is the greatest need of water and their use involves high pumping costs.

The **waters of the polar ice caps** comprise over 77 % of the world's freshwater resources, which could cover the requirements of humankind on several thousand years. The disadvantage is that they are almost entirely in the polar areas and have particular implications on the environment, climate, and rainfall patterns worldwide due to displacement, with only limited possibilities for use in adjacent areas.

Marine water resources are the safest reserves that can meet the requirements of freshwater perspective of humankind, but has the disadvantages of the high costs of desalination and seas and oceans waters pollution. This requires new desalination technology under economic efficiency conditions. No economic growth model can be developed without taking into account the environment, whose pollution has great implications on diversity, fauna and flora, the climate of the planet, global warming which by the "greenhouse effect" can give 2-4 degrees in addition to the Earth's temperature. Under such circumstances, the environment is acting as a general fixed capital subject to moral and physical wear out and should be recovered from the national product. Therefore, measures should be taken at national and international levels, such as reducing the pollutant nature of some industrial sub-sectors, stopping deforestation, promoting organic farming, introducing taxes and fees on the use of natural marine resources and on related pollution, etc.

The danger of using nuclear energy is the catastrophic degree of pollution as well as the risk to extend its geographical scope and to be out of control. Therefore, the realistic solution does not seem to be the non-proliferation and nuclear test ban, but rather the destruction of all nuclear arsenals and completely banning nuclear weapons or other similar weapons of mass destruction, which could endanger the survival of the planet.

4. CONCLUSIONS

From all the above we can deduce that forecasting the future of humankind is a challenging process with risks and pitfalls, i.e. **natural risks**, such as flooding, cyclones, climate changes, earthquakes, etc. as well as **economic risks**, such as the economic crisis, unemployment, inflation, monetary crisis etc. We must not neglect **social risks**, such as extreme poverty, lack of housing, hunger, social tension and **technological risks** of ambivalent nature such as those related to progress and non-progress of chemistry, biology, nuclear energy, computing and cybernetics, etc.

There should also be taken into account the **epidemiological risks**, such

as the emergence of infectious diseases that may endanger human beings or the risks of military conflicts between countries and major terrorist movements.

In conclusion, since Earth is only one, developed countries need to understand that it is no longer possible to further develop nor can maintain the benefits they have if the countries lagging behind from economic and social standpoint are not taking off towards progress.

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