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EDUCATION FOR THE POPULATION: IN THE WORLD AND THE BALTIC SEA REGION

Introduction

Nowadays humanity is facing the big problem of overpopulation. This fact together with the present capitalist systems do not allow the world to prevent future disasters in food and energy sources, which will be used not just by us, but also by future generations. We must take into consideration the amount of years that we will need energy and food.

The whole world is going through a transition period, in which everybody wants to have good living conditions and democracy for their societies, taking as "examples to follow" the already known developed countries (Germany, USA, Sweden, etc.) and without paying so much attention to their countries' differences in history and culture in order to create a sustainable world.

The Baltic Sea countries have recently joined the dreams and nightmares of the capitalist world, are facing big economic and social problems having less sources to satisfy their national demands and willing to belong to the EU in order to, in some way, deal with their present problems.

The joining of new countries to the European Union not only carries consequences (good or bad ones) for these countries, it also moves the present world to a new problem of how to satisfy more developed countries.

In this article I try to access information able to illustrate not only a single environmental problem, but also a chain of problems that has been connected for many years to the actual world situation and will lead us to a new step in the history of humanity. Thanks to technology and the advancement of the western world nowadays, we know what was the reason

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for the extinction of the most wonderful and incredible animals-reptiles on the earth, the dinosaurs. We even stipulate when their extinction occurred. Thanks to the same technology, we will be able to know when the extinction of "Homo sapiens" will occur or at least what will be the cause.

After all, nothing is forever, specially if it's wonderful...

Table 1.

	Total Population (Millions) 2000	Projected Population (Millions) 2025	Average Pop. Growth rate (%) 1995-2000	% Urban 1995	Urban Growth Rate (1995-2000)
World Total	6,055.0	7,823.7	1.3	45.0	2.5
More Developed Regions	1,188.0	1,214.9	0.3	75.0	0.7
Less Developed Regions	4,867.1	6,608.8	1.6	38.0	3.3
Least Developed Countries	644.7	1,092.6	2.4	22.0	5.2
Africa	784.4	1,298.3	2.4	34.0	4.3
Asia	3,682.6	4,723.1	1.4	35.0	3.2
Europe	728.9	702.3	0.0	74.0	0.5
Latin America & Caribbean	519.1	696.7	1.6	74.0	2.3

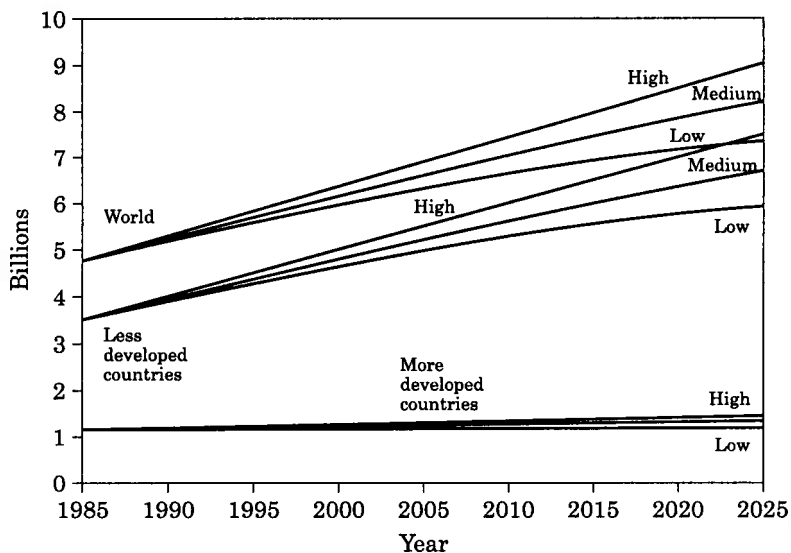


Fig. 1.

Table 2.

Continent	Total Population Millions	Per Capita Central Govt. Expenditure (PPP\$) On Education	Per capita Energy Consumption
Africa			
South Africa	40.4	659.5	2,482.0
Botswana	1.6	500.8	
Namibia	1.7	479.9	
Nigeria	111.5	5.2	722.0
Easter Europe			
Czech Republic	10.2	625.7	
Northern Europe			
Norway	4.5	1,951.6	5,284.0
Denmark	5.3	1,944.2	4,346.0
Sweden	8.9	1,643.4	5,944.0
Finland	5.2	1,539.8	6,143.0
Ireland	3.7	1,072.3	3,293.0
United Kingdom	58.8	1,082.7	3,992.0
Lithuania	3.7	342.4	2,414.0
Southern Europe			
Italy	57.3	993.8	2,808.0
Portugal	9.9	839.2	1,928.0
Slovenia	2.0	825.1	3,098.0
Belarus	10.2	373.2	2,386.0
Ukraine	50.5	227.6	3,012.0
Russia	146.9	218.8	4,169.0
Asia			
China	1,277.6	71.1	902.0
Hong Kong, China	6.9	606.3	1,931.0
Japan	126.7	849.3	4,058.0
Singapore	3.6	753.8	7,835.0
Israel	6.2	1,274.7	2,843.0
Oceania			
Australia	18.9	1,187.8	5,494.0
New Zealand	3.9	1,177.4	4,388.0
America			
Canada	31.1	1,576.5	7,880.0
USA	278.4	1,567.3	8,051.0
Argentina	37.0	405.8	1,673.0
Brazil	170.1	327.5	1,012.0
Mexico	98.9	362.8	1,525.0
Chile	15.2	303.7	1,419.0
Peru	25.7	122.9	582.0

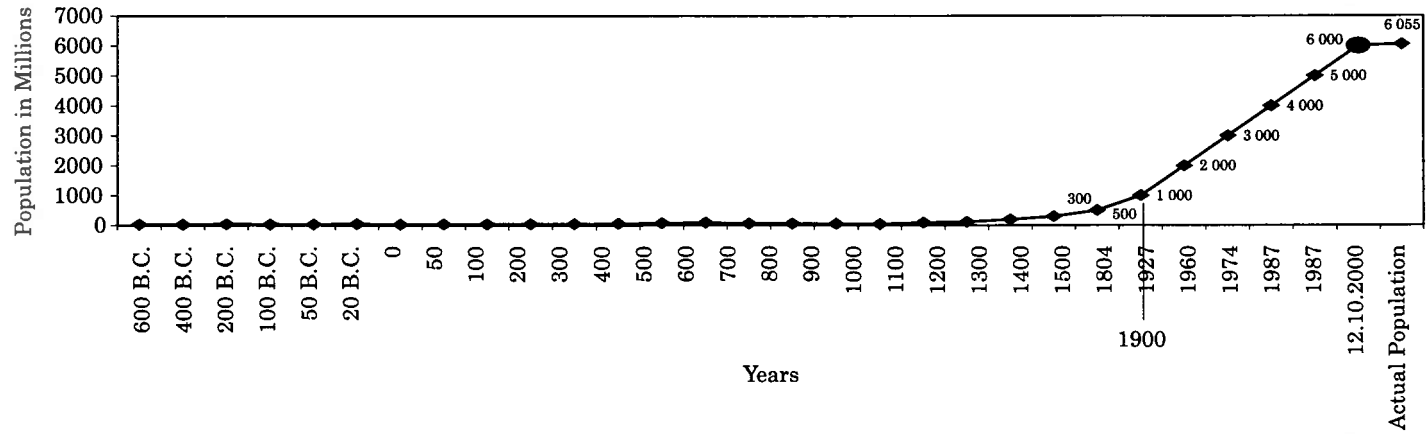


Fig. 2. Is there any problem? (The numbers of the centuries up to 1500 are estimates, but stable in accordance to the population)

On the 12th of October of 2000 human population reached the figure of six thousand million people on the blue planet. Perhaps, that could be good news. One of the most significant and maybe the most important events that happened the last millennium was in 1804, when the population reached one thousand million.

There are many fragments of human knowledge spread all over the world and, thanks to education, it is accessible to hundreds of millions of people. The incredible saga that our species has run until the present moment is this one: our population was 500 million a little after Christopher Columbus' trip, by 1804 we reached 1000. 123 years later the population reached two thousand million, 33 years later three thousand, 14 years later four thousand, 13 years later 5 thousand million and 12 years later the present population 6 thousands millions of people.

Four of each ten humans will be born in houses without drinkable water, three of each ten in a very poor house. But the figures of this accelerated population growth show that before the Industrial Revolution the conditions of poverty in the world were more pervasive than the present ones.

Suddenly, the nations started to acquire enough information in order to help other countries. Nowadays we call that information "technology" and that help as "money and jobs". Mixed in one single term. *Globalization*.

Globalization

"The wholesale mortality caused by the Black Death during the 14th century contributed in fundamental ways to the development of mercantilism, the school of thought that dominated Europe from the 16th through the 18th century. Mercantilists and the absolute rulers who dominated many states of Europe saw each nation's population as a form of national wealth: the larger the population, the richer the nation. Large populations provided a larger labor supply, larger markets, and larger (and hence more powerful) armies for defense and for foreign expansion. Moreover, since growth in the number of wage earners tended to depress wages, the wealth of the monarch could be increased by capturing this surplus".¹

It is impossible to explain the full process of globalization, but it is important to mention it, in order to understand how the present world is behaving. The Mercantilist approach at the beginning of this era worked for those societies. Nowadays the same term can be applied to the pre-

¹ Encyclopædia Britannica: Population; Mercantilism and the idea of progress.

sent world economic system. There might not be kings or monarchs as physical people? But we have full nations taking the same role that those people did in the past. One of the main reasons for globalization, perhaps the most important, is the distribution and lack of natural resources all over the world. While in some countries there are more natural resources in others they have a limited amount of them. This leads the countries with less natural resources to invest more in education, in order to develop technology and be able to supply their society with basic goods, nowadays with any kind of goods.

Unfortunately, not necessarily all countries invest in education. The lack of a very well educated society leads a country to chaos. Ignorant people can only become part of the labor force of a country in factories. If these factories belong to international companies this will lead to a new kind of imperialism. The present colonization and imperialism carried out by the first world countries takes advantage of countries with weak economies, which in the scope of this paper are transition economies.

The Demographic Transition²

The demographic transition model seeks to explain the transformation of countries from having high birth and death rates to low birth and death rates. In developed countries this transition began in the eighteenth century and continues today. Less developed countries began the transition later and are still in the midst of earlier stages of the model.

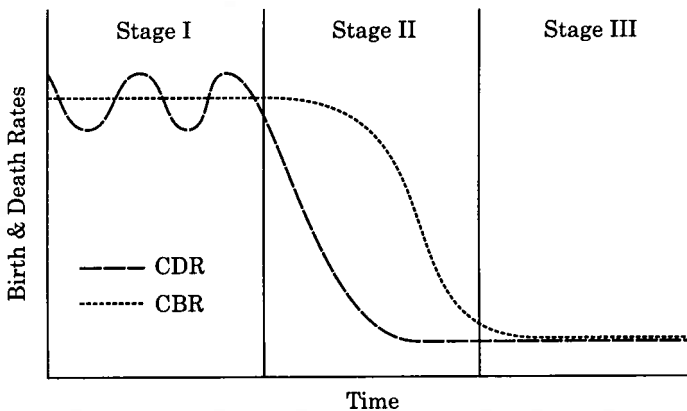


Fig. 3.

²This section is from Geography: geography.miningco.com

CBR & CDR

This model is based on the change in the crude birth rate (CBR) and crude death rate (CDR) over time. Each is expressed per thousand population. The CBR is determined by taking the number of births in one year in a country, dividing it by the country's population, and multiplying the number by 1000. In 1998, the CBR in the U.S. was 14 per 1000 (14 births per 1000 people) while in Kenya it was 32 per 1000. The crude death rate is determined similarly. The number of deaths in one year are divided by the population and that figure is multiplied by 1000. This yields a CDR of 9 in the U.S. and 14 in Kenya.

Stage I

Prior to the Industrial Revolution, countries in Western Europe had a high CBR and CDR. Births were high because more children meant more workers on the farm and with the high death rate, families needed more children to ensure survival of the family. Death rates were high due to disease and a lack of hygiene. The high CBR and CDR were somewhat stable and resulted in slow population growth. Occasional epidemics would dramatically increase the CDR for a few years (represented by the "waves" in Stage I of the model).

Stage II

In the mid-18th century, the death rate in Western European countries dropped due to improvement in sanitation and medicine. Out of tradition and practice, the birth rate remained high. This dropping death rate but stable birth rate at the beginning of Stage II contributed to skyrocketing population growth rates. Over time, children became an added expense and were less able to contribute to the wealth of a family. For this reason, along with advances in birth control, the CBR was reduced through the 20th century in developed countries. Populations still grew rapidly but this growth began to slow down.

Many less developed countries are currently in Stage II of the model. For example, Kenya's high CBR of 32 per 1000 but low CDR of 14 per 1000 contribute to a high rate of growth (as in mid-Stage II).

Stage III

In the late 20th century, the CBR and CDR in developed countries both levelled off at a low rate. In some cases the CBR is slightly higher

than the CDR (as in the U.S. 14 versus 9) while in other countries the CBR is less than the CDR (as in Germany, 9 versus 11). (You can obtain current CBR and CDR data for all countries through the Census Bureau's). Immigration from less developed countries now accounts for much of the population growth in developed countries that are in Stage III of the transition. Countries like China, South Korea, Singapore, and Cuba are rapidly approaching Stage III.

The Model

As with all models, the demographic transition model has its problems. The model does not provide "guidelines" as to how long it takes a country to get from Stage I to III. Western European countries took centuries through some rapidly developing countries like the are transforming in mere decades. The model also does not predict that all countries will reach Stage III and have stable low birth and death rates. There are factors such as religion that keep some countries' birth rate from dropping.

Table 3. Overpopulation in the Baltic Sea

The Baltic Sea	Total Population Millions	Per Capita Central Govt. Expenditures (PPP\$) on Education	Per capita Energy Consumption
Poland	38.8	563.50	2,807
Finland	5.2	1,539.80	6,143
Russia	146.9	218.80	4,169
Denmark	5.3	1,944.20	4,346
Sweden	8.9	1,643.40	5,944
Estonia	1.4	388.20	3,834
Lithuania	3.7	342.4	2,414
Latvia	2.4	362.20	1,674
Germany	82.2	1,059.4	4,267
Total Population without Russia and Germany	65.7		

Taking into consideration that there are two kind of natural resources, renewable and non-renewable, we can observe the limited amount of both in the Baltic Sea states. The existing situation forces to the Baltic countries to develop mainly their technology industry, which is expensive on the international markets and tourism, which requires

a lot of education and investment programs, in order to make it profitable and sustainable. Trade can be developed, but it also needs a lot of cooperation within and between among the Baltic countries in order to make it productive.

Populations with low salaries do not contribute much to the economic cash flow of the country. Expenditure is on the main necessities of the society (such as food, rent, water, electricity, etc.) and only then it can allow expenses on comfort and entertainment (clothes, movies, music, etc.). The acceptance of the Baltic States into the EU will raise the acquisitive power of their currencies and this will move their economies towards a new and second most important era of "necessities" (after the economic transition to capitalism).

The increasing in the demand for goods will also raise the amount of services that societies require. This will lead to an increase in energy consumption (Table 3) to the levels of the developed countries (see Table 2). The generation and supply of energy is dictated by the sources of natural energy. Unfortunately, there are limited as in any country. The use of technology in order to generate energy is one of the main problems of present society, but the cause of this problem is the demand for it. How can we give full satisfaction to a whole nation, if we are already exceeding the sustainable level of the use and exploitation of energy resources. The use of petroleum is not a solution, as it is claimed by the big potencies demanding 'lower prices', for energy purposes, when it is mainly for the creation of unnecessary articles that have lifetimes from less than one day to more than ten years.

The present world, not only the Baltic states, needs more research into ways of substituting petroleum while it is still possible and easy to do, as we are not yet in a desperate situation (this will occur at the moment that oil starts to be absolutely scarce).

Population Behavior in the Baltic Sea Countries

Case 1: Finland, Denmark and Sweden have had the best population growth development through the past ten years, having kept their population balanced in a sustainable way in order to not have a large increase in their populations.

Letting their countries educate their young citizens and keeping the development of the country in hands of the state, it is said that developed countries have reached the demographic transition point. On the other hand, the growth of these populations has not stopped. It has not stopped in any society in the world, but it is at a level of cultural 'control'. While in the USA families have children during the first 10 years of

marriage, in southern Finland, for example, the average of age for Finnish people to have children is around 30–40 years old. Which means that they do not have children at the beginning of their marriage.

Case 2: The population growth of Poland and Russia has dropped considerably during the last decade. Unfortunately their position in the demographic transition model is in Stage II. This means that their societies need to find their economic solvency in work and services. In economic terms, there is a strong need of 'jobs', if the country cannot satisfy its own demands. They require foreign direct investments, in services and labor works.

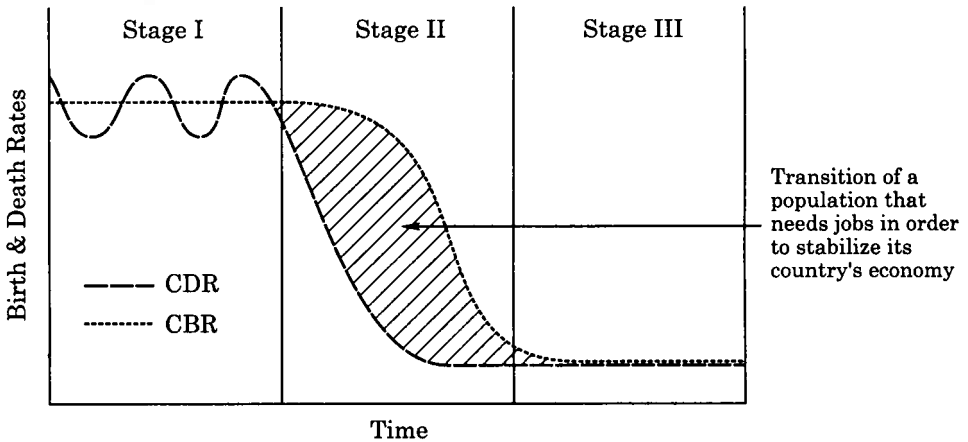


Fig. 4.

Case 3: The case of Estonia, Latvia and Lithuania is quite exceptional and stable. These countries do not present a huge demographic explosion, although just in their own levels of the birth rate. This is greater access to education, but national demand is difficult to satisfy with low incomes in economy and increasing outflow cash through foreign companies.

Even in the last couple of years there has been a strong tendency to have less children or at a mature age, which can lead to fast development, if it is well planned. The conditions are in some way still optimal. If the investment in education falls this will bear consequences mainly in: *corruption*, because of strong interests in keeping a good standard of living. *Criminality*, if people become less educated and with less sources of being productive in the economic sector, they start to steal or undertake other illegal operations. *Political Instability* due to the phenomena mentioned above could produce a lot of problems for the nation. Finally the most important, *Lack of Identity*, to not know who you are, where

'you' are going? What is the destiny of your nation? To understand that the welfare must come to everybody, because we as a nation are one unit and we must work together and for everybody's benefit.

Environmental and economic point of view

To accept more members into the European Union means something more than to add new members to one of the strongest agreements in the world. It also condemns the entire world to work for the satisfaction or better known as 'good living conditions' of these new, developed nations.

During the last 50 years, the population of the countries presently in the EU has grown from 295 to almost 378 million. In 1953, the EU's population exceeded 300 million. Thereafter, it took 10, 13 and 22 years to shelter another 25 millions inhabitants.

Foreign investment, which is and will be part of the economies of Eastern of Europe, will have to be very well planned in order to balance the service works labor that is generated with the growth of the society. Until they can find their way to be self-sufficient economically and stop depending on other countries' companies and technology.

There cannot be many factories for environmental reasons. The kind of companies, which will open corporations will have to be research, development or service firms (such as computer technology, biochemistry, hotels, etc.) able to keep working for the country for a long period, but in the hands of transnational business.

Education

Education is an important investment for the member states of the European Union. Investment in education is influenced by factors such as the level of economic development, the percentage of young people in the population and the duration of the various cycles of study. On the whole, the percentage of national wealth devoted to education reflects the importance governments attach to education.

A high standard of education allows a country to make a society 'productive' in towards the research and development. For example, if we take into consideration Germany with 82.2 million very well educated Germans. We can see that their development is a result of the research they have done through their private and public institutions and the work of generations after the Second World War. The purpose is to give good living conditions to their society, as is supposed to be for all societies in the world.

How can the Danish, Swedish, Finnish or any other developed nation satisfy their societies unlimited demand? How can, for example, the USA supply and satisfy the demand of 278.4 million people? The answer is the work and research they have done during the last couple of decades.

Table 2 shows the investment on education made in different countries. The difference among the investment of first world countries and third world countries is quite remarkable, but we can also see some cases such as Japan where expenditure is relatively low. On the other hand, we must take into consideration the strong cultural differences, the victory of efficiency over production costs and the investment made in the education sector in previous years..

In 1997 the public resources allocated to the funding of all levels of education represented an average of 5.0% of the European Union's GDP (not including private sources). This average depends on a country, but it has proved to be constant. Education is differentiated into three parts: primary, which consists of elementary school, secondary education, i.e. high school education and tertiary education, i.e. universities and research. Expenditure here was more than 70% of the total budget. This represents the salaries of teachers, current operating conditions in educational establishments, the cost of building and maintaining school buildings and even the ability to respond to a growing demand for education and to technological developments.

With the creation of "Poland and Hungary: Action for the Restructuring of the Economy" (PHARE),³ the flow of information is more equal among the EU countries and the PHARE countries Albania, Bosnia-Herzegovina, Bulgaria, The Czech Republic, Estonia, the Former Yugoslavian Republic of Macedonia, Hungary, Lithuania, Latvia, Poland, Romania, Slovenia and Slovakia. The use the same questionnaires and the same methodology for investigating the level of education in each country.

Certain features are similar in the PHARE countries and the EU Member States. Girls are less likely to enrol in the vocational stream at secondary level. In tertiary education, women are relatively more numerous than men, but they are much less likely to be studying mathematics, computer science and engineering.

English is becoming the most widespread language of communication in Europe, as it is the one most often studied by Europeans within the school system.

In the PHARE countries pre-primary education is less widespread and compulsory schooling starts later than in the EU. Fewer young people

³The PHARE program, launched in 1989 for Poland and Hungary, was extended to other countries in 1991 and is part of the pre-accession strategy for joining the EU.

take part in post compulsory education and enrolment is relatively lower at tertiary level.

A large majority of young Europeans are still at school at 16, but their participation rate is starting to decline. At 18, more than 80% of them are still in education in Sweden, Germany, Belgium, France and Finland. Among the PHARE countries, the highest percentage is 73% in Poland. On the other hand, the educational participation rate does not exceed 50% in the UK, Bulgaria, Romania, the Former Yugoslav Republic of Macedonia and Albania. Almost half of 20 year olds, in the EU study. Participation rates vary from 29% in Austria to about 60% in Belgium, the Netherlands, Greece and France.

Among the PHARE countries, at this age, Poland has the highest participation rate: 48% in five other countries (in the Baltic countries, Hungary and Slovenia) this proportion is higher than one third of 20 years olds. Young people in post-compulsory education are enrolled most commonly at tertiary level, whereas in the EU, many young people continue their studies at upper-secondary level or post-compulsory non-tertiary level. This is particularly true of Denmark, Germany, the Netherlands and Sweden.

The long-term benefit this will bring to their societies is notable. Nowadays there is a need for a new model of learning about 'overpopulation', not only in the Baltic States, also all over the world, to understand the dimensions of having a large population and promote a sustainable development. For example there are fifteen universities in Poland provided by the public sector plus the ones that belong to the private sector.

Unemployment

Unemployment is one of the biggest problems of our capitalist society. Unfortunately the type of unemployment differs between countries. In developed countries unemployment can be caused by different reasons.

When a society becomes more educated unemployment is due to the fact of a lack of jobs in the service sector. Most of graduate students want to find a job in their field of studies or research, but if they can't they become part of the unemployment statistics. On the other hand, there is a tendency that the demand for certain labor increases, such as cleaning personal (mainly), cooks, construction workers, night workers, etc., as a result of the lack of citizens who do not want to accept those kind of jobs. Why is that? The answer is quite simple. Anyone who has a degree in any field does not wish to work as a 'worker'.

The development of technology allow us to be more efficient and to hire less people, however it is necessary to employ some workers.

According to the demographic transition, Poland and Russia are in stage two and in need of strong investment in their countries. Foreign direct investments is influenced by the natural resources available, the population and the political situation of the countries.

In the case of the immigrants, the kind of job that they usually find is in the labor force sector. According to the culture and country, perhaps they can have, in the long-medium term, a job in the service sector. There is financial aid for unemployed people in countries such as Finland, Sweden, Norway, etc., although it is commonly used for immigrants (as in Sweden) and farmers (during the winter season) and even these people must prove they cannot find a job.

Personal Opinion

Talking about the Baltic Sea countries the populations are tending towards stability and prosperity. Talking about world population as a whole, we are talking about serious environmental and economic problems. That will not have an immediate solution.

On the other hand, to satisfy our present necessities does not allow us to forget our future needs. Can we really be more and better? Can we really reach "sustainability"? It is obvious that developed countries 'believe' they are close, or even have achieved this. Recycling and having more environmental taxes on goods and industries do not provide a solution. What the present world information shows is something not only complicated, but also a strong and sustained lie.

The Baltic Sea Countries will join the EU. It is an inevitable event, but the consequences to other nations is yet to be known. Examples are exploitation of the soil in other countries in order to produce food, more factories in order to make more goods of any kind, more instability in globalization with the new economies influencing the World's markets, etc.

The European Union countries must deal with the flow of migration through the nations and with the demand for a labor force. It is a fact that more people are needed for cleaning and doing hard jobs that well educated western Europeans do not want to do. In any Eastern Europe nation, even if a citizen is very well prepared and educated, in the western countries they often become part of this segment in the labor force. How to deal with this mix of population and give rights and conditions able to help and develop a better mix of nationalities.

Discrimination. During the summer the need for workers on farms is quite high and because of the currency exchange it is in some way well paid. On the other hand, nations fight to avoid accepting immigrants. How should we deal with this dilemma – to have workers for the sum-

mer, but not to have immigrants. Perhaps, a state could force its own well prepared doctors and graduates to work on streets, in coffee shops or on farms, or maybe force their student population to work for the welfare of their country in those kind of jobs. These are questions without answers, but societies demand 'quick' solutions.

Proposals for improvements in the economic and social conditions of the Baltic State countries must be aimed towards education as a main source of welfare for their citizens, in order to avoid criminality and corruption. The education programs must be designed for all citizens according to their ages. It is never too late to start to learn a new field. It will not be easy, but nothing is. The case of Finland is quite exceptional and admirable. Through hard work and cooperation it became a rich and developed nation in the course of twenty years.

National and work programs are something difficult for the countries that belonged to the Soviet Union to accept, but it is in this way they will emerge from their actual problems. It is not 'work for free', but it is necessary to change one's mentality and to contribute to one's nation. What is good for my own nation is good for myself! Unfortunately this is something difficult to accept and assimilate in a capitalist world, but something that can give a solution to the whole world.

What is the future for humanity? To find the among the nations and give the next step in the evolution to a new era or die as the Roman Empire did and go back to a new start. A big question, which will be discussed until we really reach the limit of our acts or the end of our species.

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