

The Impact of Global Changes on the Transformation of Politics, Economy and Education

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Abstract: *Society faces many challenges in transitioning toward sustainable development, and education is key to make this transition happen. Through education we influence on human consciousness, create their needs and changing behavior. One of most important educational programs is environmental education. It brings motivations, skills, values and commitment that people need to efficiently manage their earth's resources and take responsibility for maintaining environmental quality and understand the problems they face. The limitation of access to certain resources is getting closer and we need to be aware of those limitations and put those in center of our life and work. The most effective way for doing it is through environmental education started from earliest age. The limitation of access to certain resources is getting closer, and this fundamentally changes our relationship to economics, politics and ecology. This paper discusses the imperative of action within the limits of the finite world. The paper emphasizes the pressure on natural resources, which means that politics and the economy will have to undergo a radical transformation in order to be suitable not only today, but also in the future.*

Keywords: *global changes; ecology; environmental education; sustainable development*

1. INTRODUCTION

The role of education is of great importance in creating future socio-economic trends. Global changes inevitably bring with them changes in the traditional approach to education. The speed with which the world is changing means adapting to new principles, norms, and values.

Looking at the causes and consequences of such changes through the education system is a necessary way to prevent far-reaching consequences for both the planet and humanity. If the growth trend does not fundamentally change, we will witness an increasingly frequent occurrence of pandemics, an increasing number of ecological refugees who, with the instinct of survival, will start an exodus from devastated areas to areas where they believe they can ensure their existence.

In this case, mixing cultures, traditions, religions, habits, politics, education is the most important common content and the most important bearer of future social changes and development. Here we are not only talking about the need for changes in the structure of the materials, but about the necessity of understanding the political-economic wishes of global powers and knowledge of national possibilities and capacities. No matter how much we think that globalization will bypass us with a passive approach to global changes, it is impossible. Every open economy suffers the impact

of global changes. And if we don't want globalization, globalization will come to us. Only with an adequate structure of the educational process, which includes clearly defined criteria and values, can we ensure the preservation of national sustainability and the future development of our society.

As the main actors of the current situation in which humanity found itself, the pandemic of the Corona virus COVID-19, we are responsible for everything that was, for what we are currently experiencing, and regardless of the outcome of the current crisis, we are absolutely responsible for understanding the meaning, value and future actions so that such disasters do not happen again. Throughout history, man has found various ways to survive and adapt the ecosystem to his needs. Obviously, finding a balance between human needs and pressures on the ecosystem has not borne fruit. Uncontrolled use of naturally non-renewable resources (deforestation, unplanned expansion of settlements, uncontrolled growth of pollution, draining of wetlands, reduction of the abundance of many plant and animal species, unreserved exploitation of hydro potential, development of technology and its impact on the environment, such as the introduction of the 5G network...) they led to immeasurable damage, the cause of which is exclusively human.

K. Potting [1] describes how ecological damage caused by the human factor led to the disappearance of the conditions for the survival of the population. The very rapid development of the industry due to the increased demand, and thus the volume of production, leads to frequent accidents to the health of the population. Looking at the causes and consequences of such damage is a necessary way to prevent far-reaching consequences for both the planet and humanity. If the growth trend does not fundamentally change, we will witness an increasingly frequent occurrence of pandemics, an increasing number of ecological refugees who, with the instinct of survival, will start an exodus from devastated areas to areas where they believe they can ensure their existence. This leads to numerous problems, not only in the social and organizational sense, but also in the economic sense, starting from the increase in costs due to leaving the traditional place of living, to their questionable assimilation in the new environment.

The disruption of the natural balance is so great that some authors believe that it is impossible to predict what will happen in the future. Ćirković, M. states: "Devastating events completely destroy predictability. The consequence is that absolutely devastating events, which humanity has no chance of surviving, completely destroy the reliability of predictions based on past events." [2, pp. 114-123] The anthropogenic burden on the planet has become so burdensome for predicting the future, that every planetary catastrophe is first characterized as a conspiracy theory. From a social point of view, the anthropogenic burden ultimately leads to humanity becoming condemned to inhumanity, and closing our eyes to this planetary problem is justified by irrational value judgments based on the interests of the great powers. But let's take a look at what kind of forecasts and scenarios were created in the past period, what of the anticipated events came true, and where such forecasts lead us in the future.

In 1990, according to research by the Harvard Business Review, a world dialogue was started on the important issues that companies and managers face in their policies in the 1990s. The results were published in "Transitional Frontiers of Business: 12,000 Global Managers Look at Change" The survey concluded that managers around the world believe that government should put the needs of business first in decision-making and policy-making. Protecting companies that create wealth, in their opinion, should be the priority of any responsible government. However, we are of the opinion that such an attitude had to be changed with a sustainable approach, and that every company must correct its business policy by including corporate norms that harmonize the company's policy with the environment and the global business and eco system. In modern conditions and new business models within the

framework of sustainable development, the coherence of business policy implies management in new ways.

2. FURTHER RESEARCH

By means of mathematical computer modeling, a group of scientists Donnell and Dennis Meadows (USA), Jorgen Raders (Norway) and others, studied the behavior of the world system in the period of the 20th-21st centuries. The following factors were investigated in numerical form:

- Population,
- Resources,
- Volume of industrial production,
- Volume of food production,
- Level of environmental pollution.

In the book "The Limits of Growth" from 1972, which has been translated into 35 world languages, the results of research on the above factors are presented. After that, in 1992, the results of a new research were published in the book "Beyond the Limits of Growth". Both books caused polemics, interest and achieved unusual success. As authors state: "Our book was discussed in parliamentary and scientific circles. One major financial company has dedicated funds to a series of critical publications, another has established an annual award for the best research in the field. The book "The Limits of Growth" caused stormy criticism, many analytical reviews and a flurry of attacks from the right, from the left and also attacks from the position of the center. The book was accepted by many as a prediction of the near end of the world, but it is not a prophecy of that kind at all. It does not speak of a future that is predetermined, but of the choice of that future. It certainly contains a warning, but also hope..."

Considering the analysis of the development of the world and the system that, according to the results, would indicate the optimal growth model, the authors developed a computer model called "World 3", and the results of the research were published in the book "Growth Limits". Based on the study and analysis of the development of the world in the period 1970-1990, due to the changed circumstances of the environment, the model was supplemented and corrected, so that a new version of the "World 3/91" model was created. However, regardless of minor changes, the results obtained by applying "Svet 3/91" are very little different from the results obtained 20 years earlier.

In the "World 3/91" model, the behavior of system elements such as:

- Population,
- Industrial capital,
- Pollution,
- Arable land.

The mentioned elements are variable because they are the result of the life cycle, they move from birth to the end of the life cycle, such as birth and death in the case of the population, or say investment and depreciation in the case of capital. For example, the amount of food produced per capita affects the death rate. As we stated, their Survey of the Five Elements of the World (population, volume of industrial production, volume of food production, resources, level of environmental pollution) are average. It should be noted that in the population survey there is no difference between Chinese and Italians, poor and rich. World industrial production includes world production and other parameters are simplified in a similar way.

resource deposits will increase as we move towards limits.

Also, a time delay is introduced for many processes in the model. Let's say - a delay in the change in the number of the population, conditioned by the age structure. In modern society, the number of young people is significantly higher than the number of old people. Therefore, even if the birth rate decreases, the number of the population will continue to grow over the decades as a result of growing up. Although the number of children in families is decreasing, the number of families is growing.

Here's how it looks on the example of a rough calculation of the process of destruction, where we

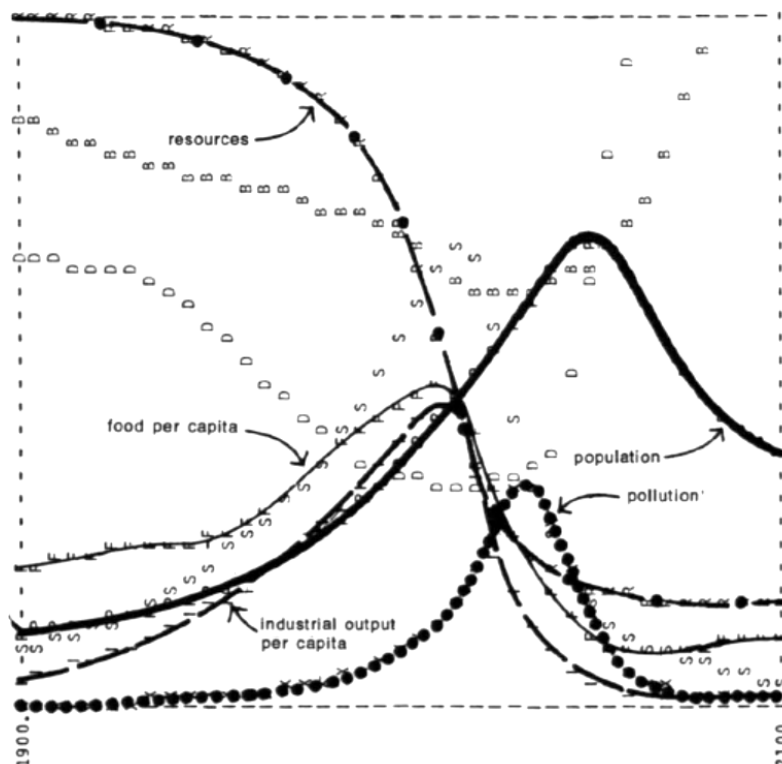


Figure 1. Traditional model-Scenario 1 [3, p.124]

- Processes of population growth,
- Economy,
- Latency limits,
- Destruction processes.

It is also important to explain that there are certain limitations, in the form of a limitation of the arable area of 32 million km² (land without Antarctica 131.3 million km²). Limits of Earth's productivity... Non-renewable resources (mineral raw materials, fossil fuels) enough for no less than 200 years, if their extraction remains at the level of 1990. The Earth's ability to absorb pollution is such that, in the event of a tenfold increase in the level of pollution registered in 1990, life expectancy is reduced by only 3%, soil fertility by 30%. However, the costs of land development, yield enhancement, exploration and exploitation of non-renewable

are practically spinning in a vicious circle. Suppose there is a shortage of food products. In that case, people could exploit the land much more intensively, in order to produce more products in a short time, to the detriment of long-term soil conservation programs. The result is a decrease in the productivity of the land, so when you look at the facts, it again leads to a further decrease in the amount of food products.

In order to be able to comment on the "world 3/91" model, we will first present certain general characteristics. The total number of interactive variables is 225. When calculating a scenario of the state of the world, the computer calculates the meaning of each variable for each half-year of the considered period, from 1900-2100. More than 90 thousand values are generated by the calculation of this model for each scenario.

Fig. 1 presents Scenario 1 of the state of the world. These are the results of the standard scenario of the state of the "real" world as shown here. World society is developing in a traditional way, it is developing as it developed during the 20th century.

Scenario 1, the behavior of the world in the period 1900-1990. yr., as stated in the book, is characterized by the following:

- The population increased 3.3 times from 1.6 billion people to 5.3 billion people.
- The total volume of industrial production increased 20 times.
- In that period, 20 percent of the world's reserves of non-renewable resources (fossil fuels, oil, coal, gas; materials: iron, aluminum, copper, chrome, nickel) were used.
- The average volume of industrial production per capita, which characterizes the material standard of living in 1990, was 260 dollars per year.

The authors predict problems will arise as time passes. The world is gradually reaching its limits. According to this model, research results suggest that from 1990 to 2020, the volume of industrial production will increase by 85%, and the rate of consumption of non-renewable resources will double. If in 1990 the reserves of non-renewable consumption were sufficient for 110 years, this scenario predicts that at the rate of their consumption at the level of 1990, in 2020, the reserves would amount to only 30 years, due to the rapid exponential growth of consumption.

Shortly after the year 2000, the level of pollution will become high enough to cause a massive decrease in the fertility of the earth. If the fertility of the soil was reduced by only 5% from 1970 - 2000, starting from 2010, the annual rate of degradation will amount to 4.5%.

In Scenario 1 of the traditional world, it is forecast that around 2015-2020, economic growth stops and economic decline begins. Capital (physical and not monetary) decreases faster than the inflow of investments. Also, the volume of industrial production and production of food products is decreasing. In proportion to the decrease in the production of food products, the level of health care falls, leading to a decrease in life expectancy and an increase in mortality.

According to the same scenario, the population, having reached its peak around 2030, of around 8.4 billion people, will start to decrease. The delay of the peak of the number of inhabitants in relation to the peak of the volume of industrial production, and the production of food products of about 10 years, is explained by the age structure of the population and social regulation. It is interesting to note that in the scenario of the traditional world, the volume of industrial production in 2100 will fall to the level of 1990.

When we look at all this from today's point of view and the current situation, during the pandemic, we cannot help but notice that the model does not take into account possible social restrictions that can lead to tragic consequences (world wars with the use of weapons of mass destruction, pandemics), so from for this reason, this scenario can even be considered optimistic.

The mentioned traditional model and its publication, indoctrination and implementation are more receptive to the population compared to other scenarios. There are several reasons why this is so.

If we are looking for a way to motivate the population to accept a new resource model scenario within the limits of sustainable development, we believe that this very sensitive issue requires a review of Max Weber, who defines four types of human social behavior:

1. Objective rational behavior - implies setting a rational goal with equally rational means of achieving that goal.
2. Value-rational behavior - implies a conscious belief in the absolute value of a set goal, regardless of the possibility of its realization.
3. Affective behavior - implies behavior primarily defined by affects and emotions with the absence of rationality.
4. Traditional behavior - based on habit, also with the absence of rationality.

Looking at the mentioned types of social behavior, we point out that it is very difficult to adapt the entrenched traditional behavior to changes in the environment, regardless of their necessity and rationality. It is this traditional utopia that could lead to poor implementation of the newly offered scenarios. Therefore, from a theoretical point of view, it is necessary to act strongly on the motives of the population, on awakening their awareness of the possible possessions that will arise if the world functions and grows in the way it has been. Acquainting the population with the real dangers and the real causes of such an assumption, which will be more receptive and meaningful to them after the Corona virus pandemic - COVID 19, we can establish a social regularity in relation to the resource model of the world, which will be woven both through the life habits of the population and through their business activities, company policy, through national state policy. Without class and status divisions, without divisions by activities, without divisions according to the level of development of companies and countries, everyone must have the same motive of preserving the resource potential of the planet in accordance with the limits of growth. The social reality is different. Social stratification will have its impact on any proposed model. The question arises, how to define the boundaries in that segment, the zone of indifference within which the complexity of the

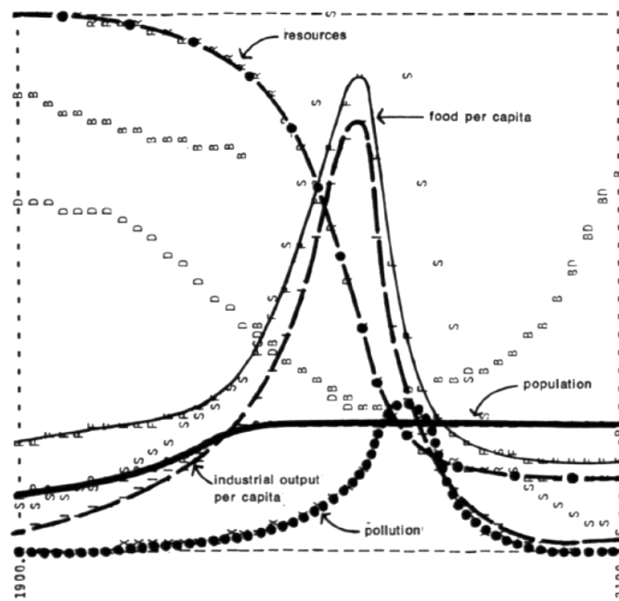


Figure 2. Scenario 10, Sustainable World [4, p.160]

social structure (the influence of power, rich, uneven knowledge...) will not affect the final reach of the proposed model? Can the preservation of humanity become a higher goal that exceeds the power of economic influence?

Otherwise, we will have a situation that Meadows calls a collapse. The following Scenario 1 describes uncontrolled population decline or economic decline, caused by going beyond the bounds of the sustainable limit. An unambiguous and important conclusion follows from the analysis of Scenario 1, that the traditional system with its growth rate of the economy and population, with its ruling method of production, although we consider it optimistic, is NOT SUSTAINABLE. The question arises, in what way should the traditional world, which is doomed to fail, be transformed into a sustainable and habitable world?

Meadows offers an answer in one of the scenarios, the so-called Scenario 10 shown in Fig. 2, in which, compared to Scenario 1, numerous and significant changes have been introduced. This scenario starts from a doubled change in natural resources. It is also based on the assumption that after 1995 all families to be limited to two children. It is also important that since that year the volume of stabilization of industrial production has been accepted at the level of 350 dollars per capita per year. Technologies are being introduced that reduce the emission of harmful substances, soil erosion and increase the effectiveness of the use of natural resources.

A new sustainable society, which in the XXI century has a stable volume of industrial and food production and a stable population, is the result of this scenario. A stable population of 7.7 billion people can be adopted as the allowable population

of the world, in the resource model. We can call Meadows' model of the world a resource model, since he considers the Earth as a source of resources.

From his explorations of the world, D.H. And D.L: Meadows draw the following conclusions:

This necessarily leads to the conclusion that without a significant reduction in the flow of material and energy resources in the coming decades, there will be a reduction in the following indicators per capita:

- Production of food products,
- Energy consumption,
- Industrial production.

2. That reduction is not inevitable. And it is precisely in this segment that we come to the necessity of transformation and a comprehensive revision of politics and economics, and practices that contribute to the growth of the number and level of material consumption, then a rapid and sudden increase in the effectiveness of the use of material resources.

3. The authors point to the technological and economic construction of a sustainable society while it is still possible. Compared to a society that solves all problems at the expense of constant quantitative growth, this solution will certainly be more appropriate. It requires a transition to a sustainable society, a carefully balanced strategy that bases its goals and accents on sufficiency, equality and quality of life, and not on the volume

of production (which was not the case with China in previous decades). Great caution and a caring approach make conclusions and not ominous predictions. And to finish the analysis of the results with the last thought of D.H. and I D.L. Meadows, "our ideas lead to a new world. Sustainability and not an increasingly perfect weapon because the struggle for power and material wealth is the last challenge of energy in the creative abilities of the human race."

In 2020, regardless of model I variations, it is imperative to operate within the confines of a finite world. The pressure on natural resources means that politics and economics will have to undergo a radical transformation in order to be suitable not only today, but also in the future.

Recent UN projects and reports suggest that the population will reach 9.3 billion by 2050 and over 10 billion by the end of the century. Most of this growth will take place in emerging markets - until 2050. Asia may have 60% of the world's population [5]. In this regard, Alexandra Boakes Tracy explains that the UN's Food and Agriculture Organization anticipates a 50% increase in food demand by 2030, even if urbanization on an unprecedented scale could displace up to 30 million hectares of prime arable land. As he states, there will be much higher meat consumption in emerging economies, and more extensive livestock farming will help increase water demand by as much as 30%, the International Food Research Institute has shown [6].

Also, in numerous reports, consumer appetite for many products is already testing the limits of supply. This will inevitably affect the company's operations and concern about the implications for future operations. This was confirmed by a survey of companies from 24 sectors, conducted at the end of last year by Ernst and Young and Green Biz, in which 76% of respondents declared that they "predict that the basic business goals of their company will be affected by the lack of natural resources in the next 3-5 years".

3. CONCLUSION

Looking at the mentioned types of social behavior, we point out that it is very difficult to adapt the entrenched traditional behavior to changes in the environment, regardless of their necessity and rationality. It is this traditional utopia that could lead to poor implementation of the newly offered scenarios. Education as a process of teaching, learning and practice is the most important way to overcome this problem. Therefore, from a theoretical point of view, it is necessary to act strongly on the knowledge, on the motivation of the population, on awakening their awareness of the possible consequences that will arise if the world continues to function and grow in the way it has been.

In 2022, regardless of model I variations, it is imperative to operate within the confines of a finite world. The pressure on natural resources means that education, politics and the economy will have to undergo a radical transformation in order to be relevant not only today, but also in the future.

Perhaps this COVID-19 pandemic will lead to increased concerns about the impact on the environment. The fact that we continue to consume more resources than the planet can naturally replenish, the fact that there are more of us every year, the uncontrolled population in the form of chaotic poliss and a host of other wrong things means that we are currently consuming the equivalent of 1.6 planets per year which some authors call "overrun day - the day every year when demand exceeds natural supply - comes earlier and earlier".

The limitation of access to certain resources is getting closer, and this fundamentally changes our relationship to education, economics, politics and ecology. Already during the next decade, access to certain resources will become increasingly difficult and expensive. Perhaps now is an important moment to stop, think, notice something more and wisely determine new priorities and strategy for a new scenario.

The necessity of introducing changes in the educational system in which, depending on the level, this topic would be brought closer to the population so that they would understand the consequences of the current approach, is not only desirable, but urgent. Education must be the hallmark of future changes and a modern approach to sustainability.

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