

ECOLOGICAL PARADIGM AND ECONOMIC REALITY

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Abstract. *Interdependence of economy and natural environment is in the focus of modern science and social practice. Having brought up the issue of irrational attitude of the man (society) and man's economic activities toward nature, our civilization has none too soon launched the trend of critical consideration and evaluation of these relations. The appearance of ecological deficits and ecological risks, the environmental crisis and the endangered basis of life in a specific "risky society" created a favorable social climate for the emergence of a new ecological paradigm of sustainable development. As a global strategy and an indicator of development, it includes the total socio-economic, scientific-technological and socio-cultural development harmonized with ecologic development standards. The new ecological paradigm emphasizes the sustainability principle of modern societies in all their dimensions - economic, spatial, demographic, cultural, ecological. It is a new strategic global ecological-economic mega-trend of the development of modern society as a sustainable world society. The ecological paradigm as a new social regulation of the relationship between modern societies and their natural environment imposes to the economic science and practice the ethical standpoint related to the respect of nature and life in general. In this respect, new economy highly appreciates ecological components, principles and standards applied in the sphere of economy: creation of production as a closed economic system, evaluation of ecological costs, implementation of ecological principles and compliance with ecological standards, development of ecological management, formation of "ecological economy", application of new quality indicators of success (Human Development Index and Index of Sustainable Economic Welfare), constitution of a new energy-economy-ecology development tendency.*

Key Words: *New ecological paradigm, sustainable development, ecological ethics, ecological risks, ecological costs, ecological economy*

INTRODUCTION

The relationship between ecological and economical phenomena is becoming increasingly interdependent. The dynamics and the prevailing type of contemporary economic activities, as well as the processes of uncontrolled urbanization and demographic growth, have endangered the ecological balance almost to the ultimate limits and emphasized a negative interdependence of natural environment and economy. Human civilization, being consumer-oriented and aggressive toward nature, has thus faced ecological challenges not known in its previous history. At the same time, it is certainly an even greater paradox that human beings, as the only living creatures endowed with consciousness, are the only beings that unreasonably violate natural environment as the basis of life, putting the survival of the entire humankind at risk.

Radical social changes caused by the devastation of natural resources require also a change of economic development models toward the establishment of a sustainable economy and sustainable life. In this respect, the principal direction (mainstream) of social changes in all the social life sectors, especially in the economy, is definitely the shift from the economic paradigm of providing wealth at any cost to the ecological paradigm of a sustainable (harmonized, well-balanced) development with ethical responsibility for current and future generations. Such tendencies of science and social practice development are more and more pronounced, on both national and global levels. The ecological paradigm is a modern, fundamental and major theoretical and practical system of knowledge about the relationship of society and nature in all their structural and developmental aspects, particularly in the conditions of endangering and violating the ecological balance on the planet Earth.

Scientific-technological development and the application of knowledge, information and new technologies, alongside with respecting the ecological ethics and principles of the ecological paradigm of sustainable development, represent a revolutionary transformation in the attitude of human civilization toward nature. In such a new system of relations of society and economy to the natural environment, their positive interdependence is formed, too. Instead of nature degradation, a civilization trend of creating an ecological society appears as a model of value. The main impetus of this process is the preservation of life, not the profit creation at the cost of destroying nature itself. A situation in which the profit motivation is placed above life as a supreme value in the system of social values generates the ecological risk of excessive destruction of nature and life. The ultimate consequence of such a trend is the disappearance of both life and profit.

1. ECOLOGICAL PARADIGM AND RISK SOCIETY

The ecological paradigm comprehends the very substance of ecological risks that objectively exist in modern society. Social ecology, economic, technical and technological sciences elaborate the problems of ecological risks: anticipation and evaluation of risks, risk management, nature of risks, reducing the risk damage, possibilities of avoiding risks, risk acceptability levels, etc. These characteristics of ecological risks are very significant for the organization of economic activities and output of safe products and services. In the actual economy, the greatest attention is devoted to a development of such business ethics

in the sphere of commodity production that would provide products which would be ecologically safe for consumers and environment [2, pp. 223-245].

The civilization response to such a big problem of life subsistence and preservation conditioned the appearance of a global strategy of sustainable development (1987 - Brundtland Commission) as a new philosophy of life. This strategy is imbued by the universal ecological ethical attitude: "never treat natural entities only as a means for your personal objectives; treat them ecologically so that your practice may become a general law guaranteeing a permanent survival to humankind and life on the whole" [8, p. 281]. This is a rational and human response to global ecological and developmental challenges, which is used in efforts to overcome anthropocentric and biocentric approaches to the solution of ecological problems. A positive interdependence of ecological, economic, scientific, technological, cultural, politic and ethical dimensions of social development is asserted in this response. The strategy of sustainable development is gradually becoming a theoretical and methodological basis for planning and realization of all sector strategies within the framework of the global strategy of social development.

The appearance, development and supremacy of the new ecological paradigm in the development of modern civilization, having occurred at the end of the second and beginning of the third millennium, raised numerous fundamental theoretical and practical issues. Having pervaded different domains of life, science, economy, politics, ethics, everyday life and other sectors, the ecological paradigm objectively pointed out the deformities of previous scientific knowledge and imposed itself as a revolutionary theoretical and practical cognition of the need to adjust the lives of people and society in all their aspects with the natural and social environment. This radical civilization change in the attitude of human civilization toward its environment represents a universal subject matter of modern scientific study. To that effect, the basic task of modern science is to review previous theories and paradigms, to adjust them and to replace (as Popper would say, to confute) them by new, humane, ethics-based alternatives of total development. A previous scientific knowledge review is possible only if the reductionist approach is avoided and the integral (holistic) concept of comprehensive consideration is applied in the scientific research of modern problems related to ecological issues.

2. ECOLOGICAL ETHICS AND ECONOMIC GLOBALIZATION

In the variety of questions posed in regard to ecological issues, ethical questions are probably the most important and primary. Namely, almost half a century ago (in 1962), the American scientist Rachel Carson was the first to indicate, in her book "Silent Spring", the limitations of technological solutions (and science itself) in preventing ecological problems, that is, she brought up the essential question of the ethical attitude of humans and their activities (primarily the economic ones) toward their living environment [12, p. 25]. The occurrence of ecological challenges in modern civilization, which the German sociologist Ulrich Beck denoted as a "risk society", raised the issue of moral standards and practice of human attitude towards nature. This imposed the imperative of ethical relation to the natural resources of our planet (water, air, soil, biodiversity, energy), as well as to demographic and spatial problems and problems of poverty and human development [6, pp. 249-290]. Undoubtedly, the resolution of ecological problems is

supported by scientific and technological development (particularly high-technology development), but a rational ecological policy, especially related to the economic sector, should be grounded in the ecological ethical principles. Here we refer to the emergence of human responsibility to current and future generations in providing a healthy living and natural environment. The ecological ethics explicitly opened the questions of the relationship of humans and nature and simultaneously gave positive answers to them. Its imperatives impose the following on humans: duties, obligations and responsibilities for the planetary living environment; respect of the world of nature; ethical ecological behavior is not in opposition to human welfare and interests; people have no right to consume everything that nature was creating through millennia; the existing generations are not allowed to "plunder" the planet at the expense of future generations [3, p. 41].

The mission of ecological ethics in our times lies in constituting ecological values and developing ecological consciousness as the forms of spiritual, post-materialistic values. The post-materialistic values, such as the quality of life, a healthy living and natural environment, a sustainable development, the development of creative human potentials and others, are turning into the fundamental values of modern life. The ecological ethics, as the applied ethics, includes the processes of evaluating human activities and highly ranking the harmony of man-society-nature relations [5, pp. 79-85]. Ecological values direct human activities toward a desirable behavior and guide the economic life toward positive objectives and ideals worth being sought for. Therefore, ecological values do not represent neutral human aspirations, they are not merely technical and technological solutions by which a degradation of living and natural environment is reduced, but they are humane and equitable human standards of social regulation by which human civilization gets improved.

The ecological paradigm in modern science is not of a neutral value even when it concerns choice between a sustainable (humane) development and an irrational and imperial exhaustion of nature. This awareness has been penetrating at a greater or lesser speed the economic science and practice, which is nowadays deeply burdened by the neoliberal paradigm of economic fundamentalism. The neoliberal economic paradigm glorifies the laws of profit and free market destroying the natural resources of our planet. Economic globalization, which favored the development of neoliberal paradigm of economic life or originated from it, caused a total "exploitation without limits" (Pierre Bourdieu) and an enormous increase of ecological problems (impairment of biosphere and its systems, demographic explosion, global climate changes and the ozone layer depletion, exhaustion of natural resources, accumulation of immeasurable quantities of waste, human health damage, etc.). Hence, the thesis of "the end of ideology" is incorrect, being that the global society is occupied by the bare ideology of market fundamentalism in the domination of neoliberal economic paradigm. Transnational corporations and social forces representing the big business interests are the exponents of such tendencies.

The neoliberal paradigm of economic development created the term "killer capitalism" [10, p. 69]. Economic inequalities and disastrous ecological problems in such a "neoliberal world" cause huge disproportions and social injustices, which may be illustrated with the following facts: 2.5 billion people, or 40% of the world population, live on less than 2 dollars a day; 10% of the richest people are in control of 54% of the world resources; 110 million children do not attend any school, while half of them live in Africa, to the south of Sahara; 1 billion people have no access to drinking water, etc.

The significance and spreading of ecological paradigm in modern science and practice is contributed by the foundation of ecological ethics as a set of "moral relationships between humans and their natural environment", where "moral standards govern and are capable of controlling human behavior towards the world of nature" [12, p. 40]. The knowledge of ecological ethics has inspired the engagement of intellectuals from different sciences, especially from social ecology, in outlining ecological policy that should pursue vital goals of social development, embodied in maximization of all social benefits and minimization of all social damages [5, p. 48]. The ecological ethics refers to the fact that ecological problems occur by human interventions in the system of nature (that they are socially caused) and by an imperial attitude of humans toward their environment ("usurpation of nature").

3. POSITIVE AND NEGATIVE OUTCOMES OF ECOLOGICAL AND ECONOMICAL INTERDEPENDENCE

Human economic activities most contribute to the natural environment degradation. Economy and nature pollution are directly related. Such pollution of nature and its destruction are based on the domination of utilitarian ethics in economy and the morals of utility, where profit maximization is the supreme value and ultimate goal of an economic activity. This goal can be achieved only by reaping advantages of all the means, especially by depleting the resources of nature, along with a free engagement and exploitation of human and natural resources. Global ecological problems having occurred during the last few decades in the conditions of economic globalization caused Mark Sagoff, in his book "The Economy of the Earth" (1990), to indicate basic ethical priorities in resolving ecological and social problems of modern society [12, p. 122]. The first priority is human evaluation of fundamental issues of life, which are above all scientific, cultural, aesthetic, historical and ethical and not primarily economical [12, p. 122]. We must distinguish clean from polluted, natural from artificial, sublime from secular, good from bad and right from wrong [12, p. 122]. Therefore, the new economic paradigm of development, related to the universal ecological paradigm and the paradigm of sustainable development, represents a specific paradigm of "sustainable economy".

The realization of "ecological economy" ("green economy"), as a rational and humane economic alternative to neoliberal economy, includes a combination of ecology-oriented modern society and market economy, where fundamental aims of development are synchronized through an optimal social development (coordination of ecological, economical and socio-cultural developments). In other words, ecological economy evaluates positive ecological values as its own values, combining ecological principles and economical criteria to find optimal solutions.

A wide variety of global ecological problems of modern society mainly result from greedy economical activities aimed at profit gaining at all costs, including the degradation of living environment and the risk of ecocide (total destruction of biosphere). The UN conferences on living environment, in particular the 1997 "Kyoto Protocol", issued a stern warning to the severity and urgency of resolving global ecological problems, such as:

- pollutant emissions into the atmosphere (gases, liquids, dust),
- water pollution (seas, oceans, rivers, lakes),

- accumulation of toxic and non-toxic waste,
- degradation of energy sources (crude oil, coal, gas, hydropower potential),
- occurrence of noise,
- occurrence of radiation (ionizing, nuclear),
- ozone layer depletion,
- destruction of biological diversity of living beings,
- exhaustion of mineral resources,
- causing of ecological accidents and catastrophes by military or peacetime exploitation of nuclear energy, etc.

The mentioned global ecological problems, mainly caused by economic activities, but also by an explosive demographic development and uncontrolled urbanization, conditioned the emergence of ecological and social crisis processes. The crisis of environment and ecological crisis develop as a social crisis *sui generis*. Herbert Gruhl writes that our "planet has been plundered", Alvin Toffler says that "we are living in a schizophrenic economy, economy that has lost the contact with reality" [1, p. 91]. Isn't it true, anyway, that the culmination of greed (covetousness) of the neoliberal economic model in financial markets provoked the world financial and economic crisis in 2009. Therefore, it may be stated with good reason that the ecological crisis is a consequence of moral, economic and social crises, that is, of the entire social system crisis (a specific social crisis).

Herbert Gruhl offered convincing proofs that the following economic assumptions and values of the western civilization are incorrect:

- that the world is endless,
- that economy is based only on work and capital,
- that the total human economy is governed by an "invisible hand",
- that a greater number and quantity is always better than a smaller number and quantity,
- that material wealth makes people happy,
- that man disposes of unlimited possibilities,
- that science and techniques always serve the purpose of progress,
- that freedoms are ever-increasing,
- that finding a job is not a problem,
- that production of food (foodstuffs) can be constantly increased,
- that man invented property,
- that man invented war and that he can settle it whenever he wants to [1, p. 109].

An attempt to comprehend positive interdependence of the economy and the ecological sphere exists in the economical science in the form of resolving the problem of ecological costs. This is the concept of "internalizing externalities" and determining eligible environmental protection costs. The complexity of the nature (essence) of ecological problems makes it difficult. "Economic science operates with quantitative categories, measurable quantities that can be more or less expressed in money. In the case of living, especially natural environment, economists are faced with a resource, a value that is unquantifiable in some and hardly quantifiable in the other essential aspects. In handling ecological problems, economic science encounters an almost unsolvable problem of evaluation. The principles of economic efficiency, rationality and usability are of little help in this situation" [9, pp. 119,120].

Such attitude clearly demonstrates that ecological problems may be understood and addressed for solution by science, economic science in particular, only through a complex interdisciplinary approach. The very fundamentals of this standpoint contain an ethical (philosophical) principle of evaluating ecological problems. Therefore, modern economic science comprehends the living environment as a vital economic factor, which can be best seen in the cost-benefit analysis of economic problems that includes not only economic but many other (political, social, ethical) factors. This enables a specific "balance of economic and social benefits on one side, and estimate of economic and social damages that occur along with an investment project on the other" [9, p. 125].

Modern approach to the analysis of the relationship between ecology and economy recognizes a combined criterion of estimating the success of business activities and social development. New criteria for measuring the efficacy of business operations and development contain not only quantitative but also qualitative indicators, including ecological and other aspects of development. There are two global indicators: Human Development Index (HDI) and Index of Sustainable Economic Welfare (ISEW). The Human Development Index includes three dimensions of development evaluation: life expectancy of the population, level of the population knowledge and education and the funds for normal life of the population. The Index of Sustainable Economic Welfare consists of the following elements: per capita consumption, participation of the population in profit sharing and expenditures related to the living environment.

CONCLUSION

A great interdependence between economy and natural environment is in the focus of modern science and social practice. Having brought up the subject of irrational attitude of humans (society) and their economic activities toward nature, our civilization has launched the trend of critical consideration and evaluation of these relations at the very last moment. The emergence of ecological deficits and ecological risks, environmental crisis and endangerment of the basics of life in a specific "risk society" have created a social climate for the formation of a new ecological paradigm of sustainable development. As a global strategy and an indicator of development, it comprises the total socio-economic, scientific-technological and socio-cultural development brought into line with ecologic development standards. The new ecological paradigm points out the sustainability principle of modern societies in all their dimensions - economic, spatial, demographic, cultural, ecological. It is a new strategic global ecological-economic mega-trend of the development of modern society as a sustainable world society.

The ecological paradigm as a new social regulation of the relationship between modern societies and their natural environment imposes to the economic science and practice the ethical viewpoint related to the respect for nature and life in general. In this connection, new economy highly appreciates ecological components, principles and standards applied in the sphere of economy: establishment of production as a closed economic system, evaluation of ecological costs, implementation of ecological principles and compliance with ecological standards, development of ecological management, creation of "ecological economy", application of new quality indicators of success (Human Development Index and Index of Sustainable Economic Welfare), constitution of a new energy-economy-ecology development tendency.

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EKOLOŠKA PARADIGMA I EKONOMSKA STVARNOST

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Međuzavisnost ekonomije i prirodne sredine nalazi se u žiži savremene nauke i društvene prakse. Otvarajući temu nerazumnog odnosa čoveka (društva) i njegovih ekonomskih aktivnosti prema prirodi, naša civilizacija je u poslednji čas započela tendenciju kritičkog promišljanja i vrednovanja tih odnosa. Pojava ekoloških deficita i ekoloških rizika, kriza okoline i ugrožavanje osnove života u svojevrsnom "rizičnom društvu" stvorili su socijalnu klimu za nastanak nove ekološke paradigme održivog razvoja. Kao globalna strategija i pokazatelj razvoja ona obuhvata usklađeni sveukupni socijalno-ekonomski, naučno-tehnološki i socio-kulturni razvoj sa ekološkim standardima razvoja. Nova ekološka paradigma naglašava princip održivosti modernih društava u svim njihovim dimenzijama - ekonomskoj, prostornoj, demografskoj, kulturnoj, ekološkoj. To je novi strateški globalni ekološko-ekonomski megatrend razvoja savremenog društva, kao održivog svetskog društva.

Ekološka paradigma kao nova društvena regulacija odnosa između modernih društava i njihovog prirodnog okruženja postavlja pred ekonomsku nauku i praksu etičko stanovište o poštovanju prirode i života uopšte. U tom smislu nova ekonomija visoko vrednuje ekološke komponente, principe i standarde primenjene u ekonomskoj sferi: kreiranje proizvodnje kao zatvorenog ekonomskog sistema, vrednovanje ekoloških troškova, primena ekoloških principa i poštovanje ekoloških standarda, razvijanje ekološkog menadžmenta, stvaranje "ekološke ekonomije", primenjivanje novih kvalitativnih pokazatelja uspešnosti (indeks ljudskog razvoja i indeks održivog ekonomskog blagostanja), konstituisanje nove razvojne tendencije na relaciji energija - ekonomija - ekologija.

Ključne reči: *nova ekološka paradigma, održivi razvoj, ekološka etika, ekološki rizici, ekološki troškovi, ekološka ekonomija*