

# Conception of Sustainable Development and Ecological Paradigm Formation in Social Consciousness\*

Valeriy Remarchuk

National Research University  
Bauman Moscow State Technical University (BMSTU)  
Moscow, Russia  
E-mail: dekan.fsgn@bmstu.ru

Vladimir Inozemtsev\*\*

National Research University  
Bauman Moscow State Technical University (BMSTU)  
Moscow, Russia  
E-mail: inozem\_63@mail.ru  
\*\*Corresponding Author

Nelly Lepskaya

Belarusian State University  
International Sakharov Environmental Institute (ISEI BSU)  
Minsk, Republic of Belarus  
E-mail: lepskaya14@gmail.com

Nonna Bagramyants

Department of Human Resources  
Sportmaster  
Moscow, Russia  
E-mail: nonnalev@yandex.ru

**Abstract**—The paper researches global problems and conflicts of modern industrial civilization undergoing global technological crisis and attempting transfer to sustainable development. The paper considers sustainable development conception and its influence on ecological paradigm forming in social consciousness. Important role assigned to philosophical analysis of transfer strategy of modern industrial civilization to sustainable development, and also to scientific and educational strategy of ecological paradigm formation in social consciousness.

**Keywords**—*industrial civilization; ecological crisis; global problems; sustainable development; ecological paradigm in social consciousness*

## I. INTRODUCTION

Development of new value system meeting the needs of modern industrial civilization undergoing global technological, as well as ecological, crisis leads to formation of ecological paradigm of social consciousness in the form of new strategy of civilized development [1]. Formation of such a value system would allow to provide high level of life to people and define survival conditions for humanity in the global technological crisis era [2]. In this case it is necessary to solve a problem of balance between modern industrial civilization development and social consciousness value paradigm development.

Formation of a new ecological paradigm of social consciousness is a natural process. Transfer to this new

---

\*Fund: The research was conducted with the financial assistance of RFBR as the part of the project of scientific research practice ("Ecological paradigm in social consciousness: establishment and development"), Project № 18-013-00488

paradigm of social consciousness is vital for the survival of the whole humanity. The transfer would lead to remarkable changes in the society functioning. Social consciousness transformation is a natural evolution step, appropriate response to the changes in the society [3]. Crucial moments cause emerging of new way of reality perception and creation of new world view. New paradigm of social consciousness emerges on the basis of new world view. Responsibility gains a priority over freedom, solidarity gains a priority over individualism, while system view of any action makes to forecast a chain of consequences, and forbids actions causing irreversible processes, and it happens naturally.

New ecological paradigm of social consciousness requires an understanding of irrationality of standards-caused pressure applied to other kinds of social and cultural environment. Membership in a class, social strata or social, confessional or ethnic group should be perceived as something secondary. "Homo sapiens" is at the first place. A human should base his actions on the interests of humanity on the whole [4].

## II. SUSTAINABLE DEVELOPMENT CONCEPTION

In past decades one of main tendencies of formation of new ecological paradigm of social consciousness is sustainable development conception. For the first time term "sustainable development" was used in 1972 during the first U. N. Conference on the Human Environment held in Stockholm where recommendation on creation of corresponding complex program for research of global problems solution conditions was accepted. In 1983 at U.N. special World commission on Environment and

Development under the direction of Gro Harlem Brundtland was created. The target of the commission is to develop "Global program of development strategy change". The creation of the World commission on Environment and Development was connected with global industrial crisis which makes to reconsider further trajectory of industrial civilization development in order to find new solutions for ecological and social problems.

In 1987 World commission on Environment and Development published report under the heading "Our common future"; since that moment term "sustainable development" became widespread. In 1992 in Rio de Janeiro a great forum on environment and development was held, where leaders of 179 countries have accepted development model new to world society based on the ideas of sustainable development. During the forum the final version of "sustainable conception" was developed, based on 27 recommendation principles of transferring of society to sustainable development.

The materials of The World Summit on Sustainable Development held in Johannesburg said that year 2005 would have already become the year of transfer of world society to sustainable development. The essential condition of this transfer to sustainable development is its global character and impossibility of its implementation in only one country or group of countries.

The works dedicated to sustainable development widely use the definition shown in the book "Our common future": "Sustainable development — is a way of development which satisfies the requirements of modern times, but doesn't threaten the ability of future generations to satisfy their own needs" [5]. The definition is criticized for its uncertainty and anthropocentricity. It is also mentioned that the definition of "sustainable development" should explicitly include an idea of natural environment preservation.

Sustainable development can be considered as a strategy of modern industrial civilization development reasonably limiting the planet population size, what would give an opportunity to provide all resources necessary for living and satisfying different kinds of needs in the conditions of natural environment reproduction. Sustainable development is aimed not at the destruction, but on constant support, growth and self-regulation of biosphere, on forming social and natural system in the future, capable to cut the Gordian knot of modern global problems and conflicts of modern industrial civilization [6]. Problems and conflicts in relationships between nature and society, ecology and economy, developed and developing countries, necessity of stepping on the way of sustainable development and national interests dominating the countries can be referred to them. Problems and conflicts of modern and future generations, rich and poor countries and social groups, mass-media forced stereotypes of life level and wisely defined people's needs can also be referred to them. New approach aimed at co-development, mutual adaptation of human and environment, and, of course, solution of all these problems and conflicts should take into account biosphere development laws and, subsequently, create the new ecological paradigm of social

consciousness on the basis of sustainable development ideas [7].

In order to solve global problems and conflicts of modern industrial civilization it is necessary to define and create an algorithm of solution of the entire principles and requirements, implementation of which would require the humanity to do ascetic and radical steps in all life spheres, because the entire modern civilization is under threat. Global problems and conflicts of industrial civilization can be solved by consolidated efforts of all nations, countries and Earth inhabitants uniting world society in order to search for strategic solutions for overcoming the crisis of this civilization and threat to all flesh [8].

In the first half of XXth century K. E. Tsiolkovsky and V. I. Vernadsky put forward ideas about continuous development of humanity, about its survival in new historical conditions. According to Tsiolkovsky, immortality can be achieved only through the space exploration. V. I. Vernadsky suggests a mind sphere (noosphere) idea and creates a theory of social autotrophy, which can be considered as a strategy of sustainable development of humanity, whose activity turns into geological factor. Subsequent development of ideas of Vernadsky shows identity of noosphere establishment processes and industrial civilization transfer to sustainable development [9]. Ideas of survival and sustainable development of modern civilization as co-evolution of human and environment means mutual penetration of human and biosphere, which would provide a balance of rational and harmonious interaction in the terms of "human-society-nature" system.

In accordance with the ideas of modern Russian and foreign philosophers the brand new state of the society in which the highest level of development is human intellect, principles and ideas of humanism would become the dominant of development, and that social system where biosphere preservation task would be integrated in all human life spheres on the Earth, would be called noosphere. The idea of noosphere development is inextricably linked to the idea of sustainable development [10]. Nowadays humanity is at the opening stage of transformation aimed at noosphere forming. Noosphere is a target of sustainable development process.

Creation of humanist intellect sphere provides co-evolution of human and environment on the basis of biosphere laws. Nowadays human intellect has achieved such a stage of evolution that it is capable to anticipate further development of the civilization and forecast current processes in order to control them and overcome crisis. Conceptual core of ideas of sustainable development and intellect sphere evolution allows people to use some ionosphere-related ideas for modeling of process of transfer to "sustainable society" [11].

### III. SOCIAL AND ECONOMICAL FACTORS OF TRANSFER TO SUSTAINABLE DEVELOPMENT

Transfer to sustainable development requires obligate reform of state-legal institutes. Imperatives of sustainable development must be provided by new forms of legal awareness, new legal standards, new control system.

Standards of national egoism are no longer capable to sustain development of individual, group and social legal awareness. Existing methods of economic management and international relationships organization would imminently lead to ecological catastrophe, which could be prevented only at the opening stage with the help of combined efforts of all humanity. It is also necessary to develop new concept of public authorities and state sovereignty, overstepping the limits of classes and national interests and even state interests. Among basic forms of power relationships priority in the world should be given to the most intelligent form of democracy, especially to nonviolent and consensus forms of it [12].

Such transfer strategy to sustainable development would provide remarkable weakening of negative effects threatening modern industrial civilization. The consequence of such transfer would be increase of people life level, improvement and spread of democracy forms, firstly in poor countries. Important feature of sustainable development model is personality, society and nation safety protection not through counteraction to emerging threats, but through preventing reasons for the threats to emerge.

The most important vector of sustainable development is balance of basic principles of global civilization life are: 1) ecosystems stability; 2) needs optimization; 3) social and natural systems controllability; 4) development legacy.

Harmony with environment is a deep principle of transfer to sustainable development: in order to provide civilization existence for a indefinitely long period it is necessary to provide maximally possible decrease of anthropogenic pressure on the biosphere and give an opportunity to a civilization to harmonically integrate in it. Maintenance of transfer to sustainable development is an administrative control (national and new international control) task. This is due to the fact that future sustainable social and economic development should be wisely and farsightedly controlled, not just regulated. It is ecological and social control at the final stage what would help to provide remarkable changes in civilized development strategy while making strategic decisions and actions and taking into account forecasts in the terms of risk and uncertainty on the basis of prevention principle (precaution).

Effective use of prevention principle (precaution) suggests that each side should work out a single system of program and forecast documents: long-term development strategy considering forecasts on changes of biosphere and ecosystems included into it as the result of economic activity; make short-term forecasts and programs for industries, regions and nations.

Crucially important is the idea that current costs of ecology maintenance would turn into investments into future economy [13]. Effects of environment pollution, waste accumulation and resources exhaustion should be prevented from spreading onto other social spheres, other countries and, what is more, those problems shouldn't be left for future generations.

In the new economy model based on sustainable development human activity provides not only social, but also biosphere coordinate system. A need to combine biosphere development laws and economic development laws emerges here. All human activity in the new value system should be based on the axiom of biosphere preservation, ecosystem regulation, biosphere stabilization. Prevention of ecosystem integrity violation, refusal from reclamation of new biosphere spaces, land areas and World ocean areas should become the fundamental principle of human activity [14].

In order to survive the period of transformation into a sphere of intellect each country, each region should make their noosphere choice and individually make and implement a plan of transfer, while planet population should become a monolithic intelligent organism, learn how to forecast its interaction with ecosystem and control its ecological development. For that it is necessary to create a planetary intelligence capable to maintain survival of the whole system "human - nature — society" for the further movement across the way of sustainable development. The essence of noosphere creates a combination of informational components with spiritual ones, and rational components with moral ones. That is why in the conditions of noosphere priorities of science and education as the most important instruments of preparation to transfer to sustainable development should become prioritized resources of sustainable development [15].

Modern industrial civilization formed in the age immanently supporting user-oriented humanism is coming to its end. It is going to be replaced with informational and ecological, noosphere-oriented, sustainable development oriented, but still industrial civilization with modified form of science and social and natural rationality filled with the ideas of humanism [16].

#### IV. SCIENTIFIC AND EDUCATIONAL STRATEGY OF FORMING ECOLOGICAL PARADIGM OF SOCIAL CONSCIOUSNESS

Science defines society progress and can be considered as a technical development engine and industrial civilization development main lever. While providing people with appropriate life conditions and achievement of the technological power top, science puts humanity in danger of extinction. In past decades humanity is threatened with natural, industrial and ecological catastrophes, and among all of them the main threat is nuclear war. In front of threats of economic crisis, natural resources exhaustion, ecosystem pollution, self-destruction of megapolises, epidemias, terrorism, incapability to control international communication systems science becomes powerless. From one side, it continues providing people with growth of material and other wellness, while from the other side it is incapable to prevent humanity from global catastrophe.

World social consciousness puts the responsibility for modern crisis situation on science and educational system. State is the main guarantor of science development in the country, and it holds the responsibility for preservation of

scientific potential, integration of scientific achievements into technical devices, technology, education, manufacturing and maintenance of its effective activity. However, in order to save its prestige in the society science should be capable to transform depending on requirements of current time, to put progressive tasks, to orient on survival and sustainable development targets. In order to effectively leave system crisis science should work not for industrial and user orienting points which kill human and nature, but in terms of value priorities of future noosphere society, or intelligent sphere.

Scientific and technical nation strategy should be oriented on new civilization targets, basing on the principle of outrunning development of science, and on its fundamental and exploratory researches. While forming nation strategy of sustainable development priorities of applied researches and developings, interindustry scientific and technical programs of federal scale should be provided in order to activate factor of future control of new development trends in science, technique and education. Precaution principle allows to form a wide range of measures to prevent dangerous events (threats and catastrophes). Governmental intervention in the processes of sustainable development should establish social informatization as the most important priority of this development. By prioritizing this social and technical resource it is possible to formulate an effective strategy of sustainable development [17].

The meaning of science for the propaganda of sustainable development concept should not be underestimated not only for creation of technological basis for industrial progress, but also for forming of ecological paradigm of social consciousness including a system of ecological education. On the stage of transfer to sustainable development science should as quickly as possible change extensive form of modern development to intensive form of future development which would allow to maximally increase quality of results at minimal usage of resources.

Transfer to intelligent sphere would require the science to make an intensive transformation step which could only be compared to the scientific revolution. All previous revolutionary transformations negatively influenced growth of scientific and technical knowledge and decreased its influence on social life, but also contributed to ecological crisis [18].

Developing much faster than biosphere, society should accept termination of biosphere destruction as an axiom in order to provide its constant sustainable development. Economics during the process of transfer to sustainable development should change principles of its activity aimed at destruction of environment and refuse from usage of biosphere only as a resource. Basic principles of the new scientific and technical strategy would fundamentally change all previous development strategies, whose effectiveness was defined by economic growth, population growth and artificial increase of wellness of its "golden billion".

New science which is going to replace the postnonclassical one, will have to change its focuses from industrial to humanistic and ecological ones. This science

itself has to become an orienting point which not only envisages and forecasts probable consequences of nature-forming human activity, but also gives recommendations to accept or not some decisions. Such process of science "futurization" changes accents of its functioning moving the focus of research from studying the past to forecasting the future defining its new priority role along the path of noosphere-stable civilization development. Being on the frontline of co-evolutionary process of society and nature development, XXIst century science gets an opportunity to create a new model of educational (advancing) strategy [19].

In perspective, science will become a uniform system model "science-education". Although responsibility for development of this new system model of science and education is held by humanity in general, they will continue developing within separate countries. Being responsible for science development, government is incapable to make education private, and that is why in the most developed countries higher education is usually financed by government at more than 80%. Educational system oriented on preparing independent members of society should be controlled by government. Therefore, government should take the responsibility for development and realization of educational politics and power up its support.

## V. CONCLUSION

In the conditions of transformation of modern industrial civilization and its transfer to sustainable development it is important to transform peoples way of thinking, give new strategic settings to social consciousness, and direct it to the nature-forming active strategy aimed at salvation of planetary biosphere. New ecological paradigm of social consciousness should be remarkably in advance of objective reality in the direction of survival optimal trajectory vector. It will be the difference between noosphere and modern sociosphere, in which permanently falling behind social consciousness cannot influence social degradation processes. Transfer to sustainable development way revolutionary transformations of social consciousness, science and educational process are required [20].

Accept ion of new values and moral orienting points aimed at forming a human with ecological consciousness plays an important role during transfer of industrial civilization to the stable stage of its development. In opposition to human-consumer of social consciousness economical paradigm age a human of a new ecological paradigm should appear: sensible and smart towards himself and nature.

## REFERENCES

- [1] V. Yu. Ivlev, M.L. Ivleva, V.A. Inozemtsev, "Crisis of industrial civilization and formation of new ecological paradigm of social consciousness in the conditions of information society" *Izvestiya MG TU "MAMI"*, vol. 2, no. 4(18), pp. 50 - 57, 2013.
- [2] V.A. Inozemtsev, "Establishment of ecological paradigm of thinking as overcoming of industrial civilization crisis," *Psychological adaptation and psychological health of human in hard life environment conditions*, Moscow, 2013, pp. 504 - 515.



- [3] M.L. Ivleva, V.A. Inozemtsev, "Formation and development of ecological paradigm of social consciousness," Materials of the 17th International Scientific Conference "Sakharov Readings 2017: Environmental Problems of the XXI Century", Minsk: BSU, 2017, pp. 60 - 61.
- [4] N.N. Gubanov and N.I. Gubanov, "Mental Bases of Social Solidarity," Proceedings of the International Conference on Contemporary Education, Social Sciences and Ecological Studies (CESSES 2018). Series "Advances in Social Science, Education and Humanities Research", vol. 283, pp. 998 - 1002, 2018. DOI: 10.2991/cesses-18.2018.219.
- [5] Our common future. The Report of the World Commission on Environment and Development. Moscow, 1989.
- [6] N.D. Lepskaya, V.A. Inozemtsev, "Specifics of industrial civilization culture in the context of modern global problems," Human, society, history, language, culture in modern science, Moscow: Moscow Polytech, 2018, pp. 52 - 65.
- [7] V.Yu. Ivlev and M.L. Ivleva, "Philosophical Foundations of the Concept of Green Economy," Proceedings of the International Conference on Contemporary Education, Social Sciences and Ecological Studies (CESSES 2018). Series "Advances in Social Science, Education and Humanities Research". vol. 283, pp. 869 - 873, 2018. DOI: 10.2991/cesses-18.2018.192.
- [8] N.N. Gubanov and N.I. Gubanov, "Mental Responses to Risks in Modern Society," Proceedings of the International Conference on Contemporary Education, Social Sciences and Ecological Studies (CESSES 2018). Series "Advances in Social Science, Education and Humanities Research", vol. 283, pp. 1003-1007, 2018. DOI: 10.2991/cesses-18.2018.220.
- [9] A.D. Ursul, sustainable development. Moscow, 2000.
- [10] N.N. Moiseev, Co-evolution of nature and society. Ways of noospherogenesis. Moscow, 1998.
- [11] A.N. Nekhamkin and V.A. Nekhamkin, "Counter-factual modeling of the past in everyday cognition," Dialogue with Time, no 65, pp. 336-352, 2018. DOI: 10.21267/AQUILO.2018.65.20778.
- [12] B.N. Zemtsov and T.R. Suzdaleva, "Ecological Law of Russia: Milestones of Formation," Proceedings of the International Conference on Contemporary Education, Social Sciences and Ecological Studies (CESSES 2018). Series "Advances in Social Science, Education and Humanities Research", vol. 283, pp. 329 - 332, 2018. DOI: 10.2991/cesses-18.2018.74.
- [13] A.A. Bakhareva, V.A. Inozemtsev, "Environment protection as one of the important factors of sustainable development of social and economical systems on the example of Moscow region," Materials of the 15th International Scientific Conference "Sakharov Readings 2015: Environmental Problems of the XXI Century", Minsk: ISEI, 2015, pp. 234 - 235.
- [14] N.N. Gubanov, N.I. Gubanov and L.O. Rokotyanskaya, "Apollo's Challenge as a Driving Force in Education," Proceedings of the International Conference on Contemporary Education, Social Sciences and Ecological Studies (CESSES 2018). Series "Advances in Social Science, Education and Humanities Research", vol. 283, pp. 13 - 17, 2018. DOI: 10.2991/cesses-18.2018.4.
- [15] V.Yu. Ivlev, Yu.V. Ivlev V.Yu., M.L. Ivleva, "Logical-argumentative basics of educational culture," Proceedings of 4th International Conference on Education, Language, Art and Intercultural Communication (ICELAIC 2017). Series "Advances in Social Science, Education and Humanities Research", vol. 142, pp. 173 - 177, 2017. DOI: 10.2991/icelaic-17.2017.38.
- [16] N.N. Gubanov, N.I. Gubanov and Yu.D. Granin, "S.A. Lebedev. Scientific method: history and theory," Voprosy filosofii, no. 8, pp. 213 - 217, 2018. DOI: 10.31857/S004287440000751-1.
- [17] V.A. Inozemtsev, Yu. V. Inozemtseva, "Informational resources problem in the conditions of sustainable noosphere ecological civilization formation conditions," Izvestiya MGTU "MAMI", Moscow, vol. 2, no. 4(18), pp. 57 - 63, 2013.
- [18] M.B. Oseledchik, M.L. Ivleva, V.Yu. Ivlev, "A new paradigm for analyzing knowledge transfer processes," Proceedings of 4th International Conference on Education, Language, Art and Intercultural Communication (ICELAIC 2017). Series "Advances in Social Science, Education and Humanities Research", vol. 142, pp. 766 - 770, 2017. DOI: 10.2991/icelaic-17.2017.177.
- [19] M.B. Oseledchik, V.Yu. Ivlev, M.L. Ivleva, "Knowledge as a non-equilibrium dynamic system," Proceedings of the 2nd International Conference on Contemporary Education, Social Sciences and Humanities (ICCESSH2017). Series "Advances in Social Science, Education and Humanities Research", vol. 124, pp. 1 - 5, 2017. DOI: 10.2991/iccessh-17.2017.1.
- [20] A.D. Ursul, Sustainable future (globalization, safety, noospherogenesis). Moscow, 2006.