

Oksana Nagorniuk, Olga Nagorniuk

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Oksana NAGORNIUK, Olga NAGORNIUK

National University of Life and Environmental Sciences of Ukraine, Ukraine

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Introduction. In Ukraine, an increasingly popular becomes the idea of stable (sustainable) development – a combination of environmental, social and economic components of society development. Exactly they form the theoretical basis of the new philosophy of humanity.

Learning new technologies of natural resources using, mankind continues to manifest a way of thinking that encourages domination over nature and its exploitation for the benefit of today. Degradation of the environment, numerous environmental problems is consequence of the human consumer. Therefore, in the system of rational use and protection of natural resources of the Earth the main and most difficult is to form ecocentric outlook, which characterized by the following features [Дерябо 1996]:

1. The harmonious development of man and nature is the most important value. Natural recognized self-confident, regardless of how it is useful or not useful and even harmful to humans. Man is not the owner of Nature, but its cohabitant.
2. Disclaimer of hierarchical picture of the world. A person cannot have any privileges just because he has mind but on the contrary its rationality imposes on it additional responsibilities in relation to the surrounding nature. Human world is not opposed to the nature world; they are elements of a single system.
3. The purpose of interaction with nature is the maximum satisfaction as a person needs and all other inhabitants of the environment needs. Influence of nature is replaced by interaction.
4. The character of interaction with nature is determined by the „ecological imperative”: the right and allowed are only that does not violate the existing in the nature ecological balance.
5. Nature and everything naturally is perceived as an equal subject in interaction with humans.
6. Ethical rules and regulations apply equally at relationship between people and the interaction with the natural world.
7. The development of man and nature is understood as a process of co-evolution, mutual unity.

8. Activities for the conservation of nature dictated by the need to preserve nature for its own sake.

Disclaimer from egocentric positions promotes transition to the ideology and principles of sustainable (harmonious, balanced) development. Three circumstances contribute to this: ecological crisis, open by science ecological regulatory and moral qualities of human.

The results of the study. Decision of the harmonization problems of relations between man and nature should be conducted in three areas: converting, educational, and ethical and aesthetic [*Екологічна...* 2004].

In the converting area the harmonization of relations implies the harmonious development of industry and industrial relations, overcome of social inequality, excessive urbanization, combining the advantages of urban and rural life, physical and mental labor, and education of integrated harmoniously developed personality.

In the educational area the harmonization of relations implies a holistic research of system „man-environment”; harmonious development of science and synthesis of environmental knowledge with other branches of science.

In ethical and aesthetic area the harmonization of relations implies the formation of a high moral imperative, promote of the golden rule of ecology „Treat to the nature as if wanted to treat you”.

This will overcome the threat of ecological disaster, to rebuild the entire system of relations of human with its culture and nature.

Exploring the relationship between man and nature, M.F. Reymers identifies a number of principles:

1. Regularities of development of the „man-nature” system (Act boomerang; the law of indispensability of biosphere; the law of inverse interaction between human and biosphere; the law of diminishing returns; the rule of dimensions and transformation of the biosphere);
2. Principles of Social Ecology (the rule of social and ecological balance; the law of historical (social and ecological) irreversibility; the law about the noosphere of V.I. Vernadsky);
3. The regularities of nature using (the law of limited (renewable) of natural resources, the law of falling of natural and resources potential; the law of reducing of energy efficiency of nature using; the rule inevitable chain reactions of „hard” control of nature; the law of soft management of the nature; the law of reducing by the nature the capacity of finished products; the law of increasing the rate of turnover of natural resources that are involved);
4. The regularities of nature protection („iron laws” of nature protection by P.R. Erlikh, the general connection of things and phenomena in nature and in human society, the law of conservation, the price of development, the main criterion of evolutionary selection).

Everything in nature – from simple molecules to human – had to pass very hard „competition for the vacancy in the biosphere”. Today the planet inhabited by only one thousandth part of species of plants and animals that withstood the test of evolution. For any substance which produced by organisms, there should be an enzyme that breaks it down. And all the decay products have again involved in the circulation of substances in nature. Each biological species, which violated this law by reducing the isolation in biological cycle, sooner or later ruthlessly removed from the evolution process, and were found alternative organisms that can restore isolation in ecological cycles.

All active effects of humanity directed on reformation of the nature. The human industrial civilization is flagrantly violates isolation of biological cycle on a global scale that can not remain unpunished. Unfortunately, humanity has not yet created a mechanism that would allow him to fit into nature.

The concept of sustainable development, adopted in 1992 includes several important documents. They are – Rio Declaration on Environment and Development; Statement on Principles of global consensus on management, conservation and sustainable development of all types of forests; Agenda to XXI century – a document aimed at preparing the world cooperation to resolve environmental, economic and social problems of the nearest future. It was formulated the definition of sustainable development [Мельник 2005].

Unfortunately, now the concept of „sustainable development” is another utopian idea of humanity, does not contain methodology provisions and information base. This problem confronts scientists with task to understand the ambiguous and contradictory notion.

The internal contradiction of the term becomes clear if we turn to the methodology of development. Any stationary system can exist only if it will support the state of homeostasis (dynamic equilibrium). The development process occurs providing of accumulation in the system free energy, i.e. through sequential change of the level of homeostasis.

In the term „sustainable development” united words that have opposite meanings: „sustainable” provides balance, and „development” possible only if a permanent exit from the system equilibrium. Thus, sustainable development for its internal imply permanent reproduction of homeostasis with periodic changes of its level at which should be a permanent solution of the contradictions between the internal components of the system and change the parameters of the biosphere should not go beyond the catastrophic transformation.

The ambiguity of this concept is that stability can be understood as the ability to maintain balance and as stability that is not the ability to change or maintain a certain rate of movement (development).

In English originals this term comes from the words sustain – sustainability – sustainable development. Thus, the term „sustainability” firstly passes the condition of stability, balance, something supported. This refers to maintaining

human welfare and social order through life supporting functions of nature as a basis for social relations.

Ecological functions of the biosphere are that base that supports social and economic systems. Namely the ability of biosphere to the reproduction (self-repairing) formed its environmental capacity, within which to human allowed by nature decision of the socio-economic problems. It is appropriate to give an example of one of the many definitions (over 60) of „Sustainable Development”: „development in which human have to live only on percents of the natural capital, not using the capital itself”. That is, provide at least its simple reproduction, but not use of the capital – something like a bank account when any rational person try to preserve capital and live only on the percents from it [Бобылев 1998].

Maintaining of ecological capacity causes two necessary conditions [Мельник 2005]:

- Preservation of vital links and mechanisms of the biosphere;
- Availability of ecological limits of impact on ecosystems.

The main types of ecological limits, that ensure a stable equilibrium, call these:

- limits of using of non-renewable natural resources – should not exceed the rate of substitution of renewable types of resources;
- limits of using of renewable resources – should not exceed the rate of their reproduction in natural systems;
- limits of violation/pollution of natural systems – should not exceed capacity of assimilation/reproductive potential of nature.

Not accidentally conference in Rio among the most important documents prepared the Framework Convention on Climate Change and the Convention on Biological Diversity, considering these the most important components for maintenance ability of world ecosystems.

Another distinguishing feature of the concept of sustainable development is the elasticity of the system. For dynamical systems (social, economic and environmental) sustainability means not conservation of existing state but elastic variability through which kept the integrity of the system and its major elements. Factors that affect the equilibrium of the system can be combined into two groups: external and internal.

External factors, in turn, depend on the degree of influence of destructive potency that can output the system from balance and symmetry of the influence strength on the system, due to which balance each other. Asymmetric same load deduce the system out of balance.

Internal factors (material, energy, information) depend on the potential ability of the system „quench” imbalances turbulence. Thus, the concept of elasticity reflects the boundaries in which the system is more stable.

According to German scholar Jörg Kon, the concept of elasticity also implies the need to preserve information features, parameters or complex of ele-

ments underlying system. This feature was not considered previously, researches limited by analysis of material and energy flows. Information diversity includes diversity of biological forms (when we are talking about the biosphere) and multiculturalism (when we mean society).

Another essential component of sustainable development is justice. For the final determination of the Rio conference, this is a key aspect. The definition of „ecological justice” is firmly included in all interpretations of sustainable development. Herewith it uses the phrases „justice between generations” and „justice within one generation”.

Speaking about the moral aspect of the concept of sustainable development, it should be noted that the future well-being depends on the every minute behavior of billion people in the world today and will always stay on internal ethical principles and prohibitions of specific people, their ability to find a compromise between their selfish interests and concern for future generations.

However, the particular person can take care of future generations only if she will not stand on the edge of physical survival. That is, the moral position is closely linked with the level of socio-economic development.

Conclusions. The entire state system of environmental management feels an acute need for qualified professionals that quickly accept new demands on ecological, economic and social policies; that can offset environmental ignorance of managers at various levels and effectively address current environmental issues. Training of such specialists is possible only if the further improvement of the system of environmental education. Therefore, it will be widely use in environmental education plans the international experience of developed countries. It is also due to the fact that the problems of environmental education and training beyond the national boundaries and increasingly becoming an international character [Мельник 2005].

Invasion of human in biosphere system of self-regulation, which was formed in the evolution of the planet for millions of years, requires special knowledge, prudence, foresight and high predictive capacity of science to ensure the safety of the biosphere. In this regard, further development of environmental education and training, increasing its theoretical level and practical application is the most important task of mankind. Before scientists in the world stand the task of ecologization of material and spiritual activities of the society. Education in the environment branch should include people of all age groups at all levels of formal and informal education.

Literature

Бобылев С.Н. (1998), *Экономическое развитие и экологический фактор // Экология и экономика природопользования.* – М.: Закон и право: ЮНИТИ. – С. 138–157.

- Дерябо С.Д., Ясвин В.А (1996), *Экологическая педагогика и психология*. – Ростов-на-Дону: Издат „Феникс”. – 480 с. – С. 4–26.
- Екологічна безпека та охорона навколишнього середовища* (2004), За ред. О.І. Бондаря, Г.І. Рудька. – К.: Вид-во ПП „ЕКМО”. – 423 с. – С. 393–404.
- Мельник Л.Г. (2005), *Основи стійкого розвитку*. – Суми: ВТД „Університетська книга”. – 654 с. – С. 385–484, 593–633.

Abstract

It is considered the features of formation of ecocentric outlook on the principles of environmental education. The necessarily to solve the problems of harmonization of relations between man and nature in three areas: converting, educational, ethical and aesthetic.

Key words: sustainable (harmonious, balanced) development, environmental education or education for sustainable development, ecocentric outlook.

Анотация

Розглядаються особливості формування екоцентричного світогляду на засадах принципів екологічної освіти і виховання. Необхідність вирішення проблем гармонізації відносин людини і природи у трьох сферах: перетворювальній, освітній, етико-естетичній.

Ключові слова: сталий (гармонійний, збалансований) розвиток, екологічна освіта або освіта задля збалансованого розвитку, екоцентричний світогляд.

Podstawowe założenia edukacji dla zrównoważonego rozwoju i jej rola w tworzeniu ekologicznych i ekocentrycznych perspektyw

Streszczenie

W artykule przedstawiono cechy formowania się ekocentrycznego światopoglądu na zasadach edukacji ekologicznej. Istnieje potrzeba opracowania rozwiązań problemów harmonizacji relacji między człowiekiem a naturą w trzech obszarach: konwersji, edukacyjnym, etyczno-estetycznym.

Słowa kluczowe: stabilny (harmonijny, zrównoważony) rozwój, edukacja ekologiczna i edukacja na rzecz zrównoważonego rozwoju, perspektywy ekocentrycznego poglądu.