PECULIARITIES OF FORMATION OF ECOLOGICAL CONSCIOUSNESS OF POPULATION

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Abstract. The article considers the problem of formation of ecological consciousness of the population of the industrial area.The authors have defined the main objectives and aspects in the context of possible trends of development of ecological consciousness and culture of the population. The study has revealed the factors influencing the ecological condition of modern industrial city.

Keywords: ecological consciousness, adult population, ecological behavior.

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Introduction

The problem of human interaction with nature disturbs humanity has disturbed since ancient times,when thinkers and philosophers studied the relationship between man and environment. This problem was escalating as a result of scientific and technical revolution at the end of the 19th century. The rampant development of manufacturing output led to devastating effects on the ecological situation of large areas of the planet as a whole and Ukraine in particular.

The problem of relationship between man and the environment

Environmental issues are global in today's social development.Ukraine topped the list of states in the number of deaths caused by air pollution in relation to the total population. The most polluted cities are in the eastern and central regions, including Kryviy Rih. Therefore, the question of improving the ecological situation is one of the priority directions of development of health promotion and safe environment. Formation of ecological consciousness and culture of the population should be an important aspect of the introduction of advanced environmental technologies and scientific achievements. Great attention has been paid to the adaptive procedures for assessing the environmental situation and decision-making

in environmental management in recent years.The reason for this is the facts that have been extensively studied in theory and proven in practice. These facts show:

- the relationship of social, demographic, economic and ecological processes is complex and dynamically changing in space and in time. For this reason, the judgment of the upcoming changes in wildlife are unreliable, even if they are based on currently detected trends of individual processes;

- industrial and ecological systems, having the property to change and to organize themselves, maintain their fitness and ability to heal themselves only within certain limits, beyond which they pass into a qualitatively different state;

- losses from poor planning and deviations when implementing environmental policies are too large to be able to generate and implement them in a mode of trial and error, a limited response to the violations that have taken place without the whole system self-learning.

These circumstances make fragile hopes for the development of the "ideal" of environmental policies, which would remain stable for a long time. Changes that are made to such strategies must be based on a more profound scientific theories and models of dynamic optimization. The supervisory and corrective mechanism of environmental policy should provide superior and efficient changes in environmental action. The mechanism should have a "memory" not only on trends in objective data, but also have a "knowledge base" of the systems of arguments and attitudes, which in the past led to or contributed to the success of errors.The mechanism should also take account of the "price" and the effects of positive and negative experiences of environmental policy.An adaptive approach to environmental management is one of the most important preconditions for its effectiveness. Adaptation of control mode is applied in two ways. Firstly, the adaptation is carried out by adjusting the establishment of environmental management strategies and operational decision-making mechanism in accordance with the changes and providingadequate conditions.Secondly, environmental policy can and should have an active influence on the formation of favorable conditions for its further development - in particular, by increasing the level of environmental education of society, capacity-building and more.Thus, it is not adaptable and active adaptation, which is achieved through targeted changes in the environment in accordance with the long-term goal of protection and rational use of natural resources.

In both of these approaches environmental policy in the mining sector should actively use the natural adaptation processes in the environmental management system, or resist them - depending on the focus and results.

Despite the perfection of engineering methods of nature protection and environmental legislation, mining companies will not use them if it is not profitable for them. It should be noted that conservation does not give profits, except for recycling from sewage and gases emitted into the atmosphere. Most of the seized substances is a valuable raw material (sulfur, a dust and non-ferrous metals, etc.) and can be used in the production process, which would produce additional revenue. Another reason for the lack of interest from the mining industry to the field of environmental protection is the difference between environmental pollution and damage to the environment as time damages the environment in another form

Fines should provide conditions under which violations are disadvantageous in terms of the economic interests of nature. As a rule, penalty payments are set by multiplying the relative statutory indicator of the board or of the value of lost profits.

Fees for above-limit and irrational use of natural resources (wild plants, animals, mineral mud, water, etc.) are collected in fines from the profits remaining at his disposal, and from his private funds.

Much better is the way of economic incentives, when the state through a variety of instruments (prices, payments, tax credits and fees) creates the conditions for the profitability of compliance with environmental legislation, as well as losses from its breach.

The study of category of ecological consciousness is underrepresented in reference books. Much more common is the notion of consciousness, whose definition is often borrowed from other human sciences (sociology, philosophy, pedagogy, etc.). According to psychologists S. Deryabo, V. Yasvin, ecological consciousness is a set of ideas about the relationships in the system "man - nature" and in the very nature of the relationship to nature, as well as the respective strategies of interaction with it. (Oglyad pro stan zabrudnennya navkolishnogo prirodnogo seredovischa na teritoriyi Ukrayini za danimi sposterezhen gidrometeorologichnih organizatsiy u 2015 rotsi.).

E.V.Girusov understands environmental consciousness as a set of beliefs, theories and emotions, which reflect the problems of the relation of nature and society in terms of their optimal solutions according to the specific needs of society and the capabilities of nature. Thus, ecological consciousness is based on the ideological and moral values, but requires their personal judgment. It is formed from knowledge and belief in the relationship between society and nature, attitude to natural resources, the ability to apply scientific knowledge due to the decision in relation to the nature. It displays an individual experience with natural systems (Vikonkom Krivorizkoyi miskoyi radi Ukrayini. (2016). Proekt Strategichnogo planu rozvitku mista Krivogo Rogu na period do 2025 r.).

In our view, ecological consciousness should be referred to as a certain set of beliefs, thoughts and emotions that reflect the specific way of relating to nature, which is based on the ratio of the corresponding specific needs of the society / group / human and natural features. It should be noted that in the majority of publications devoted to the problems of ecological education, emphasis is made on the formation of the skills of ecological culture of school age students.These publications do not disclose issues related to the organization of ecological education system for adult population.

The purpose of this article is to establish trends of development of ecological consciousness of the adult population that lives in the city with high pollution levels.

According to open sources of information, today Ukraine is in a state of profound environmental and economic crisis. In 2015, the list of cities with the highest levels of air pollution included 15 cities - Kryvyi Rih, Kherson, Dnippodzepzhinsk, Dnipropetrovsk, Odesa, Kramatorsk, Lysychansk, Slavyansk, Mykolaiv, Mariupol, Kyiv, Zaporizhzhia, Uzhgorod, Lutsk, Rubizhne (Fig. 1).

High levels of air pollution in these cities are associated with the increase in the content of specific contaminants - formaldehyde, phenol, hydrogen fluoride, ammonia, major impurities - suspended substances, nitrogen dioxide, carbon monoxide

The largest number of cities with a high level of air pollution is in the Dnipropetrovsk region - 3 cities (one of them with a very high level of pollution), in Donetsk region - 3, in the Luhansk region - 2 cities. Other cities are seven regional centers and the capital of Ukraine.

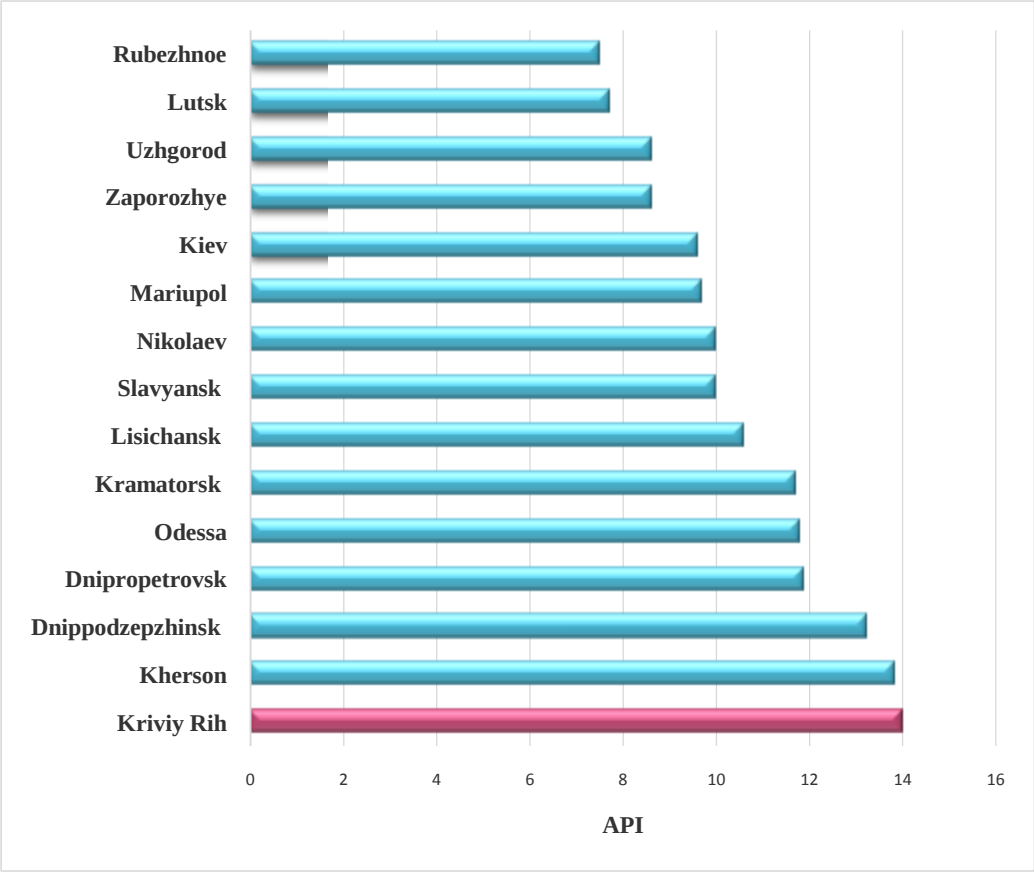

Fig. 1. The value of air pollution index (API) in the most polluted cities of Ukraine in 2015
(Oglyad pro stan zabrudnennya navkolishnogo prirodnogo seredovischa na teritoriyi Ukrayini za danimi sposterezhen gidrometeorologichnih organizatsiy u 2015 rotsi)

Iron ore basin of Kryvyi Rih is one of the leading industrial centers of Ukraine with powerful development of the steel industry, mining and chemical industries. At the same time, Kryvyi Rih is on the list of the 20 most polluted cities in the country.Factors that affect the environmental situation in the cityare:

- large concentration of mining and mineral processing and metallurgical complexes;
- the use of outdated technologies and equipment, which requires changing;
- unresolved issue of fugitive emissions (in industrial processes, mass emissions during drilling operations in mines, mining enterprises, etc.);
- lack of cleaning apparatus for gaseous components;
- problems associated with the storage, disposal and dumping of toxic industrial waste;
- the absence of effective state control over the use of the Nature Conservation Act and the system of effective penalties for harm to the environment (Deryabo, 1996).

- The greatest damage to the natural environment of the city caused by OJSC "ArcelorMittal Kryvyi Rih", OJSC "Southern GOK ", PJSC "Northern GOK ", OJSC "Heidelberg Cement Ukraine", PJSC "Central GOK", OJSC "Kryvbasszhelezrudkom", PJSC "Ingulets GOK" , PJSC "Evraz Sukha Balka", PJSC "MMK named. Ilyich" GOK "Ukrmehanobr" (Dobrovolskaya, 2012).

According to the data of mining and metallurgical complex of the city, pollutant emissions into the air in 2014 amounted to 327,300 tons, which is 7% less than in 2013. For 9 months of 2016 (Dobrovolskaya, 2012):

- emissions of pollutants into the air amounted to 252 thousand tons;
- more than 142 million tons of waste were formed, 96 million. tons were placed in the environment.

As you can see, there is a tendency to reduce the emission of harmful substances into the atmosphere.As indicated in the project "Strategic Development Plan of Kryvyi Rih in the period up to 2025":

- Kryvyi Rih in the future will be the cleanest metallurgical center of the world, which introduces modern energy saving technologies;
- Kryvyi Rih in the future will be a powerful industrial center with a diversified economy, modernized mining and metallurgical complex, high-tech engineering, the regional center of scientific and technological developments, the leader in attracting investment and industrial tourism;
- Kryvyi Rih in the future will be a safe and comfortable city to live in (Oglyad pro stan zabrudnennya navkolishnogo prirodnogo seredovischa na teritoriyi Ukrayini za danimi sposterezhen gidrometeorologichnih organizatsiy u 2015 rotsi).

The structure of the strategic plan, in addition to the modernization of enterprises, introduction of new technologies, also includes the formation of an ecologically conscious population. Ecologically conscious population is the central element of the ecological system (fig.2).

Today, there is the problem of apathy among the population regarding the status of city pollution and environmental disasterThus, an important role in the formation of consciousness is to be played by environmental education Environmental education is a conscious and systematic development of knowledge about the environment, especially the human impact on the environment, the principles of harmonious development of man and the environment.Environmental behavior is formed as a result of such education. Environmental behavior is a system of actions that implement education about the laws of human functioning environmental protection, respect for it. The objectives will be achieved by:

- popularization and promotion of ecological, energy-saving behavior of city residents;
- raising public awareness about the methods of economical consumption of resources;
- creation of public information system on the environment;
- activation of the public in monitoring the activity of enterprises in the field of ecological safety and environmental protection;
- introduction of the institute of public condemnation for causing harm to the environment;
- - expansion of cooperation between local authorities and NGOs in the context of the formation of ecological consciousness.

As shows the experience of other countries, effective factors in the formation of ecological consciousness are:

1. Legal regulation of activity of the population and enterprises of the city and its impact on nature by enhancing the knowledge of«environmental law" and the introduction of a system of responsibility for its violation (warnings, fines, etc.).
2. The introduction of the monitoring system in the areas of green space from both the public and law enforcement officials.
3. Public monitoring and control of the city's business activities on pollution.

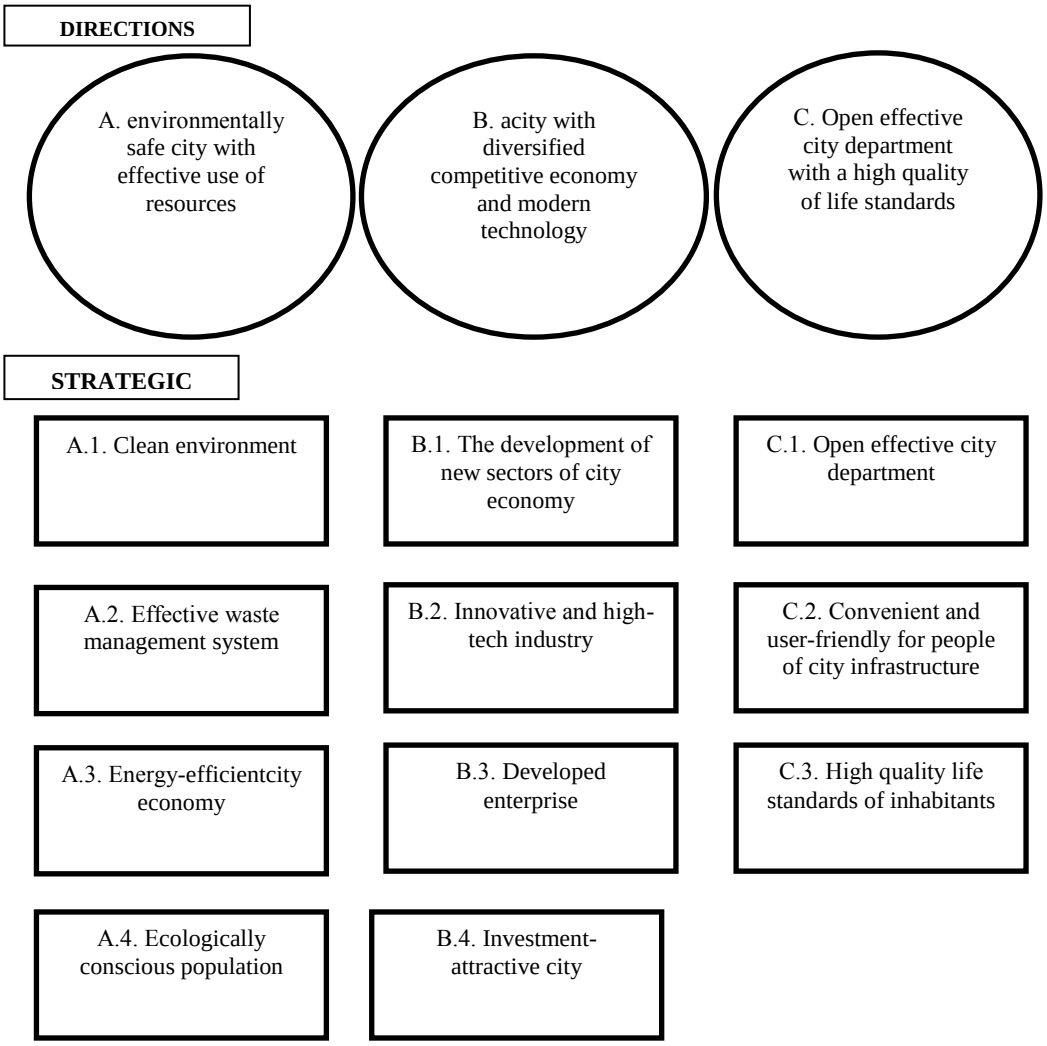

Fig. 2. The structure of strategic plan
(Proekt Strategichnogo planu rozvitku mista Krivogo Rogu na period do 2025 r., 2016)

Conclusions and suggestions

As a result of studying the problem, we have identified ways of creating environmental awareness with the assistance of the city and the public. The steps to be taken are the creation of the city's population information system on ecological status by highlighting itin the information resources of the city, television and holding actions, trade fairs and seminars. In our opinion, the formation of ecological consciousness of population of the polluted city is only possible on condition that each person treats pollution as an indicator of danger to their lives and the environment in general; NGOs as authorities of effective impact on institutions, businesses and residents, along with executive bodies of local self-government identify problems and seek ways to address them at the national level

References

Barro, R. J. (2015). Environmental protection, rare disasters and discount rates. Economica, No. 82.325, 1-23.

Deryabo, S. D., Yasvin, V. A. (1996). Ekologicheskaya pedagogika i psihologiya. Rostov-na-Donu: Feniks.

Dobrovolskaya, O. P. (2012). Analiz problem obespecheniya ekologicheskoy bezopasnosti regionalnogo razvitiya v Ukraine. Vestnik Tavricheskogo natsionalnogo universiteta im. V.I. Vernadskogo, No. 5, 17-29. [in Ukrainian].

Ekologichna situatsiya v misti Kriviy Rig. (2016). Vikonkom Krivorizkoyi miskoyi radi Ukrayini. [Electronic resource]. Retrieved from http://kr.gov.ua/karta_saytu_ pidrozdili_vikonkomu/upravlinnya_ekologii/ekologichna_situatsiya_u_misti_ kriviy_rig. [in Ukrainian].

Judson, R., et al. (2014). In vitro and modelling approaches to risk assessment from the US Environmental Protection Agency ToxCast programme. Basic & clinical pharmacology & toxicology, No. 115.1, 69-76.

Kravchenko, S. M., Kostitskiy, M. V. (1992). Ekologichna etika i psihologiya lyudini. Lviv: Svit. [in Ukrainian].

Li, Wanxin, Jieyan Liu, and Duoduo Li. (2012). Getting their voices heard: Three cases of public participation in environmental protection in China. Journal of Environmental Management, No. 98, 65-72.

Oglyad pro stan zabrudnennya navkolishnogo prirodnogo seredovischa na teritoriyi Ukrayini za danimi sposterezhen gidrometeorologichnih organizatsiy u 2015 rotsi. Central geophysical observatory. [Electronic resource]. Retrieved from http://cgo.kiev.ua/index.php.

Petruk, V. G., Bezvozyuk, I. I., Panchenko, T. I. (2010). Ekologichne vihovannya u vischiy shkolI. [Electronic resource]. Retrieved from http://conf.vntu.edu.ua/ humed/2010/txt/Petruk_Bezvozyuk_Panchenko.php. [in Ukrainian].

Proekt Strategichnogo planu rozvitku mista Krivogo Rogu na period do 2025 r. (2016). Vikonkom KrivorIzkoyi miskoyi radi Ukrayini. [Electronic resource]. Retrieved from http://kr.gov.ua/ua/st/pg/100415583959267_s/. [in Ukrainian].

Shedlovska, M.V. (2011). Oznachennya ta tipi ekologIchnoyi svIdomostI. Ukrayinskiy sotsium. [Electronic resource]. Retrieved from http://nbuv.gov.ua/UJRN/Usoc_2011_2_9. [in Ukrainian].

Sunstein, Cass R., and Lucia A., Reisch. (2014). Automatically green: Behavioral economics and environmental protection. Harv. Envtl. L. Rev., No. 38, 127.