

ENVIRONMENTAL AWARENESS OF STUDENTS OF NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES (NULES) OF UKRAINE IN THE CONTEXT OF MODERN CHALLENGES

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Abstract

This paper aims to provide evaluation of environmental awareness of students of the National University of Life and Environmental Sciences of Ukraine (NULES of Ukraine) taking into account challenges that appear due to the war. The problem of the research is reduced to answers to the following questions: (1) What sources of information do students use in order to be aware of environmental problems? (2) Do the war in Ukraine influenced on the youth awareness increase about the environment problems? (3) What priority measures should be implemented to solve environmental problems in wartime conditions? To realize purposes in the article, sample observation within students of Economic faculty was done. Results showed that 94.1% of respondents are worried about environmental problems. At the same time main sources of information about environment issues were social networks (44.1%); internet sources (41.2%); television (11.8%) and press (2.9%). Besides, 20.6% of students assumed that information about environment is easily accessible, 52.9% accessible, and 26.5% difficult accessible. Most of the respondents considered that the environment theme is not popular enough in the mass media (79.4%). Russia invasion has provoked sharpening environmental problems, where results of the survey showed that 88.2% of respondent's deep environmental awareness. In addition, 44.1% of surveyed students worry about the environmental consequences of the war. To find answer to the question about measures that should be implemented to solve environmental problems in present conditions, the SWOT analysis was done, where in the opportunity square are indicated main points, which should be realize: the rules of conduct and norms of responsibility for environmental offenses should be improved at the state level; the creation of appropriate infrastructure for the population to fulfil its environmental responsibilities; highlight environmental issues in the mass media and social networks; growth the role of non-governmental nature protection organizations and universities in raising the public's awareness of environmental problems; development, adoption and implementation of the national program of environmental education in educational institutions.

Key words: environmental awareness, ecology, students, NULES of Ukraine, information, sample, survey, SWOT analysis

INTRODUCTION

Ecological awareness is a complex concept. In a broad sense the concept of „ecological awareness” is a new form of social awareness that manifests itself in the thinking and experiences of individual people and functioning of standards of living, evaluation and understanding of elements regarding the biosphere [5].

Possessing knowledge about the environment is an important aspect in the context of the formation of environmental consciousness. In the view of modern environmental problems,

the dissemination of ecological knowledge becomes one of the most important tasks of both individual families and educational institutions.

The ecological awareness and behaviour of each person is largely formed under the influence of the social environment in which the person lives. Different segments of a country's population may have different motivations and goals regarding environmental issues, even when they are in the same environment conditions.

At the same time, it is worth highlighting the factors that restrain or promote environmental behaviour of a person [3].

Factors of environmental behaviour can be divided into the following groups: (1) external, arising from environmental conditions; (2) internal, characterizing the physical and psychological characteristics of a person.

External factors of human environmental behaviour include social, cultural, economic, legal and other components. The conditions of the listed factors are constantly changing, and their interaction with each other is also observed.

As practice shows, force majeure circumstances that arise in the external environment (for instance, war, ecological accidents or cataclysms) significantly affect the perception of the importance of ecology.

The internal factors of environmental behaviour depend on a person's psychological characteristics, motivation and values in relation to the environment.

The questions regarding the study of the environmental awareness of the population and especially young people are being studied by scientists from many countries.

Balińska et al (2020) studied the issue of environmental awareness among young people. Indeed, the authors of the study checked the sources of information used by students of the Faculty of Economics of the WULS-SGGW (Poland) in the formation of their environmental awareness. They came to the conclusion that the main source for students is social networks and internet portals. At the same time, they noted that issues of environmental protection are not covered too much in the mass media [1].

Kociszewska (2014) in her research indicated that ecological awareness requires breaking the existing scheme of thinking, changing the criteria of values, which in turns requires constitutes a significant change in people's relation towards environment. She resumed that developing ecological awareness and the active attitude of care regarding nature should start from early child's life [5].

Wierzbiński et al (2021) defined the role of ecological awareness and influence on the

food purchasing habits of young consumers in shaping their pro-ecological attitudes. They obtained results that young consumers reject the offer of cheap mass food and are ready to pay up to 50% more regarding guaranteed access to high-quality food products [13].

Many scientific research concern to evaluation of indices that measure the environmental pollution and its influence on economy, especially agriculture.

Dong and Wang (2023) in their paper were scrutinized the affect of air pollution on the global agriculture using the indicator of total factor productivity (TFP). Indeed, there are convinced that air pollution has been a significant threat to the enhancement of global agricultural TFP [2].

Li et al (2019) evaluated the linkage between agricultural economy and agricultural pollution using the method of decoupling index that helped to explore the key factors affecting the decoupling effect and to identify the direct relationships between mentioned factors [8].

Unforeseen environmental consequences due intensive agricultural practices and inputs use studied by Killebrew and Wolff (2010). They came to conclusions that agricultural intensification facilitates farmers to get greater yields per unit time and area by planting more crops each year, specialized on growing monoculture and using higher amounts of external inputs. Herewith defining the appropriate balance of costs and benefits from intensive agricultural practices is refer to the local territory, where should be known evaluation of natural, economic, and social conditions [4].

Mateo-Sagasta et al (2017) in their study justified that the growth of crop production worldwide has been achieved mainly through the intensive use of inputs such as pesticides and chemical fertilizers. The tendency was strengthened expansion of agricultural land where irrigation plays a strategic role in improvement productivity and livelihoods in rural areas, and by transferring agricultural pollution to reservoir. At the same time the livestock sector is growing very fast and associated waste has negative consequences for water quality [9].

Key ways of agricultural influence on environment was researched by Ritchie et al (2022), i.e. (1) water needs for agriculture, which can cause significant environmental pressures in regions with water shortage; (2) greenhouse gas emissions and as a result climate change; (3) large amount of land use worldwide [11].

Environmental science and technology help in improving the natural environments that give healthy life to human beings by providing better quality of water, air, and land and also keeping the area pollution-free. Besides, nowadays consumers and companies are looking for alternatives to mitigate pressure on environment resulting from continuous population and economic growth [10].

Nowadays, the topic of environmental awareness of youth in Ukraine has become extremely important. The hostilities caused by Russia led to many negative consequences, including environmental problems.

In these conditions Ukrainian young people aware these threats and ecological awareness could increase in the future.

Thus, our research is important and relevant, as it involves highlighting the level of environmental awareness of students of NULES of Ukraine and emphasize priorities in solving environmental problems.

The paper is organized as follows: Section 2 described the data and methods of empirical investigation; Section 3 reports getting results; and Section 4 ends with conclusions of getting results.

MATERIALS AND METHODS

The purpose of the article is to evaluate environment awareness by students of the Economic faculty of National University of Life and Environmental Sciences of Ukraine due to analysing information that was assembled from survey.

In the paper the following questions were given, i.e.: (1) What sources of information do students use in order to be aware of environmental problems? (2) Do the hostilities in Ukraine influenced on the youth awareness increase about the environment problems? (3) What priority measures should

be implemented to solve environmental problems at present?

Statistical survey method was used as the methodical approach of the research that includes target group of participants' observation and the survey technique.

The target group of observation consists students from different specialties of the faculty and different study years, i.e. Economics; Accounting and Taxation; Finance, Banking and Insurance; Entrepreneurship, Trade and Exchange Activities. The age of students varies from 18 to 22 years.

The questionnaire was prepared on the google platform. The link to created questionnaire was sent to students of the Economic faculty of NULES of Ukraine.

The questionnaire was held in the distance form, where the respondents filled it in and sent back to us.

The questions of the survey were in the different form, i.e. closed-ended, open-ended and yes and no questions.

Questions that were included in the questionnaire were related to their attitudes to the environment.

The questionnaire research was conducted in 2022, where 94 correctly filled in questionnaires were chosen for further research.

To generalize the environmental awareness of the population in Ukraine and to define main directions of increasing youth environmental awareness SWOT analysis was used.

RESULTS AND DISCUSSIONS

National University of Life and Environmental Sciences of Ukraine is one key university of natural science.

Taking into account this fact, we were conducted our survey research at the Economic faculty of NULES of Ukraine for students of bachelor's degree from different specialties to get information regarding youth attitudes to the environment (Fig.1).

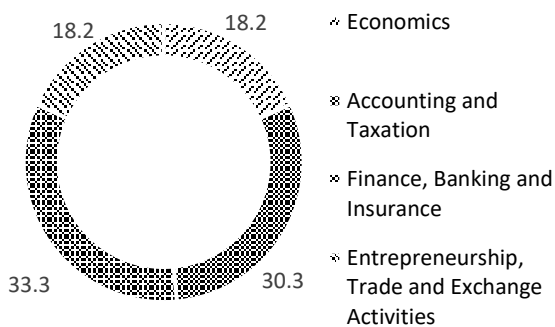


Fig.1. The structure of the distribution of respondents according to the specialty of study
 Source: author's research.

As we can see from the Fig.1, 30.3% were respondents from the specialty of Accounting and Taxation, 33.3% Finance, Banking and Insurance, 18.2% Entrepreneurship, Trade and Exchange Activities, and 18.2% Economics.

The majority of the respondents were women, i.e. 85.3% of the sample. Students grew up in different settlements, including 35.3% in villages, 32.4% in cities, 23.5% in small towns, and 8.8% in Kyiv.

Despite certain differences among survey participants, the vast majority (94.1%) are concerned about environmental issues (Fig. 2).

Similar trend was noted in the research of Sousa S.et al (2021). Results indicate that most students of a public higher education institution in Portugal are aware of the importance of protecting the environment and consider themselves well informed about environmental issues [12].

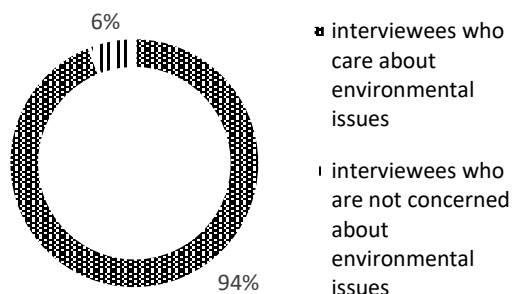


Fig.2. Distribution of respondents in relation to environmental problems
 Source: author's research.

Nowadays, during the study of a number of disciplines at National University of Life and

Environmental Sciences of Ukraine, teachers try to include new approaches in lectures and case studies, i.e. the analysis of economic activity should include the study not only economic components, but also necessarily environmental and social consequences of business.

Social-environmental approach in education and research activities are used in universities of European countries and the USA. Indeed, socio-ecological components include studying about sustainable development and natural resource management, development of alternative energy sources, ensuring the quality and safety of food and so on [7].

Therefore, students have the opportunity to process information about the state of the natural environment, to analyse primarily the impact of economic activity on it, to assess the availability and use of natural resources, the level of expenses for environmental protection and the principles of implementing the state's environmental policy.

Basic data that could be taken from the state statistics on the environment relates to the following topics: emissions of pollutants and greenhouse gasses; generation and management of waste; environmental protection costs and environmental payments; use of fertilizers and pesticides for the harvest of agricultural crops; organic farming, etc.

The environment in Ukraine is polluted due to green house emissions, forest fires for 23 thousand ha [3], chemical fertilization of the soil and plant protection, heavy metals in the ground water. As a result, wild flora and fauna, biodiversity in general is also affected.

All these aspects have been accentuated since the year 2022 when the country was invaded by Russia.

Under these conditions, the awareness about the environmental issues increase in 88.2% of respondents.

At the same time, 64.7% of students believe that the hostilities significantly influenced the deepening of their environmental awareness.

Analyzing the theme of environmental problems, 44.1% of students worry about the environmental consequences and 5.9% about greenhouse gas emissions; half of the

surveyed students consider the problems of ecology comprehensively.

According to our research, the main sources of information about ecology and environmental protection were social networks (44.1%); internet sources (41.2%); television (11.8%) and press (2.9%) (Fig.3). At the same time, 20.6% of students believe that information about environmental behaviour is easily accessible, 52.9% accessible, and 26.5% difficult accessible.

According to the vast majority of surveyed youth, the topic of ecology is not popular enough in the mass media (79.4%), only 8.8% believe that it is excessively popular, and 11.8% believe that it is sufficiently popular.

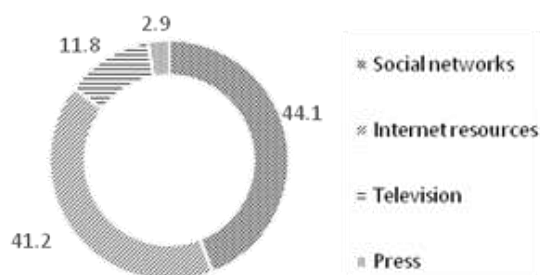


Fig. 3. The structure of the main sources of information about ecology used by students of NULES of Ukraine
Source: author's research.

In order to summarize the peculiarities of the formation of the environmental awareness of the population in Ukraine, we made SWOT-analysis to identify the main areas of improvement within the environmental policy in Ukraine (Table 1).

Table 1. SWOT-Analysis of the environmental awareness of the population in Ukraine and the main directions of increasing youth environmental awareness

Strengths	Weaknesses
<p>The majority of Ukrainians have an ecocentric type of eco-awareness and a desire for a harmonious interaction between people and the environment.</p> <p>In recent years, the number of Ukrainians, who are members of environmental organizations has increased. They cooperate with parliamentarians and government officials on the implementation of environmental initiatives.</p> <p>The development of</p>	<p>(1) Till the year 2020, there was a tendency to decrease the value of the environment compare to economic values of Ukrainians.</p> <p>(2) The share of eco-activists is insignificant among the population.</p> <p>(3) In comparison with the EU countries, there is almost no information on the adoption of environmental regulations and the implementation of environmental policy on the websites of Ukrainian state bodies.</p>

environmental awareness of the population is defined as one of the goals of Ukraine's environmental policy.

The choice of environmental protection measures was influenced by the welfare of the interviewees (persons with a high and medium level of wealth are more inclined to environmental protection measures).

Environmental protection measures are more common among respondents with secondary specialized and higher education.

(4) Authorities do not always make decisions that take into account the risks of harming the environment.

Opportunities

At the state level, the rules of conduct and norms of responsibility for environmental offenses should be improved.

The creation of appropriate infrastructure for the population to fulfil its environmental responsibilities directly affects the population's readiness to take real actions to preserve the environment.

It is important actively highlight environmental issues in the mass media and social networks.

Non-governmental nature protection organizations play an important role in raising the public's awareness of environmental problems, and they also indirectly create a public demand for state changes in the field of ecology and influence the formation of environmental consciousness of civil servants.

In Ukraine, the development, adoption and implementation of the national program of environmental education in educational institutions are important.

Natural sciences universities can play an important role in raising the awareness of the population and youth about ways to solve environmental problems.

Threats

In practice, the willingness of Ukrainians to take actions to preserve the environment is low.

It is necessary to detail the environmental policy and determine its priorities in the future strategy.

The formation of environmental awareness and ecological values of the population is influenced by environmental regulations and measures taken by the state to ensure their implementation (environmental control, responsibility, etc.), as well as the collection and distribution of environmental statistical data. In Ukraine, there are certain shortcomings in the mechanisms of environmental control and legal responsibility in this area. The database with current information on the state of the environment also needs special attention, state environmental monitoring was carried out in a fragmented manner.

In Ukraine, there are no large-scale sociological studies commissioned by the state about the state of environmental awareness.

Lack of funding sources for measures to increase environmental awareness and development of methodical, didactic and educational materials aimed at forming a culture of ecological behaviour, sustainable consumption and environmental ethics.

Source: developed by the authors based on Kuts, N., 2020 [6].

Education and educational activities are key importance for the formation of

environmental awareness. The formation of the ecological consciousness of young people is based on ensuring the consistency of formal and informal educational activities.

Natural sciences universities can play an important role in raising the awareness of the population and youth about ways to solve environmental problems by highlighting research results in scientific and popular publications, preparing books and disseminating environmental information.

Teachers should involve students and youth in conducting online courses, trainings, seminars and conferences on environmental topics for stakeholders.

Indeed, scientific and pedagogical teams can develop and implement advanced training courses in the field of environment.

In turn, scientists of various specialties should be involved in explaining the importance and methods of implementing environmental solutions at the business, community, and state levels; develop concrete measures to solve environmental problems at the level of local communities, etc.

CONCLUSIONS

Environmental awareness is the growth and development of consciousness, understanding toward natural environment protection and the activities that can cause harm to the environment. In Ukraine, people generally consider environmental protection important and are concerned about its problems.

Environmental awareness is measured by a level that can change during a person's life due to influence of different factors.

The aim of the paper was to analyse environment awareness among students of the Economic faculty of NULES of Ukraine. To realize this purpose, answers on the following questions were found: (1) What sources of information do students use in order to be aware of environmental problems? (2) Do the hostilities in Ukraine influenced on the youth awareness increase about the environment problems? (3) What priority measures should be implemented to solve environmental problems under the present conditions?

Using the Statistical survey method, we got 94 correctly filled in questionnaires, which were chosen for our research. In the sample 85% were women that could be explain by similar distribution by gender at the faculty.

Despite on the difference of geographically place of birth and grew up, 95% of students concerned about environmental problems.

Research results showed that the main sources of information on the environment theme were social networks (44.1%); internet sources (41.2%); television (11.8%) and press (2.9%). Besides, 20.6% of respondents considered about easily accessible of information about environmental behaviour, 52.9% accessible, and 26.5% difficult accessible. In addition, 79% of students believed that the environmental theme is not popular enough in the mass media, only 8.8% considered that it is excessively popular, and 11.8% thought that it is sufficiently popular.

Research results confirmed the awareness increase about the environmental issues in 88.2% of respondents. Indeed, 44.1% of students worry about the environmental consequences of the hostilities.

Education plays a leading role in the formation of environmental awareness among students.

It is necessary to improve and implement legislative, institutional and budgetary solutions in order to solve the environmental problems.

One of the important directions of this can be the concept of continuous environmental education and educational work (primarily of life and natural sciences universities) with all categories of the population, laying down funds in the budget for the implementation of these measures, attracting international financial assistance, public-private partnership mechanisms, etc.

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