Western European Journal of Historical Events and Social Science
Volume 2, Issue 5, May, 2024
https://westerneuropeanstudies.com/index.php/4
ISSN (E): 2942-1926 Open Access| Peer Reviewed

ENVIRONMENTAL DEVELOPMENT IN UZBEKISTAN: MAIN PROBLEMS AND THEIR SOLUTIONS

Dildora Abdurakhmanovna Makhkamova
Department of General Ecology and Economics
Branch of Astrakhan Technical University in Tashkent region
Republic of Uzbekistan.

Abstract: The article reflects on the environmental problems of Uzbekistan and ways to solve them. The role and importance of renewable energy sources as a solution to environmental problems are emphasized.
Keywords: ecological economics, renewable energy sources, environment, green economy, natural resources.

The development of the economy requires the use of more and more natural resources in the economy, which in turn leads to an increase in anthropogenic pressure on the environment. On the other hand, the state of the environment and its quality affect the development of production forces and territorial externalization. Proper consideration of these conflicting features and development of the economy in a way that is suitable for them accelerates growth. Actions contrary to them slow down or become a big obstacle to growth.

Such approaches and principles should be embodied in our plans and programs aimed at the socio-economic development of Uzbekistan in the medium and long term, based on our priorities. In this regard, in the conditions of the ecological revolution, which is happening more and more rapidly in the world, it is necessary to implement the economy of Uzbekistan in directions that guarantee the achievement of the most ecological, economic, social and economic results in accordance with its requirements and principles. Based on this criterion, a number of environmental problems, such as the drying up of the island and the desertification of the Aral Bay, the complexity of the environmental situation in the Republic of Karakalpakstan, Khorezm, Navoi, and Fargona regions, as well as atmospheric air pollution, scarcity and pollution of water resources, Inadequate supply of clean drinking water to the population, soil salinization and pollution, reduction of biological productivity and diversity, pasture digression, large accumulation of waste, use of the unlimited potential of renewable energy sources is almost on the way. lack of flexibility and a number of other problems should be solved.

Due to the fact that all aspects of environmental problems are intertwined in a complex way and mainly arise under the influence of the economy and have an intersectoral nature, their elimination is necessary in various aspects of economic activity (industry, agriculture, service sectors, etc.). requires implementation in specific directions. For example, in the fields of energy, raw materials, and food production, the following structure should be implemented:

1) gradual transition from coal, oil, and gas to solar, wind, geothermal, and hydrogen energy;

2) transition from the existing straight-line economic model in the raw materials sector (transition of raw materials from mines or forests to landfills) to a reuse or recycling model. In

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this new system that works in such a closed loop (as it happens in nature), the processing industries gradually crowd out the extractive industries;
3) the biggest change in the food sector is not in the production structure, but in the way of management, that is, in the restructuring of the sector. In this case, the primary task is the rational use of natural resources in an endless direction (on the basis of their reproduction).
"Greening" of agriculture allows solving these problems without harming the nature in the conditions of the increase in the number of the country's population and their demand for food. It includes environmentally safe methods of activity (efficient use of water, wide use of organic and natural fertilizers, optimal tillage, as well as reduction of waste in the agricultural sector, comprehensive control of agriculture and waste, soil fertility, plant and management of animal health and mechanization of farms, etc.) use and strengthening of organizational structures of agrarian, water economy, allocation of investments to infrastructure development takes place.

Improving the efficiency of the food industry is an important factor in ensuring food safety today and in the future. Due to the lack of storage and processing capacities of agricultural products, large losses are allowed. The results of scientists' research show that it is possible to reduce losses and waste in all links of the chain of food production and consumption by 50%.

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In the transport system, instead of the current noisy, environmentally polluting car transport, mainly rail transport (tram, metro, train) will be used in cities. There are ample opportunities for cycling. The new transport system will include cars, rail transport, buses, and the like today. But their ratio changes. A new ecologically clean and economical transport scheme will be established in the city transport.

The following areas will be of great importance in the greening of the transport sector.

1) Reduction of excess transportation, coordination of production and consumption based on optimal planning of routes of transport routes;

2) Development of ecological transport types, especially public transport for passenger transportation, including high-speed bus connections and transition to rail transport, separate development of freight transport;

3) Regulation of fuel and vehicles used in transport in order to reduce the harmful impact on the environment (clean fuel, types of transport that allow to increase energy efficiency).

In general, in the establishment of a green economy, special attention should be paid to the introduction of technologies that allow increasing energy efficiency in all sectors, in particular housing and communal economy, industry and transport, the agricultural sector, and the development of the use of fundamentally renewable energy sources.

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The unique geographical location of Uzbekistan, the great variety of its nature (desert, irrigated plains, mountain zones) have caused it to have huge renewable energy reserves. Their total volume is 51 billion tons. is equal to oil analytes (t.n.e.), and existing technologies allow using 179 million t of them. This is three times more than all the fuel produced in the country in one year (Table 1).

When the existing technical capabilities are fully used, they will cost 447.5 mln. t. CO2 emissions can replace the amount of fuel used. In other words, in this direction, it was possible to eliminate the main sources of air pollution.

In the structure of technical possibilities of renewable energy sources in our country, the sun occupies 98.8%, hydropower 1%, wind energy 0.2%. These numbers prove that Uzbekistan is a real country of the sun, and the sun is its main source of alternative energy. The technical potential of solar energy covers the republic's annual demand for energy four times. But now only 0.3 percent (0.6 million t.n.e.) of solar energy is used.

Also, the potential of wind energy and solar energy resources in our country is large, and the level of their use remains low. In the near future, there is a task to implement a systematic change and restructuring in the energy sector based on the use of the huge potential of renewable energy sources. It is necessary to use advanced foreign experience and technologies, as well as economic-ecological instruments on a large scale. The normal state and functioning of the biosphere, that is, the stability of the natural environment, cannot be ensured without creating favorable living conditions for the diverse biotic world. Our country's natural biological landscape diversity, which produces valuable resources and provides "ecological services", is an extremely important "living factory" of our national wealth. leading to nature degradation and increased environmental risk. The main part of the territory of Uzbekistan is occupied by deserts (70 percent), the rest is occupied by irrigated anthropogenic plains (10 percent) and mountains (percent). From this point of view, existing ecosystems are classified as follows: 1) desert zone ecosystems (desert, chala chul, kirgokbuyn, sub-bot lik i mari); 2)

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irrigated plain (madan ajotnims); 3) ecosystems of the togoldi-tok zone (low mountain, upper mountain, high mountain ecosystems).

The fauna of the country includes 97 species of mammals, 424 species of birds. It includes 58 types of reptiles and 83 types of fish. 34 species of mammals (35.1 percent), 48 species of birds (11.3 percent), 16 species of reptiles (27.6 percent). 18 types of fish (21.7 percent) are included in the "Red Book" of the Republic of Uzbekistan. A number of instruments of state policy - tax budget management levers, state regulation, ecological marking, ecological sports, market licenses (quota) play a key role in the establishment and development of the ecological economy in our country. They should be widely used to encourage ecologically safe types of activities, on the contrary, to limit pollution and decaying areas. In this case, it is important to follow the principles of "user pays", "polluter pays", "savings and development will get a privilege (tax, subsidy)".

One of the most important and main conditions for humanity to emerge from its ecological crisis is a change in people's orientation towards the surrounding world and the environment in particular. A person's anthropocentric view of the system "society and nature" should switch to a biocentric one, where the egocentric interest of people should not be higher than the principle of optimal development of ecosystems at various levels from local to global, and in particular the biosphere.

The new system of environmental education began its construction in the early 90s of the twentieth century. The construction of an ecological education system is based on several methodological principles that were formulated back in the 80s by famous scientists such as S.N. Glazacheva, A.N. Zakhlebny, I.D. Zvereva, E.S. Slasteninova, I.T. Suravgina. The initial concept was the idea that man is connected with nature and with his origin, existence and future. Current measures in the Republic of Uzbekistan to implement the UN Strategy for training in the interests of ESD (education for sustainable development), as well as consistently improving the quality and level of continuous environmental educational programs in the country, as well as a strong social policy helps to fulfill the tasks adopted by the UN General Assembly Resolution "On the UN Decade for Personnel Training in the Interests of ESD" are aimed at the implementation by Uzbekistan of the Strategy for training personnel in the interests of ESD. To implement measures aimed at implementing the tasks arising from the Action Strategy for the five priority areas of development of the Republic of Uzbekistan in the period 2017-2021, a set of activities in the field of education for sustainable development was developed and implemented. The Ministry of Public Education of the Republic of Uzbekistan, the State Committee for Ecology of the Republic of Uzbekistan, the Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan jointly approved the "Concept of Education for Sustainable Development of the Republic of Uzbekistan".

As noted, the concept of ESD is an interdisciplinary field of knowledge and involves processes of training, education, self-improvement, self-realization, self-certification, aimed at facilitating the formation of independent and critically thinking, spiritually independent, socially active people who take into account the principles of ecology and morality inherent in traditions of the Uzbek people, striving to gain knowledge about the environment, as well as take care of its condition and prevent new economic, social and environmental problems [4]. ESD places great emphasis on developing the necessary skills and approach for the participation of all participants in society in solving problems of regional and global scale. If

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the environmental educational process is focused on environmental issues, then ESD is focused on the interrelationship of social, economic, community and conservation factors.

In connection with the importance of education and in the interests of development, the Ministry of Public Education, the Ministry of Higher and Secondary Specialized Education, the State Commission for Environmental Supervision and the State Commission for Environmental Supervision in the Republic of Uzbekistan adopted a joint Resolution on the concept of continuous environmental training and the program for its implementation. Now all higher educational institutions of the republic are studying environmental disciplines in the direction of "Ecology and Environmental Protection".

Education is a key tool for the sustainable development of the country, which ensures that citizens develop the knowledge, skills, beliefs, and habits that are necessary for active participation in social and public life. However, as evidenced by a review of scientific literature devoted to the problems of sustainable development and the development of innovations in the field of education, the complexity and diversity of this process and its multidimensionality are noted. Great attention is paid to an innovative approach to training applicants, which should systematically and comprehensively cover all areas of educational work in the process of preparing applicants, while it is necessary to review the theoretical and practical aspects of the content of education, professional and pedagogical training of applicants, and develop innovative technologies and teaching methods.

These issues are actively studied by domestic and foreign scientists, for example, J. Martin, L. Svenson, I. Lerner, M. Skatkin, V. Bespalko, V. Slastenin, O. Pehota, S. Sysoev, A. Aziz and others. However, It is worth noting that most of the research is devoted to general education institutions, and higher education is undeservedly left without the attention of scientists from the CIS countries. And works devoted to the consideration of the specifics and features of innovative methods of teaching students and identifying the advantages and prospects for using various forms of innovative teaching are not so numerous.

As we know, the basis of innovative educational technologies used in the learning process should be social orders, the professional interest of the future specialist, take into account the economic, social and environmental needs, individual and personal characteristics of students [7]. Thus, to train specialists at technical universities, it is necessary to use innovative forms and methods, which should be organically combined with sustainable development, taking into account such basic principles as economic, social and environmental. The strategy for the sustainable development of education notes that innovative teaching technologies reflect innovative approaches aimed at developing, improving the educational process, and training personnel in various areas of life in the modern community.

They contribute to increased competitiveness, the formation of innovative thinking, the development of professional skills of students, as well as the development of the business potential of future specialists. The use of innovative methods by teachers in the training process helps to break the stereotypes of teaching different disciplines, create new approaches to the professional situation, and develop the creative abilities of students. Based on the above, we can highlight various innovative methods of teaching students:

1. Problem-based technologies of collective and group learning, simulation method of active education, method of analyzing a specific situation, design method, trainings, creative trainings, innovative educational project events, lectures-press conferences, lectures-

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conversations, special seminars, an analogue of round tables with representatives of environmental and non-governmental environmental organizations, etc. and so on.

2. Gaming technology.

Various games are widely represented in the game simulation model - business, audit, organizational activities, innovation, reflection games for relieving stress and developing innovative thinking, search testing, etc. [9]. When using business games, creative and productive-transformative activity of students prevails. Educational games are characterized by a variety of solution options, from which it is necessary to make the most rational choice.

Innovative educational projects are an effective form of organizing educational processes, aimed at the individual growth of students' cognitive interests and creative abilities. This method allows you to master the technology of presenting various creative work in reports, reviews, abstracts, and reports on professional topics. The idea and task of pedagogical innovation is to implement a new type of educational methodology, to involve new methods, technologies, and multimedia teaching aids in order to develop the potential of a future specialist.

Case technologies. Case technology is an analysis of a situation, a specific situation, a business game. Its main goal is to develop the ability to analyze various problems and tasks and find their solutions, as well as the ability to work with information.

The idea of technology is aimed at developing communicative competence in educational areas where there is no clear answer to the question posed, but there is a number of answers that can be competed with in terms of reliability.

The design method is a research method. Its basis is the development of students' research potential, the ability to independently construct their knowledge, navigate the information base, develop critical thinking and creative abilities.

Creative learning provides each student with free access to information resources, the main of which is the Internet and is based on the following principle:

• the basis of creative learning is the intended educational product that will be created by the student.
• in accordance with the student's external educational product and his internal needs;
• individual educational programs for students in the educational space;
• interactivity of classes that will be carried out through telecommunications, i.e. in online form;
• open interaction with educational products created by the student.

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Thus, to summarize, it can be noted that the basis of innovative methods of teaching students are active methods that help to form creative, innovative thinking, the development of independent thoughts, and the ability to make optimal decisions in a specific situation. All this contributes to optimal and competent teaching of the discipline “ecology” in technical universities.

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