Integration issues of human-being and environment

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Abstract. Objectively speaking, people are a part of nature, and nature contributes to human economies via the use of natural resources. Mineral resources are being used inefficiently and may soon be in limited supply. The burden on the natural environment rises in tandem with the increase in global population. Moreover, the sorts of contaminants are diversifying. After all, humankind is developing. More and more novel compounds that are not the greatest for the biosphere are being developed. The food, petrochemical, and woodworking sectors significantly harm water resources. Environmental contamination is a century-old issue on a worldwide scale. In actuality, there aren't many fundamental causes for the environment's unviability. It has long been evident that people believe they have a right to address global issues while attempting to preserve nature, but this is not always the case. Such a solution to the existing worldwide issue would result in the extinction of all life. Because it thinks it is in control of the situation, humanity appears to ignore the "Hints" of nature. In the meantime, environmental equilibrium is becoming more and more disturbed by human technology.

1 Introduction

A person living in the 21st century found himself in a society that is burdened with many dilemmas that accompany its socio-economic development. The situation is not alleviated by the problems of deforestation (25 ha/min), desertification of land (46 ha/min), growth of greenhouse gases in the atmosphere, and so on [1]. Society has faced a severe crisis and it can be concluded that its foundations are the positions of relations between society and nature, developed during the transition to a producing economy [2].

The interaction of society and nature is realized objectively: people are part of nature, and nature is part of its economy through natural resources [3]. At the same time, the dualism of man predetermines the substantial difference between society and nature and becomes a precondition for contradictions between them. With the advent of mental abilities, a person subordinated his upbringing to the tasks that form him as a person [4]. The scientific and technological revolution has opened the veil on opportunities that satisfy the interests and needs of people, and at the same time, the burden on natural systems has increased thousands of times. The lack of restrictions on the full use of natural resources has led to an irreversible deterioration in the quality of the environment [5]. Deforestation,
testing of atomic bombs, subordinating everything to electricity - the world, as it may not be appropriate to say, began to resemble a greenhouse in which plants and living beings develop, but with difficulty, who are not helped, but on the contrary, they seem to put up barriers [6].

As it turned out, they became incompatible with each other: a fruitful environment and high economic growth. This situation is the root of the global environmental problem [7].

Environmental pollution as a global problem of this century [8]. In fact, the main reasons for the unviability of the environment are not so many. It has long been clear that people consider themselves right to solve problems of world magnitude, trying not to spoil nature, but it does not always work out that way [9]. Such an approach to the problem, already global, will lead to the destruction of all life. What we can say about global warming, which is the outcome of the human factor [10, 11]. Humanity seems to ignore "Hints" of nature, believing that it has superiority over the current situation. Meanwhile, human technology is increasingly upsetting the balance in the environment.

2 Materials and methods

Along with the growth of the population on the planet, the pressure on the natural environment also increases. The types of pollutants are also becoming more diverse. After all, man is progressing. More and more original chemicals are being invented that do not have the best effect on the biosphere. Considerable damage is caused to water resources by the food, petrochemical, and woodworking industries. Various slags and ashes stored on the surface of the earth cause irreversible damage to the atmosphere.

The inexpedient use of natural resources - mineral resources - will soon become a shortage. After all, they belong to the exhaustive types of natural resources. Such an outcome occurs during extraction, enrichment, transportation, processing. As a result, huge volumes of rock masses disturb the balance of the surface of the lithosphere. Under their weight, the earth sinks or swells, which can lead to disruption of the groundwater regime and swamping of large areas.

3 Results and discussion

Demographic crisis - many countries with a capitalist market economy are interested in increasing the population, rather in the growth of the labor force [8]. With the increase of the human factor, the latest technologies will open up, which will either further destroy existence on the planet, or more intelligent inventions will be developed (Figure 1) [5].

Water pollution. Water is the most common inorganic compound on Earth. It consists of gas and salt compounds, as well as solid elements. Most of the water is found in the seas and oceans. Fresh water - only 3%. A large proportion of fresh water (86%) is collected in the ice of the polar zones and glaciers. Water bodies are threatened to a greater extent - petroleum oils, wastewater from the pulp and paper industry, and wastewater from various chemical plants adversely affects the development of aquatic organisms. All this contributes to a change in color, smell, taste, which is very necessary for the normal development of all living pure water. Harmful waste aggravating the existence of fish in water bodies is emitted from wood waste. As a result of this: caviar, invertebrates and other species of inhabitants of the aquatic environment die. Also, sewers and laundries cannot be left without attention. With the increase in human ingenuity, as if to improve life, various detergents are produced, which does not have a beneficial effect on water resources. As a result of the nuclear industry, water bodies are radioactively polluted, which causes irreparable harm to health. Scientific studies of methods for neutralizing radioactive
contamination are in demand.

Fig. 1. Demographic growth from the beginning of our era.

Wastewater pollution can be divided into two groups: mineral and organic, as well as biological and bacterial. Mineral pollution is the wastewater of metallurgical enterprises, as well as enterprises engaged in mechanical engineering.

Fecal-economic wastewater - organic water pollution. Their origin is obtained with the participation of a living factor. City waters, waste paper and pulp, brewing, leather and other industries. Live microorganisms - components of bacterial and biological pollution: helminth eggs, yeast and mold fungi, small algae and bacteria. Pollution in the majority contains about 40% mineral substances and 57% organic.

Water pollution can be characterized by several features:
- floating substances on the surface of the water;
- modification of the physical qualities of water;
- modification of the chemical formula of water;
- transformation of the types and number of bacteria and the emergence of pathogenic microbes.

Under the influence of solar radiation and self-purification, water is able to renew its useful properties. Bacteria, fungi and algae help in self-purification. Developments are also available in industry - mainly workshop and general plant facilities for wastewater treatment.

Air pollution. Atmosphere - the air shell of the Earth. The quality of the atmosphere implies a set of its properties that reflect the level of impact of physical, chemical and biological factors on people. With the formation of civilization, anthropogenic sources increasingly dominate air pollution.

Atmospheric pollution with impurities is a global problem, because air masses are an intermediary in the pollution of other natural objects, contributing to the spread of harmful masses over impressive distances.

The growth of the population of the Earth and the rate of its multiplication are the determining factors in the growth of the intensity of pollution of all geospheres of the Earth, as well as the atmosphere. In cities, the maximum air pollution is noted, where typical
pollutants are dust, gas masses, and others.

For example, in Uzbekistan, following the results of the pandemic year, the number of recorded cases of high and extremely high air pollution almost quadrupled (3.8 times), the analytical service of the international audit and consulting network “FinExpertiza” calculated. If in 2019, not marked by lockdowns and suspension of economic activity, there were only 64 such incidents, then in 2020 there are already 243 ppm (Figure 2).

Chemical impurities that pollute the air of Uzbekistan:
• natural impurities determined by natural processes;
• arising from the economic activities of mankind, anthropogenic.

In areas of active life of people, more stable pollution with increased concentrations appears. Their growth and formation rates are much higher than average. These are aerosols, metals, synthetic compounds. Various impurities enter the atmosphere in the form of gases, vapors, liquid and solid particles, such as: carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen oxides, ozone, hydrocarbons, lead compounds, carbon dioxide (CO₂), freons.

The source of air pollution with dust is also the production of cement and other building materials. Hazardous circumstances are radioactive dusts. Soil pollution. Soil is a natural formation that has a number of properties of animate and inanimate nature. The depth does not exceed 20-30 cm, on chernozems it can reach about 100 cm.

The soil is in organic matter, mineral compounds, living organisms; Every soil has its own genotype. Humus is the main and indispensable condition for the soil's cereal content; it is a complex organo-mineral complex. Under conditions of the best farming, in natural conditions, a positive balance of humus is maintained. The value of soils is determined by buffering, humus content, biological, agrochemical, agrophysical indicators.

The totality of natural and anthropogenic processes that lead to soil modification is called degradation, the quantity and quality also change, the fertile and economic significance of lands decreases. Soil fertility is sufficiently reduced (over the past 30-35 years, the humus content in soils has decreased by 35%). Due to the annual emissions into the atmosphere of Uzbekistan, which are approximately equal to 50 million tons.

The human factor negatively affects land resources, so it is necessary to take appropriate measures for the appropriate use of soils. The state must protect the land, developing measures that would prevent the destruction and pollution, depletion of land resources. In case of pollution of water and atmosphere, emergency measures are taken to clean up
emissions. By the way water resources are able to self-repair, the environment is more or less stabilized.

With land resources, everything is much more complicated. With the constant intake of harmful substances into the soil, it is not able to renew fertility. And then the already polluted soil itself becomes harmful to water and agricultural products. Several pathways for contaminants to enter the soil:
- With precipitation, gases enter the soil - oxides of sulfur and nitrogen, appearing in the atmosphere due to the operation of enterprises, diverging in atmospheric moisture;
- In dry weather, solid and liquid compounds usually settle, in the form of dust and aerosols;
- In dry weather, gases are absorbed by the earth, especially damp;
- Leaves through the stomata, various harmful compounds are absorbed. When the leaves fall, these compounds enter the soil.

Chemicals, as is customary - pesticides, are used in agriculture to protect plants from pests, ailments, weeds. The economic efficiency of pesticides has been proven. But, as a result of the toxicity of pesticides, the huge scale of their use (in the world - 2 million tons/year), the danger of their impact on the environment is growing.

4 Conclusions

In the 21st century, the civilization of the whole world has entered a stage of development, where in the first place are the problems of survival and self-preservation of both humanity and the environment, and the rational use of natural resources. This stage of the formation of mankind revealed the tasks activated by the multiplication of the Earth's population, the irrational use of natural resources. Such objections slow down the further development of the scientific and technological progress of mankind. Therefore, the most important condition for the formation of mankind is to take care of nature.

References

heterogeneity of cities, and the need to integrate social and ecological approaches, concepts, and theory. *BioScience, 50*(7), 571-584.


