

## SOME ASPECTS OF THE ECOLOGICAL CRISIS IN THE MODERN WORLD

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### Annotation

The article deals with the problems of the ecological crisis in the context of atmospheric air pollution, taking into account the development of scientific and technological progress. The article also analyzes pollutants that worsen the ecological situation and gives some recommendations for stabilizing the ecological situation in the modern world.

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## INTRODUCTION

For many centuries, the way of human life has slowly changed its appearance and, as a result, the types and levels of negative influences have changed little. This continued until the middle of the 19th century. - the beginning of an active growth of the impact of the human population on the environment. In the XX century. as a result of large-scale anthropogenic activity in many regions of the world, global pollution of the environment and vital sources with substances hazardous and harmful to human health has occurred. Zones of increased pollution of the biosphere emerged on Earth, which led to its partial and in some cases to complete regional degradation. These changes were largely driven by:

- High population growth rates on Earth (population explosion) and its urbanization;
- Growth in consumption and concentration of energy resources;
- Intensive development of industrial and agricultural production;
- Mass use of means of transport and a number of other processes.

Currently, among the various dangers threatening modern civilization and humanity is an ecological catastrophe with its many components, including global climate change and ozone layer depletion. They also include the problems of war and peace, the problems of natural disasters and technogenic security, the problems of energy, poverty, employment, food shortages, interethnic confrontation, religious intolerance, organized crime, terrorism, information security, health care, genetic security, drug addiction, degradation of the spiritual and moral sphere, etc.

## LITERARY RESEARCH

Despite the fact that scientific and technological progress contributed to the growth of the production of material goods, at the same time, as the earth civilization developed, various kinds of crisis phenomena began to appear, which later, as a rule, led to the emergence of various kinds of disasters, large human

losses and huge material damage. In recent decades, all industrialized countries have been characterized by an increase in dangers and threats in the natural and technogenic sphere. As the technosphere developed, man-made emergencies came to the fore, accounting for up to 75% of their total number. According to the UN, as a result of various emergencies, about 3 million people die every year in the world, and material losses range from 50 to 100 billion dollars a year. According to statistics, about 45% of accidents at nuclear power plants, over 60% of accidents at high-risk facilities, 80% of air crashes and disasters at sea, 90% of car accidents occur due to wrong actions of people (human factor).

Everywhere there is a process of pollution of the upper layers of the earth's surface, which occurs during the extraction of minerals, waste disposal, etc. Technogenic impact on the soil is accompanied by:

- rejection of arable lands, reduction of their fertility;
- excessive saturation of plants with toxic substances;
- violation of biocenoses due to the death of insects, birds, animals;
- Pollution of ground waters.

In work [1] it is noted that in the XX century. The course of human history has changed decisively and suddenly. The well-known Italian scientist and public figure, founder of the international non-governmental environmental organization "Club of Rome" A. Peccei wrote: "The essence of these changes is that in just a few decades, the period of slow development of mankind that lasted for many millennia has ended, and a new dynamic era has begun ... all these changes, in essence, relate precisely to the changed position of man himself on Earth. If earlier he was nothing more than one of the many living beings living on the planet, now man has turned it into his undivided empire.

According to the site [2], it is noted that it is not the first generation in a row that humanity lives with a constant and obsessive fear of environmental disasters. Deforestation, ocean pollution, ozone depletion - we have heard these phrases in our lives hundreds, if not thousands of times. Man has interacted with and influenced his environment since the very beginning of his species. However, this influence reached a truly tangible scale only in the eighteenth century, with the beginning of the industrial revolution. At that moment, man left the natural circulation of wildlife and began to dictate his own rules to the planet. The planet began to change, but we noticed it far from immediately - our civilization was busy with other things: the extraction of fuel (coal, gas, shale, oil), metal and other minerals. All these substances, bred in the natural way of nature and seized by man, returned to nature, but in a different form. It turned into a global pollution of soil, water and air and became the cause of the ecological crisis. And the intensity of this process continues to grow at a catastrophic pace, and the serious consequences of the ecological crisis will have to be eliminated by mankind in the near future.

The site [3] indicates that in the seventies of the last century, the world realized the need to urgently solve the problems of ecological balance on the planet. For the first time at a high political level, this topic was raised in 1972 in Stockholm, at the UN Conference on the Human Environment. It was recognized that environmental problems have taken on an alarming scale, and in order to solve them, it is necessary to unite the efforts of the entire world community. The Stockholm Conference has significantly intensified environmental action at all levels. However, it soon became clear that the degradation of the global biosphere is proceeding at a faster pace than the efforts being made. To analyze the reasons for this situation in 1987. The World Commission on Environment and Development produced the Our Common Future Report, also known as the Brundtland Report, which pioneered the term "sustainable development" - that is, development that preserves resources for future generations, while while meeting the needs of current generations. The Report identified overconsumption in developed countries and poverty in developing countries as one of the key causes of environmental degradation and showed the need for the world community to join forces and help the

developing world to save our planet.

According to Gorelov A.A. [4] The modern ecological crisis is the reverse side of scientific and technological progress. It was his highest achievements that were the starting point of the crisis and led to catastrophic environmental consequences on the planet. The atomic bomb was created in 1945. In 1954, the world's first nuclear power plant was built in Obninsk. In 1986, the largest man-made disaster in the history of the Earth occurred at the Chernobyl nuclear power plant, as a result of an attempt to make the atom work for itself. As a result of this accident, more radioactive substances were formed than during the bombing of Hiroshima and Nagasaki. Long-lived radionuclides entered the biosphere 66 times more than as a result of the explosion in Hiroshima. The Chernobyl accident affected more than 7 million people and will affect more people - the descendants who survived due to radioactive contamination.

The authors of [5] give an example of atmospheric air pollution caused by a military conflict that took place on the territory of Kuwait and nearby areas of the Persian Gulf after Operation Desert Storm in early 1991. Retreating from Kuwait, the Iraqi invaders blew up more than 500 oil drilling rigs with explosives. wells. A significant part of them flared up and burned for six months, poisoning a large area with harmful gases and soot. From wells that were not inflamed, oil gushed out, forming large lakes and flowing into the Persian Gulf. A large amount of oil spilled here from the blown up terminals and tankers. As a result, close to 1554 km<sup>2</sup> of the sea surface, 450 km of the coastline were covered with oil, where most of the birds, sea turtles, dugongs and other animals died. Flames burned 7.3 million liters of oil every day, which is equal to the volume of oil that the United States imports daily. Clouds of soot from fires rose to a height of up to 3 km and were carried by winds far beyond the borders of Kuwait - black rain fell in Saudi Arabia and Iran, black snow - in Kashmir (2,000 km from Kuwait). Air polluted with oil soot had a harmful effect on people's health, since the back contains many carcinogens.



**Fig.1. An illustration of the approach of a terrible dust-sand storm.**

Referring to the source data [6], we can give an example of atmospheric air pollution in the northern part of the territory of the People's Republic of China (Fig. 1). As shown in the figure, the moment is captured when a terrible dust-sand storm hits the area, which subsequently completely covered the area

with thick layers of mud (Fig. 2). As we can see, this situation may occur in other countries of the world.



**Fig.2. Covering the area with a thick layer of mud.**

## METHODOLOGY

The modern world is characterized by an accelerated pace of technological development and the introduction of high-performance technologies for the production of material goods, as well as the creation of comfortable living conditions for the population. Meanwhile, along with the introduction of high-performance technologies, the reverse sides of these achievements are beginning to emerge. In this regard, I would like to draw attention to the negative aspects of these advantages. In particular, one of the negative aspects of these achievements is the inability of mankind to obey the laws of the biosphere. It is these wrong actions committed by humanity that can lead to an unpredictable abyss, that is, Man wants to rule over Nature. This, in turn, can adversely affect the existence of the human population.

Historical examples of past civilizations testify to the focal nature of human impact on the environment. The situation at the present stage is quite different. The consumption of matter and energy in the past centers of civilization did not have a global and even more so cosmic scale. The application of the

achievements of scientific and technological progress in production activities has led to an increase in the development of technology and to global technogenic processes. The crowding of global anthropogenic processes and the growing power of their pressure on the planet and geocosmos are the most important characteristics of modern civilization. The emergence of an alternative to this method of interaction between civilization and the environment is hampered precisely by the fact that in the nature of a technogenic civilization there is no other possibility, except for the one that it implements. This model is typically focal in nature, but in terms of its scale it has grown into a planetary one.

It should be noted that the impact of man on nature was very strongly reflected in the context of the manifestation of an ecological catastrophe, which was accompanied and is accompanied by numerous disasters for mankind, fraught with global environmental tragedies in all spheres of human life. There is a process of soil contamination with harmful substances, and radioactive substances and dioxins are especially dangerous among them. Soils are degrading - they are losing humus, desertification and salinization of vast territories is expanding. Also, the problem of fresh water shortage began to grow, the pollution of the ocean, surface and ground waters with harmful substances, primarily oil products and oil itself, increased. Phytoplankton, the basis of the food chain in the ocean and an important source of oxygen, is dying. Atmospheric pollution continues, temperature inversions are observed. The global climate is changing; the El Niño phenomenon is becoming more and more catastrophic.

As you know, earthly nature endowed the human population with a number of benefits, which provides humanity with a variety of food, clothing, housing, fresh water, clean air, fertile soil for cultivating agricultural products and other benefits. In order for the human population to be able to survive, it must comply with all the rules and laws of the biosphere. Based on this, all measures should be taken so that each person should take care of the natural environment, take from it as much as necessary, and should not thoughtlessly treat all the riches of nature and should strive to exclude the occurrence of negative situations.

The most important task of the modern world is to reduce emissions that pollute the atmospheric air. Everyone knows that exhaust gases from cars contribute most to environmental pollution. Unfortunately, electric vehicles or hydrogen-powered vehicles have not yet become widespread, so the modern motorist can only handle their vehicles wisely. In this regard, I would like each driver to correctly tune the engine of his vehicle, using gas-balloon equipment and not starting the engine in idle mode. In addition, one should take into account the factor that walking is much more useful for human health than driving a vehicle to the destination.

## CONCLUSIONS

In our opinion, one of the most important tasks of our time is to resolve all aspects of the ecological disaster of the modern world, since it is ecological well-being that will be the foundation for the universal existence of the human population now and in the future. From here, all measures should be taken to solve this problem, which is global for all mankind. To solve this problem, it is necessary to unite all the efforts of the world community, since a single or several countries united in a single organization will not be able to mitigate, let alone resolve such a large-scale problem in the modern world.

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