

Problems of the Ecological Situation in the Modern World

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Abstract: At present, the issues of environmental problems in the modern world are becoming increasingly important for the peoples of all countries of the world, since this problem is common to all humanity. This article discusses some aspects of ecology related to atmospheric pollution due to the release of harmful and toxic substances into the environment, as well as acid rain worsening the environmental situation in the modern world. The article also discusses methods for analyzing the problem of environmental degradation, taking into account a deep understanding of the interdependence of man and the biosphere.

Keywords: UN conferences, greenhouse effect, sustainable development, environmental crisis, green economy, sustainable development, acid rain, sewage, crippled nature, social bomb.



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INTRODUCTION

Humanity in the process of life activity certainly influences various ecological systems. Examples of such, most often dangerous, impacts are draining swamps, cutting down forests, destroying the ozone layer, reversing river flows, dumping waste into the environment. In this way, man destroys the established connections in a stable system, which can lead to its destabilization, that is, to the deterioration of the ecological situation.

It should be noted that humanity has encountered ever-increasing contradictions between its growing needs and the inability of the biosphere to provide them without collapsing. As a result, socio-economic development has taken on the character of an accelerated movement towards a global ecological catastrophe, while not only the satisfaction of the vital needs and interests of future generations of people is threatened, but also the very possibility of their existence. An idea arose to resolve this contradiction on the way to such a civilizational development that does not destroy its natural basis, guaranteeing humanity the possibility of survival and further continuous, i.e. controlled and sustainable, development.

LITERARY RESEARCH

In the 60s of the twentieth century, it was believed that air pollution was characteristic only of large cities and industrial centers. However, it later became clear that harmful emissions could spread over huge distances. Air pollution is a global phenomenon. In addition, the release of harmful chemicals in one country can lead to a total deterioration of the environment in another.

According to experts, air pollution has currently exceeded all permissible limits. The concentration of harmful substances in the air exceeds medical standards in many cities by tens of times. Acid rain containing sulfur dioxide and nitrogen oxide, which are a consequence of the operation of thermal power plants and factories, are devastating to lakes and forests. The Chernobyl accident showed the environmental threat posed by accidents at nuclear power plants, especially since they are operated in 26 countries around the world.

Water is essential for human and ecosystem well-being, agriculture, energy and health. No one can deny that water is essential for life, and access to it is becoming increasingly difficult, especially for the poor and communities that survive on the margins of society with few resources and little political influence.

As is known, the main reason for the aggravation of the water problem of all humanity is urbanization. In order to adapt the Earth to its needs, humanity disrupts and pollutes the ecosystem, which leads to a worsening of the situation. The problem is also affected by population growth, especially in regions with the most unfavorable situation. The greenhouse effect also makes its contribution - water expanses evaporate without a trace from the surface of the planet. In addition, each person mindlessly uses water in much larger volumes than he needs.

The site [1] indicates that in the seventies of the last century the world realized the need for an urgent solution to 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 had reached a threatening scale and their solution required the unification of efforts of the entire world community. The Stockholm Conference significantly intensified environmental actions at all levels. However, it soon became clear that the degradation of the global biosphere was proceeding at a faster pace than the efforts being undertaken. To analyze the reasons for this situation, in 1987 the World Commission on Environment and Development prepared the Report "Our Common Future", also known as the Brundtland Report, in which the term "sustainable development" first appeared – that is, development that preserves resources for future generations, while meeting the needs of current generations. The Report named excessive consumption in developed countries and poverty in developing countries as key causes of environmental degradation and showed the need to unite the efforts of the world community and help the developing world in order to preserve our planet.

The materials [2] note that for many generations humanity has lived with a constant and obsessive fear of environmental disasters. Deforestation, ocean pollution, destruction of the ozone layer – we have heard these phrases hundreds, if not thousands, of times in our lives. Man has interacted with and influenced the environment around him since the very moment his species emerged. However, this influence only reached a truly tangible scale in the eighteenth century, with the beginning of the industrial revolution. At that moment, man left the natural cycle of living nature and began to dictate his own rules to the planet. The planet began to change, but we did not notice it right away – our civilization was busy with other things: the extraction of fuel (coal, gas, shale, oil), metal and other minerals. All these substances, naturally produced by nature and withdrawn by man, returned to nature, but in a different form. This resulted in global pollution of soil, water and air and became the cause of an environmental crisis. In addition, the intensity of this process continues to grow at a catastrophic rate, and humanity will have to eliminate the serious consequences of the ecological crisis in the near future.

According to the source [3], scientists warn that many species of animals and plants are disappearing. Our way of life and the way of life of animals depend on a complex ecosystem, and if species begin to disappear, this becomes a catalyst for irreversible processes that will negatively affect us in the future and already in the present. Even ecological disasters limited to a territory have planetary consequences. In nature, everything is interconnected. The existing diversity of species of living beings on the planet is not a whim of nature, but an urgent need. The disappearance of one species causes a disruption in the functioning of the entire ecosystem. A clear example is the campaign to exterminate sparrows in China in the late 1950s. As a result, the ecological balance was disturbed, and the proliferating insects destroyed not only crops, but also the foliage on the trees. This led to large-scale famine in the country and the death of more than 30 million people. The process of species disappearing and new ones appearing is constantly happening in nature. However, with human participation, the reduction of species diversity is occurring at a catastrophic rate. Since the beginning of the 17th century, more than 800 species of plants and animals have disappeared from the planet.

According to the source [4], in June 2012, 20 years after the Conference on Environment and Development in Rio de Janeiro, countries met again at the Rio+20 summit, where they discussed the emerging issues of the “green” economy, sustainable development and poverty eradication. Rio+20 also gave people the opportunity to imagine what kind of world we would like to see in 20 years. The leaders of countries gathered at the Rio+20 Conference, together with thousands of representatives of the private sector, NGOs and other groups, jointly developed a strategy for reducing poverty, promoting social justice and ensuring environmental protection measures taking into account all factors. Rio+20 is an important milestone in a series of major UN conferences, the central one of which was the Earth Summit – the UN Conference on Environment and Development in 1992, which put sustainable development issues at the top of the agenda of the United Nations and the international community.

Based on the official UN website [5], it can be stated that the methods for solving many problems in the field of sustainable development, including challenges related to urban development, energy, water, food and ecosystems, are known. At Rio+20, countries tried to find ways to implement them through the implementation of the following measures:

- Transition to a more environmentally friendly economy, with a special focus on eradicating poverty.
- Protecting the oceans from overfishing, destruction of marine ecosystems and the negative impact of climate change.
- Rational arrangement of cities and creation of more favorable conditions for life in them.
- Wider use of renewable energy sources, which will significantly reduce carbon emissions and the scale of indoor and outdoor pollution, while promoting economic growth.
- Better forest management offers a range of benefits – halving deforestation by 2030 would avoid an estimated US\$3.7 trillion in greenhouse gas losses from climate change, not even counting the jobs and income, biodiversity, clean water and medicines forests provide.
- Better conservation and management of water resources to support development and protect against desertification.

Despite the importance of the Earth Summits [6], critics point out that many of the agreements reached in Rio de Janeiro have not been implemented on fundamental issues such as poverty alleviation and environmental cleanup. UNEP's fifth Global Environment Outlook report concludes that only four of the 90 most important goals set for sustainable development (out of 500 internationally recognized agreements) have been achieved. Over the past 20 years, climate gas emissions have increased dramatically, vast areas of tropical forests have disappeared, and

hundreds of animal species have become extinct. There is also no proper monitoring of what is happening in the world's oceans, and there is no agreement yet on the protection of forests. Of course, all the important issues facing humanity are reflected in the document, but there are no significant efforts to solve them.

Forests are dying out en masse on the planet. Firstly, because of logging for the use of timber in production; secondly, because of the destruction of the normal habitat of plants. The main threat to trees and other forest plants is acid rain, which falls due to the emission of sulfur dioxide by power plants. These emissions have the ability to be transported over long distances from the immediate site of emission. In the last 20 years alone, earthlings have lost about 200 million hectares of valuable forests. Of particular danger is the depletion of tropical forests, which are rightly, considered the lungs of the planet. Forests produce fresh oxygen and help regulate temperature and precipitation. Currently, forests occupy 30% of the earth.

According to Interfax, citing materials from a report by Brazil's Space Research Agency (INPE), the rate of forest loss in the Amazon in 2021 reached a 15-year high. Deforestation of the Amazon rainforest has increased by 22% over the past year and reached a 15-year record. According to the agency's report, about 13,235 square kilometers of forest were lost between August 1, 2020 and July 31, 2021, the highest level since 2006. The Amazon rainforest is home to about three million different species of plants and animals, as well as nearly a million indigenous people. They are also essential to reducing the rate of global warming worldwide.

METHODOLOGY

The ecological drama alone is a bomb that is as dangerous for humanity as a nuclear one. The situation is so serious that unprecedented efforts, ideas and material resources are needed to prevent the coming catastrophe. In general, it is shortsighted to underestimate the role of the social bomb, especially in developing countries, where the majority of the population lives and where more than a quarter of a million people are added every day. Such a potential for human disasters is accumulating here, the explosion of which can also have irreversible consequences for the entire planet.

It should be especially noted that clean air around populated areas is almost completely disappearing, rivers are turning into sewers, there are piles of garbage, dumps, crippled nature everywhere - this is the striking picture of the insane industrialization of the modern world. Air pollution is the most serious environmental problem of modern cities, it causes significant damage to the health of city dwellers and green spaces. Above large cities, the atmosphere contains 10 times more aerosols and 25 times more gases. At the same time, 60-70% of gas pollution is caused by motor vehicles. In general, motor vehicle emissions are significantly more toxic than emissions produced by stationary sources. Along with carbon monoxide, nitrogen oxides and soot (in diesel vehicles), a running car releases more than 200 substances and compounds with toxic effects into the environment. Among them, heavy metal compounds and especially benzopyrene, which has a pronounced carcinogenic effect, should be singled out.

The process of air pollution under the influence of anthropogenic factors in the modern world is becoming one of the global environmental problems, the consequences of which will negatively affect the health of the population of all countries on planet Earth. This problem is relevant today for all regions where the energy, mining, metallurgy, chemical and other sectors of the economy are intensively developing. Increasing air pollution is the main cause of the development of various diseases throughout the world. Because of air pollution with small particles of aerosols, ash and dust, it is accompanied by a negative impact on the life of humans, animals, plants, soil cover and water basins. UN Special Rapporteur on the Environment David Boyd stated in his annual report in 2019 that 7 million people die annually from the effects of air pollution.

The concept of "sustainable development" is often considered to be closely related to ecology, mainly with ensuring environmental safety, environmental protection, which was demonstrated at the UN Conference in Rio de Janeiro. Many environmentalists even believe that everything that is done in the field of ecology is fully aimed at ensuring the goals of sustainable development. Meanwhile, this is far from true and many environmental measures during their implementation in the local ecosystem improved the environmental situation, worsening it on a global scale. However, the transition to sustainable development is possible only on a planetary scale and therefore the global goals and imperatives of sustainable development - the preservation of the biosphere and the survival of humanity in it are more of a priority for the transition to this type of development than local goals and requirements. With the beginning of the implementation of the sustainable development strategy, environmental problems at all levels should be viewed in a completely different way than before.

UNCED demonstrated awareness of the harmfulness of the traditional path of development, which was characterized as unsustainable development, fraught with crises, catastrophes, omnicide (death of all living things). The transition to a new model (strategy) of development, called the sustainable development model, seems to be a natural reaction of the world community striving for its survival and further development.

According to UNCED, it became clear that if environmental problems are not resolved, all the achievements of civilization would be under threat of destruction. They may disappear because all of humanity will be plunged into a planetary ecological catastrophe, since the wealth of nature, the self-healing capabilities of the biosphere will be completely exhausted. It became clear that it is necessary to radically change the model of human development and even the very way of life of each person, to carry out the most radical civilizational transformations in the history of humanity, which would ensure its survival.

The essence of the transition to sustainable development lies in the survival of humanity and the simultaneous preservation of the biosphere, in other words, in the preservation of the biosphere and civilization. However, in order to survive, to be preserved as a unique biological species, man must radically transform all spheres of his activity in the direction of a significant reduction in pressure on the biosphere - almost by an order of magnitude. This is a very complex task, and its implementation largely contradicts everything that is characteristic of the model of unsustainable or economy-centric development, which began with the transition of humanity to a productive economy. The ecological failure of this model was especially clearly demonstrated by the 20th century.

The process of transition to sustainable development is global, and a single country cannot take this path while other countries remain within the framework of the old development model. That is why it is important to use the spontaneously begun process of globalization and direct, first, its economic, environmental and social components to the implementation of the goals of sustainable development. In this way, the process of globalization, which is unfolding on the initiative of post-industrial states, transnational corporations and global organizations, would facilitate the transition of the world community not to a post-industrial one, but to the sustainable development of the entire civilization.

CONCLUSION

In our opinion, the transition to sustainable development is possible only on a global scale, in a coordinated and coherent mode of all security objects (and subjects as well), which means that any decisions and actions to ensure the security of any object should not contradict the international-global imperatives of sustainable development. This applies not only to environmental security, but also to any type of security - economic, informational, social, etc. It also follows that in the old model - the model of unsustainable development - the security of either

all of humanity or an individual state cannot be ensured, regardless of the type of its provision conceived (American, European, Chinese, etc.). In the near future, the issue of ensuring the environmental security of countries, regions, continents and the entire Earth as a whole depends not only on a single country or on regions, but also on whether the entire world community carries out the transition to sustainable development.

In conclusion, we would like to note that the growing severity of threats posed to human civilization by one or another global problem, including an ecological catastrophe at the present stage, is undeniable. At the same time, no state, no matter how powerful it is, nor a group of states is able to cope with these problems on their own. Only the interaction of all countries in a peaceful environment, only the awareness of universal interdependence and the promotion of universal human tasks to the forefront will allow peoples to gain confidence in the future, prevent social and ecological catastrophes, and finally, simply survive.

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