
УДК 504.062

Smagina A.R., student in gr. XT-201, Zhdanova E.A., student in gr. XT-202
(BSTU)

Language Advisor – Ozerova E.A., senior lecturer (BSTU)
Belgorod

RATIONAL USE OF NATURAL RESOURCES IN THE RUSSIAN FEDERATION

Nature is a human habitat and a source of all the benefits that are necessary for him to live and work. Man is a part of nature, its "child", he can produce only using its resources, and live only in those natural conditions (temperature, pressure, humidity, atmospheric composition, etc.) to which he is adapted, thanks to his health. For a long time, man has been trying to conquer nature, but suddenly found himself on the verge of an ecological catastrophe.

"Greenhouse effect", "ozone hole", "acid rain", lack of clean water and food, raw materials and energy crises, pollution of the oceans – humanity has had to face all these problems at the moment [1]. Because of all these problems, people can simply die.

According to many studies, the most important problem at this moment is environmental protection and rational use of natural resources. Thanks only to environmental knowledge, it is possible to solve these serious problems.

Environmental quality and human health.

The mental and physical state of a person, as well as his mood, activity during the day depend directly on health. When health is on the decline, only then does a person realize how important it is at the moment.

At such moments, the dependence of two factors is important:

The higher the level of use of natural resources, the lower the level of environmental pollution. Natural resources, being out of place, pollute the environment in large quantities with various substances that affect nature. Many substances located in their deposits, such as sulfur, lead, mercury, do not cause much harm. But if they have to be extracted from the deposit, then the production waste that remains after that is very harmful, and is also a source of pollution for the environment [2].

Air quality, as well as the quality of water and food consumed, for example, the level of noise are the most important factors for good health and human life. Also, to monitor the content of pollutants that can lead to an increase in diseases, the MPC standard was created, which is established by the law on sanitary rules.

MPC is the maximum permissible concentration of various types of pollutants in the air, water or soil, the excess of which has a harmful effect on

people, plants and animals. Unfortunately, on the territory of the Russian Federation, namely in almost 100 cities, the MPC of various harmful substances exceeds the norm by more than 10 times.

One cubic centimeter of urban air contains up to 100 thousand particles, most of which are dangerous to human health. For example, exhaust from automobile engines contains a large number of substances (carbon monoxide, nitrogen oxides, soot, benzapyrene, etc.), most of which can cause various diseases, up to the most serious, which are difficult to treat (lung cancer) [3, 4].

Due to the fact that water for domestic needs in the Russian Federation is taken mainly from surface sources (rivers, lakes, reservoirs), it is necessary to clean up various wastes, as well as disinfect them before feeding into the water supply system. The main methods for water purification are chlorination and ozonation. Developed countries have long switched to ozonation since this method of disinfection is the most harmless. But it is considered the most expensive, so chlorination is still used in our country. However, this can lead to the formation of dioxin in drinking water - one of the most harmful substances synthesized by humans. Even in very small doses, it causes diseases, up to cancer and gene mutations. If we conduct research and summarize all the consequences of the consumption of polluted water, then we can understand that it is a direct, and maybe an indirect cause of 70-80% of diseases. In recent years, the increased natural background radiation, which should usually be about 15 $\mu\text{r/h}$, creates an increasing danger to human health. This is largely due to the consequences of nuclear tests, accidents at nuclear facilities, violations of the rules for the collection and storage of radioactive waste by industrial enterprises and medical institutions using radioactive isotopes, etc.

Noise is also one of the causes of nervous diseases, hearing loss and even leukocytes, which contribute to the development of vascular diseases. According to many studies, noise reduces human life expectancy in large cities by 8-12 years. In ancient China, there was even a sound execution for blasphemy.

The noise level, which will exceed 80-100 dB, is harmful to health. A loud conversation exceeds 60 dB, and when performed by an orchestra of modern music, the sound power can reach 110-120 dB.

Scientific and technical aspects.

Due to the rapid scientific and technological growth, the environmental situation in the world has deteriorated, as technological progress has increased the human ability to exploit natural resources and influence the environment. Therefore, conducting research, many scientists come to the conclusion that it is important to delay scientific and technological development and even return to the pre-industrial state. However, this is unrealistic and to some extent meaningless, since there is no need for this, since the basis of the current situation is not progress in itself, but its inhumane orientation.

In the course of their historical development, people have faced environmental crises a large number of times, which are characterized by a discrepancy between the needs of society and the possibilities of the environment.

The rapid development of society and industries in the middle of the century led to an ecological crisis of mass destruction of trees and other plant and animal resources, which led to the industrial revolution, which focused on the widespread use of mineral resources.

But if in past epochs humanity could afford to get out of difficult situations created for millennia, then the modern crisis requires urgent measures, since in another case by the middle of the next century it will turn into an environmental catastrophe in which all the processes surrounding us will get out of human control and become irreversible.

Scientific and technological progress is noted not only in industry, but also in agriculture, where it is accompanied by withering and pollution of natural resources [5]. Most scientists associate this with the use of mineral fertilizers without taking into account the requirements of environmental legislation and strict compliance with the terms of application of these fertilizers, which leads to contamination of food, soil, and so on.

The accumulation of waste from large livestock farms, their ingress into open reservoirs and groundwater has the same severe consequences. Fertilizing the soil with manure in large quantities, as well as mineral nitrogen fertilizers, leads to nitrite poisoning.

The large use of pesticides poses a particular danger to the environment and human health.

Finally, agricultural machinery that has been developed without taking into account environmental requirements also has a great impact on the environment. Plowing with plows of dry light soil contributes to the occurrence of dust storms.

Every decade, all these dangers increase, because due to the law of reducing the energy efficiency of environmental management, it is necessary to increase the amount of fertilizers, pesticides and machine power costs by 15 times in order to double the yield.

The construction of the noosphere is possible only with the interconnected development of technology and ecological culture.

First of all, the greening of scientific progress should be manifested in the study of the safe limits of anthropogenic pressure of society on the environment, in the widespread use of clean and inexhaustible energy sources, in the introduction of resource-saving and waste-free technologies that allow the use of secondary resources.

So, environmental management and the problems of its rationalization have many aspects. The most important of them are sanitary, scientific and technical, economic and environmental. Each of these aspects is connected by dependencies with all the others, and therefore this problem can be solved only by mutually solving each of its constituent aspects.

Without the provision of financial resources and the use of material incentives in the field of rational nature management, that is, without solving economic issues, each of the issues cannot be solved, whether it is the creation and maintenance of nature reserves or the development/implementation of waste-free technologies in industries in many cities.

Referenses

1. Доржу М.С. Традиционное природопользование: изученность проблемы, определение и методы исследования // Инновации и инвестиции. 2014. №11. С. 203 – 205
2. Смирнова, Т.С. Минерально-сырьевые ресурсы РФ и мировой опыт природопользования / Вахидова Л.М., Мирабидинов Ш.Н., Молотов С.А. // Вестник ПНИПУ. Геология. Нефтегазовое и горное дело. – 2013. – № 7. – С. 7–17.
3. Бабак, Н.А. Геоэкологический резерв промышленных минеральных отходов / Н.А. Бабак // Безопасность жизнедеятельности. – 2018. – №10 (214). – С. 57 – 64.
4. Андросова Н. К. (2013). Зарубежный опыт в сфере обращения с твердыми бытовыми отходами // Охрана окружающей среды и природопользование, № 4, с. 37–41
5. Возможность применения сточных вод в мелиорации с целью рационального природопользования / Сексенбаева К.Г, Тарасова М.В.// Агрометеорология и сельское хозяйство: история, значение и перспективы: Материалы Национальной (Всероссийской) научно-практической конференции, посвященной 100-летию со дня образования учебной лаборатории агрометеорологии. – Омск, 2016, с. 180-185

Information about the authors:

Zhdanova Elizaveta Andreevna, student in gr. XT-202, BSTU, 308012, Belgorod, 46 Kostyukova St, zhdanova_elan@edu.bstu.ru
Smagina Anna Romanovna, student in gr. XT-201, BSTU, 308012, Belgorod, 46 Kostyukova St, smagina_anro@edu.bstu.ru
Ozerova Elena Alekseevna, senior lecturer, BSTU, 308012, Belgorod, 46 Kostyukova St, irinabelovod@mail.ru