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**IMPACT OF PRODUCTION PROCESSES ON THE  
ECOLOGICAL BALANCE**

**Abstract:** This article discusses the impact of production processes on the ecological balance. The author made a proposal regarding the regulation of ecological balance.

**Key words:** ecology, ecological balance, production, chemical poisons

At all stages of its development, man was closely connected with the outside world. But since the emergence of a highly industrialized society, the dangerous human intervention in nature has increased dramatically, the scope of this interference has expanded, it has become more diverse and now threatens to become a global danger to humanity. The consumption of non-renewable raw materials is increasing, more and more arable land is leaving the economy, so cities and factories are being built on them. Man has to intervene more and more in the economy of the biosphere - that part of our planet in which life exists. The Earth's biosphere is currently undergoing increasing anthropogenic impact. At the same time, several of the most significant processes can be distinguished, none of which improves the ecological situation on the planet.

The most large-scale and significant is the chemical pollution of the environment by substances of a chemical nature unusual for it. Among them are gaseous and aerosol pollutants of industrial and domestic origin. The accumulation of carbon dioxide in the atmosphere is also progressing. Further development of this process will strengthen the undesirable trend towards an increase in the average annual temperature on the planet. Environmentalists are also alarmed by the ongoing pollution of the World Ocean with oil and oil products, which has already reached 1/5 of its total surface. Oil pollution of this size can cause significant disruption of gas and water exchange between the

hydrosphere and the atmosphere. There is no doubt about the importance of chemical contamination of the soil with pesticides and its increased acidity, leading to the collapse of the ecosystem. In general, all the considered factors, which can be attributed to the polluting effect, have a significant impact on the processes occurring in the biosphere.

Man has been polluting the atmosphere for thousands of years, but the consequences of the use of fire, which he used throughout this period, were insignificant. I had to put up with the fact that the smoke interfered with breathing and that soot lay in a black cover on the ceiling and walls of the dwelling. The resulting heat was more important to a person than clean air and unfinished cave walls. This initial air pollution was not a problem, for people then lived in small groups, occupying an immeasurably vast untouched natural environment. And even a significant concentration of people in a relatively small area, as was the case in classical antiquity, was not yet accompanied by serious consequences.

This was the case until the beginning of the nineteenth century. Only in the last hundred years has the development of industry "gifted" us with such production processes, the consequences of which at first man could not yet imagine. Million-strong cities arose, the growth of which cannot be stopped. All this is the result of great inventions and conquests of man.

Basically, there are three main sources of air pollution: industry, domestic boilers, transport. The share of each of these sources in total air pollution varies greatly from place to place. It is now generally accepted that industrial production pollutes the air the most. Sources of pollution - thermal power plants, which, together with smoke, emit sulfur dioxide and carbon dioxide into the air; metallurgical enterprises, especially non-ferrous metallurgy, which emit nitrogen oxides, hydrogen sulfide, chlorine, fluorine, ammonia, phosphorus compounds, particles and compounds of mercury and arsenic into the air; chemical and cement plants. Harmful gases enter the air as a result of fuel

combustion for industrial needs, home heating, transport, combustion and processing of household and industrial waste. Atmospheric pollutants are divided into primary, entering directly into the atmosphere, and secondary, resulting from the transformation of the latter. So, sulfur dioxide entering the atmosphere is oxidized to sulfuric anhydride, which interacts with water vapor and forms droplets of sulfuric acid. When sulfuric anhydride reacts with ammonia, ammonium sulfate crystals are formed. Similarly, as a result of chemical, photochemical, physico-chemical reactions between pollutants and atmospheric components, other secondary signs are formed. The main source of pyrogenic pollution on the planet are thermal power plants, metallurgical and chemical enterprises, boiler plants, which consume more than 70% of the annually produced solid and liquid fuels. The main harmful impurities of pyrogenic origin are the following:

a) Carbon monoxide. It is obtained by incomplete combustion of carbonaceous substances. It enters the air as a result of burning solid waste, with exhaust gases and emissions from industrial enterprises. At least 1250 million tons of this gas enters the atmosphere every year. Carbon monoxide is a compound that actively reacts with the constituent parts of the atmosphere and contributes to an increase in the temperature on the planet and the creation of a greenhouse effect.

b) Sulfur dioxide. It is emitted during the combustion of sulfur-containing fuel or the processing of sulfurous ores (up to 170 million tons per year). Part of the sulfur compounds is released during the combustion of organic residues in mining dumps. In the United States alone, the total amount of sulfur dioxide emitted into the atmosphere amounted to 65% of the global emission.

Any body of water or water source is associated with its external environment. It is influenced by the conditions for the formation of surface or underground water runoff, various natural phenomena, industry, industrial and

municipal construction, transport, economic and domestic human activities. The consequence of these influences is the introduction of new, unusual substances into the aquatic environment - pollutants that degrade water quality. Pollution entering the aquatic environment is classified in different ways, depending on the approaches, criteria and tasks. So, usually allocate chemical, physical and biological pollution. Chemical pollution is a change in the natural chemical properties of water due to an increase in the content of harmful impurities in it, both inorganic (mineral salts, acids, alkalis, clay particles) and organic nature (oil and oil products, organic residues, surfactants, pesticides).

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