



PROBLEM OF AIR POLLUTION IN CITIES

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ABSTRACT

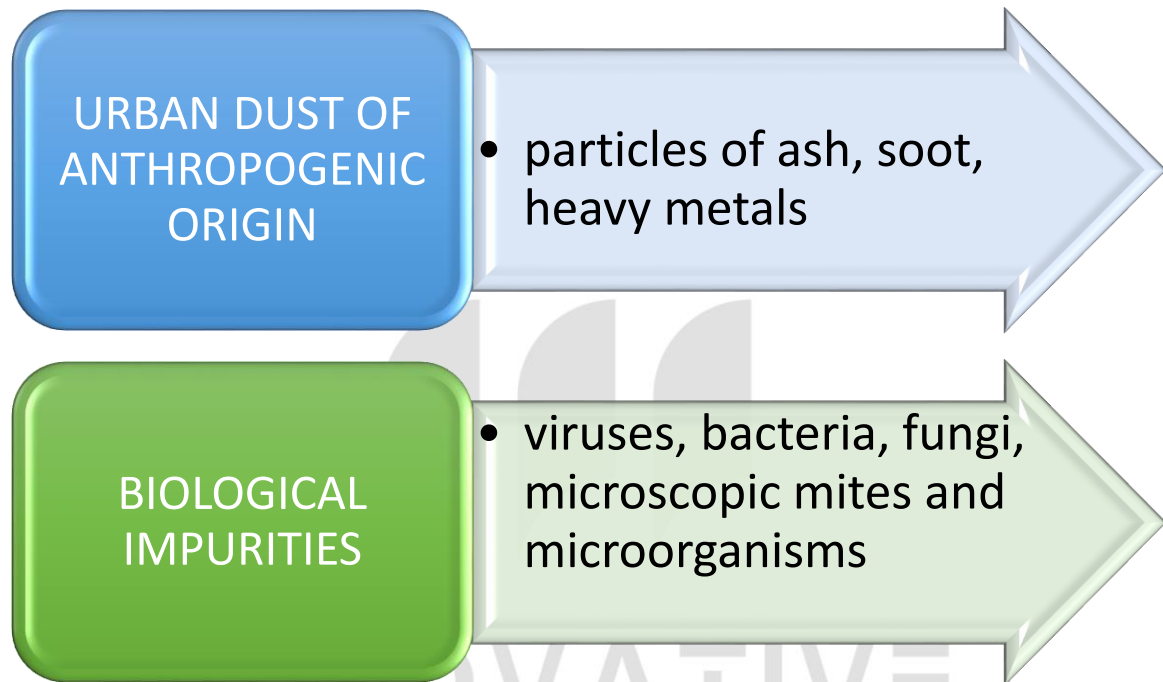
The article discusses the main environmental problems such as air pollution in cities, at the moment the existence of cities cannot be imagined without human anthropogenic impact. Humanity actively influences the state of the environment. The authors analyze the problem of urban pollution. The city is one of the types of social and spatial organization of the population, emerging and developing on the basis of the concentration of industrial, scientific, cultural, administrative and other functions.

In the modern world, most people prefer to live in huge megalopolises, which over time grow and form an artificial environment on their territory. Living in huge cities is filled with many different factors, but we should not forget that life in such an environment is very far from nature. In the process of urbanization, humanity has learned to compensate for the lack of a natural habitat in various ways, but gradually everything that they created for their own benefit becomes the cause of environmental problems. The consequence of such actions is an unbearable burden on the environment. The processes of photosynthesis and other processes that promote purification, known to everyone from school days, simply do not keep up with the rate of pollution, and the lack of funds for the implementation of environmental measures leads to large-scale environmental problems. They are especially acute in developing countries, where there is a high level of harmful substances in the atmosphere, poor water quality, increased noise levels, etc. Harmful emissions into the atmosphere, pollution of water bodies and soils with waste are global environmental problems that require an urgent solution. In this regard, the problem of resolving the pollution of cities with harmful waste comes to the fore.

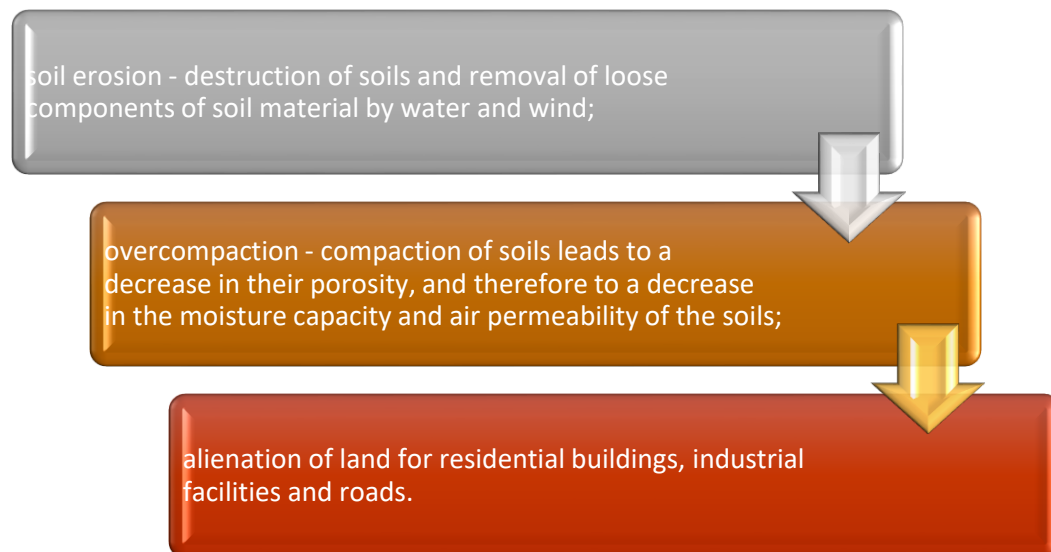
An important component of the urban pollution problem is air pollution, which in turn is considered multifaceted. It affects several aspects:



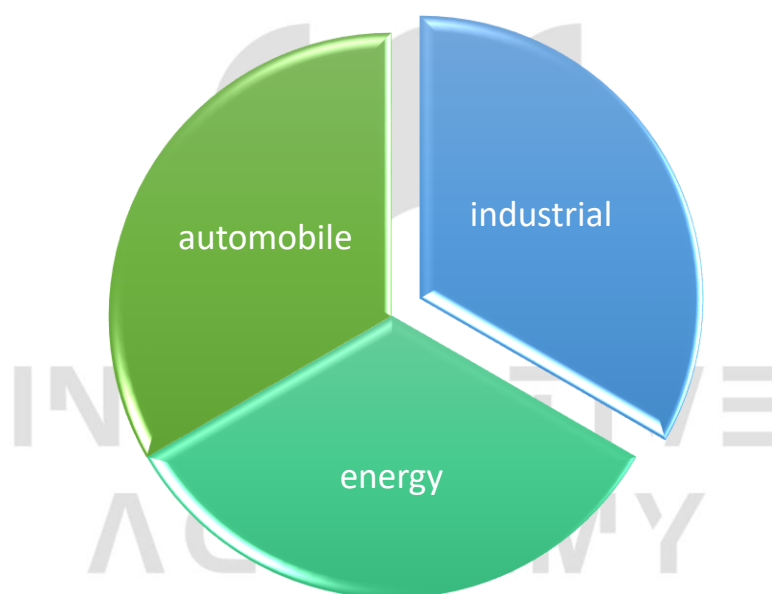
The main sources of urban air pollution are industrial production, motor transport and other types of human activity, which are accompanied by the release of various pollutants into the atmospheric air, for example:



The soil of the urban environment is subject to degradation, alienation and pollution as a result of urban development and economic activities. Degradation of urban soils is the destruction of the fertile soil layer, partial or complete destruction of the soil cover, accompanied by deterioration of its physical and biological condition, and a decrease in fertility [4]. Degradation processes include:



As a result of soil pollution due to anthropogenic activity, their chemical composition changes, which causes a number of negative consequences, including the loss of the ability to bioproductivity and self-purification. It is worth referring to the Law of the Republic of Uzbekistan "On the Protection of Atmospheric Air" [1], according to which atmospheric air is a vital component of the environment, an integral part of the habitat of humans, plants and animals. Thus, based on a small analysis of this regulatory act, we can conclude that atmospheric air is a primary component, the protection of which from pollution is a necessary and important task. It should be noted that there can be several causes of air pollution, for example, natural and artificial. Natural air pollution is caused by natural processes, for example, volcanic activity, smoke from forest fires, dust storms. Artificial (anthropogenic) sources of air pollution include industrial and thermal power plants, transport, home heating systems, agriculture, household waste. Naturally, anthropogenic pollution significantly exceeds natural air pollution in scale. Some authors distinguish the following classification of types of pollution:



Automobile pollution is associated with automobile exhaust gases. Automobile transport forms specific zones in populated areas and cities, within the boundaries of which sanitary and hygienic standards for air pollution are exceeded several times [3]. Such standards are established by the legislation of the Republic of Uzbekistan in the field of environmental protection, taking into account the background level of air pollution. It should be noted that with a long stay in these zones, a general weakening of the body is possible - immunodeficiency. Emissions of pollutants are also the cause of various diseases. All this leads to the fact that the problem of the negative impact of vehicle emissions on the environment and public health has become one of the most acute environmental problems of cities [4]. Exhaust gases contain a huge mixture of substances that have a detrimental effect on public health. Of course, with population growth, the number of cars increases. As a result, the concentration of pollutants in the atmospheric air increases. However, there is no solution to this problem yet. Recently, more and more electric cars have appeared. They do not pollute

the environment, since they do not use gasoline, and therefore do not produce exhaust gases. However, another problem immediately arises - the price of this type of transport, which is several times higher than usual. Thus, only a certain circle of wealthy people can purchase such electric cars, which is significantly smaller than the rest of the population, which means that we should say that the problem still remains unresolved and is on the agenda. The next type of pollution is associated with large-scale energy consumption in cities - energy pollution. Energy facilities are among the most dangerous in terms of their impact on the environment and, accordingly, have an intense impact on the biosphere. Energy is consumed in various forms. For example, fossil fuels are widely used - coal, oil products and natural gas. This in itself determines the state of pollution of the urban environment with combustion products.

Industrial pollution is formed during the work of various industries: metallurgy, chemical industry and others. Industrial enterprises emit a huge amount of pollutants into the atmosphere, which directly affect the health of the population, which subsequently leads to various serious diseases. Intensive development of the chemical, oil refining, microbiological industries contributes to environmental pollution with substances that have allergenic properties. In addition, a number of chemical ingredients irritate and damage the mucous membrane of the upper respiratory tract and bronchi [2].

Permissible concentrations in the atmospheric air of certain pollutants have been established [4]. MAC - such concentrations that do not have a direct or indirect effect on humans and their offspring, do not worsen their performance, well-being, as well as sanitary and living conditions of people. However, based on the number of environmental problems today, we can conclude that permissible concentration indicators are not always observed.

Air pollution with specific substances depends on the type of industry developed in the city. If a large city houses enterprise of several industries, then a very high level of air pollution is created. Since the era of post-industrialization is coming, which is accompanied by the development of large-scale chemistry, then the purification of industrial emissions from harmful gases is of colossal and primary importance. In order to protect the atmospheric air, it is necessary to carry out architectural planning measures during the development of cities and measures for their improvement. It is necessary that the territory of cities be divided into residential and industrial areas with a protective zone between them. At the same time, the wind direction should be from residential areas to industrial ones.

According to the Republic of Uzbekistan "On the Protection of Atmospheric Air" [1], industrial control over the protection of atmospheric air is carried out by legal entities, individual entrepreneurs who have sources of harmful chemical, biological and physical impacts on atmospheric air. Also, when implementing measures to protect atmospheric air, the fight against soil dust is of great importance, which consists of the following actions: streets and squares must have a smooth surface, for example, asphalt, all free areas must be landscaped. Of great importance are the machines that constantly monitor the concentration of pollution at certain points and transmit this information to the corresponding automated control systems. At this stage of development, special mathematical models have been developed that allow, based on data on the degree of air pollution and weather forecasters' information, to predict the possibility of smog, photochemical fog, the expected concentration of carbon monoxide on the main highways of the city, etc. [5]. The city provides people with work and

maximum conveniences, that is, comfort, ease of life, density of communications and availability of satisfaction of important needs. However, the most important needs of a person are not satisfied in the city - these are clean air, clean water, silence and primary food products. If environmental protection measures are not taken in time, then the environmental problems of the city develop into global, world problems, posing a threat to the lives of present and future generations of people and all living things on Earth. Thus, it is concluded that atmospheric air is the most important component of the natural environment, therefore, its protection should be a priority task not only for the state, but also for society as a whole.

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