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ECOLOGY OF URBAN AREAS OF KAZAKHSTAN

Abstract: *the article considers the ecological state of urban areas. Examples of specific cities in Kazakhstan are given. Ways to eliminate environmental problems of cities are analyzed.*

Keywords: *urban ecology, sources of pollution, emissions, automobile pollution, solid household waste.*

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ЭКОЛОГИЯ ГОРОДСКИХ ТЕРРИТОРИИ КАЗАХСТАНА

Аннотация: *в статье рассматривается экологическое состояние городских территорий. Приводятся примеры конкретных городов Казахстана. Анализируются пути устранения экологических проблем городов.*

Ключевые слова: *городская экология, источники загрязнения, выбросы, автомобильное загрязнение, твердо бытовые отходы.*

The problem of the ecology of urban areas currently requires more and more attention. According to experts, more than half of humanity already lives in cities, and by 2050 the urban population will be 86% in developed and 67% in less developed regions of the world. In many economically developed countries, the share of urban residents is already 75-80% of the population [1, p. 127]. In Kazakhstan, the share of the urban population in 2019 was 56.55% and this indicator will only grow further.

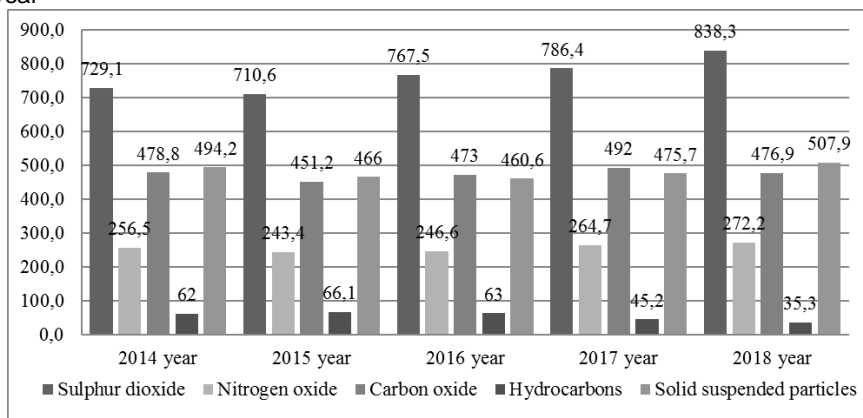
Due to the high level of urbanization, the state of the environment is deteriorating. Cities account for about 80% of all air emissions and 3/4 of the total amount of pollution. Almost all cities in the world annually emit up to 3 billion tons of solid waste, more than 500 billion m³ of industrial and household waste, and about 1 billion tons of aerosols. At the same time, the polluting and thermal effects of large cities and agglomerations can be traced at a distance of up to 50 km from them. Thus, cities change natural landscapes, thus forming a special anthropogenic landscape [2, p. 25].

As for Kazakhstan, over the past five years, emissions from the most common air pollutants from stationary sources have increased, as we can see from table 1

Figure 1

Emissions of pollutants into the air from stationary sources in Kazakhstan, t /

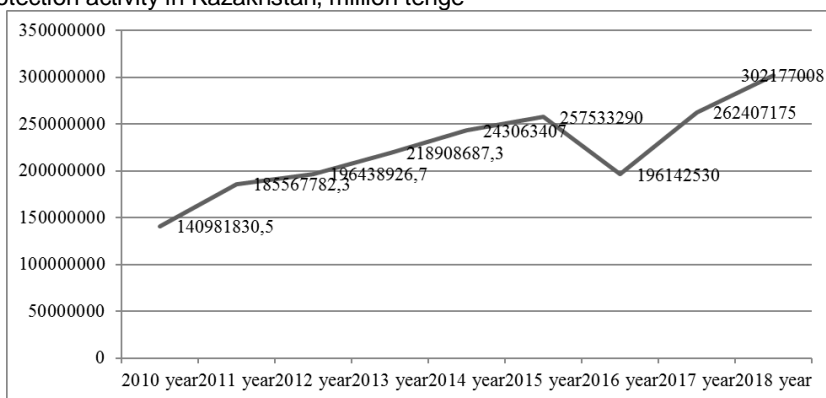
year



It is also worth noting that in comparison with 2010, the volume of expenditures on environmental protection in Kazakhstan also increased in 2018

Figure 1

Total expenditure on environmental protection by type of environmental protection activity in Kazakhstan, million tenge



In the cities of Kazakhstan, the main contribution to air pollution is made by road transport. The poor quality of the fuel used and the lack of filters for cleaning exhaust gases, the poor condition of the rolling stock of car farms, the increase in the number of cars in cities, leads to the fact that a huge amount of carbon monoxide, lead, etc. is released into the atmosphere.

In fifteen cities of the Republic, the level of air pollution by harmful emissions has been increased. These cities include Zyryanovsk, Aktau, Temirtau, Taraz, Petropavlovsk, Shymkent, and Almaty. The high level of air pollution in cities is the

result of outdated production technologies, inefficient treatment facilities, and poor quality of the fuel used. The main pollutants are dust, sulfur dioxide, nitrogen dioxide, hydrocarbons, phenol, lead, hydrogen sulfide, hydrogen chloride, ammonia, etc.

Each of these substances has its own negative impact on health. Dust, for example, causes diseases of the respiratory system, liver, and blood. The most dusty cities in Kazakhstan are Aktau, Atyrau, Zhezkazgan, Semipalatinsk, and Ust-Kamenogorsk. Disorders of the nervous system can be caused by an increased content of carbon monoxide in the air. At the same time, headaches occur, memory decreases, and sleep is disturbed. High carbon monoxide content is observed in such cities as Almaty, Aktobe, Karaganda, Kostanay, Petropavlovsk, Pavlodar, Semipalatinsk and some others. If there are several types of pollutants in the air, which usually happens, the negative effect is even more amplified. This affects the immune system, which often leads to cancer [3, p. 110].

A separate group of problems in cities is related to household and other waste and their disposal. In 2018, 4.3 million tons of solid household waste were generated on the territory of the Republic of Kazakhstan, which is 100 thousand tons less than in 2017 - 4.4 million. The share of solid waste recycling and disposal from the total volume in 2018 was 11.51%, in 2017 - 9% [4].

Currently, less than 6 per cent of solid household waste is processed on the territory of the Republic, and this sad state of Affairs is due to a number of reasons. First, the existing system of solid household waste management in Kazakhstan was established in the Soviet times, and it was mainly based on landfill disposal. Secondly, there is a problem of lack of culture of separate garbage collection among the population of the country. And most importantly, the solid waste processing industry in the country is at an early stage of development, and its efficiency is extremely low. There are not enough waste-processing enterprises in the country, and the existing ones are not loaded at full capacity due to the lack of interaction between local authorities, public services and, accordingly, the institutions themselves [5].

In order to reduce industrial emissions, it is necessary to modernize old enterprises in order to reduce waste. But this requires additional capital investment, which business owners do not want to make for the installation of new filters or the modernization of the technological process. At best, such enterprises should be closed and new ones built. With the help of new laws and regulations, imposing large fines on a polluting enterprise can achieve a positive effect.

To improve the environmental situation in cities with heavy traffic, it is necessary to pay more attention to the quality of the fuel used by cars, not to let old cars out on the road, and to build new roads and interchanges.

When designing new cities and settlements, architects should pay more attention to air circulation in the streets and courtyards of houses. New buildings should be located on high ground, not in depressions and depressions where they are well blown by air currents. All these measures will reduce emissions and improve the ecology of urban spaces [6, p. 45].

REFERENCES

1. Budreiko E. N. Ecology of cities. Soil, water and air pollution. [Electronic resource]. Natural science, 2009. Mode of access: <http://www.portal-slovo.ru/impressionism/41495.php>. (date accessed: 11.03.2020).

2. Konstantinov, A. P. Ecology and health: the dangers of the mythical and the real // Ecology and life, 2012, no. 8, Pp. 90-91.
3. Newsletter on the state of the environment of the Republic of Kazakhstan for 2019
4. Official Internet resource "volume of waste generation in Kazakhstan for 2017-2018" URL: <https://taldau.stat.gov.kz> (accessed: 04.04.2020).
5. Internet resource "Problem of waste processing in Kazakhstan" URL: <http://ekobioservis.kz> (date accessed: 14.04.2020).
6. Shchankina E. Geographical sciences: Ecology of urban areas. 2017. №2. P. 70-72