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Environmental Problems of Uzbekistan and Ways of Its Solution

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Annotation. The effective application of machinery and technology in the demographic processes occurring in the modern world, regional networks, large-scale construction of industrial enterprises has led to changes in human life. This process has given rise to problems. One of such problems is the environmental problem

Key words: Environmental problems, Uzbekistan, ways of its solution, environmental protection.

Introduction. Environmental problem has become one of the most serious problems facing humanity in the 21st century. In particular, the destruction of the ozone layer, global warming, shortage of fresh water, atmospheric air pollution and the problem of preservation of flora and fauna poses a number of problems for mankind. Since the first years of independence, Uzbekistan has been seriously engaged in environmental protection. The main goal of this policy is to preserve the Aral Sea, which is one of the extreme problems in the regions, to protect people's health, to preserve their biodiversity and to utilise transboundary traditions, taking into account the situation in the regions. That is why Uzbekistan has adopted laws, decrees and notifications on environmental issues. Based on these official documents, the preservation of the ecological balance is a priority task for the protection of public health. This article analyses the environmental situation in Uzbekistan, the environmental hazards threatening the life of the Republic and their aspects, and the causes of these major problems. The article also provides advocacy information on these policies developed in the country over the years of independence.

Within the framework of the 14th meeting of the Conference of the Parties to the Convention on the Conservation of Migratory Species of Wild Animals, which took place in Samarkand in February, Uzbekistan presented its National Report on the State of the Environment.

This document provides an overview of the current environmental situation, trends, priorities and strategies of the government, as well as progress in fulfilling the republic's obligations under environmental agreements. The study was prepared by Uzbek experts with the support of the United Nations Economic Commission for Europe (UNECE), the United Nations Environment Programme (UNEP) and the Food and Agriculture Organisation (FAO).

Water scarcity

One of the key problems in Uzbekistan, according to the report, is the worsening water shortage. According to the experts, on the one hand, this situation is due to population growth and the increasing need for food and energy. On the other hand, it is a consequence of climate change. For example, the volume of snow and glaciers in the mountains is decreasing. The report says that over the past 50-60 years, the size of glaciers in the Pskem River basin has decreased by 24 per cent, the Surkhandarya River by 40 per cent and the Kashkadarya by 70 per cent.

Researchers report that the flow of the Amu Darya and Syr Darya rivers could decrease by 5-15 per cent in the coming decades, further worsening water scarcity. To conserve water resources, Uzbekistan is implementing government programmes that involve payments and fines for pollution and excessive use.

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According to the report's authors, the Aral Sea deteriorated in the second half of the last century due to water withdrawals for irrigation and the reduction of the Amu Darya and Syr Darya flows that feed the reservoir. Compared to 1960, the volume of the Aral Sea has decreased 16 times.

Water pollution and dust and salt storms from the bottom of the dried-up Aral Sea lead to an increased incidence of anaemia, gastrointestinal, cardiovascular and other disorders, experts say.

In addition, crop yields in the Aral Sea region are 2-3 times less than normal, and the decline in pasture and land productivity, the death of tugai vegetation and the drying up of lakes are estimated to have led to the loss of 100,000 jobs in the region.

Among the main contributors to air pollution - another key problem in Uzbekistan - the report's authors point to the growing number of cars, outdated fuel standards, as well as the use of coal and firewood for heating and the lack of use of clean technologies. Uzbekistan has 4 million cars that emit 1.3 million tonnes of pollutants a year, the most in Tashkent and Tashkent Oblast. At the same time, imports and use of electric vehicles are increasing in the country, the report emphasises.

At present, among the Central Asian states only Kazakhstan is a party to the UNECE Convention on Air Quality, but all countries of the region can participate in the programme on competence development in this sphere. In case of accession to the Convention, they will have an opportunity to receive further support in the implementation of specific projects. A new approach to the problem of preparation of absorbents of fluorinated gases of industrial production based on the rational use of mechanochemical methods of influence on the forming system and allowing to obtain cheap, highly active sorbents for sanitary purification of waste gases was proposed and scientifically substantiated.

The nature of interaction between society and the environment has recently caused concern in wide circles of the public. The human environment is becoming increasingly polluted and its ability to regulate itself is catastrophically declining. Diseases that previously were not observed at all or were localised are spreading widely. They have been called ‘diseases of civilisation’.

Both natural and social environments need protection and improvement. Human beings feel discomfort and fall ill both from the disturbance of ecological balance in nature and from the contamination of the social environment.

The ecological state of the Republic of Uzbekistan is extremely worrying. Soil, air and water are polluted. Mineral extraction is carried out irrationally, and nature is becoming scarce. Nature suffers from intensive collection of fodder, medicinal and food herbs and shrubs. Intensive collection of raw materials, unregulated grazing, and recreational pressure on landscapes lead to the reduction of the country's biomass reserves.

The level of ecological culture of the whole society plays an important role in preserving the natural environment and solving ecological problems. In order to form and develop environmental culture in the population, it is necessary to create a special methodology of environmental education, based on which, and with the help of which people could control their actions and actively form environmental culture.

The Uzbek side has always expressed its concern about the consequences of the impact of aluminium production emissions on both the environment and the health and gene pool of the population. As early as 17 November 1994 in Tashkent, Uzbekistan and Tajikistan signed an agreement on cooperation to improve the environmental situation in the areas affected by the activities of the aluminium smelter in Tursunzad. Unfortunately, a number of measures of the agreement were not implemented by the Tajik side.

UNEP representatives, along with other international experts, personally got acquainted with specific facts on site and saw with their own eyes the consequences of the industrial activity of the aluminium smelter. And the facts are as follows: the enterprise emits into the atmosphere about 22 thousand tonnes

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of pollutants, including 120 tonnes of the most dangerous and harmful to human health and the environment hydrogen fluoride.

A significant share of these emissions is carried by the air flow during 18-19 hours a day towards Sariasiysk, Uzun, Denau, Altynsay, Shurchin, Kumkurgan districts of Surkhandarya region of Uzbekistan, where more than 600 thousand people live. Scientists and ecologists have proved that fluoride accumulation in the environment of this region causes degradation of flora and fauna, disturbs the balance of synthesis and mineralisation processes, and promotes mutation processes. Fluoride compounds cause the spread of fluorosis, developmental anomalies of musculoskeletal, respiratory, endocrine systems. Birth of children with congenital defects has become a common phenomenon here. It is especially alarming that from year to year in the zone of influence of the enterprise, the morbidity rate grows, the number of premature births and miscarriages, congenital deformities and stillbirths increases.

In connection with the above-mentioned it becomes actual to control macro- and microconcentrations of hydrogen fluoride, representing one of the most important tasks of safety engineering at its production and environmental protection. The solution of the above mentioned problems of rapid determination of the degree of danger and harmfulness of hydrogen fluoride in air mixtures is possible only with the help of development of new express methods having necessary dynamic parameters and metrological characteristics.

The most correct and proper solution of the set tasks of express and accurate determination of hydrogen fluoride in air is creation and application of simple highly accessible and cheap sensors. In this connection, the task of development of effective methods based on semiconductor effects and creation on their basis of devices for hydrogen fluoride monitoring is an urgent problem of modern analytical chemistry and ecology.

Various methods are used for the detection of hydrogen fluoride in air, the choice of which is determined by the impurities that accompany hydrogen fluoride in air and air mixtures.

The formation of industrial gases and ventilation emissions containing hydrogen fluoride, chlorine, hydrogen chloride, fluorine and chloro-organic substances is characteristic of many industries (chlorine production, production of metallic magnesium, processing of non-ferrous metals, etc.)

For absorption of chlorine and chlorine-containing substances, water, aqueous solutions of alkalis and organic substances are used. The lime method has a number of advantages: low cost, availability of reagent, does not require careful protection of equipment from corrosion because the medium is alkaline. The disadvantages of the method are low degree of purification, insufficient degree of absorbent utilisation.

Gaseous chlorine and fluorine are well absorbed by such solid organic compounds as lignin and calcium lignosulphanate. However, it is more efficient to use these absorbents in the form of aqueous solutions and slurries. Iron oxide chloride and oxide copper, lead, cadmium chloride, some organic polymeric materials can be used as solid absorbers of hydrogen chloride from industrial waste gases. Absorption purification is a continuous and, as a rule, cyclic process, as absorption of impurities is usually accompanied by regeneration of the absorption solution and its return at the beginning of the purification cycle. In physical absorption, the absorbent is regenerated by heating and pressure reduction, resulting in desorption of the absorbed gas impurity and its concentration.

Conclusions: Thus, the development is ready for implementation: there are acts of laboratory and pilot tests, there are pilot laboratory samples, technological regulations and specifications, have the best metrological characteristics and operating parameters that meet the requirements of the relevant GOST 52033-2003 for devices of similar classes.

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Literature

1. 'Transboundary impact of pollutants emitted by SUE TALCO on the population and environment of some districts of Surkhandarya region of Uzbekistan', Forum International. Tashkent, 2010.
2. Наркевич Н. П., Печковский В. В. Утилизация технологических фторсодержащих газов за рубежом // Химическая промышленность за рубежом: Обзор, инфор-ция. М.: НИИТЭХИМ, 1989, № 7.
3. Галкин Н. П., Зайцев В. А., Серегин М. Б. Улавливание и переработка фторсодержащих газов. М.: Атомиздат, 1975. - 240 с.
4. 37
5. https://www.gazeta.uz/ru/2019/08/08/water-stress/
6. Гусев Л.Ю. Водно-энергетические проблемы Центральной Азии и возможные пути их разрешения//Вестник МГИМО университета. 2013. 6 (33). С. 36.
7. Экономическое обозрение. № 10 (238). 2019. С. 21.
8. Абдурахманова И.К., Вафоев Р. Состояние и использование земельно-водных ресурсов Узбекистана (орошаемое земледелие) // Вестник Прикаспия. №4. ноябрь 2017.