

Problems of Pollution of Reservoirs in the Conditions of Uzbekistan

Sadullayeva X. A.¹, Salomova F. I.², Mirsagatova M. R.³, Kobiljonova Sh.R.⁴

At present, certain problems are observed in the Republic of Uzbekistan with providing the population with high-quality water for household and drinking needs. In this situation, part of the population, especially in rural areas, uses surface water. The health of the population of Uzbekistan largely depends on the quality of surface water in the country.

In the last decade of the 20th century and at the beginning of the 21st century, international integration makes the issues of interaction between states to provide the population with drinking water from sources of drinking water supply of particular relevance. Under the auspices of the United Nations, the World Health Organization, the European Economic Community, more than 40 international legal documents have been developed and adopted that establish the foundations of interstate water relations for the protection of water bodies - "UNECE Convention on the Protection and Use of Watercourses and International Lakes", "Convention on impact of industrial accidents", "UN Convention on the Law of the Non-Navigational Uses of International Watercourses", "Protocol on Water and Health", etc. [76, 101]. They reflect the issues of protecting surface and underground sources of drinking water supply, eliminating the consequences of their pollution, protecting public health under the influence of the water factor, etc. International acts provide for bringing the national legislations of countries in line with the solution of problems of water use by the population of water sources based on scientific research on drinking water supply sources.

In the provisions on the procedure for establishing water protection zones and zones of sanitary protection of water bodies on the territory of the Republic of Uzbekistan, the delineation of powers between the subjects required the improvement of water and sanitary legislation and on the problem of interaction of the territorial departments of SanPiN with other territorial bodies of federal executive authorities and executive authorities of the subjects of the Republic of Uzbekistan, protecting and monitoring surface and underground water bodies [200]. The rules of water and sanitary legislation, unlike international acts, do not fully reflect the sanitary and organizational issues of ensuring the quality of water of trans boundary water sources in the zone of their sanitary protection due to the lack of targeted field observations. Only requirements have been established for water use sites of surface sources of drinking water supply in the corresponding subject of the Republic of Uzbekistan. There are no studies in this regard for underground water sources. Only SanPiN "Hygienic requirements for the protection of surface waters" recommends the organization of control and exchange of information on the sanitary condition of water bodies on the basis of interregional and interstate agreements.

Despite the steady increase in water consumption due to the rapid increase in population, the main problem was not the lack of drinking water in most countries of the world, but the progressive pollution of rivers, lakes and groundwater. Significant industrial growth has led to a sharp increase in the volume of technical waste discharged in the form of untreated or insufficiently treated wastewater into water bodies. According to the World Health Organization, river waters contain thousands of organic substances. However, domestic water quality control services have the ability to control no more than three to five dozen substances that pollute water bodies. The most significant share of water pollution is industrial wastewater, half of which (according to domestic environmental services) is discharged into water bodies without treatment, and most of the second half - in an insufficiently purified form. Therefore, almost all rivers are polluted with oil products, heavy metals, organic and

¹ Tashkent Medical Academy

² Tashkent Medical Academy

³ Tashkent Medical Academy

⁴ Tashkent Medical Academy



mineral compounds. Agricultural wastewater carries huge quantities of fertilizers and pesticides into rivers and lakes. The discharge of wastewater into water bodies is accompanied by the accumulation of pollutants in the bottom sediments in high concentrations, which can lead to a sharp increase in the level of pollution in flood waters and to secondary pollution associated with the formation of new (often more harmful than the original) chemical compounds [1]. The impact of water pollution on natural ecosystems is very dangerous for both humans and natural ecosystems due to synthetic detergents coming with domestic wastewater, which, due to foaming, prevent oxygen from entering the water. A great danger for the ecosystems of reservoirs with stagnant water is the accumulation in them of organic matter coming from agricultural (and especially livestock) effluents containing biogenic elements, including nitrogen and phosphorus, as a result of which the water becomes unsuitable for human life. The system of measures for the protection and rational use of water resources (sea, river, lake) should be an integral part of national plans in any country. In this regard, Uzbekistan has developed a system of legislative acts, which include the following laws on the protection of water bodies: "On the sanitary and epidemiological well-being of the population of Uzbekistan", "On water and water use", SanPiN RUz No. 0172-04 "Protection of surface water bodies" and others. All of the above prompted the analysis of laboratory studies of water in open reservoirs, i.e. reservoirs in order to assess its bacteriological, sanitary-chemical and for the presence of radioactive substances [2, 3].

According to the World Bank, the loss of drinking water in Uzbekistan in 2018 amounted to 469 million cubic meters, or 32% of the total volume of drinking water produced. Large-scale water losses occur against the background of unfavorable forecasts about the future situation with the water supply of the Central Asian region, in particular Uzbekistan. By 2050, according to World Bank forecasts, the flow of water in the Syrdarya river basin may decrease by 2-5%, and in the Amudarya river basin by 10-15%, which will increase the water shortage. This will hit not only agriculture, but also hydropower, since the productivity of hydroelectric power plants by 2050 in some parts of the region may decrease by up to 20% [3].

The problem of the Aral Sea concerns not only Uzbekistan, but also neighboring countries. Every year, 135-145 million tons of salt are dumped into the Amu Darya and Syr Darya, or about 17-20 tons per 1 ha of irrigated land per year. If until 1960 about 55 km³, or 45-50% of the average annual river flow, entered the Aral Sea, by 1990 the inflow had decreased to 6-12 km³, and in dry years it approached zero. Sea level is currently decreasing at a rate of approximately 0.5 m per year, reaching 37.0 m; the area of the sea surface was reduced to 32,000 km²; salinity has increased to 40 g/l or more and is still growing[4].

At the end of the 80s. 20th century The problem of the Aral Sea began to acquire political meaning: through the efforts of the leaders of the Central Asian countries, the International Fund for Saving the Aral Sea (IFAS) was created, which is today the only interstate coordinating mechanism in Central Asia. Experience shows that only the joint efforts of all the countries of Central Asia can prevent the further drying up of the Aral Sea. At the same time, unfortunately, the countries of the region do not go further than signing general declarations and memorandums.

In the 90s. 20th century there were many initiatives, but all of them actually remained on paper. For example, on March 26, 1993, in the city of Kyzyl-Orda, the leaders of Central Asia signed an agreement on joint actions to solve the problem of the Aral Sea and the Aral Sea region. Paragraph 3 of Article 1 stated: guaranteed provision of water supply to the Aral Sea in volumes that allow maintaining its reduced but stable water area at an environmentally acceptable level and thus preserving the sea as a natural object[5]. The main reason for the failure to solve the problem of the Aral Sea is that it is located mainly on the territory of Kazakhstan and Uzbekistan and is the "inland sea" of these republics. The rest of the Central Asian republics are concerned about the development of their own hydropower and extensive agriculture. In October 2019, Uzbekistan proposed to the world community to declare the Aral Sea zone a zone of environmental innovations and technologies. And this issue will be considered at the UN General Assembly in September 2020. Kazakhstan seeks to preserve biodiversity and the lake in the north of the Aral Sea. Over the past 30 years, international



organizations have written a huge number of analytical notes and proposals that were review and recommendatory in nature [6]. UNDP programs on environmental problems of the Aral Sea region are also being implemented [7].

The main solution to the Aral Sea problem is to create a legal framework for determining the status of the former Aral Sea in Central Asia, i.e. when the Aral will become a subject of international relations. This can be done if the Central Asian countries sign an international agreement through the mediation of the EU, the US and the Russian Federation. It should not be forgotten that this will become possible only in close cooperation between the Central Asian republics in solving the energy and environmental problems of the region.

The main threats today to guaranteed access to water include such as unilateral and inconsistent management of water resources of rivers by upstream countries; the commercialization of water and the attitude to water as a commodity in certain upstream countries of the region; the desire of the upstream countries to build new large hydroelectric reservoirs on the main trans boundary tributaries of the Amu Darya and Syr Darya.

With the coming to power of Sh.M. Mirziyoyev Uzbekistan has softened its positions and is entering into a dialogue on water and hydropower issues. Uzbekistan is interested in developing not only its own hydropower industry, but also investing in neighboring countries. For example, in January 2020, Tashkent and Dushanbe began negotiations on the joint construction of two hydroelectric power plants in Tajikistan for \$552 million. The constructed HPPs will generate up to 1.4 billion kWh of energy “exclusively for the needs of Uzbekistan”[15]. Unfortunately, Central Asia has not yet developed a common water use code in accordance with international standards. And I think that conflict in the water sector will continue, and will only get worse. The main conflict genic factor is the lack of a single agreement between the Central Asian states on the rational use of trans boundary rivers, i.e. construction of hydroelectric power plants, reservoirs for the development of their own economy. Until the Central Asian republics feel like a single ecological, economic, social and political organism, conflict potential will persist not only in water, but also in other areas.

List of used literature:

1. Садуллаева, Х. А., & Шарипова, С. А. (2017). Подготовка врачей общей практики к формированию у населения основ здорового образа жизни. *Молодой ученый*, (23-2), 5-7.
2. Саломова, Ф. И., & Садуллаева, Х. А. (2017). Экология человека в медицинском образовании. *Молодой ученый*, (22), 425-427.
3. Саломова, Ф. И., Садуллаева, Х. А., Миррахимова, М. Х., Кобилжонова, Ш. Р., & Абатова, Н. П. (2023). Загрязнение окружающей среды и состояние здоровья населения.
4. Саломова, Ф. И., Садуллаева, Х. А., Миррахимова, М. Х., Кобилжонова, Ш. Р., & Абатова, Н. П. (2023). Загрязнение окружающей среды и состояние здоровья населения.
5. Миррахимова, М. Х., Садуллаева, Х. А., & Кобилжонова, Ш. Р. (2022). *Значение экологических факторов при бронхиальной астме у детей* (Doctoral dissertation, Россия).
6. Саломова, Ф. И., & Садуллаева, Х. А. (2017). Экология человека в медицинском образовании. *Молодой ученый*, (22), 425-427.
7. Саломова, Ф. И., Шерқўзиева, Г. Ф., Садуллаева, Х. А., Ахмадалиева, Н. О., & Ярмухамедова, Д. Х. Н. (2022, November). Чанг бўрони ва атмосфера ҳавосининг ифлосланиши. Uzbekistan-Japan International Conference «Energy-Earth-Environment-Engineering», November 17-18, 2022, Uzbek-Japan Innovation Center of Youth, Tashkent, Uzbekistan Uzbekistan-Japan International Conference «Energy-Earth-Environment-Engineering», November 17-18, 2022, Uzbek-Japan Innovation Center of Youth, Tashkent, Uzbekistan тезис Bet 93.
8. Садуллаева, Х. А., & Шарипова, С. А. (2017). Подготовка врачей общей практики к формированию у населения основ здорового образа жизни. *Молодой ученый*, (23-2), 5-7.



9. Саломова, Ф., Садуллаева, Х., & Кобилжонова, Ш. (2022). Гигиеническая оценка риска развития аллергических заболеваний кожи у детского населения. *Актуальные вопросы профилактики стоматологических заболеваний и детской стоматологии*, 1(01), 88-91.
10. Садуллаева, Х. А. (2022). Diseases of modern cities and population.
11. Садуллаева, Х. А. С. Ф. (2021). Замонавий шаҳарлар ва аҳоли касаллиниши. Republican scientific-practical conference with international participation “Problems of Preventive Medicine”.
12. Ахмадалиева, Н. О., Саломова, Ф. И., Садуллаева, Х. А., Шарипова, С. А., & Хабибуллаев, С. Ш. (2021). Заболеваемость преподавательского состава ВУЗа технического профиля. *Oriental renaissance: Innovative, educational, natural and social sciences*, 1(10), 860-871.
13. Ataniyazova, R., Isakova, L., Mukhamedova, N., Sharipova, S., & Sadullayeva, H. (2020). Analysis of some aspects of the morbidity of health workers with temporary disability. *International Journal of Pharmaceutical Research*, 12(4), 521-524.
14. Саломова, Ф. И., Садуллаева, Х. А., Шеркузиева, Г. Ф., Ярмухамедова, Н. Ф., & Дусмухамедова, А. Ф. (2018). СОСТОЯНИЕ АТМОСФЕРНОГО ВОЗДУХА В РЕСПУБЛИКЕ УЗБЕКИСТАН. *Здоровье и окружающая среда*, (28), 27-31.
15. Саломова, Ф., Садуллаева, Х., & Кобилжонова, Ш. (2022). Гигиеническая оценка риска развития аллергических заболеваний кожи у детского населения. *Актуальные вопросы профилактики стоматологических заболеваний и детской стоматологии*, 1(01), 88-91.
16. Саломова, Ф. И., Садуллаева, Х. А., Миррахимова, М. Х., Кобилжонова, Ш. Р., & Абатова, Н. П. (2023). Загрязнение окружающей среды и состояние здоровья населения.
17. Саломова, Ф. И., Садуллаева, Х. А., Миррахимова, М. Х., Кобилжонова, Ш. Р., & Абатова, Н. П. (2023). Загрязнение окружающей среды и состояние здоровья населения.
18. Миррахимова, М. Х., Садуллаева, Х. А., & Кобилжонова, Ш. Р. (2022). *Значение экологических факторов при бронхиальной астме у детей* (Doctoral dissertation, Россия).
19. Salomova, F. I., Sadullaeva, H. A., Abdullaeva, D. G., & Kobilzhonova Sh, R. (2022). PREVALENCE AND RISK FACTORS OF ALLERGIC DISEASES IN CHILDREN IN HOT CLIMATIC CONDITIONS.
20. Ниязова, О.А., и Имамова, А.О. (2023). СОВЕРШЕНСТВОВАНИЕ ОРГАНИЗАЦИИ ОКАЗАНИЯ МЕДИЦИНСКИХ УСЛУГ И ЦИФРОВОЙ СРЕТЫ. *Европейский международный журнал междисциплинарных исследований и управленческих исследований*, 3 (02), 41-46.
21. Kobiljonova, S. R., & Jalolov, N. N. (2023). REPRODUCTIVE AND PERINATAL OUTCOMES BORN BY CAESAREAN SECTION.
22. Niyazova, O. A., Jalolov, N. N., & Khairullaeva, L. G. (2023). STUDYING THE ACTUAL NUTRITION OF STUDENTS OF TECHNICAL INSTITUTIONS (UZBEKISTAN, GERMANY). *European International Journal of Multidisciplinary Research and Management Studies*, 3(02), 35-40.
23. Jalolov, N. N., & Imamova, A. O. (2023). THE ROLE OF NUTRITION IN THE MANAGEMENT OF CHRONIC HEPATITIS. *European International Journal of Multidisciplinary Research and Management Studies*, 3(02), 28-34.
24. Закирходжаев, Ш. Я., Жалолов, Н. Н., Абдукадилова, Л. К., & Мирсагатова, М. Р. (2023). ЗНАЧЕНИЕ ПИТАНИЯ ПРИ ХРОНИЧЕСКИХ ГЕПАТИТАХ.
25. Kobiljonova, S. R., & Jalolov, N. N. (2023). REPRODUCTIVE AND PERINATAL OUTCOMES BORN BY CAESAREAN SECTION.



26. Axmadaliyeva, N., Imamova, A., Nigmatullayeva, D., Jalolov, N., & Niyazova, O. (2022). Maktabgacha yoshdagi bolalarda sog 'lom turmush tarzini shakllantirishning dasturiy platformasi.
27. Abdukadirova, L. K., Jalolov, N. N., Nozimjonova, M. N., & Narzullayeva, U. S. (2022). EVALUATION OF PRACTICAL NUTRITION OF PATIENTS WITH CHRONIC HEPATITIS.
28. Jalolov, N. (2022, April). Умумтаълим мактаблари бошланғич синф ўқитувчиларнинг саломатлиги бўлажак авлодни тарбиялашнинг асосий мезони. Республиканской научно-практической конференция “ДНИ МОЛОДЫХ УЧЕННЫХ”.
29. Зокирходжаев, Ш. Я., Жалолов, Н. Н., Ибрагимова, М. М., & Махмудова, И. А. (2019). Сурункали гепатитлар парҳезтерапиясида маҳаллий дуккакли махсулотларни қўллаш.
30. Zokirkhodjayev, S. Y., Jalolov, N. N., Ibragimova, M. M., & Makhmudova, I. A. (2019). THE USE OF LOCAL LEGUMES IN THE DIET THERAPY OF CHRONIC HEPATITIS. *Toshkent tibbiyot akademiyasi axborotnomasi*, (1), 64-68.

