Asian Journal of Multidimensional Research
ISSN: 2278-4853 Vol. 12, Issue 5, May 2023 SJIF 2022 = 8.179
A peer reviewed journal

CONTEMPORARY WATER PROBLEMS AND THEIR INNOVATIVE SOLUTIONS (HISTORICAL-ETHNOGRAPHIC ANALYSIS)

Bakhtiyor Rejavalievich Khalmuratov*

*Associate Professor,
Doctor of Philosophy in History (PhD),
Namangan State University,
Namangan, UZBEKISTAN
Email id: b_khalmuratov@gmail.com

DOI: 10.5958/2278-4853.2023.00064.2

ABSTRACT

In this article, water shortage, which is one of the most acute and serious problems of the present day, and the crises associated with it, are historically and ethnographically researched. In the article, the author also revealed the root causes of water-related problems in Central Asia, particularly in the Fergana Valley region, and innovative proposals for their solutions.

KEYWORDS: *Water, Water-Related Problems, Central Asia, Republic Of Uzbekistan, World Countries, Ferghana Valley, Salinity, Drinking Water, Water Resources, Tran boundary Rivers.*

INTRODUCTION

At the beginning of the 21st century, the people of the whole world faced the difficult problem of how to use and manage the limited resources of the planet. It is recognized everywhere that water is a necessary element for the development of the economy and the health of society, and that it plays a decisive role in the preservation of ecology, without words, denials, or objections. However, in spite of increasing attention, water resources are becoming less and less [1. - B. 135.].

According to UNESCO, by 2030, more than 3 billion people will suffer from a lack of water resources. Although the United Nations Millennium Development Goals Declaration calls for "stopping the unreasonable use of water resources" and "promoting the sustainable use of water"... today, almost half of the world's population faces water-related problems, and about 1 billion people currently have access to clean drinking water. and 2.5 billion people do not have enough water for sanitation purposes. 80% of all diseases in the world are caused by lack of drinking water or pollution. Every second in the world, a child dies due to lack of drinking water [2. - B. 136.].

According to research, in the next 20 years, the demand for water in Uzbekistan will increase significantly and the available water resources will decrease sharply, which will increase the current water shortage up to five times. By this time, Uzbekistan is among the red regions in terms of water shortage. What are the likely scenarios of dehydration?

Regional Aspects Of Water Scarcity.

Because Central Asia is an arid region far from oceans and seas, water sources are of strategic importance here. The countries of the region are divided in terms of water resources. Countries such as Kazakhstan, Turkmenistan and Uzbekistan are seen as "downstream" countries, while Tajikistan and Kyrgyzstan are seen as "upstream" countries.

In terms of supply, the countries of the first group are connected to the countries of the second group. In particular, 20% of the total water resources used in Uzbekistan are formed inside the country, and 80% are formed in neighboring Tajikistan and Kyrgyzstan. These two relatively poor "upstream" countries are interested in generating and exporting more electricity through the construction of hydroelectric power plants and reservoirs, which creates serious problems for agricultural water supply in other countries in the region. This aspect has been the main root of conflict and disagreement between the countries of Central Asia for many years, and the situation that has arisen in the region due to water sources has been used by the big countries as a tool for political influence.

Although the "water diplomacy" carried out by the Uzbek government in recent years has significantly eased the tension in the use of transboundary water resources in the region, until now general rules for the use of water based on international standards have not been developed between the countries of Central Asia.

According to the experts of the World Bank, by 2050 water resources in the Syrdarya basin are expected to decrease by 5% and in the Amudarya basin by 15%. In 2050, the shortage of fresh water in Central Asia could lead to an 11% decrease in GDP.

Due to increasing water scarcity, there is a possibility of problematic situations between upstream countries and downstream countries on the following issues:

1. Increasing desire for unilateral and non-coordinated management of water resources of transboundary rivers.

2. Increasing sentiment towards commercialization of water and treating it as a commodity.

3. As a result of climate change, the desire of the upstream countries to build new large hydroelectric reservoirs in the main transboundary tributaries of Amudarya and Syrdarya to meet domestic energy needs. Currently, 85 percent of Kyrgyzstan's electricity and 91 percent of Tajikistan's electricity are produced by hydroelectric power stations. The reduction of water resources will have a serious impact on increasing electricity shortages in these countries. For comparison, the share of hydropower stations in energy supply is 15% in Uzbekistan and 10% in Kazakhstan.

Based on the above, it is important to reach a new agreement on the issue of transboundary water use that is stable and equally beneficial for the parties, and to quickly resolve the transition to a single strategic approach to the rational use of water.

Due to the natural growth of the population and the increase in water consumption, as a result of climate change, anomalous hot weather is becoming a new norm, the number of snowy days is decreasing, as well as the irrational use of water resources, serious environmental problems and water shortages are occurring in Central Asia.

According to the UN classification, Uzbekistan is included in the ranking of countries with water shortage. According to the latest data published by the World Resource Institute, Uzbekistan ranks 25th among 164 countries in need of water [4]. As you can see, feel and sense, the water problem in our region, where we make a living, spend our days or live, is getting more complicated over the years. This prevents the development of the economy and the improvement of the standard of living of the population.

If attention is paid to the existing reserves, it can be seen that the future balance of water resources will be affected by the rapid melting of the glaciers that form the main rivers of the region, other aspects of climate change, as well as the increasing needs of the population for water and the development of industry. Experts estimate that a 10-20% reduction in water supply will have serious consequences for the size of irrigated land and employment [3], and may result in a decrease in gross national income. Effective, rational and equitable management of existing water resources to meet the needs of irrigated agriculture, utility and industrial development, environment and other sectors is crucial to guarantee sustainable economic development of the country.

At the same time, the problem of water scarcity, which is becoming more and more serious in the Central Asian region, and the environmental risks such as the destruction of cultivated fields due to salinization, the turning into deserts and deserts due to the increase of environmental risks, the people of the Ferghana Valley need to conserve land and water. -revival and development of historical and national values, such as preserving, honoring, raising the head if necessary, "drinking water from the head", and forming a modern eco-culture on the basis of age-old customs, traditions and national values, is becoming extremely important. In addition, the water problem is becoming more complicated due to the demographic explosion. In particular, you know that the Ferghana Valley is the most densely populated region in Central Asia, where 9.8 million people live. Andijan region alone has a population density 10 times higher than the average national level.

Today, we are talking not about the complete restoration of the ecosystem, but about achieving equality and balance, which will prevent even more deplorable degradation and destruction in the region by common efforts" [5. - B. 139.].

As in other parts of the Central Asian region, one of the most pressing issues in the Ferghana Valley is drinking water. Due to the fact that only about 10% of water resources are produced in our country, Uzbekistan is highly dependent on the amount of water that is formed in neighboring countries and flows into our territory.

Total natural underground water reserves in Uzbekistan are estimated to be 24.35 km3. Of this amount, 20.79 km3 is in the Quaternary layer, 2.92 km3 is in the Upper Paleocene (in geological history, the Cenozoic Era, which lasted 60-70 million years and lasted 35-40 million years, is divided into the Paleocene, Eocene and Oligocene periods) - in the Quaternary layer and 0 ,46 km3 is located in the Upper Cretaceous layer. About 50 percent of the mined underground water falls on the Fergana Valley. Chuchuk erosti water is mainly in the Fergana valley, it is 34.5 percent [6. - B. 104.]. For this reason, in recent years, a special decision of the Cabinet of Ministers of the Republic of Uzbekistan was adopted regarding the calculation of fresh water reserves in the valley and their monitoring. According to this decision, in 2017-2022, in order to

improve the system of water supply to the population of Fergana Valley, hydrogeological works on re-estimation and increase of underground water reserves in Namangan and Fergana regions, as well as regional hydrogeological work on assessing the real situation of groundwater use and hydrogeological research in the Fergana Valley region the main attention was paid to the implementation of research [7].

So, without taking into account the environmental possibilities, the extensive use of water resources leads to the deterioration of water quality and a difficult situation in providing clean drinking water to the person who is the "Khalifa of Allah on earth". Because Sirdarë, which is the main water basin in the valley, is not used enough to provide drinking water from some other water sources, providing the population with good quality fresh (sweet) drinking water is one of the most serious problems in the region. In addition, freshwater, which is potable water, is a crucial resource in the production of agricultural products in saline infertile lands. This situation is still relevant, especially in Pop city and Mingbulok district of Namangan region. For this reason, it encourages the creation of international legal frameworks for the purpose of mutually beneficial cooperation, to use a new and advanced, effective approach to the management of water management in local conditions, which does not harm the mother nature, does not make it unable to recover, and does not push humanity to the brink of destruction.

Salinity problem. The extensive use of chemicals in cotton cultivation, inefficient irrigation, and inadequate drainage systems have resulted in enormous amounts of polluted and saline water seeping back into the ground. As a result, even more pollutants began to enter fresh water. Currently, about 50% of all irrigated land is classified as saline, and about 5% of this type of land is highly saline [8. - B. 3.].

From the second half of the 20th century, the land reserves of the Fergana Valley have been intensively (spending less labor and money, getting more crops), but extensive (spending a lot, but not achieving much result, wasting money and labor. In this case, "the cost of the ass is expensive"). As a result, the salinity of the lands, which have provided abundant crops for thousands of years and fed people as they say, "If you feed the land, the land will feed you", has increased. According to experts, sodium and magnesium sulfate salts dominate in the composition of ground water in the Fergana valley. Gypsum deposits in parent rocks and soils are common in this area. Gypsum horn and arzic soils make up large areas in the valley [9. - B. 189.].

In the future, we would like to share the collected folk knowledge related to traditional farming culture from Dang'ara of Fergana region, Mingbuloq, Kosonsoy, Chust and Pop districts of Namangan region in the months of May-August 2017-2018, leaving the perfect research on this subject to the discretion of soil experts. In particular, according to Muratali Sheraliev (born in 1948), an elderly farmer living in the village of Damabad, Chust District, Namangan Region, preparations for the next year's farming should be started immediately after the autumn harvest. The thicker and earlier the snow falls after the sowing of autumn crops, it is permissible to be happy knowing that it is "God's blessing to man". You must be aware of the fact that among the farmers of the valley, sayings such as "it snowed - grain rained" and "the land is full - the hand is full" are widespread. That's why the hardworking grandfathers celebrated the first snowfall every year in a special way. When it snowed, they warmly greeted each other as a symbol of gratitude and expressed gratitude to the Creator for bringing each other to these days [10- B. 182.]

In the village of Tumor, Dangara district, Fergana region, there was such a view among the inhabitants of the valley water and the salinity of the land. When Allah bestows His blessing on His servants, He first of all gives it to the people who live on the right side of the valley, that is, in the upper part. Because you yourself know that the upper part of the gorge, that is, the starting places, is a region that is always pure, fresh water and free from salinity, due to the fact that no human foot has reached it, no one has tampered with it. On the other hand, the part of the gorge is close to the seepage waters, and the salinity level of the land is much stronger. This also determines the economic situation and economic traditions of the local population [11].

According to the recorded information from the farmer Egamberdi G'aniev (born in 1939) living in the village of Rovot, Kosonsoy district, Namangan region, tillage began after harvesting the crop and this process continued for a long time. Later, after the arrival of the winter cold, the real peasants washed the land with cold water, said, "The salt on our foreheads has dried up", and washed their poor and diseased land with cold water. A farmer of Mirishkor says that it is necessary to wash the land flooded with salt water for 3 years.

Since it was not possible to grow all types of crops in saline lands, local farmers tried to plant plants grown in saline lands. In particular, the farmers of Mingbuloq district of Namangan region, who turned the once barren land into a desert, also planted rice on the salt-soaked land. It is this plant that is grown on salty soil, and the saltiness of the mother earth was washed away by planting this crop, which cannot be saturated with water, "with its feet always standing in the water, and its head facing the grandfather sun." In addition, special trees have been planted around this land to remove the salt from the land. In particular, according to the views of the valley farmers, the land, where the body and the forehead have been salted by a person against his will, is not allowed to wash off the salt, but the farmer washes it with water, and at the same time, by planting trees suitable for such land, it is cleansed from disease. can be fixed. For example, local farmers have always planted willow, mulberry, fig, and juniper trees around the salt fields. Because these trees grew not only on salty land, but at the same time, they were naturally salty, or some farmers were very afraid of being kicked from the top by hoes. "my ear" while taking away the salt of the salty earth, which they "salted" with chemicals and other means, according to the order [12].

In the Mingbulok district of Namangan region, there are many saline lands, so the farmers worked on the salted lands and washed the saline lands with water, "washed, dipped", local fertilizers were applied to the low-yielding lands, and the ditches were cleaned of silt.

The main risks and threats in the water sector in the medium and long term are the decreasing volume of water resources as a result of climate change, as well as the increasing demand for water due to the growth of the population and the rapid development of the economy.

In the process of mitigating these threats, a number of effective practical works are being carried out in the Fergana Valley, as in other regions of Uzbekistan, in terms of the gradual cancellation of the state order for the cultivation of cotton and wheat, the introduction of market mechanisms into the economy, and, accordingly, the reform of the state regulation of agriculture. This is the first step towards a reasonable and fair solution to existing problems.

Water management organizations, work methods and skills must be adapted to the new challenges of ensuring water and food security. If these tasks are fully fulfilled, changes will

occur in the management and distribution of water resources, and their efficiency will increase, and faster adaptation to the current demand will be ensured.

Central Asia is threatened by climate change, primarily by the extremely rapid melting of centuries-old mountain glaciers that form the region's main rivers. During the last 50-60 years, the area of glaciers has decreased by about 30 percent. According to forecasts, the volume of glaciers will decrease by 50% when the temperature increases by 2oC, and by 78% when it warms by 4oC. Melting of the glaciers at such a rate is likely to cause a serious shortage of fresh water. According to estimates, by 2050, the flow in the Syrdarya basin is expected to decrease by 5%.

As you know well, in recent years, water management relations between the countries of the region have improved significantly compared to previous times, and there is a positive trend in solving the problems of water use of transboundary rivers. However, in the future, the construction of new large hydropower facilities and reservoirs in the upper reaches of the huge Syr Darya, as well as the use of them and the existing ones in the energy mode, may cause a number of water supply problems for other countries of the Central Asian region located downstream of the rivers, including Uzbekistan.

One more serious problem that needs to be solved immediately is the problem of cleaning and using the wastewater (collector - drainage and waste water) efficiently. About half of the water used by industrial enterprises is returned as wastewater, which poses serious ecological risks to the environment.

So, in recent years, in connection with the ecological situation in our region, the shortage of water resources, the decrease in the quality of drinking water, the degradation of land, and the sharp decrease in biodiversity have become extremely urgent problems that are waiting for their solution.

In order to preserve this precious resource, it is necessary to use water-saving technologies and develop long-term forecasts. Most importantly, we need to reduce the irrigated areas or switch to the drip irrigation system as soon as possible. Also, through the educational system and environmental education in the family, the population, especially the young generation, who will rule not only themselves, but also the whole world, in the mind of the priceless, incomparable, unique gift - water should be used sparingly and carefully, "the sound of water" It is very important to form and strengthen opinions about the possibility.

REFERENCES

1. Саидов А. Х. Жаҳонда сув етишмаслиги билан боғлиқ инқирозлар // Ижтимоий фикр. Инсон ҳуқуқлари. – 2010. – №2. – – Б. 135.
2. Саидов А. Х. Жаҳонда сув етишмаслиги билан боғлиқ инқирозлар // Ижтимоий фикр. Инсон ҳуқуқлари. – 2010. – №2. – – Б. 136.
3. https://kun.uz/news/2022/08/09/ozbekistondagi-suv-taqchilligi.
4. https://www.wri.org/applications/aqueduct/country-rankings.
5. Саидов А. Жаҳонда сув етишмаслиги билан боғлиқ инқирозлар...– Б. 139.

6. Атроф-муҳит ҳолатининг шарҳи. Ўзбекистон. Иккинчи шарҳ. Бирлашган Миллатлар Ташкилоти. – Нью-Йорк ва Женева, 2010. – Б. 104.

7. 2017 – 2022 йилларда ер ости чучук сув захираларидан фойдаланишни кенгайтириш ҳисобига Фарғона водийси аҳолисини ичимлик суви билан таъминлаш тизимини такомиллаштириш. https://www.norma.uz/uz/qonunchilikda_yangi/fargona_vodiysidagi_chuchuk_suv_zahiralari_qayta_baholanadi

8. Атроф-муҳит ҳолатининг шарҳи.....– Б. 3.

9. Аширов А. А. Ўзбек маданиятида сув. – Тошкент: Академнашр, 2020. – Б. 189.

10. Аширов А. А. Ўзбек маданиятида сув.... – Б. 182.

11. Дала ёзувлари. Фарғона вилояти Данғара тумани Тумор қишлоғи. 2018 йил.

12. Дала ёзувлари. Фарғона вилояти Данғара ва Наманган вилояти Тўрақўрғон тумани қишлоқлари. 2021–2022 йиллар.