WATER RESOURCES AND THEIR USE IN THE NATIONAL ECONOMY

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ABSTRACT

Water resources play an important role in ensuring the economic development of our country. Water resources have a special place among natural resources and are unique in their importance. Water is used in all sectors of the economy and in the life of the population. At the same time, the nature and types of use of natural resources are diverse. In particular, the development of irrigated agriculture plays a special role in strengthening the country's economy. That is why it is said among our people, "There is water - there is life, and where there is no water, life ends."

ANNOTATSIYA

Mamlakatimiz iqtisodiy rivojlanishini ta’minlashda suv resurslari g’oyat katta rol o’ynaydi. Suv resurslari tabiat resurslari orasida alohida o’rin tutadi va ahamiyatiga ko’ra beqiyosdir. Suv halq xo’jaligining barcha tarmoqlarida va aholining hayot faoliyatida ishlatiladi. Bunda tabiiy resurslardan foydalanish harakteri va turlari xilma–xildir. Ayniqsa sug’orma dehqonchilikni rivojlantirish mamlakat iqtisodini mustahkamlashda alohida o’rin tutadi. Shuning uchun ham halqimiz orasida «Suv bor–hayot bor, suv tamom bo’lgan joyda hayot tugaydi» deb bejiz aytishmagan.

АННОТАЦИЯ

Водные ресурсы играют важную роль в обеспечении экономического развития нашей страны. Водные ресурсы занимают особое место среди природных ресурсов и уникальны по своему значению.

Вода используется во всех отраслях экономики и в жизни населения. При этом характер и виды использования природных ресурсов разнообразны. В частности, развитие орошаемого земледелия играет особую роль в укреплении экономики страны. Вот почему в нашем народе говорят: «Есть вода - есть жизнь, и где вода истекает, там жизнь кончается».

KEYWORDS

Water resources, water distribution, water scarcity, water management complex, water supply, water basin, sewage, irrigation system efficiency, irrigation koedanitsy, irrigation ditch, irrigation ditch productivity, water use efficiency, water conservation.

КЛЮЧЕВЫЕ СЛОВА

Водные ресурсы, водораспределение, дефицит воды, водохозяйственный комплекс, водоснабжение, водохранилище, канализация, эффективность оросительной системы, оросительные коеданицы, оросительная канава, продуктивность оросительной канавы, эффективность водопользования, водосбережение.

KALIT SO'ZLAR

Suv resurslari, suv taqsimoti, suv tanqisligi, suv xo'jaligi kompleksi, suv ta'minoti, suv havzasi, oqova suv, sug'orish tizimi foydali ish koeffitsiyenti, sug'orish shaxobchasi, xo'jaliklararo kanallar, suvdan foydalanish koeffitsiyenti, suvdan foydalanish unumdorligi, suvdan foydalanish samaradorligi, suvni muhofaza qilish.

The main water resources that supply water to Central Asia are located in the Chatkal, Pamir-Alay and Tianshan ridges, which are in the form of permanent glaciers. 70-80% of Central Asia's water resources are located in the mountainous regions of Tajikistan, Kyrgyzstan and Kazakhstan. At present, 8 million people live in the Aral Sea basin of Central Asia. hectares of land will be irrigated. In the same area, 126 billion dollars a year are available for drinking and irrigation. m3 of water. The volume of water generated in this area is 15,750 m3 per hectare of irrigated land.

If one hectare of land is planted with cotton and yields an average of 25-30 quintals, the volume of water taken from the source to irrigate one hectare of land is at least 10 thousand m3. It can be concluded that agriculture in these areas is carried out at the expense of a lot of water, for example, in the Republic of Uzbekistan an average of 60 billion soums a year. m3 of water is consumed, of which 50 bln. m3 is used for irrigation. Each hectare of irrigated land consumes an average of 11-12 thousand m3 of water. 40 The total volume of water in Uzbekistan is 8-10 billion cubic meters. m3, ie about 1000 m3 of water per hectare of irrigated land. In conclusion, due to the fact that Uzbekistan is located in the semi-desert and semi-desert zone, the water shortage in its territory is very high. This means that more than 80% of the water consumed in our country comes from Kyrgyzstan and Tajikistan.

The uneven distribution of water across the country is exacerbated by its seasonal fluctuations. The nature of river water supply has a significant impact on the water balance and its distribution by year and season. The main source of water for many rivers in our country is snow in the mountains. In such areas, the main water flow occurs in the spring. The main water source for the Amudarya and Syrdarya rivers is glaciers, most of which flow in the summer. The unfavorable seasonal distribution of river water makes it difficult to use water resources and creates a balance in the economy. Fresh water shortages are particularly acute in arid regions, where the bulk of water resources are used to irrigate crops. In order to reduce water shortages and improve water supply, a number of reservoirs and 41 large canals have been built in the Aral Sea basin. They have a water capacity of 20 billion cubic meters. The Toktagul Reservoir, built on the Naryn River, is estimated at 2 billion cubic meters each. Andijan and Charvak reservoirs with a capacity of 4 billion m3, Kayrakkum reservoir with a capacity of 4 billion m3, Chordora reservoir with a capacity of 3.75 billion m3 in the Syrdarya basin, 10 billion cubic meters. Nurak and Tuyamuyun reservoirs in the Amudarya basin with a capacity of 2 billion cubic meters. The construction of the Talimorjan Reservoir with a capacity of m3 will lead to a significant reduction in water shortages in the entire Aral Sea basin.

A number of large canals have been built across the country to improve water supply. These include the Big Fergana, Big Andijan, Big Namangan canals in the Fergana Valley, the Southern Mirzachul Canal in Jizzakh and Syrdarya regions, and the Parkent and Tashkent canals in the Chirchik River oasis. In the Amudarya oasis, the Karshi main canal, the Amu-zang Amubukhoro canal, the Karakum canal and a number of other canals have been built. All of this is failing to provide water to the sectors, despite the fact that it regulates and manages the available water resources in all sectors of agriculture, energy, industry and the national economy. Therefore, the involvement of the rapid development of industrial and agricultural production in the economic development of inland regions requires a more rational use of surface water resources and their redistribution. This will require a comprehensive approach to water management. The integrated use of water resources should be considered not only in the rivers and basins, but also in the regions. At the same time, water resources, which are an integral part of the natural environment, require the territorial organization of the national economy on the basis of rational specialization of material and natural resources and their efficient use. The main task of the water management complex is to develop regional recommendations to meet the demand for water in the context of emerging water scarcity. The zone will be implemented according to a single inter-sectoral scheme of rational use of water, designed to rationally distribute water in each of the integrated water use networks.

Almost all major basins have water management schemes that characterize the status and prospects of water development.

The Aral Sea basin has large freshwater reserves and is one of the world's leading regions in terms of total water resources. Most of the water resources are river water. The average long-term volume of river water is 126 billion m3 per year, which is 17,000 m3 per capita per year. Many water resources are located in large mountain glaciers and underground basins. The usable resources of fresh and low-mineral groundwater are 65 km3. However, water resources are very unevenly distributed in the Aral Sea region.

About 80% of them are in the mountainous eastern regions, which are currently poorly developed and where agriculture can develop due to natural precipitation. Currently, the population accounts for only 12% of the water resources in the western and southern regions, where 80% of industrial and agricultural production is located. With the development of industry, the intensification of agriculture, population growth, freshwater consumption is increasing year by year. In 1950, the total water intake in the country was 40 km3, and in 1960 it was 50 km3. In 1970 it was 55 km3, in 1980 it was 57 km3, in 1985 it was 60 km3, and in 2002 it was 56 km3. Water consumption is growing rapidly, growing 1.5 times in 50 years. The need for water will increase in the near future.

Land, along with water, is the main means of agricultural production. And water is an inevitable factor in the production of agricultural products. The soil is fertile only when it has optimal moisture and ensures high yields. Growing crops requires a lot of water, which is used irreversibly. During the growing season, thousands of tons of water are released into the atmosphere from each hectare of soil. Hundreds of cubic meters of water must pass through plants and evaporate to form a product. For example, in the cultivation of 1 ton of potatoes, the need for water is 1500 m3, in the cultivation of winter wheat - 600 m3, in the cultivation of cotton - 3000 m3, in the cultivation of rice - 13,500 m3. For normal growth of cultivated plants, soil moisture during the growing season should be 70-75%. In most parts of the region, it is much lower. Low or excess soil moisture has a negative impact on crop yields. The soil water regime can be regulated only by reclamation measures aimed at creating active moisture balances in the active layer of the soil and maintaining it throughout the growing season. Only technologically perfect irrigation systems can provide a fully regulated type of soil water regime. 47 The use of irrigation water in agriculture is inextricably linked to land use. The value of water consumption can only be considered in the light of the end results of irrigated agriculture.

1. The value of water as a means of production is lost when it is separated from the production process. Irrigation water from irrigation sources has its own characteristics. This water must be sent to a specific site in a timely manner and in the required amount. Failure to comply with these conditions will have a negative impact on agricultural production. Improving the efficiency of irrigation water use is a task of national importance. The key to efficient use of water resources is to get the most out of irrigation water at low cost. This is achieved through a variety of technological, organizational and economic measures. The efficiency of water use in irrigated agriculture is characterized by the following indicators. - Coefficient of efficiency of irrigation system - Coefficient of water use in irrigation system - Irrigation water efficiency It was noted that most of the water in agriculture is used irreversibly. One of the reasons for the irreversible consumption of water is that it is lost as a result of absorption and evaporation in irrigation systems. These losses account for 20-25% of all water consumed, and sometimes 40%. Water loss is reflected in the Irrigation System Efficiency Coefficient (KPD), which is the amount of water flowing into the area (Wn-t) from irrigation sources (Wbr) over a given period (decade, month, growth period). is the ratio of the amount. KPDs Wnt / Wbr The difference between the water intake and the water supplied is the loss of absorption and evaporation. The expression [(1-KPD) * 100] determines the percentage of water loss in the system. The efficiency of an irrigation system includes an inter-farm station (KPD m.x.) and an on-farm station (KPDvx), and this expression is defined as follows. KPD KPDmx * KPDvx The efficiency depends on the technical level of the irrigation system, the nature of the soil, the relief, and so on. It varies from year to year for each system. At the same time, it fluctuates a lot in irrigation systems that have canals in local streams and are poorly equipped with hydraulic structures.

   Much of the water is lost in inter-farm outlets and canals. In the country as a whole, more than 40% of all water from irrigation sources is lost at inter-farm and intra-farm outlets. Therefore, the increase in the efficiency of irrigation systems is an important reserve for water conservation.

Loss of water at the station can cause significant material damage. In addition to the direct loss of moisture, its absorption leads to rising groundwater, salinization of soils, and deterioration of the reclamation of irrigated lands. It also costs a lot of money to divert water from irrigated areas. Loss of water also occurs in the fields: some of the water is absorbed below the layer where the roots grow and joins the groundwater, as well as evaporates from the surface of the fields. The total water loss is reflected in the system water use (KWS) coefficient. This ratio is the ratio of the useful water consumption of plants in the field to the amount of water obtained from irrigation sources. 49 KIVS Ye • F Wbr where: Ye – consumption of useful water by agricultural crops for a certain period of time, m3 per F - irrigated area Wbr - the amount of water from the irrigation source, m3 The coefficient of water use in the system o ' the expression [(1-KIVs) • 100)] indicates how much water the wires consume from the irrigation source to produce the crop, and the total percentage of water consumption in the system and in the field. The total loss of irrigation water indicates that there are reserves of rational use of water from irrigation systems by improving their technical use. Irrigation water efficiency is a generalized indicator of water use efficiency. Irrigation Water Use Productivity (POV) is defined as the ratio of a product produced in kind or value (AVP) to the total volume of water received from an irrigation source (Wbr). POV AVP Wbr In water-scarce drought areas, the goal is to get the maximum yield per 1 m3 of water, not per hectare. Irrigation water efficiency is a synthetic indicator. It is closely related to the economic productivity of the soil, which is expressed in terms of production. This indicator characterizes the level of economic activity of agricultural enterprises and the use of irrigation systems. The problem of rational use of irrigation water is now of paramount importance. Much work is being done to improve irrigation equipment and reconstruct existing systems. Improving the technical level of irrigation systems (equipping their systems with hydraulic and water metering facilities, installing anti-slip coatings on canals, building closed pipelines, using advanced irrigation methods) will help to improve land and water use.

During the transition to a market economy, great importance is attached to the rational use and protection of natural resources, especially water resources. Water conservation measures are not only aimed at stopping wrong actions or activities, but also at preventing the pollution and depletion of water resources. There are standards for the allowable sum of different ingredients in pools. They are aimed at using water for domestic and household purposes without harming human health. With the rapid growth of the national economy and the development of urban planning, the need for water will increase. This increases the importance of rational use of water and its protection. The development of industry, the industrialization of agriculture and the growth of public utilities will lead to an increase in the volume of water used. Separation of wastewater is a major cause of water pollution. The quality of water in reservoirs is deteriorating as a result of the development of blue-green algae, which significantly worsens the oxygen zone of the ponds. Pouring warm water into rivers and dumping agricultural fertilizer residues is one of the reasons for the growth of blue-green algae. Chemicalization of agriculture leads to direct contamination of water sources with toxic chemicals and fertilizers. These chemicals and fertilizers fall into the rivers along with the groundwater and drainage water from irrigation systems. This is more common in irrigated rice systems. Pollution of ponds with sewage causes great damage to the national economy. Our government has taken a number of measures to protect water resources. In 1996, the Cabinet of Ministers adopted a resolution "On measures to regulate the use of water resources and strengthen their protection." In 1997, the Institute of Water Problems was established. In 1996, the Oliy Majlis of Uzbekistan approved a law on water. With this law, the state reaffirmed that water resources are the common wealth of the people and their rational use, as well as their protection from pollution - a matter of national importance. The law stipulates the principle of meeting the economic and drinking needs of the population in the first place. This means that any economic activity should not be an obstacle to the provision of clean water to the population.

In conclusion, we can add that the Republic of Uzbekistan consumes an average of 60 billion m3 of water annually. Of this, 50 billion m3 will be used for irrigation. Each hectare of irrigated area corresponds to 11-12 thousand m3. The distribution of water in the regions varies from 9,000 m3 (Jizzakh region) to 18.5 thousand m3 (Khorezm region) per hectare. Many large reservoirs have been built to regulate the Syrdarya and Amudarya rivers in order to prevent water shortages that occur once every 11-13 years. Water use efficiency in agriculture is measured by the operating efficiency of the irrigation system, the water utilization factor and the productivity of irrigation water, and the amount of profit per m3 of water. The problem of protection of water resources from pollution is very important today. There are three ways to solve this problem: 1. The scope of water treatment is expanding. 2. The use of wastewater in agriculture is expanding. 3. Measures are being taken to reuse closed water in industrial enterprises.

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