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HISTORY OF FORMATION AND STAGES OF DEVELOPMENT OF SURKHANDARYA RESERVOIRS

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Annotation: This article analyzes the formation of reservoirs in the Surkhandarya region, the stages of their construction, and their historical development. The study highlights major irrigation projects implemented in the region since the mid-20th century, the policies aimed at developing water management, and the significance of reservoirs in agriculture and the socio-economic life of the region. Additionally, the article examines the technical solutions applied during the construction of the South Surkhan, Tupalang, Uchkizil, Oktepa, and Degrez reservoirs, as well as the natural-geographical factors and their impact on the region's ecology. Based on historical, geographical, and analytical methods, the research investigates the step-by-step formation of the Surkhandarya reservoir system and scientifically substantiates its current state and development prospects.
Keywords: reservoir, irrigation, historical development, water management, ecology, engineering structures, relief South Surkhan, Tupalang, Uchkizil, Oktepa, Degrez, main canal, reconstruction.
Аннотация: В данной статье анализируются процессы формирования водохранилищ Сурхандарьинской области, этапы их строительства и исторического развития. В ходе исследования рассматриваются крупные ирригационные проекты, реализованные в регионе с середины XX века, политика развития водного хозяйства, а также значение водохранилищ в сельском хозяйстве и социально-экономической жизни региона. Кроме того, изучаются технические решения, применённые при строительстве водохранилищ «Южный Сурхон», «Тупаланг», «Учкизил», «Октепа» и «Дегрез», природно-географические факторы и их влияние на экологию региона. В статье, на основе исторических, географических и аналитических методов, поэтапно исследуется процесс формирования системы водохранилищ Сурхандарьи, научно обосновываются их современное состояние и перспективы развития.
Ключевые слова: водохранилище, ирригация, историческое развитие, водное хозяйство, экология, технические сооружения, рельеф, Южный Сурхан, Актепе, Тупаланг, Учкизил, Дегрез, магистральный канал, реконструкция.

Introduction

Surkhandarya region, located in the south of Uzbekistan, is one of the regions with naturally limited water resources. Despite this, irrigated agriculture has been developed in this region since historical times, and experiences in the rational use of water resources have been formed. In the second half of the 20th century, the need arose for the Surkhandarya region to create a system of large water management structures - reservoirs. This process was closely related to

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the policy of water resources management, development of desert areas and intensive development of agriculture in the republic. This article analyzes the formation of the Surkhandarya reservoirs, the stages of their construction, and their role and significance in the socio-economic life of the region based on a historical-geographical approach.

Relevance of the topic: Today, the issues of rational management of water resources, expansion of irrigated lands and ensuring environmental sustainability are of urgent importance in the economy of the southern region of Uzbekistan - **Surkhandarya region** . Due to the peculiarities of the terrain and climatic conditions of the region, reservoirs play an important role here not only in agriculture, but also in industry, energy and providing the population with drinking water. Therefore, **the history of the formation of Surkhandarya reservoirs** and **Studying the stages of development** is important in today's scientific research.

The relevance of the topic is determined by such factors as the need to restore historical heritage, the role of reservoirs in the socio-economic development of the region, the need to analyze environmental problems, the need for digital archiving and systematization of historical data. Also, by studying the history of the formation and stages of development of reservoirs in the Surkhandarya region, the aim is to gain a deeper understanding of the historical experience of Uzbekistan's water management policy, improve the current water supply system, and create a scientific basis for ensuring environmental safety.

Purpose, object and subject of the study. The main purpose of this study is to analyze on a scientific basis the process of formation of reservoirs in Surkhandarya region, their construction stages, historical development dynamics and their role and significance in socio-economic life. The study identifies the historical formation of the water management system in the region, the influence of natural and geographical factors, the stages of change of engineering and technical experiences, and highlights the role of reservoirs in regional development. The object of the study **is the reservoirs located in Surkhandarya region** (South Surkhan, Uchkizil, Degrez, Oktepa, Topalang reservoirs) and **the processes of their creation, operation and development** . In other words, the object of the study **is the system of water resources collection and management structures in the region** and their impact on territorial, economic and ecological changes. The subject of the study **is the complex of historical, technical, social and natural factors that influenced the formation of Surkhandarya reservoirs ,** their **stages of development and their significance today** . The course will examine the gradual construction of reservoirs, their role in the irrigation network, changes in the water supply system, as well as their impact on the lifestyle of the local population.

Methods

The study used **historical-analytical , geographical , statistical, field research** and **integrated approach** methods. Through the historical-analytical method, the construction and development processes of reservoirs were analyzed based on historical sources, archival documents and scientific literature. Using the geographical method, the natural conditions, relief, river basin and hydrogeological characteristics of each reservoir were studied. Statistical analysis was carried out based on water capacity, irrigation area and water distribution indicators. The field research method allows for analysis **based on real reality , regional observation and practical data** . The source base of the study is data from the Ministry of Water Resources of the Republic of Uzbekistan, historical maps, archival documents and scientific articles.

Analysis of Literature

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Analysis of the research on the topic. Although previous studies have been conducted on the formation of the water management system, reservoirs, and irrigation infrastructure in the Surkhandarya region, most of them are devoted to the history of water resources in Uzbekistan or Central Asia in general, and **a comprehensive historical analysis of the Surkhandarya region** has not been sufficiently studied.

Some scientific works on the history of water management since the second half of the 20th century - **Komilov O.K (2017), Nasriddinov Q.M (1994), Buriev S.D (2008)** The studies of scientists such as **A.** (in particular, South Surkhan, **Topalang, Degrez, Oktepa, Uchkizil)** were not analyzed as separate historical stages.

In recent years, researchers **from the Ministry of Water Resources of the Republic of Uzbekistan , Uzgidromet , the Institute of Geography and Geology** , and **Termez State University** have published scientific articles on the natural and geographical characteristics of water resources in Surkhandarya and their role in regional development. However, these works are mainly **in the hydrotechnical, geological, or economic areas** , and do not **focus on the historical formation processes, construction stages, and social consequences.** not fully covered. Although previous studies have studied the history of water management and irrigation systems in general, **a comprehensive historical analysis of the formation, stages of development, socio-economic and ecological significance of the Surkhandarya reservoirs** has not yet been carried out on a sufficiently scientific basis. Therefore, this study serves to fill the existing scientific gap, illuminate regional history with concrete evidence, and connect current water policy with historical experience.

Source of information - Surkhandarya regional state archive and Denov district archive, “Creators of the To'palang reservoir” by Q. Khudoyberdiev and A. Odinayev, “The water-bearing people are dear in the land” by J. Kadyrov and S. Jumayev, “Surkhon artificial lake” by S. Buriyev, “Surkhon dam” by S. Buriyev, “Soviet irrigation of Uzbekistan, a universal creation” by S. Baturin , volume IV Scientific literature entitled “Irrigation of Uzbekistan”, “Surkhandarya in the Mirror of History” by S. Tursunov, E. Qobilov, T. Pardayev, B. Murtazoyev, and articles on the topic, timely press releases, reports, and field research observations were used.

Results

The Surkhandarya region has a complex relief, and the harmonious arrangement of mountains, valleys and plains required a unique approach to the organization of irrigation systems. Therefore, in the second half of the 20th century, the South Surkhan, Oktepa, Topalang, Uchkizil and Degrez reservoirs were built, which made a significant contribution to agriculture and the socio-economic development of the region. In the years after World War II, in order to expand irrigation networks, develop new lands and improve water supply, the Hazarbog Canal was expanded and the Yurchi swamp in Denov was drained.

By 1955, the irrigated area of the oasis reached 158,000 hectares. [1, P. 112] During these years, the construction of the Degrez and Uchkizil reservoirs began. The Kakaydi and Yangiarik canals were expanded.

In the second half of the 20th century, the flow of rivers in the oasis began to be regulated by the construction of reservoirs. In 1946-1959, a number of reservoir projects were submitted for implementation by design institutes:

Uchkizil reservoir - capacity 80 million m^3 ; Degrez reservoir - capacity 12 million m^3 ; Kyzyryk reservoir - capacity 350 million m^3 ; Oqjar reservoir - capacity 300 million m^3 ;

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Lalmisoy reservoir - capacity 39.6 million m ^{3} ; South Surkhon reservoir - capacity 710 million m ^{3} ; Sherabad reservoir - capacity 22 million m ^{3} .
Of these, in 1958-1967, the construction of the South Surkhan [2, P. 327] and Degrez (1958) [3, P. 56] Uchkizil reservoirs (1957) [4, P. 759] began. Instead of the Sherabad reservoir , the Sherabad main canal with a capacity of 110 m (^{3} was built and put into operation. The Zang canal, which provides 86 m ^{3}) of water per second, was also reconstructed
The construction of reservoirs is not only a technical achievement, but also a historical event that reflects the water policy, land reclamation policy and social processes of its time. Therefore, studying the stages of formation and development of Surkhandarya reservoirs allows for a scientific analysis of the development model of the region. Today, historical experience is of great importance in managing water resources, maintaining ecological balance and developing sustainable agriculture. This topic combines the disciplines of history, geography, ecology and economics to analyze the history of Surkhandarya water management and develop practical conclusions for modern water policy.
The Surkhandarya River is formed by the confluence of the Karatog and To'palang rivers and flows through the territory of the Uzun district. Its length is 175 km, and the catchment area is 13 thousand km². On the right bank of the river is the Surkhan oasis, and on the left bank are the foothills of the Bobotag. The South Surkhan reservoir was built on this riverbed. Initially, the Surkhandarya River irrigated the Surkhan oasis, and the Sherabad River irrigated the Sherabad oasis. When the water of the Sherabad River was not enough during the development of new lands, the water of the Surkhandarya was diverted through the Sherabad main canal and began to be used for irrigation of the oasis. This filled the lower part of the Sherabad River with water, paving the way for the development of new lands. On February 11, 1954, the USSR Council of Ministers adopted a resolution to expand cotton cultivation in the Surkhandarya, in particular, the area under fine-fiber cotton to 70 thousand hectares. On this basis, on April 12, 1954, the issue of building the South Surkhandarya reservoir was considered in Moscow under the leadership of AN Askochensky and VV Poslovsky. The project was submitted to the Sredazgiprovodkhlopok Institute, and on March 8, 1956, a technical project was prepared and approved by the USSR Ministry of Agriculture on March 30.
The Institute's specialists conducted exploration work near the present-day city of Kumkurgan, on the right bank of the Surkhandarya, and found it to be the most suitable place for building a reservoir. Although the Shorchi or Zharkurgan areas were also considered at first, Kumkurgan was chosen for the construction of the reservoir. The reason for this was, firstly, the convenience of delivering water to the Surkhan-Sherabad deserts, and secondly, the steep relief of the area made it possible to accumulate water and increase the reservoir capacity. With the start of the construction of the South Surkhandarya reservoir, the local population was relocated to the present-day village of "Yangiyer", the "Besh Harokh" farm association and the "Aqjar" estates, and were provided with new housing. The "Savjiran Ota" tomb on the river bank was also relocated and turned into the present-day large cemetery on the hill.
On March 19, 1958, the Council of Ministers of the Uzbek SSR adopted a resolution on the construction of the South Surkhan Reservoir. According to order No. 171, 10 million soums were allocated for the first two years of construction, the project was approved on April 15, 1958, advanced training courses were organized for 200 workers, and YaAZ and MAZ vehicles were allocated for the construction of the dam. In the same year, engineers from the Sredazgiprovodkhlopok Institute Ye.M. Benyaminov, VM Kritsky and VG Kogay developed

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the project of the Kogay Reservoir. The dam equipment was prepared by specialists from the Leningrad Hydrological Institute, and the railway construction projects were prepared by specialists from the Dnepropetrovsk Institute. The technical council under the Ministry of Water Resources of the Uzbek SSR approved this new project for the construction of the South Surkhan Reservoir on April 12, 1958 [5, P. 90] . Representatives of 29 nationalities worked together to build the reservoir.

Simultaneously with the construction of the South Surkhan reservoir, the town of Kumkurgan was rapidly built in order to create the necessary conditions for its builders. Modern housing, a kindergarten, a workers' supply department, a canteen and a bakery were built. The city was supplied with natural gas and drinking water. All work was carried out under the direct supervision and assistance of the government. Initially, 23 million 360 thousand soums were allocated for the construction of the South Surkhan reservoir, but in fact 14 million cubic meters of soil, 141 thousand cubic meters of concrete and 1,100 tons of metal were used, so in 1964 the costs were recalculated. At the suggestion of the Sredazgiprovodkhlopok Institute and the Ministry of Water Resources of the Uzbek SSR, the total amount was increased by 5 million 780 thousand soums, amounting to 29 million 336 thousand soums. This report was approved by the USSR Ministry of Land Reclamation and Water Resources in 1966. [6, P. 16]

On June 3, 1967, by the decision of the Uzsuvskurilis Department of the Ministry of Land Reclamation and Water Management of the Uzbek SSR, a special commission was formed to accept the South Surkhan reservoir under the leadership of the chief engineer of the Surkhandarya regional irrigation network department AP Pugach. The commission included such specialists as AI Ivanova, AA Bondarenko, VG Lazurin, Ye.V. Nikiforov, AA Buracheva, PG Fedorova, IB Artamanova and VG Kogay. The commission was provided with technical documentation on the work performed - projects of dams and water structures, control records, reports and information on the electrical system.

On October 24, 1967, according to the final decision of the commission, the construction and installation work of the South Surkhan reservoir was assessed as “good”. It was officially confirmed that a total of 29 million 336 thousand soums were spent on the construction. The total capacity of the South Surkhan reservoir is 800 million m^3, the useful capacity is 610 million m^3, the useless volume is 90 million m^3, and the turbidity volume is 100 million m^3. The surface of the water surface is 65 km^2, the depth of the basin is 27 meters, the height of the dam is 30 meters, the length is 20 km, and the width is 5.2 km.

According to the conclusion of the working commission, all construction work was carried out in accordance with the established plan and to the required level. The facility was found to fully comply with the resolutions of the USSR Ministry of State Construction and Reclamation and Water Management of 1966. The Council of Ministers of the Uzbek SSR by order of September 21, 1967 established the State Acceptance Commission. The commission included BP Kurbonov (chairman), AP Pugach, AA Bondarenko, VG Kogay, PP Fedorov, DI Afonin, VM Glukhov and other specialists. On November 4, 1967, the commission reviewed all technical documentation and construction work and assessed the condition of the dam, water discharge and equipment as “good”. Thus, the South Surkhan reservoir was officially put into full operation. On June 17, 1967, in connection with the full commissioning of the South Surkhandarya Reservoir, the workers of the Surkhandarya region were awarded the Order of Lenin for their achievements in economic and cultural construction. To present the award, the

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First Secretary of the Central Committee of the Communist Party of Uzbekistan Sh. R. Rashidov visited the region and sincerely congratulated the workers.
Thanks to the water taken from the "South Surkhan Reservoir", which began operating in 1967, 24 thousand hectares of new land were developed and the land reclamation condition of 13 thousand hectares of land was improved. [7, P. 2]
These successes were an important step in increasing the economic potential of the Surkhandarya region.

Irrigation facilities inherited from the past still serve the well-being of the people and the development of the future. According to the list approved by the Cabinet of Ministers, there are 22 large hydraulic structures in Surkhandarya region - 5 reservoirs, 6 main canals, 5 pumping stations, 5 hydropower plants and 1 collector. The reservoirs in the region (South Surkhan, Topalang, Uchkizil, Oktepa and Namuna-Degrez) have a total water storage capacity of 905.5 million m³. Their capacity is: South Surkhan - 800 million m³ (currently 503 million m³), Topalang - x million m³, Uchkizil - 160 million m³, Oktepa - 100 million m³, Namuna-Degrez - 17.5 million m³. [8, P. 192].

Discussion

Uchkizil Reservoir. The construction of the Uchkizil Reservoir, located in Surkhandarya region, began in 1953 and was fully commissioned in 1957. The main purpose of the reservoir is to improve the water supply of the land and expand the area of irrigation. The Uchkizil Reservoir is located approximately 20 km north of Termez, the center of Surkhandarya region, on a natural, horseshoe-shaped depression near the Uchkizil ridge. It is surrounded by hills.
The Uchkizil Reservoir covers an area of 10 km2 and is dammed by a dam 11 meters high and 4 kilometers long in the Uchkizil Valley · The total volume of the reservoir is **160 million m³ , and** the usable volume is **80 million m³ . It is located in the Zang Canal .** and is filled with water from the Surkhandarya River through **the South Zang water supply channel .** The average depth of the Uchkizil reservoir is 16 meters and extends for 5.5 kilometers along the length. The Zang canal, which receives water from the Surkhandarya, supplies the Uchkizil reservoir with water, and the reservoir supplies the undeveloped steppes of the Termez district and the Amu Darya with water. The length of the Uchkizil reservoir is 2 kilometers, the southern one is 3 kilometers, and 2 dams. The main structures of the reservoir include the southern and western dams, a structure in the form of a water outlet tower, as well as the main retaining dams. **The southern dam** is 1,150 meters long, 11.5 meters high, and the top is 6 meters wide. The upper slopes of the dam are reinforced with reinforced concrete slabs. A water discharge structure was built on the left side of the southern dam, designed to transfer 10-15 m ^{3} of water per second. The length **of the western dam** is 2260 meters, and its height is 5.2 meters. [9, P. 207]
The channel leading from the reservoir has two distributors, the eastern distributor with a capacity of 12 m ^{3} per second , and the western distributor with a capacity of 17 m ^{3} per second. The Uchkizil reservoir is an important hydroelectric facility, which made it possible to irrigate 6,000 hectares of new land and improve the water supply of 6,000 hectares of irrigated land. [10, P. 63-64]
An open water distributor (head gate) located 70 meters from the water intake facility directs water to the eastern and western distribution channels. After the Uchkizil reservoir was commissioned, the construction of large hydropower plants along its main irrigation networks

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continued. Today, this reservoir plays an important role in the management of water resources in the region and the sustainable irrigation of agricultural crops.

The Degrez reservoir was built in 1958. This period coincides with the years of active irrigation policy of Uzbekistan during the Soviet era. During the 1950s and 1960s, many reservoirs, canals, and water structures were built in the Surkhandarya valley. The construction of the Degrez reservoir was also part of these large-scale land reclamation reforms. The reservoir has **a water capacity of** 12.8 million m³. This volume belongs to the category of medium-sized reservoirs. It provides a water resource sufficient for irrigation of cultivated areas at the local level . The **water level** is 140 hectares. This indicator indicates that the reservoir is relatively small in terms of area, but its water storage capacity indicates that it is an important source of seasonal irrigation of crops. Reservoir **Hazarbog Canal** and **It is filled with water from the Khojaipok River** . This means that there is a dual-source water supply system. Thus, the reservoir uses both natural river water and an artificial canal system. This The solution increases the stability of the water supply. [11, P. 56]

Degrez Reservoir **Saltwater** and **Altynsay districts . This also shows the agro-economic importance** of the reservoir . The existence of an irrigation system contributes to the development of agriculture in these regions, in particular, to increasing productivity in the fields of cotton, grain and vegetable growing. The reservoir is not only used for irrigation, but also **for groundwater regulation** and **It also plays an important role in mitigating the microclimate** . At the same time, it creates conditions for preserving biodiversity around the water basin. The Degrez reservoir plays an important role in the irrigated farming system of the Surkhandarya region. Its construction was a practical result of the policy of efficient use of water resources in the 1950s. Even today, the reservoir retains its importance in providing water to the region's agriculture.

Oktepa Reservoir. The Oktepa Reservoir is one of the largest hydraulic structures in the Surkhandarya region, located in the southeastern part of the Bobotog massif. The construction of this reservoir is one of the important stages of the republican large-scale irrigation and land reclamation policy of the 1970s–1980s. The construction of the reservoir began in 1978 at the initiative of the head of the Uzbek SSR, Sharof Rashidov. The main goal of the project was to improve water supply in the arid regions of the Surkhandarya region, increase the productivity of agricultural crops by accumulating water resources and effectively distributing them. During the construction process, advanced engineering solutions and technologies of that time were used, and the project was implemented in cooperation with central research institutes and local hydraulic engineering specialists.

The reservoir is filled with the waters of the Amu Darya through the Amu-Zang main canal. The waters flowing from the reservoir are discharged into the South Surkhan reservoir, playing an important role in the balanced distribution of the water balance of the entire oasis. Thus, the Oktepa reservoir acts as a hydrological link connecting the Amu-Zang and South Surkhan irrigation systems. The Oktepa reservoir was fully commissioned in 1982, and its total capacity is 120 million cubic meters. The reservoir is 4.6 kilometers long, has an average depth of 25 meters, and is located at an altitude of 338 meters above sea level. The reservoir is strategically important in terms of its location, being located at the 191st kilometer of the Dushanbe-Termez international highway (M-41 highway). [12, P. 21]

To'palang Reservoir. The economic and technical basis developed by the Ministry of Water Resources of Uzbekistan in the early 1970s scientifically substantiated the need for the

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To'palang Reservoir. In accordance with the resolution of the Government of the Republic No. 471 of October 27, 1972, design and exploration work for the construction of the reservoir began. [13, P. 5] These documents were approved by the former All-Union State Expert Commission (Gosplan) on March 29, 1972. However, the Ministries of Land Management and Agriculture did not allow the project to be implemented. This indicates the existence of **administrative and political obstacles between the republic and the center** . In the period from 1975 to 1979, the approval of the project was postponed several times . Experts from the UzGiprovodkhoz Institute repeatedly prepared analytical documents and sent them to Moscow expert commissions. The project was approved by **the State Construction Committee** only on October 10, 1979 , but it has not yet received final approval. During this time, the government of the republic, in particular the leaders of the Surkhandarya region - **Abdukholiq Karimov** and **Abdukhalil Nomozov** and others applied directly to the central authorities and exerted political will. The final approval for the To'palang project was given **by the head of the Uzbek SSR, Sharof Rashidov. and with the direct intervention of the Moscow political elite. During Abdukholiq Karimov's trip to Moscow, he** met with the former Union Minister of Agriculture **VK Mesyats** and the Secretary of the Central Committee of the CPSU **MS Gorbachev . With their consent, the issue was resolved at the Politburo** level. This indicates that the To'palang reservoir was **of not only economic but also political importance** . As early as 1979, the government of Uzbekistan, by Resolution No. 401, allocated **1,323.7 hectares of land** for the construction of the To'palang reservoir. Construction work began in early 1980 by **the To'palang PMK (cotton-melioration collective)** within the Surkhongidrostroy organization . First, auxiliary structures such as a road, a concrete plant, a workers' dormitory, and a canteen were built. Engineers Tursun Alikulov, Abdugani Kholnazarov, and Yevgeny Tkachenko took an active part in this stage.

The history of the formation of the To'palang reservoir project shows that, despite long-term delays by central agencies, it was implemented as a result of the republican initiative and dedication of local specialists. This project was formed in the conditions of central dependence of the water management policy of Uzbekistan in the 1970s-1980s and became an important stage in increasing the economic and agricultural potential of the Surkhandarya region. Even today, the To'palang reservoir is of strategic importance in ensuring the water, energy and environmental sustainability of the region. Irrigated lands of the Surkhandarya **Amu-Surkhan Irrigation Basin Directorate** system. It consists of three major irrigation systems. **The To'palang–Qaratov system** - irrigates the northern regions through the To'palang and Qaratag rivers (804 km). **The Surkhan–Sherabad system** - receives water from the South Surkhan reservoir through pumps (248 km). **The Amu-Zang system** - receives water from the Amu Darya and supplies the southern districts (445 km). The three systems are interconnected and can provide each other with water during periods of water shortage. All of them are closely connected to **the South Surkhan reservoir in the center of the oasis. Since the useful capacity of the South Surkhan reservoir has decreased over the years, the To'palang reservoir** serves as an additional source of water during the cropping season. It reduced the energy and financial costs of bringing water from the Amu Darya and allowed **the Amu–Zang system to be directed to its territory.** The natural flow of the To'palang water could ensure the future operation of **the Surkhan-Sherabad system** without pumping. It will also retain turbidity, increase water clarity, and extend the service life of the South Surkhan reservoir.

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This reservoir, with a design capacity of 500 million m³, will allow increasing the volume of water in **the Hazarbog Canal when it starts operating at full capacity. As a result, an additional 40–50 m³ of water per second will be directed through this canal to the Bandikhon massif** and discharged over **the Sherabad Canal** . If this process is carried out due to natural flow, the water required for the Sherabad machine canal will reach it by its own flow. According to calculations, **4 million 320 thousand m³ of water per day , or 400 million m³ of water** over ten days, can be delivered naturally to the Sherabad main canal through such a flow. This amount is equivalent to the volume of an average large reservoir. As a result, millions of soums of electricity will be saved at the Sherabad pumping station. Because currently this pumping station lifts water from the South Surkhan reservoir and transfers it to the Sherabad main canal. In this process, 6 units operate, each of which releases 20 m³ of water per second (total 120 m³/second). The ability of the Topalang reservoir to deliver water through natural flow reduces energy costs and expands the area of irrigated land. As a result, new lands will be developed in the Bandikhon massif, and the water flow will reach the Muzrabot fields 200 km away.

Conclusion

In the 1960s–1980s, the need for water in the Surkhandarya increased, and the floods and mudflows of the To'palang River caused great damage to the Sariosiyo and Uzun districts. Spring floods and autumn water shortages further exacerbated the problem. In order to eliminate this situation, it was considered necessary to build a reservoir that would regulate the river flow. Moscow scientists technically substantiated the project and proposed the construction of a reservoir with a capacity of first 25 million m³, then 100 million m³, and then 500 million m³ near the village of Hisorak. [14, P. 222] The construction of the Topalang Reservoir eliminated water shortages and made it possible to irrigate 95,000 hectares of new land.

Pumping stations play a crucial role in the irrigation system of the Surkhandarya oasis, but their operation requires a large amount of energy consumption. The technical indicators of the existing large pumping stations clearly demonstrate the scale of this process. In particular, **the "Jayhun" pumping station** has a capacity of 92 m³ of water per second, supplying 65 thousand hectares of cultivated land of the oasis with water. The **"Amu-Zang-1"** pumping station pumps 100 m³ of water per second and irrigates 82 thousand hectares of land. The **"Amu-Zang-2"** pumping station has a capacity of 112 m³ per second, supplying 81 thousand hectares of land with water. The **"Sherobod"** pumping station is the largest, pumping 120 m³ of water per second and supplying water to 75.1 thousand hectares of land. In total, these four large pumping stations provide water to 244.6 thousand hectares of irrigated land in the oasis. However, the total irrigated land area in the region is 325.8 thousand hectares. Therefore, in the current irrigation system, every drop of water is economically extremely valuable in the face of water shortages.

The South Surkhandarya, Topalang, Uchkizil, Oktepa and Namuna-Degrez reservoirs in Surkhandarya region are of great importance in the socio-economic development of the region. Their construction serves to develop agriculture, develop new lands, provide water to the population and maintain ecological balance. These structures were built in the middle of the 20th century to expand cotton cultivation and effectively use water resources. During the years of independence, they were modernized, and water distribution and management were improved. Today, the Surkhandarya reservoirs serve the sustainable development of

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agriculture, ecology, tourism and energy sectors. Studying their history and effective management is an important factor in future water security and sustainable development.

References:

1. Archive of the branch of the administration of Surkhandarya region of UzPA , fund 1 , list 13 , case 93 , sheet 112.
2. Uzbek Soviet encyclopedia. 4th floor . Tashkent. 1973 . 327 p.
3. K. Khudoiberdiev, A. Odinaev . The creators of the Topalang reservoir. Tashkent. 2006. - p. 56
4. National Encyclopedia of Uzbekistan. Electronic Library. 759 -b
5. "Uzdavmeliosuvloy i ha" Institute, Fund 90, works No. 1313, 4008, 4441 .
6. S. Buriev. S urkhan's water dam. -Tashkent. 2019. -16 p.
7. Banner of Lenin, 1969, February 4. -2 p.
8. S. Buriev. Surkhan's Dam. Tashkent. 2019. – 192 p.
9. National Encyclopedia of Uzbekistan. Electronic Library. Page 207
10. Karaev M. Reservoirs of Uzbekistan. -T., "Uzbekistan", 1969, pp. 63-64.
11. Q. Khudoiberdiev. A. Odinayev. The creators of the Topalang reservoir. Tashkent. – 5, 56, 222 p.
12. T.A. Abdimo'minov, A.Yu Rakhmatov. Reservoirs and their use prospects (in the case of Oktepa reservoir). "Economics and society" №12(103)-1 2022. -21 p.