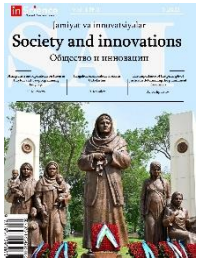
Жамият ва инновациялар –
Общество и инновации –
Society and innovations
Journal home page:
https://inscience.uz/index.php/socinov/index



Irrigation-melioration works in Uzbekistan (1950–1990)

Oybek KOMILOV[1]

Andijan State University

ARTICLE INFO

Article history:
Received April 2023
Received in revised form
15 May 2023
Accepted 15 June 2023
Available online
25 June 2023

Keywords:
irrigation-land-reclamation,
cotton monopoly,
Soviet government,
irrigation system,
dredger,
state farm,
drainage,
collector,
virgin lands.

ABSTRACT

In the article, the state of irrigation-land-reclamation of Uzbekistan in the condition of cotton monopoly in 1950–1980 is closely observed. Besides, the measures for the improvement of the irrigation system by the Soviet government and their results are analyzed in the article on the grounds of primary sources. In this period, the main goal of the development of irrigation and melioration works in the republic was inextricably linked with the process of development of reserves and gray lands.

DOI: https://doi.org/10.47689/2181-1415-vol4-iss3-pp1-10

O‘zbekistonda irrigasyon-melioratsiya ishlari (1950–1990)

Kalit so‘zlar:
irrigatsiya-melioratsiya,
paxta monokulturasi,
sovet hukumati,
irrigatsiya tizimi,
drenaj nasosi,
sovxoz,
drenaj,
kollektor,
qo‘riq yerlar.

ANNOTATSIYA

Maqolada 1950–1990-yillarda paxta monokulturasi sharoitida O‘zbekistonda irrigatsiya va melioratsiya ishlari holati muammosi atroflicha yoritilgan. Bundan tashqari, birlamchi manbalar asosida sovet hukumatining irrigatsiya tizimini rivojlantirishga qaratilgan faoliyati va ularning oqibatlari tahlil qilinadi. Bu davrda respublikada irrigatsiya va melioratsiya ishlarini rivojlantirishning asosiy maqsadi qo‘riq va bo‘z yerlarni o‘zlashtirish jarayoni bilan uzviy bog‘liq edi.

[1] Doctor of Sciences in History, Professor, Theory of Civil Society Department, Andijan State University.

Ирригационно-мелиоративные работы в Узбекистане (1950–1990)

Ключевые слова:
ирригация-мелиорация,
хлопковая монокультура,
советское правительство,
ирригационная система,
землесос,
совхоз,
дренаж,
коллектор,
целинные земли.

АННОТАЦИЯ

В статье подробно освещена проблема состояния ирригации и мелиорации Узбекистана в условиях хлопковой монокультуры в 1950-1990 годах. Кроме того, на основе первоисточников, проанализированы мероприятия Советского правительства, направленные на развитие оросительной системы и их последствия. В этот период основная цель развития ирригационно-мелиоративных работ в республике была неразрывно связана с процессом освоения осушенных и целинных земель.

As we know, during the years of Soviet power, irrigation, and melioration works were rapidly developed based on the essence of the policy of cotton monopoly in the agricultural sector of Uzbekistan. In the conditions of the cotton monopoly, further development of irrigation works in the republic, as well as uncontrolled irrigation of large cotton fields and inefficient use of water resources gradually led to a serious problem such as water shortage. The First President of the Republic of Uzbekistan gave an appropriate assessment of these processes: “Due to the monopoly of cotton, the scientifically based crop rotation system was broken, the land lost its productivity, and the lack of water resources increased” [1. P. 19].

During the Soviet era, Uzbekistan mainly specialized in growing cotton, it was turned into a base of raw materials, and 90 percent of the grown cotton was transported to the Center. Water and irrigation, which are the source of life, took the main place in the performance of these works. Due to the colonial features of the agrarian policy of the Soviet government, the irrigation and reclamation works were accelerated in the years after the Second World War. “The first post-war five-year (4th five-year) plan was successfully implemented, as a result of the implementation of the plan for the restoration and further development of the national economy in the republic, great progress was made in the development of a cotton growing, which is considered the main branch of agriculture” [13. P. 159]. At the same time, cotton was planted in large areas, and the harvest from them increased year by year. As a result of the rapid strengthening of the cotton monopoly under the strict control of the center, cotton cultivation areas have expanded even more. In 1946, the cotton area was 57,500 hectares, and in 1950, it expanded to 76,015 hectares. The gross yield of cotton increased from 55,647 tons to 128,472 tons [9. P. 26]. However, the development of the cotton industry in this way also led to the problem of water shortage in some regions. In the post-war years, the successes and achievements in irrigation works only served collective farms. First of all, the water was used to irrigate cotton fields. Grain, vegetables, orchards, and other crops are supplied with water in the second place. Due to water scarcity, private households are left without water [12. P. 45]. Of course, these processes were related to the so-called cotton monopoly policy of the Soviet government ruling at that time.

As a result of the policy of cotton monopolies, which became more severe in the 50s of the 20th century the size of cultivated areas gradually expanded. Cultivated areas increased mainly due to the development of reserves and gray lands in the republic.

Special attention was paid to irrigation works in the acquired lands. In 1950, there were 253,000 hectares of land suitable for irrigated agriculture in the Surkhandarya region of the Uzbek SSR, of which 130,000 hectares were irrigated [17. P. 28]. The irrigated lands in other regions of the republic were also prepared in terms of irrigation and melioration. In particular, in 1951, excavation works were carried out in the field of irrigation and melioration works of Tashkent region in the volume of 19,378,0 thousand cubic meters, and 2,221 hectares of protected lands were prepared for irrigation and melioration, and 496,500 excavated [3.P.139]. In the Andijan region, only 9.1% of the plan for irrigation and reclamation work was completed until January 24, 1951. According to the 1961 production and financial plan, 5,970 tons of cotton were grown in the "Communizm" collective farm belonging to the Shahrikhan village council of Shahrikhan district, and by 1962, 6,599 tons of cotton were produced. It is known from the given figures that cotton cultivation in the district has been increasing year by year.

A number of decisions and orders were issued by the Soviet government in order to develop and expand irrigation works in Uzbekistan. In particular, on February 8, 1951, the Council of Ministers of the Uzbek SSR issued Resolution No. 234 "On preparing irrigation systems for the spring of 1951" [15. P. 79]. In the text of this decision, it was noted that the preparation of irrigation systems for the spring of 1951 in many regions of the republic by the USSR Council of Ministers was completely unsatisfactory. By the end of 1951, the regions of the UzSSR were assigned the task of transitioning to a new irrigation system in the amount of 368,000 ha. The largest irrigated areas of the republic corresponded to 58,000 ha – the Bukhara region and 52,000 ha – the Andijan region. However, these assignments were not fully implemented in the republic. The main reason for this was, first of all, insufficient control of irrigation and planting works by the local water management authorities.

The main goal of the expansion of irrigation works was aimed at the development of the cotton sector. For this reason, large irrigation facilities were launched in the republic. For example, "During the years 1951–1955, irrigation facilities were built in the basins of the Syrdarya, Kashkadarya, Zarafshan rivers, in the lands of Central Ferghana, in the foothills of Surkhandarya and Amudarya" [2. P. 70]. The construction of these water structures, in turn, made it possible to irrigate many areas and also influenced the expansion of cultivated areas.

On March 13, 1952, the Council of Ministers of the USSR issued a decision "On the progress of the reconstruction of irrigation fountains in the Uzbek SSR and the transition to a new irrigation system". In this decision, the following information was given regarding the unsatisfactory performance of reconstruction of irrigation branches and transition to a new irrigation system by the party and Soviet bodies of the republic: instead of 589,000 being transferred to the new irrigation system by March 10 of this year, only 187,000 or 34.6% of the land was transferred to the new irrigation system only. In the Tashkent region, instead of 85,000 ha, only 30,000 ha of land were transferred to a new irrigation system, in the Khorezm region, 23.3% of the plan for transition to a new irrigation system was fulfilled [16. P. 233]. It can be seen that the implementation of this decision in the regions of the republic was very low.

On September 6, 1952, the Ministry of Cotton of the USSR issued Order No. 1691 "On unsatisfactory use of irrigated lands in the Uzbek SSR" [18.P.14]. The fact that the Ministry of Cotton of the USSR, the Ministry of Water Management of the USSR, and its

local bodies did not pay enough attention to the areas of land that are not used in the irrigation network, according to its results, the work done on the preparation of the reserve lands in terms of irrigation and melioration is unsatisfactory, and the preparation of irrigation and melioration for the harvest of 1952 it was noted that the plan was fulfilled by 74.8% in the republic. In the irrigation system of Uzbekistan, earthmoving machines were widely used. In 1953, 108 earthmoving machines were used in the irrigation of the republic, and in 1960, their number was 435 [10. P. 11]. The data presented above confirm that the number of earthmoving machines is increasing year by year.

The main goal of the Soviet government in the development of the irrigation system was to expand the cotton cultivation area and increase the amount of cotton production. The decision of the Council of Ministers of the USSR and the Central Committee of the CPSU dated February 9, 1954 "On the further development of cotton cultivation in the Republic of Uzbekistan in 1954-1958" was the program for irrigation construction in the republic. In it, the expansion of irrigated land areas in Uzbekistan by 600,000 hectares by 1958, of which expansion of cotton areas by 300,000 hectares was foreseen [5. P. 172]. The Soviet government paid great attention to the development of previously empty and neglected reserves and gray lands to achieve this goal. The purpose of the development of irrigation and melioration in the republic was related to the development of new lands. Based on this, as a result of irrigation and melioration works, the development of new lands expanded. The acceleration of irrigation works in the republic during 1955–1959 allowed 160,000 protected lands to be put into operation. In 1965, cultivated areas of Uzbekistan increased by 350,000 ha, including irrigated land by 200,000 ha [14. P. 541].

The development of reserves and gray lands in the republic and the establishment of state cotton farms and districts on these new lands further increased cotton production. Including, the construction of a large water facility was also carried out in the southern zone of the republic – Surkhan – Sherabad desert. Here there was a large massif of empty land suitable for irrigation on an area of 145 thousand hectares. From 1955 to January 1958, 21,423 thousand cubic meters of earth and 16,825 cubic meters of concrete and reinforced concrete were built here for the construction of hydro technical structures. This made it possible to significantly improve the water supply of irrigated lands and additionally to irrigate tens of thousands of hectares of new and fertile lands [8. P. 49].

On December 21, 1964, according to the Decision No. 718 of the Central Committee of the Republic of Uzbekistan and the Council of Ministers of the Uzbek SSR "On measures to expand the irrigated lands in Samarkand, Bukhara, and Kashkadarya regions and improve the technique of the irrigation system, to increase the further supply of water to the irrigated lands", the Uzbek SSR Water the Ministry of Economy announced its order No. 3 on January 6, 1965. According to it, the Ministry of Production and Preparation of Agricultural Products of the Uzbek SSR and the Ministries of Water Management of the UzSSR accepted the proposal of the executive committees of the Samarkand, Bukhara, Kashkadarya regions on the development of 94,000 hectares of reserve and new lands during the years 1965–1970, as well as 15,000 hectares. It was agreed on the construction of the Amu-Karakol Canal and the Amu-Bukhara Canal by 24,000 ha, the expansion of the Kattakurgan reservoir by 27,000 ha, and the construction of Chimkurgan, Pachkamar and Kalkamin reservoirs by 28,000 ha according to the proposed regions.

In accordance with the aforementioned decision No. 718 of the Central Committee of the CP of Uzbekistan and the Council of Ministers of the UzSSR, the Ministry of Production and Preparation of Agricultural Products of the Uzbek SSR issued Order No. 72 on February 6, 1965. According to this order, the head of the Department of Production and Preparation of agricultural products of Kashkadarya region, renaming it as "Okhunboboev" state farm on the base of the Chirakchi Production Department, placing it in the central enclosure of the new "Eski Angor" state farm on the land of the 3rd section and "Kok Dala" state farm, and in the territory of the 3rd section of the Okhunboboev state farm, the total area of 5,800 ha of arable land, including 3400 hectares of irrigated land and 3000 hectares of cotton cultivation area were assigned. Including:

– establishment of the "Eski Angor" state farm based on the "Uzgiprozem" farm;

– production and financial plan for the "Eski Angor" state farm should be drawn up and submitted for approval based on the existing regulation (rule) by March 1, 1965, Lutfullaev (capital construction) and directly supervise the execution of these tasks. Berger (irrigation and land reclamation) [19. P. 69].

During the ninth five-year period (1971–1975), a total of 513,100 new irrigated lands were developed in Uzbekistan. Farms specializing in cotton growing were established on newly acquired lands. In 1975, 5,013,300 tons of cotton were grown in the republic and handed over to the Union thresher [7. P. 161]. According to the given data, cotton cultivation in the republic has increased significantly compared to previous years.

In order to regularly supply the Union with cotton, the Soviet authorities paid great attention to the system of training middle-level agricultural and water management personnel. Because of this, their number increased. In the ninth five-year period (1971–1975), 6 hydro melioration technical schools trained water management personnel with secondary education. In particular, Tashkent, Samarkand, Andijan, Urgench, Surkhandarya and Nukus hydro melioration educational institutions have been operating. These educational institutions trained 8,496 specialists in hydro melioration, hydro-technical construction, mechanization of hydro melioration works, and automatic operation of water management systems. It can be said that they continued to grow. In particular, in 1971 – 1349, in 1972 – 1558, in 1973 – 1981, in 1974–1790 and in 1975–1818 young specialists with secondary technical education were trained. In this five-year period, the number of engineers and technicians of the Ministry of Water Management of the UzSSR with higher education also increased. Their number was 2164 in 1971, 2368 in 1972, 3337 in 1973, 4941 in 1974, and 6139 in 1975. During five years, 5487 specialists from higher educational institutions were sent to water management organizations.

It is clear from the given information that in accordance with the agrarian policy of the center in the field of cotton growing, the number of technical personnel training in the field of irrigation in the republic gradually increased from year to year. However, the lack of personnel in the field of irrigation and melioration was noticed in some areas. It is worth noting that the lack of specialists with diplomas (especially in newly acquired lands) was considered a serious problem. The authorities and the heads of most agricultural enterprises were not engaged in creating conditions for specialists to stay at work. Young specialists who graduated from universities and technical schools and were sent to villages were not provided with enough housing; they often did not work in their specialty.

In accordance with the decision of the Central Committee of the KP of Uzbekistan and the Council of Ministers of the UzSSR of September 23, 1976 "On the plan of land reclamation in 1976–1980 and measures to expand the use of meliorated lands" in 1976–1980, the tasks set by water management and construction organizations of the Namangan region on the development of new lands done. In the tenth five-year period, 18,400 hectares of newly irrigated land in the region were brought into use, and the reclamation condition of 33,800 hectares of irrigated land was improved [6. P. 1]. For four years and in the last nine months of the tenth five-year plan (1976–1980) in Uzbekistan, 207,600 new irrigated lands were put into circulation, and 454,700 land reclamation improved [4. P. 17]. The improvement of the land reclamation condition has given rise to a slight increase in productivity in some areas.

However, in the 70s and 80s of the 20th century serious problems arose in the field of irrigation and reclamation works of the republic. The decisions and orders issued by the Soviet government in the field of irrigation were not implemented on time by local water management bodies. At the same time, it became evident that the reclamation condition of irrigated land and its secondary salinity, the low level of productivity in irrigated areas, and the unprofitability of the capital funds allocated to these areas were not justified. "For example, in 1986, one-third of irrigated cropland was damaged due to repeated salinization. In the 70s and 80s, about 5 thousand irrigated lands were taken out of agricultural circulation due to the deterioration of land reclamation and 1.6 million in the period between 1965–1985 irrigated land areas were put into operation, the fixed assets of automobile enterprises increased by 6 times, but the gross product increased by only 78%" [14. P. 554].

According to the plan of 1981, the construction of 26 reclamation facilities with a total cost of 38.1 million rubles was set in the Karakalpakstan ASSR. 6.7 million rubles from the balance of 30.4 million rubles on January 1, 1981, were included in the plan. From January to August, the completion of these works amounted to 2.7 million rubles (40% of the annual plan was completed). The construction of separate collectors took more than 8 years. The construction of the KS-4-4 collector began in 1972. During this period, less than 50% of the estimated value of the land was developed.

Serious work has also been done in improving the condition of irrigated lands and cultivating them. One of the positive works in the field of reclamation was the commissioning of horizontal and vertical collectors. But these works were not carried out in an organized manner in the regions of the republic and were mostly not well organized. Construction of vertical drainage in Vobkent, Shofirkon, Kogon and Gijduvon districts of the Bukhara region was carried out at an unsatisfactory level. In 1979–1980, only 1.8 million rubles out of 8.4 million rubles were appropriated (21%). In 1981, 1.2 million rubles, that is, 139,000 rubles (12%) from January to August, were planned to be appropriated. It is important to note that during the mentioned years, these capital funds were not adequately utilized in the region and were spent inappropriately. As a result, many protected lands remained unexploited.

In Gagarin, Sherabad, and Termez districts of the Surkhandarya region, the construction of collectors according to the plan and their reconstruction are far behind. According to the report of the Water Management Commission of the Supreme Soviet of the UzSSR, the Ministry of Reclamation and Water Management of the UzSSR and its local bodies carried out large-scale water management works during the tenth five-year

period. 215,000 irrigated lands were developed or 102% of the plan. Land water supply and reconstruction of the irrigation system area of more than 1 million ha have been completed (according to the plan, 665,000 ha). The length of the collector-drainage network has increased by 8,000 km. Covered horizontal drainage on 326,000 ha area and vertical drainage on 320,000 ha area has been started. During this period, the material and technical base of water management was further strengthened. In 1980, the reclamation fund of water management bodies amounted to 3145 million rubles. The irrigation network of the republic was equipped with new hydro-technical structures, that is, it increased by 6.9 thousand in five years. The number of hydrometric devices has increased to 2,500.

In 1981, the Ministry of Water Management of the UzSSR set a task for the comprehensive reconstruction of the irrigation system on an area of 10,000 ha, and for this purpose, the allocation of 14.2 million rubles of capital funds was considered. From January to August, 4.1 million rubles (29%) were absorbed, and 2095 (21%) were invested. In the Khorezm region, 3151 were included in 1264 according to the plan (made up 40 percent of the annual assignment). The main attention was paid to the quality of project-estimate documents for the complex reconstruction of the irrigation system. As part of the reconstruction, 354 ha of new land, and 137 ha of the lands of the Shumanay state farm in the Karakalpakstan ASSR were planned. The irrigation and collector-drainage network reconstruction project was envisaged in the Ilich state farm with 376 hectares of land in the Zadaryo (now Mingbulok) district of the Namangan region. In 1986-1990, 17,000 hectares of new land should be developed in the Namangan region, water supply should be improved on 40,000 hectares, land reclamation of 38,000 hectares should be improved, and 45,000 hectares of old land should be leveled. For this purpose, large-scale irrigation-reclamation works are being carried out [20. P. 5]. According to the calculations of the Ministry of Agriculture of the USSR, in 1981–1985, 2200 electric wire pump units were sent to the collective farms and state farms of the republic. As a result, the cotton fields in the new lands were regularly irrigated with the help of pumps. In 1976-1980, in the main directions of the development of the national economy of the USSR, attention was focused on the development of the Jizzakh steppe, that is, it was emphasized that “in the UzSSR, the development of the Jizzakh steppe should be strengthened.” As a result, nearly 200,000 ha of land was appropriated in the Jizzakh desert. In particular, in the Dostlik district of the region, 36,500 hectares of land were appropriated in ten years, and twice as much profit was received from them. In 1975, the district produced 50.1 thousand tons. cotton was made. It is clear from the above that the development of the Jizzakh desert was directed to the development of cotton production. The cotton production plan of the Soviet government was excessive, and all local agricultural and water management authorities were entrusted with the constant supply of raw materials for the Union threshing floor. Based on the commitment to colonization, “In about 30 years, intensive development of new lands in the Jizzakh desert was started.” During this period, 250,300 ha of land was appropriated. Out of this, 70,900 ha corresponded to the desert massif consisting of inconvenient and unproductive lands far from irrigation sources.

During the years of Soviet power, the size of irrigated areas in Uzbekistan gradually increased year by year. The following numbers clearly prove our point. The irrigated areas in 1950 amounted to 2276 thousand, in 1960 to 2964 thousand,

to 2696 thousand in 1970, to 3476 thousand in 1980, to 3930 thousand in 1985, to 4020 thousand hectares in 1986 [11]. But the high expansion of the irrigated areas in the republic and the year-by-year increase in cotton cultivation made irrigation of other necessary agricultural crops secondary. Most of the water resources were used to irrigate cotton fields. As a result, the cultivation of grain, vegetables, rice, and horticulture products has decreased sharply.

Covet authorities tried to expand the irrigated land and build waterworks. In particular, in 1985, 900 irrigation networks and 92,000 hydro-technical structures were developed in the republic. The total length of irrigation canals increased by 197,000 km. In this year, the indicator of use of water resources was 54.8 km^3, in 1989 this indicator was 50.4 km^3, and in 1990 it was 52.4 km^3. On average, 85% of the water consumed was used for irrigation or agriculture. The volume of water used for irrigation in 1985 was 46.3 km^3, in 1989 it was 42.3 km^3, and in 1990 it was 44.4 km^3 [12. P. 34].

Summarizing the work done in the fields of irrigation and land reclamation in the eleventh five-year period, the departments of the Ministry of Land Reclamation and Water Management of the Republic have mastered 238,600 new irrigated lands, improved land reclamation by 461,000, and rehabilitated 300,000. reasonably leveled. These figures are much more than what is indicated in the plan. At the same time, 4 new reservoirs, including the Andijan reservoir with a capacity of 1,900 million m^3, were put into operation, the works on the Tuyamoyin hydroelectric station, Khisorak, Zomin, Okdaryo, Qorovultepa, Oktepa reservoirs were completed. However, the level of mineralization of the river water increased due to the collector discharges, as a result of which the area of land in the republic in this period deteriorated and flooded with salt increased to 566,000. Disruption of land reclamation has intensified deformation processes in the field of irrigation [13. P. 37].

In 1986, there were 25,800 km of inter-farm irrigation ditches, 142,000 km of internal farm canals, 106,000 km of drainage collectors, as well as 28,000 km of closed and more than 3,500 km of drainage vertical drains. During this period, the water management complex of Uzbekistan consisted of more than 180,000 km of irrigation channels and 230 inter-collective irrigation networks. 120,000 km of the collector-drainage network can also be added to this. During the productive period, the volume of water is 16 billion. 26 large water reservoirs with a capacity of m^3 were operated. In this year,

the total irrigated area in Yozyovon district of the Fergana region was 16,705, of which 3,182 were non-saline, 11,732 were weakly saline, and 1,876 were strong and medium saline. If we pay attention, the area of irrigated land in Uzbekistan in 1960-1990 was 2 mln. increased to by 1986, irrigated fertile land was 85.8%, and in the same year, grain-bearing land fell from 57% to 22%. This figure was 35% in 1940. At the same time, due to the monopoly of cotton in Uzbekistan, there were also cases of forced use and mobilization for cotton harvest [13. P. 43].

Several irrigated fields in the republic suffered from rising groundwater levels. In the 1990s, the level of underground water in irrigated lands rose by 3 m. In this period, the level of underground water in the arable lands of Kyrgyz state and collective farms (Ellikkala district) is 1.5 m. rose to by mid-1990, there were 245,000 irrigation systems, 50 large water distribution facilities, 47 reservoirs, 23,300 km of inter-farm irrigation

stations, 120,000 km of drainage-collectors, 3,433 wells, including 1.5 million ha land was irrigated by machine [15. P. 51].

In conclusion, it should be emphasized that in the 50s-80s of the 20th century, the main goal of the development of irrigation-reclamation works in the republic was inextricably linked with the process of development of reserves and gray lands. As mentioned above, in 1950, the size of irrigated areas was 2,276,000 hectares, and in 1986, this indicator increased to 4,020,000 hectares. It can be seen that during the Soviet era, the irrigated area grew year by year. The acceleration of irrigation gave impetus to cotton cultivation and further development of cotton farming in the republic. For this purpose, the development of new lands expanded. As a result, cotton harvest and cultivation in the republic gradually increased from year to year. The expansion of cotton plantations has also created a number of serious problems in irrigation. For this reason, many canals, reservoirs, and other hydro-technical structures were built in the republic. As a result of the high development of irrigation and melioration works, the land gradually lost its productivity, the secondary salinity of the land increased, and the shortage of water resources increased.

As one of the positive works in the field of land reclamation, it is also permissible to highlight the construction of horizontal and vertical collectors. However, the development of irrigation-reclamation works eventually led to the formation of a cotton monopoly in Uzbekistan. The establishment and implementation of the cotton monopoly policy caused many negative aspects. This policy strengthened the republic's dependence on the Center, especially in the matter of providing the population with grain and food products.

REFERENCES:

1. Educational-methodological complex for studying the speech of the President of the Republic of Uzbekistan Islam Karimov at the joint meeting of the Legislative Chamber and the Senate of the Oliy Majlis of the Republic of Uzbekistan on November 12, 2010, on the topic "The concept of deepening democratic reforms and developing civil society in our country".-Tashkent: Iktisodiyot.

2. Cotton Monopoly: Consequences and Lessons (1917-1991)].-Tashkent: Istiklol.

3. State archive of Andijan region, fund 608, list 1, case 485.

4. Industrialization of repair and maintenance work, the introduction of dispatching and automation of irrigation systems in the Uzbek SSR // Express – information "Melioration and water management". Series 6, Issue 9.Pp.17-26.

5. Mamedov A.M (1967). Development of irrigation in Uzbekistan. -Tashkent: Fan.

6. State archive of Namangan region, fund 275, list 1, case 3620

7. Komilov, O. K. (2022). From the history of irrigation and land reclamation in Uzbekistan (1950-1990). American Journal of Interdisciplinary Research and Development, 10, 416-421.

8. Komilov, O. K. (2022). Land reclamation and irrigation measures of virgin lands in Karshi Steppe. Frontline Social Sciences and History Journal, 2(01), 35-42.

9. Komilov, O. K., & Khamidova, R. F. (2022). TRAINING OF EXPERT PERSONNEL IN THE FIELD OF IRRIGATION IN UZBEKISTAN (1951-1990). EPRA International Journal of Research and Development (IJRD), 7(8), 148-152.

10. Komilov, O. K., & Yunusov, N. K. (2023). IRRIGATION SYSTEM IN UZBEKISTAN AND ITS MAIN MEASURES. American Journal of Interdisciplinary Research and Development, 13, 69-79.

11. Komilov, O. K. (2019). The history of the development of irrigation and land reclamation in Uzbekistan and its effects (1950-1990).Theoretical & Applied Science, (7), 265-269.

12. Komilov, O. K. (2019). RECLAMATION OF VIRGIN LANDS IN UZBEKISTAN AND ITS EFFECTS (1950-1970). Spirit Time, (9), 9-11.

13. Komilov, O. K. (2019). IMPLEMENTATION OF NEW LANDS AND STRENGTHENING OF COTTON MONOPOLY IN UZBEKISTAN (1950-1970). Актуальные научные исследования в современном мире, (10-3), 40-43.

14. Komilov, O. (2021, June). THE HISTORY OF MASTERING VIRGIN LANDS OF CENTRAL FERGHANA (1953-1973). In Конференции.

15. Komilov, O. K. (2021). Modernization History of the Irrigation System in Uzbekistan (In the Example of the Period of Independence). Design Engineering, 6111-6120.