

The History of Irrigated Farming in Central Fergana Deserts (On the Example of 1951-1970)

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Abstract

Irrigation has historically played a pivotal role in transforming arid regions into productive agricultural zones, particularly within the Soviet Union's strategic development plans across Central Asia. The Central Fergana desert region of Uzbekistan witnessed extensive irrigation efforts between 1951 and 1970, aimed at supporting cotton cultivation as part of the USSR's broader economic agenda. Despite the importance of these interventions, comprehensive historical analyses of the organizational structures, financial mechanisms, and infrastructural advancements behind the Central Fergana irrigation projects remain limited. This study aims to examine the Soviet Union's irrigation and land reclamation strategies in Central Fergana by analyzing archival materials and historical records, with a focus on the establishment and evolution of the Inter-Collective Farm Council and the construction of key water infrastructure. The findings reveal that the development of irrigation in Central Fergana was largely driven by collective farm investments and coordinated through specialized institutions such as "Ferganavodstroy." The initiative progressed in three phases, culminating in the construction of the Great Andijan Canal, which significantly enhanced the irrigation capacity for over 140,000 hectares of land. This research highlights the Central Fergana irrigation campaign as a unique case where decentralized labor and financial resources from collective farms were mobilized for large-scale state-directed agricultural modernization. The study offers valuable insights into the socio-economic and institutional dynamics of Soviet-era land management, providing a historical precedent for current and future irrigation strategies in similarly arid and resource-dependent regions.

Keywords: Ferghana Valley, Great Ferghana Canal, Sirdarya, Land Reclamation, Steppe, Agriculture, Irrigation, Collector, Cubic Meter, Irrigation

1. Introduction

The development of irrigated agriculture in the Central Fergana region during the mid-20th century represents a pivotal chapter in the Soviet Union's broader agrarian and industrial policy aimed at transforming arid landscapes into productive agricultural zones[1]. Geographically positioned at the heart of the Fergana Valley, the Central Fergana deserts were identified by Soviet planners as a strategic area for large-scale irrigation and land reclamation, particularly in light of Uzbekistan's designation as the primary supplier of raw cotton to the USSR's light industry sector. Beginning in the early 1950s, the Soviet government launched a series of ambitious projects to bring vast tracts of uncultivated land under irrigation, fueled by the ideological commitment to harness nature through engineering, and the practical need to boost agricultural output[2]. This transformation was driven not only by the availability

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: **submitted;** 2025/4/30 **revised;** 2025/5/13 **accepted;** 2025/5/20 **published;** 2025/5/26

of water from key infrastructure like the Great Fergana Canal but also by political directives such as five-year plans, and institutional mechanisms like the Inter-Collective Farm Council, which coordinated labor, financing, and construction efforts. Unlike previous state-led models, this initiative heavily relied on the indivisible funds and manpower of collective farms, marking a significant experiment in decentralized resource mobilization[3]. Through the construction of canals, pumping stations, and reclamation facilities, the Soviet government sought to establish new districts and settlements while integrating desert territories into the national economy. This article aims to analyze the historical trajectory, policy frameworks, and socio-economic consequences of irrigation projects implemented in Central Fergana between 1951 and 1970, drawing on archival materials, planning documents, and historical scholarship.

2. Research Method

This research is based on a historical-analytical methodology utilizing both primary archival sources and secondary scientific literature to reconstruct the processes of irrigated land development in the Central Fergana desert from 1951 to 1970. The study relies on official resolutions, government decrees, and planning documents from the Communist Party of Uzbekistan, as well as statistical and technical records archived in Uzbekistan's national repositories[4]. A key component of the method involves analyzing Five-Year Plan targets, implementation directives, and the activities of major organizations such as the Inter-Collective Farm Council and the “Ferganavodstroy” trust. The research traces institutional, administrative, and infrastructural developments by dividing the historical timeline into phases that correspond to major state planning initiatives, including the transformation of irrigation governance structures and the construction of major water channels such as the Great Andijan Canal. Emphasis was placed on correlating policy decisions with physical changes in land use, canal systems, and agricultural expansion[5]. A comparative review of reports and engineering data was conducted to identify patterns in resource allocation, technological deployment, and labor mobilization. By triangulating government documents, expert monographs, and statistical data, the study aims to contextualize irrigation policy within broader Soviet socio-economic strategies, particularly concerning cotton production and rural modernization. This integrative method allows for a multi-dimensional assessment of both the technological and political facets of land reclamation efforts in Central Fergana, contributing to a deeper understanding of Soviet-era development models in semi-arid regions[6].

3. Results and Discussion

The Central Fergana region, geographically, encompasses areas bordered by the Syr Darya to the north, the Great Fergana Canal to the south, the Kokand oasis to the west, and the Andijan oasis to the east. This region extends approximately 90 km from west to east and 50 km from north to south, representing the lowest flat plain of the valley[7].

In September 1952, the issue of irrigating and developing the lands of Central Fergana was once again brought to the agenda. The Central Committee of the Communist Party of Uzbekistan (CC of the CPU) and the Council of Ministers of the Uzbek SSR adopted a resolution to carry out the construction of irrigation facilities to irrigate 65,000 hectares of virgin lands in Central Fergana [8]. The implementation of these works began in 1953. The Soviet government planned to develop the desert area in the center of the Fergana Valley primarily to cultivate cotton, which was strategically vital as Uzbekistan was being positioned as the main supplier of raw cotton for the central light industry.

This decision was significantly influenced by several factors: the existence of essential infrastructure, such as the Great Fergana Canal; the high population density in the Fergana Valley compared to other regions of Uzbekistan; and the availability of sufficient labor resources in existing collective farms to undertake the development and irrigation of new lands.

According to the Five-Year Plan, by 1955, the total area of irrigated agricultural lands in the Namangan oasis was to reach 167,000 hectares. This included introducing 7,000 hectares in the Achikkul massif, 20,000 hectares in the Chust district, and 40,000 hectares in Central Fergana into agricultural turnover. The completion of the Kosonsoy Reservoir, with a water capacity of 50 million cubic meters, and the intensification of irrigation works in the Padshaatasoy and Govasoy systems, were projected to increase the region's cultivated lands to 200,000 hectares [9].

In implementing the irrigation and development of the lands in Central Fergana, the Soviet authorities primarily relied on the indivisible funds of collective farms. This was because the Soviet state lacked sufficient financial resources to develop virgin and fallow lands at the time. This marked the first "experiment" of the Soviet government in using the indivisible funds of collective farms for land development. As a result, the establishment of an Inter-Collective Farm Council (Kolhozlararo Kengash) was deemed an appropriate organizational measure for overseeing these activities [10].

In February 1953, the Council of Ministers of the Uzbek SSR approved and adopted a special directive regarding the organizational structure, rights, and responsibilities of the Inter-Collective Farm Council. According to the directive, the Council was composed of representatives from 700 collective farms in the Fergana Valley regions, as well as representatives from Soviet and public organizations. Members of the Council were elected for a term of two years at a general meeting of representatives. The Council consisted of a chairperson, four deputy chairpersons, and 12 members, totaling 17 individuals. One of the deputies and two members, who were relieved of their prior duties, included an engineer-hydraulic specialist responsible for the technical aspects of the Council's work and an agronomist who oversaw organizational issues in the newly established farms [11].

An operational group was formed under the Inter-Collective Farm Council to address organizational, technical, and financial matters. The Council operated directly under the leadership of the Central Committee of the Communist Party of Uzbekistan, the Council of Ministers of the Uzbek SSR, and the Presidium of the Supreme Soviet of the Uzbek SSR. From 1953 to 1959, the chairperson of the Council was Sh.R. Rashidov (who served as the Chairperson of the Presidium of the Supreme Soviet of the Uzbek SSR from 1950 to 1959) [12].

The history of the Interkolkhoz Council's activities can be divided into three periods. The first period, from November 1952 to December 1956, was characterized by the Council's limited focus on water management and road construction. Until 1956, contractual relations between the "Ferganavodstroy" trust and the kolkhozes (collective farms) remained in effect. During the second period, measures were taken to strengthen the activities of the Interkolkhoz Council and to streamline the agreements required between kolkhozes and the trust. By a resolution of the Council of Ministers of the Uzbek SSR, the existing agreements between the "Ferganavodstroy" trust and the kolkhozes were annulled, and the authority to establish such agreements was transferred to the Interkolkhoz Council. Funds allocated by the kolkhozes for land development were deliberated upon during the general assemblies of collective farms

and subsequently transferred to the Council's fund. Thus, by December 1956, the Interkolkhoz Council, which had initially been an organization focused on water management construction, was restructured and became the Interkolkhoz Council for the Irrigation and Development of Central Fergana Lands. This transformation established the Council as the sole organization with full control over all activities in this domain[13].

The Development Department of the Interkolkhoz Council oversaw the construction of cultural and social facilities such as clubs, schools, shops, and bathhouses, as well as housing for settlers relocating to desert areas. These projects were funded through the indivisible funds of the kolkhozes. Additionally, the department was responsible for accounting for the newly developed lands, tracking the crops sown on these lands, and recording the yields obtained.

The Irrigation Department was reorganized and restructured in 1958. Operating within the framework of "Uzglavvodstroy," it was tasked with placing orders with the "Ferganavodstroy" trust, overseeing the execution of these orders, accepting completed projects, regulating financial matters, and monitoring the fulfillment of contractual obligations[14].

It is worth emphasizing that, initially, the development and irrigation of Central Fergana lands were not carried out using a unified method, such as the establishment of state farms (sovkhozes) or collective farms (kolkhozes), as was common in other desert oases of Uzbekistan. Instead, until 1953, the Central Fergana lands were distributed among economically strong organizations within the valley regions. These organizations, using their own funds and workforce, developed only small plots of land that required relatively low labor input. Mobile brigades from economically strong collective farms were sent to the newly developed lands. Consequently, irrigation activities in these newly developed areas were of a localized nature. The organization of land development and irrigation in this manner for the Central Fergana desert regions indicates that the process was planned to be carried out not through state funding but rather through the resources of organizations and collective farms, and most importantly, through the labor of existing workers and kolkhoz members[15].

In 1957, a master plan for the irrigation and development of Central Fergana lands was developed. According to this plan, the total area designated for development was 386.8 thousand hectares, of which 90 thousand hectares were classified as highly uneven virgin lands. Additionally, 140 thousand hectares of the total area were designated as new lands to be developed and irrigated. To achieve this goal, the Great Fergana and Southern Fergana canals, the Akhunbabaev main irrigation system, and several other irrigation systems were to be reconstructed and expanded. Additionally, main reclamation collectors and their branches were to be constructed, and the channels of existing main collectors were to be widened. In the newly developed areas, plans included the establishment of 5 new districts, 10 state farms (sovkhozes), and 94 collective farms (kolkhozes). For the first time in its practice of irrigated agriculture, the Soviet government planned to test a comprehensive method of developing virgin lands in Central Fergana. This approach not only included the reclamation of desert areas but also the establishment of all essential living conditions for the population residing in these regions. The implementation of this plan was outlined in the resolutions adopted at the union and republican levels in 1956. These included the August 6, 1956, decree of the Central Committee of the Communist Party of the Soviet Union (CPSU) and the Council of Ministers of the USSR titled "Measures for the Irrigation and Development of Mirzachul to Increase Cotton Production in the Uzbekistan SSR and Kazakhstan SSR. To implement this task, in

1957 alone, 1,700 young people were sent to participate in the development of the virgin lands of Central Fergana[16].

The "Ferganavodstroy" trust served as the primary contractor directly responsible for the irrigation and development of Central Fergana lands. Its functions included determining the construction and assembly management teams based on the volume and timeline of tasks, distributing construction projects among these teams, organizing construction sites, and ensuring, wherever possible, that construction activities within a single administrative district were managed cohesively.

The trust's structure comprised three construction and assembly management teams, a housing and cultural-social construction management unit, the interregional transportation departments of Fergana and Andijan, a material-technical supply department, the Margilan Motor Plant, the Reconstruction Directorate of the Great Fergana Canal, and, starting in 1957, the Directorate for the Construction of the Kokand Water Junction on the Sokh River. Additionally, the irrigation and development efforts involved various organizations, including the district "Uzselkhoztekhnika" departments, regional water management departments, and the Directorate for the Operation of the Great Fergana Canal, among others[17].

To supply necessary construction materials for irrigation facilities, factories like the Margilan Timber Mill, the Kopchigay Concrete Plant, and gravel screening sites in Jumashuy, Margilan, Kuyganyor, and Kokand were expanded or launched.

According to the master plan, irrigation and development of desert areas were to be implemented in two phases, with the first phase scheduled for completion by the end of 1964. In 1956, activities aimed at improving the irrigation and reclamation conditions of land were conducted across all areas, including Sokh-Isfara, Western Fergana, Achikkul, the Great Fergana Canal zone, and other Central Fergana lands, encompassing 35 farms[18].

In the newly developed areas, irrigation systems were constructed, and the 270-kilometer-long channel of the Great Fergana Canal was reconstructed and widened, doubling its water-carrying capacity. For this, the Kuyganyor Dam's sluice was renovated and recommissioned. Additionally, a 105-kilometer stretch of the Akhunbabaev Canal was reconstructed, allowing a new headwork capable of drawing 110 cubic meters per second from the Syr Darya to be managed using advanced mechanization. New irrigation systems, including those in Balikchi, Khanabad, Kyzyltepa, and Kuibyshev, were constructed.

From 1963 to 1965, the South Fergana Canal was reconstructed to improve the use of water from the Great Fergana Canal for irrigating new lands, doubling its water-carrying capacity. To address water shortages in the western region of Central Fergana, the Frunze Pumping Station, with a capacity of 8 cubic meters per second, was commissioned in 1963, followed by the Abdusamat Pumping Station, with a capacity of 25 cubic meters per second, in 1968. Moreover, 409 motorized pumps were installed to draw water directly from major irrigation networks like the Akhunbabaev, Great Fergana, and South Fergana canals, significantly improving water supply for crops during the vegetation period.

The increasing scope of irrigation and development activities in Central Fergana necessitated the establishment of new trusts like "Andizhanvodstroy" and "Namanganvodstroy", which began operating independently. This expansion further accelerated the scale and volume of land reclamation and irrigation projects.

Each phase of the irrigation and development process in Central Fergana involved specific tasks. During the first phase, from 1953 to 1960, the "Ferganavodstroy" trust undertook preparatory works for irrigation and production infrastructure development. The

second phase, starting in 1961, saw a significant portion of desert lands reclaimed and incorporated into agricultural production, with crops being cultivated on the newly developed lands.

On May 12, 1964, the Council of Ministers of the Republic adopted a special resolution titled "On the Development of Central Fergana Lands." This resolution aimed to strengthen the material and technical base of construction organizations and to centralize construction and irrigation activities in major virgin land areas.

At the 23rd Congress of the Communist Party of the Soviet Union in 1966, the directives for the eighth five-year plan outlined objectives for irrigating and developing 500,000 hectares of new lands in Uzbekistan. These objectives included improving the reclamation conditions of Central Fergana lands and combating salinization and waterlogging.

At the May 1966 Plenum of the Central Committee of the Communist Party of the Soviet Union (CPSU), a resolution titled "On the Extensive Development of Reclamation to Achieve Consistently High Yields of Grain and Other Agricultural Crops" was adopted.

At the III Plenum of the Central Committee of the Communist Party of Uzbekistan, the aforementioned issues were discussed, and detailed measures for their implementation were outlined. According to these measures, the plan included irrigating and developing 500,000 hectares of new land and improving the reclamation condition of 1 million hectares of existing land in the republic.

In 1971, the Central Committee of the Communist Party of Uzbekistan developed measures to increase the productivity of irrigated croplands and accelerate the reclamation of virgin lands in Central Fergana.

According to the plan, it was necessary to enhance the productivity of crops grown on the reclaimed lands and increase the revenues derived from them. During the third phase of the Central Fergana irrigation and development project, spanning 1967–1977, the construction of the Great Andijan Canal began. By the end of 1966, irrigation and reclamation conditions had been improved for 87,500 hectares of land in Central Fergana.

In 1965, the Central Committee of the Communist Party of Uzbekistan and the Council of Ministers of the Republic adopted a resolution on the "Construction of the Great Andijan Canal." According to the project, the first phase of the Great Andijan Canal had a total length of 196 kilometers and a water-carrying capacity of 250 cubic meters per second. The canal originates from the Naryn River. The canal extends from the village of Haqqulobod, through the Karadarya River, to the central part of Central Fergana, reaching the Bagdad district. In 1970, the construction of the Great Andijan Canal was completed. The canal's waters improved the water supply for 145,000 hectares of land in the desert zone of Central Fergana. The Great Andijan Canal includes three additional branches: the Akhunbabaev, Achchikul, and Sokh branches, which supply water to all districts of Central Fergana. Along the canal's main section and its branches, a total of 706 various hydraulic structures, bridges, and 18 hydrological nodes were constructed. According to the project, the canal's construction involved 20 million cubic meters of earthwork, 320 thousand cubic meters of concrete, and 350 thousand cubic meters of reinforced concrete work. The state budget allocated 50 million rubles for the canal's construction. The waters of the Great Andijan Canal enabled the irrigation of 80,000 hectares of newly developed land and improved the water supply for 75,000 hectares of existing land. Overall, the canal's waters enhanced the water supply for 140,000 hectares of land in the Fergana Valley regions, including 61,000 hectares of virgin cropland.

4. Conclusion and Recommendation

The irrigation and development of the Central Fergana desert region between 1951 and 1970 marked one of the most ambitious and strategically vital agrarian initiatives undertaken in Soviet Uzbekistan. This study has demonstrated how political directives, economic imperatives, and organizational innovations converged to transform barren land into fertile agricultural territory, particularly for cotton cultivation. By mobilizing the indivisible funds and labor forces of collective farms, the Soviet government was able to compensate for financial constraints and avoid reliance on centralized state investment. The establishment and evolution of the Inter-Collective Farm Council played a pivotal role in coordinating these efforts, overseeing not only irrigation and reclamation works but also the social infrastructure necessary to support settlement and cultivation. The reconstruction and construction of major canals—such as the Great Fergana and Great Andijan Canals—along with large-scale engineering projects and pumping stations, were essential in increasing the water supply to newly developed lands. These developments significantly expanded irrigated agricultural acreage, improved the productivity of the desert regions, and laid the groundwork for sustainable settlement in Central Fergana. The planning and execution of these massive hydraulic and agricultural works, supported by local labor and technical expertise, reflected a unique model of decentralized yet state-directed agricultural modernization. Ultimately, the irrigation of Central Fergana not only met the USSR's growing demand for cotton but also reshaped the socio-economic landscape of the region, leaving a legacy that continues to influence the agrarian structure of the Fergana Valley today.

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