



# The importance of irrigation systems in agriculture during the rule of Husayn Bayqara

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ABSTRACT

This article examines at the irrigation system and agricultural changes in Khorasan during the reign of Husayn Bayqara, as well as the role of Mirak Said Giyas, chief agronomic, horticultural, and landscape architect, in agriculture and horticulture development. A study of irrigation systems under Husayn Bayqara's reign adds to the historical record.

**Keywords:**

Irrigation system, canal, ditch, gardener, landscape, agricultural products.

## Introduction

According to historical records, Sultan Husayn Bayqara (1438-1506), a representative of the timurid dynasty, conducted a lot of creative work in the Khorasan province, of which Herat was the capital. Husayn Bayqara's insight created the groundwork for the country's economic development. Progress has been made in all areas due to the country's calm and tranquility. Not only has culture and the arts received a lot of attention, but so has the irrigation system, which is at the heart of the economy and agriculture. Construction of new irrigation structures and rehabilitation of old irrigation systems had a positive impact on agricultural production during this time period. Reforms in the irrigation system during the reign of Husayn Bayqara led to the development of the "Bayt-ul-iman" and "Khamsa Oroyi" Gardens outside of Herat.

## Main part

Husayn Bayqara is making significant investments in the Nazdah nahr irrigation

system, which is crucial to the agricultural sector. Husayn Bayqara will devise plans for the development of the Nahr-i Shahi canal and the Nazdah nahr irrigation system, both of which are devoted to the Alid shrine. Kiyomiddin Abul Kasim, who works in the Herat office, is named to be in charge of agricultural management and "all matters linked to irrigation" by the finance administration. Despite the fact that the date of his nomination to the job is not specified in the decree, it falls in the tiger's year. This order mandated the completion of the sewers between 1482 and 1483, as well as payment for the work completed during that time period. Kiyomiddin concentrates on the canal's construction.

The word is commonly applied to wing and subsurface irrigation canals, although Sultan Husayn was interested in Nahr-i Shahi [1]. Amir Giyasiddin Mukhammad (829 / 1425-26) was a tourist who traveled to various countries during Husayn Bayqara's reign and subsequently spent the remainder of his life in

Badghis. He developed agriculture in Bodhisde by building an irrigation canal[2].

Around the reign of Husayn Bayqara, the Juyi Nav (New Canal) canal was built, which today runs through Herat province[3].

Herat province's waters are separated into various divisions and canals. In addition to the foregoing, Isfizari's study offers valuable information about agricultural irrigation in the Herat region under Mirzo Husayn Bayqara's reign. There were seven distinct irrigation canals near Herat under Sultan Husayn Bayqara's reign[4].

People devoted themselves to agriculture during the reign of Husayn Bayqara, according to Isfizari, and territories that had never been cultivated before were developed by irrigation. As a result, the fields between Murgab and Marvi Sahigon (30 farsahs) and Sarag and Marv (25 farsahs) have been rendered usable[5].

"Due to him, even the rocky areas and hills were not left vacant, these grounds were turned into vineyards and orchards," Muiniddin Isfizari said of Husayn Bayqara's devotion to the development of protected and gray regions. Water was transported to the rural area's unoccupied areas via ditches, which boosted the land's production. The empty and sandy plains between Murgab, Merv, and Shahijan, as well as the twenty-five fars of desert between Sarakhs and Merv, were then developed into arable and interconnected farms"[6].

Because Sultan Husayn Bayqara, like his forefathers, placed a high value on agriculture in Herat province, agriculture flourished, and the practice of planting trees became prevalent during his reign[4].

"Irshad al-ziroat" by Kasim ibn Yusuf al-Harawi is a treatise on timurid agriculture, irrigation, and horticulture. The principal agronomist, gardener, and landscape architect Mirak Said Giyas made a significant contribution to the development of agriculture under Sultan Husayn Bayqara's leadership, as can be seen in the introductory section of the work "Irshad al-ziroat." Mirak Said Giyas, who had expertise of agronomy and hydrological management (mirab), exploited the experience of prior family members who had served the timurids, according to the author. Mirak Said Giyas provided Kasim Ibn Yusuf with information on water distribution and agriculture in the Herat region. Mirak Said Giyas also served as the mirab in charge of water distribution [7]. Mirak Said Giyas was a master of his trade, and under his direction, he designed and developed central gardens in Herat for Sultan Husayn Bayqara. He devised a detailed plan for the planting of fruit trees and the utilization of water in orchards.

A textbook on the hydrology of the Herat region was written by Abu Nasr al-Harawi. His textbook "Resala-ye tariq-e qesmat-e ab-e qolb" (Water Distribution Methods) has information on water distribution in Herat [7]. We learn about the growth of irrigated agriculture in Herat during the reign of Husayn Bayqara, as well as the mirabs' ways of rational water usage at the time, and the importance placed on the irrigation system, from the aforesaid sources.

N. N. Tumanovich successfully defended his doctoral dissertation, "Herat in the XVI-XVIII Centuries," in 1991. In "Irshood al-ziroat," this study presents a list of Herat's agricultural products. The size of land used for agricultural production is shown in the table below:

Agricultural crops	Jufti gov
1. Wheat (different varieties)	1000
2. Rice	630
3. Barley	500
4. Oats	
5. Panicum	800
6. irmik(semolina)	
7. Legumes	10

8. Red beans	2
9. Onions	10
10. Carrots	40
11. Beets	10
12. Cabbage	2
13. Turnip	5
14. Red pepper	1
15. Eggplant	1
16. Different greens	130
17. Melon-growing (watermelon, melon, pumpkin *)	300
18. Medicago	200
19. Cotton	220
20. Tobacco	5
21. Poppy (bang)	2
22. Opium	40
23. Mendo (corn)	40
24. Sheftel (corn)	Planted after wheat is harvested
25. Sesame	

The 17 foods in the table were consumed, the list of cereals and pulses is not exhaustive. We cannot say exactly when cotton was first planted in Herat, but tobacco and opium have been grown since the 17th century[8].

N. N. Tumanovich writes that he has no information about the author of "Irshad al-ziroat". The author says that this work was written to familiarise the Safavid administration, which came to power after the timurids and the shaybanids, with the agriculture of Herat[9]. M. Subtelny writes that Abu Nasr al-Harawi's work provides information on agriculture and irrigation systems from the time of Husayn Bayqara. Based on the above data, we can conclude that the approach of both authors in their research is correct.

The cultural upsurge that began in the first half of the 15th century reached its peak in the second half of that century, during the reign of Sultan Husayn Bayqara. Of course, Alisher Navoi's contribution was great. Highly respected and trusted in the eyes of the people, Navoi had a reputation in the Timurid palace; he spent his wealth and prestige in the palace to protect the people's affairs and build great cultural edifices. He was an important patron of poets, writers, craftsmen, artists, built

madrassas, mosques, baths, hospitals, hothouses, dug canals in Herat, Mashhad, Nishapur and other cities. In all, the number of buildings, canals, charities, and monuments associated with the name of Alisher Navoi exceeds 300[10]. Clearly Alisher Navoi's focus is not only on science and poetry, but also on the booming economy. Due to Navoi's financial support for the construction of irrigation facilities in the country, the welfare of the people improved.

### Conclusion

In short, the reforms implemented during the Husayn Bayqara administration have borne fruit. As a result of the stability of the irrigation system, the quantity and quality of agricultural products have increased. Husayn Bayqara further cemented Herat's medieval status as the brilliant founder of the timurid dynasty after Sultan Shahrukh.

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