



WATER MANAGEMENT SYSTEM UNDER THE BAHMANIS AND BARID SHAHIS- A STUDY OF THE KAREZ SYSTEM AND THE BAGH-E-HAMMAM OF BIDAR.

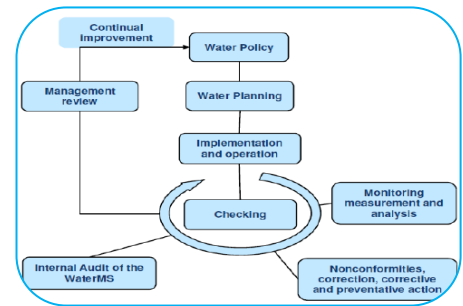
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ABSTRACT:

Human civilization across the world stands as a testimony that water is one of the major necessities from points of nature. The confrontations with nature especially in drier areas revolve around ground water, whether harnessing, transporting, usage or management and many inventive ideas were born, for the purpose in the drier parts of the globe. Hence, several methods of water extraction, collection and management are invented throughout the globe, some of which are associated with efficient, sustained use of surface water, ground water and rain water. Karez is one such inventive method of collection, transportation, storage and distribution of ground water. The most unique features of Bidar is this historic water supply system, called Karez, (also known as qanat)



KEYWORDS: Human civilization , historic water supply system, called Karez.

INTRODUCTION:

Karez is an inventive system of collection, storage, transportation and distribution of ground water. Most of the Karez systems in India were developed during reign of Muslim ruling class dynasties descending from Persia or having influential connections with Islamic world or inviting expert engineers from there. Karez strongly influenced the village socio-economic organisations due to multitude of uses they were brought into. These were masterpieces of engineering structures to collect groundwater and direct it, through a subsurface gallery with a gradual slope, to surface canals and tunnels that provided water to habitats and agricultural fields. This inventive technology-karez was a result of necessity for harnessing groundwater in arid and famine hit areas like Bidar, Bijapur, Gulbarga and Hyderabad. Bidar, capital of erstwhile Bahmani sultanate with a history of more than 700 years or more is one of the heritage cities of present Karnataka State.

GEOGRAPHICAL LOCATION AND HISTORY OF BIDAR.

Bidar district is the northernmost district of Karnataka bounded by most parts of Telangana and Maharashtra. In the east it is bounded by Nizamabad and Medak districts of Telangana state, by Latur and Osmanabad districts of Maharashtra state in the west, Nanded district of Maharashtra state on the north and Gulbarga district of Karnataka in south. Bidar district constitutes five talukas viz. Aurad, Basavakalyan, Bhalki, Bidar and Humnabad with Bidar as the headquarters of the district. Traditional tales refer this region as Viduranagara of Mahabharata times.¹

Historically, the district had a glorious past. It formed an administrative region under Mauryas, Satavahanas, Chalukyas of Badami, Rashtrakutas, Chalukyas of Kalyana, the Kalachuris, Kakatiyas, Khiljis, it served as capital of Bahmanis, Baridshahis, province of Mughals and the Nizam of Hyderabad. The treasure of culture, art and architecture nurtured by these successive rulers have contributed well to its cultural richness. As such, there are a good number of Hindus and Muslims in Bidar district with their rich culture and Art and Architecture. Similarly, social and religious reformers such as Basaveshwara and Guru Nanak also played significant role in social reformation based on socio-religious and gender equality. The revolution by Shivasharanas in the 12th century, encompassing the social, literary (vachana sahithya) and religious fields emerged on this land.²

The Delhi Muslim rulers first Allauddin Khilji and later Muhammed-bin-Tughluq took control of entire Deccan including Bidar. During the middle of the 14th Century the Officers of Sultan Allauddin Khilji stationed in Deccan rebelled and established Bahamani Sultanate in 1347 C.E. at Gulbarga (present Kalaburagi) which witnessed frequent warfare with the Vijayanagar Kingdom.³

Earliest recorded history of its existence as a small and strong fort is also traced to Prince Ulugh Khan in 1322, where after it came under the reign of the Tughlaq dynasty. The credit of enrichment of the present fort at Bidar goes to Sultan Ahmad Shah-I, the first sultan of the Bahmani dynasty to rule from Bidar when he shifted his capital from Gulbarga to Bidar in 1422 C.E, as it had better climatic conditions and was also a fertile and safe land (from Vijayanagara Kingdom).⁴

With the establishment Bidar as of the second capital of Bahmani dynasty by Ahmad Shah-I (1422-1486 C.E), of Bahmani Kingdom, the old Fort was rebuilt and enriched with beautiful gardens, palaces, madrasas and mosques. Mahmud Gawan who became the Prime Minister in 1466 C.E was a notable figure in the history of Bidar. It remained under the Barid Shahi dynasty until the inroads of Aurangzeb into Bidar after his father and Emperor Shah Jahan appointed him the Prince of Deccan. He annexed the Bidar Fort from the Adil Shahis in 1656 C.E after warring for 21 days. With this, Bidar became a part of the Mughal Empire for the second time.⁵

Bidar was again annexed by the Bijapur Sultanate but the Mughal viceroy of Aurangzeb retook it in 1657 C.E and thus Bidar again became a part the Mughal Empire in 1686 C. E.⁶ In 1724, Bidar became a part of the Kingdom of the Nizams of Hyderabad. Third son of Asaf Jah-I (Nizam-I), Mir Sa'id Muhammad Khan Salabat Jang held Bidar fort from 1751 to 1762, till his Brother Mir Nizam Ali Khan Asaf Jah-III Imprisoned him in this fort and was killed in fort on 16th September 1763. After independence of India Bidar became part of Mysore (now Karnataka) state in 1956 C.E (and now of Karnataka since 1973).⁷

ORIGIN OF KHAREZ SYSTEM.⁸

Originally the Persian term Karez meant Kariz and other parts of the world have given many names for this system; like "Fugara" by North Africa, "Falaj" by Arabia, "Qanat Romani" by Jordan and Syria, "Galerias" by Spain "Kettharra" by Morocco, "Kanjering" by China and "Kariz" by Afghanistan, Pakistan and India. Presently the *Karez* is found in thirty eight countries throughout the world most of which are concentrated in the Middle East region. Persia is the earliest known country for recorded Karez system. The Muslim ruling dynasties descending from Persia or having influential connections with Persian kings may have invited expert engineers from Persia to develop this Karez canal system in India.

THE KHAREZ SYSTEM IN BIDAR.⁹

The historic water supply system called Karez (also as qanat) is one of the most unique engineering structures of Bidar. It is a water harnessing technology originating in Persia as discussed above. The Bahmani rulers, who were fond of gardens and buildings, built many water systems, gardens for spending their leisure times and irrigational purposes. Karez network tunnels and canals were built in 15th Century by the Bahmani kings in Bidar and Adil Shahis in Bijapur in Karnataka.

This Kariz is the network of connected canals, built through underground water streams which were meant to provide drinking water to civilian habitats and garrisons inside the Bidar fort. It consists

basically of a network underground canals connected by vertical shafts (wells) at the surface. The karez spout into the ground water sources (or natural springs) and transports it through the underground tunnels to the settlement, ending in a surface canal and/or pools in the village for various uses like drinking, washing, ablution, watering livestock, they were also further used for irrigating fields, orchards and gardens.

This system of water supply was necessary in a city like Bidar where the soil was rocky and drilling wells to provide drinking water and irrigation to land was difficult in those days. And thus it is believed that the Muslim rulers of Bidar laid the Karez system under the expert advice of Persian engineers by laying subterranean canals in the heart of the rocks by widening the natural rift. The Naubad Karez is estimated to have been constructed during the Bahmani Period between 1432-1518 C.E (though it is not known about which ruler/s of this dynasty has caused the construction). The Karez was probably directed towards developing irrigation infrastructure for a villages at Naubad, Ashtur, Adilabad and Chickpet, Bage-e-Hammam Bage-e-Gornalli, Bage-Shahi etc. The Karez in Bidar had 27 vertical shafts (wells) cut at suitable points to conserve ground water and extend for about 2 kilometres (1.2 miles) each. A few karez shafts have been closed by builders and developers and only 21 are visible today. Such underground canals can be seen at Papnash, Gurudwara, Navadgeri and Narsinmha Jharani and several such water canals can be brought to light if systematic excavations are done around the Bidar City.



The Kharez tunnel being conserved at Naubad, Bidar.

The Bagh-e-Hamam' of the Barid Shahis.

Bagh-e-Hamam (garden bath) as residents of Aliabad village (where it is located) call it, comprises of some buildings, a bath, and a small pond which are now in ruined state, where the waters from an underground stream are poured. The garden is now part of the Aliabad forest area, and is hidden among tall trees. The garden is at the foot of a cliff and does not have an approach road and one has to climb a mound to spot it.¹⁰

Experts on Bidar Monuments hold that, "This might have been a picnic spot developed by Ali Barid, the first Sultan of the Barid Shahi dynasty," The king used to visit the place along with his personal staff and relax in his leisure days. "That is why the village is named after the king as Aliabad (Ali Barid Shah). Such structures are as important as the Bidar fort and need to be conserved",¹¹ The spring of Aliabad that culminates at the Bagh-e-Hamam has been described by Ghulam Yazdani the former head of archaeology in the Nizam government of Hyderabad in his monumental work. The spring is fed by a karez from Naubad, which runs underground through the cliff. ¹²



The picnic spot of Bagh-e-Hamam at Aliabad

CONCLUSIONS.

Thus Human civilizations across the world stand testimony to water being one of the major confrontation points with nature. Majority of the civilizations rose and grew at the places with abundance of water. Many methods of water extraction, collection and management are found throughout the world, some of which are associated with efficient, sustained use of surface water, ground water and rain water. Karez is one such inventive method of collection, transportation, storage and distribution of ground water. Muslim dynasties with ruling class descending from Persia having influential connections may have invited expert engineers from Persia to develop the Karez. Karez have strongly influenced the village socio-economic organisations due to multitude of uses they were brought into. These are masterpiece engineering structures to collect groundwater and direct it, through a subsurface gallery with a gradual slope, to surface canals that provide water to settlements and agricultural fields. This inventive technology, kharez was result of need for harnessing groundwater in arid areas like that of Bidar. Bidar, capital of erstwhile Bahmani sultanate with a history of more than 700 years or more is one of the heritage cities of present Karnataka State. The original Persian term for Karez is Kariz and the rest of the world has yielded many names for this system. It is found in 38 countries throughout the world. Muslim rulers, who were fond of gardens and buildings, built many water systems, gardens for spending their leisure times one of the most unique features of Bidar is the historic water supply system, called karez of Bahmani kings in 15th Century in Bidar. Bagh-e-Hamam (garden bath), was a picnic spot developed by Ali Barid, the first Sultan of the Barid Shahi dynasty.

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