

# Natural Environment of Zayande-river and the Safavid Development of Isfahan

Asghar Mohammad Moradi, Ali Omrani Pour, Sayed Mohsen Faizi

**Abstract:** Isfahan is a historic city that has experienced several urban developments during history. They began from forming the city, Al-buyid and Seljuq period, and Safavid urban evolution in sixteenth century. Zayande-river is an important and effective natural element in relation with the city. This article reflects the conclusion of ph.d thesis on revitalization of Zayande riverfront. The interaction of Zayande-river, its nature in Isfahan plain and city in Safavid period is the main scope of this article. So the historic changes of natural-historic environment of the river are studied. The base documents are historic texts, foreign and vernacular tourists' travelogues, and historic maps and pictures from natural – historic environment of Zayande-river.

The conclusion is cognition of: I) Interaction between Zayande-river & Isfahan in Safavid age, II) Theory of the Safavid development of Isfahan in relation with river. They provide a theoretical base for planning, conservation and development plans of the city, especially for Zayande-river natural-historic environment.

**Keywords:** Zayande-river, Isfahan, Safavid age, natural-historic environment

## 1. Introduction

Zayande-river is one of the most important natural elements in Isfahan plain that has complex relation with the city. Isfahan, in seventeenth century, is the the greatest Islamic capital. So, the historic city accepts a development plan that is an important point on its urban history. One of the main effective potencies in planning, execution and success of the development plan is a permanent and noticeable flow of water in fertile plain of Isfahan. In attention to the main role and importance of Zayande-river in safavid development of Isfahan, this article reflects conclusion of studying Zayande-river and Isfahan in safavid development plan.

## 2. City and river in pre-safavid Isfahan

Plain and the city of Isfahan has experienced more than one thousand years in islamic-persian urbanization. Two main ages in pre-safavid history are: I) Integration of small cities and villages and creation of Isfahan in Al-Buyid age, II) City development in Seljuq age. [1]

According to the most historic documents, first human settlement in Isfahan plain is nearby Zayande-river: "Jey". [2], [3] Isfahan in eleventh was two separated cities:

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"Yahudieh" and "Shahrestan" and some fine villages were related to them. Jey is one of the best villages near Shahrestan. [4]

Shahrestan was a political center and nearby Zayande-river that had a good relation to southern reigions of Iran by the historic bridge on river.

In eleventh century the main architectures on north riverfront are only grinder buildings and some elegance palaces near the city. Isfahan in twelveth century has three important aspects in relation with the nature of Zayande-river:

- I. Network of fresh water in city,
- II. The finest and civilized Persian city in relation with nature, [5]
- III. Existence of four great gardens in relation to city. [3]

## 3. City and river in Safavid Isfahan

Isfahan grew in the seventeenth century because it had become the capital of the Safavid Empire. And because of the political and economic activities directed by Shah-Abbas, the population grew fast by immigration. The agriculture on the plain of Isfahan was intensified in order to support this population and the imperial system. Without efficient distribution of the waters of the Zayande-river the agricultural system on which the capital was depended would have failed. The growth of Isfahan required organization and investment. So some decisions were planned and acted:

§ 105 streams (Madi) were flowing from the river in the city and the plain, [6]

§ Twelve bridges were founded on Zayande-river. Some of them have the action of bridge and dam together. [6]

§ Three soil dams were founded below the last bridge on river for raising the water to irrigate the land of either side. [7]

§ Intricate system of water sharing which comprehended each group of villages on the river. A form of this system has come down to us over the signature of Shaikh Bahai.

§ Attempt to increase the flow of Zayande-river by building a tunnel and transitioning some of Karun-river to Zayande-river. [8]

Isfahan, the new capital of Safavid Empire, accepted a new master development plan in seventeenth century. In this development the city grew to the river, passed it and contributed Zayande-river in the forming and making new urban spaces.

The main and the most important aspects of this urban development, through studying the historic documents, are:

#### A) City scape

"existence of gardens in city, high minarets and domes, Zayande-river flow, several streams flowing from river in the streets, alleys, different urban spaces and finally to the houses, great amount of water in the city and the plain, existence of many gardens all around the city" are the phrases describe the city scape in Safavid age. [9], [10], [8], [11]

#### B) The main spatial elements of development plan

Old city of Isfahan was developed on the following zones:

- I. Chahar-Bagh Street as the main axis of city development,
- II. Series of royal gardens in two sides of Chahar-Bagh Street,
- III. Jolfa Bridge (Si-o-se-pol), Khaju Bridge,
- IV. Hezar-Jerib garden,
- V. New urban districts in relation to river: Abas-Abad, Jolfa, Gabr-Abad, Shams-Abad, Khaju, Sheikh-Yusof on both sides of river,
- VI. Farah-Abad garden,
- VII. Chahar-Bagh-Sadri Street and gardens,
- VIII. Saadat-Abad gardens. [9], [12], [10], [8], [13]
- IX.



Picture No. 1: View to a part of Chahar-Bagh Street in 1870 [15]

#### C) Chahar-Bagh Street and its gardens

Specialities of this street and its royal gardens are:

§ A common walking way acrossing with river, from the kingdom palace till the Soffe Mountain, open to people, [9]

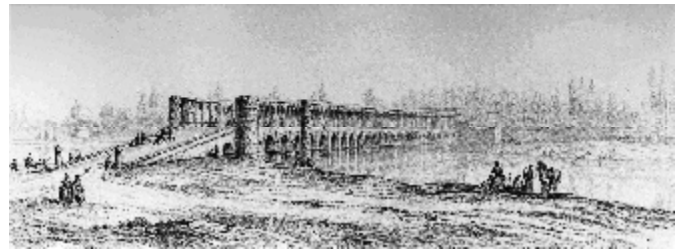
§ Water flow on either sides and in centre, with pools, waterfalls, fountains, [12], [8]

§ Seven pools along the street to the river, [8]

§ Tall sycamore trees on either side, [9], [14], [13]

§ Vast Iranian gardens and palaces on either sides with transparent walls, an entrance building, a central hall, long and regular lines of trees, and open on people, [12], [10], [8], [14]

§ Existence of grand buildings, royal gardens, great urban spaces, and royal palaces nearby the street.



Picture No. 2: Jolfa Bridge in seventeenth century [16]

#### D) Jolfa Bridge (Si-o-se-pol), Khaju Bridge,

These two bridges (now exists) are extensions of two great axis of the Safavid development plan over the Zayande-river. Their common quality is:

§ Different passing ways on bridge for different relations with river nature,

§ Creating spaces on bridge for people to view surrounding riverscapes,

§ Natural environment of these bridges was a place for different celebrations in relation with nature, such as "Aab-Pashan". [9], [10], [8]

#### E) Hezar-Jerib garden

The southern end of Chahar-Bagh axis was a vast, royal and regular garden. Water of Zayande-river was taken for it, with some pools, streams, waterfalls and fountains. Also, it was a centre for growing special trees and scarce fruit. [9], [8]

#### F) New urban districts

By growing population of the city, some new districts were planned in south of Naghsh-e-Jahan square. These six districts were on riverfront and erected for special royal purposes:

§ Abas-Abad for king Abas s relevants immigrated from Tabriz, on northern riverfront, next to Chahar-Bagh Street, [8]

§ Jolfa for the Christians were immigrated by king Abas from Jolfa on Aras riverfront to Isfahan, on southern riverfront, next to Chahar-Bagh Street, [10]

§ Gabr-Abad for zoroastrians, on southern riverfront between Jolfa and Khaju bridges,

§ Shams-Abad, Khaju and Sheikh-Yusof districts on northern riverfront,

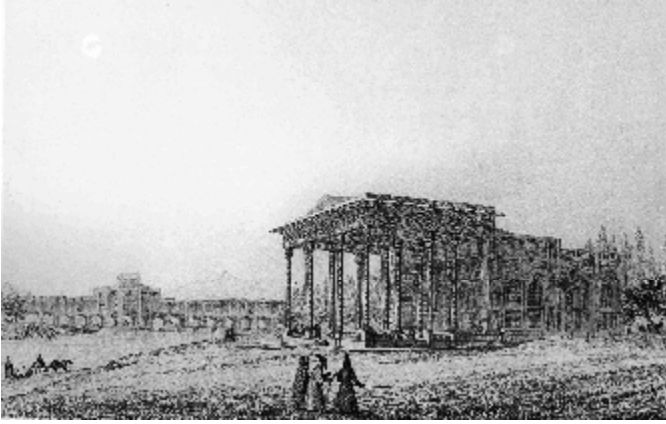
§ Some common adjectives of them in relation to the nature are:

§ Approximately all alleys had a stream from the river and two lines of tall sycamore trees,

§ The finest and greatest buildings are located on the riverfront. [8], [10]

#### G) Chahar-Bagh Sadri Street

Chahar-Bagh Sadri Street was another street by the pattern of Chahar-Bagh that planned and erected in the city development to river and passed from it. [17]



Picture No. 3: Khaju Bridge and a part of Saadat-Abad garden in seventeenth century [16]

H) Saadat-Abad, Farah-Abad Gardens

Saadat-Abad was a complex of gardens and royal buildings on both sides of the river, above Khaju Bridge, where the river expands and is as a lake. Zayande-river passed through it and a bridge was connecting two parts of it. So it was a good palace for royal great celebrations in relation with water and nature. [8], [14], [13]

Farah-Abad was a complex of gardens and palaces in south of Jolfa district. It was the most important country palace of Safavid kings. [18]



Picture No. 4: Map of Safavid Isfahan, drawn by Cherikov in eighteenth century. It shows clearly the structure of the development and its parts in relation with the river. [19]

### Zayande-river flow and its present nature

Zayande-river in Isfahan plain was a great natural element that supported the Safavid city development plan. The main achievements of the planning were dependent to the river and its nature. So the river in the development plan is not only a natural-supporting system but also a fine architectural system in the city and its spaces. All the Safavid historic documents and tourists emphasize on the planned presence of natural elements in the city.

The major adjectives of this presence are:

§ One of the main traits of the historic city was the river and the streams separated from it. [9]

§ Water was enough to flow in all alleys acrossing Chahar-Bagh Street, [12]

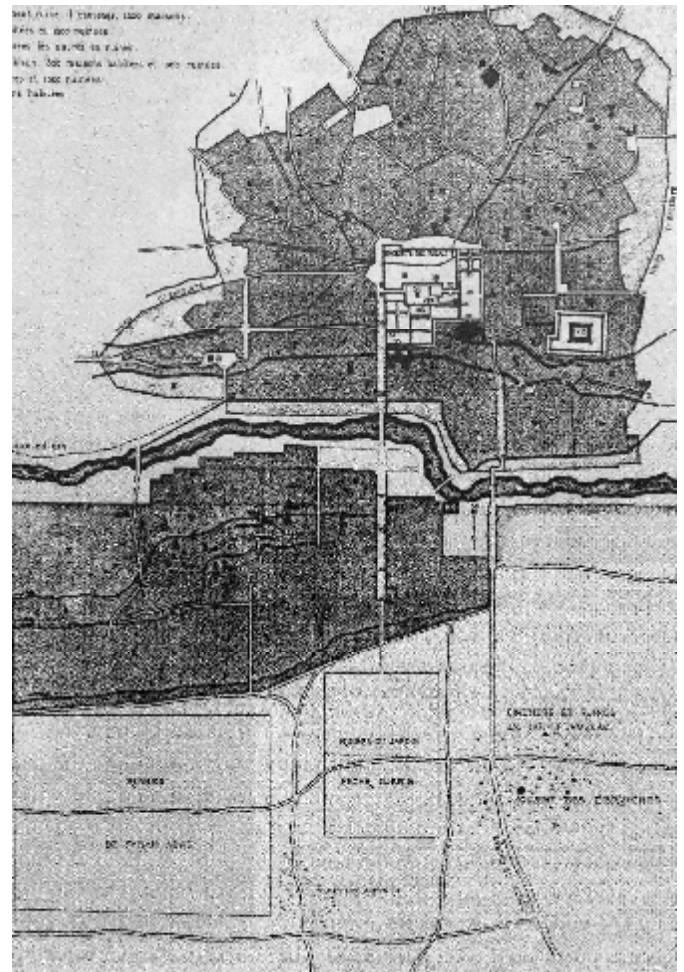
§ The complex management system of water contribution by the streams,

§ Connecting north and south urban riverfront by four dam-bridges,

§ Transmition water from river to every palace and house in the city,

§ Most of the streets involve atleast one line of trees and a stream in it.

§ The city was surrounded by cultivative lands that were irrigated by the river and its streams. [10], [8], [11], [14], [13]



Picture No. 5: Map of Isfahan, drawn by Kempfer in seventeenth century, showing new urban districts, Hezar-Jerib and Farah-Abad gardens, historic bridges, Chahar-Bagh axis and the old Seljuq Isfahan.

#### 4. Conclusion

Election of the historic city of Isfahan as the capital of the Safavid Empire prepared it for a planned royal development. With respect to the structure of the old city, the city grew to the river and contributed it in the new structure of the city.

The main physical zones of the plan are:

- § Chahar-Bagh as the first axis of development,
- § Zayande-river as the second axis of development,
- § New urban districts,
- § Urban and suburban royal gardens and palaces,
- § Urban and suburban water distribution network.

Theory of the Safavid development of Isfahan in relation to the city and the river is:

- I. Applying different natural elements and different images of them in urban spaces,
- II. Development based on nature,
- III. Activating nature potentialities in the city with a respecting approach to nature,
- IV. Applying some natural elements as well as streams in the architectural contexts, so changing the natural elements to the architectural ones,
- V. Taking the nature and the river to cityscape and the people's image of the city,
- VI. Changing the old city, far from the river, to a riverain city, connected and related to it.

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