

Iranian Shârbâgh

The Position of Persian Garden In Urban Landscape¹

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Abstract | The arrangement rhythm of urban grains in traditional cities of Iran are formed in accordance with the water supply system of the cities and villages. In this regard, Persian gardens play a key role in formation of city structure and urban landscape of traditional cities as well as incorporation of architectural grains , green infrastructure and green natural organs of the city. The triple factors of water, vegetation and architectural grains can be identified as the main factors in formation of Iranian traditional city structure. The current research studies Persian Shârbâgh or Persian city garden in order to discover the relation between these triple factors in formation of sustainable landscape in traditional cities and the role of Persian garden as a key factor in formation of Persian city gardens. The interaction of these triple factors results into formation of city structure and creation of a green belt in peripheral parts of the city. This is enabled by the presence of gardens and fields as well as the existence of architectural grains that can be considered as green grains since they are all considered courtyard houses and garden houses. Not only does this arrangement provide a desirable micro climate in an undesired context, but also it creates a sustainable landscape within a sustainable composition and allows an interaction which enables a full productivity of nature by human and offers a perpetual life of the traditional cities. Here, an exploratory method based on field observations and aerial and satellite photographs is used. The results indicate that the urban landscapes of past Iranian cities were formed in a combination of water, vegetarian and architectural grains which provided an apt microclimate in houses and cities and resulted in a unique, appropriate, functional and aesthetic rhythm in cities.

Keywords | Shârbâgh, Traditional city, Persian garden, Urban landscape.

Introduction | Landscape of past Iranian cities have met the needs of the citizens and the natural context in three emotional, cultural and ecological aspects. Landscape is emerged out of environmental, cultural and historical context which have perpetuated a tie between human and city (Sheybani, 2010). A Persian garden is a global design masterpiece in the outdoor space and a resultant of people's idea in interaction of man and nature and benefiting from nature in the creation of outer space. Here, these questions are queried: What is the position of gardens in formation of our historical cities? How has Persian Shârbâgh influence the city fabric and urban landscape and how were Persian Shârbâghs created?

Persian Shârbâgh is a masterpiece in instilling an interaction between human and creating a place for comfort, moderation, and productivity. Shârbâgh is devised for four different climates with the idea of environmental sustainability and utilization of environmental elements. It is considered as foundation of Iranian city and embodies dynamic garden cities that are environmentally compatible. A significant case of a Persian Shârbâgh is found in Samarqand in Timurid period. Clavijo gives us valued evidence about Samarqand gardens during Timurid dynasty. He described the gardens to which he was invited by Timur (also known as Tamerlane) to a great deal. Long boulevards connected these gardens to the city and by passing through these gardens it seemed like "you are passing a jungle of long trees in which a city is located" (Clavijo, 2002: 213).

Shârbâgh

Is Persian Shârbâgh the same as Persian garden-city? Is Isfahan Châhârbâgh (meaning the four gardens) truly the same as Shârbâgh? Is Sharestan the same as city garden? These are the questions that are queried about Persian garden cities and the influence of Persian gardens on landscape configuration of Iranian cities².

The inherent climate – the inherent land – self-determines the principals of urbanism. They indicate that not only is the city built with nature, but also it is formed by utilization of nature and natural elements. This principal is rarely detected in the world's history of urbanism.

Every Shârbâgh is formed as a result of interaction of water and vegetation as natural elements and architectural grains and components as built elements. The role of these

elements in formation of garden city structure is discussed in the following.

Elements of Shârbâgh formation: water, vegetation and architectural grains

The physical body of Iranian cities was designed in accordance with the natural and ecological environment in which the triple elements of water, vegetation (gardens and fields) and architectural fabric of these elements were mainly involved (Pic.1). In this process, the cities were formed by natural combination of two corridors³ of waterways and green infrastructures and organic formation of architectural grains within the natural context. These green corridors that were created based on the mentioned waterways, are the main builders of Shârbâgh. The city structure configuration of traditional Iranian cities were arranged by spatial relations of the corridors and their overlap. The initial ideas in formation of cities were established from close relation of the corridors and architectural grain so that the city structure was organized by the relation between natural corridors (waterways and green infrastructure).

Therefore, the combination of these fabrics and the way water entered the city in form of river, fountain or Qanat (subterranean aqueduct) and etc. configured the city structure format. In fact, the city form and fabric was configured in a way that shaped the basis of a Garden City owing to the presence of three elements of water, vegetation and architectural grains.

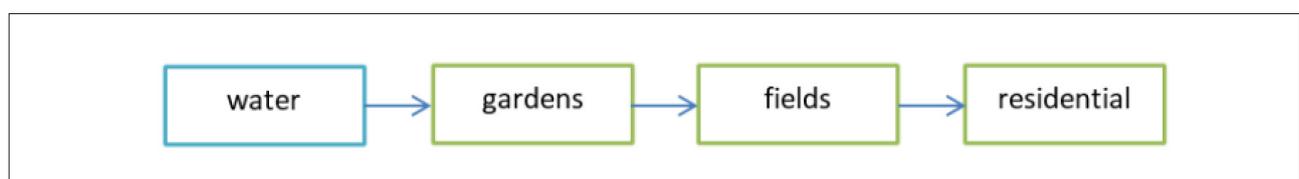
Water supply system in traditional cities of Iran

Water supply system varied in different parts of the country due to geographical and climatic conditions. The water was mainly supplied by Qanat (subterranean aqueducts) or fountains in arid and semi-arid areas such as Yazd, Kashan. In other cities including Isfahan, Semnân and etc. the river was used for irrigation.

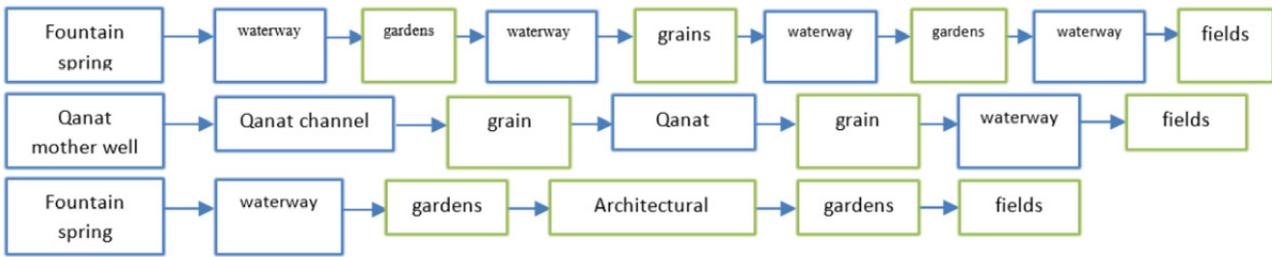
These water supply systems created a context for formation of vegetation and development of architectural grains and consequently the formation of city structure.

Fountain and Qanat patterned cities

Most semi-desert cities in the Central Plateau of Iran have the same ecosystem and they are shaped due to behavioral patterns of the relationship between water, vegetation and



Pic 1: Formation bodies of Iranian city types based on the triple factors.
Source: Authors



Pic 3: Body formation of Qanat and fountain cities based on the triple factors. Source: Authors.

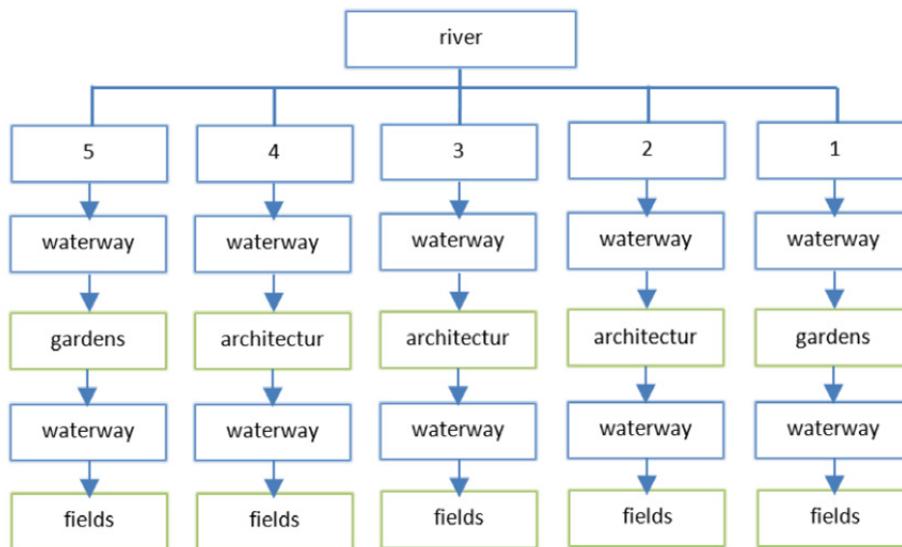
urban fabric (architectural grains). Water movement path from the start to the end of the city were arranged to suit agriculture and consuming needs of the people of the city. Hence, street slopes and city fabric followed water movement. The water is supplied from fountains or Qantas in these cities in a way that Qanat length was stretched along the longitudinal direction of the city and the urban landscape created in the city was formed by arrangement of green grains together so that the gardens and fields encompassed the city fabric (Pic.2).

Regarding the grain size, it might have the features of the urban green grains. This means that garden-alleys are shaped along the main alleys while the gardens are placed at the end of alleys and eventually, the houses with central courtyards also contribute to the number of smaller green grains. As a result, the structure of the urban landscape has provided a micro climate and the location of gardens, fields and green fabric in the surrounding part of the city has created a type of environmental protection in the city.

River patterned cities

Semnân is among the significant river cities in Iran. The city’s main water supply was provided from permanent river that originated from Sangesar and Shah Mirzad Mountains. Having entered the city, the river is divided into five branches and Semnân neighborhoods are named after the river banks; for instance Lati Bar and Shah Jooy neighborhoods (Pic.3).

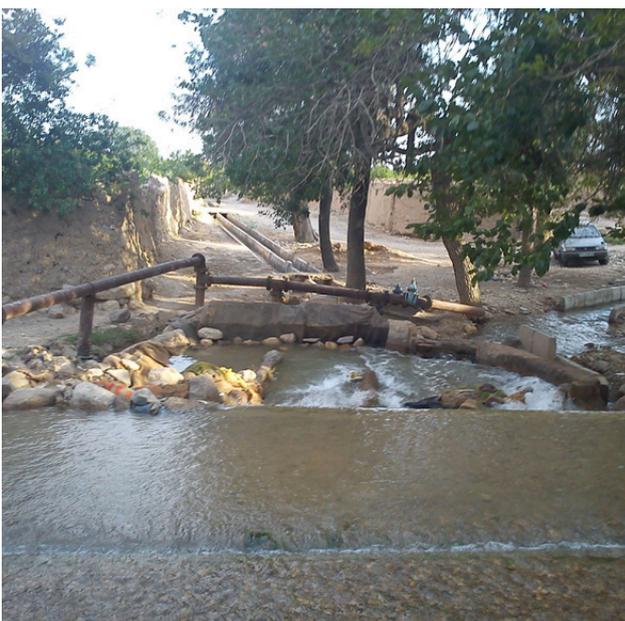
Here, the city landscape was affected by the movement of streams in the streets, forming of residential areas along the streams and even the presence of trees along the main paths or waterways (Pic.4). In addition, river division into alleys as and urban landscape led to water retention in this city. Kouyche (Alleys) –which shaped and ended up in dead ends– had access to green grains (houses). These green grains were composed of house gardens alongside the alleys and larger gardens at the end of alleys. Therefore, a controllable nature existed at the end of each ally that created a microclimate within the alleys. The residential fabric was formed along



Pic 3: The main structure of Semnân city in the past. Source: Authors.



Pic 4: Kouyche(alley) in Semnân.
Photo: Mohammad Jamshidian.



Pic 6: Kouy(street) in old fabric of Semnân.
Photo: Mohammad Jamshidian.

these alleys and formed the residential structure of the city (Pic.5).

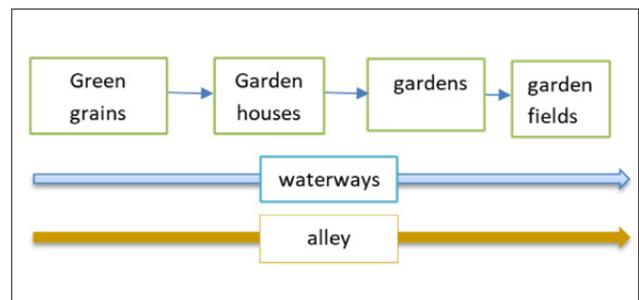
The houses were equipped by cisterns in order to access, store and irrigate the internal Chahrbâgh (garden yard). The combination of these alleys create a street (Pic. 6) whose names were mostly derived from the pond's name of the neighborhood; for instance Shah Jooy and Lati Bar neighborhoods in Semnân.

Finally, urban neighborhoods and the entire city were surrounded by garden and garden fields and according to urban studies, the so-called green belt encompassed Semnân city.(Pic. 7)

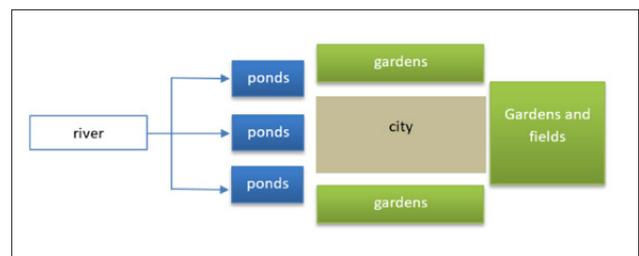
The ecological pattern of Semnân is now destroyed. However, city structure of similar cities such as Eslamiyeh (Taft) in Yazd are still intact. The following satellite photographs show the current fabric in Semnân (Pic. 8) and Eslamiyeh (Pic.9).

Isfahan city pattern

Isfahan city is another significant city that is patterned according to its river. The rhythmic order of this city is an example of creating order and balance in the environment which implies the great knowledge of its residents. Vita Sackville-West, a European traveler, describes her journey to Isfahan: "Having passed through hundreds of kilometers of desert road, a passenger who travels to Isfahan from Tehran is astonished by the greenery and refreshing melon fields, miles of poppy fields among the brown trees and the sudden appearance of turquoise domes in the city. Today, these landscape are green just as Chardin's time when Ibn



Pic 5: Combination of alley, water, architectural fabric and vegetation.
Source: Authors.



Pic 7: Schematic view of Semnân in the past that the entire city were surrounded by garden and garden fields.
Source: Authors.

Battuta was amazed by the sweetness of Isfahan apricots” (Sackville-West, 1957:426). Isfahan city pattern is the same as river patterned cities due to the presence of river. The

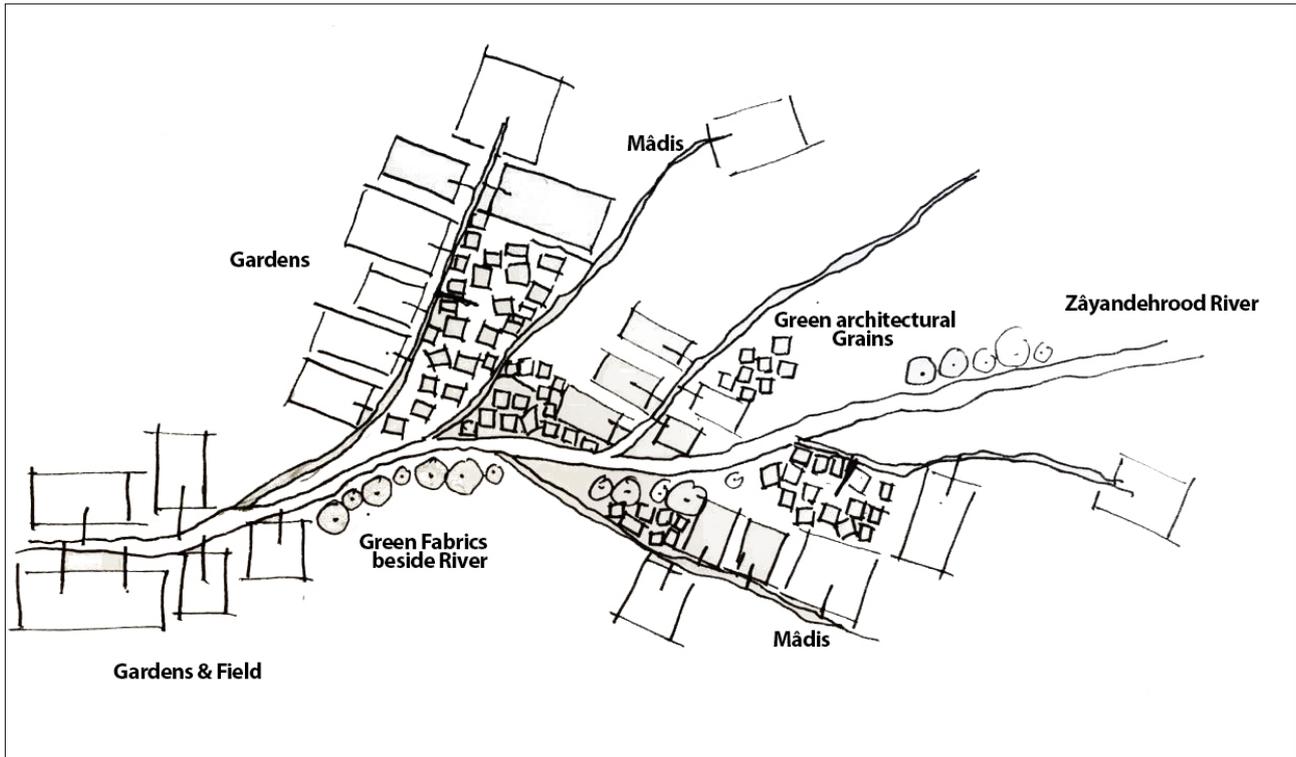
water was diverted from the upstream to downstream of the river by the so-called Mâdi. A Mâdi is a man-made canal which directly originates from the river. In other words,



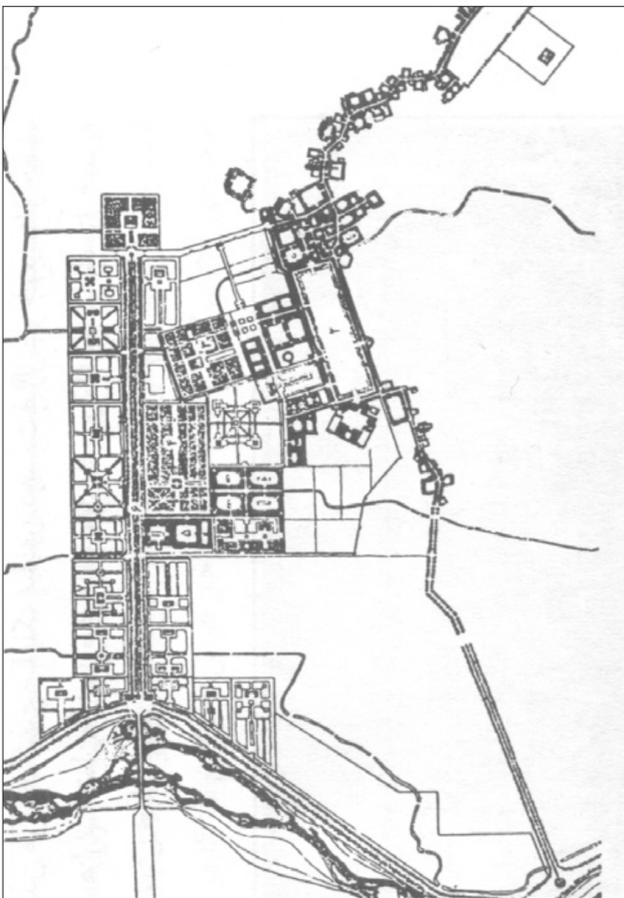
Pic 8: Semnân city is a river city whose ecological fabric and green structure is destroyed.
Source: Google Earth, 2016.



Pic 9: Eslamiyeh is a type of river city whose green structure is conserved.
Source: Google Earth, 2000.



Pic 10: Old city structure and Madis of Isfahan.
Source: Authors.



Pic 11: River impact on the formation of ChâhârBâgh and creating a desirable urban landscape.
Source: Pirnia 2001: 276.

if Zâyandehrood river is said to be the lifeline of Isfahan, Mâdis will be considered as watercourses that root from this river and branch off in the city context (Mahriyar, 2003). The primary function of Mâdis was to distribute the river waters. In fact, they were created to branch from Zâyandehrood and irrigate the peripheral land and agricultural fields (Ghalenoe&Alikhani 2014:1071).

On the other hand, Mâdis led water into the city alleys and green house courtyards and contributed to the creation of a microclimate in the courtyard. They enabled a green urban fabric by adding green spaces in houses and formation of a desirable urban landscape by diverting water from Mâdis to the house courtyards through water axis and water ponds and vitalizing the courtyards.

As a result, the location of gardens, garden fields and fields respectively at the end of alleys, along the river and perpendicular to them, formed an appealing landscape in Isfahan Shârbâgh owing to presence of water and river surrounded by gardens and fields along and in the city (Pic.10). At the end, the orientation of urban ChâhârBâgh axis and location of official gardens along this axis (Pic.11) enriched the city landscape through even combination of water, vegetation and architectural grains and provided thermal comfort through preparing a microclimate.

Water diversion system into houses

In every Shârbâgh, Iranian houses are imperative parts in figuration of urban landscape and associated with water-vegetation pattern. This is because water path extends

to houses which arrange city landscape structures either in Qanat and fountain cities or in river cities. Therefore, architectural fabrics transform into green grains, based on their size, and create both an apt microclimate for residents and water supply for consumers. Two main water patterns can be detected in diverting water into houses:

1. Having been diverted to gardens and garden houses, the waters branched from fountain spring and Qanat mother well are thereby led to urban fabric and eventually into houses in two different ways:

A. The water axis is kept at the house and the courtyard level. Here, the water enters from one side of the courtyard, diverted to the main pond, creates a Châhârbâgh and exits from the other side of the courtyard. In this case, creation of pond in the main courtyard and continuity of the outer environment to the house not only does have a positive influence in regulating the environmental conditions, but

also it offers an appealing landscape in the interior spaces of the house. (Pic.12)

B. The water axis is kept at a lower level from the city axis and the building and water is derived into the ponds of the pit yards so that the created green space would lead into establishment of thermal comfort by creation of a microclimate in the house. In some cases, the water is used through installation of numerous stairs to Pâyâb (Place accessing to the water storage).

In this pattern, the water path finally is led to garden alleys, gardens and fields after pouring through houses and garden houses.

The water sourced from Qanat mother well or fountain spring was immediately distributed in urban fabric and garden alleys to create the urban landscape and it was eventually distributed in gardens and fields.



Pic 12: Tabâtabâi house Kashan. Water influence on landscape and relate outdoor and indoor.
Source: www.mehrnews.com.

Conclusion | The linkage of the three elements of water, vegetation and architectural grains in traditional cities of Iran has led to emergence of an urban landscape to which we refer as Persian Shârbâgh; cities where gardens as the most significant product of Iranian civilization in human connection with nature are meaningfully involved. The culture of Shârbâgh creation in various climates establishes

a unity among urban elements despite their diversity. Using a comprehensive patterns, Persian Shârbâgh creates coherence and connection between the indoor and outdoor along offering sustainability and generating microclimates in the city. This unity along diversity is due to the combination of rational and functional relationship between water, vegetation as well as outdoor and architectural

spaces that has enriched the urban landscape by affecting city landscapes in different ecosystems and formation of Shârbâgh. The structure of the created context in Shârbâgh has embodied architectural grains of Shârbâgh by creating zones, mass and green grains in a green infrastructure with water infrastructure.

Thus, ecologically sustainable cities are shaped in a way that they can provide an apt context for formation of natural city organs and creation of traditional gardens, fields, garden houses. they can also allow garden lives where garden palaces and formal belvedere gardens are built. As a result, formal

gardens evolved according to a sustainable and ecological city structure and the green organs of the city. In other words, not only Shârbâgh was an appropriate context for creation of formal gardens, but also it would lead to garden development, preservation, restoration and sustainability. Following the development of cities and destruction of gardens and loss of contexts for Shârbâgh, formal gardens are also decreased in numbers. They are gradually degraded in structure and introduced as a statue of Persian garden in a whole separate context.

Endnotes

1. This article is derived from researches on creation of Persian Shârbâgh which is lectured as a part of wisdom and philosophy of Persian garden in Ph.D. curriculum of landscape architecture at University of Tehran.
2. This paper considers gardens as traditional gardens and garden alleys that are mentioned are formed by lateral arrangement of traditional gardens. Formal gardens (belvedere gardens and palace gardens) are located in fabrics that are created by traditional gardens and fields.

3. Although the term “corridor” is considered a modern word in environmental and ecological literature, its concept was going on in traditional cities of Iran. In defining the meaning and application of corridors, it can be confirmed that corridors are different in type and size and in natural made or built type. Waterways, traffic routes, cargo lines and habitat axis are unique corridors of every region.

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