

Misadventure of decorative management in the World Heritage's Persian gardens

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Abstract | This paper is an attempt to present a general view of the current status of the agricultural landscapes in seven Persian gardens, which all have been registered by UNESCO as the World Heritage property (cultural landscape). The cases studies are Abbas Abad garden (Behshahr), Fin garden (Kashan), Akbariyeh garden (Birjand), Dolat Abad garden (Yazd), Pahlavanpour garden (Mehriz), Chehelsotun garden (Isfahan), and Shazadeh garden (Mahan). The findings of this study show there is not sufficient attention toward the conservation and restoration of productive greenery in Persian gardens. In Fin and Chehelsotun gardens the agricultural landscape has completely devastated and converted to the non-original decorative green spaces. In the same way, the visitors of Abbas Abad garden do not observe any productive areas in the garden periphery. On the other hand, the fruit-bearing greeneries in Akbariyeh, Shahzadeh, and Pahlavanpour gardens have been preserved. Nevertheless, the serious and pursuant actions should be taken for revitalizing the productive sceneries of these historical gardens. Finally, the agricultural lands of Dolat Abad garden have fortunately not yet been converted, but do not have the active and vivid condition. In conclusion, beyond conserving the architectural features of Persian gardens, it is also vital to be revived their agricultural landscapes. Finally, it should be mentioned that revitalization and rehabilitation the productive greeneries in historical gardens is a fundamental way to demonstrate the genuine Persian garden.

Keywords | Persian garden, World Heritage, agricultural landscape, conservation, agritourism.

Introduction | The old written sources in the field of Persian garden have mentioned two types of plants integrated into the plant system of Iran's historical garden. In fact plant system of Persian garden has been organized by utilizing both the decorative and productive plants. But during the eras after construction these gardens, the agricultural greenery may have been damaged or even converted. The obvious example in this respect is cutting out the fruit trees in two famous gardens: Fin and Chehelsotun. On the other

side, nine of Iran's historical gardens registered in UNESCO World Heritage list in 2011.

The agricultural landscape refers to that part of the garden's green spaces in which the edible products are being produced. Nevertheless, cultivating the fructiferous was not merely for aesthetic. Rather each garden had an economic-ecological system in which the greenery must have an economic-ecological harvest for owners and gardeners.

In order to study the status of edible landscapes in Persian gardens two periods should be selected: the historical past, and nowadays period.

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Productive landscape in the past

The agricultural landscape which covers the most surface of Persian gardens (Naeima, 2012) in addition to producing edible fruits and vegetables, has an important role in visual scenery of the garden, its symmetry, and order (Naghizadeh, 2013). Motedayyen (2009) believes that productivity is the common attribute in Persian garden establishment as well as its evolution. Furthermore, productivity hides in the meaning of the "garden" term: "The enclosed periphery in which flowers, groves, fruit trees and vegetables are planted" (Barati, 2005). A look at the redrawn map of Timurid garden based on the descriptions of Irshād al-Zirā'ah (Heravi, 1967) reveals that the diversity of plant species in the productive landscapes has been more than ornamental ones (Ruggles, 2008: 60). Establishing the productive landscape not being limited to the Iranian gardens, rather it was one of the principal criteria of Islamic gardening and landscaping. Ruggles (Ibid: 5, 15, 46, 57, & 59) published a valuable book in the field of the agricultural landscape in the gardens of Syria, Spain, and Kashmir. Clark (2014: 120-126) believes that the most widely used fructiferous plants in the Islamic gardens are: pomegranate, fig, olive, citrus, plum, cherry, tomatoes, pears, apples, walnuts, berries and blackberries, strawberries, chestnuts, and hazelnuts.

Therefore, the edible landscape as one of the genuine attributes of the Persian garden (Heidar Nattaj, 2013) is the soul of life and activity in the garden. The man in the edible green space touches the depth and value of nature by smelling the scent of medicinal flowers as well as by picking and eating the fruits. If the ornamental landscape provided a fascinating scenery to the observer, the agricultural green spaces, in addition to the eye, stimulated the sense of taste and took the observer to a practical reaction to itself. From this perspective, Akbarzadeh and Adibi (2013) call the Persian garden a therapeutic landscape, so the sense of health in the garden could be felt when both productive and ornamental greeneries are active.

The current status of agricultural landscapes in the seven Persian gardens

Considering the importance of the productive landscape in shaping the identity of the Persian Garden, the field surveys in order to assess the quality of agricultural green space took place. Those visits took place in September 2016 and consisted of the following gardens, respectively:

1. Akbariyeh garden (World Heritage site); Birjand city (Eastern border of Iran)
2. Abbas Abad garden (World Heritage site); Behshahr city (North of Iran)
3. Fin garden (World Heritage site); Kashan city (Center of Iran)
4. Chehelsotun garden (World Heritage site); Isfahan city (Center of Iran)

5. Dolat Abad garden (World Heritage site); Yazd city (center of Iran)
6. Pahlavanpour garden (World Heritage site); Mehriz city (center of Iran)
7. Shahzadeh garden (center of Iran); outside of Mahan city (toward the South of Iran)

Akbariyeh garden

Birjand is the capital of South Khorasan in the East of Iran and is known for its saffron, barberry, rug, and handmade carpet exports. As a matter of fact, the geopolitical importance of Birjand was enhanced in the 17th century, thus, politician traffic was increased, and England and Russia established their consulate office in Birjand. Therefore, the local authorities of Birjand provided the appropriate space for meetings and socio-political traffics and designed and constructed the gardens as the natural and social conditions in different eras (Saberifar et al., 2015). These historical gardens that show some similarities to each other are Akbariyeh, Rahim Abad, Amir Abad, Bahlgerd, Masoumieh, and Shokat Abad.

Due to the registration of the Akbariyeh garden a World Heritage Site in 2011, it has a special significance in this city. The construction of the Akbariyeh as a complex was started in the late Zandiye era and continued in Qajar and Pahlavi dynasties. This garden was shaped based on absolute regularity geometry and is considered an excellent example of Iranian gardens (Ibid). The Akbariyeh garden as a resting place was built 5 km from the center of Birjand. The selected vegetation includes several indigenous species. Due to frequent severe water shortage, water was stored in basins to be used when needed. Ceramic elements were inserted into the slope to slow down the water and prevent soil erosion. Water enters under the garden and fills a basin which is divided into two branches that irrigate the trees through subsidiary canals. The presence of exotic plants and rows of pine instead of cedar trees along the main axis are particular features of this garden (UNESCO, 2011).

In fact, Akbariyeh is representative of South Khorasan Gardens in architectural design, planting, and water systems. In addition of multi-purpose plants, such as berry, pomegranate, and Damask rose, the principal surface of the garden has been divided into two categories of greeneries: pleasure landscape, and utilitarian agriculture. Among these two kinds of greeneries, utilitarian fruit trees have covered the most area of the periphery. Special planting is one of the attributes of productive lands which means each plot (in Persian: Kart) has been specified to one or two fructiferous species. Figure 1 demonstrates the Pistachio as the principal products of the Akbariyeh garden. Other fructiferous plants of this garden are pears, apricots, and greengages. One of the interesting things about gardening is that the space of each grove is formed by a combination of ornamental-fruit varie-

ties (pine, berry, pomegranate, figs, etc.).

In general, and in comparison with the other gardens visited, the quality of the productive landscape in this garden, due to the experts' observation and special consulting is relatively at the acceptable status. However, it should be mentioned the status of the agriculture in Akbariyeh World Heritage garden is still far from the desirable condition, and therefore, preserving the authenticity of the Persian garden system, both ornamental and productive sub-systems, can be yielded a more vivid green space, provided that the managerial and planning plans are going to be designated.

Abbas Abad garden

Abbas Abad (420.20 ha) is an example of the Persian Garden model which was adapted to the humid climate and dates back to the Safavid epoch. The garden complex is located amid a forest, in northern Iran. The water runs through a system of pipes, canals, and basins, and the flow is maximized by exploiting the slope, gravity and water pressure. The plan and features of this garden represented by the interconnected system of the dam, the network of underground channels and pipes, the Chahar Taqi and the towers with their safety function.

Abbas Abad Garden currently has neither agricultural landscape nor authentic vegetation. Apart from some wild fructiferous species such as raspberries, pomegranates, plums, apples, and figs, there is no obvious order to define the productive structure in the garden system (Fig. 2). Of course, due to the wet climate and the geographical context of the garden in the forest bed of northern Iran, there are forest trees like oak and zelkova in the garden, which, of course, have a secret planting order, both linear and sometimes networked. The most frequent trees in the garden are oak, chestnut-leaved oak, common hornbeam, zelkova, Persian ironwood, Persian maple, lilac persimmon, honeyberry,

and Cappadocian tree. From the shrubs of the garden, we can mention the hawthorn, medlar, and plum.

Fin garden

Fin garden (7.60 ha) is the World Heritage Site, and is located at the edge of the Iranian desert, near Kashan, is the sixteenth-century garden, and both its architecture and landscape continue to be dependent on the water (Ruggles, 2008). Fin contains numerous cypress trees and combines architectural features of the Safavid, Zandiyeh and Qajar periods. The central plant element of the garden is cypress (*Cupressus sempervirens* var. *fastigiata*). Despite the improvements through architectural restorations, the plant density of Fin famous historical garden is being demolished, especially after the severely cold winter in 2007 (IRAN's National Botanic Garden, 2014). Before 2009 the massive quince trees (*Cydonia oblonga*) filled the agriculture beds, but after elimination the fruit trees, lawns were planted on the surfaces of the beds (Jeyhani & Omrani, 2007; IRAN's National Botanic Garden, 2014).

The Fin is located in an arid region delimited by mountains on one side and desert on the other. The garden has an approximately quadrangular shape with the pavilion being at the intersection of the two principal axes. The pool is situated northwards, from which the main waterway originates. Water at Fin is supplied by a spring 3 km away from the south of the garden. Here the water is divided into two branches, one supplying the water mills and the other feeding, via two artificial springs, the main and subsidiary water bodies of the garden, before heading out to the surrounding farms and fields. Water in the garden is sent to three main areas where the natural properties of gravity, water speed, and pressure are used to create special effects with the aid of man-made features such as ponds, fountains, channels, hidden ducts and water tile pipes (UNESCO, 2011).



Fig. 1: A Pistachio plot in Akbariyeh garden (Birjand: Southern Khorasan). The visitor can see both fruit trees in the foreground and ornamental trees in the background. Photo: Mohammad Reza Khalilnezhad, 2016.



Fig. 2: A wild Pomegranate bush in Abbas Abad garden (Behshahr in the north of Iran). Photo: Mohammad Reza Khalilnezhad, 2016.



Fig. 3: Conversion the edible landscape into grass surface in Fin historical garden (Kashan). Photo: Mohammad Reza Khalilnezhad, 2016.



Fig. 4: Intensive floriculture in the Chehelsotoun garden (Isfahan). Photo: Mohammad Reza Khalilnezhad, 2016.

Planting dense rows of cedar trees along the principal axes has given the garden an apparent order and spacing and compactness which is particular to Fin Garden. Subsidiary walkways contradict this feature and give a sense of openness to the garden. Tall trees at the boundaries separate the garden space from each other and help create a micro-climate favorable to the growth of fruit trees and flowers. The particularities of this garden include its pre-Islamic origin, the ancient and highly developed water system, the organization of the vegetation, the use of cedars, its asymmetry, and the building materials used for the structures (UNESCO, 2011). Fin garden exhibits significant elements of the Persian Garden pattern, organization of waterworks, old vegetation, and architectural and artistic elements. But unfortunately, in parallel with restoration the architectural features, the plant system of Fin garden has been gradually declined. In addition to devastating the fruit trees, planting the lawn put the decorative old trees at the emergency condition (Fig. 3). Deep learning of this damage can teach Iranian experts the importance of protecting the identity and original plant system. Because the garden health and vivid living go beyond just illustrative makeup. When the approach to the garden is channeled to a purely decorative creature, it can no longer be controlled by unwanted and non-systematic changes.

The choice of plants, their adjustment, planting location, planting volumes and dozens of other issues were not merely in order to fill the garden space and creating a green and beautiful collection. Rather each component has a duty in the system, which, by eliminating or replacing it causes a disruption of the performance of the whole system.

Chehelsotoun garden

Chehel Sotun (5.80 ha) is a pavilion garden. The principal axes of the garden go from west to east, and plane trees have been planted along them. The pool is the most important manifestation of water here. The garden dates back to the Safavid epoch, and the construction of the palace in-

side it seems to have been completed in 1674 AD, after two subsequent building campaigns. Documented conservation work date back to the second half of the 20th century. Chehel Sotun was chosen by UNESCO as the World Heritage Site because of its magnificent architecture and water system, garden landscaping and arrangement of plants (UNESCO, 2011).

The productive landscape of Chehelsotun Garden in Isfahan has unfortunately disappeared along with many changes made in its vegetation system. It seems that in the contemporary period, increasing the volume of vegetation as well as the variety of ornamental species was merely aimed at creating a lush and beautiful environment for displaying the Chehelsotun palace. As Figure 4 shows, the extensive green lawn surfaces, floriculture, and shrubs are designed in order to produce decorative scenery in this spectacular garden. Fortunately, the shape of the plots remains in its almost old state, but plant species have been changed and the atmosphere of an original Persian garden cannot be felt.

Dolat Abad garden

The Dolat Abad Garden (8 ha) was built about 1750 in Yazd, which is the capital of a province in the center of Iran. Also, the Dolat Abad garden renowned for having the world's tallest wind tower that stands over 33 meters. The pine trees (*Pinus brutia*) provide shade over the central walkway of this World Heritage Site. In the Dolat Abad garden, in contrast to the Fin, the fruit trees' landscape has not yet been converted to non-genuine decorative greenery. But most surfaces are still vacant where rehabilitation and reconstruction are being projected.

The garden is rectangular in shape and is articulated along a strong east-west axis with flowerbeds divided by brooks. The garden served as a fruit and governmental garden, with a summer and winter residence. The water was supplied by Dolat Abad Qanat, which reaches the garden from behind the summer mansion and fills a ba-

sin from which the water is divided into two branches. One of the distinguishing features of this garden is the wind-catching structure and several water basins and jets. Dolat Abad possesses a complete layout among surviving Persian Gardens (UNESCO, 2011).

The agricultural identity of Dolat Abad garden has been preserved and in spite of Fin and Chehelsotun gardens its productive landscape has not fortunately yet been converted to the counterfeit decorative landscape. The productive landscape in this garden is not homogeneous, and according to Figure 5, some plots, especially near the entrance, are in better condition. Thus, some plots are empty and some have been regenerated with freshly planted saplings.

The vast expanses plots and the variety of fruit-bearing trees (pomegranate, grape, apple, and orange) indicate the high production capacity of this garden in the past. But today, that genuine, vibrant and dynamic agriculture has been declined to a half-dead body. The most agricultural lands are abandoned and therefore, the productive areas shrunk to some specific spots. Certainly, in addition to the administrator's management and planning procedure, the decline in water has affected the agriculture shrinkage of this garden. But given the registration of the garden at UNESCO, it is necessary to pay more attention to its vast and impressive productive landscape.

Pahlavanpour garden

Pahlavanpour garden was constructed during the Qajar period in the Mehriz territory (not far from Yazd), a city in the center of Iran. The main decorative plant in this garden is *Platanus orientalis*, and its primary fruit is pomegranate (*Punica granatum*). The plane trees have been planted on both sides of two water streams in the principal axis. The main axis of this case has two side walkways at the lower

level which are drawn along the edge of pomegranate beds. Thanks to the abundance of water, this garden enjoys abundant vegetation. A qanat supplies water: it enters the garden and flows through a watermill, fills a basin, passes through the gutters then goes along the main axis of the garden before flowing again into a watermill, from which it irrigates the surrounding fields. The buildings are grouped into the winter and summer residence complexes and include complementary structures. Among the particular elements of this garden are the link between the water and the mansion (the main brook passes through the mansion) and the presence of two watermills which reap the benefits of hydraulic power. Pahlavanpour garden exemplifies the Persian Village Garden pattern, where traditional garden meets modern landscape (UNESCO, 2011).

This garden has accommodated one of the most vibrant and active productive greenery. The principal fruit of the garden is pomegranate (Fig 6), and the basic ornamental tree is *Platanus*. In addition to pomegranate, there are other fruits like apricots and persimmons in the garden. This garden has a large central space in the front of the mansion. This intermediate open space as a multifunctional space was used as a rainwater cache in which were grown pomegranate trees. Among the gardens surveyed in this study, the Pahlavanpur garden is the only garden which the basic ornamental structure and its upper-story formed by a single hardwood plant (*Platanus*). Therefore, the most important suggestion in the Pahlavanpour garden is preserving the indigenous agriculture landscape.

Shahzadeh garden

Shahzadeh garden is another World Heritage Site in this study. Its marvelous terrace gardening in a sloping bed enriches the relationship between the spectator and the scenery. This garden was built during the Qajar reign



Fig. 5: Integrative landscape in Dolat Abad garden (Yazd). Photo: Mohammad Reza Khalilnezhad, 2016.



Fig. 6: Productive landscape in Pahlavanpour historical garden (Mehriz, Yazd province). Photo: Mohammad Reza Khalilnezhad, 2016.



Fig. 7: Recently, planting *Ligustrum* in the margin of the fruit plots led to the visual disconnection between visitors and fruit trees in the Shahzadeh garden (Mahan, Kerman Province). Photo: Mohammad Reza Khalilnezhad, 2016.

(1819 century CE) and remained unfinished as its founder died. It was subsequently due to the political and social reasons neglected and damaged. The first conservation work started in 1959, and the garden was registered a National Heritage in 1975. In 1981 an earthquake imposed severe damage, and preservation work started again in 1991 (UNESCO, 2011).

The pavilion building was positioned on the highest terrace and the entrance building on the lowest terrace. The spatial experiences in this garden, based on various viewpoints, are distinct and clearly perceived. (Abar-Dasht Consulting Engineers, 2003). Currently, some of the agriculture landscapes have been converted into the decorative greenery. Also, planting the decorative shrubs around the fruit trees disconnected the visual relationship between visitors and fructiferous trees.

The garden has an elongated rectangular shape. So, its longitudinal axis intersects the main entrance and the pavilion buildings. The other buildings were located along the perimeter wall of the garden. A high composite wall completes the enclosure. The internal organization of the garden is based on flat steps laid along the main axis, corresponding to the typology of Takht (step) gardens. Furthermore, the arrangement of different types of tree and shrub forms accurate patterns of shade and seasonal colors. The longitudinal axis and topography are also highlighted using brooks and a series of small cascades along the stepped slope. The particular features of this garden are the innovative irrigation system, which

coupled functional and aesthetic goals, and its desert setting. Shahzadeh exemplifies the Takht Persian Garden model, created in an extreme climate with the help of innovative irrigation methods and the functional and aesthetic use of water (UNESCO, 2011).

Nearly 80 percent of the garden area allocated to the fruit landscape such as apples, pears, apricots, cherries, and quince. Recently, some sections of fruit-bearing green space have been converted to the decorative greenery. For example, some of the fruit landscapes have been converted to the ornamental greeneries. In Shahzadeh garden each planting plot (Kart) had wisely been allocated to one or two specific fruit trees and consequently, each plot had its distinctive visual scenery. But unfortunately, according to Figure 7, planting the *Ligustrum* around the fruit trees impedes the connection between the observer and the trees.

The variety of plant species in the Shahzadeh garden has promoted the biodiversity of the garden and makes it a wildlife hunter. Thus it should be mentioned that the productive landscape can produce a habitat for wildlife.

Comparison of the productive landscape in the case studies

Among the gardens studied, there are the highest quality productive landscapes in Pahlavanpour and Shahzadeh gardens. Maintaining the dynamism and originality of the productive plant system, as well as restoring and regenerating the damaged parts are the most important recommendations for these gardens. Most parts of the agricultural lands in the Dolat Abad garden are fruitless

Table 1: Current status of the productive landscape in the studied gardens. Source: Author.

Agriculture status Gardens	Existent	Reviving	Destroying	Devastated
Akbaryeh	•	•		
Abbas Abad				•
Fin				•
Pahlavanpur	•			
Dolat Abad		•		
Chehelsotun				•
Shahzadeh	•			

and unprofitable. These lands must essentially be revitalized for regeneration the fruitful landscape.

The productive landscape in the Akbaryeh garden is being revived and is in an acceptable condition. Of course, the agricultural greenery in this garden requires more attention. The edible bearing landscapes of Abbas Abad, Fin and Chehelsotun have completely been destroyed. Therefore, these three World Heritage gardens, revitalizing the productive greeneries has the highest priority.

Table 1 shows a comparative view of the agricultural landscape in the studied gardens.

Conclusion

Persian gardens, as much as speaks of Iranian history, culture, and identity, is a living statement of the cultural status of our society today. The decline of agricultural culture and the degrade of contentment spirit in the last century have led the Iranian community to a major challenge called consumerism, which prioritizes the decorative approach instead of production attributes. By contrast to the present situation, the Iranian culture promotes the agricultural activities not merely for yielding the wealth, but even aimed at serving the creatures of God, for instance by planting fruit trees in marginal spaces of streets and alleys. Today, however, the misadventure of decorating and consumerism approach has brought the agricultural landscape to a lesser degree in the field of landscape planning and design of urban environments. The depth of this decline can be seen in the Fin garden in which the native quince trees have been replaced with the exterior lawns. The Fin garden echoes the status of our community. A society that has one of the most exceptional climate within the limits of physical boundaries, as well as the knowledge of agriculture in the limits of its cultural

boundaries, can revive the most diverse productive landscapes, provided that it embraces the environmentally friendly approach.

Nowadays and after the registration of Persian gardens in the World Heritage list, more attention must be given to providing a complete and vibrant picture of historical gardens. Therefore, preservation, restoration, and revitalization the agricultural landscape inside the historical gardens, in addition to the visual dimension, requires a systematic approach to the garden as a living creature that highly depends on its context. Thus, the illustrative approach to revitalization of the agricultural landscape would not necessarily be sustainable.

On the other hand, codification the indigenous knowledge of gardening and dissemination the Iranian approach into the design of the planting system, both utilitarian and pleasure landscapes, is of high priority. Obviously, the prerequisite for attaining those goals would be gathering the indigenous experiences and knowledge that can be acquired from some old gardeners.

The second prerequisite would necessarily be approaching the historical gardens and its components and features as a unit living entity. Furthermore, the entire garden with all its components has an integrated and systematic nature. That is, the change in any part can have a constructive or destructive effect on the whole system. For instance, the recent lawns in the Fin garden are damaging to valuable old species, especially and most importantly the cypress trees. Therefore, taking any action which yields damaging the greenery of the garden, would lead to putting the life of a living creature in danger which cannot be restored in the short term as repair of its buildings and structures. Finally, if the edible and fruit-bearing landscape of the garden is damaged, the decades and even centuries must pass to restore the original and lively landscape.

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