

Original Research Article

## Talo as a Landscape Infrastructure; Examining the Nature of “Talo Wells” and Its Role in the Social Life of Laft Port City\*

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**Abstract** | Throughout history, the difficulties and constraints in the extraction of water resources have always made the supply and exploitation of water challenging for the people in the central and southern cities of Iran. However, such limitations have contributed to their water-related knowledge, insofar as the history of water engineering in Iran has witnessed the creation of masterpieces such as aqueducts and reservoirs. The city of Laft is not exempt from this rule due to its geographical location and special climatic conditions. Laft's special conditions have created a phenomenon called “Talo wells”. The current research is an attempt to scrutinize the nature of the Talo complex as an ancient water infrastructure by analyzing written and oral sources related to the Laft area and Talo wells. It also relies on the knowledge of science related to the phenomenon of freshwater wells by examining its role in the social life of Bandar Laft through the lens of landscape discipline. For this purpose, the location of Talo wells has been not viewed as just an engineering system for supplying water but rather a landscape phenomenon and infrastructure. This study employs a case study in which the data were collected from available literature, interviews, and field observations. Findings of the study show that “Talo” as the only water infrastructure in Bandar Laft, relies on a landscape infrastructure. Fresh water, as a vital and valuable element in the city, has contributed to the formation of the city-port of Laft and turned it into a civilized habitat. If, despite the special geographical location of Laft as the closest point of connection between Qeshm Island and the southern shores of the Persian Gulf and its effective role in creating settlement and business prosperity, without the discovery and management of freshwater resources in this port, the possibility of permanent settlement and the formation of an ancient city It did not exist and Laft became only a temporary resort and a connecting bridge between Qeshm Island and the coast of Hormozgan. In addition, Talo wells have a special place among the people of Laft because they provide access to limited and valuable sources of drinking water. The special and extraterrestrial position of water in this region has elevated the role of Talo wells from an urban water supply technique to a platform for the manifestation of philosophical concepts, sacred beliefs, interaction, and social participation of people in protecting water values.

**Keywords** | *Freshwater, Talo wells, Landscape infrastructure, Water protection, Bandar Laft.*

**Introduction** | Throughout history, in the cultures of various nations, elements of nature have been an important part of human life, aligning with the living conditions of societies. As far as in the course of evolution, they have gone beyond form and have been considered to have meaning and value. Concerning this spiritual position and the gift that they sincerely presented humans with, the way people deal with these natural elements has a special distinction compared to other manifestations of nature and the aspect of sanctification, honor, and sometimes praise. Water is one of these sacred natural phenomena. Despite the tremendous progress of mankind in various aspects of life, water has still maintained its importance as the most significant

source of human life, from agricultural production to energy supply. The civilizational settlements throughout history have depended on the discovery of water sources. The importance of this element has gone so far that it has penetrated the culture and mythological history of different nations and has added spiritual dimensions to human social life.

The spatial and temporal distribution of water resources in Iran is diverse. For a long time, the residents of different cities of Iran, depending on the amount and type of their need for water, have attached different values to water, and the difference in valuing the water has resulted in different and specific behaviors and rituals in dealing with this natural and important element (Mansouri & Javadi, 2018, 15, 28 & 32).

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In some regions of the south of the country, such as Hormozgan, the severe lack of freshwater resources has turned water into high and vital value, which has caused the process of water access and protection in the cities and ports of this region to be carried out especially. Among the cities, islands, and ports of Hormozgan, Qeshm Island has long played the most important role in supplying drinking water to the province due to its geographical and geological characteristics and also supplied water to other ports and islands as well (Mofidi Shemirani et al., 2013, 63). As Kazerooni (1988, 130) in his book "The history Islands and Ports of Persian Gulf" stated, "Of all the ports located in the Gulf of Oman and the Persian Gulf, none was close to Qeshm, and the drinking water of the people of that island in every city came from reservoirs. It has been provided with many sweet and pleasant wells. Therefore, the two factors "rain" and "underground water" have been the only sources of drinking water in Qeshm Island. As one of the important and historical cities of Qeshm, the city-port of Laft<sup>1</sup>, with an estimated age related to the Sassanid<sup>2</sup> period and with landscape management based on the social values of water and interaction with nature, has succeeded in being resilient against special climatic conditions and limited water resources. It has survived to this day.

Laft's landscape approach in dealing with water and its values led to the creation of a unique water infrastructure such as "Talo wells" at the foot of a stony hill and transforming it from an urban water supply system into a landscape infrastructure that is respected among the residents of the city and nearby settlements.

Future studies aim to investigate and describe the area of Talo from the perspective of the landscape discipline and to identify and categorize the features that play the most important role in defining Talo as a landscape infrastructure. The collection of Talo wells as a landscape infrastructure has a special value among the people in terms of the importance of playing a role in the extraction of water as a vital element in Laft and the way of its exploitation.

In this research, two basic "physical" and "meaningful" aspects of Talo wells, which have turned it into a scenic infrastructure in the city-port of Laft, are examined: the physical aspect, which the analysis of Talo as a unique and civilizing example of water infrastructure and the engineering of the Laft fresh water supply and access network covers technical-engineering topics, geology, and the influence of the region's morphology on the water supply model. In the semantic dimension, the process of transforming Talo from a water infrastructure to a water landscape infrastructure with the approach of social protection of water and urban civilization and the emergence of different cultural meanings and concepts in this regard are analyzed.

Part of the process of recognizing the scenic nature of a phenomenon is to understand its morphology and systematic function in interaction with humans and the environment.

Therefore, to achieve the goals of the research, it is necessary to answer this question: How was the performance of the Talo complex in supplying fresh water to Laft and about the natural structure and artificial elements of the city, such as the Laft Reservoir? How has this relationship changed in recent years? What roles do Talo wells play in the personal and social lives of Laft people? How has this role changed during the history of living in a Laft? What dimensions does the social function of Talo wells include? Is the reason for the formation of Talo as a traditional water system the same as the reason for its protection and continued exploitation?

### Research Hypothesis

Water in Laft acts as a vital and rare element, beyond material and form, and has a valuable and landscape-based identity from the semantic dimension. Talo wells are like a container that water guards such a precious container and its existence is the guarantee of life. The collection of Talo wells has played an important functional and meaningful role in the stability and continuity of the individual and social life of the people of Laft throughout history. This tight relationship has made Talo wells a social-historical landscape. The functional and semantic dimensions of Talo, which has transformed it into a scenic area, can be examined from two aspects: 1. Human interaction with nature by creating a creative way to obtain and collect drinking water. 2. The interaction of the local community of Laft with history regarding the maintenance of well water and the implementation of special rituals in this regard.

### Literature Review

The research that has previously dealt with Talo wells is very limited and mostly lacks scientific, accurate, and reliable information about the history and the main reason for the formation of the Talo complex (wells and pits). Among the written articles, one can refer to "Historical Review and Introduction of Laft Port of Qeshm Island" written by Omatali (2004) and "Identifying the Characters of Qeshm Rural Architecture (With Particular Reference to Laft Village)" written by Lilian et al. (2010). However, such studies have mostly documented the oral history of Laft.

"Emarat-e Khosrshid" Research Institute (2019) took a step further to analyze Bandar Laft and the key elements of its architecture and landscape. According to the research of this group, the Talo pit is a natural phenomenon and the result of the pristine morphology of Laft Hill, and a natural bowl serves as a reservoir for collecting surface water from heavy rains. Therefore, the pit has been given priority to the wells. However, apart from the inconsistency of this claim with the structural features of the existing situation of Talo collection, no analysis and document showing its proof have been provided, and only this hypothesis has been accepted.

Comparatively, what differentiates this study from the previous research is to criticize the previous findings and attempt to

“recognize the functional and semantic dimensions of the Talo complex.” For this purpose, field observations were conducted and the scientific phenomena were described; the relationship between them was discovered with the help of landscape science. The novelty in this research is not based on the acceptance of previous views and their unconditional acceptance but on reviewing the documentation of previous claims and finding the true goals and process of the formation and protection of the Talo collection in the context of history and how to transform it into a landscape infrastructure.

Based on the investigations, despite the importance of “Talo wells” in the freshwater supply mechanism of Bandar Laft, this issue has not been focused on, and even a similar case has been carried out in the history of drinking water engineering in Iran. Until now, no scientific research and precise archeological studies have scrutinized the performance model of the Talo complex, especially the Laft fresh water supply. In addition, the role of oral narration in the continuation of the social life of the people of Laft is an issue that, although it has been neglected until now, needs to be investigated and researched due to its importance and place in the oral history of Laft.

## Theoretical Foundations

### • Water, an element of landscapes

Due to its life-giving property, water has played a role beyond a natural element throughout history, and depending on the conditions of access to it, it has had a high value and personality in the beliefs and thoughts of different nations. As far as among the four elements of nature, its meaning and sacred aspect compared to its physical wonders have had a stronger place in the history and culture of civilizations. Water has symbolic meanings: the symbol of the mirror, the feminine principle, fertility, purity, renewal of strength, and in ethnic and mythological beliefs, it is the symbol of the beginning and eternal element, the purifier of the dead, the bestower of beauty, the healer (Hoseyni Jahangir & Fakhri, 2019).

The importance of water as the main substance for the survival of living organisms is undeniable. For this reason, water has been a symbol of light and purity in different religions since ancient times, and therefore it should be prevented from polluting (Mokhtaran et al., 2015, 8). Water is considered a sacred element in Iranian culture and literature. In the history of pre-Islamic literature, water is created according to the second of six times in the second stage of creation, and several gods and angels such as “Anahita” and “Tishtar” have an unbreakable connection with it (Hoseyni Jahangir & Fakhri, 2019, 98). In the ancient belief of Iranians, plants and especially trees were considered sacred elements and manifestations of infinity due to their vital connection with water and connection with purity, fertility, growth, and abundance in the universe (Javadi, 2013, 45). Iranians had many festivals and rituals in praise of water, and in this way, they expressed their happiness for the existence of water in their land. The establishment of

a celebration can be considered as the reason for honoring an event or the continuation of an entity, and it can be regarded as one of the valuable manifestations of a phenomenon among people and an encouragement to protect the life of that phenomenon. The sanctity of water and the human need for it throughout history have led to the preservation of the sanctity of water despite the growth of science and changing beliefs. A high-ranking person named “Mirab” took on the task of protecting and preventing waste and pollution of water resources.

Such symbolic definitions in human thought and culture have turned water into a landscape element. Studies on the place of water in the popular culture of the people of the world indicate that due to special climatic conditions, Iran is a land of respect for water. The sanctity and sacredness of water can be understood in written and oral works, as well as the ancient beliefs of people. According to the beliefs of the ancient Iranians, water has played a significant role in the creation of existence and the advancement of the struggle between good and evil in the field of mythological history of Iran (Hoseyni & Jahangir Fakhri, 2019, 91).

Due to the limitation of water resources, for centuries the cities of the Iranian plateau were formed and developed in interaction with water infrastructures. In reading the relationship between water infrastructures and the structure of Iranian cities, there have been scattered studies that generally emphasize the role of water distribution networks in the general morphology of the city, including the orientation of urban routes and passages and the division of urban blocks, and show it in harmony with the water distribution streams. The connection between the mental, cultural, and social structures of the city neighborhoods with its water infrastructure has been crystallized in the management of this water network in every neighborhood of the city. Moreover, all the people of the neighborhood, clans, and families had a role in the discussion of water maintenance and management and water infrastructure components. This public participation, which provided the basis for collective activities related to water, was the basis for the formation and continuation of the mental connection of all citizens with water and water infrastructure (Alehashemi, 2020, 6 & 11). Such activities had an important role in the improvement of the system and turned it from a mere water infrastructure into a landscape phenomenon.

Water is not exclusively a natural substance flowing in nature to meet the basic needs of the people of a region or village, and it has become a factor in competition, regional tension, inter-provincial differences, and even ethnic conflicts. Therefore, it can be said that water is a “substance and social issue,” and as a limited and demanding commodity, it can be considered the source of social challenges (Jafari Azad et al., 2022, 16).

“Tal O” or “Tela” wells are a set of wells on the southeast slope of Shahr Mountain (Laft Hill) in the old context of Bandar, which were dug in a stone pit near the historic Laft Castle

(Omatali, 2004, 146). These wells are called "Tal Ab" or "Tala" for short, due to the existence of water wells on the hillside.

### Analysis of The Findings

Given that either the creation of settlement or its continuation in Lafat port hinges on the existence of permanent sources of fresh water in this area, an element such as water has a special value among the people of Lafat. The high value of water in terms of material and meaning among the people of Laft has caused the collection of Talo wells, as the only sustainable system of fresh water supply in the city, from a mere water infrastructure to a landscape infrastructure and to continue the social life of Laft.

People in Laft have been encouraged to bring the wisdom of engineering and problem-solving creativity together. The main impetus for such a combination has been the impact of the region's climate on the limitation of surface and underground water resources in Laft and the necessity of access to permanent sources of drinking water for the continuation of life and residence in the city. Through adaptation and interaction with the special nature of Laft, people have created such a masterpiece. According to the literature, field research, and interviews on the exact performance of the wells in question, no credible documents can be found from a scientific point of view. Everything that is presented in the rest of this research is the result of the logical analysis of the collected documents and its matching with interviews, observations, and field findings. Based on the findings of the research, this problem can be defined and analyzed from two "physical" and "semantic" aspects: the structure of Talo, interaction with nature and Talo, and society's interaction with history.

#### • Talo structure, interaction with nature

Throughout the ancient history of Iran, due to the climatic characteristics and the lack of freshwater resources, the natives of different regions, based on the specific conditions of the place of residence and available facilities, have invented methods to supply and store the water they need and sustain their lives. Their methods often were "access to underground water sources" or "rainwater extraction." In most regions of Iran, access to underground aquifers has been done in three ways: "aqueduct," "spring," and "water well." The level of water tables has been very effective in choosing one of these three main techniques. In the central desert areas, due to the great depth and breadth of the aquifers, they generally use aqueducts, and in the southern areas, due to the high level of underground water, they mostly use the well drilling system. In other words, the importance and role of the water well in the southern regions of Iran, especially Qeshm Island, is equal to the aqueduct in the central plateau.

According to what has been extracted from the available literature and oral sources, the existence of freshwater wells and their connection with the underground water table can be cited as the main method and technique of Laftian in

supplying the fresh water they need. Also, in an article entitled "Qeshm Island's Surface and Underground Water Resources and Methods for Utilizing them the existence of scattered and limited aquifers in areas such as Tadala, Diristan, Tanban, Soheili, Gavarzin, Torgan, and "Laft" has been mentioned (Rezaee et al., 2010, 476). Zand Moghaddam (2003, 413 & 435) also highlights the use of rainwater and freshwater wells in the book "Afaq-e jazire-ye Qeshm" regarding local methods of access to water in Laft. He maintains that water from wells is only used for drinking because it is sweet, rainwater is used for agriculture, and irrigation of gardens, and the water in reservoirs has been used for washing purposes from the past to the present day.

According to Imam Juma (in English Friday Imam) and the head of the Islamic Council of Lafat at the time, Ahmed Powazi<sup>3</sup> (07 Jun. 2023, personal review) "Due to the high level of underground water in Lafat in the past (something about 2.5 to 3 meters below the ground level), the people of Lafat used the technique of digging wells to use fresh water in the underground surface. These freshwater wells are the same as Talo wells. There is no archaeological evidence to prove this claim, but according to the residents, the evidence is the spontaneous rising of water in the wells after the ceremony of emptying and dredging them.

Following a more complete understanding of the structure of Talo wells and how they function in the claimed aquifers in the bed, we conducted studies on the formation process of aquifers in islands and coastal areas from the perspective of geological science. Matching the morphological characteristics of Qeshm Island and Bandar Laft with the data obtained from scientific studies and the analysis of the relationship between the two led to the confirmation of the claims of the residents. Moreover, the documents were proposed to relate Talo wells to underground water sources and put forward the possibility that all or some of the wells are Artésien<sup>4</sup>.

The results of geological studies show that there is a deep connection between the morphological structure of a geographical area, including topography, the shape and location of fractures in the earth's crust, and the type of bedrock in that area, with the way and quality of the formation of aquifers in that area. Accordingly, along the faults, areas with various types of bedrock that have been fractured and fragmented may form the main routes for the passage of more groundwater (Faunt, 1997, 30) (Fig. 1).

From a seismicity perspective, the relevant area has very sharp and highly seismic faults. The zoning maps of the relative risk of earthquakes in Iran introduce the village of Laft in the "relatively high" relative risk zone (Lilian et al., 2010, 29). Also, the potential for aquifer formation can be associated with the location of Laft on the border of the Eurasian and Arabian plates, the presence of several active faults in Qeshm, especially the Laft area, and the effect of these features on earthquakes and crustal deformation (Pourkhosravani et al., 2020, 58).

Qeshm Island is a coral island in the form of a coral reef in the heart of marine ecology (Donfeli, 2017). The outer layer of this rock consists of impermeable sediments of marl, clay, shale, and schist, or alternately of sandstone and conglomerate (Khosrozade, 2014, 2014). Despite the impenetrability of the bed, the vertical fractures and the presence of seams in the shale rock layers cause little penetration of water into the lower layers (Allaby, 2013) and the formation of scattered underground water tables (Fig. 2). Since Laft port is located on the northern edge of Qeshm Island, it includes the mentioned features.

Considering the coastal location of Bandar Laft and the proximity of Laft Hill to the sea, the closest model of floodplain aquifers can be attributed to Fig. 3. According to the theory of water mixing, it is very important to keep the pressure of fresh underground water constant to prevent the infiltration of sea salt water into them. With the drilling of Talo wells and access to fresh water reservoirs in its lower layers, during many years of water extraction, the balance of aquifers to seawater has been disrupted, and the ground for

their mixing and loss of well water quality has been provided. During the field visit and introduction of the wells, Mr. Powazi (08 Jan. 2023, personal review) pointed out the water quality of each one in terms of saltiness and sweetness. Therefore, the Talo bed aquifers were not isolated and separated from the sea. To deal with the phenomenon of water mixing, the water infrastructure of Talo has been engineered in such a way that the wells, while providing access to fresh water sources, have increased the possibility of rain penetration in bed fractures and feeding aquifers in an artificial and man-made way.

• **Reservoir and Talo wells, the resilience of a civilization**

As mentioned in the introduction section of the paper, water reservoirs and well drilling have been two common ways of supplying drinking water in Qeshm Island. With the growth of the population and the increase in the need for water and food in the way of preserving and developing the civilizations of the island, the technique of building reservoirs was used and expanded in the settlements. Due to the limitation of rainfall as the only source of agricultural water supply in Laft climate

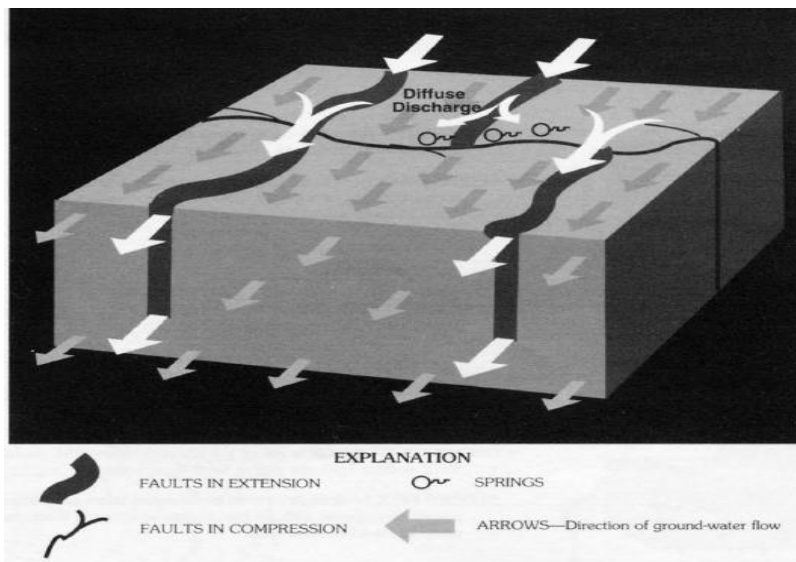


Fig. 1. Theory of underground water flow paths along faults. Source: Faunt, 1997, 31.

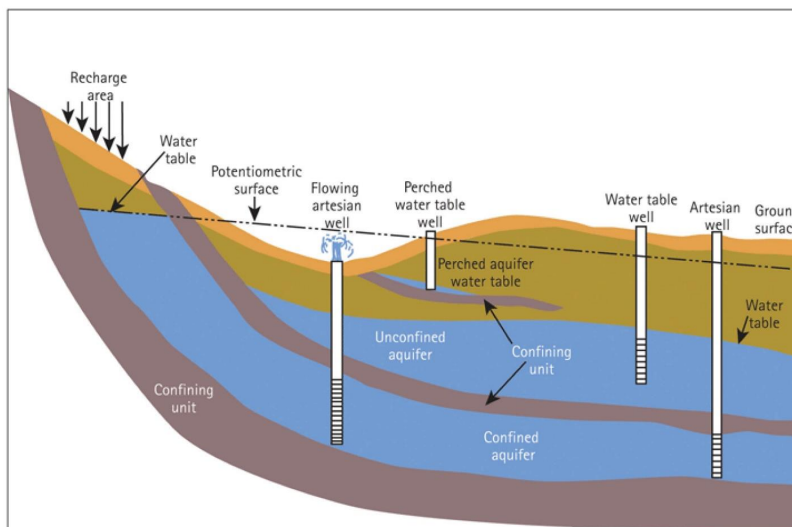


Fig. 2. Formation of underground water table in different levels and types. Source: www.ngwa.org.

and the need to pay attention to surface water management and rain storage for the continuation of the settlement, water reservoirs were built by the residents, the largest of which is "Stone Pond." Locating the construction of the above-mentioned reservoir and establishing its connection with the flood has been done as a result of Laftian's wise knowledge and the use of the potential of the natural environment. Paying attention to the natural characteristics of the bed, i.e., the type and morphology of the hill and the location of the pond in its range, has played an essential role in locating the upstream reservoir. The use of the slope of the hill creates a special and interactive system for directing surface water to the reservoir and flood wells and storing it for resilience and exploitation in drought periods (Figs. 5 & 4).

Following the adaptation of Talo wells to the new conditions and the increase of their rainwater permeability capacity, a pond, referred to as a "Dam," was created by digging a wide pit in the Talo area and on the wells. The word "dam" in the native dialect means a dam and catchment. The hills are next to each other, all over the horizon; they have cut the middle of the hills; they have gone forward; they have built a half-kilometer earth dam between the two hill ridges that are attached, a vast catchment; rainwater flows from the peaks and hill ridges and gathers and collects in the dam. The land is salty, and the water of the dam is salty, and it goes to the palm groves (Zand Moghaddam, 2003, 445) (Figs. 7 & 6).

Based on the field documents and the studies conducted on the relationship between the stone pond reservoir and the pond, the model of the movement of rainwater runoff on the slopes of Laft Hill has been drawn (Fig. 8). Rainwater moves through natural channels parallel to the slope of the hill, collects on the western slope, and is directed to the northern entrance of the stone pond reservoir upstream of the Talo complex. Before entering the reservoir, the volume of water is purified by sand

ponds in a completely traditional way and then enters the Treasury. If the volume of input is greater than the capacity of the reservoir, its overflow will exit from the south valve and will be directed to the Talo complex in a gravel path.

• **Semantic dimensions**

- **Talo, society's interaction with history**

As the most significant element of life, water has played an indispensable role in the emergence of human civilizations and the construction of cities in the world, especially in Iran. In ancient Iran, water was considered a source of immortality, a messenger of light and purity, and for this reason, Iranians had a sacred attitude towards water. According to them, water is among the four elements, and according to Zoroastrians, it is considered the most sacred element after fire (Abizadeh, 2011, 3).

Based on the interview with the natives of Laft, the local people consider the Talo wells to be sacred, and to protect them, various rituals have been performed in this place since ancient times.

For a long time, the local people have considered the water wells and the trees growing on the edge of its bed to be sacred, and for this reason, in rituals and occasions, they make sacrifices next to the wells and under the shade of trees and tie the branches of the oldest tree with green cloths. They thought that these trees were the guardians of well water, and their greenness indicated the presence of fresh water in the place (Fig. 9).

According to the conducted studies and field findings, the social function of Talo can be investigated in several categories:

- The limitation in water resources and the necessity of people's adaptation in the matter of water allocation caused class equality in most cities and ports of Qeshm, including Laft. This point of view led to the rapid development of civil life and the emergence of civilization, peace, and harmony among the people of this region.

- The vow to dig a well: There are different accounts of the

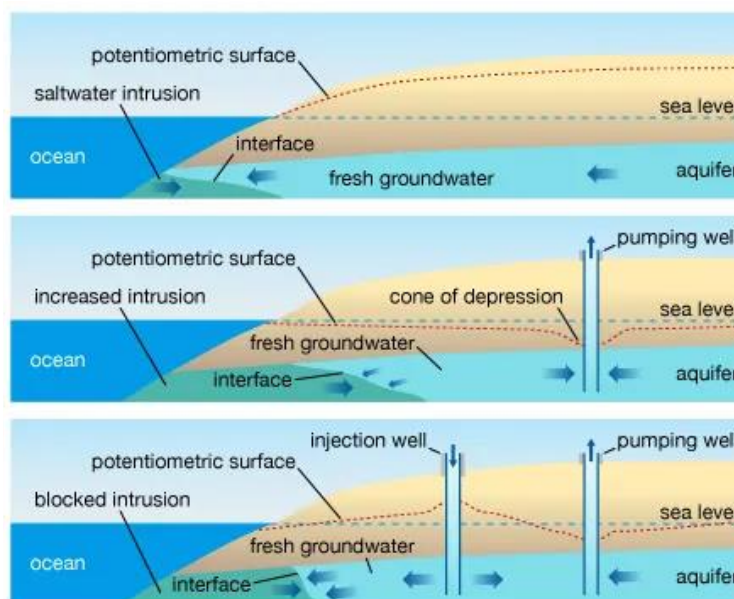


Fig. 3. The effect of active coastal freshwater aquifers on preventing their intrusion into salty seawater. Source: www.britannica.com.



Fig. 4. The influence of the morphology of Tepe Laft in creating natural paths of surface water movement and their integrity at the foot of the hill. Source: www.emaratkhorshid.com.

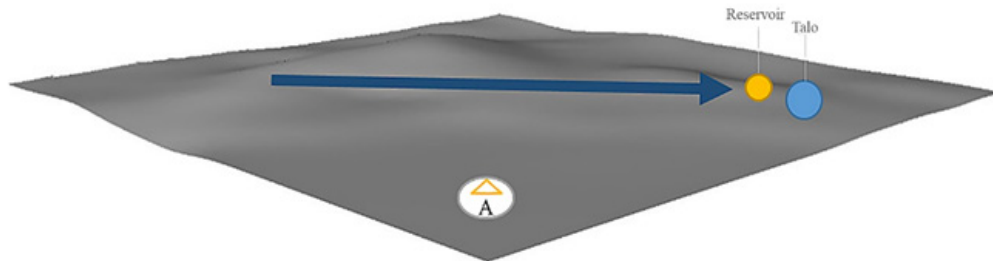


Fig. 5. Intelligent selection for the location of Laft infrastructures based on hill topography and placement in the main flow path of surface water. Source: Author based on www.cadmapper.com.

age of Talo wells. However, according to the information received from “Mr. Powazi,” Imam Juma of Laft, (07 Jun. 2023, personal interview) and the book “Afaq-e jazire-ye Qeshm,” it appears that the onset of digging the wells dates back to the Sassanid period. However, over time, with the growth of Laft’s population and as a result of the increase in the need for freshwater sources and the decrease in the level of exhaustion of the primary wells, the drilling of wells has continued in different periods. In the last period, the digging of some wells related to the 8th century AH, that is, about 600 years ago, was done by a benefactor named “Khwaja Abdul Karim.” Due to the lack of water resources and its high value in the continuity of the Laft community, digging a freshwater well is considered one of the ways to do good work and one of the public benefits. If Khwaja Abdul Karim built Talo wells for this purpose. As far as the people believe, these wells are known as the observation point of Khwaja Abdul Karim (the

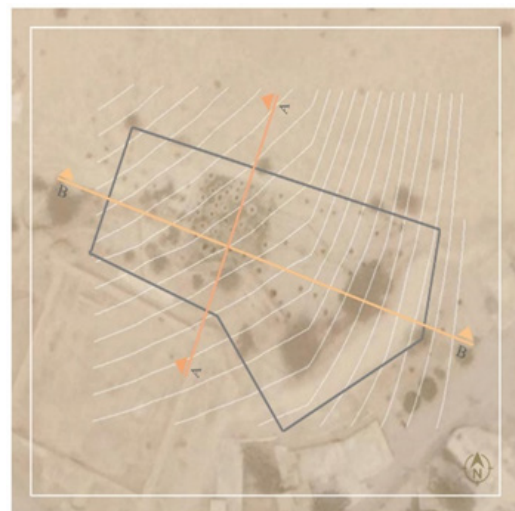


Fig. 6. The zone of Talo wells. Source: Author based on www.contourmapcreator.urg8.ch.

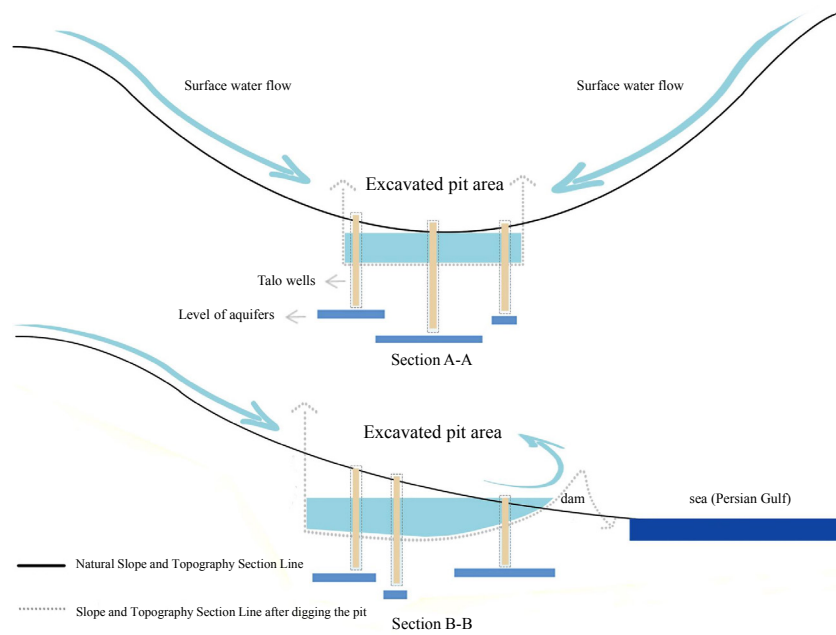


Fig. 7. Longitudinal and transverse profile of Talav complex, before and after digging the pit. Source: Author.

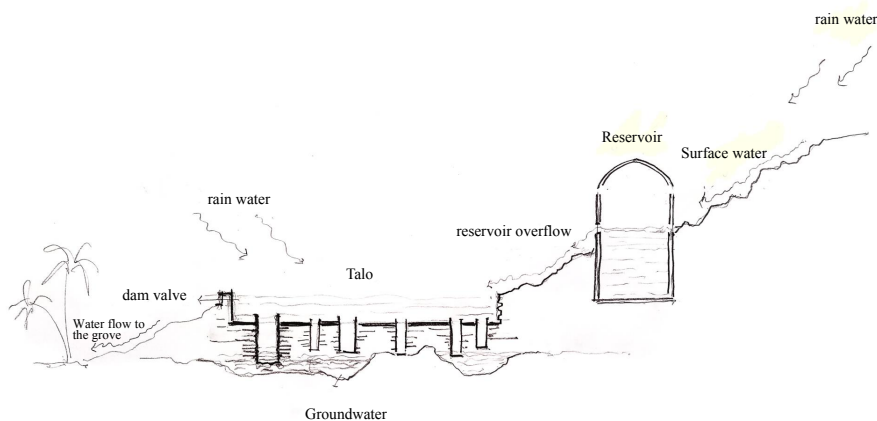


Fig. 8. A schematic cross-section of the connection between the stone pond and the flood area in Tepe Laft. Source: The author based on field evidence, interviews, and library studies.

place of observation and grace of Khawaja Abdul Karim) (Zand Moghaddam, 2003, 435 & 453).

- The growth of Kanaar and Kahor trees on the side of the pond and the ancient belief in their sanctity have led to the creation of prayer places and the tying of wishes on the trees, and they are referred to as guardians of water.
- The use of a lady in guarding the wells and supervising the implementation of justice in the use of the water rights of the residents is reminiscent of the role of Anahita, the goddess of water.
- Naming each of the wells is a sign of their value and prominent role in the lives of the Laft people and Attributing character to the wells.
- Gathering of Laftians in the area of Talo Wells, after praying for rain and cooking a local dish called “Kolumba Kheer” as a sign of a vow to hasten the acceptance of the prayer, show the strong role of wells in the creation and continuation of social interactions of Laft residents.
- The ritual of digging wells and reservoirs is a social tradition



Fig. 9. The growth of trees and the movement of their old roots towards water sources in the pond. Photo: Author’s archive.

and has continued until today. This ritual can be included in the intangible heritage of Laft, like the sail-pulling ceremony (Fig. 10).

## Conclusion

As Alehashemi (2015, 34) stated in the article “The Water



Fig. 10. The annual ceremony of cleaning and dredging the pond area and collecting water from the wells. Photo: Seyed Ahmad Powazi, (1): 2021, (2) & (3): 2023.

System of Bukhara as the Example of Rising the Water Networks to the Landscape Infrastructure<sup>1</sup> for the city” the cause of the stability of the function and character of the system in the lives and minds of the citizens is associated with the simultaneous and mutual connection of urban water infrastructure with the physical and mental dimensions of that city’s structure. The separation of each dimension leads to the deterioration of water infrastructure. As an example, due to the separation in the course of the rivers and valleys of Tehran, first, the value of water and then its bed was destroyed.

In the process of transforming water infrastructure into landscape infrastructure in a city, the entanglement of the physical and semantic dimensions of that phenomenon is essential in the personal and social lives of citizens.

Therefore, according to the landscape-oriented feature of the Tilaw water infrastructure, the stability of its functional and semantic values can help citizens protect its form. Although the essence of the formation and stability of Talo wells has been the value of fresh water in the low-water area of Lake, water has changed from a rare vital element to a natural, accessible, and relatively cheap substance. The problem arose from the increase in the population of Laft and the occurrence of changes such as the reduction of underground water resources in the bed of Talo, the

continuation of periods of drought and lack of rainfall, and finally easier water transfer by fresh water tankers in recent years. Consequentially, Talo wells, which used to be the only source of drinking water for the people, lost their high functional and meaningful value among the general public, especially the wealthy, and a limited percentage of citizens still use them.

In the topic of the pathology of the pond area, the trace of water’s diminishing value is evident in the reduction of attention of the Laft community to the protection of health and the performance of wells. Although the authorities and a group of benefactors of the city, due to the religious identity of the wells and the use of the people unable to buy water, every year during a group charity action, dig up the wells and clean the area from pollution.

As investigated in this research, Talo is entangled with the history and social life of Laft people from many physical and semantic aspects. This interweaving between culture and technology, which was formed due to the vital value of water for human life and the sustainability of civilizations, has led to the transformation of a traditional water infrastructure called Talo wells into a landscape-like and original phenomenon in the memory of Latinas, as far as the ritual of its protection has been carried out until today.

## Endnotes

\*This article is extracted from the Research Project entitled “Sea-Based Development in Hormozgan” which was conducted under supervision of Dr. “Seyed Amir Mansouri” by the research team of NAZAR Research Center in Hormozgan province in January 2023.

1. There have been two different sites in history called ShahreLaft in Qeshm Island, “Ancient Laft,” which in history includes two parts, the Old Laft and Sidan Laft, and the current Laft, “New Laft,” which itself includes two different urban contexts: Old Context And the new structure, which is between 300 and 400 years old, and the main core of its formation is Lafat Castle, known as “Naderi Castle” (Omatali, 2004, 138).

2. Since the Laft region has witnessed numerous civilizations in different time and space intervals throughout history, its age has been estimated to be equivalent to the age of the “Laft 1” site (the

Laft site number 1), the oldest ancient site discovered in Laft; the “Laft 1” site is 4 kilometers east of the current Laft site, and the main period of settlement in it is related to the Sassanid to Seljuk period, but some pottery related to the Parthian period was also obtained from the surface of this area (Khosrozade, 2014, 85).

3. Due to the lack of documents based on archeological excavations in the area of Tlav wells and the lack of scientific documents regarding the description of their engineering function model during the history of construction and operation, most of the technical materials mentioned in this research are the result of field studies and analysis of observations based on oral narration of history from Mr. Powazi, Imam Juma, and chairman of the Islamic Council of the city of Lafat.

4. An artesian well (in French: Artésien) is a type of well (man-made)

that provides a constant flow of water. In an artesian well, water with the pressure related to the balance of static water (hydrostatic pressure) is forced to rise from the mouth of the well without

the need to introduce any other force. This pressure is due to the denominator of the well, which is at a depth below the surface of the water source (piezometric level) (Water Science School, 2018).

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