

Watering System In The South of Algeria During The Ancient History

نظام السقي في الجنوب الجزائري في التاريخ القديم

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Abstract:

This study aims to show the importance of watering system that was used in the south of Algeria during the ancient history. Taking into the consideration that water was one of the biggest historical problematics. Because it is related to all domains of life ; economical, social and political domains. It was very obligatory to think of laws avoiding the conflicts about this vital element.

We tried through this study to show the contribution of the human being in the old Algeria in this domain. Through watering with the technique of Al-faggara. And how it was founded and used. Finally, the study focused on the distribution of water fairly between watering, drinking and other different uses.

Keywords :watering ; system ; Al-faggara ;Ancient history ; south of Algeria.

ملخص:

تهدف هذه الدراسة الى بيان كيفية تنظيم عملية السقي من استخراج الماء وتوزيعه واستعمالاته في الجنوب الجزائري في العصر القديم. ذلك أن قضية الماء تعد من الاشكالات التاريخية الكبرى، لارتباطه بالإنسان في شتى المجالات الاقتصادية والاجتماعية وحتى السياسية. وهذا ما نجم عنه وجوب تنظيم عملية تقسيم هذا العنصر الحيوي.

بالإضافة إلى إبراز مساهمة الإنسان في الجزائر القديمة في هذا المجال. من خلال السقاية بتقنية الفقارة، وكيفية إنشائها واستعمالها ، وتقسيم الماء بعدل، وتوزيع وتنويع استعماله بين السقي والشرب ومختلف الاستعمالات الأخرى.

الكلمات المفتاحية: السقي، نظام، الفقارة، التاريخ القديم، جنوب الجزائر.

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1. INTRODUCTION:

Water is the main vital element in life. Through history all societies need to use it in all fields and domains. This issue isn't related only to the past, but it is related to all times. Now days, this issue is getting very dangerous day-by-day. The contemporary studies confirm that the following wars will be about water and the domination over it.

Since we live in Algeria where the climate is not stable in raining. So we need to remember old experiences and inspire new ways and methods. In addition, to the diversification the sources of this vital element. In order to exploit them in a good manner.

The issue of water is related to many economical, social and political fields. There were many conflicts and problems during its exploitation. Therefore, the human being thought of many mechnes(techniques) which show how is a human being adaptable to his environment. And his use of the groundwater in imaginary ways.

The famous of these ways are the alternating watering. (Especially, in the south-east of Algeria in Touggourt and Ouargla). There is another main way of watering called Al-faggara, which we will treat in this study.

We'll try answering the following problematic :

- what is the meaning of Al-faggara system ?
- what are its origins ?
- How did people use this way of watering ?
- what was the geographical area that used this kind of the watering ?

2. The Concept Of Al-faggara System :

In Arabic language Foggara word is related to thr ancient watering system , which had many explanations like the followings :

The first definition ; It is derived from the arab word "fakr"(poverty) in the meaning that it costed very expensive to dig it, So people should have lots of money at work. They might spare all the money they had until become poor. Especially , after work if they discovered that water is just a little or gone. Especially if water is just a little or absent. While they were waiting for the compensation after work, and providing water ¹.

-The second definition : It was derived from the Arab word "Al-faggara" in the meaning of "Digging". It was narrated of the Prophet Mohammed (PBUH) His saying to salman : « Go and dig (faggar) for the smallest tree and plant it. »²

-The third definition :It is similar to the verb « fadjara » in the meaning of « burst », and the word « fadjara » also by the time it changed to « faggara ».

Some people say that it is related to the spine. Because wells sequence is similar to the vertebrae sequence.

¹¹ Ahmed Djaafari Nidham al-faggarate wa alyato tawzi'a al-maa fi mintakati Tout, majallato Dirset Torathya, laboratory of civilized building of Middle Maghreb to thr Ottman Era, Algiers, Vol 1,2007,p109.

² Ibn Mandhour :Lissa, al-arab,dar sadir, beyrouth,(n.d),p63-64.

3. Conventional Definition :

Since the langular meaning of « Al-faggara » is different and divided into many types, the conventional definition is unique. It is the ancient approach of watering. It was an underground hole connected a series of wells. This hole collects water and brings from springs located at different levels. It should be digger in simple slope, sot hey are over each other. There should be a certain distance separating a well from the other. The upper well is characterized by a slight slope allows the flow of water. And through the inner hole, these wells connect together. The water runs from the upper wells to the lower ones, which gathered water in a last well. After that, water gathered in a reception tub. At last, the water was extracted for watering and various uses ¹.

4. Determining The Geographical Area Of The Faggara :

In fact, the geographical area of the faggara is clear and and prevalent by the researchers. Whenever the faggara is mentioned that means Touat region and vice versa. Because the faggara is the main source of life in this region, that is located in the south of Algeria ². In general, it included three regions (*Tinjorarine-Gourara*, *Middle-Touat* and *Tedkelt*) (actually it is Adrar region).

Concerning the geographical borders of the region ; from the west there are the area of El-sawra and the west *big A'irq*. From the north east there is the hill of *Tadmait*. And from the west, there are *A'irq shash* and the area of *wadi(valley) El-sawra*. But from the south, there are desert of *Tanzeroufet* and the hill of *Moeder*. Finally, from the east there is the hill of *Tadmait* till *Moeder* in the south ³.

The location of Touat region took a good importance in the great Sahara. Due to the fact in that is located on a course of commercial convoys between the north and the south. Especially, *Timbucto* and *Borno* from the south. In Addition to *Marrakech*, *sejilmasa* and *Ouargla* from the north. This vital location has enabled the region to play an economical, social and scientific role, that peaked in the 18th century.

5. The Origine Of Faggara And Its History :

It's not easy to determine the real date of the Faggara system emergence in general. Therefore, the ancient historical sources didn't mention it. As a result, the new studies are depended on points of view through different historical researches⁴.

¹ Ibn Souissi Mohammed :Behth hawla al-faggara bi-Iqlim Touat, the community of historical researches and studies, wilaya of Adrar, 1997, p3

² It is actually the wilaya of Adrar.

³ Mobark Ibn El-ssafi Djaafari :alalaqat al-thqafia bayna Touat wa Al-sudan al-gharbi khilal alqarn 12 Ad, p32.

⁴ Abdulaziz Laaradj :Faggarat Touat-Timimoun bayna nidham al-taghdya wa Tawzi'a al-miyah wa dawroha fi harakiati al-mojtam'a wa nashatatih, the third international conference of water and Urbanism in Maghreb during the ancient and Middle ages, Tunisia, november, 2007, edited by Mohammed Hassan, 2009, p100.

We try to show some chronological and historical hypotheses until nowadays. There is a brief among those interested in the subject, that the origin of Al-faggara system is an ancient system of watering.

A/ Soumarian Origine Hypothese :

The first founders and the innovators from the peoples of the east were the *Canaanites* in the *Mesopotamia* valley¹. It started with the techniques that were discovered by the Soumarians in The *Mesopotamian* valley. Because of the similarity of the climate. After that, it was developed through the ages to end in the final form of Al-faggara in the human civilization.

The archeologists discovered its remains the most advanced in *Canaanite Geihoon* then in *Oman* in the same period of the 3rd thousand BC. As it is confirmed by studies and excavations that carried out by the Belgian mission led by the engineer ‘‘Andri Stevens’’. It determined about 20 sites for channels dating back to the *Canaanite* period².

In the same context, concerning the returning of Al-faggara system to the old period, here are some hypotheses :

According to some hypotheses dated back to the old period, during the 1st thousand AD, the level of the groundwater mass of *Albee* basin was higher than it was in the late period.

The surface water layers in some areas have helped to extract water easily. Especially, in places where springheads appeared on the edges of cliffs, enabling to cultivate the neighbor lands.

Whereas later on, in the tenth AD century, there happened a decrease in the level of the underground water mass. It's started that in *Tamantit* palace. And in the near edges, there were too much springheads in the old period. Then through time, the size of water basin had dwindled. And the springheads had disappeared. Therefore the inhabitants tried to dig other wells and water holes to get water again. Then the water level had continued to decline gradually. The inhabitants of this palace went to look for water in the direction where the water supply is higher.

Especially in the direction of Tamantit hill where the Albian layers.(continental Antir calire) are big from which most of the Faggartes of the region were supplied. Let's suppose that this is the explanation of some French researchers to the phenomenon, so there is a great disagreement between the local researchers about the origin of Al-faggara and its growth³.

B/ Coptic origine hypothese :

There were lots of hypotheses about the first who innovated Al-faggara system in the region or Touat. It's obviously to give some of them to discuss in order to reach an acceptable result about this point. There is an hypo these saying that the Copts that

¹ Ahmed Soussa :Hadharat bilab el-rrafidayne bayna al-samyine wa al-soumeryine,dar El-Rachid, Baghdad, 1980,p60-61.

² Abdulaziz Laaradj :Faggarate Touat-Timimoun,p101.

³ ben Souisi Mohammed :Behth hawla al-faggara bi-Iqlim Touat, p8.

immigrated to the region in the early periods, had known in their original country in Egypt Al-faggara system. After their coming, they brought the idea with them. This information is related by sheikh Al-Tayb Ibn Al-Haj Abdurrahman who was called Ibn Hida in his manuscript ‘ ‘ *Al-qawl al-bassit fi akhbar Tamantit* ’ ’ .They were the early founders of « Hinow » the 1st Faggara in Tamantit.

Whereas this short information might be questionable or refused as a whole. For some reasons :

the information is devoid of history of Coptic immigration to the region, and the way they came through? this is from a side, and from other side this hypothesis negated that all people came to the region were whether travellers or families looking for safe and stability. Because this region is a drought zone. There was nothing encouraging the immigration to it.

Captain (LO) in his study about the faggaras found lots of opinions and hypotheses in this matter. One of them is that a person who was being chased by one of Maghreb kings during the end of the 1st century AD. He went down in the palace of *Tamantit* and dug the first Faggara which was called « *Hinow* »¹.

C/ The Waves Of Immigration Hypothese During The Obeids State :

The researcher Martin(A.G.P.Martin) said that after the fall of the Obeids state in *Egypt*, groups of them immigrated to the region of Touat and *Timbucto* and held palaces and original stayles of watering.They got the water out of the ground to the surface and called this approach « Faggara »².

D/ The Iranian Origine Hypothese :

There is an other hypothese pretends that the 1st who bring Al-faggara are *Al-baramika*. After a group of them escaped from *Baghdad*, because of their fall(Nekba) by the caliph *Haroun al-Rachid*. According to some narrations, they came to Touat region and palaces and Sali oasis, they brought an idea of digging al-faggara which was geometrically similar to the approach that was used in Iran³.

E/ The Jewish Origine Hypothese :

In the same context, sheik Mohammed Bey stated that the jewish community that has been displaced to Touat in the ancient history is one who planned Al-faggara.His proof is that the Jewish who were expelled (removed) from Al-medina al-monawara dug some faggaras in Touat region. they were similar to those known in Al-medina as « *Sharraj* »⁴.

¹ Lo (capitane). "Les foggaras du Tidikelt ", Travaux de LR.S. t.x, 1953. Et t.x 1954.p 142.

² MARTIN, A.G.P. - Les Oasis Sahariennes (Gourara, Touat, Tidikelt). Algiers.

³ LO(capitane), "Les foggaras du Tidikelt, p 143.

⁴ Sheikh Mohammed Bay beaalim, Imam in the Quoranic school at Ouluf, ala minwal sharraj almadina,majallato aamal alahrajane 2 lit'arif bi-mintaqati Adrar, 1985,p55.

F/The Berber Origine Hypothese :

Whereas the judge Mohammed Ibn Abdikarim Al-bikraoui(1262-1339ah) one of the famous judges in Tamantit.He stated in his manuscript « *Dorrato al-aklam fi maarifati akhbar al-maghreb b'ad al-islam* » the Berbers of the zinata tribe settled the area early. They might plane and dig the faggaras, Because they built most of the area ¹.

6. The Ancient Historians And Geographers Attitude :

If the controversy still exists at the historical level about the origine of Al-faggara issue. It's obviously that some similar systems like (khattara, sharraj...) are very clear. They expanded from *Afghanistan* in the east to *Morocco* in the west. They located along the time of the third thousand civilizations BC ².

The oldest historian *Herodote* considered the it was expanded from Taiba to columns of *Hercules*, in a form of locations tend ayes apart, where there were huge lucks of salt in the form of small hills, and on the top of each hill there was a spring that throws fresh water from the center of the salt ³.

Starting with Egypt to Morocco including Touat region. Ibn Hawkel said : « Between Sudan and Maghreb land there were inhabitants of Berbers, there were also unwortered wilds, unoccupied wild low water, ungreased pastures only in winter. »⁴ Also Ibn Khaldoun and the Al-Hassan Al-wazzan stated the same idea ⁵.

There were lots of palaces -including ancient Faggarates- had Berber or Jewish or Arabic names. The researcher (J.C.Echallier) indicated to these palaces in his book through his journey to the area in 1972.He stated that the constraction of some palaces dated back to the first century AD. There were some Faggarates supplying the palaces and the gardens with water ⁶.

7. Al-faggara Engineering :

The channels of al-faggara were considered the main parts and components of al-faggara system which are :

- 1/ the series of wells connected to each other by tunnels or the channels that were known as "Al-nnafad".
- 2/ streamlets : through which water is curried when it is on the face of each to different uses(watering, drinking...)

¹ Ben Snoussi Mohammed :Behth hawla al-faggara bi-Iqlim Touat, p10.

² J.Tixéront, Reflection sur l'implantation ancienne de l'agriculture en Tunisie, Karthgo, Revue d'Archéologie Africainne,10éme année 1959-1960,Paris,p.26.

³ Hérodote, Histoire, IV,185, ,texte établie par Ph. Le grand, Ed. Les Belles Lettres,Paris,1960,p185.

⁴⁴ Ibn Hawkel :Sourato al-ardh,dar alhaya,1996, p100.

⁵ Alhassan Ibn Mohammed Alwazzan : Wasf Ifriqia, translated into Arabic by Mohammed Hidji and Mohammed Al-akhder,dar algharg alislami, beyrouth,1983, Tom2,p133-134.

⁶ ECHALLIER.J.C. Villages désertés et structures agraires anciennes du Touat- Gourara (Sahara Algérien). Paris, Arts et Métiers Graphiques, 1972. P 20-21.

3/ Al-Mawajin : they are such basins to gather water in order to irrigate the agricultural land ¹. Thus, these are the main components of al-faggara system.

The approach that is mentioned in the sources, about the ancient achievement of al-faggara was not easy or simple. But it required more human efforts and well preparation over all achievement aspects. starting from the pre-planning to the faggara way, then making a topographic study to the earth nature ².

The layout of the floor or the corridor on which the faggara will be built is the first work must be started with the help of one of the great experts, from the area, or from the nearest areas ³.

The process is done by digging wells from the lowest area to the highest. They extended the inner channels between them. After that they started digging the main well (mother well) in the highest point of the hill. Then they opened a circular nozzle and dug it deeply until it reaches the solid layer. Then narrowing the rotation of the well to the point of the nucleus in its depth, then the knocked with iron bars, and the water flows up towards the canal or heavy the tunnels that have been completed, according to the gradual slope(decline) from the mother well to oases allocated to agriculture ⁴.

The exterior of the continents in its wells look as if it is going on one level horizontally and vertically, but watching it internally. It's clear that it's going down to the estuary ⁵.

We can summarize the technique process to pound Al-faggara, and extend it, through the following steps :

A/Preliminary Study :

-Recognition of the sources of water in the inner basins under the sandy plateaus (hills) on the south side of reconstruction and watering area.

-Doing a visualization of the expansion of the tunnels, and the above wells in the direction of the area of reconstruction and watering.

2/The achievement Process : It means to inform the inhabitants about the start of the completion and the collection of tools, men and equipment...

-Construction of tunnel and core wells chain in the direction of the reconstruction and irrigation area to the point of the mother well.

-Building basins that receive tunnel water to distribute it once again.

-Construction of irrigation canals system and extending it from the basins received to the orchard and oases to pan into pits in order to hold(keep) water ⁶.

Finally, each one is free in his part of water, and the approach of its exploitation during the day. He might water his land like he pleased. But the habitual time for watering is in the morning. Factually, there were some exceptional cases.

¹ Abdulaziz Laaradj :Faggarat Touat-Timimoun,p105.

² Ibn souissi ;op.cit,p12.

³ Ibid,p12.

⁴ Abdulaziz Laaradj :Faggarate Touat-Timimoun,p107.

⁵ Ibid,p107.

⁶ Abdulaziz Laaradj :op.cit,p108.

B/ The Supporting Commission To The Achievement :

It means the official and the unofficial bodies that were carrying out these major projects. In this way, Charles Andri Julian argues that the state didn't take into consideration directly these works of public interest¹.

Whereas, by referring to the literary and the material sources, we find that these institutions have not been as easy as Julian imagined. Because there were high bodies managing them directly. After Rome realized the effectiveness of this solution on the economical and the social level.

By referring to research done by the researcher Abdulaziz Belfaida². He relied on archeological evidence in the north of Africa, After his study to 56 archeological manuscripts, he concluded that there might be many organizations and official institutions were credited with the completion of these projects³.

8.Conclusion :

To conclude, this watering system is depended on Al-faggara. In order to distribute water fairly. Thanks to the existence of a supervisory body that managed water affairs, oases communities had the ability to adapt to the environment, and the enactment of laws and legislations without access to official authorities.

Last but not Least, the specificity of each special area must be taken into the consideration in water projects and encouragement of traditional watering system. Because it is considered as an economical, social, historical and tourist heritage, That will contribute to the sustainable development of the country, instead of keeping our economy hostage to the ephemeral wealths.

¹ Ben souissi :op.cit,p14.

² Gilbert Grandguillaume, Régime économique et structure du pouvoir le système des foggaras du Touat ,R.O.M.M ,N°13-14, 1973, P404.

³ Ben souissi :op.cit,p14.

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