

Water Distributor (Mir Ab) and System of Water Distribution in Iran

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Abstract: *In a major part of the Islamic Iran era due to various reasons, land owning and as a result, agriculture was considered to be the main source of the revenue of the government. Political factor and irrigation can be regarded as the two main factors in prevalence of agriculture. By political factor, we refer to the security and stability of the country for the sake of the trust of the villager and the farmer for working on the land and as a result, providing his own livelihood and the required products of urbanists and payment of the relevant tax and toll. The other significant factor consists of the problem of water and irrigation that even today, without it, the agriculture is not conceivable scientific studies and achievements are mostly evaluated for promotion of the percentage of the productivity of the use of water in irrigation and agriculture. This itself shows the importance of the problem of water in agriculture and providing the livelihood of the country. of course, agriculture has been itself one of the main sources of the national revenue. Meanwhile, important problem in irrigation system has been the system of water distribution which unfortunately have not been considered so much by the historians and itinerary writers.¹ In the present article, we have sought to shortly discuss the issue of water distribution system and the man who was in charge of it, i.e. water distributor.*

Keywords: *Water, Agriculture, Water Distribution, Water Distributor.*

INTRODUCTION

Importance of Water and Water Distribution in Iran:

A) Climatic Condition of Iran:

Iran is located in the arid area of world and the average precipitation in this country is 250 mm insofar as 25 percent of the Iranian territory is located in trans-arid regions, 40 percent in arid regions and 25 percent in semi-arid regions. Water resources are located in a small part of the country total area and should be transferred to two third of the area of Iran that are part of the regions suffering from water shortage.

West and northwest of Iran are regions that receive more than average precipitation and on the other hand, east and southeast of Iran are regions that suffer from the shortage of water and have fewer water resources. In eastern regions, due to the shortage of water, systems of irrigation and water distribution have been invented and allocations are made in this field that have common features (Safinezhad, 1989).

¹ Ann Lambton, Continuity and Change in Mediaeval Persia, 2007, Ch. 5.

The average environmental facilities and restrictions play a significant role in determination of priorities. Needs evolve in proportion to the geographical, social, natural and cultural conditions (Hosseini Abri, 1998). In arid and semi-arid lands, life and existence depend on water and irrigation. Water shortage has been one of the most important stages of the formation and evolution of the Iranian culture and civilization and led to numerous inventions and innovations including underground water passages, wells, dams and so on and so forth. In historical works, Iran is described as a pioneering country in the domain of sciences related to the extraction and management of the water resources. Given such a need and significant, just distribution of water in arid and semi-arid regions of Iran is of considerable sensitivity (Tavoos, 2005).

The norms governing the systems of the traditional management of irrigation in arid and semi-arid regions that is the result of the long term experience of past generations not only have taken form for providing such needs rather they have emerged for realization of social justice and participation of all beneficiaries in management of agriculture and even the political and social developments particularly the decrease of power of the Khans, village heads, great landlords in past half century have led to the change of natural, social and cultural conditions as well as the shift in the priority of the needs of farmers (Tavoos, 2005; Papoli Yazdi, 1998).

Then, government and society relied on agriculture and many agricultural products as well as the majority of regions were dependent on the irrigation system. Some relevant factors underwent through countless changes given this dependency on the irrigation. Water required to be protected by certain strategies and this was indeed of a political significance. If the water passages and underground canals were not cleaned and the rivers and dams were not repaired the deluge would destruct them. Thus, if there was a storm, and the damages were not repaired immediately, the water for irrigation would be short.

Moreover, without a percentage of political security, the investment on construction of underground water passages and canals was not possible. Thus, security along with stability and system and politics as well as the support of the special military forces paved the ground for agricultural development.

Usurpation of water and undesirable distribution occurred for several times and caused local conflict and this was a disaster for those who were deprived from the water. These problems required to be addressed by the implementation of a type of order. Furthermore, most part of the responsibility of water distribution except the great rivers was with the local people and of course with a circular and shift based order that had its own principles and the consumer should have accepted it and the dependency of the local groups progressed it. Also this issue created many local dependencies (Lambton, 2007).

Water Distributor:

Water Distributor or Mir Ab meant the head of water or the manager in chief of the water distribution who would calculate the time for distribution of the underground water resources in a just way. This position was in many cases based on heritage but since this work was complicated the water distributor was permanent and his wage was determined at the end of year and by Norooz.²

Ann Lambton in her "Landlord and Peasant" writes:

There was a family in Shiraz whose many forefathers were the water distributor. Insofar as Haji Mohammad Ali Mir Ab who had this position after his father in late Safavid era even became the top accountant of Safavid court. His successor Aqa Khodadad Mir Ab was also the water distributor of Shiraz during the reign of Karim Khan Zand. Moreover, his son Haji Taqi Mir Ab held this position and after him, his son Aqa Hadi had it and he was the "Advisor of Environs" too. His son Haji Mirza Mohammad Mir Ab held the same position and after his death his son Mirza Fazlullah Mir Ab succeeded him (Lambton, 1960).

The importance of water and irrigation, on the one hand, and creation and establishment of relevant facilities and also reasons, on the other hand, sometimes led to the creation of extraordinary social authority and power for the officials and people in charge. Insofar as in some cases these people would interfere in political issues

² Wikipedia.

and governance and decision making. For example, in fourth century of Hijra, the Water Distributor of Marv who was in charge of the control of the water distribution and management of underground water resources was more powerful than the governor of Marv and was the commander of almost 10 thousand men. (Barthold, 1971)

The Village Head usually took advantage of one or several deputies for management of village affairs. These deputies like the village head were in charge of handling the affairs of their master. In every village in proportionate to its size and scale of production one or several men were in charge of guarding the pastures and plains. In those villages where there was water shortage, the water distributor played a key role or more powerful role than the village head. (Varham, Political and Social System of Iran in Qajar Era)

The wage of the water distributor was usually paid by the farmers. In some regions (e.g. Khurasan) there was a head water distributor who supervised the regional water distributors and served the Sheriff.

In those places where the owners of the underground water resources were princes or governmental staff or the distribution was complicated (e.g. Zayandehrood in Isfahan), an official agent was in charge of the taking care and supervision of the water distribution. In those places where the farmlands were scarce, the water distribution was in the hand of the farmers and they would choose someone whom they trusted most (Lambton, 2007).

In the distribution system based on "Taq" every underground water resource had one or several guards called "Sar Taq" who were in charge of distribution of water and every "Sar Taq" would have two deputies known as "Lavan" who supervised the water distribution. All transactions related to the water distribution or sale of part or the whole share of the water and their transfer to others through inheritance were recorded in a book and they would be preserved. The water distributor would receive five days of water instead of his wage. In Sistan the agent in charge of the irrigation was known as "irrigator". There were two types of irrigators, one the irrigator who would bring the water to the village and the other the irrigator who would distribute the water inside the village. In late Qajar era the position of the second irrigator was transferred to the head of village (Lambton, 2007).

In many different times and areas, the governments after their establishment would provide the irrigation facilities (Numani, 1980). For example, in Sassanid era, there was a position in the bureaucratic system as irrigation that would supervise the ownership and water distribution (Ensafpur, 1972).

This office of irrigation continues to work in the second century of Hijra as "Divan Al Ma" whose task is determination and reception of the tax from the water owners. This office would provide reports of the increase or decrease or change of the name of the water owners (Mir Ahmadi, 1989).

Supervision of water distribution was always undertaken by professional people. These people in Abbasid era were known as "Qias" or "Hisab" in the structure of management of irrigation.³ This organization in Ghaznavid era was called "Water Distribution" in Marv while it was referred to as "protector" in Neyshapur. These people would use some tools some of which are seen even now. (Lambton, 2007)

Basis of Division of Agriculture Water:

The system of agriculture water system refers to the supervision of the just division and distribution of water. In other words, this system determines how much water in how much time is allocated for a farmland. This is now measured by a unit called debit. Debit features the volume of water passed from the surface in a certain amount of time. In those cases, where the surface (canal or circular exit of the underground water resource) is considered to be fixed, and as a result the volume of the water transferred is assumed to be fixed, the time unit becomes important. Generally speaking, units of water distribution in Iran can be classified in three groups: 1- land units; 2- volume units; 3- temporal units.

1- Land Units:

³ Sabah Ibrahim, Businesses in Abbasid Era, 1983, p. 12.

The land units refer to the division of water based on the land area. In other words, every peasant will have water share based on the size of his land. (Dehkhoda Encyclopedia has defined water share as follows: water share consists of every person's share of the river water or its branches originated in an underground resource or fountain. This method of distribution was used in those areas where there was sufficient water resources (Rahmani, 1969).

2- Volume Units:

The volume units regardless of the land area under irrigation is also concerned with the volume of water share. In other words, in definition of the water share, it should be determined that how much water is used in a determinate time in what volume. One of the volume units is stone. In Shahre Rey, even the land size is measured with the unit of water measurement, i.e. stone (Safinezhad, 1969).

3- Temporal Units:

They are units that merely include the time of the use of water. It is needless to say that intensity and amount of water are different in every place. Therefore, time units are various. This unit is more appropriate for those places that are arid and semi-arid. Consequently, water resources are of great importance. Time units are more used for the underground water passages. Given the size of the debit of the water of the underground resources and the nature of the regional soil, we can enumerate numerous types of time units. Among these units, one can refer to the following:

1) Water Distribution based on Taq System:

In this system the night and day are divided into two "Taq". Therefore, if distribution circle is 12 days we will have 24 Taq and the turn of the Taq will be determined by ordinal numbers or by people's names. For example, if someone's turn is in the first day, he will have the "first Taq" and this proceeds up to the twenty fourth Taq.

2) Water Distribution based on Mir Ab System:

In those underground water resources where the minor owners are in majority the management and regulation of the water turn which is the basis of every type of irrigation will proceed through certain rules. This water distribution system determines everyone's share based on the geographical features of the land and its material value. There is a determinate rule and regulation for every case and these affairs are handled under the supervision of the Water Distributor. The Water Distributor regulates his own program based on the ordinary farming calendar.

Farming Calendar:

The division of the year into special seasons for further agriculture is normal in water distributor underground canals. In this calendar the year is divided into three or four seasons. The season is also referred to as "Dowr". Farming seasons are not similar in terms of their duration. The term of every season varies from one to four months.

Conclusion

In Islamic era, the major part of revenues of Iran was from the agriculture and it is natural that the vital factor in this is the access to water and the way of access to it in agriculture and the mode of irrigation for acquisition of optimized product. Given the traditional irrigation methods in Iran (which unfortunately have allocated a major percentage of the irrigation to itself), the most important issue in historical examination is the mode of water distribution for leading the water to the land. Two major factors in this issue in Iran is the

shortage of water in arid and semi-arid areas of country which will naturally be followed by the need for water division. The second factor is the context of the eastern dictatorship that has been raised by the eastern intellectuals among whom one can refer to Marx, Engels and Witfogel. This theory insists on the weather and regional conditions and considers the dictator regimes in east as the result of meteorological conditions.

The third factor to which we shortly referred earlier in this article is the need to the person in charge of protection and use of the systems of water distribution (even today the sector of use of water is considered to be the most important factor in water systems and structures).

The person in charge of water distribution was called Mir Ab in past and sometimes his power was even much more than the local commanders and rulers. For example, one can refer to Marv city of fourth century and Shiraz in Safavid and Qajar eras. There were people who served as the deputies of the water distributor to whom we referred earlier.

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