

PRIVATE SECTOR SERVICES IN OPERATION AND MAINTENANCE OF SUFI CHAI IRRIGATION AND DRAINAGE NETWORKS

SERVICES DU SECTEUR PRIVE DANS L'EXPLOITATION ET LA MAINTENANCE DU RESEAU D'IRRIGATION ET DE DRAINAGE SUFI CHAI

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ABSTRACT

Poor management of the irrigation networks by the government in the past few decades, the successful experience of some countries in attracting the participation of farmers in operation and maintenance of networks, the positive and effective results gained by the private sector, are among the factors influencing the assignment of the management of 12,000 ha of Sufi Chai Irrigation and Drainage Networks to private sector and using the cooperatives in water distribution management in the network. The East Azerbaijan Regional Water Authority organized water users' cooperatives for the exploitation of the modern networks in 2004, and assigned the management of Sufi Chai Irrigation and Drainage Networks to the private sector in 2009. Since then, four contractors have been active in the network operation and maintenance and five contractors in restoration works.

Private companies have made irrigation subcontracts with 38 Water Users' Cooperatives conveying the water up to the intake and delivering it to the Cooperative in terms of volume. Cooperatives are in charge of managing the water distribution among water users. Supervision on the performance of provisions of the contract was done by the representative of the Owner (East Azerbaijan Regional Water Authority) and for a while, by Mahab Ghods Consulting Engineers. Among the advantages of private contractor are reduced political interference in water affairs; clear understanding of the problems in water allocation, conveyance, distribution and use; active and effective presence of qualified staff in fulfilling the obligations and reducing the duties undertaken by the government, which has given them time to plan for water resource development at the country scale.

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However, inadequate trained man power, particularly in the early period of the network exploitation, and the present imbalance between the income and current costs of the network are among the constraints faced by the management of private sector contractors.

Key words: *Private companies, Contractors, Water management, Operation and Maintenance, Sufi Chai Irrigation and Drainage Networks, Iran.*

RESUME

Les facteurs tels que la gestion faible des réseaux d'irrigation par le gouvernement lors des dernières décennies, l'expérience positive de certains pays en ce qui concerne la participation des agriculteurs dans l'exploitation et la maintenance des réseaux, les résultats positifs et efficaces acquis par le secteur privé influent sur la charge accordée au secteur privé et aux coopératives dans la gestion de superficie de 12 000 ha de terre du réseau d'irrigation et de drainage Sufi Chai ainsi que la gestion de distribution d'eau. L'Autorité régionale de l'eau d'Azerbaïdjan oriental a organisée les coopératives d'usagers d'eau dans l'exploitation des réseaux modernes en 2004, et a attribué la gestion du réseau d'irrigation et de drainage Sufi Chai au secteur privé en 2009. Depuis lors, quatre entrepreneurs ont participé activement dans l'exploitation et la maintenance du réseau, et cinq entrepreneurs dans les travaux de restauration.

Les entreprises privées ont fait de sous-traitance d'irrigation aux 38 coopératives d'usagers d'eau pour le transport d'eau jusqu'à l'entrée et pour la distribuer à la coopérative en termes de volume. Les coopératives sont chargées de la gestion de distribution d'eau aux usagers d'eau. La surveillance de la performance des dispositions du contrat est faite par les représentants du propriétaire (East Azerbaijan Regional Water Authority) et pour quelque temps par Mahab Ghods Consulting Engineers. Suivent les avantages de l'entreprise privée : réduction d'ingérence politique dans les affaires de l'eau; compréhension claire des problèmes de répartition d'eau, de transport, de distribution et d'usage; présence active et efficiente du personnel qualifié dans l'accomplissement des obligations et la réduction des fonctions du gouvernement. Tout ceci donne la chance à l'entreprise privée de planifier le développement des ressources en eau au niveau du pays.

Cependant, l'insuffisance de main d'œuvre qualifié, en particulier au début de l'exploitation du réseau, et le déséquilibre actuel entre les revenus et les coûts actuels du réseau étaient certaines des contraintes rencontrées par les entrepreneurs privés dans la gestion.

Mots clés: *Entreprises privées, entrepreneurs, gestion d'eau, exploitation et maintenance, réseau d'irrigation et de drainage Sufi Chai, Iran.*

1. INTRODUCTION

During the recent past, building water reservoirs, canals and irrigation networks have met many needs of the people. The custodian of these infrastructures is the government, which often feels burdened with the task of network management due to constraints in man power and funds. If such works could be done by the private sector with cooperation from the stake

holders, it would lessened the burden on the government, which then could devote more time and funds in resolving the water related issues at the country level.

In this context, the East Azerbaijan Water Company concluded a managerial contract to use the private sector services in offering a new approach to water use management and maintaining the Irrigation and Drainage Networks (IDN). There have been two approaches to accomplish the task. The approach was using the services of contractors such in water use management and maintenance of infrastructure, in which the managerial responsibilities of the network like personnel management responsibilities, social and legal affairs, exploitation and maintenance, interaction with exploiters, were all upon the contractor and the employer had only a supervisory role. In the second approach that started from 2009, the private sector is the only supplier of power for contractor. The legal affairs and protective management are not on the private sector contractor. In the present paper, the exploitation and maintenance of the IDN that involves 15 years of water use and maintenance has been discussed. The reasons for changing using the private sector services and criticizing the issues, are not included in the present paper.

2. THE POSITION AND LIMITATIONS OF IDN PLAN OF SOFI CHAY

The IDN of Sofi Chay is located in north west of Iran and in the hillsides of Sahand Mt., south east of Urmia Lake, and 140 km of south west of Tabriz between 37° 11' and 37° N latitude and 46° to 46° 25' E longitude. The Sofi Chay IDN plan is divided into four sections considering the specifications of planting and constructed facilities in the 1200ha area.

The reasons for using the services of private sector in IDN of Sofi Chay

By mid 1990s the Water Companies realized that to improve the performance of the IDNs, the services of non-governmental sector must be utilized, particularly for water use management, and maintenance of the network and established buildings. In order to carry out the same, the users' cooperation was established. Then it was tried to draw their attention to participate in establishing irrigation network of Sofi Chay and gradually to prepare the necessary platform for transferring the network management. Towards this objectives, the Water Company passed through various stages of works, including capacity building in the Users' cooperatives. To reduce the burden on the government, it was to decided to use the private contractor in IDN management in the following issues; placing high emphasize on consumers, reducing the political considerations, achieving the primary aims of the plan using water from the accessible water resources, increasing the irrigation output, increasing the life span of network and resolving the challenges.

The managerial structure of IDN of Sofi Chay

The successful experiences of some countries in managing irrigation and its positive results led the higher managers of the organization to consider the services of the private players in network management as a strategy in their agenda, which, among other things, had the priority of IDN management of Sofi Chay. Following this decision, and following some interactions, the Regional Water Company organized the traditional societies, commissioned them and legalized

their existence in first stage, and established 14 users' cooperation. Presently the number of cooperations in Sofi Chay network has reached 38 that are responsible for managing the water distribution in the network, dividing the water between the users, concluding irrigation contract, receiving water fees, protecting the network and dredging the brooks as a part of network management.

Measures for transferring the IDN management to contractor

- Preparing the water use and maintenance instructions
Water use instructions and operative processes were incorporated in a 'checklist'. Software section is formed and it is necessary for start up and use the established units first. In the IDN of Sofi Chay, the checklists are considered useful.
- Preparing and explaining the water use operations and maintenance as a contract
Meeting the expectations and aims of the employer is one of the most important subjects in using the services of the contractor. The aims and expectations are defined in the contract. In this regard, explaining the operations and analyzing the activities, in the form of quantitative and measurable items, is the most important part in preparing the documents of the contract. In the IDN of Sofi Chay, quantifying water use operations in time are carried out.

Capacity building and education

Employers must carry out creating capacity and educating human forces engaged in the IDN management. The East Azerbaijan Water Company attempted for instructing the selected employer and familiarizing them with management and maintenance categories. After selecting the first employer, there was a meeting with higher directors, supervisor and the contractor in which the duties and standpoints were declared and prepared.

The transferred measures and operations of contract include the following:

- Water distribution between the members
In irrigation network and drainage of Sofi Chay, contractor carries out distribution and delivery of water to users' cooperation and water use entities. The Water Company in the early planting season invites the cooperatives to conclude contracts for irrigation. According to the contracts, the volume of water needed for the IDN is calculated on a monthly basis and in the planning meeting this is approved by the members. The Water Company sends the approved plan to the network supervisors. The needed water of the cooperatives along as per the approved plan is delivered from Alavian dam.
- Concluding a contract with cooperatives and receiving the water fee
One of the major duties of contractor is to conclude an irrigation contract and receive the water fee from cooperatives and deposit the same to the account of East Azerbaijan Water Company.
- Protecting the establishments
Contractor protects the Maragheh canal, Khanghah and Shikh Baba establishment by having guards there and it is the duty of authorities to protect and supply security forces

for second-degree major canals. If any individual does something that damages the establishments, the concerned person(s) must be referred to judicial authorities.

- **Maintaining the establishments**

The Water Company takes measures to service the hydro-mechanical equipments in accordance with instructions of the producer and solving any problem that may arise during their working.

- **Carrying out all small repairing services**

During water use, if there is a need for repairing in establishments and buildings, contractor must report the repairing necessities. Issuing the agenda by supervising department, the maintenance activities such as repairing the manholes, changing the parts, chaining, leveling the service roads, removing the rusts and painting the irrigation valves is carried out by the contractor and the costs are paid to contractor by statement bills.

- **Preparing the function reports and sending to supervising department**

The contractor must send its functional progress in a monthly report to supervising department.

- **Major repairing in network**

First, the repairing needs are recognized, then the volume of work is calculated and according to the same the necessary budget will be allocated. Through a separate process, the contractor for this work is selected by tendering.

Supervising the activities of the contractor

As the contractors have a wide range of works to be carried out, the work quality, timeliness, users' satisfaction with the work done, etc., are monitored through supervision. East Azerbaijan Water Company had transferred the responsibilities of execution, operation water use system maintenance, system renovation, capacity building of personnel, network supervision, etc., to Mahab Ghods Consulting Engineers for a period of 36 months. The main services of the Consulting Company are as follows:

- **Supervising the water use in the network**

The Consulting Company analyze the problems of the physical structure and offer their ideas, suggestions, and operative programs for droughts and they supervise the production method, collecting and controlling the data and receive the fees, distribute the water between the users according to the provisions of the contract. Consulting Company sends monthly work report to the employer.

- **Supervising the repairing and maintenance of the network**

The Consulting Company supervises the protection and maintenance of the network and the establishments; executes the instructions and function of startup systems along with periodical inspection of the establishments; determines the technical needs with respect to maintenance, renovation, machineries: both qualitatively and quantitatively. The measures taken must be sent to the employer through a monthly report.

Other supervising issues in network management, water use and maintenance

In certain areas of work, the contractors may not have the required capacity or knowledge. In this regard, Consulting Company could play a role.

The problems and challenges to the private sector in IDN activities Sofi Chay network

- Lack of experienced personnel
Most of the contractors are experienced in building structures. Managing an IDN is alien to them.
- Unwillingness of the high-grade contractors in irrigation network management
Most of the private sector contractors prefer works with more profit, and so are more interested in structure and building construction.
- Problems resulted from User Cooperatives' functions
In water use system of irrigation network of Sofi Chay, the cooperations are regarded as a part of managerial structure and the role of water distribution among the users are upon them. If the defined duties were not satisfactorily fulfilled, the water use would be adversely affected.
- Physical failure of the network
In the earlier periods of the IDN of Sofi Chay, the establishment of the canal network was not complete. This affected the functioning of the contractors later.

The strength points of the contractor services in network exploitation

- Reducing the role of government and adjustment of social issues
- Decreasing bureaucratic delay

3. THE RESULTS OF USING THE CONTRACTOR SERVICES FOR SEVERAL YEARS IN THE IDN OF SOFI CHAY

- During the operation and maintenance of the IDN of Sofi Chay, a contract was concluded according to the experiences in which the requests of the employer clearly were defined along with work measurement, preparing the processes and operation instructions and maintenance. The timetables for execution were drawn up. The contract of the network could be changed to regular contract and used by other networks.
- Consulting Company was engaged in order to have a modern management in the operation and maintenance of the network, in addition to the supervision for increase of life of the system. However, the work sphere being large and distributed over farmers' fields, the necessary capacities must be created to enable the traditional building contractors become suitable for IDN works.

- The East Azerbaijan Water Company for the first time prepared the documents for evaluating contractors' performance, which were to be examined before assigning new contracts. At least five months before termination of the current contract, contractors start preparing the new tender documents. In assigning the work to the contractors the low prices criterion could not be the only consideration.
- Considering that the supplying and distribution of water is of much importance (among the exploiters as the most important part of agriculture), thus, if necessary preparation and conditions are not met, transferring to the exploitation services to the private sector is not suggested.
- Considering that East Azerbaijan Water Company is responsible for water allocation, this could not be transferred to private sector. Only the operational parts are given to private sector to reduce the role of the government. To tackle political and social problems, the Water Company decided to take assistance from the Maragheh and Binab water management departments.
- There are major differences between the supervising the operation and supervising the construction in the plans. If supervisory staff do not play the role of facilitator, the contractor will not be able to work successfully in network management. In the early start up, and when the contractor is not educated, the employer must give some advantages to the contractor in education, leadership, administrative guidance, and support.

4. SUGGESTIONS

- The experiences show that contract costs have been exceeding the rate of the water fee. Hence the contract system, which on the one hand was meant for reducing government's financial burden, on the other hand increase it as no contractor will work on a loss. Considering the global experiences, using the owners and their participation in operation, management and maintenance of the IDN is a solution and is of great significance.
- To ensure getting a voluntary cooperation of the water users' associations in the matter of IDN management, the government may have to consider the current laws and make suitable amendments in those that appear to be bottlenecks in the decentralization process.
- The beneficiaries must be considered seriously, and using the services of consultants social studies are carried out and the norms are recognized and the most suitable systems for water management are selected. The leading personnel of the cooperatives may be inducted as executives with certain powers for carrying out day-to-day functions.
- The nature of network operation and maintenance work is more of a managerial nature than executive. Thus, if consulting engineers, are able to prepare the capacities and needed readiness in offering the services, they will be better than building contractors.

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