INSTITUTIONS AS KEY DRIVERS OF COLLECTIVE ACTION IN WUAS OF UZBEKISTAN

LES INSTITUTIONS COMME PRINCIPAUX MOTEURS DE L'ACTION COLLECTIVE DANS LES AUE EN OUZBEKISTAN

Elizaveta Mochalova[1], Oyture Anarbekov[2] and Uktam Kahhorov[3]

Abstract

This paper presents a multifactor approach for performance assessment of Water Users Associations (WUAs) in Uzbekistan in order to identify the drivers for improved and efficient performance of WUAs. The study was carried out in the Fergana Valley where the WUAs were created along the South Fergana Main Canal during the last 10 years. The farmers and the employees of 20 WUAs were questioned about the WUAs' activities and the quantitative and qualitative data were obtained. This became a base for the calculation of 36 indicators divided into 6 groups: Water supply, technical conditions, economic conditions, social and cultural conditions, organizational conditions and information conditions. All the indicators assessed with a differentiated point system adjusted for subjectivity of several of them give the total maximal result for the associations of 250 point. The WUAs of the Fergana Valley showed the score between 145 and 219 points, what reflects a highly diverse level of the WUAs performance in the region. The analysis of the indicators revealed that the key points of the WUA's success are the organizational and institutional conditions including the participatory factors and awareness of both the farmers and employees about the work of WUA.

The research showed that the low performance of the WUAs is always explained by the low technical and economic conditions along with weak organization and information dissemination conditions. It is clear that it is complicated to improve technical and economic conditions immediately because they are cost-based and cost-induced. However, it is possible to improve the organizational conditions and to strengthen the institutional basis via formal and information institutions which will gradually lead to improvement of economic and technical conditions of WUAs. Farmers should be involved into the WUA Governance and into the process of making common decisions and solving common problems together via proper institutions. Their awareness can also be improved by leading additional trainings for increasing farmers' agronomic and irrigation knowledge, teaching them water saving technologies and

[1] Former Intern at International Water Management Institute (IWMI) Central Asia Office, C/o ICARDA/PFU-CGIAR-CAC, Osiyo Street home 6, app 123, P.O. Box 4564, Tashkent 100000, Uzbekistan. Apprentice researcher at Geological Institute of the Russian Academy of Sciences, Pyzhevsky Lane 7, 109017 Moscow, Russia. E-mail: eliz.mochalova@gmail.com. Elizaveta conducted her internship as well as field study in Ferghana Valley under direct supervision of Oyture Anarbekov during 2011-2012.

[2] Senior Research Officer/PhD Candidate at CDE, University of Bern, International Water Management Institute (IWM) Central Asia Office, C/o ICARDA/PFU-CGIAR-CAC, Osiyo Street home 6, app 123, P.O. Box 4564, Tashkent 100000, Uzbekistan. E-mail: O.Anarbekov@cgiar.org or Oyture.Anarbekov@cde.unibe.ch

[3] Senior teacher at faculty of Hydraulic Engineering at Tashkent institute of irrigation and melioration (TIIM), Kori-Niyoziy Street 39, Tashkent, Uzbekistan, e-mail: uktam-nig@rambler.ru

source: https://doi.org/10.7892/boris.63726 | downloaded: 24.4.2024

acquainting them with the use of water measuring equipment so it can bring reliable water supply, transparent budgeting and adequate as well as equitable water allocation to the water users.

Keywords: Water management organizations, Institutions, Participatory management, Performance assessment, Uzbekistan, Water users associations.

1. Introduction

In Central Asia, water is a very important resource, the environmental key factor influencing all the activities in the region. Uzbekistan is double locked country in Central Asia. It is located between the two main rivers of the Region: the Amu-Darya and the Syr-Darya. Country has population of 29,074,000 people (ADB Fast Facts 2012 estimate) and territory of 448 978 km^2.

Among the population of Uzbekistan there are 34% of people who work in the agricultural sector (World Bank 2010). However, the increasing climate warming can lead to the water scarcity in the future and to the serious challenges in the irrigation sector.

In order to improve the irrigation management, all countries of Central Asia, including Uzbekistan implemented the irrigation management transfer from the government to the water users at the on-farm irrigation level. The water users, i.e. the farmers, create the Water Users Associations (WUAs) to improve the water allocation and the water use in the own countries.

One of the intensifiable agricultural production region in Uzbekistan is considered Ferghana Valley. The Fergana Valley is shared between Kyrgyzstan, Tajikistan and Uzbekistan and there are more than 10 million people who live there. The situation with deliver water for irrigation is challenging in the Valley because water should be shared by three countries. The Soviet Union built the intensive irrigation system in the Fergana Valley especially in Uzbek part with the main aim: to support the production of agricultural products, especially cotton fiber. The agriculture in Uzbekistan is supported by the Government especially to cultivate cotton and wheat, the support or subsidy is called quota system in the country. The state buys the harvest for the lower price than the market one; however, the farmers are sure of selling all the yields. Farmers growing cotton and wheat get financial loan and special credits from the government. All transactions with regard to deliver agricultural product according to quota is done via bank transfers. Farmers don't deal with cash in any transactions with the State. Although, there are positive movements to support viable operations of WUAs, there are still cases where poor operation and maintenance of on-farm irrigation system as well as its deterioration, the farmers implement inefficient irrigation regimes which leads to soil salinization and poor participation of water users in the work of WUA. That becomes the reason for progressive fluctuations of the major crops yields (data from SDC Central Asia Integrated Water Resources Management Fact sheet 2012).

In the last 10 years there were Water Users Associations created in the Fergana valley in order to perform the decentralization of the water management, to improve the water supply and to move towards a sustainable water use. The main aim of WUAs activity is to deliver effective irrigation and land ameliorative services to water users, such as stable and reliable water supply and creation of favorable land ameliorative conditions of the irrigated lands at all stages of WUA development (source: Guidelines on WUA Business Planning which is produced along IWRM-FV project 2008). However, now, these WUAs perform with a completely different level of efficiency: some of them are much more successful than the others.

In order to understand the reasons of the different performance level of the WUAs and to be able to provide recommendations to improve their activity a comparative analysis of the WUAs performance was done.

2. Methodology

The WUAs efficiency assessment is a methodology for the research of the services level in the WUA by means of the limited number of the indicators (Vincent et al 2007). The common problem for Asian countries is a lack of reliable data about the extraction of water from the canals (Bandaragoda 2006). For this reason a methodology was chosen based both on numerical data and farmers' assessment of the irrigation water supply.

In the research of the WUAs in the Fergana valley a multifactor approach was applied, i.e. the performance level for 6 groups of factors was analized and compared: water supply (i.e. its sufficiency (Nelson 2002)), timeliness (Burton 2010), reliability (Molden et al 1998) and adequacy, technical conditions (effectivity and technical conditions of infrastructure (Burton 2010)), equipment renewal and water measurement, economical conditions (fee collection performance, financial self-sufficiency, maintenance cost (Koç 2007), percent of the high value crop and economical incentives), social and cultural conditions (readiness of the farmers to pay for the irrigation services, equality of the water supply, disputes ratio (Burton 2010) and number of women members of WUA Council), organizational conditions (annual general meeting attendance, staff professionalism, existence of regulation documentation, execution of the contracts between WUAs and water users, sanctions and penalties system, WUA Council and Chairman elections) and information conditions (farmers' background, skill level and awareness about the WUA's activity, trainings about the use of the new equipment). One of the main objectives of this research was to understand the significance of the organizational and institutional basis and participatory mechanisms for the successful performance of water management at WUA level.

2.1 Effectiveness of the WUA

After all the indicators were calculated and assessed with a score system (with a different number of maximal points from 2 to 10 for different indicators) the points were summed up to get the final result for every WUA. The possible maximum was 250 point. Then the WUAs with the best points and with the worst points were analyzed in order to see what the preconditions of the successful performance are in the places.

2.2 Selection of target WUAs as well as methodology of field research

In the year 2011 there were 36 WUAs along the South Ferghana Magistral Canal (SFMC) in the Fergana Valley. Figure 1 shows the location of WUAs along the South Fergana Main Canal. As you can see, there were more than 36 WUAs along the SFMC prior to 2011 irrigation season. Some of the WUAs were combined and re-organized. The boundaries of the re-organized WUAs are not drawn in Fig. 1.

The SFMC is divided into 10 hydrounits: 6 of them are located in the Andijan province and 4 in the Fergana province of Uzbekistan. On the base of the data from IWMI and Scientific-Information Center of the Interstate Coordination Water Commission of the Central Asia (SIC ICWC) reports the preliminary assessment of some economical indicators could be done. According to the points that were calculated 20 WUAs were chosen: 2 from each hydrounit, one of them with the maximum of points and another with the minimum. (In one WUA the director was absent for a business trip and it was impossible to get the quantitative information about this WUA's activity, that is why there were finally analyzed the performance of 19 WUAs.)

Two types of questionnaires were elaborated both for the farmers and WUAs' employees. These questionnaires were designed to get quantitative and qualitative information about the WUA's activity. The farmers from the head, middle and tail end of the canal were questioned.

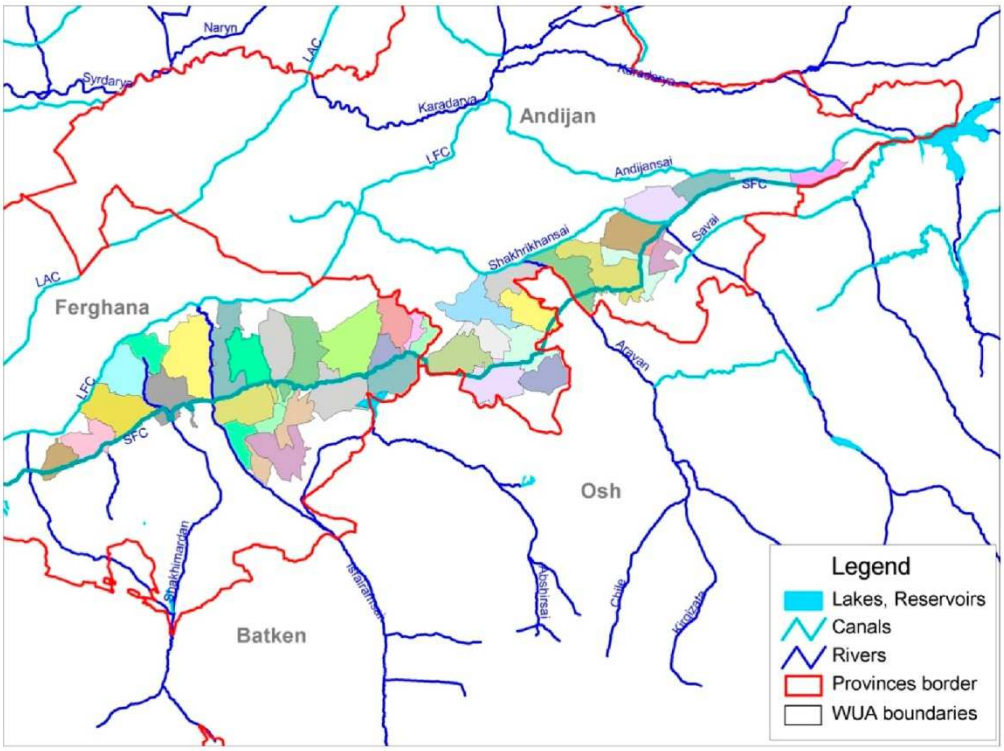

Figure 1. Location of WUAs along the South Fergana Canal (Localisation des AUE le long du canal de Fergana Sud). Source: IWMI-Central Asia Office 2011

3. Results and discussion

In the year 2011, according to the farmers' opinion there were no major problems with the irrigation water, that is why farmers did not reveal serious problems with the water supply and were in general satisfied with the WUAs' performance.

The Andijan province being in the head part of the SFMC does not experience significant difficulties with the amount of the water for irrigation. Sometimes it can be the reason for the weak organization of the WUAs' activities because there is no pressure for the efficient organization of the water supply.

The Fergana province being in the tail part of the SFMC experience difficulties with the water supply and with the even distribution of the water. If there are no WUAs in this region there would be serious problems for the farmers to get the water they need. That is one of the probable reasons for the better WUAs' performance.

Almost half of interviewed farmers are engaged in cotton and wheat cultivation, these two kinds of crops go together because of the state order. A quarter of farmers grow orchards and vegetables, which are high value crops and allow the farmers to get the money in time and in cash partially because these farmers don't have a state order.

In general, there are some positive trends in the developing of the farmers' opinions and understanding of the problems. Almost all of the farmers that were questioned admit that there must be the fees for the irrigation services of WUA and every consumer of water should pay the service fee.

A common problem of the WUAs is the problem of enforcing the on-time payment of ISF either from bank account transfer or in cash, WUAs don't collect funds on-time usually farmers pay once they get yields, and then the WUA does not have enough money to buy some machines, to make the rehabilitation of the canals in time or to pay salary to the staff as well as taxes.

3.1 Effectiveness of the WUAs

The calculation of the indicators and their assessment with a score system are presented in Table 1.

Table 1. WUAs performance assessment with a score system, 2011 (Évaluation de la performance des AUE avec un système de points)

WUA's name	Water supply assessment	Technical indicators	Economical indicators	Social and cultural indicators	Organizational conditions	Information indicators	Total
Fergana province							
Povulgon Abdusalom	38.4	31.8	30.7	23.0	36.4	10.9	171.2
Fayzobod Shahimardosoy	40.2	25.7	21.6	32.0	42.8	17.2	179.4
Yangiaryq Obihayot	40.1	23.5	19.7	29.2	41.6	10.8	164.9
K. Umarov mirob	35.5	28.8	10.7	27.3	39.8	14.5	156.7
Khojibek Zoirjonobod	37.8	29.3	29.4	29.8	50.7	17.7	194.6
Kuva urta buz anori	34.2	36.1	55.0	28.0	47.9	15.9	219.1
M. Mamataliev	40.1	27.5	14.9	26.8	38.6	15.3	163.3
Andijan province							
Mash'al	34.4	22.0	24.6	22.5	43.1	13.7	160.3
Mirzaev	33.4	17.8	19.3	27.2	48.4	12.3	158.3
Marhamat Nosir	26.5	21.3	21.8	25.8	40.9	9.0	145.3
Pahtakor	29.9	24.8	26.0	30.7	32.5	13.2	157.0
Tojiboev	37.3	19.9	26.9	27.5	40.4	13.3	165.4
Tomchi Kuli	35.5	31.8	23.3	29.8	43.6	12.7	176.7
T. Rajabov	28.2	29.3	19.4	24.3	40.3	17.5	159.0
S. Kasimov	36.0	29.2	27.3	31.7	43.6	15.6	183.4
Jura Polvon	35.4	22.9	18.7	27.7	30.1	13.9	148.6
Xoja Obkash	35.4	23.9	24.8	30.3	42.5	13.9	170.8
Jalakuduk vodi imkoni	35.4	15.9	18.7	30.2	43.8	12.7	156.7
Sobirjonov suv bulogi	34.9	24.2	21.4	29.2	44.1	12.0	165.8
Maximum	40.0	45.0	55.0	32.0	58.0	20.0	250.0

After analyzing different groups of factors influencing the performance of the inefficient WUAs in comparison to the efficiently performing WUAs it is clear that as for the water supply, technical conditions and economical conditions, they have almost the same level of performance (Figure 2).

However, there is a significant difference in the performance level of the organizational and institutional conditions, social and cultural conditions and farmers' awareness. These groups of factors can be considered as the weak points of the inefficient WUAs (Figure 3).

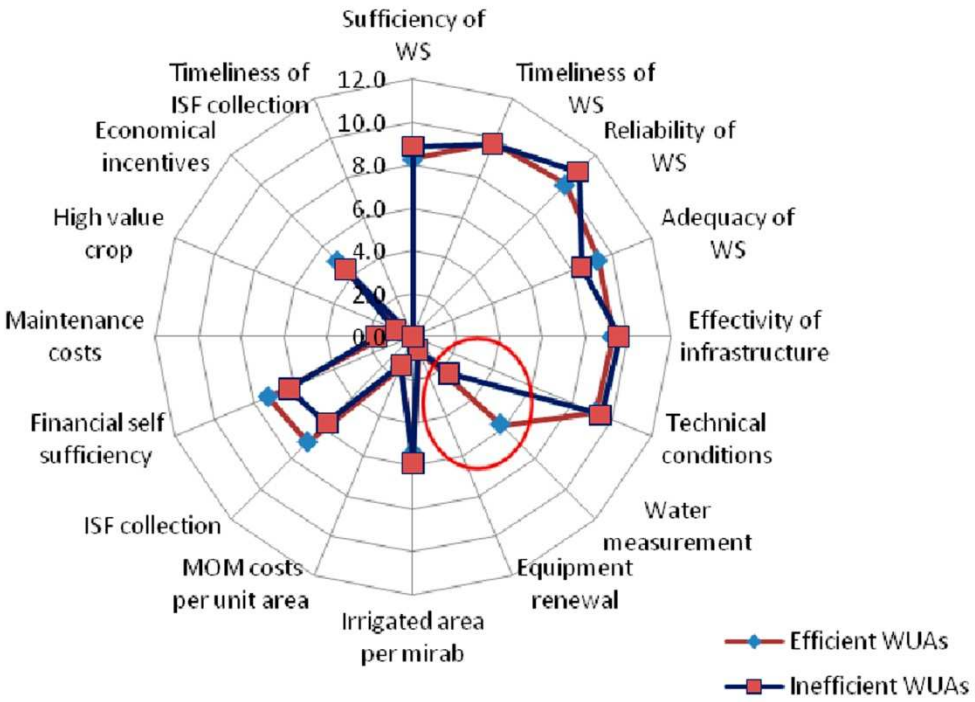

Figure 2. Water supply, technical and economic conditions of the efficient and inefficient WUAs (L'approvisionnement en eau, les conditions techniques et économiques des AUE efficaces et inefficaces)

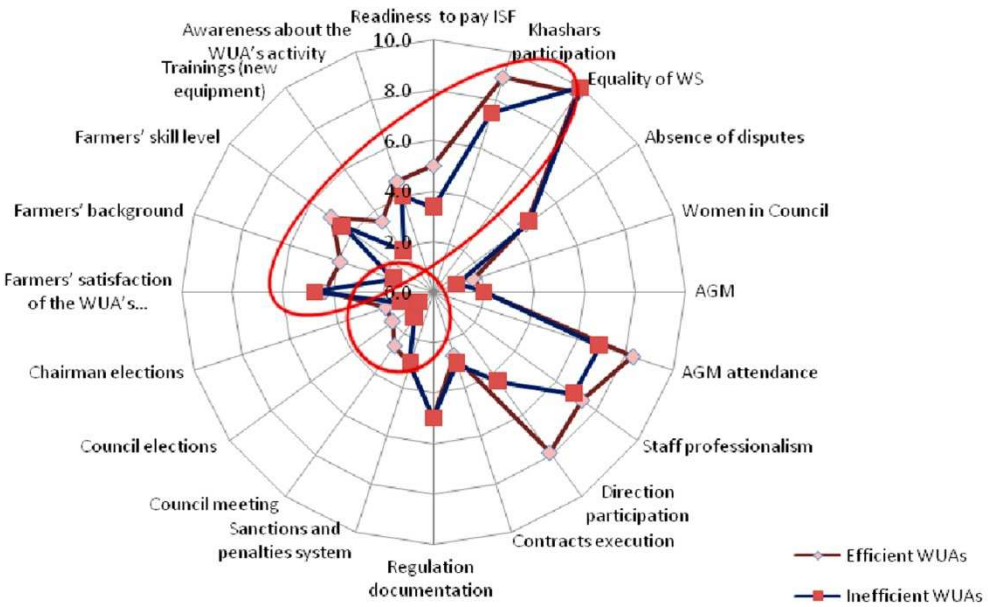

Figure 3. Social, organizational and information conditions of the efficient and inefficient WUAs (Conditions socials, organisationnelles et les conditions d'information des AUE efficaces et inefficaces)

3.2 Recommendations for future work

Undoubtedly, the main recommendation should be to renovate the canals, hydraulic installations and pumps and to improve the ISF collection performance. However, it is not an easy task, especially in the actual conditions in the region. That is why there are some other recommendations for the considerable improvement of the WUAs performance via strengthening institutional aspects of water management.

1. Every WUA should possess rules and regulations (by-laws, business plan, and etc) and penalties systems for breaking the rules and regulations which are accepted within WUA. It does not have to go necessarily through the court. Sometimes, publishing the picture of the defaulter in a local newspaper can be a strong motivation for this person not to commit the same fault again. In Uzbekistan, the public opinion has a strong pressure on the people in the conditions of the small rural societies. It corresponds to application of the design principles of Ostrom (Ostrom 1990).
2. WUAs should involve more farmers into the WUAs Governance, not necessary via formal institutions which are in majority cases are not operational but it could be utilized via informal institutions which have been practiced decades and centuries in the country. Such as the meeting of Aksaqals (old respected people) of the villages. Because, water users in majority situations follow and adhere to the rules and regulations of the informal institutions, one might also consider how to formalize these informal institutions.
3. The WUA's activity should be transparent and open to all the farmers of the WUA. It will increase their interest and understanding the water allocation challenges, WUA's budget expenditure and stimulate their participation in the meetings and discussions.
4. Every WUA must choose very strictly staff they hire. They must be professionals in their field of work and must be highly interested in working for the WUA. Especially, it must concern the WUA's director. Majority of interviewed efficient WUAs have strong leadership as a factor of success.

4. Conclusion

The research showed that the low performance of the WUAs is always explained by the low technical and economical conditions along with organizational conditions. It is clear that it is complicated to improve technical and economical conditions immediately because they are cost-based. However, it is possible to improve the organizational conditions and to strengthen the institutional basis which will gradually lead to improvement of economic and technical conditions. Farmers should be involved into the WUA Governance and into the process of making common decisions and solving common problems together. There is need to state that governing WUA as common entity was introduced in the region as a policy just after dismantling of Soviet Union. However, Uzbekistan and rest of Central Asia countries had a endogenous knowledge on governing and managing water resources within community before as well as during the Soviet Union. Study has also revealed that efficient WUAs possess the combination of formal and informal institutions in comparison to inefficient WUAs. Therefore, it would be rational to strengthen within inefficient WUAs not only work of formal institutions such as meeting of WUA Council, WUA Arbitrage and Revision committees but also meetings and work of so called Aqsakals and organization of khashars so called idigenous institutions.

The staff of efficient WUA has also shown that majority of them passed the capacity building in technical and institutional aspects of water management. Therefore, it would be rational to conduct more capacity building and awareness activities among inefficient WUAs. Additional trainings for the increasing of the agronomic and irrigation knowledge, teaching them water saving technologies and making them acquainted with the water measuring equipment and its use will be very useful.

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