CRP 1.1. "Dryland Systems in Central Asia" Program

FIELD REPORT
NARES and Extension staff incorporate good governance practices for improved land and water management

(short version of draft report)

Period of January – December, 2014

Contribution to IDO 4: "More sustainable and equitable management of land, water and genetic resources in pastoral and agropastoral systems"

Activity title: Governance of water resources for its sustainable, equitable and efficient use
(report for internal use only)

Action Site : Ferghana Valley

Cluster Activity : Water Use Efficiency

Implementer : International Water Management Institute (IWMI)

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I. Introduction

Along CRP 1.1. program in Central Asia for 2014-2015, there is carrying out research directed towards ***understanding key potentials and limitations of WUAs in Ferghana Valley by assessing the role of institutions (formal and informal***[1]***) and related socioeconomic and environmental outcomes in view of enhancing collective action aiming at more sustainable water governance of on-farm irrigation water management***.
The main direction of research is going to understand and show the linkage between on-farm water management institutional conditions including economic mechanisms and its impact on improvement the overall water management at on-farm level. Mainly, it links with the institutional and economic environment where the WUAs are operating and identifying what kind of rules and regulations should posses WUAs in order to operate sustainably. Development of appropriate institutions (set of rules and regulations) and good governance stuctures potentially guarantee the efficient use of irrigation lands in despite of its ownership.
There is need to mention that this research is aslo the topic of Oyture Anarbekov's PhD study at University of Bern, Switzerland.

Research is based on comparative case study approach in Central Asia, particular in Ferghana Valley. This approach is proposed in order to better understand the context and overcome the external validity issues. In addition, research is going to compare the water governance and its influence to the overall performance of WUAs as well as identifying the specific cases and driving forces behind of differences in each country of Ferghana Valley through selected case-studies. Two pilot WUAs are selected in each country of Ferghana Valley within one hydrographic Small River or canal system basin. A unit of analysis is WUA located in the head tail and end tail of Small River or canal system. In Uzbekistan, it has been selected three WUAs due to length of main canal.

General hypothesis is that WUAs based in the tail –end of irrigation system should have less problems in organizing collective action, public participation and involvement public into the governance, operating and maintaining on-farm WUA infrastructure due to scarcity to access of water. Annual reports about each WUA's performance, interview water users and WUA officials will help in identifying the specific cases and driving forces behind of differences.

In order to accomplish this task, the author employs Collective Action theory to understand what are the key factors that restraint resource users to operate and maintain their on-farm infrastructure as collectively and manage as common pool resource in order to improve their water use efficiencies. In addition, the research will be also based on theory of New Institutional Economics and Common Pool Resources Theory (D. North, Ensminger/Haller and Elinor Ostrom) which brought to better understanding the importance and the role of institutions in economies, and have elaborated the first widespread critique of the transition paradigm.

Field methodology is based upon three types of approaches to collect data:

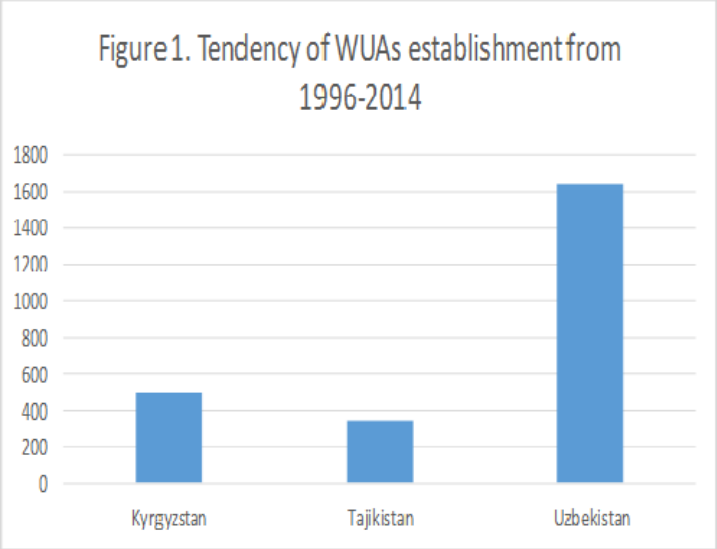
a) Key informants interview and observations, i.e. collecting background information for drafting each WUA case-study;
b) Quantitative data collection: using questionnaire;
c) Qualitative data collection via using Focus Group Discussions

Annual reports of each WUA's, budgets, protocols of General Assembly meetings, Arbitrage and Revision committees collected in order to better understand the local realities.

[1] Informal institutions, for instance, included social *khashars (collectively clean drainage systems or fix irrigation scheme. It was a free labor and voluntarily initiated activity). With the adoption of new rules, these activities are less practiced today.*

II. Focus of Research

Since mid 1990's region's countries have started their agricultural reforms, former large scale collective farms has been transformed into different forms of individual farming. E.g., in Kyrgyzstan land has been distributed among the former members of collective farms, in Uzbekistan land was allocated through land distribution commissions into larger individual units of not less than 10 ha first however, starting from 2009 massive optimization of land process started and today the average size of farmer in Uzbekistan varies between 50 – 75 ha of lands, especially in the conditions of Ferghana Valley. Tajikistan was among Kyrgyzstan and Uzbekistan but the latest move more towards small land owner unit management of agriculture sector. The results of the land reforms has been triggering for the former on-farm water management system. The state water management organizations formerly delivering water to the collective farm gates were forced to deal with amplitude of hundred of individual farmers, growing different crops, and applying different agronomic and water management practices. Therefore, the need for a new organizational arrangement to manage water at the on-farm level and to distribute irrigation water between new individual farmers became an obvious necessity.



The entire system of irrigation water management during the Soviet times was designed to deal with large collective farms. The land reforms have resulted in a situation, whereby along the main canals, instead of a few, mainly cotton growing collective farms, there are now hundreds of individual farmers in terms of Uzbekistan and Tajikistan and thousands in Kyrgyzstan who are cultivating different irrigation intensive crops such as rice, wheat and vegetables.

Figure 1 shows the tendency of WUA establishment in three countries of Ferghana Valley starting from 1996 – 2014.

This situation has increased problems with water distribution along the main canals, particularly when water scarcity frequently leads to clashes and conflicts between water users. Often, due to inefficiencies into the irrigation system and water application methods, the amount of water withdrawals into the administrative districts much higher than their water shares—locally called as "limits". The governments of the Central Asia mainly have followed the same route on overcoming of "water impacts" of the de-collectivization. They have issued decrees on organization of Water Users Associations (WUAs) in place of liquidated collective farms to fill water management gap. Thousands of WUAs have been registered within a few months in each country.

Although, in all countries of Ferghana Valley, it has been accepted that Water users association (WUA) is the key component in this restructuring process and are in charge of operating and maintaining on-farm irrigation and drainage infrastructure. Most of WUAs are still not able to take full responsibility, organize collective action, persuade water users with data/information and generate sufficient funding for operation and maintenance of its own collective infrastructure. Poor water governance, i.e. public participation and involvement in on-farm water management have led to farmers' dissatisfaction, lack of ownership of on-farm infrastructure, conflicts among water users (unsanctioned withdrawals of water by upstream or elite farmers) and between water users and WUAs, mistrust to the work of WUA (data transparency), reductions in crop yields and overall low rate of WUA irrigation service fee collection. Author believe that without proper internal rules and regulations within WUA it is almost impossible to improve water use efficiency at WUA level.

III. PROGRESS UP TO DATE: PERIOD JANUARY – DECEMBER, 2014

A. Tajikistan:

Two pilot WUAs have been already selected in 2013 based upon agreed criteria along Khojabarkigan main magistral canal in Sughd Province. A unit of analysis is WUA located in the head tail and end tail of canal system. Because Khojabakirgan canal itself provides water for two districts, it was rational to choose one WUA from upper district, i.e. B. Ghafurov and second WUA from the tail part of canal, J. Rasulov district (please see below map of the location of WUAs along main canal). The name of WUA which is based in B. Ghafurov District is "Obi Ravoni Ovchi Qalacha" and name of WUA which is based in J. Rasulov District is "X. Olimov" successor of WUA "Gulyakondoz".

Based upon selected WUAs in Sughd Province along main canal Khojabakirgan and collected background information for the WUAs case-studies, there were made progress with the hiring local consultants to start the quantitative data collection using questionnaire in 2014. The approach of data collection in each WUA has been elaborated by identifying categories of water users to interview as well as number of them. Need to mention that in both WUAs, clear explanation of the research project objectives and outcomes have been explained to WUAs leaderships. In each selected WUA, i.e. WUA Obi Ravoni Ovchi Qalacha in B. Ghafurov District as well as WUA X. Olimov, successor of WUA Gulyakandoz in J. Rasulov district, there have been identified 40 water users (totally in two WUAs 80 respondents) to interview using the designed questionnaire. Local consultants have been trained on each questions specific aim and approach how to ask each question of the questionnaire. The survey started in the mid of May, 2014 and accomplished by the end of September, 2014.

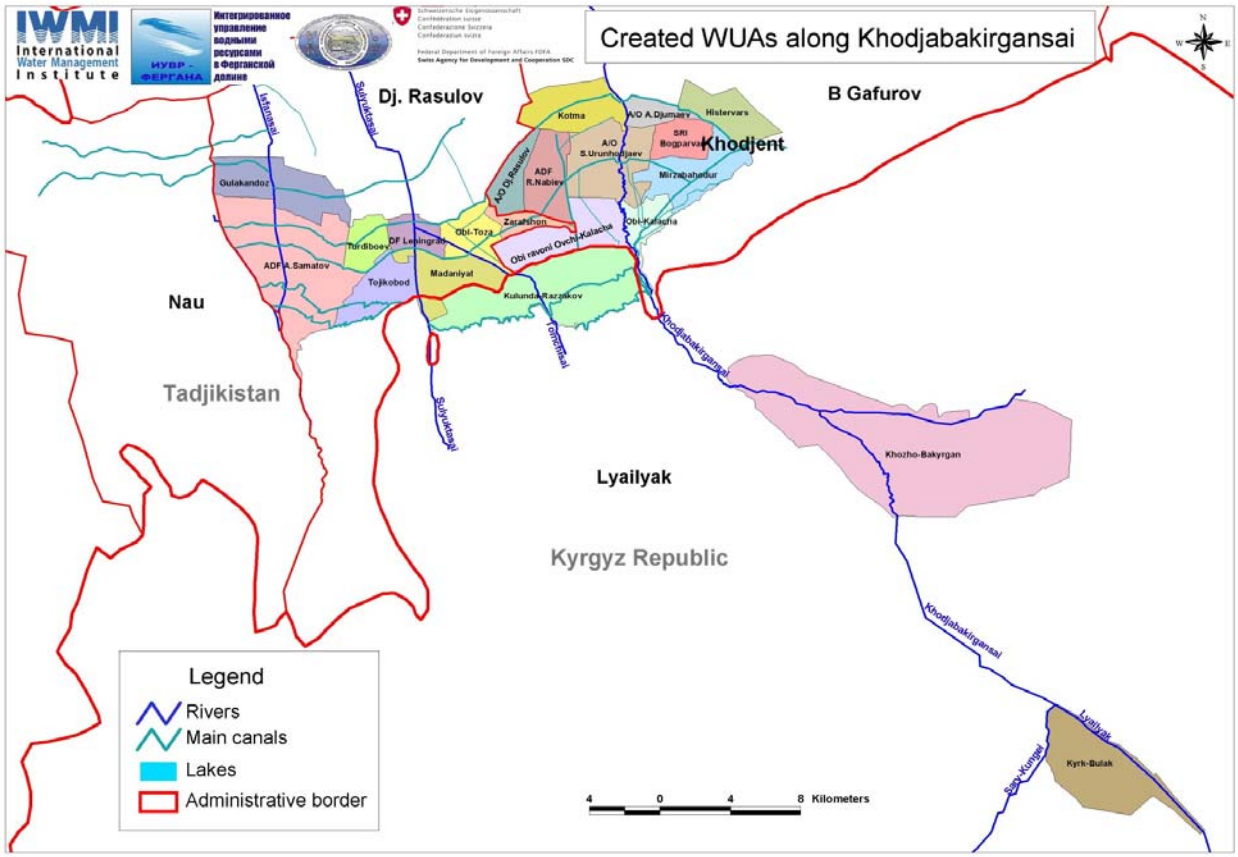


Figure 1. Created WUAs along Khojabakirgansay (source : IWRM-FV project)

B: Uzbekistan

There have been selected as case-study three WUAs along South Ferghana Main Canal (SFC). One of the reason for selection of three WUAs because SFC is the long canal, totally with 114.9 km long length and irrigated area of more than 94,000 ha. So basically, there were selected one WUA in the head part, second in the middle part and third in the tail part of SFC. The head part WUA is called Tomchi-Kuli which is based in Markhamat district, Andijan Province, middle WUA is called Kodirjon A'zamjon based in Quva district, Ferghana Province and tail WUA is called Komiljon Umarov which is based in Toshloq District, Ferghana Province. In all WUAs, there have been interviewed key informants, collected background data using specifically developed data collection sheet as well as available local materials. In addition, there have been able to conduct survey among farmers of WUAs.

Survey has been conducted among 53 farmers as well as rural settlement chairs (makhalla) in Tomchi-Kuli WUA, among 31 individual farmers of WUA Kodirjon A'zamjon and among 30 individual farmers of WUA Kodirjon Umarov. Field methodology accomplished to collect intensive data collection in order to draft case-study of each WUA. There have been also explained in detail the research project objective and outcome to the WUAs leaderships. Local consultant in each WUA has been identified and hired for the conduction of extensive questionnaire. Jointly with WUA leadership and local consultants identified and selected different category of water users as well as their numbers to interview based upon research approach. Local consultants have been trained on each questions specific aims and approach how to ask each question of the questionnaire. There have been interviewed totally 114 water users in three WUAs using the questionnaire. The survey started in the mid of May, 2014 and accomplished in December, 2014.

VI. PRELIMINARY RESULTS FROM THE FIELD STUDY

These results are based upon survey conducted among WUA directorate, first initial key informants' interviews and observations. Key informants are water users such as deqkhan farmers, individual farmers, kitchen-garden plot owners represented by chairmen of local rural settlements, Canal Management Organization employees. There is expected to provide more comprehensive results and recommendations after the processing and analysing quantitative data which were collected via questionnaire from different type of water users and staff of five selected WUAs including focus group discussions. Totally, there were surveyed 194 farmers in two countries.

Tadjikistan:

- Important role is playing Djamoats, i.e. Rural Settlements in organizing collective action in the territory of WUA, such as social khashars (collective action to clean on-farm canals) in WUA X. Olimov;
- Due to deqkhan farmers dismantlement process, the process of collective action is becoming more difficult and complex. WUAs are facing challenge organize farmers into the governance body of WUA;
- More and more there is appearing the need to establish Water user groups in order to unite water users along tertiary canals for the collective action within WUAs;
- A question of on-farm irrigation and drainage network ownership is becoming more and more important;
- The main actors in main canal water allocation and use are followings: Management of Khojabakirgan Main Canal (CMO), WUAs, deqkhan farmers with its Association of Deqkhan farmers (ADKh Khojabakirgan), lessees from deqkhan farmers, presidential land owners, kitchen-gardens and other water users, such as Djamoats/makhalas;
- The formal and in-formal structure of WUA governance is better organized in the tail WUA along KhBC. In majority of WUAs, the chairman of WUA Council is working on voluntary basis however in WUA X. Olimov (previous Gulyakandoz), water users decided to pay salary for Chairman of WUA Council work. They have realized and understood the importance of this body operation;
- There is also high interference by Water Unit of Rayvodkhozes for the work of WUA;

- Furthermore, there is systemic and organized work of WUA Council and its Board of Governors in WUA X. Olimov (former Gulyakandoz) with proper protocols, minutes of meetings. These aspects directly relate to the improved water management inside WUA incomparison to WUA Obi-Ravoni Ovchi Qalacha.
- Farmers, i.e. deqkhan farmers in the tail WUA X. Olimov are more adhere to follow the accepted rules and regulations within WUA in comparison to head WUA. The leadership of WUA including its farmers strongly confident that they don't allow massive water stealage, violation the rules accepted in WUA and if it happens they could handle it within WUA;
- In both WUAs there are exist external interferences in water allocation to the deqkhan farmers however, extend of interferences is hugely different in head WUA in comparison to tail WUA. More external interference to the work of WUA is occurring in WUA Obi Ravoni Ovchi Qalacha in comparison to WUA X. Olimov (former Gulyakandoz), mainly and due to presence of WUA governance in tail WUA. The external interferences are basically followings: Local authorities such as Governors (Xokims), Prosecutor and other authority of District call and ask WUA management to provide water first to his/her relatives, friends or to his/her lands;
- In general, one can conclude that governance is better organized in WUA X. Olimov (tail ender) in comparison to WUA Komiljon Umarov (head tail). WUA X. Olimov has better collective action, existence of penalty system, governance structure such as court of Aqsakals (eldermens), all these contribute to the success of WUA governance;
- In both WUAs, Deqkhan farmers mentioned that there is need to revise the formal organizational structure of WUAs with its governance and management bodies. Both WUA deqkhan farmers agree that there is need to be WUA governance body but not in current organizational structure content. It should be more real and not just on the paper;

In both WUAs, Deqkhan farmers indicated that they use other different water governance mechanisms in contrast to accepted one in order to find solutions for the different problems related to water allocation, such as work closely with Djamoat leadership and Association of Deqkhan Farmers leadership. It is highly recommended to revise proposed WUA governance structure taking into consideration local context and indegineous knowledge. There is potentially reconsider current governance structures in WUAs taking into consideration important informal institutions. It is also expected to provide more in-depth findings and recommendations for WUA governance improvement.

Uzbekistan:

- All water users consider that it is important to have WUA Governance and its meetings. Specifically, during the General Assembly of farmers there are discussed the water use situation, the contractual relationships between WUA and water users, the irrigation service fee collection rates, preparedness of irrigation and drainage networks for the upcoming vegetation season as well as get reporting of executive as well as governance body such as WUA Directorate as well as WUA Council accordingly.
- There is need to mention that in all WUAs there is symbolic payment for the use of water by kitchen-garden plot owners. Individual farmers basically compensate the cost of provision of irrigation water to kitchen-garden plot owners.
- There is agreement within WUA that water first delivered to the fields of farmers starting from 06:00 – 21:00 and later from 21:00 – 06:00 water is provided for kitchen-gardens.
- The important role plays as well the leadership of WUA. Water users stressed that it is important to have a good leader who could adhere the order as well as discipline in the WUA.
- One of the most spread methods of getting irrigation service fee paid by WUA, is the closure of the outlets and not provision of water by WUA directorate.
- One of the issues in Uzbekistan WUAs is the typical form of agreement/contract which is disseminated in all WUAs to make a contract between WUA and farmers.
- Majority of farmers within WUAs are cotton and wheat producers. These two crops are considered State quota crops, therefore State purchases cotton and wheat from the farmers. This

process sometimes takes long time therefore, there is delay to payment for irrigation service to WUAs.

- Because people live within one society, they would like to solve conflicts and disputes within their societies.
- Need to mention that although WUA Tomchi-Kuli is based in head of Canal and ideally WUA management shouldn't be active but in WUA Tomchi-Kuli management is better organized due to its leadership.
- Survey has revealed that leadership plays important role in governing and managing water resources inside WUA. According to survey, WUA Tomchi-Kuli is better organized in comparison to WUA K. Umarov. Water users are would like to approach more directorate of WUA Tomchi-Kuli to resolve the conflicts at least.
- In both WUAs, farmers indicated that there is interference of State Water Inspection especially with regard to on-farm instrastructure maintenance and water allocation based on limit.
- However, in both WUAs there is need to revise the governance structure taking into consideration local indigenous knowledge and informal institutions.

After discussion with water users, it is clear that WUAs are still demanded organization which should exist and agricultural organization that operates by farmers themselves. Farmers gradually understand that it is their organization and that they need to support. However, there is State interference to the work of WUA, starting from making sure that WUAs have in place all documentations (contract with farmers; demand, supply and limit documentations; day-to-day water allocation schedule, water use planning as well as water scheduling), control the proper operation and maintenance of irrigation and drainage infrastructure within WUAs and others. There is basically less problem with regard to difference between head and tail WUA. There is similarities of State interference in all three WUAs and revision of current Governance structure. If there will be disappear Governance body, WUAs could not operate in the viable conditions.

Below table shows the initial comparison of design principles of common pool resource instititutions application in three countries of Ferghana Valley via case-studies of above WUAs. Need to mention that information on Kyrgyz case-study WUAs has been taken outside of Ferghana Valley part of Kyrgyzstan.

Initial Comparison of Design principles CPR institutions application in three countries

Principles of Institutions	Kyrgyzstan	Tajikistan	Uzbekistan
1) Clearly Defined Boundaries	-Territ vs Hydro; Canal vs local source; Small farmers	- Still process of Reform – towards KG	+ Re-registration, optimization of farms
2) Proportional Equivalence between Benefits and Costs	+ No-State Quota; contractual arrangem	+ Highest ISF in the region	- State Quota + Contracts
3) Collective-Choice Arrangements	+ General Assembly, Meeting of Aqsakals	- Tail end WUAs active	- Once GA in a year
4) Monitoring	- Inadequate Capacity	- Inadequate Capacit	+ Strong Govt
5) Graduated Sanctions	+ Collectively: Court of Aqsakals	- Interference Irrigation Auth, debt	+ State Org interference
6) Conflict-Resolution Mechanisms	+ Zonal representat; Court of Aqsakals	- Not recognition int-rules. External costly	+ State Authority interverence
7) Minimal Recognition of Rights to Organize	+ Strong Leaders, Ayil Okumety linkage	- LA don't recognize	+ Strong Government
8) Nested Enterprises	+ Zonal Representation	- Towards Kg case	- Optimization of farmers
9) Bargaining Power	Less practiced	Between	High interference

Table 1. Initial Comparison of CPR design principles applications in three countries

From comparison of nine principles, table shows that Kyrgyzstan WUAs has less Government interference to the work of WUA in comparison to Tajikistan and Uzbekistan. However there is issues such as hydrographic versus command-territorial water management. Tajikistan is leading in terms of rate of irrigation service fee, however it doesn't guarantee that Tajikistan WUAs are better

off in terms of financial resources. Kyrgyz WUAs directly relate their activity based upon direct payment of irrigation service fee by water users in comparison to Uzbek WUAs where Government guarantees payment of state quota agricultural crops's irrigation fee. In all three countries there is indigenous knowledge as well as informal institutions that are more active and helpful versus official formal ones. Among such structures in Kyrgyzstan is Court of Aqsakals, in Tajikistan Djamoats, in Uzbekistan Qishloq Fuqaroral Yigini. It is clear that there are institutional aspects which could be exchanged and learned between WUAs in the region such as collective action of Kyrgyz WUAs, State support and state positive interference of Uzbek WUAs and from Tajik WUAs setting the irrigation service fee.

Finally, there is need futher research to come up with proper governance structure to each country of Ferghana Valley. Research is still continuing in 2015.

One of the outputs in 2014 was publication of article at ICID Congress Meeting in Korea.

Mochalova, E. [NARS]; Anarbekov, Oyture [IWMI]; Kahhorov, U. [NARS]; 2014. Institutions as key drivers of collective action in WUAs [Water User Associations] of Uzbekistan. [Abstract]. In International Commission on Irrigation and Drainage (ICID). 22nd International Congress on Irrigation and Drainage: securing water for food and rural community under climate change, Gwangju, Korea, 14-20September 2014. Transactions. Volume 1. Question 58 and 59. New Delhi, India:International Commission on Irrigation and Drainage (ICID). pp.228-229. (ICID Transaction 31(A)).

Full article is accessible via web-link at: http://cac-program.org/files/9cb119a2382c3d446cc1e81eedf957c7.pdf