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Discussion Paper

Water User Associations (WUAs) in Kyrgyzstan

**A Case Study on Institutional Reform
in Local Irrigation Management**

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
BChK	<i>Bolshoy Chuyskiy kanal</i> (Great Chuy Canal)
DVKh	Department of Water Management at the Agricultural Ministry
FAO	Food and Agricultural Organization
FSK	Former sovkhos or kolkhoz
ISF	Irrigation Service Fee
O&M	Operation and Maintenance
OblVodKhoz	<i>Oblastnoe upravlenie vodnogo khozyaystvo i melioratsii</i> (Province Water Administration)
RayVodKhoz	<i>Rayonnoe upravlenie vodnogo khozyaystvo i melioratsii</i> , (District Water Administration)
SemKhoz	<i>Semenoe Khozyaystvo</i> (breeding farm)
Sk	<i>selskokhozyaystvennyj kooperativ</i> (agricultural cooperative)
UchKhoz	<i>Uchebnoe Khozyaystvo</i> (research farm)
WUA	Water User Association
WB	World Bank

PREFACE

The present study was compiled within the framework of the research project "*Water shortage, water use conflicts and water management in arid environments of Central Asia*". Its objective is to analyze the causes and the effects of the growing water shortage and the increasing deterioration of the water quality in this area. The research activities compare the situation in four inland basins of Central Asia: the Aral Sea Basin, the Ili-Balkhash Basin, the Issyk-Kul Basin, and the Tarim Basin. One component of the project focuses on questions of water management on interstate as well as national level. This paper concentrates on the local level, where political decisions concerning water management have to be implemented and where problems of access to and availability of water have the most direct consequences.

This four-year research project was made possible by a grant of the Volkswagen Foundation as part of the program "Central Asia / Caucasia in the focus of science" ("Mittelasien /Kaukasus im Fokus der Wissenschaft"). I am very grateful for this support.

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Project Manager

1. INTRODUCTION

After the dissolution of the Soviet Union Kyrgyzstan followed a radical land reform, privatizing most of the former collective and state farms (kolkhozes and sovkhoses). Thousands of small farms, sometimes united to cooperatives, came into existence. This new situation was a challenge for water management in the irrigation sector. While before the kolkhozes and sovkhoses were responsible for water distribution on their huge areas and the maintenance of the on-farm canals¹, now the newly emerged small farms had to be supplied individually with water. As nobody felt responsible for operation and maintenance (O&M) of these channels and due to lack of financial means, investments in maintenance of the infrastructure almost stopped², irrigation systems deteriorated extremely and water use was not controlled anymore. As agriculture in most areas of the country is due to climatic conditions only possible with irrigation, this presented a tremendous impact on productivity. In Kyrgyzstan more than 1 Mio. ha of arable farm land is served by 22,200 km of on-farm channels (Kozhoev 2004:2). Therefore, since the mid-nineties Water User Associations (WUAs) are established at local level to maintain on-farm irrigation channels, to organize water distribution and to collect the newly introduced irrigation service fees (ISF). The transfer of irrigation management to the users aims to make it market-oriented (through cost-recovering fees, demand orientation, less state interference and more efficiency) and democratic (through decentralization, user participation and empowerment). These objectives are not yet met though.

This article aims to give an overview over the reform of local irrigation management by its transfer to Water User Associations and to identify obstacles for its success. Its main focus are institutional aspects of the reform and not technical issues. Institutions are understood as formal as well as informal rules - societal accepted ways of behavior, which can be laws, traditions, norms and values. A subtype of institutions³ are organizations as the ones that enforce those rules but are also shaped by these. The existing institutions are still active Soviet ones as well as pre-Soviet and post-Soviet norms and rules that emerged after the decline of the binding power of the Soviet system. Water management is nested into certain cultural norms of behavior that limit the compliance to rules that are not perceived as legitimately. The study therewith combines rationalistic and constructivist approaches of Neo-

¹ On-farm refers to the canals on the area of the FSK. Off-farm canals are the ones that bring water to these on-farm systems. The off-farm canals are still in the responsibility of the RayVodKhoz.

² In the decade after independent they have been about 25% of the minimal necessary amount (Kozhoev 2004:3).

³ Though organizations are collective actors, the term actor is here only used for individual actors.

Institutionalism by analyzing incentives influencing actors' choices but also by assessing the role cultural and societal norms and values play in determining appropriate choices.

The transfer of irrigation management to WUA means that rules and norms of local water management change as well as the assigned organizations: Water is no longer delivered for free but has to be paid for. Water should be used efficiently and economized. The state is no longer responsible for O&M. Farmers should manage their system independently and self-governed. As WUAs come into an already existing network of local organizations and institutions dealing with water issues, they are challenging existing rules. This may be welcomed, if the existing rules are considered inadequate by the actors, but it also may provoke resistance by those profiting from these rules.

The main argument is that the economic as well as political objectives of WUAs are impeded by institutional obstacles and that those institutional aspects did not receive the attention they should in the reform program to establish WUAs, as it is mainly following a technocratic top-down approach. This results in lacking incentives and a non-supportive environment for the original objectives of the reform process.

The paper will first introduce into the concept of Water User associations (WUA) and the reform program in Kyrgyzstan (chapter 2). To analyze the implementation process, a case study in the Rayon (district) Sokuluk in Northern Kyrgyzstan was conducted. Chapter 3 describes the general features of this Rayon. Chapter 4 introduces into the institutional environment before chapter 5 and 6 are focussing on the specific actors, organizations, and institutions relevant for irrigation management in the research area. Chapter 7 discusses the incentives evolving for the actors and the role of local institutions for the performance of WUA. Before Chapter 9 summarizes the results some recommendations are given in chapter 8.

2. THE REFORM OF LOCAL IRRIGATION MANAGEMENT

2.1 The Program to establish Water User Associations (WUAs)

After some first WUAs had been established by Kyrgyz government, in the mid-nineties the concept as well as pilot projects have been developed with the help of credits extended by the ADB, FAO and the Japanese government. The first three pilot WUAs were founded by the ADB within the framework of the project “Building Capacity for the Formation and Management of Water User Associations“ of 1995-1998. The country-wide development of water user associations takes place with the support of the World Bank and the ADB, with the World Bank covering the Northern Oblasti (provinces) (except Chuy) and the ADB the Southern as well as Chuy. The respective projects are the World Bank's “On-Farm Irrigation Project“ (since 2001) and the ADB's “Agriculture Area Development Project“ (since 1998). These projects are aiming at general rehabilitation and more efficient management of off- and on-farm irrigation canals with the establishment of WUAs being one component. Both projects cooperate closely.

The WUA component is supposed to introduce WUAs as a new organization and to strengthen them so that they can take over the operation and maintenance of the irrigation infrastructure of the former kolkhozes and sovkhoses in the long term. In 2000 a WUA support department (*otdel podderzhki AVP*) has been created at the Department of Water Management (DVKh) at Ministry of Agriculture, Water Management and Processing Industries and at its branches in the seven Oblasti, as well as in many of the republic's 42 Rayons. The employees of the support departments are paid out of project funds with a salary orientated along the usual wages in public service. As a long-term aim they are to be integrated into the state water administration. The support department helps WUAs with tasks as registration, to set up their budget, to make the contracts on water with the farmers and the RayVodKhoz. It provides training's for WUA staff and council members on topics such as foundation and development of WUA, financial administration, engineering, water usage, and juridical questions.

The first legal foundations of WUA have been the 1995 government decree “Regulations on WUAs in Rural Areas“ and 1997's “Statute of WUAs in Rural Areas“. The latter already regulates the gratuitous transfer of on-farm infrastructure to WUAs, allows the trade with water, stipulates bookkeeping and fees, and allows the WUA to impose sanctions in the case of a breach of regulations. Based on these in 2002 the “Law on Water User Associations“ was

passed by parliament. (Otdel podderzhki AVP 2001; ADB 2000a: 1; Hassan et al 2004: 15; Kozhoev 2004:4f; interviews⁴ k11:25; k23:35-36; k27:8).

In April 2004 more than half of the irrigated land area in Kyrgyzstan has been managed by WUA as presented in the following table.

Table 1: Water User Associations in Kyrgyzstan, by 04/01/2004

Oblast	Rayon	WUAs	Total irrigation area, ha	Irrigation area managed by WUA, ha	%
Batken	Batken	8	14885	11620	78%
	Kadamzhay	10	26046	19795	76%
	Ljajljak	6	14408	9924	69%
	Kyzyl-Kija	0	2150	0	0
	total	24	57489	41339	72%
Dzhalal-Abad	Suzak	12	29482	17895	61%
	Bazar-Korgon	6	18271	10865	59%
	Nooken	12	22900	20947	91%
	Ak-Syj	4	11924	8437	71%
	Ala-Bukin	8	16863	14070	83%
	Toktogul	5	14049	5790	41%
	Toguz-Torouz	6	3642	2137	59%
	Chatkal	1	7061	3550	50%
	total	54	124192	83691	67%
Issyk-Kul	Ak-Suj	8	40682	16521	41%
	Dzheti-Oguz	5	42285	16318	39%
	Issyk-Kul	9	32935	15088	46%
	Ton	7	23935	10944	46%
	Tjup	2	23540	2032	9%
	total	31	163377	60903	37%
Naryn	Ak-Talin	8	15172	7183	47%
	At-Bashin	6	31638	7343	23%
	Dzhumgal	9	18429	10462	57%
	Kochkor	13	30172	23567	78%
	Naryn	7	24830	7468	30%
		total	43	120241	56023
Osh	Alay	1	6538	250	4%
	Aravan	15	22353	20099	90%
	Kara-Suu	21	42453	32982	78%
	Naukat	15	26766	22126	83%
	Uzgen	10	21341	13854	65%
	Chon-Alay	1	8418	462	5%
	Kara-Kuldzhin	2	6524	2107	32%
	total	65	134393	91880	68%
Talas	Talas	17	37837	23688	63%
	Bakay-Atin	10	27690	19406	70%
	Kara-Buurin	15	30554	30554	100%
	Manas	11	18819	15029	80%
	total	53	114900	88677	77%
Chuy	Moskov	7	44426	24738	56%
	Yssyk-Atin	11	56000	33120	59%
	Chuy	5	31327	9404	30%
	Sokuluk	14	56604	26462	47%
	Kemin	9	29160	20599	71%
	Panfilov	15	31336	27659	88%
	Zhail	12	42740	32054	75%
	Alamedin	10	37399	19206	51%
		total	83	328992	193242
total		353	1043584	615755	59%

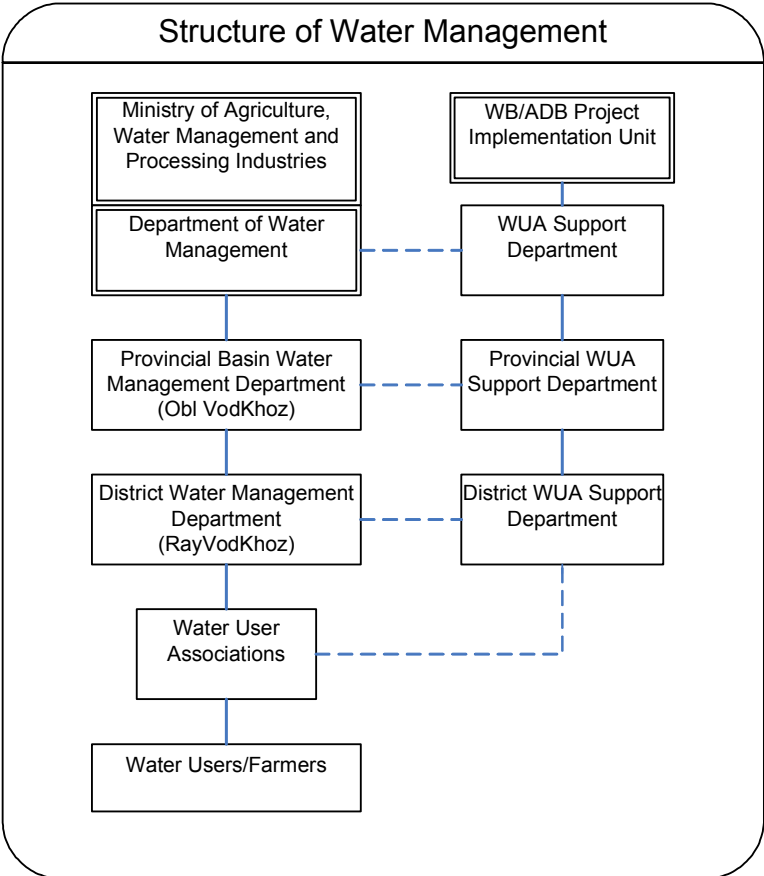
Source: Kozhoev 2004, own calculations

⁴ All interviews have been anonymized. The respective positions of the interviewees are listed in the reference section. The number after the colon indicates the paragraph in the interview transcript.

As can be seen, reform progress is differing in the regions. However, these numbers do not mean that these are all really functioning WUAs. Only 37 of 353 WUAs have fulfilled the 7 criteria. Hardly any WUAs are self-financing and many are even highly indebted. In December 2003 the indebtedness of WUAs due to non-paid fees to the government was 42 Mio Kyrgyz som, which is equivalent to 1 Mio US-Dollar. An evaluation in 2001 showed that of 223 WUA about 50 existed only on paper. In Chuy Oblast., there are according to a staff member of the Oblast support center 22-25 WUAs not functioning, i.e. they are highly indebted or completely inactive, which is about a fourth of all WUAs in the Oblast (Kozhoev 2004: 7; Alymbaeva 2004: 11; k23:129).

The current structure of agricultural water management is presented in the following chart.

Figure 1: Overview over the water management structure

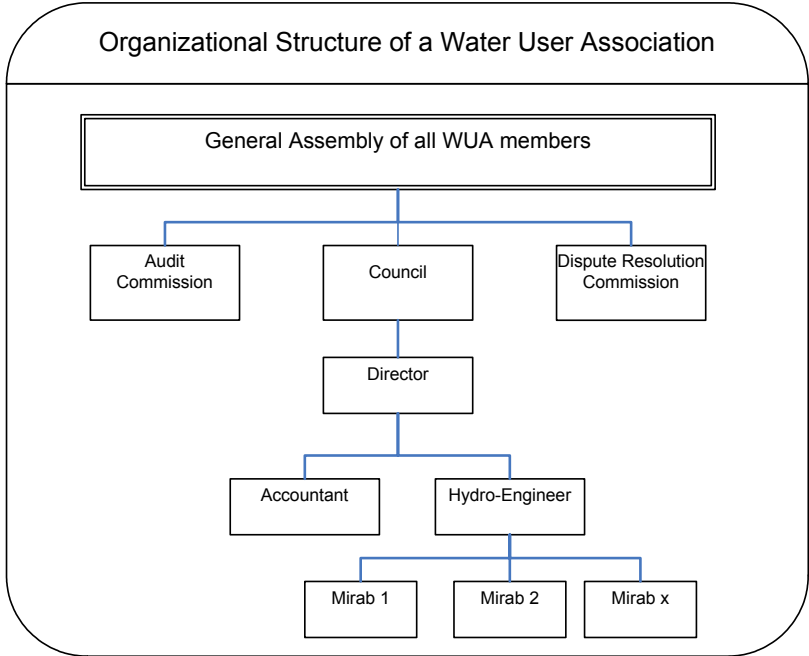


2.2 The structure and tasks of a WUA

The main functions of a WUA are operation and maintenance of the on-farm irrigation system, water distribution, dispute resolution and self-financing of these tasks. According to this, a WUA should be established along hydrological boundaries, hence covering the area

served by a certain canal or sub-system of a canal. This represents a change from the formerly (and in practice still prevailing) territorial principle, where water management was oriented towards administrative boundaries.

Figure 2: Structure of a WUA



A WUA is headed by an elected council (usually 7-11 members) with a chairman (or chair-woman), who all work in an honorary capacity. The mechanisms of election are varying: sometimes all council members as well as the chair are elected directly by the WUA members, sometimes the council is elected with one representative per group of users (e.g. village or side-canal) and then elects the chairman (Hassan et al 2004: 16). The staff encompasses director, hydro-technician and accountant. They hold paid positions and are appointed by the council. Apart from them a number of so-called mirabs (water masters) are employed during irrigation season. Due to limited financial means, sometimes the accountant or the hydro-technician also only get seasonal position or director and accountant are merged in one person. Some WUAs also have zone representatives which have a mediating position between the WUA staff/council and the farmers.

The WUA executive is accountable to the general assembly of its members. This general assembly takes place once a year. At least 60% of all members have to participate.

To get officially registered, the WUA needs to present a statute (*ustav*), article of agreement (*uchreditelnyj dogovor*), the minutes of the general assembly, and the chart of the irrigation system.

At the beginning of the season, each farmer has to make a contract with the WUA about the amount of water he needs. Accordingly the WUA makes a contract with the RayVodKhoz on the overall amount of water.

All WUAs have to pay a water fee of 3 tyn⁵ per m³ to the RayVodKhoz for the transportation of the water.⁶ They have the right to determine themselves the sum they demand from their members. This ISF is calculated according to the estimated costs. The expenses to be covered are: fee to RayVodKhoz, staff salaries, social duties, rehabilitation work, taxes, transportation costs, administration costs, water loss. The ISF also have to cover repayment of credits. According to the budget of the WUA the ISF varies. Most WUAs take 4.5 tyn per m³, so that 1.5 tyn per m³ remain for the WUA. The general assembly has to adopt the yearly budget including the ISF.

In general, the budget is prepared by the WUA staff with help of the support department, decided by the WUA council and then presented to the general assembly for acceptance. The budget should be accessible for the members (e.g. hang on the wall of the WUA office), so that every member can see, for what purposes how much money is spent.

People who are not members of the WUA but use water from channels under WUA responsibility have to pay a higher ISF. According to law it should be 1.5 times the sum members have to pay. WUA can decide the exact amount itself.

To be able to apply for credits at World Bank or ADB a WUA has to meet seven criteria:

1. Founding and legal registration of the WUA, opening of a bank account.
2. Drawing up of a financial plan and of a work program.
3. A plan drawn up by the WUA's council and administration with regard to the use and maintenance of the irrigation system; included in this an annual plan concerning the collection of fees from the members – these fees should increase annually, until cost-recovery is reached.
4. The WUA members pay for all costs the WUA encounters with regard to its operation and the maintenance of its systems, as well as the taxes for the RayVodKhoz. In the first year all taxes for the RayVodKhoz should be paid, as well as at least 30% of the operating costs.

⁵ 100 tyn are 1 Kyrgyz som. 1 som is equivalent to about 0.02 Euro.

⁶ The water transportation fee was established in 1995 with 1.5 tyn per m³ and raised to 3 tyn per m³ in 1999. Exception are WUAs in mountain areas that take water directly from mountain rivers in self-managed channels without involvement of the RayVodKhoz.

5. Together with the Oblast and Rayon water administration, the WUA administration works out different technically, economically and ecologically sensible variants of renovation and calculates their costs.
6. The WUA members choose one variant.
7. The members give their vote concerning the application for a credit, and the WUA council approaches the Project Implementation Unit with the project proposal (*Projekt "Vnutrik-hozjajstvennoe oroshenie" 2002: 1*).

75% of the costs for rehabilitation projects are provided as a grant by World Bank, ADB and also other donor organizations, while 25% have to be covered by the WUA. Some WUAs receive an initial credit for e.g. computer, office or a car.

3. CASE STUDY SOKULUK

For the analysis of the role of institutions and actors in the reform of local irrigation management, a case study was conducted in Sokuluk Rayon. Sokuluk Rayon was selected as a “crucial case” (Eckstein 1975) for testing the importance of institutional factors. As the region is neither marked by extreme water scarcity, transboundary water problems, poverty or periphery, one can exclude some potentially influencing factors of irrigation management performance. If, however, the reform even under those most favorable circumstances faces difficulties, one can assume that these will be even stronger at other places. One WUA in the middle part and one in the lower part of the Rayon were selected for in-depth analysis. Both municipalities were doing rather well in Soviet times and both WUAs already received grants.

The field research for the case study was conducted from May 10th to May 24th 2005. The methods of qualitative social research employed have been tools of Participatory Rural Appraisal (PRA) and network analysis.

Further research to obtain general information and additional data was conducted by interviews with officials and WUA representatives in the Rayons Aravan (Osh province), Alamedin (Chuy province) and Tyup (Issyk-Kul province). Also a conference in Bishkek (2003) and a seminar in Osh (2004), organized by the WUA support department at the DVKh, were attended. Interviews with experts in water administration, international organizations and scientific institutes completed the data.

3.1 General characteristics of Sokuluk Rayon

The Rayon Sokuluk is located in the Chuy province in Northern Kyrgyzstan in the western vicinity of the capital Bishkek. It extends along the rivers Sokuluk and Jylamish. The Chuy valley is the most densely populated area of Kyrgyzstan, a third of the population of the country lives here. The rayon Sokuluk is both in hydrologic regard and land use patterns representative of the Chuy valley. The Sokuluk river rises in the glaciers of the Kyrgyz Range on 3500 to 4000m and flows into the Chuy river at the border to Kazakhstan. Like all other rivers of the Kyrgyz Range it is fed mainly from glaciers and melting snow, so that the maximum discharge takes place in the summer. At the middle reaches of the river are several water-technical facilities and reservoirs. The Great Chuy canal (*Bolshoy Chuyskiy kanal, BChK*) is crossing the district from east to west (Askaraliev 2004)

The area of irrigated land in the Rayon is 56,604 ha. Main problems are high groundwater-level, salinization and swamp formation. Though there is no general water shortage, in Nizhe-Chuyskii rayon in the downstream part fields are fallow land due to lacking access to water because of deteriorated irrigation infrastructure.

Figure 3: Map of the research area



Main cultivation products are sugar beets, grain, melons, beans as well as grapes. Irrigation is especially needed for sugar beets. In addition there is fruit and vegetable growing for subsistence. Despite the relative vicinity to the capital, many villages do not dispose of good market access, as roads are bad and transportation costs high.

Sokuluk Rayon consists of 19 municipalities (Ayl Okmotu). Most of them are covering the area of one or several former sovkhoz or kolkhoz (FSK). Three Ayl Okmotu possess land outside their core area: Tosh Bulak, Saz and Krupskoe. They are located at the mountainous area in the upper part of the Rayon. Due to scarcity of suitable land there the FSK also had field areas in the lower parts. After land and administrative reform (see below chapter 4) this land became part of the subsequent Ayl Okmotu and was distributed among the population.

3.2 Irrigation management in Sokuluk

WUAs are managing about half of the irrigated land in the Rayon, in May 2005 the area reached 28.513 ha. There are 16 WUAs of which 14 are legally registered. Three further WUAs have been at stage of planning at time of field research. Most WUAs are organized according to territorial principles with one or two WUAs in one Aiyl Okmotu, covering the area of the FSK. There is only one WUA, "Shorgo", that is organized according to hydrological boundaries. It manages land of the mentioned three up-hill Aiyl Okmotu that lies in the lower parts of the Rayon. In areas without WUA the Aiyl Okmotu or the FSK care for water distribution, or the individual farms have direct contracts with the RayVodKhoz.

WUA "BCHK-SOVKHOZNIY", STUDENCHESKOE

The WUA "BChk-Sovkhozniy" is located in the village Studencheskoe, which belongs to Aiyl Okmotu Frunze. The Aiyl Okmotu consists of four villages: Frunze, Ozernoe, Komsomolskoe, and Studencheskoe. The village of Frunze, where the Aiyl Okmotu administration is located, is several kilometers away from Studencheskoe. The Aiyl Okmotu has about 8,000 inhabitants of 17 nationalities. While formerly a considerable part of them have been ethnic Germans, now there are mainly Kyrgyz (46%) and Russians (38-40%) with many migrants from South Kyrgyzstan. The WUA covers the area of the former research farm of the Agrarian University (*Uchebnoe Khozyaystvo, UchKhoz*). The other three villages belonged to the former sovkhov "Frunze" and do not have a WUA yet.

Studencheskoe used to be a rather wealthy village in Soviet times because of the UchKhoz. In the words of the WUA-director: "As a kolkhoz we have been like a millionaire". However, like all rural places in Kyrgyzstan it suffered after the break-down of the collective system from decline of all local facilities like youth center, public bath-house, library, kindergarten. School and streets are in bad condition. Though there are some new employment opportunities (e.g. small furniture and noodle factories), people live very poor. On average each household possesses between 5-7ha land. Cultivated are mainly cereals, lucerne and sugar-beets. While lucerne and cereals can be cultivated without irrigation, sugar-beet needs to be irrigated. Apart from that, there is some cultivation of corn and vegetables.

The WUA is named after the two main channels of which it takes water: The Big Chuy Canal (*Bolshoy Chuyskiy kanal, BChK*) and the Sovkhozniy canal. The WUA was founded in March 2001 and has 129 members: 128 farms and the UchKhoz, which is still existing on a smaller scale. The WUA comprehends 2667 ha of land of which 1867 ha are irrigated. All farm owners are members of the WUA. Paid positions are the director, the accountant, the hydro-engineer and seasonal two mirobs. The council consists of 7 members.

The ISF was used to be 5.5 tyn, but it was planned to augment it to 6 tyn for the upcoming season. At the time of field research not all farmers had signed their contract for the following season yet though irrigation period was already about to start. Albeit there is in general enough water there are huge losses due to deteriorated infrastructure. The WUA got a grant from ADB for a computer and a motorcycle. The RayVodKhoz initiated another proposal to ADB for a rehabilitation project about 126,000 US-\$, on which is not decided yet.

In that part of Frunze Aiyl Okmotu that is not served by a WUA (the area of the FSK Frunze), the Aiyl Okmotu manages the water distribution and coordinates the water delivery. The irrigation set is on the balance of the cooperative "Altyn Talaa". The cooperative is the succession organization of the "Frunze" sovkhos after it was dissolved in 2000. In the beginning it covered 800ha land, but now it is less as farmers left the cooperative. 300 households are members of the cooperative, which has 35 employees. The director of the cooperative is the former director of the sovkhos.

WUA "KD ORSET", ZHANY-PAKHTA

This WUA covers the whole area of the Zhany-Pakhta Aiyl Okmotu located in the lower part of the Sokuluk valley near the border to Kazakhstan. It consists of 5 villages – Zhany-Pakhta, Zarya, Ak-Kashat, Mayskoe, Mirnoe - with 5983 inhabitants of 27 nationalities. Before land reform, the whole area belonged to a state breeding farm (*Semenoe Khozyaystvo, SemKhoz*), which is still existing on smaller scale. Previously, it was predominantly German populated. While most Germans and many Russians left migrants from the South of Kyrgyzstan and ethnic Kyrgyz refugees from Tajikistan moved to the village. Today the population is about half Kyrgyz and half Russian. People are cultivating mainly cereals. Vegetables are not grown at larger scale, as the way to the market in Bishkek is too far to make it lucrative to sell them.

The WUA was founded in 2002 and is responsible for water withdrawal from two channels: 10th and 11th channel. There are three big members of the WUA: the Aiyl Okmotu (which has 400ha land), the agricultural cooperative (*selskokhozyaystvennyj kooperativ, sk*) "Zhany-Pakhta" and the SemKhoz "Zhany Pakhta". These three together with 113 farms have been the founding organizations. Now there are 242 member farms. The WUA staff consists of the director, the accountant, the hydro-technician and six mirobs. The council consists of nine members. It also has an arbitration committee. The irrigation set is on the balance of the SemKhoz. The ISF was 5 tyn in 2004 and increased to 6 tyn in 2005. The WUA got chosen for an ADB rehabilitation project (49 Mio. som), which delayed at time of research because of the political turmoil.

RAYVODKHOZ, SOKULUK

The district water administration (*Rayonnoe upravlenie vodnogo khozyaystvo i melioratsii*, RayVodKhoz) is located at the rayon center Sokuluk. The number of staff members varies between 100 and 114, depending on season. RayVodKhoz is financed mainly by the water tariffs. However, many WUAs have debts of non-paid fees at the RayVodKhoz. Due to little salary the RayVodKhoz is not able to attract qualified personnel and therefore has an immense cadre problem.

The RayVodKhoz is responsible to maintain and operate the off-farm irrigation channels which deliver the water to the on-farm irrigation set managed by the WUA. Due to lack of financial means the RayVodKhoz is not able to do all the necessary work at the off-farm channels. Therefore, the WUAs in general do this work in exchange for water delivery. The WUA lists all the works it has done (in a so-called *akt protsentovki*) and RayVodKhoz gives them water for the monetary value of it. According to law, the RayVodKhoz is only allowed to take maximum 30% of WUA payments in kind. In fact however, it is more.

The RayVodKhoz cooperates with WUAs on basis of contracts on water delivery. Each WUA has to make a contract with the RayVodKhoz before the irrigation period begins. Since last year the WUAs do not indicate the amount of water but which cultures they grow on how much ha. On basis of this the amount of water is calculated. Every week at Tuesday is the "Day of WUA" (*den AVP*) at the Sokuluk RayVodKhoz. This is a weekly meeting of – ideally - all WUA directors (or other representatives) together with the head of the support department and the head of RayVodKhoz. Sometimes also hydro-engineers of RayVodKhoz attend the meeting.

WUA SUPPORT DEPARTMENT, SOKULUK

The WUA support department in Sokuluk rayon exists since march 2002 with three specialists working there: one specialist for development of WUAs (the head), one specialist for water use and one engineer. Until November 15th, 2004 it was also responsible for the neighboring Moskov Rayon with 44.000ha irrigated area until there an own support department was established. It has its office in the building of the RayVodKhoz. The office is well equipped with two computers, a photocopying machine, and a telephone. However, at time of research the telephone was not working due to non-payment of bills.⁷

⁷ This does not seem to be an extra-ordinary situation: when being in the OblVodKhoz for an interview with the support department half a year earlier, there also the phone had been cut off out of the same reason.

4. INSTITUTIONAL ENVIRONMENT

Before analyzing the functioning of WUAs, this chapter is going to give an overview over the institutional environment affecting water management, i.e. the fundamental set of economic, political, legal and social rules that shapes the basis for the specific local institutional arrangements.

4.1 Conditions in the agricultural sector

In the 1990s the Kyrgyz government conducted a nation-wide land reform in several steps. Since 1998 full private ownership of land is possible. The land area of the former kolkhozes and sovkhoses was redistributed: 75% was distributed among the local population while 25% remained at the state. Each member of a former sovkhos or kolkhoz (FSK) at working age had right to at average 0.35 ha of land.⁸ In addition, families kept their assigned home gardens as private property. During the land distribution in the course of the privatization often influential members of the FSK (directors, water engineers, etc.) and government employees were favored with the assignment of better plots at the upper runs of the irrigation systems (Hassan et al. 2004: 7f; Zitzmann, Trouchine 2005: 33). Many FSK have been transformed into joint-stock companies or different kinds of cooperatives of individual farmers. The land that remained at the state is leased to private farms via the local government (Aiyl Okmotu). Today there are 1,700 new cooperative or enterprise farms, over 60.000 small private farms and some hundred thousand private plots of less than 1ha (home gardens for subsistence). The few remaining national farms constitute only 2% of the agricultural gross domestic product, peasant or cooperative farms 40%, home gardens nearly 50%. While the share of the agricultural sector in GDP fell, its share in workforce raised to more than 50% (Giovarelli, Akamatova 2002: 1; Zitzmann, Trouchine 2005: 36).

The agricultural sector is characterized by a general a lack of those market conditions that would be necessary to sell produce with a profit, thus earning one's living with it. Hence a lot of experts meanwhile tend to critically question the radical and quick privatization in the agrarian sector which brought forth thousands of petty farmers with neither the necessary knowledge nor the necessary means for lucrative agriculture.

⁸ The exact amount was dependend on the region. In the land-scare south of the country, it was in general less. Pastures were excluded from privatization.

Firstly, the farmers cannot use the economic potential of their fields due to missing knowledge and experiences as well as lacking market access. The current farmers are usually former specialized FSK workers or teachers etc. without training in farming (Bucknall 2003: 4; DFID 2003: 3-5). They often simply do not know how much to irrigate and therefore use as much water as possible leading to wasteful water usage. The experts of the specialized institutes⁹ at the same time lack the means to go into the villages and train people. Wasteful water use is therefore at least partly rooted in lacking access to knowledge about right irrigation and a resulting “the more, the better” attitude.

Secondly, the small land plots are not big enough to make any benefits from cash-cropping. Only those who rent additional fields can make a profit. Sometimes the plots are even too small for subsistence. Additionally farmers usually do not possess the technical equipment they need. They have to hire it from the FSK or from private persons, which is cost-intensive. Further input-factors have to be bought, e.g. seed and fertilizers. Taxes, ISF and (if they want to sell their produce) transport costs have to be paid. This is the reason why most farmers do not make any profits.

Due to general poverty, wide-spread subsistence production and state's taxation policy the Kyrgyz agricultural economy is mainly a barter economy with little cash transfer. It is assumed that a considerable share of economic transactions are barter deals, even if exact details are unavailable. The agrarian sector is virtually “de-capitalized” (DFID 2003: 10-9; Hassan et al. 2004: 30). Those conditions make it difficult to introduce monetary mechanisms like water tariffs.

Hence farmers have been allowed to pay a part of the ISF (30%) in kind (crops). In fact it is in many WUAs between 50% and 80%, which are actually paid in kind. This results not only in limited cash-flow in the WUA, so that for example the employees have to be paid in natural produce, but also increases transaction costs and creates additional costs (storage, transportation, etc). This barter trade is prolonged in the relation of the WUA to the RayVodKhoz: As WUAs lack money to pay for water, they repair and clean channels of the RayVodKhoz in exchange for water (cf. sec. 3.2). As WUA members as well as many directors are no professionals, this kind of maintenance lacks proficiency and is not adequate for big channels.

Hassan et al. (2004: 32) therefore come to the conclusion: “Market constraints are among the key obstacles of sustainable institutional change in water-resources management in Kyrgyzstan“. The same is stated by a Central Asian-wide study of the British Department for International Development (DFID 2004: 10-10): “Unless farms are profitable, irrigation management transfer will fail”. The significance of the agricultural conditions is also highlighted by

⁹ E.g. of the Agrarian University or the Irrigation Institute at the DVKh.

the first answer of the director of RayVodKhoz when asked about his wishes for future water management: “that the farmer would get good yields” (k48:41).

A consequence of the constraints in the agrarian sector observed in Sokuluk is that many people do not work on their fields but give their land for rent and only use their garden plots for some small subsistence cultivation. Land is rented by other local farmers¹⁰ or by businesses. They combine many plots to huge and lucrative fields. Many migrants from the south, who came to the village only after land reform, do not possess land but rent it. In Stundcheskoe only few people work on their fields themselves, but most give it for rent. In the WUA „Shorgo“, where the land is situated quite far away from the homes of its owners, about 80% of them give it for rent.

However, the WUA concept foresees that only the ones that possess land can become member of a WUA while short-term tenants make a contract with WUA (see chapter 2.3). Hence, many of the actual farmers and water users cannot become member of the WUA, as they are not possessing land. This results in the paradoxical situation that the de-facto water users are not members of WUA, while the WUA members cannot afford to be a water user. Many water users therefore have a trivial business relation with the WUA: they pay, the WUA delivers, and they do not have any rights. The system in this way, instead of empowering, actually excludes many water users.

4.2 Local governance institutions

The Kyrgyz government, along with the dissolution of the FSK, introduced structures of local government: the 487 Aiyl okmotu (municipalities). They include one to twelve villages, mostly according to the territory of the FSK. The head of Aiyl Okmotu is since 2001 elected. The Aiyl Okmotu has usually a staff between 11 to 17 employees. In general, they also have a land specialist who is responsible of the 25% of FSK land that remained under state ownership. Beside the administrative body, there are several elected or appointed organizations: The women’s council and the veterans’ council are relicts of Soviet times; the elected local *kenesh*, the village council; and the court of elders (*sud aksakalov*).

The *sud aksakalov*, the court of elders, is a traditional Kyrgyz local institution to which people turn with conflicts and problems in village and family life. The members are respected members of the community, held (or hold) often important positions (director of kolkhoz, po-

¹⁰ These may be farmers who enlarge their own fields to make cash-cropping, or newly in-migrated inhabitants who do not possess land. The latter, however, are mainly renting land from the Aiyl Okmotu, as it is cheaper (and usually worse) than the private-owned land.

liceman, teacher), are however not necessarily old. Nevertheless therein the general authority of the older ones is reflected, which represents a powerful norm in the traditional law. It gained relevance after independence, when the old Soviet system of control eroded. In 1995 it received a (temporary) formal legal basis with a decree of the president "On Approval of Temporary Regularization on Courts of Elders in the Kyrgyz Republic". Its field of activity lies particularly in the range of the traditional and customary law and the solution of smaller conflicts: land disputes, affairs of family, cattle theft and also water disputes. However, its role and range of activity varies considerably in each village. It achieves its goals by means of persuading and social pressure. (Ibraimova 2004: 7f; Giovarelli, Akmatova 2002: 6f, 12, 17).

In 1994 the government transferred the responsibility for O&M of the on-farm irrigation system to the Aiyi Okmotu. However, as it soon became visible that this puts excessive demands on Aiyi Okmotu, a new government decree envisaged the transfer of these systems to the farmers (Alymbaeva 2004:8f). In those villages where WUAs have not been founded yet, the Aiyi Okmotu is still the one responsible for local irrigation management.

4.3 Legal framework

As described in chapter 2.4, in the course of the WUA reform several decrees and (by-)laws were passed to establish a legal framework for the activities of WUA. The first two decrees (1995 and 1997) defined WUA, regulated its activities in O&M, and organizational and financial structure. They did not, however, pay much attention to transparency and democratic processes. Alymbaeva (2004: 9) therefore comes to the assessment: "The legacy of a centralized management model was translated into the contents of these laws." The shortcomings of the inadequate legal framework resulted in WUAs that were neither financial nor organizational viable. In 2002 therefore a new "Law on WUAs" was passed that addressed also the governance aspects of WUAs - questions of rule of law, participation, transparency, etc (Alymbaeva 2004:10).

Some problems are still not solved and partly arise due to inconsistencies in national law. The legal status as non-commercial organizations has not been clarified yet. It is well defined down in the 2002 Law on WUAs, but the tax code has not been changed accordingly. Thus WUAs pay up to 20% taxes on their proceeds (for roads, disaster prevention, on income etc.). Many WUAs perceive this as one of the most pressing problems: "We have a war with the taxes" (k37:15).

The transfer of the irrigation system to the WUA also bears difficulties: all facilities with on-farm relevance (and also some off-farm) should be transferred to the balance of the WUA. But according to law, the one who transfers it (in this case mostly the FSK or the Aiyi Okmotu) should pay 20% of its value as tax to the state. However, as some sets are worth 1

Mio. som or even more, it means that they would have to pay 200,000 som to the state. In Zhany-Pakhta for example, it would have been 96,000 som. In BChK the set was on the balance of the UchKhoz which gave it to the WUA without paying the 20% to the state. Understandably, with lack of money anyway, those organizations want to give away facilities but they do not want to pay for it. And the WUA as a receiver also has not the funds to pay for it. There were some proposals to make this transfer without payment (law of 6 April 2004), but again the tax code was not changed accordingly.

Also one has to mention that the contracts between WUA and RayVodKhoz lack an adequate legal foundation. It is difficult to determine in advance the exact amount water needed (it may be less in a year with lot of rainfall, it might be more in a dry year). Though many WUAs order more water to be flexible, the contracts are subject of frequent changes. So factually much water delivery takes place on oral agreement. A real right to water is not given and also not perceived by the actors. Even a WUA director, when telling about a conflict with RayVodKhoz about not-delivered water¹¹, seemed to want to justify his behavior as he said that this situation lasted for some time and they were in need for the water (he did not argue that they paid for it and they therefore had the right to it).

¹¹ One head of section sold water to several WUAs without delivering the full amount and taking the money for himself.

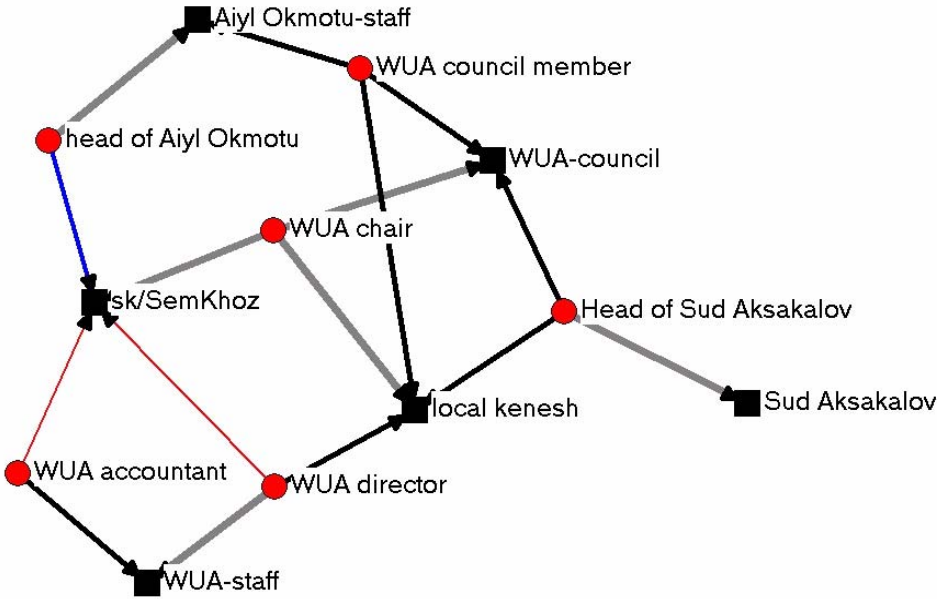
5. ACTORS AND ORGANIZATIONS

The next chapter aims to reveal who is active in a new organization like the WUA and how it fits itself into the already existing structures at local level. In a first step, the identified key actors and their affiliation to various organizations are shown (5.1). The subsequent sections provide a closer scrutiny of the relation of the WUA to Aiyl Okmotu (5.2), FSK (5.3), and RayVodKhoz (5.4) respectively.

5.1 Interrelations of actors and organizations

The following charts present past and present affiliations of key actors in water management in the respective villages.

Figure 4: WUA “kd orset”



Red line: former member; blue line: former leading member; black line: current member; gray line: current leading member. Quadrate: organization; circle: actor.

This chart shows that WUA actors – divided in WUA staff and WUA council members – are no exclusive WUA representatives but are involved in Aiyl Okmotu or FSK activities as well. WUA staff and council members are affiliated to the Aiyl Okmotu (divided into staff and council (*kenesh*), the sk/SemKhoz (FSK) and the court of elders (*sud aksakalov*). The FSK was a

breeding farm (*SemKhoz*). It existed until 1991, was then transformed into a stock corporation that went bankrupt in 2003. Now there are two organizations: the breeding farm (*SemKhoz*) and a cooperative (*sk*). Albeit they are formally independent organizations, they share office, staff (50 employees) and even the director. Both are self-financing. Though the land and technique of the breeding farm are still state-owned, they do not receive any subsidies and are working like a private company. The director of both was the director of the FSK before. Before the WUA was established, the *SemKhoz* was responsible for water distribution.

The local *kenesh* consists of 11 deputies, four which also have a function in the WUA: Beside the already mentioned director of the cooperative, who is chairman of the WUA council and the local *kenesh*, two WUA council members are deputies as well as the director himself.

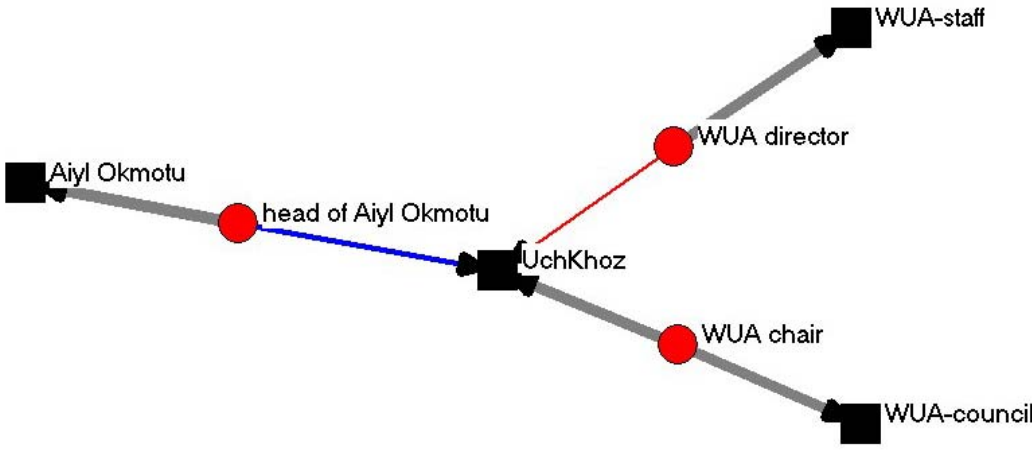
Many of the people in the network are members of the Aiyl Okmotu council (local *kenesh*), but it may not be misinterpreted as high influence or a big role of this organization. Rather it shows that the ones who are active in village life – be it a member of local *kenesh*, be it at the women's council or the *sud aksakolov* – are often active in several organizations, so also in the WUA council.

The WUA is also connected to the court of elders, as its chair is also a member of the WUA council from the beginning on. He worked 15 years as leading agronomist and one year as leading economist in the sovkhov. The *sud aksakalov* was formally established three years ago and has four members and one secretary.

One person is in the center of the network: He is the director of the *sk/Semkhov*, chair of the WUA council and chair of the local *kenesh*. Not visible in the chart is that he was also a member of the Oblast *kenesh* until it was liquidated and is a close friend of the head of Aiyl Okmotu.

For the other studied WUA only the leading representatives of local organizations are pictured in the chart.

Figure 5: WUA “BChK-Sovkhozniy”



red line: former member; blue line: former leading member; gray line: current leading member.

As one can easily see, here the *UchKhoz* (the research farm of the Agrarian University) emerges as central organization: the director of *UchKhoz* is also the chair of the WUA, the former director is now the head of the Aiyl Okmotu and the WUA director used to work as hydro-engineer at the *UchKhoz* before.

The *UchKhoz* used to cover 2500 ha land and was responsible for water management. In 1999 the land was redistributed and a cooperative was founded. In the beginning, all farmers were members, but now it is said to exist only on paper. Presently there are mainly small individual farms. The *UchKhoz* still owns 174 ha of fields, of which 145 ha are irrigated land. Though it still belongs to the university, it is self-financing.

This brief network analysis showed that WUA and other relevant local organizations, namely Aiyl Okmotu and FSK, are closely interrelated. These interrelations are visible when the affiliations of actors to different organizations are described. How do these close interrelations effect the performance of WUA?

Due to the combination of functions by some actors it bears difficulties to analyze the relation of “the” Aiyl Okmotu and “the” WUA. Is a WUA council member, working as personal secretary of the head of Aiyl Okmotu and also being a deputy of local kenesh to be considered a representative of the Aiyl Okmotu or of the WUA? And if she is telling, that she meets constantly with WUA staff – is it in her role as council member, as Aiyl Okmotu staff or as mem-

ber of the *kenesh*? Or is it simply, because they are all working in the same building? Nonetheless, the two following sections will try to figure out the specific role of Aiyl Okmotu, FSK and water administration.

5.2 Relations of WUA with village organizations

This section will not only discuss the relation of the WUA to the Aiyl Okmotu administration in strict sense but also to organizations associated to it namely the local *kenesh* and the court of elders.

In many cases Aiyl Okmotu is related to WUA development from the beginning on. The support department often approaches Aiyl Okmotu to help them set up WUAs and to organize the first meetings, as they themselves have not sufficient capacities. Sometimes it is even the initiative of the Aiyl Okmotu: At Frunze, the Aiyl Okmotu was at time of field research busy to set up a WUA for the area of the FSK “Frunze”. It was obvious their initiative and not the farmers’ one as Aiyl Okmotu not only already determined the name of the WUA (Frunzeyskiy) but also who will be the director. This is not surprising as Aiyl Okmotu got responsibility for local irrigation management at a time when it also got responsibility for other tasks the government did not have money for any more: schools, roads, drinking water systems, etc. without having enough funds themselves (Alymbaeva 2004: 8f).

In Zhany-Pakhta the office of the WUA is situated in the building of the Aiyl Okmotu. They rented it for a small amount of money (160 som) like other village organizations as well. This may contribute to the WUA being associated as part of Aiyl Okmotu administration by villagers. Even a member of the local *kenesh* said, that there would exist a special commission at the Aiyl Okmotu to deal with water meaning the WUA. The director of WUA takes part in the weekly staff meeting of Aiyl Okmotu on Wednesday and meets regularly with the head of the Aiyl Okmotu.

In Studencheskoe there is at first glance no direct connection between the WUA and the Aiyl Okmotu. The situation is already spatially differing from Zhany-Pakhta: The Aiyl Okmotu office is located in another village while the office of the WUA is in a building of the UchKhoz. The WUA director states that the WUA would work independently from Aiyl Okmotu. He indicates that representatives of Aiyl Okmotu would come to their meetings to get to know their problems, but they could not help as they do not have money. The head of Aiyl Okmotu, however, who was the director of the UchKhoz before while the current WUA director worked there as an hydro-technician, claimed that he recommended him for the position as a WUA director. Both are neighbors.

Such a close relation between WUA and Aiyl Okmotu was also observed in other places: The accountant of WUA Tarash, e.g., is also a member of the local kenesh and worked in the Aiyl Okmotu before. Other WUAs also have their office at the Aiyl Okmotu building or Aiyl Okmotu even built an office from its budget. A World Bank project evaluation showed that in 102 WUAs either the head of Aiyl Okmotu or his deputies are members of the council.

The strong involvement of Aiyl Okmotu can have positive as well as negative effects. On the one hand, Aiyl Okmotu is involved as it possesses land (and also the head may possess land) and because many farmers still turn towards it in case of conflicts and it can support WUA, especially in the difficult beginning. On the other hand, there are Aiyl Okmotu who perceive WUA as subordinated (“WUA belongs to us”) and are trying to dominate it. Furthermore, it reaffirms the territorial perception of WUA which contradicts the hydrological principle of its organization.

5.3 Relations of WUA with the FSK

Both WUAs cover the territory of a FSK, which used to be the main employer. Hence it comes as no surprise that almost all actors have or had some kind of relation with it. It makes little sense therefore to analyze that somebody working in the FSK is now a WUA member. However, it is still worth to look at the leadership level.

In both villages a small state-owned farm remained (the research farm in Studencheskoe and the breeding farm in Zhany-Pakhta) and in both villages the respective director is the chairman of the WUA. In Studencheskoe it is an informal rule that the head of the UchKhoz will be the chairman of WUA. The relations between the UchKhoz and the WUA are very close: The office of the WUA is located in the building of the UchKhoz and the WUA does not have to pay rent for it. The mighty role of the UchKhoz is also visible in the fact that the previous director is now head of the Aiyl Okmotu. He claimed that he initiated WUA and recommended his former hydro-engineer as director.

At Zhany-Pakhta, the director worked as head of one of the four units of the FSK. Before the WUA was founded, the SemKhoz cared for the water. It was already mentioned that the sk/SemKhoz director is a central figure. It can be assumed that he was the one who initiated the WUA because he told that a friend of him who works for ADB told him about the credit program. The director takes part in the daily morning meetings of the sk/SemKhoz and uses the equipment of it (e.g. tractors).

In both villages the former leaders of the FSK do not only hold leading positions in the successor organizations but also in the Aiyl Okmotu.

5.4 Relation of WUA with state water administration

Apart from the local institutions it is also important to consider the relation of the WUA to the district water administration (RayVodKhoz). The official relation was already described in chapter 3.2.

The Relationship between the individual WUA and the RayVodKhoz is mainly depending on the state of mutual payment. Many WUAs are owing money to the RayVodKhoz of non-paid water fees. “Kd orset” and “BChK-Sovkhozniy” do not have any debts at the RayVodKhoz and therefore have a good relation. However, several director complained towards the RayVodKhoz director at the Tuesday sessions: They had to collect money from the people, and then the water would not be delivered on time. They had to hire people for rehabilitation work, and then the RayVodKhoz would not give the receipt. They had to solve all the problems, argue with people, and then RayVodKhoz would not fulfill its part. One complained that it is humbling and he does not want to work further like this.

These complaints show also, that the problems of payment do not only concern payment of WUA to the RayVodKhoz but also vice versa: the payment of RayVodKhoz for cleansing work at its channels done by WUAs. Many WUAs also complain that they lack equipment, material and advice to do this work correctly. The WUAs do not know how to render account. Many arguments obviously are starting because of a lack of information and experience on side of the WUA, e.g. about water amount for flushing, about procedures of getting paid rehabilitation and cleansing work, etc.

One further point of tension between both organizations is the condition of the off-farm canals, for which the RayVodKhoz is responsible. Due to their bad condition there are enormous water losses, which have to be paid for by the WUA. For example, one WUA director complained that of 50 m³ they order only 32 to 33 m³ would reach WUA territory.

The relationship seems to be a mixture of conflicts and fights as the WUAs are depending on the RayVodKhoz and on a sort of care on part of the RayVodKhoz. Albeit the latter role is mainly fulfilled by the support center, also the head of the RayVodKhoz spends time in explaining matters to the WUA delegates. The office of the support department fulfills the role of a meeting point. This seems to be an essential role of the department as it became obvious that the WUAs are having many problems and do not know a lot about the procedures and about how others do it. When they meet in the office, they exchange about salaries, which kind of contracts they have, etc. There seem to be very little information about each other. It is hard to imagine how WUAs can work in Rayons where there is no such support department. Its role seems crucial as WUA staff in most cases does not have the knowledge and capacities yet to act independently.

6. LOCAL INSTITUTIONS AND CORE FUNCTIONS OF WUA

To assess institutional influence on WUA performance four core functions will be analyzed: maintenance of the irrigation set, collection of ISF, water distribution (including dispute solution) and awareness raising of water users. For each function the role of (informal) local institutions will be described.

6.1 Maintenance of irrigation facilities

WUAs inherited the bad infrastructure of the canals. Since due to this water often does not reach the fields, it represents a source of tension. WUAs lack the technical equipment for adequate cleansing and rehabilitation work and the financial means to hire professionals. Rehabilitation is therefore only done when funded by donor programs. For regular maintenance WUA in general apply an old Central Asian institution, the *ashar*. *Ashar* is voluntary work for the community, traditionally organized by the *mahalla* committee¹² or the village elders with material provided by a wealthy member of the community.

WUAs are gathering their members once or twice a year for voluntary cleansing work at the channel. Also where there are no WUA, *ashari* for the irrigation set are organized. In Frunze, it is done by the director of the Sovkhoz. Sometimes *ashari* are also part of credit programs, when a WUA gets a credit or grant for materials and then the community members do the work. *Ashari* are also used for cleansing of off-farm channels for the RayVodKhoz.

With re-vitalization of this well-known and accepted rule of common work at village level, it is possible to maintain the channels without lots of financial means and by this perhaps even to create a sense of ownership for the facilities. It also has its limitations, however: first, *ashari* are only suitable for small canals. Its use for cleansing work at bigger channels can only be a temporary measure but no long-term perspective. Second, as its basic principle is voluntariness, it comes into difficulties if it is included as a mandatory in credit programs.

¹² *Mahalla*, most often translated with “neighborhood” or “local community”, is a residential network in villages as well as cities in the sedentary parts of Central Asia, tracing back beyond the 13th century. The *mahalla* committee is the lowest level of local self-organization. It presents an institution to organize collective religious and social events, solve conflicts and provide social services. After attempts of the Soviet authorities to supersede it failed, it was tolerated but never got a formal legal base. In Kyrgyzstan it is existing in predominantly Uzbek villages in the South of the country.

A strong sense of community, which is visible in such institutions as the ashari, can be supportive for establishing self-responsibility for the irrigation set. However, this orientation can also hinder the rational performance of WUA.. Albeit the initial intention was . to set up WUAs along the hydrological set they have to maintain, they are now in general established along territorial boundaries. As WUAs have often been founded by the FSK's administration or the Aiyl Okmotu, their region of responsibility also depends on their area and not on hydro-graphic boundaries. The WUA kd orset is for example oriented along the territorial bounda-ries of Frunze Aiyl Okmotu albeit it should for hydrological reasons include the Aiyl Okmotu Kayzhanovka as well. Establishment is easier in this way, as people know each other. They are hesitating to work with people they do not know. However, it can turn out to be a hin-drance to effective work: The director of WUA "Shorgo" says, that it is easier to work with people who not know each other, as otherwise too many other things are influencing conflict solution. In Chuy area often hydrological and administrative boundaries coincide, as the irri-gation system was built for the FSK which are now the Aiyl Okmotu, but in the South of Kyr-gyzstan with older irrigation systems, this presents a situation objecting one of the principal ideas of WUA.

6.2 Collection of ISF

One of the main components of the WUA concept is raising and collection of fees for the supply with irrigation water (ISF: Irrigation Service Fee). Albeit the amount is agreed by the general assembly, many farmers are reluctant to pay. The collection of the ISF is a big prob-lem, though payment rates got better in recent years. The main controversy concerning non-payment is about the question if farmers are not able to pay or if they are not willing to pay. There are people who argue that even though farmers are poor they could pay, as they are also paying for e.g. fertilizers, and that it is therefore a question of willingness rather than ability. That many farmers are too poor to pay fees (as well as fertilizers) due to the institu-tional constraints in the agrarian sector was already described in the chapter on agriculture. This chapter will discuss the attitude that water has not to be paid for.

Several WUA directors and consultants stated that people would complain about the price, but after explaining it they would understand the purpose. Some however will still not pay, some still will steal water at night.

People are not used to pay for water. Water used to be free in the Soviet Union. This "Soviet mentality", i.e. the expectation that the state should put water at one's disposal for free, is very often identified as the main reason for a lacking willingness to pay. Another reason often mentioned is that water is considered a gift of God for which one cannot pay. The drinking water association as well faces the problem of people not paying on time. The director as-

cribes this to ideological and psychological reasons that people are not ready to pay for something they always got for free.

The collection rates are generally very low throughout the country, as shows the following table:

Table 2: Collection of ISF in WUAs, 2003

Oblast	Average collection rate in WUAs
Jalal-Abad	57%
Batken	62%
Osh	43%
Issyk-Kul	42%
Naryn	45%
Talas	61%
Chuy	62%
TOTAL	53%

Source: Alymbaeva 2004: 11.

Albeit some WUA representatives claim that they would not deliver water to farmers who did not pay their debts of the previous year, no actual cases could be verified. There is no correlation between actual water payment by the individual farmer and water delivery from the WUA. Non-payment of water seems to be an accepted or at least comprehensible behavior. Consequently, with no sanctions following non-payment, little incentives exist to pay on time. Especially, as due to the deteriorated infrastructure and water theft (see below 6.3) also payment is no guarantee for water delivery on time work.

At Kd orset, the WUA staff urges people to pay 30% in advance and the remaining money later, at last at the end of the vegetation period. However, observation showed that farmers will receive their receipt for water supply without paying in advance. Therefore, kd orset still has 1000-1500 soms debts from farmers of last year. Other WUAs have even more money that farmers owe them, and in many cases they on their part owe the money to the Ray-VodKhoz.

The introduction of volumetric ISF therefore means a challenge to long-established rules of water management. The difficulties in its implementation are reinforced by the fact that no

effective sanction mechanisms exist to enforce payment and reliability of water delivery is lacking.

6.3 Water distribution

Albeit the research area is not a water-scarce - thus conflict-prone - region, there are regularly tensions and '*skandali*' occurring because of water distribution though everybody would deny it initially. Especially in summer when all farmers need a lot of water, problems and uproars occur. Particularly villagers who have their plots at the end of channels are complaining that the water would not reach their fields. In many cases it is the deteriorated infrastructure especially of the smaller canals inside the village to the home gardens that hinders water delivery. An equally important factor however is un-allowed water withdrawal. In this case the task of the WUA is to control water withdrawal, guarantee timely water delivery to those who paid and punish violation of the rules.

Water theft is closely connected to the unwillingness and inability to pay the ISF. WUA faces the task to deal with this widespread behavior. In theory, each WUA has mechanisms to punish water theft. Many WUAs have an dispute resolution committee and agreed on the amount people have to pay – between 300 and 1000 som. Representatives from the support department report that at the annual assembly people WUA members would discuss this topic openly. However, not a single case was reported when a dispute resolution committee at any WUA got really active. Kd orset also has such a committee, which is only existing on paper, though. Officially, the penalty for water theft is 1000 som, but until today nobody paid it and there also was not one case at the general assembly. The findings of Alymbaeva (2004: 28f) also revealed that farmers hesitate to approach the conflict commission or are not aware of its existence.

There are also no effective intra-WUA control mechanisms of exact water amounts. Cases of favored distribution to relatives are often reported in literature. It is said that the local instances of power abuse their power in order to supply their relatives or clients with water. However, no such cases have been noticed during field research. Also one has to keep in mind, that advantages in water access often have been already determined during land reform, when the people with the respective powerful positions got the fields situated near the canals.

Suffering from water theft is not only irrigation water supply to the neighboring field but especially drinking water supply. As people have to pay for drinking water not according to the amount they use but per Person, they take this water to irrigate their garden plots. People put at night hoses at the public water pumps and withdraw the water to their garden plots. The heads of the drinking water department of Frunze Aiyl Okmotu and the SOOPV in Zhany

Pakhta respectively complained that due to use of drinking water for garden irrigation there is a shortage of drinking water in summer. However, also these organizations did not succeed in preventing it.

In Zhany-Pakhta the *sud aksakalov* claimed that it solved the problem by continuously persuading, explaining and arguing with people and that drinking water theft now is hardly happening any more. In most cases, however, stealing of water has no consequences as due to a general culture of avoiding conflicts nobody wants to blame each other. Most members of a WUA know each other and will not directly confront the person, especially not if it is a rich or respected person. This is even reinforced if one has to go an official way. Even the head of the SOOPV in Zhany-Pakhta admits that – albeit they once in a while catch and punish people who steal water – they occasionally commiserate with them: "Sometimes we close our eyes, because what should we do?". Water theft is so common, that it can be described as a local institution itself as it presents a widely non-confronted rule of behavior. If someone has the authority to solve conflicts, then it is the elders or the Aiyi Okmotu, but not a hardly known, new organization like the WUA. Even if the director or chair is an expert, people have more respect of elders than of professionals. Also, when people switch to steal drinking water, it is – strictly speaking - not the business of the WUA any more. This point has therefore to be addressed comprehensively. The *sud aksakalov* may fill this gap, but also it is embedded in local structures and there are many reports when the elders in their decisions protected distinguished members of the community. Avoidance of an open conflict by peaceful persuading may also mean that conflicts are suppressed and individuals are urged not to go to court for their right as they would bring shame to the village.

6.4 Internal awareness

One main aim of the WUA concept is raising community awareness and empowerment of the rural population by introducing self-responsibility for the management of their irrigation system, thereby raise ISF collection rates and efficient water use. For a longterm compliance to the new rules a change of attitudes is required.

6.4.1 The WUA council

The main decision making power inside the WUA is the council and it therefore should have a strong vision about the strategy and delegate this to the director. The council chairman was in both investigated WUAs very involved. Also at some other WUAs visited the chair was quite strong. The rest of the council remained rather weak.

This reflects the internal structure of WUA that is adapted from government authorities with minimal functions of the meeting of members and a strong position of the chairman as well as the director as an “executive”. While the general assembly meets once a year, the idea of the council is to meet more often, about every two months. It was difficult to recover how often the council actually meets. Questions were usually answered with “according to requirements”. It seems that official meetings are rather rare – probably not much more than the mandatory one time per year. There may be some more meetings when there are urgent problems. In Studencheskoe there was by time of field research an additional meeting appointed as the Council had to discuss about the new director. However, the meeting has been organized rather spontaneous by the director (not by the chair) and only one member of the council and one of the audit commission showed up. It does not seem that the council gets active by themselves. Kd orset: “as the director says, so we meet” (member of council, k40:18). However, many members are meeting constantly each other or the director somewhere on the fields or in the village or at work and exchange information without having an official meeting. The members of the council are rather constant. In both WUAs there have not been any changes concerning the members of the council apart from some people who were replaced because they moved away. According to one director, at the first election three members were “clear” from the beginning, two others were invited. There were not more candidates than positions.

The director of RayVodKhoz mentioned as a problem that people elect not professional as a chair but people who enjoy respect because they are a teacher or a doctor. Therefore the RayVodKhoz has to explain a lot and educate them, processes with which the RayVodKhoz uses a lot of time. Especially in the South of the country, often the respected old men are elected to the council, if a WUA encompasses several villages, it is often one elder from each village. They often lack the energy, time and understanding to do the efforts of community awareness raising expected from the council. Also they may see their main task in representing their respective village’s interests. However, a councilwoman of kd orset said that there have to be people with authority in the council because they have to explain people that they have to pay. There are obviously different perceptions existing about what is a good functioning WUA council: The RayVodKhoz wants somebody doing his job proper, where they do not have to spend tot of time explaining, the WUA wants somebody convincing the villagers to pay the fees. At the moment, both expectations often merge, as many respected villagers hold or held important positions at the FSK and are therefore experts.

6.4.2 The WUA members

Concerning community awareness, the support department trains the staff and council members of WUA and expects them to spread the information further to the farmers. This does not work. The problem already erases with the way the WUA is founded.

Statements like “I have founded WUA” expressed by the director or the head of Aiyi Okmotu point to the fact that the WUA is a result of a top-down process rather than of bottom-up. How initiatives take place became visible on one “*den AVP*” attended: the head of the support department informed the WUA representatives that there is a new Japanese grant for which are only *vodokhozyaystvenni sovet* (a council of all WUAs of a system) are eligible. Therefore she proposed to set up a council. She handed out the statute of the new council and after some questions of the WUA representatives in a hurry a chair was elected.

This top-down process in which most WUA are founded reflects the general political culture that reflects a “history of following state instructions” (DFID 2003:6-5) and negligible experience in pro-activeness, democratic processes and awareness of own rights.

There are hardly any long-term community awareness raising programs in advance. Hence community awareness about the meaning of WUA is low. Though the cases where farmers do totally not know about WUA are rare – just as rare are cases when farmers exactly know what the WUA is. People in general know that there is some organization responsible for water, because somebody comes to them to collect fees. However, farmers in general do not perceive the WUA as an independent organization. Often they think it is a special department of the Aiyi Okmotu and sometimes they also connect it with FSK or RayVodKhoz. Some can associate persons with it, but hardly anybody knows the exact name or what “WUA” stands for. They do not perceive it as „their“ organization, but mostly as connected to Aiyi Okmotu. This is also confirmed by the study of Hassan et al. (2004: 36) : “The WUAs are perceived as someone else’s organizations, either of the chairman or of the village.”

When asked about the role of the WUA or why it was founded, the main answer was: “It is a necessity”. This is understandable as there are obvious problems that the WUA manages. However, it indicates that people are not aware of alternative possibilities and do not estimate the WUA as a way of organization they have chosen for certain reasons. It is in the perception of local actors something like a fate, not a free choice people made out of several options.

Another point to consider is that farmers are often swamped with the many new organizations and new names for old organizations on local level. Especially the many new forms of farms which are set up, then go bankrupt, and then are re-established under a new label are not followed any more. Apart from that people have been confronted in recent years with a lot of foreign experts coming to their villages and trying to make them member in various organizations: agricultural cooperatives, micro credit unions, drinking water associations, water user associations. At the end farmers end up being member in lot of organizations paying a lot of fees without seeing the benefits. Also the psychological moment has to be considered that after learning that kolkhozes and communism is bad, now everybody tells

them again to unite into cooperatives and associations which often remember on socialist patterns and are mistrusted therefore (k25:18, 21-22; Hassan et al. 2004: 32).

Payment is closely connected to community awareness: None of the big projects have intense community awareness or community mobilization components. Hence the farmers often do not know, what exactly is going to happen, why they have to pay for something they did not have to pay before, which costs have to be covered, how they benefit from it. The (un-)willingness to pay therefore seems hence not only connected to traditional values or Soviet mentality but also to a simple lack of information, why and for what farmers have to pay – let's say an unwillingness of donor and government agencies to “pay” the time participation needs.

7. DISCUSSION

7.1 Incentives and lacking incentives

The first sections of the discussion explore which incentives for actors evolve from the way the reform of local irrigation management is pursued and its interactions with the local setting and which incentives are lacking for successful change.

7.1.1 Incentive set for state water administration

As almost everywhere in the world, the impulse for reform in irrigation management came from a crisis in state budget: “The government realizes that they have no money for O&M, so they say we give it to the farmers to pay” (k17:27). This can be seen as the main incentive on state-side from top-level down to RayVodKhoz. For RayVodKhoz it is facilitating its work after the dissolution of the FSK as WUAs are finishing the “administrative nightmare” (DFID 2003:6-6) of making individual contracts and pursuing individual fee collection with every single farmer. The director of Sokuluk RayVodKhoz appreciates WUAs as they make the work of the RayVodKhoz easier. “In principle, it is a structure like the Soviet system, when we gave water to the FSK. A similar system” (k48:32). The equation once more reveals that a technocratic view on WUA prevails.

Additionally, WUAs are not only cleansing the RayVodKhoz-channels (in exchange for water), they provide also a possibility to get access to credits grants to rehabilitate these. WUA is condition for an application for credits or subsidies from the WB and ADB (and other donors) for the restoration of canals etc. Therefore establishment of a WUA often presents the only way of getting necessary rehabilitation work done. The director of RayVodKhoz Tyup stated very clearly: “The state is allocating fewer resources to the RayVodKhoz. That is why we need WUAs, because they will get money from donors. (...) There is only one way: WUA. All donors work via WUAs.” (k20:13,26).

Albeit in the beginning there was some reluctance and fear by state agencies that WUA could undermine their position, it seems meanwhile to be welcomed as a facilitating agency.

7.1.2 Incentive set for local administrative bodies

Despite of reports of opposing local administrative bodies in the beginning, it seems, that meanwhile the advantages of WUAs are obvious and therefore there is a motivation to found them. There are several cases where Aiyl Okmotu initiated the WUA. This is understandable,

as WUA facilitates work of Aiyl Okmotu and – at least until now – does not confront Aiyl Okmotu. That WUAs are not presenting any form of challenge to Aiyl Okmotu is confirmed by the fact, that many Aiyl Okmotu in the rayon did not pay their ISF without the WUAs effectively demanding the money from them.

This change of attitude in Aiyl Okmotu is probably connected to the fact that WUAs are not working as independent, empowered farmer organizations but as kind of a public service provider closely linked to Aiyl Okmotu. This process mirrors the general attitude towards non-governmental organizations on village level: In the beginning, they were feared by the authorities, as NGOs with access to donor grants dispose of financial means the Aiyl Okmotu does not have. However, local authorities learnt to co-opt NGOs instead of seeing them as a rival.

The WUA is a way to get access to credits and therefore this incentive exists for Aiyl Okmotu and FSK like it was already described for the RayVodKhoz. This leads to the fact that WUAs often only exist formally in order to fulfill the conditions for project applications. Such an incentive is not exclusive for WUAs but also for other NGOs. NGOs at village level are often founded on short-term basis for a certain goal, e.g. to acquire funds for renovation of the school. In Zhany-Pakhta in 2004 drinking water management was transferred from Aiyl Okmotu to a SOOPV to get a credit for water pipes from ADB which only would give it to organizations. The director of the SOOPV is the one who was responsible for drinking water at the Aiyl Okmotu before. In general, Aiyl Okmotu seem – after hesitating first - to welcome NGOs as they can use them as a means to get access to donors. This process is mirrored with WUAs.

7.1.3 Incentive set for farmers

While it is an incentive for administration and FSK to get free of responsibility for run-down irrigation infrastructure, it presents no incentive for farmers to care for an irrigation set that is extremely deteriorated and needs a lot of capital investments. Also other effects of the reform of local irrigation management like introducing ISF and increasing ISF due to WUA administrative costs rather work discouraging than stimulating. The main problem with incentives for farmers is that the benefits are long-term and/or intangible: Incentives such as ownership, reduced conflict potential, transparency of water distribution, reliable water service and accountability are not easily visible and difficult to communicate.

The only tangible, short-term incentive is again access to credit, which can also motivate individual farmers. One member of kd orset-council indicated that she was very interested in WUA development, as she heard about the ADB project and her field was going to benefit of the reconstruction work as it is next to the renovated channel. However, when the only incen-

tive for WUA founding is access to credit and grants, the interest is to set it up quickly and not in changing attitudes of water users. This fits with interest of the programs to set up as much WUAs as possible. The support of donor projects also rather aims for the establishing of formal structures and capacity building for the holders of functions (seminars) than for broad community awareness. Empowerment of water users, accountability and transparency with regard to them, though, are not. As a consequence, a majority of farmers is unaware about their rights and responsibilities as well as about the exact tasks of WUA (see also Hassan et al. 2004: 34ff; Alymbaeva 2004: 32f).

Due to these circumstances, awareness raising again turns out as crucial, because only with then farmers will be informed about the long-term, intangible positive effects of WUA.

7.1.4 Incentive set for WUA staff

Professional qualities of WUA staff, especially of the director and the chairman, are crucial as they have to deal with conflicts and implement tough decision. A precondition and main incentive to get qualified and engaged personnel should be an attractive salary.

The salaries of the staff are the same in both WUAs: 600 som for the mirobs, 1200 som for the accountant and the engineer, and 1500 som for the director (equivalent to 12, 24 and 30 Euro respectively), which is even for rural Kyrgyzstan very low salary. Very often the salary cannot be paid. It also has to be considered that the position of a director or chairman takes up a lot of time, so that a "normal" farmer who has to work on his fields cannot afford to deal with the problems of water supply on an every day basis, but only someone who has employees or relatives to work his fields or another sort of income (as the salary of the director is not enough to earn a living). Due to lacking means of the WUA, they often need to use their private car. The bulk of directors met therefore have been rather wealthy.

This bad payment leads to difficulties in finding qualified staff, as nobody wants to work for such a little amount of money. In BChK-Sovkhoznij the director left at the time being there due to low salary. The WUA had many problems to find somebody new.

This is reinforced as the job is connected with a lot of responsibilities and difficulties. During field research two cases happened when already appointed directors refused afterwards. In both cases beside the low salary anxiety of the responsibilities of the director were mentioned as reason for the drawback. Representatives of Frunze Aiyl Okmotu say that people are afraid of it: "nobody wants to take the responsibility and scold people all the time" (k32:7-8). And this even in Sokuluk - a region with little conflicts

To work for WUA therefore bears a lot of challenges, but hardly any incentives, neither in financial nor in societal way (payment, social respect). Recruitment of staff therefore revealed to be one of the core problems.

7.2 The role of institutions for the performance of WUA

The interrelation of WUA to other village organizations as well as the impact on local informal institutions can have supporting as well as hindering effects on the performance of the WUA.

The old sovkhos cadres are still dominating the Aiyi Okmotu as well as the WUA. The question, however, is: who else should do the job? In those cases, where WUA directors are not educated hydro-engineers or the like, they are easily swamped with the tasks and responsibilities. Is the fact that the same people hold different positions already a sign of nepotism? This conclusion would be too easy. Also in Western countries, the number of people who are active in public life is often rather small and often the people who are active are engaged in several organizations. And especially in a poor country like Kyrgyzstan, simply not many people can afford to engage in public life. This duplication of public positions is not only visible concerning the WUA, but also other organizations: In Zhany-Pakhta e.g. the chair of the women's council is also the secretary of the *sud aksakalov* and a member of the local *kenesh* – like the chair of the *sud aksakalov*.

A pushing head of Aiyi Okmotu can be mobilizing and supportive for the WUA. On the other hand, the Aiyi Okmotu can also undermine the independence of the WUAs. Even though these are no formal subordinates, this fact is sometimes not accepted. This is not only to be explained with hierarchical patterns of political culture that allow Aiyi Okmotu put through its candidates but also with the fact that farmers often despite the existence of WUA turn to the Aiyi Okmotu in case of water disputes. As in most cases also Aiyi Okmotu staff are land owners and water users, they have juridically seen a right (or even an obligation) to become WUA member. Even when the Aiyi Okmotu does not perceive the WUA as subordinated, WUA may subordinate itself due to lack in experience with independent decision-making and a tradition of top-down processes. Therefore, Hassan et al (2004: 34) come to the conclusion: "The WUA acts as a service organization under the local government and not as a civil-society association embedded in the community."

Also other local organizations have ambivalent roles. As seen in Zhany-Pakhta, the *sud aksakalov* can be effectively integrated in conflict resolution. But this should not be considered a general rule and it would be unwise to propose it for all WUAs. The role of the *sud aksakalov* is different in each village: in some they are very important, sometimes they may even dominate the Aiyi Okmotu, in others, like in Studencheskoe, they are not influential. They hardly function in the way written in the law, as they involved bottom-up. So in some places

their engagement may be useful, in others not. One has also to consider, that they can work counterproductive: The respected elders can tell farmers who did not receive that they should not complain and by that way suppressing conflicts instead of solving them. Also the effort to solve conflicts at local level is often connected with pressing people not to go to courts because it would be a shame for the village. If then decisions of elders are favored towards rich or respected villagers and discriminates poor ones, its role is very ambivalent and one should be careful towards biased positive view on all “traditional” institutions. Interestingly, Zhany-Pakhta was a predominantly non-Kyrgyz village and the *aksakali* are not only old Kyrgyz white-beards, but also Russians, and even a woman. This shows that it does need to have been a long-term institution, but there have to be some respected persons that make it work.

This strong role of the personal factors is also important for WUA leadership, as it is the director or chairman that has to be able to solve conflicts and confront people. The last point however, contradicts social norms that give higher importance to a harmonic community life than to the defending of individual rights. Another obstacle difficult to overcome is water theft which is connected to non-payment of ISF. Here norms regarding the very nature of water have to be changed, a task which presents an overstrain for WUA but has to be faced together with those village organizations that possess the authority to enforce institutional change. This may be the court of elders, this may be another organization, depending on the individual local context.

The roles of the *Aiyl Okmotu* and the court of elders show general attributes of Kyrgyz (political) culture, a strong hierarchical culture and respect for elders and community. Such values can have more influence on actual behavior than incentives appealing to rational behavior. A survey on reasons for water conservation in the Syr Darya basin e.g. found out that financial incentives are counting only for 20% of the respondents, while 30% mentioned moral and religious motives (Abdullaev 2005: 7).

8. RECOMMENDATIONS

The last chapter will discuss some recommendations for further WUA development. The first section is devoted to the question of the reasonableness of volumetric water charges. After that, two points evolving from the findings of the study are discussed: the need to incorporate local institutions in WUA planning and the need to devote more time and efforts to awareness raising.

8.1 Re-considering ISF

ISFs are aiming at cost-recovery and more efficient water use. Both objectives are not met. In order to achieve cost coverage the current fees are too low. There are different calculations and estimations as to how high they should be. Hassan et al (2004: 39) assume that the current fees would have to be raised by 5 to 7 times. Apart from absolute market supporters many domestic experts accept, though, that at the moment it is not possible to raise cost-covering fees for agriculture from the farmers. They rather stress that the point is to pay a symbolic fee in order to make clear that water has an economic value. Apparently, already this symbolic price poses a problem for farmers, not only because they do not want to pay due to reasons of principle, but also because they are almost unable to earn a profit with agriculture. Even a water expert at the Presidential Institute for Strategic Studies admits that “at the moment it is nonsense to take money from them [the farmers]” as people in rural areas would be too poor, and that the concept of water fees should be understood as a perspective concept, that has to rise according to the living-standard in agriculture: “It is a perspective idea. To speak about tariffs now is certainly a dream” (k07:32).

As long as the basic conditions for reasonable ISF are not met it might be wise to turn away from a dogmatic approach towards water payment. The director of “kd orset” proposes payment per ha instead per m³, a fee for use of the irrigation set. In his view, it would mean less cost for WUA as you would not need so many people to control the system and it would not lead to overuse of resources, as it damages the fields if people use more water than is actually needed. While the last point may be doubted, it is true that the costs of an exact volumetric measuring of water are very high and they can even exceed the cost of water supply. In fact, in most WUAs at the moment only a quasi-volumetric charging is applied as measurement equipment is lacking (DFID 2003:11-21).

There are some WUA that already count for water on a ha basis. Though the long-term goal can be an ISF according to used water, for a transition period the per ha form of payment could be a better solution. It would reduce costs of measurement technique, mirops, etc. When after some years WUA got stronger, farmers better educated and the economic situa-

tion better, one could switch to payment per m³ again. There is also the option of combining both ways, a basic charge per ha combined with a volumetric fee. Alymbeava (2004: 20) proposes that a volumetric charge to RayVodKhoz should be combined with a fix O&M fee to the WUA. This would also make financial planning for WUAs more reliable as the pure volumetric way means that in years with lot rain when farmers use less water the WUA will not receive the expected income and cannot pay salaries or credit rates (DFID 2003:11-21).

8.2 Incorporating local institutions

To make WUA work, it is necessary to look at the specific local context and to incorporate existing local institutions. As the respective local institutions concerning conflict resolution and rule enforcement effective seem to play a crucial role they should be actively involved in water management. However, as those local institutions are differing, each case has to be individually analyzed. Therefore, a bottom-up approach with enough time for community awareness raising measures is necessary. In the course of the World Bank and ADB's projects a lot of foreign experts were invited who helped or were supposed to help with the development of a strategy for the development of the water economy. This is criticized by domestic experts, as the highly paid foreign experts are often unfamiliar with the facts and termini, and their suggestions cannot be realized. As they are unfamiliar with specific local institutions often their advice does not work. At the same time, the domestic universities are lacking the means to train the new generation or to even make a work journey into the country in order to advise the farmers, as often the farmers just do not know how much water a plant needs, which leads them to irrigate too much.

Hence it may be better to look on the specific local situation to recover who can contribute to water reform than to set up new organization with non-working committees. There cannot be a nation-wide rule for this, as institutions vary in each village as seen at the example of the *sud aksakalov*: In Zhany Pakhta there were even newspaper article about them as they are more successful than other ones. It is said to have a lot of influence as only people with authority are its members. In contrast, in Studencheskoe the villagers did not mentioned the *sud aksakalov* as an organization in the village. When asked for it, one woman answered: "O, these are just some relatives that meet and proclaim their opinion". It shows that institutions do not have to be traditional to function, but to be accepted by the population and have to receive commitment.

8.3 Re-focussing donor priorities

With the reform being so closely connected to donor programs, their design has a huge influence on the incentive set for the different actors.

It turns out that the success or failure of WUAs do not only depend on structural realities, but very strongly on the people. It is crucial to have a director or chairman who knows how to solve disputes and is in state to take tough decisions. This is also confirmed by other studies (Hassan et al. 2004: 39). A main difficulty is to get qualified and committed personnel as there are little incentives for the job. With personal capacities being so important, donor priorities should focus on this point. However grants are often oriented towards technical equipment and not towards covering salaries. WUA that are eligible to grant programs are selected according to agricultural parameters of the member farms and not according to community awareness or staff quality. A further result is that there is a need for incentives for farmers to engage actively in WUA reform and understand ISF payment. This was neglected so far. "To lure a donkey across the street, you lay carrots for him. But for WUAs there were no carrots to show to farmers that the system is good" (k25:17-18). But the time that is needed to organize people was underestimated by the reform program and donor projects. The hitherto existing approach of providing training for council members and then waiting for a trickle-down is not sufficient. An expert suggested that the formation of a WUA should be anteceded by a twelve month community awareness program (k17:34).

A representative of ADB agreed that changing attitudes and raising ownership of the WUA is essential, however, its way of achieving it is forcing people to pay: "These institutional things are rather difficult because people need to change for new attitudes, they need to rely on themselves. So as a part of this exercise we requested with the loan repayment conditions that community will contribute 5% of the grant before the civil works will start. (...) To make them real owners of this project" (k15:2-5). However, financial contributions will not change attitudes.¹³ Also there is a danger in using the credit program as incentive, reflected in experiences by other village development projects: "The population tends to be more interested in hardware [rehabilitation and development], and this component is used as a carrot, in order to make them accept the software [mediation and negotiation], which in turn is not given the appropriate time and attention." (Regional Dialogue and Development Project, quoted in Bichsel 2005: 62).

Incentive setting and effective sanctions can work to a certain degree. Long-term commitment to new organizational forms and compliance of rules however can only be achieved by a change of attitude and internalized patterns of behavior of all involved actors.

¹³ The financial contribution by the way is sometimes paid by villagers now living in the city.

9. CONCLUSION

WUA are filling a gap, when after the dissolution of the FSK nobody felt responsible for on-farm water management any more. This situation provided lots of possibilities for unfair and biased water distribution. The WUA provides the possibility to give water a “host” again.

But the way the WUA concept is implemented is prolonging problems rather than challenging them: WUA faces now the problems the RayVodKhoz was and still is facing: Underpaid staff, no incentives for good work, bad infrastructure, lacking technical equipment, difficulties in collecting ISF, etc. There are a lot of incentives for local administration to implement WUA reform. However, those incentives do not exist for the water users. That is because the reform is implemented top-down and is only addressing the technical-financial aspects of WUAs neglecting their political, societal features. In this way, the current reform is not a solution of the problems of irrigation management, but only shift the problems to another level.

This results in incentives contrary to the original objectives of WUA. The economic aspect to introduce monetary valuation in irrigation management fails because of the features of the agrarian sector that does not provide the necessary institutional environment. The political aspect to make WUAs an instrument of local self-governance and empowerment is hindered as it threatens existing patterns of (political) culture and societal norms. Water management is nested into certain cultural norms of behavior that limit the compliance to rules when they are not perceived as legitimately.

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