



Conflicts on Irrigation Water in the South of the Kyrgyz Republic

ACTED



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PREFACE

This report was prepared by Asyl Undeland based on data and materials of Mirgul Amanalieva and Aizhan Tursalieva from Rural Development Fund (RDF), who conducted an extensive desk review, interviews and discussions with the stakeholders.

RDF team was consulted by Baiysh Abdrazakov, who provided his valuable knowledge of the irrigation water issues in the south of the country. The report is based on the analysis of documents and in-depth studies conducted in nine *aiyl aimaks* of Osh, Jalalabad, and Batken regions.

The research team expresses its gratitude to the managers and staff of the WUAs in the three oblasts, where the research was conducted, as well as to the Regional Department for Water Resources for providing valuable information on access and distribution of irrigation water in the South of Kyrgyzstan.

The research team also would further like to express its gratitude for the financial support of this work, provided by ACTED's Conflict Mitigation through Targeted Analysis and Community Action (COMTACA) project. The COMTACA project is an initiative of ACTED, supported by USAID, that aims to directly support local communities and the national administration in identifying vectors of conflicts, dispute mechanism and peace building activities to contribute to a safer community for all. RDF appreciates overall guidance and support of Ms. Mary Rose O'Brien, Project Manager, Ms. Vera Bersudskaya, and all members of the ACTED team.

The findings, interpretations, and conclusions expressed in this report do not necessarily reflect the views of ACTED or USAID. RDF is responsible for the conclusions and accuracy of data in this report.

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
ACTED	Agency for Technical Cooperation and Development
<i>aiyl aimak</i> (AA)	Rural municipality area
<i>Aiyl bashy</i>	Head of village appointed by the Head of AO
<i>aiyl kenesh</i> (AK)	Rural municipality's council
<i>aiyl okmotu</i> (AO)	Rural municipality administration
<i>Akim</i>	Head of Rayon State Administration
<i>Ashar</i>	Traditional community volunteer work for common benefit
CMC	Conflict Mitigation Committee under the WUA Board
COMTACA	Conflict Mitigation through Targeted Analysis and Community Action
DWR	Department for Water Resources
EWN	Early Warning Network
FGD	Focus Group Discussions
I&D	Irrigation and Drainage
IFI	International Financial Institution
ISF	Irrigation Services Fee
<i>Murab</i>	Water Specialist in the WUA
NSC	National Statistics Committee
O&M	Operation and Maintenance
Rayon	District
RDF	Rural Development Fund
RDWR	Rayon Department for Water Resources
TORs	Terms of Reference
UNDP	United Nations Development Program
USAID	United States Agency for International Development
WB	World Bank
WU	Water User
WUA	Water Users' Association
ZR	Zonal Representative

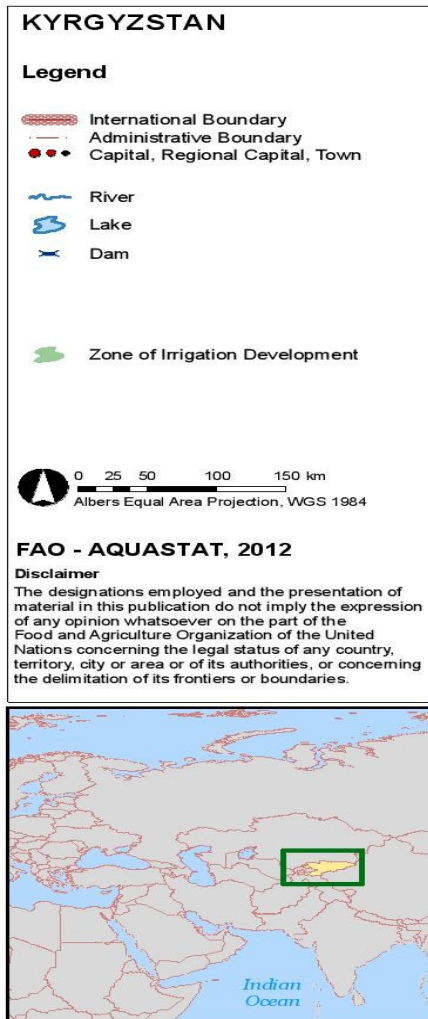


Figure 1. Irrigation Map of the Kyrgyz Republic

Source: FAO. http://www.fao.org/nr/water/aquastat/countries_regions/KGZ/Kyrgyzstan.pdf

EXECUTIVE SUMMARY

The Kyrgyz Republic is a small, mountainous and landlocked country, with more than 65 percent of the population living in rural areas and relying on agriculture for income, subsistence, and food security. Due to the geographical, terrain, and agri-climatic conditions, agriculture heavily depends on irrigation water, since 90 percent of crops are grown on 1.3 million ha of irrigated land.

Since the collapse of the Soviet Union, the complex irrigation and drainage inter farm systems, and especially on-farm irrigation networks, have been rapidly deteriorating, which has led to decreased quantity and quality of water reaching farms. To address the void in management of on-farm irrigation networks, which used to be maintained by the collective and state farms, the Government of the Kyrgyz Republic conducted a decentralization reform, transferring water structure management to the new institutions - the Water User Associations (WUA). Currently more than 475 WUAs have been established throughout the country; however, their performances vary depending on various social, economic and technical factors.

Water is a vital resource given the Kyrgyz Republic's dry climate, which is used not only for production, but also for livelihoods and many other purposes, making dependency of rural population on it even stronger. In the case of irrigation water, the predicament arises from competition to use more of a scarce resource. The growing competition over access to irrigation water has been fueling conflicts in many rural areas. Seasonal water scarcity during agricultural season from April to September is especially acute in the south of the country, where due to limited areas of arable land, high population density, lack of off-farm employment possibilities, the majority of farms are smallholding farmers, with tiny plots of approximately 0.2 ha per household.

ACTED, the implementing partner for the Conflict Mitigation through Targeted Analysis and Community Action (COMTACA) Project funded by the USAID, in its aim to directly support local communities and the Government in its will to identify vectors of conflicts, dispute mechanism and peace building activities contracted RDF to undertake multiple actions. It explored the origins and drivers of conflicts around irrigation water, as well identified courses of action for government, civil society, or community leaders to relieve or resolve existing or emerging disputes over access to and use of irrigation water in the South of Kyrgyz Republic. The research employed various qualitative methods, such as desk review of major legal and background information, focus group discussions, expert interviews, and in-depth interviews of major stakeholders.

The types of conflict that arise stem from the perception of actors that their ability to derive benefit from the resource of irrigation water is constrained. Perceptions of constraint in accessing water in turn are related to expectations of parties regarding their access. Thereby, conflicts are amongst the actors involved with the use of irrigation water: Rayon Departments of Water Resources (RDWR), WUA management and WUA staff (*murabs*), individual users, and groups of users. One can classify user groups into several types according to demonstrated commonality of interests in accessing water: upstream communities; downstream communities; state border communities; ordinary people in their communities; and to some degree ethnic groups.

From this constellation of actors the following four major types of conflict are observed:

1. Organizational Conflict: RDWR versus WUA management and among WUAs
2. WUA management/*murabs* versus powerful individuals
3. WUA management/*murabs* versus ordinary people
4. Community versus community, particularly upstream versus downstream populations, communities in neighboring countries along the border; and/or ethnic groups.

The research reviews and analyzes the underlying conditions that prompt conflict, such as high poverty level in rural areas with mostly subsistence based agriculture, when farmers are not able and not willing to invest in the improvement of irrigation infrastructure due to limited land size and derived income from it.

There is a general scarcity of water during agricultural season, especially during June-August, which is caused by inadequate state support to the on farm irrigation system in general, and to the poor condition of on-farm irrigation infrastructures.

Another driving force of conflict relates to institutional weakness of Water Users' Associations (WUA) that compromises their ability to serve as the regulating entity for use of irrigation water. These problems are due to poor accountability and governance with no internal arrangements to ensure representation of water users' in decision making; and to management weaknesses, especially in maintaining the basic contractual premise of WUAs: collection of user fees in exchange for regular, adequate supply of water; and problems with the legal framework for their operation.

There are other general factors contributing to conflicts over irrigation water, such as lack of agricultural knowledge about irrigated farming, the climate change and frequent occurrence of natural disasters. In border communities, the conflicts arise due to non-delimited border areas and ineffective agreements on water use between the governments of Tajikistan, Kyrgyzstan, and Uzbekistan.

The findings from the case studies and review of underlying factors of conflict point to the types of specific actions that can contribute to prevention and mitigation of conflict. The water management related recommendations address advancement of legal framework for WUAs, strengthening the WUAs institutional framework, and point out the need to search for innovative opportunities for reinvestment in infrastructure through micro credit schemes based on community solidarity.

I. BACKGROUND INFORMATION

The Kyrgyz Republic is a mountainous, landlocked country of 198,500 km², where more than 65 percent of population lives in rural areas and relies predominantly on agriculture. More than half of rural households in the country are dependent to some extent on crop and livestock sales, which constitute over a third of their income¹. Agriculture contributed only 21 percent of GDP in 2010, but it plays a crucial role for the economy, providing about one- third of the country's employment, ensuring household food security and consumer price stability, and being a leading source of exports. Most farmers interviewed in the study areas are small holder farmers, with 344,492 (99 percent) being individual peasant farms. People continue to engage in agricultural activity only due to limited viable off-farm opportunities in rural areas. On more than half of the country's arable land farms grow staple crops, such as grain (53.6 percent of arable land), especially wheat and barley.

Table 1. Crops by Land Area and Farm Type in Kyrgyz Republic in 2012

Crops		Area (ha)	Crop Area by Farm Type (ha)			
			State farms	Collective farms	Household plots	Peasant farms
<i>Grain including:</i>		625,200	3,900	34,900	36,500	549,900
	Wheat	146,800				
	Winter wheat	177,700				
	Barley	135,300				
	Winter barley	12,100				
	Oat	900				
	Maize	95,300				
	Rice	7,300				
	Pulses	49,200				
	Millet	300				
	Buckwheat	300				
<i>Technical crops, including:</i>		94,600	2,100	3,300	3,200	86,000
	Cotton	31,000				
	Sugar beet	5,600				
	Tobacco	3,400				
	Oil bearing crops	54,600				
<i>Potato and vegetables:</i>		135,900	500	1,800	45,800	87,800
	Potato	81,600				
	Vegetables	45,400				
	Melons and gourds	8,900				
<i>Feed crops</i>		310,000	2,600	10,900	14,200	282,300
Total		1,165,700				

Source: Kyrgyz Republic Agriculture in 2012. National Statistics Committee

¹Poverty Assessment. World Bank, 2007

The poverty level in Kyrgyz Republic averaged 29 percent in 2009, with uneven geographic distribution: 31.5 percent in Batken region, 36.9 percent in Jalalabad region, and 38.3 percent in Osh region (NSC, 2011). Household food insecurity is high in these regions with approximately one-third of households being food insecure, 20-22 percent facing severe food insecurity and 12-15 percent facing moderate food insecurity².

The Kyrgyz Republic generally has sufficient water resources originating from the melting of snow and glaciers, formed by perennial and ephemeral rivers, brooks and springs, freshwater and brackish lakes, including the lake Issyk-Kul. The average annual precipitation in the Kyrgyz Republic is not adequate to support cropping, with the annual rainfall varying between 350-700 mm in the south of the country. Annual evapotranspiration (crop water demand) exceeds effective precipitation by a factor of four, particularly during the summer months, making irrigation critical to agricultural production. Data from the On-farm Irrigation Project –I (OIP-1) indicate that crop yields of farms with access to rehabilitated irrigation systems are between 10 and 20 percent higher than those without improved irrigation³. With a high level of land fragmentation, the agricultural sector in the Kyrgyz Republic is driven by small-scale irrigated agriculture with 90 percent of crops grown on 1.3 million ha.

As other ex-Soviet countries, the Kyrgyz Republic inherited an extensive and complex water irrigation and drainage infrastructure system, which during the Soviet time was maintained with the support of significant investments from Moscow. The economic difficulties of the transition period, accompanied by severe shortage of funds, dismantling of collective and state farms in the mid-90s, led to an institutional void in management of local irrigation infrastructure and its fast deterioration. In order to maintain this infrastructure, the Kyrgyz Government, with the support from International Financial Institutions, initiated reforms in the water management sector by devolving management of secondary irrigation systems to the users themselves through the establishment of Water Users' Associations and by introducing principle of payment for use of water.⁴

Water in Kyrgyz Republic is surface gravity driven and comes primarily through engineered secondary canals and ditches. As a result, upstream villages and users have access to more water and on a timely basis, while downstream users often do not get sufficient or any water. According to the perception of local authorities and leaders, downstream users tend to be poorer than upstream users due to these particularities in water supply. Farmers' choice of crops becomes dependent on water availability. Participatory mapping exercise showed that if upstream farmers are able to grow rice and other cash crops for trade, downstream farmers due to shortage of water, resort to growing mostly wheat for own consumption. Such disparity leads to tension between upstream and downstream users, which often escalate into open conflict.

As a Soviet legacy, Kyrgyz Republic has many disputed and non-delimited border areas with neighboring countries Uzbekistan and Tajikistan, which contribute to tense interstate relations in regards to sharing natural resources. During the Soviet period, the entire network of rivers shared among its republics was managed by Moscow through the water-use quotas. The Soviet system

²Second Update on Food Security and Nutrition Status in the Kyrgyz Republic. World Food Programme, April 2010

³Project Paper for the Second on Farm Irrigation Project, WB. 2011

⁴Kyrgyz Government Regulation on Water Users' Associations in Rural Areas, adopted in 1995

involved integrated water policies, where in the summer, the two upstream republics (present day Kyrgyz Republic and Tajikistan) released water to the downstream ones (present day Kazakhstan, Uzbekistan, and Turkmenistan) for irrigation and hydroelectric power generation. In return, during the winter, when it was not practical to release water, the downstream republics provided those upstream with gas and coal to generate electricity.

Demand for water in the Kyrgyz Republic, especially in the southern parts of the country, is increasing due to population growth, appearance of new settlements, expansion of agricultural land area, especially with the revival of a pasture based livestock sector, and increasing use of water for industrial and construction purposes. Water scarcity only emerges in agricultural season, mostly from April through August, and is largely caused by ineffective irrigation infrastructure and water management.

There are natural and human affected factors of availability of water.

- **Natural factors affecting availability of irrigation water.** Climate change influences the availability and quality of water in the Kyrgyz Republic with the rise in temperatures causing fast melting of glaciers, ice caps and ice sheets, decreasing rainfall and increasing water evaporation, leading to more frequent drought occurrences, river flooding and water logging. It is estimated that although the number of rainy days in Ferghana valley stays the same, the intensity of the spring rainfalls is increasing. As a result, water deficits and droughts will be more frequent, especially in the south of the country. Water deficits are likely to last until mid-fall.⁵ Interviews and FGDs with experts and farmers in the studied areas showed that the water flow has become unpredictable, with relatively more water in rivers and canals earlier in the spring, but less water in the summer season, when it is needed the most for irrigation purposes. Erratic precipitations due to climate change make it difficult for farmers and water management institutions to predict, assess, and plan irrigation needs. Frequent landslides and mudslides clutter up what is already dilapidated infrastructure, lead to soil degradation, and affect water quality. The study respondents similarly noted that more frequent landslides, mudslides, and floods also affect supply of water, destroying irrigation systems, obstructing water flow with garbage, making water muddy.
- **Human induced factors affecting availability of irrigation water.** Water is renewable, but finite source and its existence can be controlled only by nature. People can only manage its aspects such as to access, to preserve, and to allocate between different users. However, human influence can significantly decrease water flows through ineffective regimes of land management and use, weak agricultural knowledge, including on soil reclamation and irrigation of crops, and inefficient management of water supply and distribution.

Land management in Kyrgyz Republic is inefficient. The farming system in country is characterized by an overwhelming majority of farms being established on very small land plots. In the south of the country, the average land plot allocated to household in the course of the land privatization reform in mid 90s was around 0.2 ha in size, with

⁵Climate Change Impact on Pastures and Livestock Systems in Kyrgyzstan. Draft Report for the IFAD, 2013

maximum size of about 0.5 ha. Such land fragmentation inhibits commercialization of the agriculture and dictates its at large subsistence nature.

Agriculture is one source of income in the South of the country, but not the major one. About 20 percent of incomes of population in Batken, Jalalabad, and Osh Oblasts in 2009 came from the labor migrants working outside of the country⁶ (predominantly in Kazakhstan and Russia). For most food products, actual consumption in the country is far greater than what is produced, meaning that major food stuff, such as wheat flour is imported.⁷

The Soviet legacy of decision making by the state through specialized experts led to a general deterioration of farming knowledge. Farming is largely undertaken without much consideration of selection of crops, or of available water and quality of soil. There is a lack of modern technologies used in cropping, leading to little investments made. Such low level of knowledge on farming principles leads to demand for irrigation water that is beyond what infrastructure is likely to provide.

- *Water management services are thriving to achieve sustainability.* The Law on Water adopted in 1994 and the Water Code adopted in 2005 have laid the foundation for the establishment of the Water Users' Associations. The first WUAs had started appearing in Kyrgyz Republic in 1996 with the support of the ADB. The Kyrgyz Government issued resolution No 473 on Water Users' Associations in Rural Areas in 1997 and the Law on Unions (Associations) of Water Users in 2002, which further advanced principles for decentralized water management to the WUAs, spelling out their roles and responsibilities.

The national-level Department for Water Resources Department (DWR) within the Ministry of Agriculture and Water Resources (MAWR) is the central state body responsible for developing policy for water management, including regulation of the use of the water fund (the totality of available water in the country); management of state-owned hydro-economic capital assets; meeting the water requirements of the population and agricultural producers; development of irrigation infrastructure; conducting state accounting of water use; administrating the state water cadaster on water use section and control of state water use.

Each oblast has a Basin Water Resources Department (BWRD). Each Oblast DWR has WUAs' Support Unit, which is tasked to provide technical and methodological support to the WUAs.

The Rayon Departments for Water Resources (RDWR) are the lowest-level territorial government agencies for water management. They carry out the state policy on operation and management (O&M) of water bodies, and regulate distribution and use of water resources, water supply to agricultural water users, water use control.

⁶ National Statistics Committee, 2011

⁷ Irrigation in Figures, 2012

End user on farm irrigation systems are managed by the Water Users Associations. WUA are associations, representing all Water Users (WUs) of the *aiyl aimak*, with the General Assembly being the highest body, the WUA Board being the supervisory body, and the Directorate being an executive body. The Law on Unions (Associations) of Water Users also defines the responsibilities of the Revision Committee and Conflict Mitigation Committee, both of which started to be formed in 2002. The Conflict Mitigation Commissions (CMC) can consist of 3-5 persons, and usually meets when there is a need to address a dispute.

WUAs are responsible for operation of Irrigation and Drainage (I&D) networks and water distribution among WUA members. They look after the construction, modernization, repair, cleaning and other actions that support the proper condition of the WUAs' irrigation network and its development. Finally, they are in charge of water pollution prevention and professionalization of its members in irrigated agriculture.

In situation with fragmented land use, subsistence nature of agriculture, and low level of farming knowledge, water management is focused mostly on water distribution among all users and patchy maintenance and rehabilitation of networks.

Currently, about 80% of the country's on- farm irrigation system, serving about 767,000 ha, is managed by the 475 WUAs, which are responsible for the management of 22,700 km of on-farm irrigation schemes, 4,300 km of drainage networks, more than 250 water pools, and more than 20,000 hydro-technical facilities.⁸ The remainder comprises schemes with independent abstraction works that are not under the DWR responsibility.

- Engineering irrigation schemes with lined canals represent 40.2 percent of the area. They have water-inlet structures on rivers, which provide silt protection, are available for flash flood water flow and provide guaranteed off-take from irrigation sources.
- Semi-engineering schemes have water-inlet structures, but canals are only partly lined and partly equipped with water distribution structures. The area served by such schemes represents 34.4 percent.
- Non-engineering schemes have no water-inlet structures; canals are not equipped with water distribution structures and are not lined. The area served by such schemes accounts for 25.4 percent.⁹

The WUA Directorate is headed by the director, and includes accountant and *murabs*. *Murabs* are hired by the WUA Directorate for the purpose of water infrastructure maintenance and repairs, distribution of water to users, and collection of fees.

Some areas, also have volunteer *Zonal Representatives (ZR)*, each responsible for designated irrigation areas of around 30-50 ha. These ZR monitor compliance of water

⁸ CAIC Consulting, 2010

⁹ Irrigation in Figures. 2012

users with established water withdrawal schedule and informally monitor the work of *murabs*.

The Kyrgyz Government, with financial support from the WB and the ADB, has been rehabilitating on-farm irrigation system. Up to now 223,651 ha (29 percent) of all on farm Irrigation and Drainage (I&D) systems are rehabilitated. An additional 34,800 ha of I&D systems are being rehabilitated under the On Farm Irrigation Project -II funded by the WB. A shortage in funding and a lack of technical capacity in WUAs have led to considerable seepage and leakage losses in the distribution system, resulting in an estimated conveyance/distribution efficiency of 55 percent.¹⁰

WUAs' activities are mostly funded by the revenue collected from WUs through the Irrigation Services Fees (ISF) for the delivery of water. The average collection rate of water user fees in the study areas is about 60-70 percent. Although WUAs can impose fines on ISF non-payment, there were no cases in studied areas where WUA used administrative fines or tried or was able to bring nonpayers to court. These free riders are mostly better-off farmers and individuals affiliated with power structures.

II. WATER CONFLICTS IN THE STUDY AREAS

RDF conducted an in-depth case study in three AAs: Bazar Korgon AA in Bazar Korgon Rayon of Jalalabad Oblast, Otuz Adyr AA in Karasuu Rayon of Osh Oblast, and Tort Kul AA in Batken Rayon of Batken Oblast. The validation of the findings of the three case studies was conducted in additional six AA of the southern regions. According to interviews with national level officials working on irrigation water, the picture of conflicts around irrigation water in study areas is applicable to the whole country, but especially to the southern regions.

Table 2. Social and Economic Characteristics of Study Areas

AA	Oblast	Population	Poverty level (%)	Area under major crops (ha)			Average arable land per inhabitant (ha)
				Wheat	Rice	Potato	
Otuz Adyr	Osh	15,918	30.22	241	-	28	0.15
Bazar-Korgon	Jalal-Abad	35,486	29.6	390	80	88	0.77
Tort-Gul	Batken	7,183	54	180	120	10	0.32
Atabekov	Jalal-Abad	25,447	37.42	40	316	100	0.14
Seydycum	Jalal-Abad	14,728	46.6	470	320	55	0.25
Jany Nookat	Osh	24,464	30	470	320	55	0.5
Chek-Abad	Osh	5,364	43	240	10	140	0.12
As-say	Batken	7,330	29.15	55	5	20	0.3
Suu-Bashy	Batken	5,252	50.3	200	100	50	0.03

Source: data collected by RDF in AOs

¹⁰ Irrigation in Figures. 2012

1. The characteristics of water conflicts in Bazar Korgon AA, Bazar Korgon Rayon, Jalalabad Oblast.

Bazar Korgon AA is comprised of six villages with a population of about 35,486 people in 6,800 households, 30 percent of which are under the poverty level. The AA is located on the border with Uzbekistan, about 80 percent of its population is comprised of ethnic Uzbeks, with the remaining 20 percent being ethnic Kyrgyz. Several ethnic conflicts occurred between Kyrgyz and Uzbek groups in the last decade. The last violent conflict in that area happened in June 2010.

The climate in the area is temperate, continental with dry summers, with the majority of the land being arid and semi-arid. There are about 17,915 ha of arable land in this AA, with 14,086 ha being irrigated (averaging 0.77 ha per person). The overwhelming majority of the communities are small land holding farmers, who grow mostly vegetables, feed crops, and cotton. All interviewees noted that the major source of income is remittances from the labor migrants working in Russia.

Figure 2. Water Canals in Bazar Korgon AA



Source: RDF, 2013

Irrigation water comes mostly from Kara Unkur River through 18 on-farm canals of 142 kilometers in length. This water is mostly used for irrigation purposes, but in Jeti Koshkon and Ak Tailak villages, due to lack of potable water, it is also used for domestic purposes.

The major problem with irrigation water in Bazar Korgon AA is high water losses due to poor condition of canals. WUA's management stated that about 40 percent of water is lost with roughly 30 percent of irrigation canals made of concrete, with the rest canals being unlined. Such high losses lead to shortage of water, especially in the downstream villages, in which interviewees claimed that they receive less than a half of what is delivered to the upstream villages.

Irrigation systems in Bazar Korgon AA are managed by two WUAs "Murap" and "Abu Hyat" established in 2009. These WUAs are equipped, have office facilities with computers and have

vehicles procured with credit funds received from the Kyrgyz Government through the WB funded On-Farm Irrigation Project. These two WUAs received substantial support from other donors, as summarized in Table 3.

Table 3. Donor Support to WUAs in Bazar Korgon AA

Year	Donor	Project	Provided support	Support amount
2008	WB	On Farm Irrigation Project	Vehicles for WUA, New hydrological facilities	about US\$ 475,000
2009	USAID	WUASP (WUA Support Program)	Hydro facilities	about US\$ 230,000
2012	Red Cross	Osh and Jalal-Abad Water and Waste Water Rehabilitation Project	Rehabilitated water reservoir and installed 8.5 km of water pipe	about US\$ 545,000
2014	ADB	Rural Water and Sanitation Project	Planned to ensure potable water supply to all villages	US\$ 3.8 million
2012	Helvetas	TASK	Hydro facilities	about US\$ 4,300
2012	OSCE	WUAs Support Project	3 sets of Hydro facilities 2 bicycles for WUA	about US\$ 3,200

In addition, both WUAs Directors were trained by various projects on issues concerning legal framework for WUAs, financial management, technical maintenance of water structures, IT, use of agricultural machinery, and recommended norms of water consumption for different crops.

The ISF for water users is established by the WUAs' Directorate based on the plot size and on the crop grown on it. Some WUAs sign contract with water users, but the majority do not. ISF collection is low and delayed, with a majority of users paying after harvesting and as late as December. According to the interviews with WUAs management and members, some better-off farmers and influential people often do not pay the ISFs. Another problem with the collection of the ISFs in that area relates to the WUA's inability to access reliable information on land ownership. There are many land plots, mostly of labor migrants, who are either informally rented or sold, some being land plots, which had been withdrawn from the agricultural use by the local authorities and planned for new housing developments. Lack of information on ownership makes it difficult for WUA to collect irrigation water payments.

Even though WUAs are not able to collect ISFs in full, they still have to pay the RDWR according to the contract monthly, as well as full social benefit payments for its salaried employees. Low collection of ISF leads to accruing debts to RDWR and to the State Social Fund upon which additional fines are levied. RDWR already filed a case against one of the WUA in that area.

Conflicts on irrigation water emerge in Bazar Korgon AA during the cropping season, especially in June-July. The problem is deepened by the fact that people also have limited potable water and use irrigation water for domestic purposes, making access to water and its quality a vital issue.

2. The characteristics of water conflicts in Otuz Adyr AA, Kara Suu Rayon, Osh Oblast

Otuz Adyr AA is comprised of eight villages with 15,918 people living in 3,795 households. The majority of the population in this AA is ethnic Kyrgyz (90 percent), with a small proportion of Uzbek ethnic group (8 percent). Arable land represent 6,347 ha with less than half of it being irrigated (3,134 ha), making the average size of an irrigated land plot about 0.15 ha. Crops cultivated are cotton (26 percent), vegetables (17 percent), wheat (15 percent), melons and water melons (15 percent), and corn (10 percent).¹¹

Major irrigation water comes from the Kurshab River, which is a left tributary of Kara Darya River, coming from the melted glaciers of the northern side of the Alai range. The Kurshab River is 155 kilometer long and has more than 40 tributaries. It is characterized by rapidly and suddenly formed alluvium. The river is prone to mudflows and landslides, especially in late spring. The Kurshab River water catchment system is located in Kara Suu Rayon, and supplies water to Otuz Adyr and Kochkor canals. Water from canals is also used for drinking and domestic use.

About 80 percent of arable land in Otuz Adyr AA is irrigated from the Otuz Adyr canal. The canal is heavily cluttered up with alluvium and water going to smaller canals is extremely silted. The quality of irrigation water is poor; it becomes especially muddy in the spring. The existing silting system is not capable to filter the silt and dirt.

There are three WUAs functioning in Otuz Adyr AA: “Maz Aikal” (established in 2002), WUAs “Ener Sai” and “Bai El Asyl” were formed in 2009. Each WUA manages a canal. Irrigation is surface based with the majority of canals being unlined.

Figure 3. Irrigation in Otuz Adyr AA



Source: RDF, 2013

Water is scarce during the agricultural season, and especially in June-August, when the main conflicts happen between upstream and downstream villages, such as Chook, Kojom Bak, Savai Aryk, and Osh-3000. Several cases were reported during the FGDs. For example, several years ago people from downstream villages tried to block the road to protest against a shortage of

¹¹ Social passport of Otuz Adyr AA.

water due to the fact that upstream villages withdrew more water than they were allocated by the RDWR.

In addition, there are problems related to the quality of water, with canals being cluttered up with trash, silt and mud. The area is prone to mudslides and landslides which also destroy infrastructure and affect water supply.

However, all interviews and participants of the FGDs indicate that the number and intensity of conflicts over water has decreased during the last several years. Interviewees believe that this occurred because the ISF payment rate has increased, although users still owe more than 200,000 soms to the WUA (about USD 4,000) in back payments.

In that WUA, water users are supposed to pay 30 percent of ISF in advance, according to the WUA Directorate, yet more than 40 percent of people still do not follow that rule and violate established schedule of water delivery.

Table 4. Donor Support to WUAs in Otuz Adyr AA

Year	Donor	Project	Provided support	Support amount
2008	WB	On Farm Irrigation Project	Procurement of vehicles for WUA, installing new hydro facilities	about US\$450,000
2009	SDC	Rehabilitation of Water Supply System	Training, installing of 7 new hydro facilities	US\$ 25,500
2011	UNDP	Promoting Integrated Water Resource Management and Fostering Transboundary Dialogue in CA	Cleaning of 10 km of canal, work for labor program	about US\$ 9,000
2012	OSCE	Project for WUAs' Support Program	Installing hydro facilities	US\$ 250,000

3. The characteristics of water conflicts in Tort Kul AA in Batken Rayon, Batken Oblast

Tort Kul AA is comprised of five villages, with population of 7,183 in 1,436 households. Tort Kul AA is neighboring with Uzbekistan and Tajikistan with several disputed border areas.

More than 54 percent of households in Tort Kul AA are considered to be living under the poverty line. Total irrigated land in the AA accounts for 856 ha (average plot size per household is less than 0.32 ha). According to the interviews, FGDs and Social Passport of the Tort Kul AA, people predominately grow grapes (40 percent of land is under vineyards), cherries and apricots (35 percent of land is under horticulture). The rest of the irrigated land is mostly under vegetables, beans, maize, and winter wheat. There is a wine making plant in this area which was built during Soviet time and that used to process 2,800 tons of grapes annually.

Figure 4. Horticulture in Downstream Village and Flooded Roads in Upstream Village of Tort Kul AA



Source: RDF, 2013

The area is prone to natural disasters, especially landslides, which damage irrigation infrastructure and clutter up canals making water muddy and silted.

Currently, the irrigation water to villages in Tort Kul AA comes mainly from Isfara River via the Tort Kul canal and other tertiary canals. Water is used not only for irrigation, but in some villages it is also used for drinking and domestic purposes. It is of poor quality and according to interviews in the area it leads to health problems with high rates of typhoid, malaria, and hepatitis among local population. Many people bring potable water in cisterns from Batken town.

The “Bavash” WUA in Tort Kul AA, was established in 1999 and registered in 2003. This WUA serves canals with a total length of 22.27 km. There is an exceptional case in this AA with the agricultural cooperative, “Kojoshken”, which receives water from the Sokh River, managed not by the WUA, but directly by the RDWR. This cooperative signs agreement directly with the RDWR and pays all water fees to it. Another case of contracting directly with RDWR is for use of water received from the pump station in Tort Kul AA. It is also managed by the RDWR and ISFs payments are collected from users by the *aiyl okmotu*.

In Tort Kul AA the roots of the water conflicts are also due to inefficient and deteriorated irrigation infrastructure, which is not capable to deliver sufficient, timely and good quality water. Another important cause of the water conflict in that AA is that it shares its borders with Uzbekistan and Tajikistan, where no delimited state borders are recognized. The irrigation infrastructures built during the Soviet period was shared by all three republics. Rivers and canals go from the Kyrgyz Republic, cross Tajikistan and Uzbekistan and come back to the Kyrgyz Republic. Agreements on sharing water made under the Soviets are not accepted and honored anymore. As a result, there have been many conflicts along the border over access to water and its sufficiency. There have been frequent conflicts between WUs in the Kyrgyz Republic and Uzbekistan over amount of water received and access to infrastructure located on the territory of Uzbekistan for repair and cleaning.

Table 5. Donor Projects Support to the WUA in Tort Kul AA

Year	Donor	Provided Support	Support amount
2007-2013	Counterpart Consortium, funded by the EU and USAID	Rehabilitation of pump station in Aygultash village of Suu-Bashy AA	US\$ 1,931
2007-2013	Counterpart Consortium, funded by the EU and USAID	Rehabilitation of 2 km of water canal and pump station in Chon-Kara village of Tort-Gul AA	US\$ 2,109
2012-2013	UNDP	Building of roundabout canal	about US\$ 32,000
2000-2010	ADB	Reconstruction of water canal in Chek and Chon-Talaa villages)	US\$ 36,650

III. CONFLICT TYPOLOGY

Scarcity of water during agricultural season leads to competing use and conflicts. Water is a vital resource given the Kyrgyz Republic's dry climate, which is used not only for production, but also for livelihoods and many other purposes, making dependency of rural population on it even stronger. In the case of irrigation water, the incompatibility arises from competition to use more of a scarce resource. The types of conflict that arise stem from the perceptions of actors that their ability to derive benefit from the resource of irrigation water is constrained. Perceptions of constraint in accessing water in turn are related to expectations of parties regarding their access.

Understanding local water conflicts through their typology and strengthening conflict prevention by assessing conflict context, its stakeholders, identifying and addressing the root causes of conflict and scaling up successful conflict resolution examples is of high priority. It is important to consider empirical evidence for country's context of the conflicts, specific geographical, economic, social and cultural factors. Field work in the researched AAs indicates both a set of underlying structural issues that lead easily to conflict and types of conflict that occur over irrigation water. The succeeding section provides a consolidated analysis of the many underlying issues that contribute to the recurrence of conflict in the south of the Kyrgyz Republic.

In the Kyrgyz Republic, the conflicts happen amongst the actors involved with the management and use of irrigation water: the Rayon Departments of Water Resources; WUA management and WUA staff (*murabs*), individual users, and groups of users. Groups of users can be classified into several categories based on demonstrated commonality of interests in accessing water: upstream communities; downstream communities; border communities; and to some degree ethnic groups. From this constellation of actors the following four major types of conflict are observed:

- Organizational Conflict: RDWR versus WUA management and among WUAs
- WUA management/*murabs* versus powerful individuals
- WUA management/*murabs* versus ordinary persons
- Community versus community, particularly upstream versus downstream populations, communities in neighboring countries along the border; and/or communities with majority belonging to one ethnic group.

From the content analysis of the interviews, an idea of the relations between most of the stakeholders could be derived. The relations have been evaluated from a qualitative approach,

based on review of documents and taking into account the way that the specific stakeholders referred to other stakeholders during the interviews.

Conflict Type 1: Organizational Conflict: RDWR versus WUA management and among WUAs

The irrigation water supply starts from the RDWR channeling water to WUAs. Every year each WUA submits an application with required water volume to the RDWR and they then sign a contract based on a mandatory form approved by the Government in 1999.¹² Water is not widely considered in Kyrgyz Republic as an economic good with a market value. The rates for cubic meters of water are very low, they were established by the Law on Establishment of Tariffs for Irrigation Water Supply Service adopted in March, 1999 and have not been changed since then. The cost of 1m³ of water in I and IV quarters of the year is equal to 1 *tyin* (about US\$0.5), and in II and III quarters it is equal to 3 *tyins*. In rayons with unfavorable climatic conditions these rates are significantly lower. WUAs then sell water to the water users adding established rates to its expenses (delivery and distribution of water, salaries, social benefits payments, taxes). Over the period 2001-2010 the ISF has increased from KGS 2.74/1,000 m³ to KGS 6.65 /1,000 m³. The WRD and the basin WRDs are financed out of the state budget. Rayon WRDs are financed out of the state budget and water users' funds. Thus, a large portion of the ISF goes to the RDWRs budget, rising from KGS 19.8 million in 2001 to KGS 42.9 million in 2009. Over this same period the ISF collection rate has increased from 71 percent to over 99 percent.¹³ However, these amounts are still largely inadequate to cover actual operation and maintenance needs. To aggravate the situation, according to interviews, some political leaders, including Parliamentary Deputies promise to their constituency to ensure free water supply, which also leads to perceptions among water users that they are entitled to free water.

The RDWR charges WUAs tariffs for water based on these norms of supply rather than on actual delivery. Given infrastructure problems a common perception expressed in interviews and FGDs was that actual receipt of water was significantly below the nominal amount for which the WUA was charged. This is due to the lack of measurement capability to capture the exact volume provided. In several cases this difference was a source of irritation for the WUAs and by extension the users in the community. The problems arising from this difference have to be internally handled by the WUA which must pass along the excess charges to users who are receiving less water than expected. Given that there is no exact measurement of the transfer of water to individual users as well, the scale of the problem is largely unseen.

In several reviewed cases, water supply by the RDWR to the WUAs was significantly delayed, which is critical for vegetation (for instance, Seidikum WUA received water from RDWR with delay of 22 days in 2012).

The conflict between the WUA and RDWR is often extrapolated on other WUAs. For example, the neighboring Bazar Korgon, Siedykum, and Akman WUAs have frequent disputes around the amount of water withdrawn. Because these three WUAs receive irrigation water from the same

¹² Kyrgyz Government Resolution No 233 On Approval of Model Contract for Irrigation Water Supply Services from the State Water Systems

¹³ On Farm Irrigation Project Appraisal Document (World Bank, 2012).

major canal “Levaia Vetka”, managed by the RDWR, and since there are large water losses in the network, in the absence of effective measurement for the amount of water disbursed and withdrawn, there is a perception that upstream WUAs withdraw more water than allocated to it by the RDWR.

Model contract requires that WUAs pay monthly for received water within 30 days after receiving invoice from the RDWR. If payment is delayed, a WUA is obliged to pay a fine of 0.5 percent on due amount for each day delayed. However, this is not a feasible requirement, because water users pay WUAs at large after irrigation season, but mostly after harvest. For example, according to the data provided by the RDWR of Bazar Korgon Rayon, this RDWR provided water to WUAs at the amount of 1,800,000 soms, but only 1,000,000 soms were collected in 2012.

The RDWR filed a case in a court against several WUAs for non-payment of ISFs but the court could not force WUAs to pay since they had no funds on the accounts. In that situation RDWR asked the Finance Police to inspect Bazar Korgon WUAs financial situation as a means of pressuring WUAs to pay. RDWR in case of Otuz Adyr AA also filed a case in a court against the WUAs for non- payment of ISFs.

That type of conflict is essentially between two corporate entities where the relatively shortfall of water is not directly affecting the personal livelihood or welfare of individuals. Hence this conflict is unlikely to lead to violence per se. It does, however, perpetuate poor maintenance of infrastructure and, to the extent that WUAs might mobilize their respective communities, possess latent potential for conflict.

Conflict Type 2: WUA management/*murabs* versus powerful individuals

A common perception was that WUAs were powerless to counter unauthorized diversion of water to private land by persons in the community who enjoyed power. This power was derived by either being associated with the local administration or by having influence over this administration by virtue of wealth, direct connections, or connections with persons at a higher level of government. It should be noted that while these instances were reported, it was not possible to verify that they actually had occurred. Nonetheless, the repeated assertions of this problem suggest that this type of conflict occurs. In this instance, the conflict is around the WUA’s inability on the ground to enforce rules on water use for all. On the other hand, powerful individuals feel authorized to ignore the water use regime, presumably out of an assessment that he/she can bring greater force to bear on the WUA or at least sufficient force to make confrontation a significant cost to the WUA which discourages taking action to accept this accessing of water. Since WUA is charged for total amount requested from the RDWR, it is ordinary people who subsidize cost of water for those powerful individuals who do not pay. The flouting of the rules in turn undermines the WUA’s overall authority and trust in the community, making it a less efficient mechanism for resolving the multiple interests of individuals to accessing water.

This type of conflict carries with it a latent threat of greater conflict (were the WUA to enforce its use regime), the avoidance of which means that it should not normally directly lead to violence between the parties. But it can happen depending on the stance that the WUA would

take in a specific instance (likely leading to backlash). In addition, the record over time in dealing with multiple instances will also lead to expectations of (in) action by the WUA. This situation is reflective of the lack of sufficient social capital within the community where powerful individuals are ready to flout the rules and problems in enforcing social norms of behavior.

Conflict Type 3: WUA Management/*murabs* vs. ordinary persons

This is perhaps the most common types of conflict. It reflects the shortcomings of WUAs in practice to play the role of managing scarce irrigation water versus the bulk of the population which do not have any particularly empowerment in the community (the reasons for WUAs' shortcomings are discussed in the next section). There is significant mistrust among the population regarding the WUAs' competence and trustworthiness, which in turn feeds the perception that certain persons or groups (either powerful, or upstream groups, or those who can bribe the *murabs*/management) gain 'unfair' access to water which is countenanced by the WUA. There is a perception among many users in Bazar Korgon AA, that *murabs* provide more water, timely and for lower price to their relatives, friends, or local authorities. The incentive scheme, when *murab* is paid base salary, and additional fixed amount based on collected rate of payments is not working. The *murabs* in the Bazar Korgon WUA, per instance, are paid depending on collection of ISFs (with a 50 percent collection rate the salary is 500 som, with up to 60 percent collection rate it rises to 4,000 som, and with more than 90 percent collection rate the salary is 5,000 som, which is still low for such work). Since the ISF is established by area size and by crop, *murabs* have room for manipulation, for example, by documenting payment for crops with lower water consumption which would not affect their salary. WUAs are powerless to stop theft of water through the construction of illegal outlets, or by breaking canals and pipes.

WUAs are dominated by individual executives and a few *murabs* with no strong mechanisms for accountability: boards are barely functional and transparency is difficult to obtain, particularly in measuring how much water is supplied and where. Moreover, WUAs have a difficult task in sufficiently fulfilling their duties even with the best of intentions owing to the overall inadequacy of infrastructure that leads to losses. This lack of trust in turn affects' the ability of WUAs to operate, particularly in collecting fees, achieving a balance in the irrigation water usage, and mediating among users when differences emerge.

During interviews, WUs in Tort Kul AA expressed low trust in the WUA, saying that it cannot provide them with sufficient and good quality water. At the same time, there have been cases reported when high level local authorities were getting water through canals specially made for them.

Such incidents, as well as nonpayment of ISF by powerful individuals cause mistrust from users to the *murabs* and in the Bazar Korgon WUA Directorate and many community members do not participate in community volunteer works (*Ashar*) to clean canals and undertake small repairs. Interviewees reported that usually less than quarter of villagers participate in *Ashar*, and even then it is mostly old people and children who participate.

These conflicts between the WUA as regulating entity and individuals do not lead to long-term or violent conflict per se, though individual violent outbursts have occurred which indicate

potential for future conflicts. WUAs are capable of enforcing general rules against individuals or at least not countenance a major unilateral change in the usage of irrigation water by a particular user (even if sanctions are not directly possible). At the same time, the often conflictual relationship between ordinary persons and WUAs provides ample opportunity for the joining of interests into larger group where WUAs lack the power to enforce rules on the ground.

Conflict Type 4: Community versus community

This is a latent conflict that was present in all of the AAs reviewed for this study. In many areas there are water users who suffer from tail end deprivation, where they receive either too little or too late water that is of poor quality.

For example, the conflict in Bazar Korgon AA mostly involves water users from upstream and downstream villages due to high losses in infrastructure and insufficient water supply. Water often is supplied with interruption for 2-3 days, leading to low crops' yields and productivity. Since in Bazar Korgon AA upstream villages are settled mostly by ethnic Uzbeks and downstream villages by ethnic Kyrgyz, there are ethnic grounds for pitting one community against the other. This additional driving force makes the conflict very dangerous.

There are similar problems of insufficient water supply in Otuz Adyr AA, where the conflict mostly involves water users from upstream and downstream villages. When precipitation is low during agriculture season and water is insufficient, farmers also violate established schedule of water supply. They dig their own canals, ditches, and steal water from each other. In upstream villages of Otuz Adyr AA water floods gardens, household plots and roads, while downstream villages lack access to water.

There are frequent conflicts over quantity and quality of water between WUs in the Kyrgyz Republic and neighboring communities in Uzbekistan in Tort Kul AA, because as it was explained earlier, water goes through Uzbekistan territory and comes back to the Kyrgyz Republic with much less water, and often polluted with trash.

Conflicts between communities represent the most dangerous type of conflict in terms of potential damage, though it would require the presence of at least three conditions. First, the WUAs become sidelined as the entity capable of regulating water use among users from competing users. As was seen in the AAs reviewed, the WUAs have numerous institutional weaknesses and the types of conflicts above reflect their weaknesses as an institution. If WUAs are not accepted by a significant number of persons to be the entity for water use, then there is no other institutional framework on the ground that is present to handle the competition for scarce resources. In cases where water usage involves transborder issues, then it is all the more difficult for the WUA to be fully effective. The second condition is the absence of other entities which can call on the coercive power of the State to regulate water usage among users in the event of WUAs being sidelined. There are a number of institutions which can play this role. In particular, *ayil okmotus* can step in (either with or without WUAs) to determine water usage; these local governments would presumably have sufficient local knowledge to quickly intervene. At the same time, it is by no means certain that local government would command the adherence of differing groups on a particular water regime. Ultimately, though hardly a long term solution in terms of water management, police and other law enforcement entities can intervene when a

serious conflict arises; heretofore the police have been noticeably absent in dealing with water usage issues.

The third condition is the coalescing of a grouping around access to water. This would stem from social factors within the communities that would prompt persons to band together for greater access to water (or to deal with a perceived threat to existing levels of access) in the absence of an effective WUA that would regulate use. The most obvious criteria for joining together are groups of proximate neighbors. Because of the nature of irrigation water in the Kyrgyz Republic which is overwhelmingly gravity-fed, there is latent potential for conflict between upstream users with greater access to better quality water with downstream users. Overlaying these differences may be social distinctions among the groups. In one AA, the division between groups of users was further underpinned by ethnic differences. It is also possible that divisions within the same ethnicity by clan or other social grouping could underpin the coalescing of a group.

There were famous incidents in the past of group-on-group conflict over water where the regulating entity and more generally the State at the time were unable to avoid conflict.¹⁴ In more recent times in the south of the Kyrgyz Republic there have been conflictual situations involving cross border communities.

IV. CONFLICT ANALYSIS

The water conflicts are always complex and the factors causing and affecting them in reality are multiple. Conflicts on irrigation water in Kyrgyzstan are mostly caused by its seasonal scarcity, ineffective management and use, and the inability to maintain infrastructure largely inherited from the Soviet era. Irrigation water is predominately gravity-diverted and surface-applied and the scarcity is mostly caused by the spatial characteristics, when upstream users have more and better quality of water than downstream. In addition water users are divided by the state borders and thus have different legislations which are not shared and not harmonized between the states, or when users in one village have different access and arrangements to obtain water due to lack of governance safeguards in WUA management.

1. Primary participants (individuals, institutions and groups), which are involved in disputes on irrigation water, their roles, influence and interaction

The matrix of interests of the participants of conflicts on irrigation water visualizes, that key participants (except RDWR) share some common interests, such as ensuring clean water and safe infrastructure because these factors affect health of all living in community.

All farmers and communities want to earn high income from growing crops and to be able to have sufficient water for domestic use. Each user is alike in their interests in water; however, different types of users can be distinguished in terms of their ability to act on their narrow self interest in water. Only farmers who have priority access to water (powerful individuals and upstream communities) due to physical location in regards to water source or pressure on WUA to ensure privileged access are able to grow highly profitable crops which at large require more irrigation water. At the same time according to the interviews and round table discussions with

¹⁴Such as conflict in Batken area in 1987

key stakeholders, powerful water users tend not to pay for the water they consume since they feel entitled to take the water and are powerful enough to avoid sanctions. This is not true of ‘ordinary users’ whose interests are the same, but lack the leverage in the local setting to get their own way in using water in defiance of local framework for distribution of water generally set by the WUAs. Thus the interactions of the powerful and the ordinary people are substantially different.

Upstream communities have an interest in mitigating problems with oversupply of irrigation water, which floods their homes, gardens and roads. Their interactions with downstream communities are limited; by virtue of the water flowing through their communities there is less friction with the WUAs (see Section V).

It is evident that ordinary water users and downstream communities have higher unmet basic needs to ensure water for drinking and domestic consumption and they care about equity in access to water and payment for received water (in cash and in labor).

WUA wants fair relations with the RDWR, where the WUA does not bear alone the cost of poor infrastructure inherited from the state, and the non-payment of users, especially powerful ones due to weak legal framework. This weak legal framework does not give WUA incentives to improve its performance.

Table 6. Matrix of Water Conflict Participants and Their Interests

Conflict participants		Status in Conflict ¹⁵	Interests
Ordinary Users	Water	Very active	<ul style="list-style-type: none"> - High revenue: water availability, growing crops, favorable legal environment - Basic needs: water availability for domestic use, water availability for irrigation - Water supply: timely and sufficient water supply - Health: clean water, safe infrastructure - Equity: equal access and fair payment system, equal participation in community works
Powerful Users	Water	Passive	<ul style="list-style-type: none"> - High revenue: water availability, growing profitable crops - Water supply: priority and sufficient water supply, free water - Health: clean water, safe infrastructure
WUA, <i>murabs</i>		Active	<ul style="list-style-type: none"> - High revenue: abundant water without losses, ISFs rate and collection adequate to repay RDWR, maintain I&D system, maintain WUA facilities, pay salaries, taxes. - Water supply system: timely and sufficient water supply, favorable legal environment, capacity of investment, good political, technical and infrastructure support from the state. - Health: clean water, safe infrastructure - Water management system: adherence to water withdrawal schedule by WUs, diligent dealing with facilities

¹⁵ the stakeholder’s status in the conflict is estimated based on the perception of interviewees: passive status when there have been no expression of disputed claims to water, an active status is when claims have been expressed sporadically and only in verbal form, and very active status is when claims have been expressed constantly and often in physical violence.

Rayon for Water Management	Department Resources	Passive	- High revenue: The rate and collection of WUA payment for water adequate to maintain off farm I&D
Upstream communities		Passive	- High revenue: growing profitable crops - Water supply: no oversupply leading to flooding - Health: clean water, safe infrastructure
Downstream communities		Very active	- High revenue: water availability, growing crops, favorable legal environment - Basic needs: water availability for domestic use, water availability for irrigation - Water supply: timely and sufficient water supply - Health: clean water, safe infrastructure - Equity: equal access and fair payment system, equal participation in community works
Border communities		Very active	- High revenue: water availability, growing crops, favorable legal environment - Basic needs: water availability for domestic use, water availability for irrigation - Water supply: timely and sufficient water supply - Health: clean water, safe infrastructure - Equity: equal access and fair payment system, equal participation in community works

2. Underlying Drivers of Conflict

The underlying conditions that prompt conflict are the following:

- *High poverty level in rural areas and largely subsistence based agriculture.* The poverty in rural areas is high. In study areas, the poverty level goes from 30 percent in Bazar Korgon AA to 54 percent in Tort Kul AA. Majority of interviewees in nine AA stated that the major income source in their villages is remittances from relatives working as labor migrants. Participants of the FGDs confirmed that agriculture, and especially cropping is not considered as a major source of income for interviewed households, but mostly is used for own consumption with small scale trade of surplus. Smallholding subsistence farmers are not stimulated to invest into irrigation infrastructure to maximize crops' productivity.
- *Scarcity of resources.* While water resources would be sufficient with adequate planning and fully functioning infrastructure, they are in effect scarce in the main crop vegetation season, especially in July-August. The scarcity is also affected by climate change, i.e. fast melting of snow and glaciers.
- *Infrastructure problems.* Despite donor support over the past few decades and the establishment and capacity building of WUAs, irrigation water infrastructure remains ineffective in many areas. The general decline also translates into diminishing amounts of water being delivered, increasing scarcity of the resource relative to what was enjoyed before. The existing ability and willingness to pay for services does not match what would be needed for adequate upkeep.
- *Lack of agricultural knowledge.* Farmers do not have sufficient knowledge about irrigated farming, the ratio of water required for different crops at different stages of their vegetation. There is lack of knowledge among farmers on soil treatment techniques such as soil tillage, crop selection, crop rotation and fertilizers. This puts another strain on water resources.

- *Institutional weakness of WUAs.* There are numerous issues around WUAs that compromise their ability to serve as the regulating entity for use of irrigation water. These problems can be grouped under three headings: poor accountability and governance; management weaknesses; and problems with the legal framework for their operation.

- *Accountability and Governance.* In the AAs reviewed as well as in secondary sources, WUA Boards are not playing supervisory role. In only few localities WUA Boards support WUA Directorate in collection of ISFs, and in very few cases in addressing issue of non- payment by water users.

The Conflict Mitigation Committees under the WUA Board in practice are not functioning, and out of all nine study areas such committee work with disputes only in Jany Nookat AA. According to interviewees, these committees can function only if people selected to participate in it are respected by communities and their decisions are accepted by all sides, as well as by the WUA Directorate. Obtaining such individuals is difficult in practice. Motivating a group of people to take the time to exercise proper oversight in these rural contexts has been challenging. Moreover, it is questionable that such people would be able to competently hold WUA Directorates to account. This governance shortcoming means that in turn Directorates are like independent monopolistic companies, a recipe for lessened trust among water users in the institution.

- *Management issues.* There is a challenge in maintaining the basic contractual premise of WUAs: collection of user fees in exchange for regular, adequate supply of water. As noted above, the infrastructure challenges combined with climactic variation would make it difficult even under the best management. In practice, WUAs have an *ad hoc* approach to operating their system. In most cases WUAs do not enter into contract with water users because of several factors: i) WUA is supposed to use the established and approved DWR format for the contract. This contractual form used in contracts with RDWR does not reflect the real situation and does not provide any rights to WUA. At the same time, the same contractual form is used for contractual relations between WUA and water users, and it does not reflect real relationship between WUA and WUs. WUA cannot fulfill obligations formulated in that form, such as compensation of farmer's losses in case of not delivery of required water in full. Since the delivery doesn't depend on WUA at large, they cannot commit to that and thus do not sign contracts. At the same time, if WUA has no signed contract with water users, it cannot bring non payers to the court.

The salary level in the WUA, especially of technical staff is low. In some WUAs *murabs* are paid on annual basis, in others only during irrigation season, i.e. during six months.

- *Legal/institutional issues.* WUA are registered as public, non- commercial organizations under the Law on Unions (Association) of Water Users. This law has

provided foundation for the management of water at the community level, but needs further development to reflect the real situation. As noted earlier, some WUAs do not register themselves to avoid heavy taxation. Taxation is a major issue. Water user fees are not legally considered as revenue and should not be taxed. However, some WUAs are charged 2.5-4 percent sales tax on the received revenue from the ISFs, which are imposed by the decision of *aiyl kenesh* (local council). In some areas AK exempted WUAs from that tax.

- In other cases corporate income tax is being sought by tax inspectors. There is a similar situation is with the value added tax, when tax bodies impose VAT at 20 percent on WUA revenue. Originally this tax was imposed on DWR, then it was imposed on the WUAs, but in 2012 it was abolished. However, many tax inspectors are not aware of abolishment of this tax and continue to impose it on the WUAs. The same concerns many WUAs Directors, who do not know that and continue to pay income and VAT tax and even fines accrued on late payments on taxes.

- WUAs pay social benefit payments to Social Fund at the amount of 17.25 percent of the salary fund. In order to open bank accounts, WUAs are asked to submit registration certificate at the Social Fund. The SF in turn does not issue this certificate if WUA has liabilities, which is not in accordance with the law. If WUA cannot open bank account, it cannot receive grants from *aiyl okmotu* or other state organizations. However, WUA collects water payments from water users mostly in December, and that is the only time it is able to pay social benefit obligations. The Social Fund even filed a case in court against WUAs for non-payment of Social Fund obligations and incurred late payment fees.

Frequent inspection from state fiscal bodies, such as state Fiscal Policy of WUA cost a lot of money and takes a lot of time. In interviews some WUA management officials complained that informal payments to Financial Police were very high.

- *Land management issues.* There is no sound land management approach, land allocation for settlements and farming is chaotic and without consideration of other land uses and planning for integrated land management, availability of water and existing water infrastructures. In studied areas there are many incidents where existing infrastructure cannot deliver water effectively to allocated land plots and even access to it becomes inhibited. In addition, patchy land allocation does not allow maximization of irrigation water flow. Unregulated land allocation and use lead to overlapping and contradiction of land rights, and the insecurity of these rights. Land for settlements, cropping, grazing animals, forest, industrial purposes, and for easements is treated separately from each other, and regulated by different sets of laws, creating confusion on the ground .For example, in all study areas settlements and cropping land encroached on water land contributing to deterioration of irrigation infrastructure. Although the Water Code and the Administrative Penalties Code stipulate that violation of water land easements is fined, in practice there is no enforcement of that provisions.

The Kyrgyz Government continues to push for the establishment of cooperatives to facilitate consolidation of land plots for more productive farming. However, the legal framework for cooperatives is ambiguous. Thus, still functioning Regulation on Reorganization of Agricultural Enterprises N 632 dated June 1994 requires cooperatives

to be established on a land plot not smaller than 25 ha. This requirement is difficult to meet in the South, where land plots can be about 0.1 ha (the average size of the land plot in Bazar Korgon AA). Majority of farmers are not aware of existing fiscal incentives for cooperatives, such as tax benefits (cooperatives pay only land tax and exempt from income tax, VAT, and sales tax).

Lack of access to information on land ownership negatively affects management of irrigation infrastructure by the WUA. There are land plots with unclear tenure arrangements, which makes difficult to collect ISFs from these lands. That mostly relates to lands of labor migrants, who either informally rented land out or sold it to other people; land plots, which had been withdrawn from the agricultural use by the local authorities and planned for the new housing developments; Land Redistribution Fund (LRF) land plots informally sub leased with no information on tenure available to the WUA.

- *Ethnic issues.* There are areas in the south of the country with mix of Kyrgyz, Tajik, and Uzbek ethnic groups, which have histories of inter-ethnic conflicts. In such settlements, when one ethnic group can have better access to water by residing closer to the source or in upstream areas, and the other group having less water, such context can serve as additional spark to fuel water disputes.
- *Transboundary issues.* Unresolved inter-state disputes and non-delimited state borders create tense environment in border villages. In regards to water, there is general perception on the Kyrgyz side, that existing agreement on water sharing is not fare to citizens of the Kyrgyz Republic. This agreement was reflected in the Protocol of Water Distribution of 1984, and confirmed in the Inter State Agreement in 1992¹⁶. According to these agreements, the Kyrgyz Republic can retain 12 billion m³, which equals to 25 percent of the annual runoff in the country (47 billion m³). While the Kyrgyz Republic honors its agreement in terms of releasing 75% of water to the neighbors, Uzbekistan constantly disrupts its supply of natural gas in exchange. In addition, there are cases when pumping stations, canals or other water infrastructure belonging to one state are located on the territory of another state making it difficult to access for repairs and maintenance. Inter State Agreements are outdated and do not reflect current situation and do not respond to needs of the local population. As a result, there have been many conflicts along the border over access to water and its sufficiency that are cross border in nature.

3. Conflict Management Experience

In all three study areas there were cases when water users fought with each other, but also when water users fought with *murabs* over the water. The summer in 2011 was reported as extremely dry in the south, the water supply was very low and disrupted, and it fueled

¹⁶Agreement between Republic of Kazakhstan, Republic of Kyrgyzstan, Republic of Uzbekistan, Republic of Tajikistan and Turkmenistan on Cooperation in the Sphere of Joint Management on Use and protection of the Transboundary Water Resources. Kazakhstan, February 18, 1992

conflicts in many localities. That summer many farmers ignored agreed irrigation schedules, stole water at night from each other and destroyed water pipes.

Conflict management in many localities was mostly done by local government bodies through support to maintain infrastructure, build social capital in communities. In several study localities, heads of AO have been active in enforcing people to pay water fees by linking issuance of various documents requested by villagers only on a base of payment for water. However, that practice had to be abolished under the pressure of the people and of the Government. In some localities, AO provides financial support to WUA to rehabilitate infrastructure through grants from the local budget. In communities with mixed ethnic population, local governments undertake various social joint events. The head of the Bazar Korgon AO jointly with the deputies of the *aiyl kenesh* organize joint tea drinking events for all villagers 2-3 times a year, with occasional religious sacrifices. During these events, local leaders initiate and facilitate discussions on problems and issues in the villages. According to interviews, such gatherings alleviate many grievances and prevent escalation of conflicts. Where and when no administrative or social measures work, heads of AOs seek help from the law enforcement bodies. Thus, in Bazar Korgon AA with ethnically mixed population, where conflicts often arise due to upstream vs. downstream water claims, AO head contracted the police forces to ensure guarding of major water distribution systems in 2011. Head of AO, with WUA Director and *murabs* monitored the fields and water use by farmers for 24 hours during the whole irrigation season.

WUAs have poor records of conflict mitigation. Several informal institutions established under WUA by various projects are not widespread or sustainable. Only in one study area in Bazar Korgon AA there is working Conflict Mitigation Commission, which prepares a list of those WUs who do not pay water fees, or violate schedule and destroy infrastructure and submit it to a Court of Elders, who conduct meetings with these WUs and try to convince them to pay water dues. Also in Bazar Korgon AA the WUA with support from the project has formed a group of zonal representatives with designated irrigation areas. These representatives monitor compliance of WUs with water consumption schedule and ensure payments for water use.

In 2011, WUA in Bazar Korgon hired a private lawyer who went around villages to explain necessity of payment for water use and collected these payments at the same time. He was paid 10 percent of the collected amount, and he managed to collect more than 80 percent of water fees (collection rate was always below 60 percent in that WUA). This effort was especially valuable because while collecting, the lawyer raised awareness of farmers on water fees and how they are spent on O&M.

Table 7. Matrix of Conflict Driving Forces, Conflict Expression, and Successful Mitigation Approaches Implemented in Study Areas

Conflict Type	Driving forces	Results/Expressions	Successful mitigations/prevention
Conflict Type 1: RDWR vs WUA Management	Scarcity of water; Irrigation infrastructure problems; Weak and outdated legal framework; Lack of state policy and support to WUA; Institutional weaknesses of WUA.	Accumulation of debt on WUAs Court cases Inability to register WUA → to have secure contractual relations with water users, inhibits WUA's access to outside finances, including grants and loans.	Not mentioned in study area
Conflict Type 2: WUA management, <i>murabs</i> versus powerful individuals	Weak and outdated legal framework; Irrigation infrastructure problems; Institutional weaknesses of WUA.	Powerful individuals often do not pay for water used and do not participate in volunteer community works on water infrastructure	WUA contracted private lawyer to increase WUs awareness, while collecting ISFs payments, rate collection affected lawyer's payment. The WUA has Zonal Representatives respected by community, who monitor compliance of WUs with water consumption schedule, ensure payments for water use.
Conflict Type 3: WUA Management, <i>murabs</i> vs. ordinary persons	Scarcity of water; Irrigation infrastructure problems; Land management issues; Weak and outdated legal framework; Lack of state policy and support to WUA Institutional weaknesses of WUA	Physical fights between users and <i>murabs</i> ; Damage of irrigation infrastructure Refusal to pay ISFs	The Conflict Management Committee under the WUA Board prepares a list of those WUs who do not pay, or violate schedule and submit it to Court of Elderly. The Court of Elderly conducts meetings with these WUs and tries to convince them to pay water dues. WUA contracted private lawyer to increase WUs awareness while collecting ISFs payments, rate collection affected lawyer's payment. The WUA has zonal representatives respected by community, who monitor compliance of WUs with water consumption schedule,

		Lack of agricultural knowledge		<p>ensure payments for water use.</p> <p>Incentive based salary payment to <i>murabs</i> depending on rate of collection of ISFs.</p>
Conflict Type 4: community vs. community		<p>Scarcity of water;</p> <p>Irrigation infrastructure problems;</p> <p>Weak and outdated legal framework;</p> <p>Lack of state policy on transboundary issues</p> <p>Land management issues</p> <p>Ethnic tensions</p> <p>Institutional weaknesses of WUA</p>	<p>Physical fights</p> <p>Damage of infrastructure</p> <p>Blocking roads</p>	<p>AO head contracted the law enforcement body to ensure guarding of major water distribution systems and avoiding violence.</p> <p>AO with AK organizes community events where water issues are discussed, which can prevent conflicts.</p> <p>Many conflicts are mediated by <i>imam</i> at the mosque.</p>

V. RECOMMENDATIONS ON PREVENTING AND MITIGATING CONFLICTS OVER IRRIGATION WATER

The findings from the case studies and review of underlying factors of conflict point to the following types of actions that can contribute to prevention and mitigation of conflict. These can be subdivided among areas that relate directly or at least mostly to water management and broader issues that impact management of irrigation water and hence avoidance of conflict.

Water Management Recommendations

1. Advancing policy and legal framework for WUAs

WUAs in Kyrgyz Republic still need support from the Government, especially in advancing favorable legal environment for their effectiveness and sustainability.

- a) The WUA SU and projects should provide support to address this issue in undertaking an inventory of contractual forms used for RDWR and WUAs, WUAs and WUs to identify bottlenecks. That especially concerns the approved by the Kyrgyz Government contractual form between the RDWR and WUA. It would be desirable to have strong evidences of water losses by tracking water supply on a pilot basis in several locations starting from the RDWR to the farmer field. Developed draft modifications to model contract between RDWR and WUA, WUA and WUs based on the legal inventory and results of pilot measurements need to be submitted to the Government for review and if possible approval. Similar changes would be reflected in a model contract for WUA with WUs. It is possible to explore possibilities to increase penalties for the non-payment of water used stipulated in the Law on Unions of Water Users and make sure that these provisions can be enforced by the WUAs.
- b) There is a growing number of water users for industrial or construction purposes, but there is a lack of legal basis for regulation of such use. It is recommended to develop changes to relevant legislation on management of such use, including their regime for payment of ISFs to WUAs.
- c) The approach to enforcement of easement around water infrastructure needs to be agreed at the national level between relevant agencies and enforced on the ground.

2. Strengthening the institutional framework for WUAs. WUAs are the key mechanism for management of irrigation water at the level closest to consumers (of course it is an association of users, but its management must mediate among a large number of users and hence it operates much like a service provider). It is at that point of delivery of service (or lack thereof) that the greatest potential for conflict emerges due to real or perceived inequity of treatment of users. This of course occurs in an overall scarce water environment, poor infrastructure, and structural issues related to land tenure and crop practices that are beyond the WUAs' control, but the

proximate causes of conflict will nearly always be related to problems with the WUA. The commitment to WUAs as the management model means that it is most realistic to build on the record of WUAs.

The specific steps are the following:

a) Clarify and simplify WUAs' organizational and fiscal reporting status. There is a wide spread confusion about WUAs' legal status as public organizations and corresponding obligations. Field data shows that there is a different interpretation of tax requirements for WUA depending on each specific tax body and inspector. In some cases WUAs were charged by the tax inspector with income, sales and VAT tax, in other cases they pay only sales tax. The legislation is clear that VAT and income tax are not required from WUA, and WUA can be exempt from the sales tax by decision of the local councils. The legal registration of WUA is also confusing as it was mentioned earlier.

There is a need to clarify requirements for WUA opening bank account, accessing outside finances. It was reported that banks require registration certificate from the SF, but SF does not issue the certificate if the WUA has liabilities to it, which is against the law. Once clarified, a process needs to be initiated to address any legitimate outstanding debt on the part of WUAs. Similarly, WUAs have reportedly been subject to unjustified frequent audits and financial inspections by local and national authorities. Finally, WUAs had funding granted by *aiyl okmotus* taken away from them under regulations which treated WUAs as private entities which could not receive such grants. There needs to be an easy mechanism for local governments to provide financial support to WUAs.

The WUA SU and projects support can be provided in the following steps:

- i. undertake an inventory of all relevant legislation and regulations and remove any ambiguities regarding WUAs' requirements for registration, taxation, financial reporting and auditing;
- ii. prepare and disseminate simple guidance letter on these issues for WUAs to refer to when dealing with corresponding bodies; and
- iii. provide recourse to a "hotline" housed in the WUA Support Unit within the DWR to address misunderstandings when they occur.

b) Empower WUAs to collect dues to put themselves on a more sustainable footing. This is always a problem among associations, where it is often not easy to deny access to a communally managed resource. In addition, water is viewed by many

consumers as a free good provided by nature. Payment levels in part will depend on awareness of WUs that they pay not for water, but for services received. Payment also depends on trust in the WUA management. Cutting off water to delinquent payers is often not technically possible, nor desirable as an enforcement mechanism, especially from a conflict mitigation perspective. Stiffer fines for nonpayment might also have a greater deterrence effect.

WUA SUs and projects can provide support to WUAs to address that issue of collection:

- i) to raise awareness on necessity to pay ISFs and its effect on repairing of the infrastructure through attractive informational materials, such as comics, social advertisement material.
- ii) to develop and test innovative approaches to set incentives for full and timely payment of ISFs. The system of incentives can be developed and tested in several localities.

c) Continue to provide for capacity building to WUAs. Such capacity building needs to focus not on trying to develop complex management or accountability mechanisms that are not sustainable given the poor financial base of WUAs.

- i) Basic training on financial management, simple O&M planning and execution, irrigation requirements of various crops should continue.
- ii) Searching and piloting advanced irrigation technologies, such as drip and sprinkler irrigation, establishment of community level water reservoirs to preserve water in winter for use during irrigation season, use of ground water through creating aquifers.

From a conflict perspective, the ability of WUAs to plan water usage and communicate expected usage rates to all users within its area is important to head off misunderstandings. In addition, horizontal peer learning might be promoted among WUA management and boards to learn from each other what works in the real life situation, that WUAs find themselves in.

3. Increasing transparency on irrigation water planning and usage. A striking element contributing to local tension was the structural problem of tracking volumes of water received by the WUAs and the provision of water to various users within the community. Even with the best of intentions, perceptions of unfairness easily emerge. Transparency is needed in both planning and execution. The plan for water supply should be publically displayed, with indication of amount per user, land area to be irrigated and expected dues to be paid.

Monitoring is much more difficult. It is not practical to recommend to install and maintain meters at all points along the water distribution network. However, greater validation of how water is flowing by visual evidence from the community in conjunction with *murabs* and WUA appears possible. One approach might be to promote more regularized community monitoring. This would involve mapping the key junctures in the distribution network and appointing community members (i.e. Zonal Representatives) to simply record at different times the amount of water flowing. Such community mapping might be also done by persons close by, or even by school children. Another relatively low cost approach would be to provide monitors with cellphones and GPS capacity to take a picture at occasional times to demonstrate how water is flowing. In both cases, this monitoring would need to feed into a system to collect the data, or at least a regular report to the WUA Board. That approach can be tested within the overall water tracking pilot.

WUA should provide information to public on display at a minimum on the plan for water supply for coming season with ISF to be charged by user. At the end of irrigation seasons WUA should display in easily accessible facilities the following information: i) on water amount supplied to each user, and ii) on land area irrigated, and ISF collected by user with specific data on each land area and grown crop.

4. System for reinvestment in infrastructure. Government needs to provide support to WUAs in accessing market based financial resources for maintenance of infrastructure. While clearly basic financial management is needed to address the on farm irrigation networks' O&M, there is need for access to credit for larger rehabilitation projects. Donor interventions have only partially addressed this need and the design of specific investment operations does not create a sustainable mechanism. One of the suggestions provided at the Expert Group meeting was for Government to lobby for a credit or leasing line for WUAs based on social solidarity. Some form of credit needs to be developed that corresponds to the peculiarities of WUAs' organizational structure and cash flow. Micro-credit schemes for financing community water projects could be supported on a pilot basis through the provision of seed capital, initial reserves and guarantees. It would engage stakeholders, including finance providers to identify ways of promoting microfinance in water sector.

However, such financing would require at first greatly improved cost recovery from the users and increased management efficiency of WUA.

5. Addressing land management issues. Support Units to WUA at the regional level have started developing guides for farmers on irrigation crop calendars, on soil treatment techniques such as soil tillage, crop selection, crop rotation and fertilizers. This effort needs to be upscaled and developed with materials widely disseminated to reach more farmers. There are successful examples of results from training provided to farmers on irrigation crop calendars which need to be replicated through WUA.

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Annex 1. Objectives, Scope, and Methodology of the Study

This study was conducted by the Rural Development Fund (RDF) under contract with ACTED within the framework of the Conflict Mitigation through Targeted Analysis and Community Action in Kyrgyzstan (COMTACA) Project supported by USAID. This Project aims to directly support local communities and the Government of the Kyrgyz Republic in identifying vectors of conflicts, dispute mechanisms and peace building activities to contribute to a safer community for all. Specifically, the Project provides support for actionable analysis on conflict and instability trends and community mobilization conducted in order to build Early Warning Networks (EWNs) spanning southern Kyrgyz Republic that are institutionalized into existing social infrastructure.

The objective of the research was to explore issues of the origin of conflicts and their drivers, as well as to identify courses of action for government, civil society, and community leaders to relieve or resolve existing or emerging disputes over the access to and use of the irrigation water in the south of the Kyrgyz Republic. The specific task was to explore and suggest a typology of disputes related to governance, resource allocation, access and use of irrigation water in the Kyrgyz Republic. The findings and recommendations of the study were presented to the Expert Group (EG) established under the Project and to key stakeholders at the regional level.

This general objective was subdivided in five specific tasks:

1. Identify primary institutions and groups involved in disputes on irrigation water, their roles, influences and interactions;
2. Develop a typology of disputes/conflicts around irrigation water, which could be used to effectively prevent and mitigate conflicts;
3. Carry out conflict analysis on irrigation water;
4. Review possibilities to forecast/predict conflicts;
5. Provide recommendations on prevention and mitigation of disputes and conflict around irrigation water.

Water use is often prone to conflicts because inequality is inherently built into water regimes. Water can rarely be owned individually and the variability in quality, quantity and flow direction implies uneven access, with some users benefitting from easier, better, and priority access. A major factor in this type of water conflict is how water is accessed and used. The research therefore focused on water management and use issues from the perspectives of different stakeholders.

Findings from the case studies were presented to the key stakeholders at the regional workshop conducted in Osh, Jalalabad, and Batken, and at the Expert Group Meeting in Bishkek on August 13, 2013. All feedback and comments provided by the regional stakeholders and by the members of the Expert Group were reflected in the final report.

Methodology of the Study

The Terms of Reference (TORs) for the research requested a minimum of the three case studies with one per each region, and quantitative research of 50 key stakeholders in 15 AAs. However, at the implementation stage RDF agreed with ACTED instead of conducting survey to undertake in-depth interviews in additional six AA to validate findings of the case studies. RDF experts also conducted ten Focus Group Discussions (FGDs) with key stakeholders in the villages, as well as at the regional and national level. The research methodology dictated by the TORs allowed for conclusions based on collection and analyzing of qualitative information in a limited

number of *aiyl aimaks*. Given the circumstances where there is no reliable statistical data available on conflicts in the country, let alone around conflicts around irrigation water, such case study approach is justified. However, findings in this report are broadly consistent with concerns raised in various documents reviewing the performance of the Water Users' Associations (WUA), of the Support Units to WUAs, of the Rayon Water Departments (RWD) as well as other secondary sources on conflicts and irrigation water as well as the views of officials working more generally in the irrigation sector. Thus, while these are case studies from specific AAs, from the perspective of persons working with these issues on the ground, they are representative of typical issues of conflict throughout the region.

The research sites were selected after the preliminary desk review and in consultations with the Support Units for Water Users' Associations and ACTED in three regions. Selection was based on AA spatial and territorial characteristics and incidents of conflicts around irrigation water there in the past.

Table 8. Studied *Aiyl Aimaks* in Osh, Jalalabad, and Batken Oblasts

Aiyl Aimak	Raion	Oblast	Number villages
Bazar Korgon	Bazar Korgon	Jalalabad	4
Atabekov	Suzak	Jalalabad	15
Seidikum	Bazar Korgon	Jalalabad	9
Otuz Adyr	Kara Suu	Osh	8
Chek Abad	Aravan	Osh	8
Jany Nookat	Nookat	Osh	4
Tort Kul	Batken	Batken	5
Suu Bashy	Batken	Batken	5
Ak Sai	Batken	Batken	6

Source: ARIS Village Profiles, 2012

Research Methods:

Desk review. Experts conducted a review of statistical data on demographics, poverty and agriculture, various reports, projects' documents and studies on issues of irrigation water, especially in the south of the country and in selected nine areas in particular. The results of the desk review were used in development of the tools and for elaboration of conflict typologies. RDF also reviewed different legal documents related to water resources management and conflict resolution in Kyrgyzstan.

Case study (investigation of individual cases). For the case study RDF used the following methods: i) Key Informant Interviews, ii) Focus Group Discussions (FGD), and iii) mapping.

- i. *Key Informant Interviews.* RDF interviewed experts in the area of irrigation, including representatives of the Rayon Department for Water Resources (RDWR), government officials, heads of *aiyl okmotu* (AO), representatives of *aiyl kenesh* (AK), experts working in NGOs and donor funded projects on issues related to water and/or conflicts. In villages, RDF also interviewed local experts, such as land specialists at the AO, heads of the WUAs, *murabs*, and representatives of Elders Courts.

- ii. *Focus Group Discussions.* RDF experts conducted ten FGDs bringing together community representatives, including men and women, whom were asked to respond to questions about their perceptions, opinions, beliefs, and attitudes towards irrigation services and situation around the irrigation water. Each focus group engaged 6-12 water users in each AO, including smallholding and large farmers, representatives of WUA, RDWR, representatives of the local governments.
- iii. *Mapping.* Participatory rapid mapping of the conflict/disputes around irrigation water allowed different members of community to express their understanding of the situation and opinion on causes and ways to mitigate conflicts. The mapping also helped them to visualize the situation, to understand better dynamics of conflict and its driving forces. Participatory mapping results were used for production of GIS based maps of conflicts in the study areas.

Annex 2. List of Legislation Related to Irrigation Water

Law of the Kyrgyz Republic “On Unions (Associations) of Water Users”, 2002, with amendments of March 30, 2013.

Water Code of the Kyrgyz Republic of December 4, 2004, with amendments of October 10, 2010.

Regulation “On Water Protection Zones of Water Bodies Belts of the Kyrgyz Republic” in accordance with Kyrgyz Government Decree #271 of July 7, 1995.

Agreement between Republic of Kazakhstan, Republic of Kyrgyzstan, Republic of Uzbekistan, Republic of Tajikistan and Turkmenistan on Cooperation in the Sphere of Joint Management on Use and Protection of Transboundary Water Resources”, Alma-Ata city, February 18, 1992.

Overview Chart of Normative Legal Acts regulating Management and Use of Irrigation Water

№	Name of normative legal act (NLA)	Year of adoption	Brief summary of a NLA governing management and use of irrigation water
I. Interstate agreements of the Kyrgyz Republic			
1.	Agreement on mutual recognition of rights and regulation of property relations	October 9, 1992, ratified by Resolution of Kyrgyz Parliament# 1404-XII of January 12, 1994	The main objective of the Agreement is conducting a coordinated water policy by the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Uzbekistan, the Republic of Tajikistan and Turkmenistan, through organizing joint management of water distribution. Management functions of the agreement are assigned to the Interstate Commission for Water Coordination (ICWC). The agreement has formalized an essential legal framework and principles for the cooperation complying with the international norms. It has secured an important obligation of the parties to the agreement to ensure strict adherence to the agreed use of water resources, facilitate the exchange of information, and prevent any action on their territory which could inflict damage on other states.
II. Constitution of the Kyrgyz Republic			
1.	Constitution of the	Adopted by referendum on 27	The land, its subsoil, air, water , forests are the exclusive property of the Kyrgyz Republic, are used to maintain a single ecological system as the basis for life and work of the people of Kyrgyzstan,

	Kyrgyz Republic	June, 2010	<p>and are under the special protection of the state (Article 12, p. 5)</p> <p>Local self-government bodies may be delegated the state powers, with transfer of material, financial and other resources, required for their execution. The state powers can be transferred to local governments by law or by contract. In terms of the authority delegated the local governments are accountable to the state bodies (Article 113, p. 2)</p>
III. Codes of the Kyrgyz Republic			
1.	The Civil Code of the Kyrgyz Republic	May 8, 1996, No. 15, Part 1, January 5, 1998 No. 1 part II	<p>The Civil Code provides that the objects of exclusive state property, including land, its subsoil, water, air, forests, flora and fauna, all natural resources, and other state property which is not assigned to the state legal entities make up the state treasury of the Kyrgyz Republic.</p> <p>The property in state ownership is assigned to the state-owned institutions on the right of business or operational management, and for enterprises - for operational management. Forced servitude may arise on the basis of decision of a state body or local self-government.</p> <p>Forced servitude may be established to ensure: laying and operation of electric transmission lines, communications and pipelines, water supply and irrigation, as well as for other needs of an owner of the real property which cannot be achieved without establishing the forced servitude.</p> <p>Losses suffered by an owner of the real property due to the forced servitude are subject for compensation by a person for whose benefit the servitude has been set up.</p> <p>The owner of the real property encumbered by the forced servitude has a right to claim the person in whose interest the easement has been established for a proportionate cost instead of reparation of a loss (Article 233-13).</p>
2.	The Water Code	January 12, 2005, No. 8 in the wording of the Law of the KR No. 170 of October 10,	<p>The Water Code regulates water relations in the field of management, conservation and development of water resources to guarantee a sufficient and safe supply of water to the population of the Kyrgyz Republic, environmental protection and sustainable development of the water fund of the country.</p> <p>In order to implement the Water Code, the basic principles of water resources management are</p>

		2012	established; jurisdiction of state bodies in management of water resources and water facilities are determined; a framework for development of national water strategies and plans for the use of water resources are designed; use of surface and groundwater and payment for their use is regulated; measures to protect water resources from pollution and depletion are identified; provisions for emergencies related to water resources and dam safety are introduced; water management and irrigation sectors are regulated, regulations on the use and ownership of lands of the water fund are established; the State Water Inspectorate is established and the authority and duties of public water inspectors are defined; offenses in the use of water resources are determined; compliance of this Code with the obligations of the Kyrgyz Republic under international law are defined.
3.	The Code of Administrative Liability	August 4, 1998, No. 114	<p>Article 121 establishes that: the use of water fund lands (other than natural water bodies) for construction of farm buildings, buildings for wood storage and processing and other objects, stump pulling, construction of linear structures, blasting, drilling and other works, removal of topsoil without proper authorization for the use of these lands – are subject to a administrative fine: individuals - from one to five calculated indices, officials - from five to twenty calculated indices.</p> <p>Article 122 stipulates that violation of the rules and norms of water disposal, the accounting procedure of volume and quality of the allocated runoffs, pollution, contamination and depletion of water resources, wastewater treatment technology breaking, breaking the rules of operation of sewage treatment plants and facilities, rules of keeping the water register, failure of water protection regime in the catchment areas, use of prohibited fishing gear, causing water erosion and other harmful effects, as well as infringing the rules and regulations of water disposal, damaging the natural state of water bodies- are subject to administrative fines: individuals - from seventy to one hundred, officials - from one hundred to one hundred and fifty calculated indices.</p> <p>Commissioning of enterprises, public utilities and other facilities without waste treatment plants and facilities, as well as without fish protection structures and devices, preventing water pollution and clogging or their harmful effects, or with faulty water treatment plants is subject to administrative fines: officials - from five to fifteen calculated indices (as amended by the Law of 25 February 2013, No. 35).</p>

4.	TheTaxCode	October 17, 2008, No. 230	<p>The Tax Code of the Kyrgyz Republic defines the basic principles of taxation.</p> <p>Irrigation water supply services, under the charter activities, provided by water users' associations to their members are not subject to income tax payment (Article 189, 3e).</p>
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IV. Laws of the Kyrgyz Republic

1.	The Law of the Kyrgyz Republic "On Water"	January 14, 1994, No. 1422- XII	<p>The purpose and objectives of the water legislation of the Kyrgyz Republic shall be regulation of relations in use and protection of water resources (waters), prevention of environmentally harmful effects of economic and other activities on water bodies and water facilities, and improvement of their condition, strengthening the rule of law in the field of water relations.</p> <p>Totality of all water bodies, the land occupied by them, including allocated for water protection zones and belts and water resources concentrated in them, comprises the State Water Fund of the Kyrgyz Republic.</p> <p>The water bodies of the Kyrgyz Republic include rivers, lakes, glaciers, snowfields, swamps, other surface sources, as well as areas of concentration of groundwater, including medicinal- mineral and thermal waters.</p> <p>The water resources of the Kyrgyz Republic include all kinds of surface and underground water, concentrated in water bodies.</p> <p>The State Water Fund is intended to ensure preservation and resumption of water resources, satisfaction of drinking, domestic, municipal, industrial, agricultural, energy, transportation, recreational and other needs, maintenance of reserves, wildlife sanctuaries and habitats of flora and fauna.</p> <p>Article 27 stipulates that agricultural water use is based on water balances and restricted by the limits of water consumption.</p> <p>Irrigation of land with waste water is performed in consultation with the specially authorized state</p>
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			<p>agencies, including public health and veterinary inspections.</p> <p>Water bodies and water facilities located on the territory of pastures and cattle routes are provided primarily for livestock needs after drinking and household needs of the population.</p> <p>Article 40 stipulates that gains from payment for the use of water bodies and water resources are the source of funding for:</p> <ul style="list-style-type: none"> - measures on rational use and protection of water resources, reconstruction and improvement of water bodies and water facilities, prevention and elimination of harmful effects of water; - activities on water supply of the population and public sectors of the economy, reconstruction, modernization, construction and operation of water facilities and devices; - specially authorized bodies to recover their costs for water intake, transportation and water supply of water users, reducing water losses and implementation of other activities related to operation of water bodies and water facilities as well as water protection. <p>The procedure for the collection and use of fees for the use of water bodies and water resources is established by the Government of the Kyrgyz Republic.</p>
2.	Law of the Kyrgyz Republic “On unions (associations) of water users and unions of associations”	March 15, 2002 No. 38, as amended by the Law of March 30, 2013, No. 46	<p>This Law determines the legal status and organizational basis for the establishment and operation of unions (associations) of water users to operate and maintain irrigation systems in rural areas for the public benefit.</p> <p>Legislation on unions (associations) of water users and their unions consists of the Constitution of the Kyrgyz Republic, the Civil Code of the Kyrgyz Republic, the Water Code of the Kyrgyz Republic, this Law and other normative legal acts of the Kyrgyz Republic.</p> <p>WUA is established in accordance with this Law as a non-commercial organization that acts in the public interest for the purpose of operating and maintaining a specific irrigation system so as to</p>

			<p>provide the owners and users of agricultural land with irrigation water.</p> <p>The principal tasks of the WUA are:</p> <ul style="list-style-type: none"> - operation and maintenance of irrigation system within the WUA service area and distribution water to the WUA members on the basis of annual agreements; - distribution water on the contractual basis to individuals who own or use irrigated land within the WUA service area who are not members of the WUA; - rehabilitation and improvement of irrigation systems within the service area of WUA and undertaking construction works as necessary; - purchase irrigation water from a water supplier on the basis of a contract or taking water in the prescribed manner of self- diversion directly from natural water bodies (rivers , lakes and groundwater) in accordance with the received water use license and regulating the water use and distribution within the WUA service; - procurement, replacement, operation and maintenance of irrigation equipment; - prevention of water pollution; -undertaking land improvement works; - training WUA members in progressive methods of irrigation and promoting the use of new techniques and technology.
3.	Law of the Kyrgyz Republic “On Environmental Protection”	June 10, 1999, No. 53	In the course of their activities, economic and other entities are required to comply with the approved operating practices, to have and ensure safe and efficient operation of water treatment facilities, installations and means of control, decontamination and disposal of waste, to conduct introduction of environmentally friendly technologies and industries, to implement protection and rational use of land, mineral resources, waters, air, forests, flora and fauna, restoration of natural

			<p>resources.</p> <p>Economic entities carrying out commercial production of livestock and agricultural products must have adequate sanitary protection zones and wastewater treatment facilities.</p> <p>During operation of drainage systems and land reclamation works, the measures to preserve the water balance, rational use of water, protection of land and forests from depletion, flooding, and prevention of other adverse effects on the environment must be observed.</p>
V. Resolutions of the Government of the Kyrgyz Republic			
1.	Regulation on Protection Zones and Belts of Water Bodies in the Kyrgyz Republic	July 7, 1995, No. 271	<p>The Regulation applies to the riparian zones of rivers, lakes, ponds, reservoirs and canals (hereinafter - the water bodies).</p> <p>It defines the procedure for establishing water protection zones at the water bodies of the Kyrgyz Republic, sets up the mode of economic activities and use of lands that are part of the water protection zones, as well as the responsibility for keeping them in good condition.</p> <p>The establishment of water protection zones does not preclude arranging easements along the canals, zones of sanitary protection of water sources used for drinking water supply, sanitary zones for fish ponds, as well as the areas of sanitary protection of resorts, where the water bodies are used for medicinal and other healing needs of the population, which borders and mode of use are established in accordance with the legislation of the Kyrgyz Republic.</p> <p>The boundaries of water protection zones are established taking into account the physical geography, soil, hydro-geological conditions, designated purpose of a water body or its separate parts, the nature of the relief, as well as the interests of all water users.</p> <p>The boundaries of water protection zones and riparian belts are recorded in mapped plans of owners of land of the water fund and water protected areas, land holdings, general development plans, etc.</p>

Annex 3. Maps of Studied Areas

