Global Water Solidarity: Improving Water and Sanitation through Decentralized Cooperation in the Republic of Kyrgyzstan

March 2014

Ministry of Foreign Affairs of the Netherlands

Background

Despite important efforts undertaken, 783 million people lack access to safe drinking water and 2.5 billion people lack access to basic sanitation. Sub-national institutions, such as local authorities and water utility companies, play a key role in responding to this challenge. Their technical competences and leadership, together with an active coalition of partners and concrete decentralized cooperation mechanisms, is needed to achieve universal access in water and sanitation. Local governments in both developed and developing countries share a common experience to lead efficient, accessible and accountable water and sanitation services. They are close to the service users and are knowledgeable about local conditions and needs.

The Millennium Development Goal 7, Target 10 is to halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation. Channelled through decentralized cooperation mechanisms (where local levels of government can connect with their counterparts elsewhere), the technical competencies and leadership of decentralized partners have proven to be an important vehicle in achieving this. Honouring its commitment to support decentralized cooperation complementarily with the Articulation of Territorial Networks for Sustainable Human Development (ART) Initiative, UNDP established with several local level authorities and water suppliers a thematic platform dedicated to water and sanitation in late 2011: the Global Water Solidarity international platform (GWS).

Global Water Solidarity is an ***Institutional platform*** for local level water management. In the first step it is conducting demand-driven feasibility studies among different local level actors involved or interested in engaging in decentralized solidarity cooperation. While these technical studies enrich already existing knowledge at the local level, the value added of GWS is in the standardization of its solidarity mechanisms and ensuring that its proposed technical frameworks on water and sanitation are properly integrated within a coherent sustainable human development response.

GWS systematizes and builds upon the existing solutions and best practices and facilitates a more effective participation of local actors in the planning, delivery and monitoring of water and sanitation management at local and national level. In this regard, GWS consolidates the knowledge and experiences accumulated over the years, to facilitate technical cooperation and the exchange of good practices and know-how among local level actors. It therefore contributes to greater ownership and accountability of development actors, which in turn yields greater transparency of development processes. All these services create an international decentralized cooperation community of practice on water and sanitation issues, as showcased by several studies on local, national and international innovative solutions. Furthermore, as a broker of local-to-local knowledge and experience such as South to South and triangular, GWS aims to strengthen UNDP's provision of tailored services to meet the different national and local requirements in water and sanitation. Furthermore, GWS outlines regional maps of the technical competencies and governance capacities/facilities of its donor partners, therefore promoting more aligned solidarity actions of the actors from the North, and contributing to improve the territorial management of water and sanitation in the South. These harmonized GWS interventions are channelled in support of integrated territorial plans, which reduce fragmentation and the overlap between various water and sanitation programmes and increase the impact and sustainability of efforts in support of Sustainable Human Development. The technical solidarity partnerships translate in joint and aligned actions, creating a more attractive environment for financial cooperation, whether from traditional donors or solidarity networks. The well-harmonized decentralized transfer of technical competencies also create and promote more opportunities for local authorities, national governments, specialized public agencies, private institutions and civil society organizations from the water and sanitation sector. GWS aims to link the

common interests of each of these actors to the multilateral framework, seeking the complementarity of the territory's interests and resources and, to certain extent, the territory's internationalization.

Thanks to its convening capacity, GWS will support the creation of innovative partnerships with influential institutions. This will in turn support UNDP and the GWS members to scale up water and sanitation activities and maximize their impact at the country level, and to improve knowledge resources and training modules for development partners. Likewise, it will reinforce the impact of advocacy in policy-making.

While advocating for innovative partnerships in water and sanitation sector, Global Water Solidarity works on developing funds coming from both, solidarity and bilateral sources. The funds are used to support local level needs in providing clean, safe and sustainable water. Global Water Solidarity delivers tangible solutions to local challenges while linking local priorities to international policies.

Preface

Most of the water supply and sanitation (WSS) infrastructure in the Kyrgyz Republic was built 40-50 years ago and during the last 20 years, after the recession from the Soviet Union and subsequent economic transition, the WSS systems deteriorated rapidly. While the challenges of providing basic water and sanitation services to all remain as they have in previous years, new challenges are emerging, such as accessing new sources of finance, improving design and planning processes, improving the efficiency of infrastructure service providers, developing stronger and reliable institutions to deliver Government strategies, and developing more targeted approaches for investment. There is a lack of coordination between water sector policy and policies for related sectors (e.g., housing). Likewise, development policies for communal services sectors are not well integrated into the national annual and medium-term budgeting processes.

The economic issues remain the most problematic. At the present time the government of the Kyrgyz Republic does not have sufficient funds of its own to make significant investments in the WSS sector and it is therefore reliant in the short term on international donor funding (National Programme 2013). At the same time, it provides significant subsidies to the WSS operators which cover up to 90% of WSS operation and maintenance costs. Currently the o&m of WSS utilities (vodokanals) is economically insufficient as their accounts payable exceed annual revenues from utility charges; many operators are de facto considered bankrupt. Economic instruments such as, for example, appropriate tariffs for services, taxes, license payments, fines can be a means of generating revenue which may be used for financing water infrastructure (proper operation and maintenance, rehabilitation and extension) as well as improving management and protection of water resources and ensuring their adequate allocation. The National Programme (2013) confirms that "tariff strategies need to be based on an operational and maintenance cost recovery principle related to the level of service, and that tariffs should be set without political influence".

On the other hand, the population of the Kyrgyz Republic faces a severe financial situation as well as relative disparity. Unequal access to clean water and improved sanitation, low level of affordability and generally poor level of WSS services mean that there is a high level of dissatisfaction with the standard of service and as consequent unwillingness to pay for it unless there are clear improvements in the WSS services.

This study aims at analyzing the situation in the water and sanitation sector with a focus on the inequalities in the access to the services.

The study targets decision makers in the country and donors in order to give them background and recommendations how to improve access to water and sanitation and to overcome the inequalities in the sector.

Acknowledgements

This publication has been prepared in the framework of the United Nations Development Programme Global Water Solidarity-ART Initiative.

Main contributors to the document were the following:

Kyrgyz Alliance for Water and Sanitation (KAWS):

Anara Choitonbaeva, Expert for Water, Sanitation and Community Mobilisation

Ecological Movement BIOM:

Anna Kirilenko, Gender and Environment Specialist

Vladimir Korotenko, Chairman

WECF (Women in Europe for a Common Future):

Irina Kozban, Junior Expert for Resource Management

Claudia Wendland, Water and Sanitation Specialist

Sascha Gabizon, Executive Director

Thank you also very much for the valuable comments by:

Nina Vashneva, Chief specialist of the State Disease Prevention and Sanitary and Epidemiologic Surveillance Department, Ministry of Health of the Kyrgyz Republic;

Askarbek Toktoshev, Director of the Department of Water Supply and Sanitation Development under the State Agency of the Kyrgyz Republic on Construction, Housing and Public Utilities;

Chybak Chinaliev, Project coordinator of the Community Development and Investment Agency of the Kyrgyz Republic (ARIS);

Shairgul Orozbakieva, Chief specialist of the Department of Water Supply and Sanitation Development under the State Agency of the Kyrgyz Republic on Construction, Housing and Public Utilities,

for providing help in GIS processing:

Alata Elatawneh, PhD student at the Institute of Forest Management, Technical University of Munich.

We gratefully acknowledge the financial support of the **Agence de l'Eau Artois-Picardie, UNDP and the Dutch Ministry of Foreign Affairs** that made the conduction of the feasibility study possible.

List of Acronyms and Abbreviations

ADB	Asian Development Bank
ARIS	Community Development and Investment Agency
CAAW	Central Asian Alliance for Water and Sanitation (NGO)
CDWUU	Community Drinking Water User´s Union
DFID	Department for International Development (UK)
Ecosan	ecological sanitation, here a UDDT
EBRD	European Bank for Reconstruction and Development
GIZ	German Agency for International Cooperation
KAWS	Kyrgyz Alliance for Water and Sanitation (NGO)
LA	local authority
LSA	local state authority
NGO	non-governmental organization
NPD	National Policy Dialogue
O&m	operation and maintenance
RWSS	Rural Water Supply and Sanitation project
UDDT	urine diverting dry toilet
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
VIP	ventilated improved pit latrine
WASH	Water, Sanitation and Hygiene
WB	World Bank
WECF	Women in Europe for a Common Future (NGO)
WHO	World Health Organization
WSS	Water supply and sanitation
WUA	Water Users' Association

List of tables

List of graphs

List of maps

Contents

1. Introduction

Access to water and sanitation has been recognized as a human right by the United Nations General Assembly and Human Rights Council. This means that ensuring access to water and sanitation for all is a legal obligation. As any other human right, a fundamental principle is everybody´s right to enjoy this right without discrimination.

The Protocol on Water and Health provides a sound framework for the translation of the human right to water and sanitation into practice, particularly by setting specific targets and target dates.

Although the Republic of Kyrgyzstan has not yet ratified the Protocol on Water and Health, a National Policy Dialogue on integrated water resources management has been active since 2007, first with the aim of achieving the MDG 7 goals and then starting the target setting process under the Protocol on Water and Health. In October 2013, the target setting process has been finalised with a final report setting and defined target in the following nine areas:

- Quality of the drinking water supplied
- Reduction of the scale of outbreaks and incidents of water-related diseases
- Access to drinking water
- Access to sanitation
- Quality of discharges of wastewater from wastewater treatment installations to waters within the scope of the Protocol
- Quality of waters, which are used as sources for drinking water
- Identification and remediation of particularly contaminated sites
- Effectiveness of systems for the management, development, protection and use of water resources
- Frequency of publication of information on the quality of drinking water supplied and of other waters relevant to the Protocol

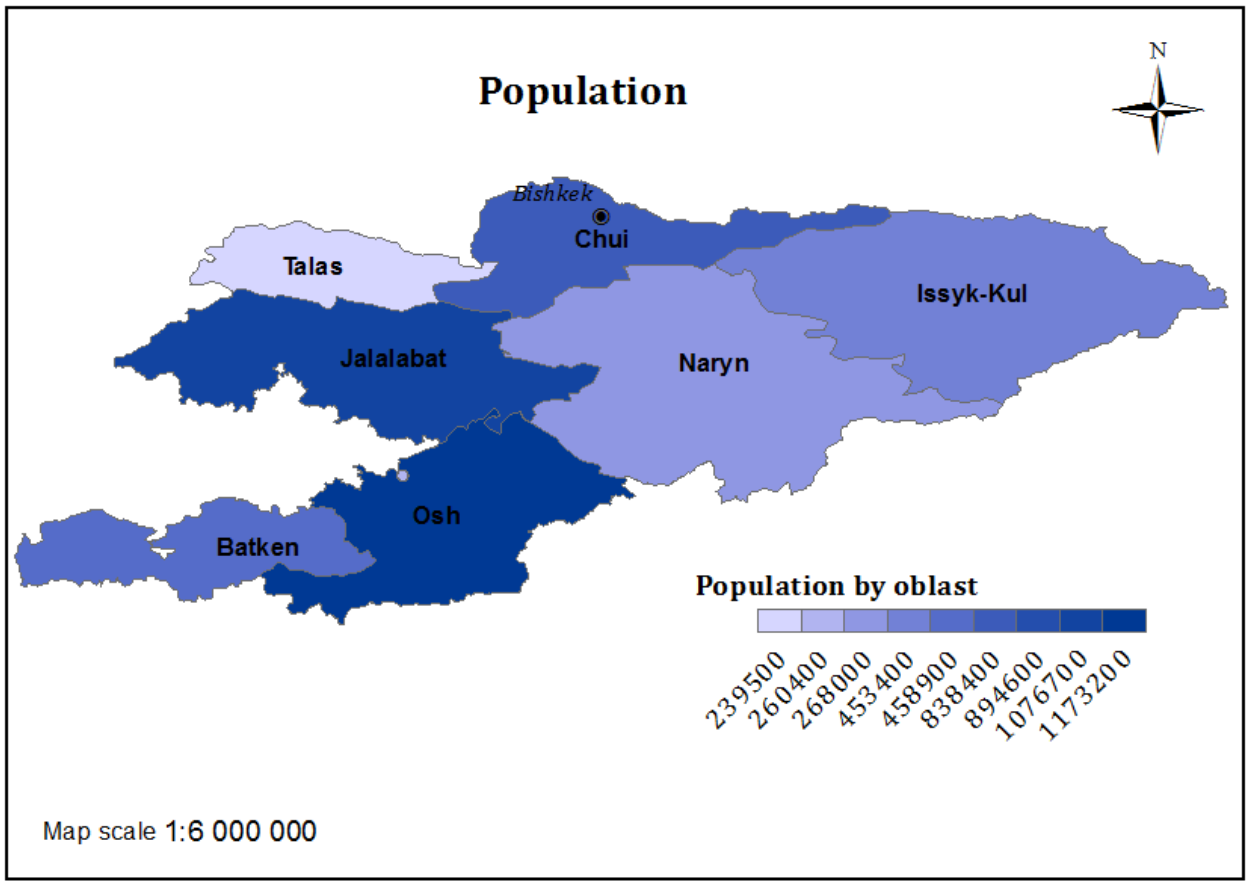
This study comes in line with the targets set, complements them with recommendations and can support the leverage of reaching the targets. It aims not only at identifying the inequalities in the water and sanitation sector but proposing concrete solutions.

2. Baseline Situation

This chapter gives an overview on the baseline situation in the Kyrgyz Republic in terms of population, access to water and sanitation and disparities.

2.1 Population

As of 2013, the estimated total population of the Kyrgyz Republic is 5 663 100 people, of whom one third – almost 1 900 000 people live – in urban areas and two thirds – 3 762 900 – people live in rural areas (National Statistical Committee 2013). The most populated regions are Osh and Jalalabat oblasts. Naryn and Talas oblasts are featured by the lowest number and density of population, mainly due to their geographical characteristics.

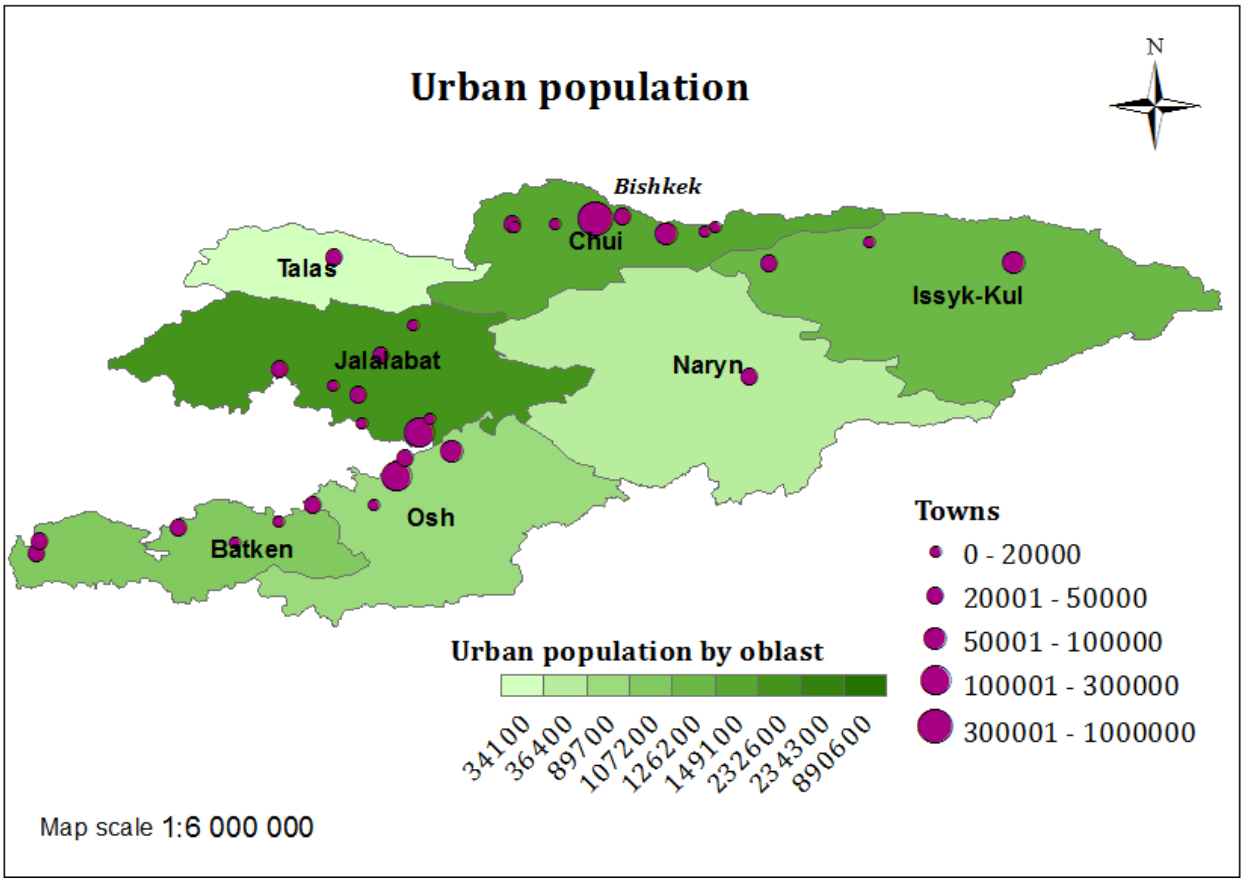


Map 1. Total population[1]

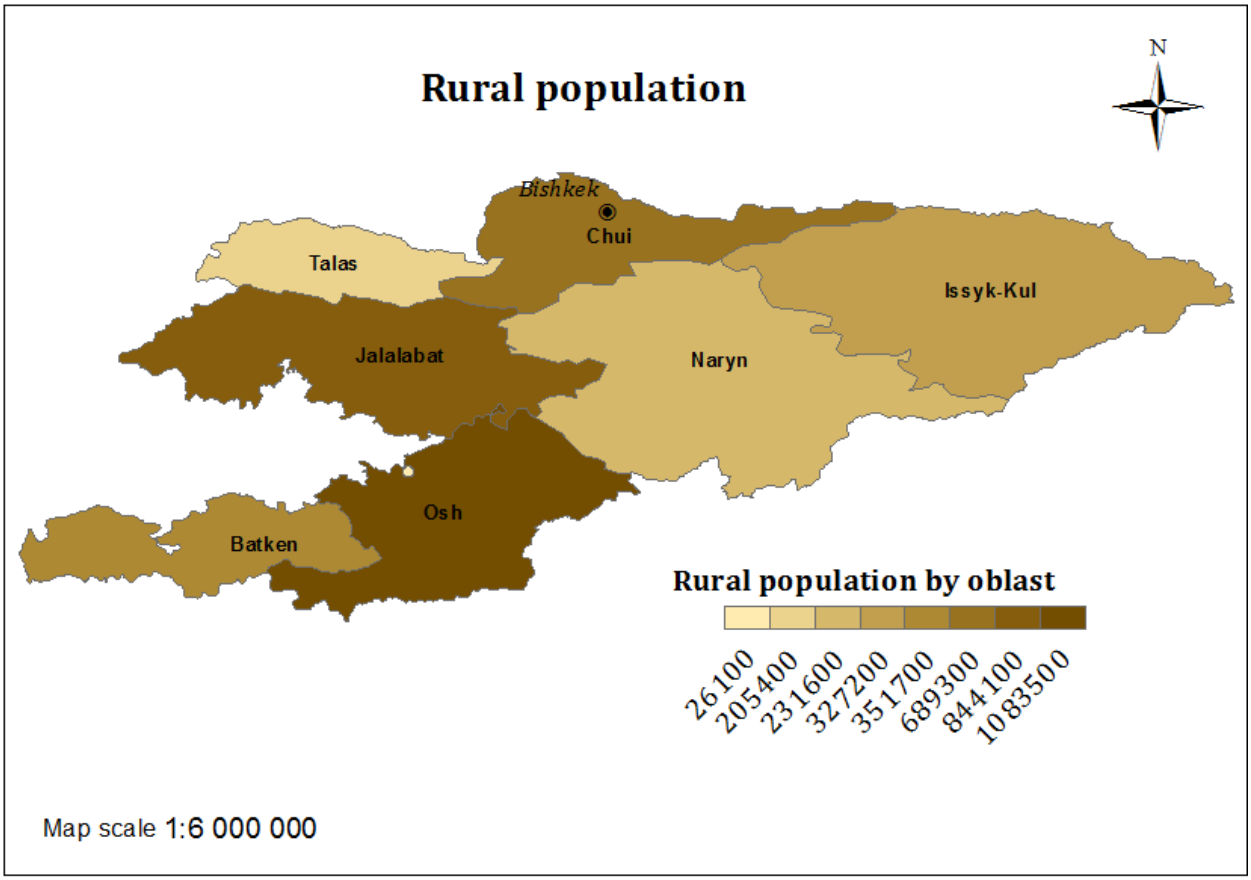
URBAN POPULATION: According to the Kyrgyz Republic's institutional and political definitions, there are 40 urban settlements in the country (National Statistical Committee 2011), 31 of which are cities and towns (ARIS 2013). The main cities and towns are Bishkek (894 600 citizens), Osh (260 400), Jalalabat (103 000), Karakol (70 500), Tokmok (55 800), Uzgen (52 100), Kyzyl-Kiya (46 500), Balykchy (44 400), Karabalta (40 400), Tashkomur (37200) and Naryn (36 400). In these settlements, water supply and sanitation is managed by vodokanals (water utilities).

RURAL POPULATION: The rural population makes up the majority of the population of the Kyrgyz Republic. Of the existing 1,899 villages in the Kyrgyz Republic, almost one-third are below 750 people in size, and 98% are below 10,000 people in size (OECD 2009). From the economic point of view, these thresholds of 750 and 10 000 are important because the costs of supplying water change significantly above and below these levels.

[1] The scale of all maps in this document has been insignificantly distorted due to adjusting to .*doc format.



Map 2. Urban population



Map 3. Rural population

2.2 Poverty

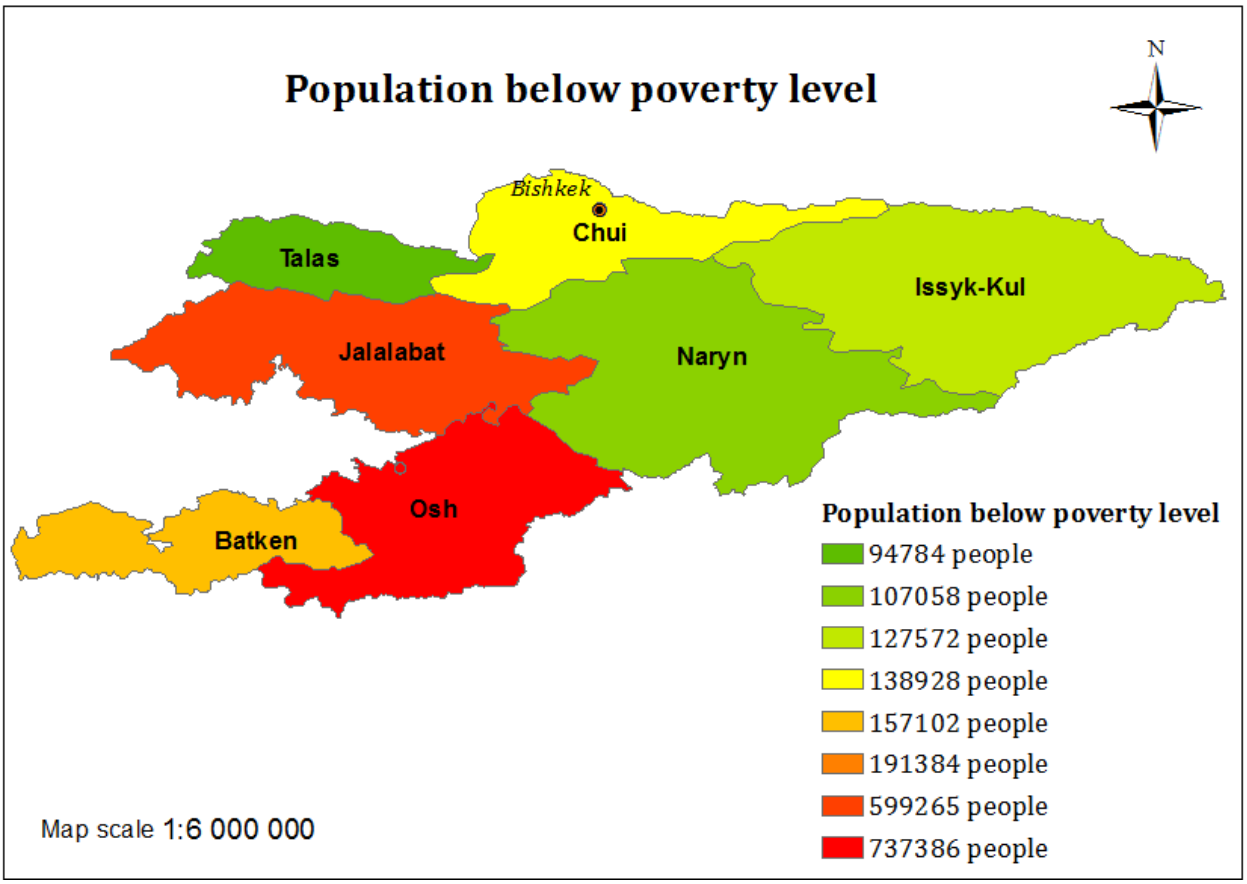
According to the research estimates of the World Bank (World Bank 2013a), the absolute (upper) poverty rate in the Kyrgyz Republic in 2011 reached the level of 36.8% of the population, while the extreme (food) poverty rate was 4.5%. This implies that out of an estimated population of 5.6 million people in 2011, the total number of people living below the extreme poverty line was 252 300, and the number of population living below the absolute poverty line was 2.43 million. This means that two out of five people have income below 25 849 soms per year per capita.

Data shows that poverty in the country dominates in the rural areas. 1.4 million (66%) of the poor population live in rural areas, while 636 000 (32%) live in urban areas. Therefore, the number of poor people living in the rural settlements is twice than the number of poor living in cities. The World Bank Snapshot (2013a) notes that changes in regional poverty rates are dynamic, with urban poverty rates increasing, with rural poverty gradually decreasing. Moreover, another tendency marked by the World Bank (WB) is the continuing increase of the absolute values of the poverty level. Thus, compared to 2010, the absolute poverty level has increased by 3.1%.

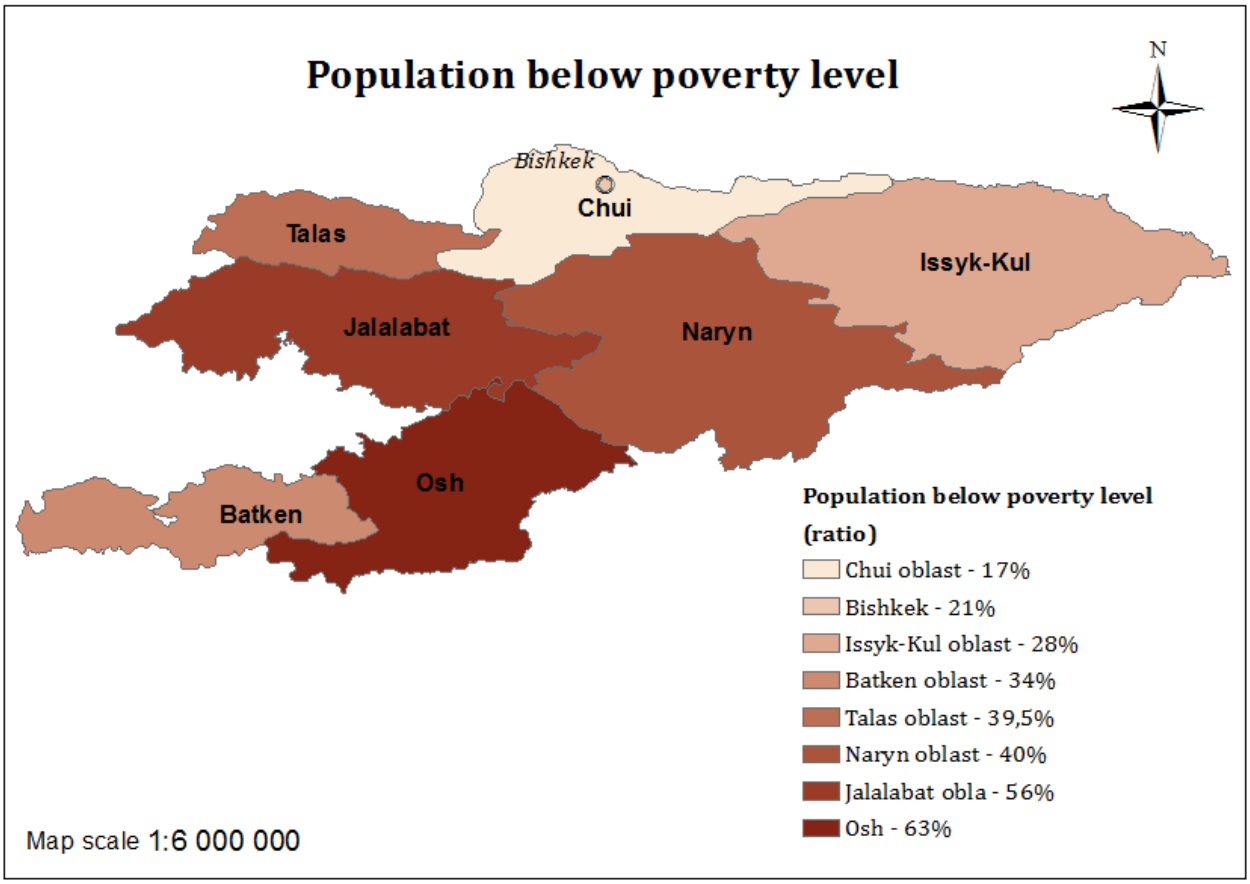
The official data on poverty level for 2012 indicates another slight increase of population below the poverty line. The poverty rates by oblast (based on consumption) are represented in the Table 1 and Graph 1.

Table 1. Poverty rates by oblast (based on consumption) (National Statistic Committee 2012)

	Population below poverty level in %, 2012			**Population below poverty level, 2012**		
	Total	**urban**	**rural**	**total**	**Urban**	**rural**
Kyrgyz Republic	**38.0**	**35.4**	**39.6**	**2153478**	**734158**	**1419320**
Batken oblast	34.2	38.7	32.9	157102	41480	115622
Jalalabat oblast	55.7	61.7	53.4	599265	183381	415884
Issyk-Kul oblast	28.1	22.4	30.4	127572	28219	99352
Naryn oblast	39.9	26.9	42.0	107058	9807	97251
Osh oblast	51.4	54.8	50.0	737386	236082	501304
Talas oblast	39.6	23.6	42.2	94784	8042	86742
Chui oblast	16.6	24.0	15.0	138928	35762	103166
Bishkek city	21.4	21.4		191384	191384	

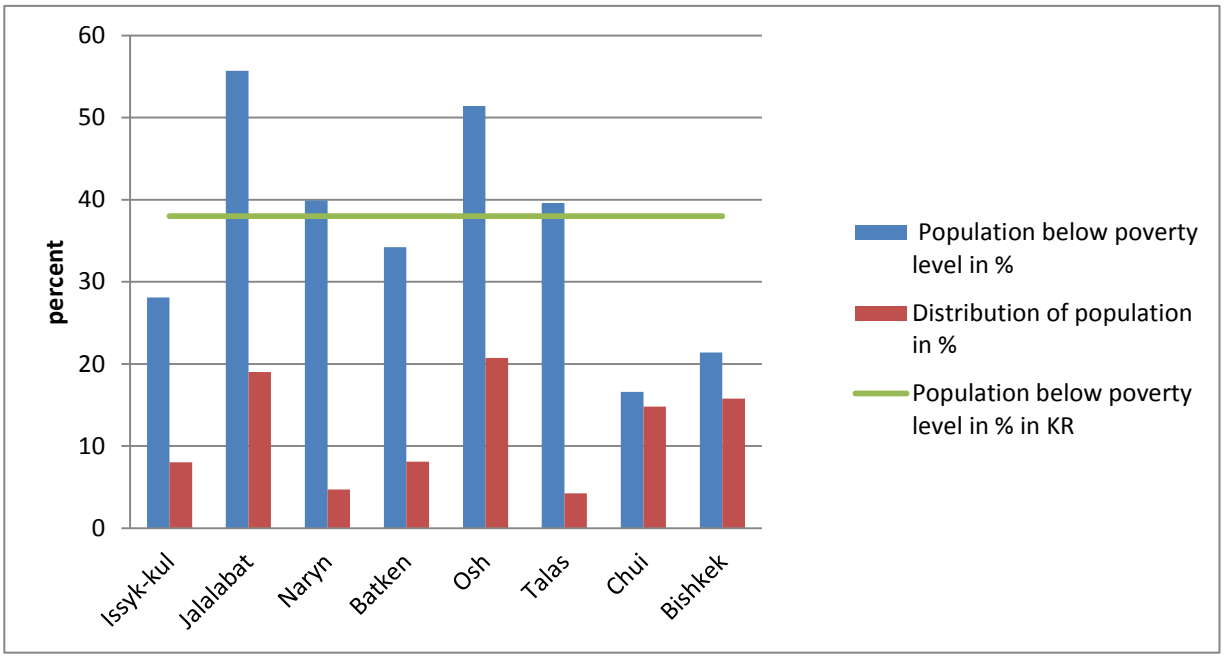


Map 4. Population below poverty level (absolute numbers)



Map 5. Population below poverty level (ratio)

Graph 1. Poverty rates at oblast level



Graph 1 compares the ratio of poor population with the general size of population by oblast.

Based on the provided data, the regions of the Kyrgyz Republic can be grouped in the following way to identify baseline patterns for further management and implementation of solidarity mechanisms:

- highly urbanized Chui oblast and the capital city Bishkek, located in the region, can be considered the wealthiest areas in the Kyrgyz republic. The poverty level here is the lowest across the country; it is slightly higher among urban population.
- Jalalabat and Osh oblasts are regions with the highest absolute and relative poverty rates. They combine above-average ratio of poor population with a population size and density. This means that these regions give home to the largest number of economically vulnerable citizens, both in rural and urban areas.
- Naryn and Talas oblasts allocate relatively low numbers of population, however large part of it lives in poverty. The most vulnerable groups in the regions include rural population, inhabitants of small and remote villages. The poverty level in rural areas is significantly higher than in the only two urban settlements.
- Issyk-Kul and Batken oblasts represent an intermediate scenario with relatively moderate number of population leaving below the poverty line. The gap between the income of rural and urban population is not as significant as in Naryn and Talas oblasts.

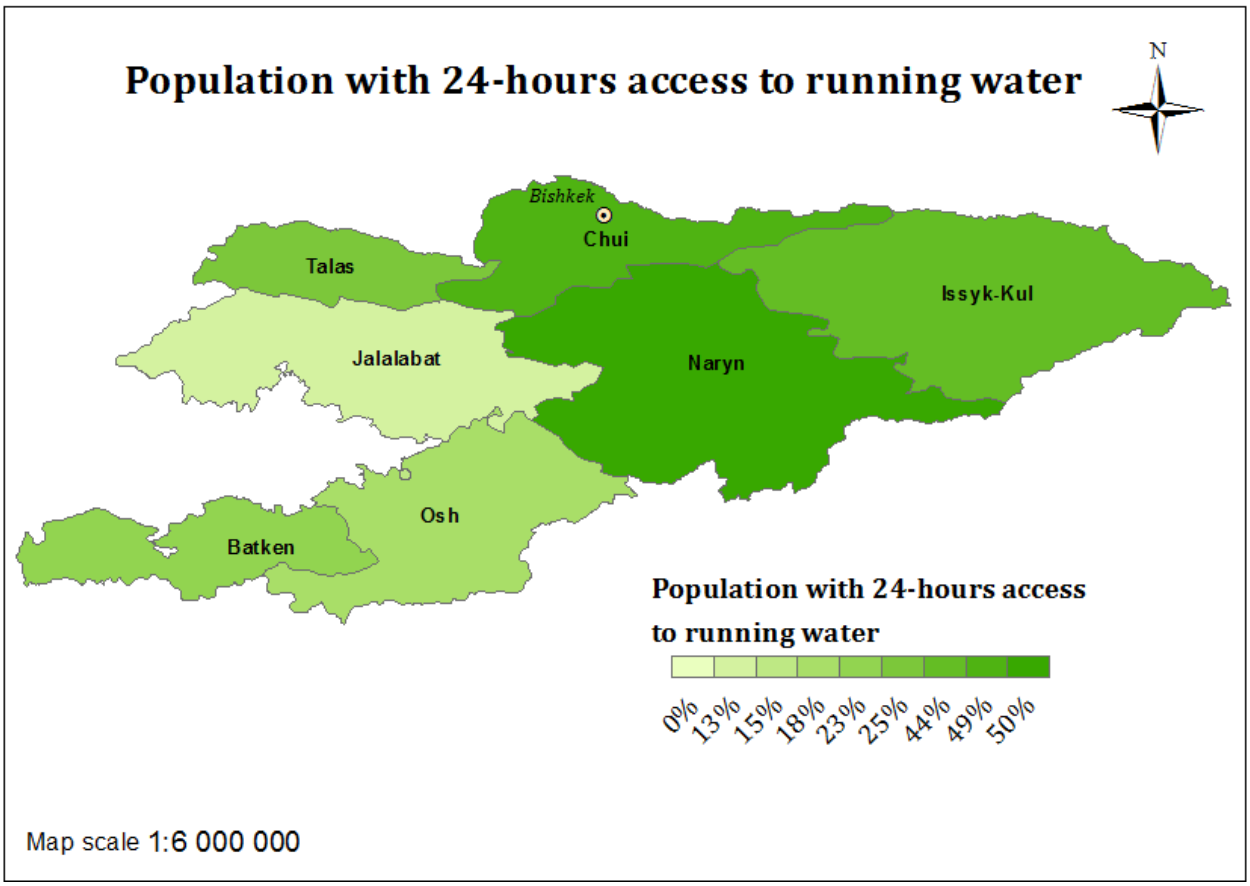
2.3 Access to Drinking Water

The results of ARIS research conducted in 2013 show that only 59.9 % of rural population obtain water from a water supply system (water posts). The rest of the population (40.1%) use water obtained from ditches, rivers, channels, springs, water carriers and other unsafe sources. Limited access to water in the households complicates use of water for personal and family hygiene, washing, bathing, cleaning, washing up, etc. Moreover, women and children bear heavier burdens in searching for water sources and fetching water. Because of this, water-borne parasitic and infectious diseases result in huge annual losses for the Kyrgyz Republic.

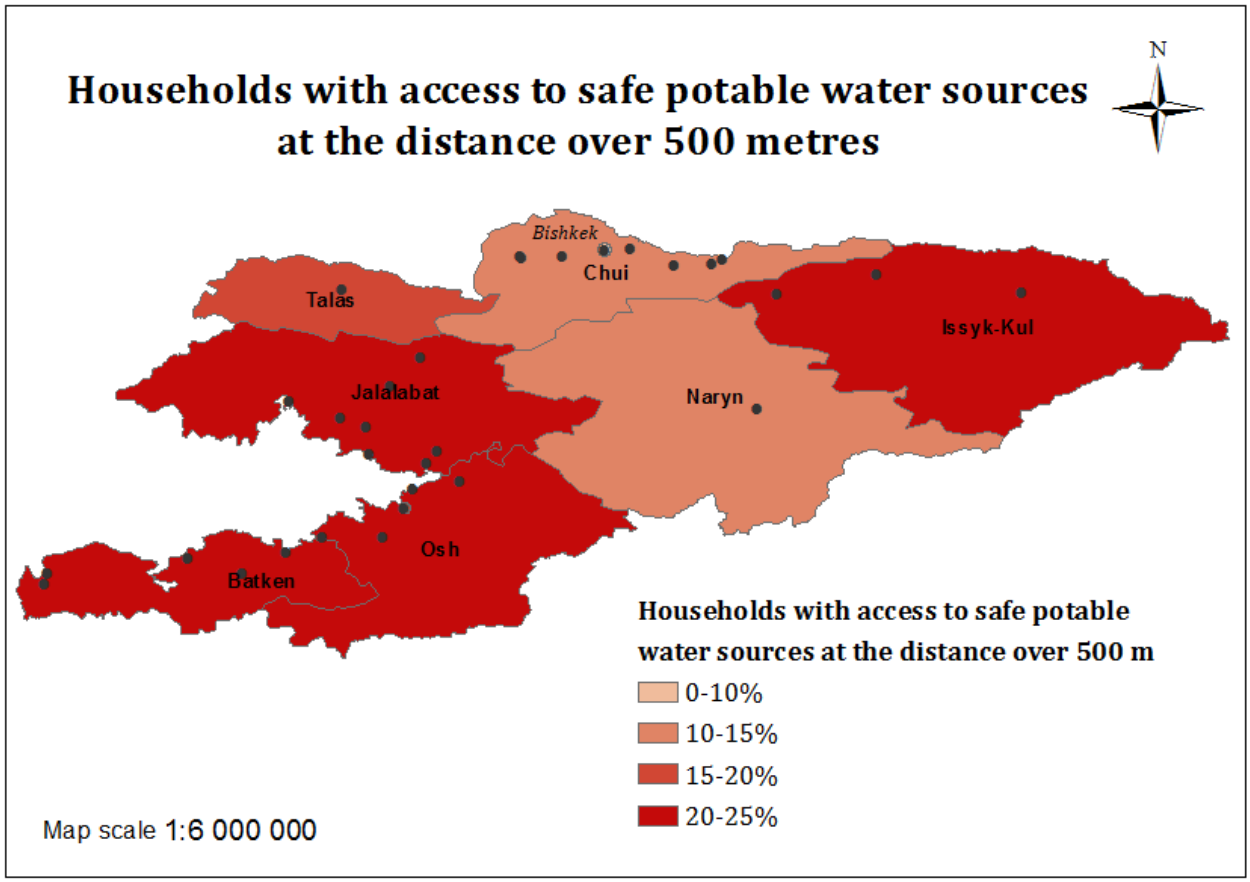
However, access to centralized water supply system does not necessarily provide continuous access to clean water. The interviews conducted by ARIS show that only 37.13% of rural population in the country have water supply for 12 or more hours per day (see Table 2) and are satisfied with the frequency of the supply. The rest of the population (62.87%) do not have regular water supply. They experience limited water supply as well as interruptions in supply which can last for days. 36.68% of the population do not have any water supply. More detailed information on the continuous water supply to rural population by oblast can be found in the Map 6.

Table 2. Frequency of water supply in rural areas

Water supply	**Population**	**Percentage**
Uninterruptedly (24 hours)	1 030 687	27.2%
12 and more hours daily	376 273	9.93%
4-12 hours daily	461 545	12.18%
Less than 4 hours daily	430 164	11.35%
Not daily	66 027	1.74%
No water supply	1 390 273	36.68%
No water supply in a winter time	2 088	0.06%
2 hours, 4 days a week	5 466	0.15%
4 hours, 3 days a week	15 408	0.41%
Not daily in a winter time	1 171	0.03%
2 hours, 2 days a week	10 862	0.27%
Total	**3 789 964**	**100%**

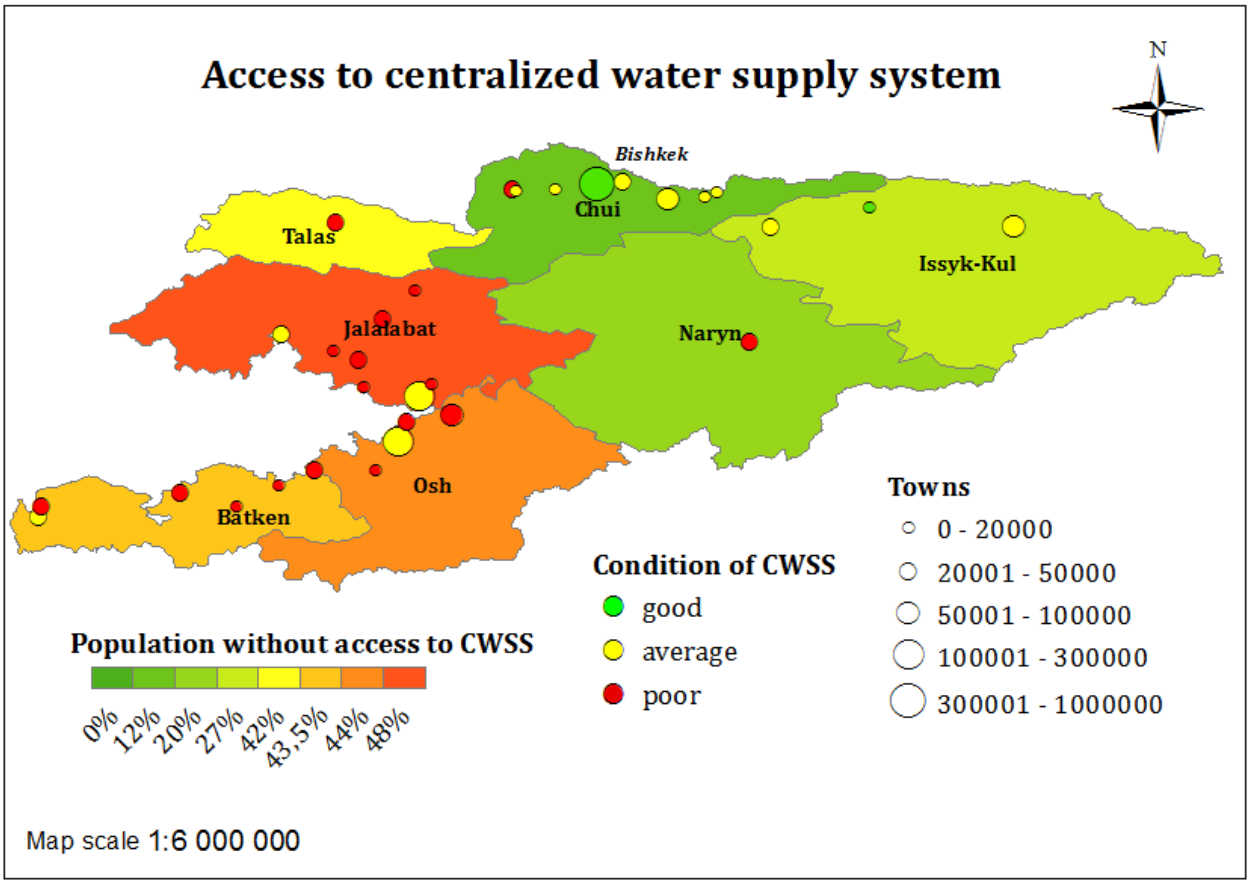


Map 6. Access to running water in rural areas (frequency of water supply)



Map 7. Households with the access to safe potable water sources at the distance over 500 m

CENTRALIZED WSS: Interview-based research conducted by ARIS in 2013 provides data on the availability of a centralized water supply system, water supply service frequency, Community Drinking Water User´s Unions (CDWUUs) in the country. According to ARIS MIS data, the total number of villages (including the villages being a part of the Kyrgyz cities) is 1 899. Of them 651 (34.28%) do not have centralized water supply system. These villages cover about 45% of the Kyrgyz households. Communities without centralized water supply and sanitation systems prevail in the Southern oblasts (see Map 8).



Map 8. Access to centralized water supply system

The lowest level of water supply is noted for Batken, Jalalabat and Osh oblasts. According to this data 218 of 651 rural communities that do not have access to piped water supply are located in Jalalabat oblast, and 212 villages are located in Osh oblast. These settlements have a population of more than 500 000 people.

The large regional disparity means significant variation in affordability of water supply and sanitation services. Along with great population density variation around the country disparity in ability to pay for WSS means that there are certain "hot spot" areas where the ability to pay is low and the unit costs of water supply provision are high and where the most vulnerable groups can be indicated (OECD 2009). A significant difference in poverty level between various smaller administration units should also be considered: in some rayons it reaches 75% (World bank 2013b).

Table 3 illustrates the influence of household income on access of poor and non-poor population to water. Thus, according to current data (National Programme 2013, Table 3), poor people in urban areas mostly have to use outdoor sources of water; their access to running water is limited. The most vulnerable population stratum – poor rural population – often can not afford private water pumps and is often forced to use reservoirs, rivers, lakes and ponds with unsafe water quality.

Table 3. Water Access, by Urban/Rural and Poverty Status, 2005 (National Programme 2013)

	Urban		Rural	
	Non poor	**Poor**	**Non poor**	**Poor**
Main water source (% of total population)				
Running water	71.2	32.7	13.7	7.0
Private water pump	21.2	35.8	27.3	19.6
Public (communal) water pump	6.8	26.5	35.3	39.6
Reservoir, river, lake, pond	0.1	0.7	17.6	27.2
Other	0.7	4.3	6.1	6.6
Location of water source (% of total population)				
Indoors	66.1	29.1	10.9	3.2
Outdoors (in the yard)	26.8	41.3	34.7	27.3
Outdoors (in the street)	7.2	29.6	54.4	69.5
The distance from home to the nearest water source if is in the street (% of total population)				
Less than 100 m	55.3	72.3	49	48.9
100-200 m	31.8	19.5	44.5	36.5
200-500 m	10.3	5.8	5.7	13.5
500-1000 m	2.6	2.4	0.9	0.7

2.4 Access to Sanitation

Table 4 presents the available data on provision of sewerage systems in the country (according to data provided by the Department of Water Supply and Sanitation Development under the State Agency of the Kyrgyz Republic on Construction, Housing and Public Utilities).

Table 4. Provision of sewerage systems by oblast

	Region	**% of coverage**
1	Batken oblast	3%
2	Jalalabat oblast	7%
3	Issyk-Kul oblast	11%
4	Naryn oblast	5%
5	Osh oblast	11%
6	Talas oblast	4%
7	Chui oblast	37%
8	Bishkek city	81%
	Kyrgyz Republic	**25%**

The information on the current conditions of sewerage systems in urban settlements is very limited and outdated. 24% (Target setting 2013; up to 28.4% according to different sources) of the population in the Kyrgyz Republic are provided with centralized sewerage systems with treatment facilities, mainly in

Bishkek. More than half of small towns and oblast centers do not have centralized sewerage and wastewater treatment plants. Moreover, the population size of regional and district centers with access to sanitation reduces annually by 1.5% due to the degradation of infrastructure. National Programme 2013 provides limited information on the situation with sewage systems in urban settlements. It defines sewage systems as adequate if 50% of the population or more are connected to the system, and inadequate if the coverage is less than 50% (Appendix A, Table X).

Generally, sewerage systems were constructed in 1960-1990s; most of them have life-expired. Even in large towns the sewerage systems only serve a part of population, e.g. approximately 35% of the population in Kara-Balta, about 30% of the population in Jalalabat town, and only 13% of the population in Naryn tow.

In all the towns the sewerage systems are primarily located in areas of the city with multi-storey buildings. The majority of the population living in the areas with private housing use pit latrines and septic tanks which require regular (and expensive) removal of sludge. Moreover, the sludge removal services do not necessarily cover all the districts with pit latrines sanitation systems. Thus, the population in Talas town complained of leakage in the sewer pipes, blocked pipes, and a non-functioning wastewater system as well as concern due to the high water table where septic tanks/ pit latrines fill up very quickly (EBRD 2011, 2012*).*

The situation with the treatment plant in Naryn city is a pressing issue not only for Naryn, but also represents a problem common for the entire Central Asian region. Due to low efficiency of sewage treatment, some 20-30% of not duly treated sewage is released into the Naryn river which is a source of drinking water for settlements located downstream. (Aga Khan Branch Foundation 2010).

Sewerage in residential areas in all small towns and in former urbanized villages like Haidarken, in Batken, Min-Kush in Naryn, Kadjy- Say in Issyk-Kul, Orlovka, Chong-Tuz in Chui, Kochkor-Ata, Shamlday-Say in Jalalabat oblasts with individual houses should be implemented by removal of sewage to sewage treatment. However, at present, due to the lack of cesspool trucks Water or Communal Service Utility Companies are not able to provide such services to the public. Therefore, residents of private houses have to use outside toilets with no cleaned cesspits. As a result, the main volume of domestic wastewater is infiltrating into the ground, and sediments from cesspits and sedimentation basins are composted in the gardens.

In Naryn town the operation of the urban sewage treatment plant was complicated by difficulties in activating biological treatment facilities. Currently wastewater does not go through bio-filters – the main biological treatment facilities. Mechanical cleaning structures work ineffectively (20-30%). The situation with wastewater treatment plants is almost the same in all small towns. (Aga Khan Branch Foundation 2010).

Poor status of treatment facilities is observed in Karakol, Balykchy, Cholpon-Ata cities, Jergalan, Kadji-Sai, Aksuu villages located near the Issyk-Kul lake. The issues of construction of a sewage pump station in Jalalabat city and local treatment facilities in Mailuu-Suu remain unsolved. As a result Changetsai and Mailuu-Suu rivers are regularly polluted. Sewage waters in Naryn town go through mechanical treatment to the Naryn river. Sewage treatment facilities in Minkush and Dostuk villages of Naryn province virtually do not work. Since 1990 treatment facilities in Kara-Suu town have not been working.

According to Kyrgyzgidromed water flows of basins of Chu and Syrdaria rivers are polluted the most. In Chui, Alamedin, Chon-Kemin, Issyk-Ata, Kechi-Kemin, Naryn, Akbura, Kara-Daria, Tar, Yassy, Kurshab rivers increased contents of ammoniac and nitrate nitrogen, compounds of copper, zinc, oil and oil products, organic substances, as well as residues of weed and pest-killer chemicals of DDT and HCH groups are noted. High concentration of compounds of copper, zinc, oil and oil products, nitrite nitrogen were observed in Tyup, Jergalan, Jety-Oguz, Cholpon-Ata, Ak-Suu and etc.

In rural areas of the Kyrgyz Republic, 93% of the population has access to improved sanitation (WHO & UNICEF 2013). This means in general a simple outdoor pit latrine, often located far from the house. Due to the lack of centralized water supply on the premises, there is no opportunity to implement flush toilets. The pit latrines are constructed out of poor quality materials and are not emptied when they are full but rather relocated. The toilets are difficult to use at night and during winter because of the absence of light and low temperatures. This leads to complications, especially for women, who often report that they suffer from associated health problems such as urinary tract infections. Small children use potties in the house. Older children (more than 6 years old) use pit latrines, which poses a health risk for them. Most people have an aversion to pit latrines because of the smell and poor hygienic conditions. Latrines are cleaned regularly, once a week during summer time and once every two weeks to a month during wintertime, and the task is usually accomplished by women or girls.

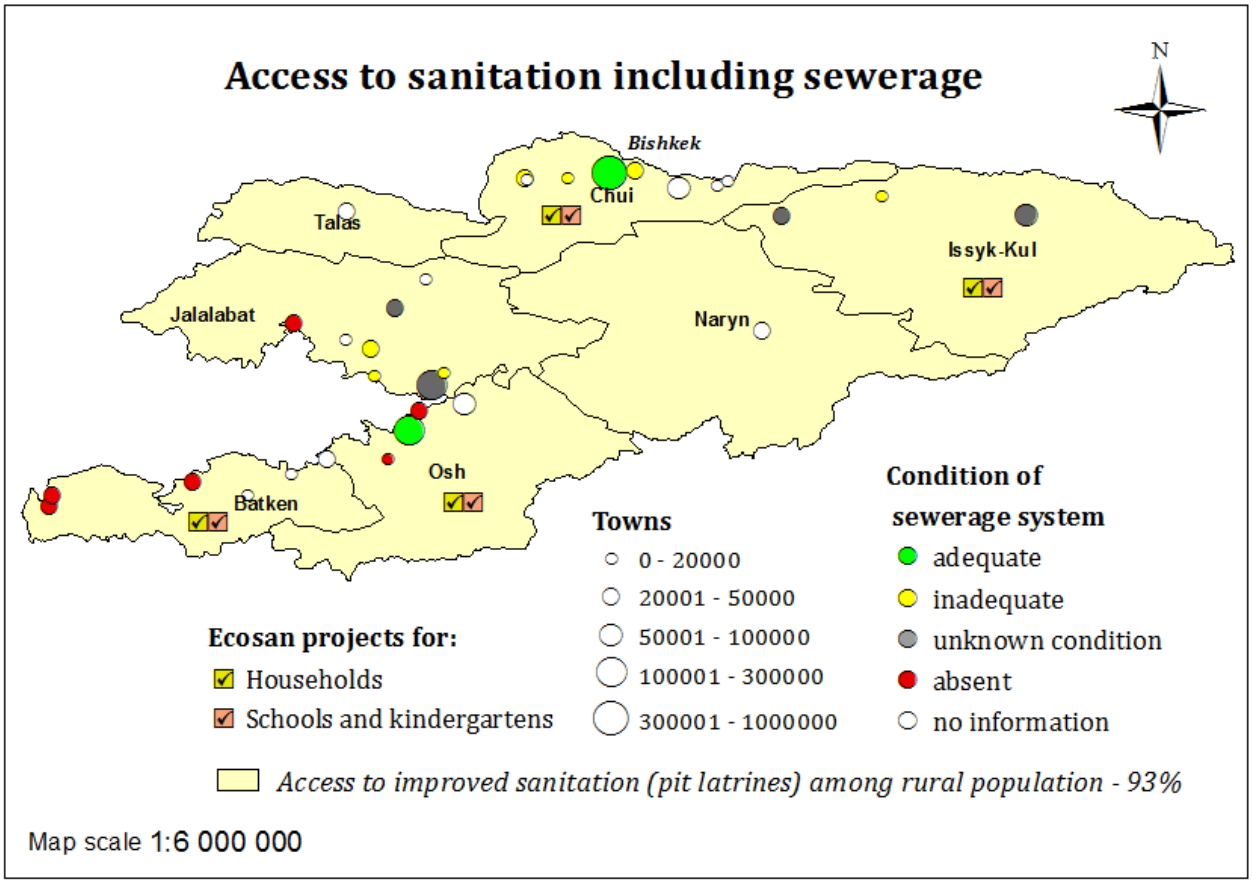
A small part of the rural population has access to improved sanitation facilities (VIP, ecosan toilets, septic tanks, facilities for the composting of sewage). VIPs are upgraded pit latrine which are ventilated but still outdoors and smelly.

The urine diverting dry toilet (UDDT) or ecosan toilet is an innovative technology, which can be implemented inside the house or attached to the house. The ecosan toilet does not need water for flushing, it does not smell, nor does it attract flies. The technology is very much appreciated especially by women and girls who report to have fewer diseases. Urine diverting toilets do not mix urine and faeces by using a separating toilet seat. Urine is collected and stored in a reservoir. Faeces, which are collected underneath the toilet, must be directly covered by dry materials such as sawdust, soil, ashes, or a mixture of those. The toilet products, urine and faecal compost, can be used as organic fertilizers. Urine is an excellent liquid fertilizer containing nitrogen, phosphorus, potassium and many micronutrients. The fertilized plant will grow faster, develop more leaves and produce higher yields. Faecal compost is an excellent soil conditioner and fertilizer. The safe application of urine and faecal compost requires some basic hygienic agricultural considerations, according to WHO guidelines[2]. The UDDT technology has been introduced in Kyrgyzstan by CAAW and WECF during the last ten years. After the construction of an ecosan toilet, adequate operation and maintenance of the facility, including the safe use of the toilet products, is very important for long-term sustainability.

Ecosan toilets have been implemented (around 500 individual toilets and 10 in schools and kindergartens) in Batken, Issyk-Kul, Chui, Osh and Naryn oblasts.

The basic picture of the current situation with access to sanitation including sewerage is reflected in the Map 9.

[2] Guidelines for the safe use of wastewater, excreta and greywater 2006
http://www.who.int/water_sanitation_health/wastewater/gsuww/en/



Map 9. Access to sanitation facilities in towns and rural areas

2.5 Water Quality and Water Related Diseases

In the Kyrgyz Republic about 90% of water supply systems use water from underground sources, including springs, and about 10% use water from surface sources. Nevertheless, there are problems with water quality in a number of regions. Often sanitary protective areas of water reservoirs have no fences; the livestock is grazing near the reservoirs. The distributed water is often not treated and its quality is not checked. About 48% of water supply facilities are not equipped with disinfecting devices. Many of 107 412 centralized water supply systems (water pipelines) operate inefficiently. Therefore, risks of use of poor quality water are increasing both due to outdated infrastructure and the consequences of climate change.

As rural (small-scale) water supplies lack on-site laboratories, CDWUUs are entitled to contract with any accredited laboratories. Current instability of CDWUUs' financial status prevents most of them from using laboratory services. In practice, control of the quality of drinking water from small-scale supplies is carried out by the Centre of State Disease Prevention and Sanitary and Epidemiological Surveillance. The data on rural water supply quality is submitted quarterly to the Department of State Disease Prevention and Sanitary and Epidemiological Surveillance from the Naryn, Issyk-Kul, Talas and Chui regions. However, the software run by them often fails and needs revision. Difficulties of surveillance are also associated with a personnel turnover rate in this field.

The highest level of bacterial contamination of tap water is observed in the settlements of Jalalabat (28.3%) and Chui (18.4%) oblasts and the city of Osh (17.6%). (State Sanitary and Epidemiologic Surveillance Department 2011)

In recent years, the majority of the cases of water-related diseases have been registered in the rural areas of the Kyrgyz Republic, especially in the Southern regions of the country (Batken, Osh, Jalalabat oblasts) and in the southern part of Issyk-Kul oblast (Ton, Jety-Oguz, Ak-Suu rayons). Among the acute intestinal infections widespread in Kyrgyzstan, directly or indirectly related to water and sanitation, the most frequently recorded are typhoid fever, paratyphoid fever, bacillary dysentery and viral hepatitis A. Average republican intestinal infections incidence has been registered at continuously high level, having reached in certain years the rate starting from 332.4 (in 2001) up to 490.2 (in 2010). The highest incidence rate is registered in Batken oblast, i.e. 4161 (980,0), and Jalalabat oblast, i.e. 5400 (552,8), having exceeded the national indicator almost 1.8 times.

In autumn 2012, there were outbreaks of viral hepatitis A among the school children of junior classes in the rural areas of southern part of Issyk-Kul oblast and high rate of deceases with hepatitis A were registered in Bokonbaev and Teplokluchenko villages which are the rayon centers with more than 12000 population. The main source of the centralized water supply systems are the surface waters. The water supply networks are completely deteriorated and water quality is very poor. The local population of the villages often use the rivers crossing as a water source.

Typhoid morbidity rate is still a serious issue. Typhoid is more often registered in a form of waterborne outbreaks. Thus, in 2007 morbidity rate for enteric typhoid and paratyphoid has increased by 1.4 times and resulted in 186 cases of typhoid and 90 of paratyphoid. Jalalabat oblast is the most unfavorable region in the country regarding enteric typhoid, with 70% of total cases of this nosology. In 2007, 159 cases were registered in form of local outbreaks, mainly in populated areas located along Mailusuu river. The main reasons for this increase of disease rate remain to be insufficient provision of good quality drinking water and lack of water, sanitation and hygiene (WASH) activities.

Helminthosis keeps significant position in infectious pathology of population of the republic. 40-45% of the infectious diseases are helminthosis. High rate of infected population is caused by the lack of hygienic habits of the population and behavioral aspects as well as poor quality water. Every year from 35 to 45 thousand people infected with helminthes are officially registered in the country but the true picture exceeds the official statistics' by several times. The most widely-spread helminths are enterobiasis (63%), ascaridiasis (22.4%), hymenolepiasis (5.8%) and echinococcosis (2.3%). As for protozoa, Giardia forms 14.4%.

Within the framework of Department for International Development (DFID) funded project examination of children for parasitic diseases have been undertaken in 2003-2007. It was discovered that from 61% to 79% children in selected villages were infected with four main parasites (enterobius, ascaris, giardia and hymenolepis). Similar, 6500 children have been tested for giardiasis and the rate of infected children was more than 38%.

With the support of DFID funding the study also looked at the change in the incidence of giardiasis and other water related diseases before and after the completion of the World Bank Rural Water Supply and Sanitation project 2003 - 2008. Data for the giardiasis analysis is highly accurate as it came from samples taken before and after completion of the WSS infrastructure. However, data for the other water related diseases is probably less accurate as it came from a secondary source: information provided by the Village Ambulatories.

The main findings were:

- The overall incidence of giardiasis among children fell by nearly two thirds, from 30.9% to 13.2% (Table 5). While it dropped in all three oblasts, the decline was greatest in Issyk-Kul and Talas. Naryn was virtually unchanged.

- The analysis of acute intestinal infection (which includes acute viral hepatitis, dysentery, giardiasis, enterobaeces, and ascariasis) shows that in 49% of villages there was a decline, in 9% there was no change, and in 32% an increase.

It should be noted that care must be taken when attributing impacts. There are many causal factors that influence the incidence of acute intestinal infection, of which the quality of drinking water is just one. Hygiene is another. Several people have suggested the introduction of school meals in 2005, often prepared in not very hygienic conditions, is one of the reasons why the drop in acute intestinal infection was relatively modest, and in fact increased in some villages.

Table 5. Incidence of giardiasis among children (Target setting 2013, Gender aspects 2013)

Oblast	Rayon	Village	Basic inspections 2005	Results of inspections 2007
	Ak-Suu	Zyndan	53%	13%
	Jeti-Oguz	Kichi-Jargylchak	50%	14%
	Issyk-Kul	Chyrpykty	23.7%	18,7%
Average change in Issyk-Kul			41.1%	15.5%
	Kochkor	Kok-Jar	37%	39.1%
	At-Bashy	Taldy-Suu	35%	30.4%
	Naryn	Tash-Bashat	37%	20.4%
Average change in Naryn			30.6%	30.3%
	Manas rayon	Aral	25.5%	8.3%
		Chon-Kapka	14.6%	10.9%
		Kyzyl-Jyldyz	19.4%	13.6%
	Kara-Buura rayon	Suulu-Maimak	34%	12.2%
		Kara-Suu	35.7%	9.0%
Average change in Talas			29.1%	10.7%
Overall average change in Project area			30.9%	13.2%

Correlation between indicators of adequate WASH conditions and children mortality rate is also observed: The highest level of infant mortality (the number of children who died in the age of up to 1 year per 10000 live born) caused by infectious and parasitic diseases is observed in Batken province (43. 4 in 2006; 21.6 in 2010) and Osh province (23.9 in 2006; 15.4 in 2010). It is these provinces that have less access to safe drinking water. For instance, in Bishkek the mortality and infant mortality rates are much lower (6.7 in 2006; 1.4 in 2010).

2.6 Gender

POLICY LEVEL: Equal access to water and sanitation is not only dependent on population's income and availability and condition of WSS services, but is also closely related to governance and gender issues. Gender mainstreaming into water resources management has been recognized in many bilateral and multilateral meeting and documents at various level, such as International Conference on the Population and Development (Cairo 1994), the Fourth World Conference of Women (Beijing 1996), UN Millennium Summit (New-York 2000), World Summit on Sustainability Development (Rio 92, Johannesburg 2002).

The Kyrgyz society is very much male dominated. Women are generally underrepresented in governance and administration and play a smaller role in decision-making.

In 2011, the Parliament for the first time failed to enable implementation of gender quota of not more than 70% of single sex persons representation in the composition of auditors of Chamber of Accounts: there are only 2 women out of 9 auditors, which is only 22.2%. At that, these 2 women were nominated by the President, whilst parliamentary majority and parliamentary minority nominated only men to become auditors. This case demonstrates the lack of political will and commitment to the requirements of gender legislations within a male portion of the Parliament. In this view, women's organizations will refer this to the Constitutional Chamber of Supreme Court, as soon as this body is established.

Table 6. Women among Members of Parliament in Kyrgyzstan

Year	Total number of MPs (people)	Women	%
1995	105	5	4.7
2000	105	7	6.8
2005	75	0	0
2007	90	23	25.5
2010	120	28	23.3

Elections of deputies to local administration bodies conducted in the Kyrgyz Republic on October 5, 2008, confirm a presence of stable traditional gender system structures (Table 7). Comparative analysis of registered candidates to deputies of local councils demonstrate the following distribution of candidates based on gender: the number of women in Bishkek and in Chui oblast exceeded 20 percent, of the rest regions, it varied from 10 to 19 percent. The smallest number of women-candidates is observed in Osh oblast, where only 10.4 percent of women were registered (2377 men and total 457 women for the whole oblast). In the republic as a whole, 17.4 percent of women and 82.6 percent of men were registered as candidates to be elected to local council representatives.

Table 7. Comparative data on deputies elected to local councils in 2004 and in 2008

Region	Percentage of women deputies in 2004, %	Percentage of women deputies in 2008, %
Bishkek	15.9	13.6
Batken oblast	16.54	14.5
Jalal-Abad oblast	12.0	18.2
Issyk-Kul oblast	23.74	16.2
Naryn oblast	16.4	13.3
Osh oblast	14.79	14.8
Talas oblast	12.0	11.5
Chui oblast	26.87	24.8
Total	**19.12**	**17.1**

Access of women and men to the decision making on the water issues at all levels is noted as unequal throughout the country. Only 2 women head the Urban Water Utility Companies "Vodocanal", meanwhile 80% of tariff collectors in the water utility companies are women.

Of 4175 individuals working in the CDWUUs women comprise only 18 %. Only 7 out of 433 CDWUUs all over the country are chaired by women; 10 women are deputy Chairmen of CDWUUs. Thus representation of women at CDWUU level is extremely low. Alongside, equal representation of men and women in the CDWUUs is known to improve management efficiency (see case study in the Appendix B).

HOUSEHOLD LEVEL

Women have a high burden in the households in addition to their income generation activities. Rural women are estimated to be twice as busy with household-activities in comparison to men. E.g. women are in charge of the water provision (72% of the respondents)[3]. Because of their household duties, especially rural women, suffer the most from the lack of adequate infrastructure (energy, running water, sanitation and hygiene). The time consuming and intensive efforts required to meet basic needs reduces the potential for further income earnings, which aggravates the precarious situation of households.

Young children and immune-weak people (including the elderly, and those with HIV-Aids) are at the greatest risk of becoming ill from diarrheal and parasitic waterborne illnesses. These increased cases of disease also increase workload of women, as in most cases women are the main care takers of sick family members.

Gender specific challenges include different risks for men and women. The highest mortality rate due to parasitic and other infectious diseases is registered among men. This can be primarily explained by the fact that men following stereotypic perceptions "must not bother about health, as it is an indication of weakness". Thus men often turn to medical help when it is too late.

Where sanitation facilities exist, the lack of privacy (e.g. no doors, no locks) in the facilities is of a greater burden to women. As a result of all the above, women in many countries try to drink as little as possible during the day and often suffer from associated health problems such as urinary tract infections, chronic constipation and other gastric disorders. In rural areas, men often avoid using pit latrines where they are badly maintained (stench, dirt) and relieve themselves outside whilst women remain dependent on the pit latrines.

Menstruation hygiene management (MHM) is a challenge when adequate WASH conditions are absent, e.g. a lack of sufficient and safe water for washing. Many women are also subject to health risks. Urinary tract infections, dermatitis, abdominal pains, vaginal scabies and complications during pregnancy can all be caused by poor menstrual hygiene management. In rural areas, it is often difficult (or unaffordable) to purchase hygienic material to manage menstruation in a hygienic way, particularly in public spaces, in school and at the work place. An issue is also the embarrassment that prevents young girls and women sharing their questions about MHM, because there is a taboo to talk about.

2.7 Vulnerable Groups

Among the population of the Kyrgyz Republic several specific vulnerable groups can be identified. Young families living the suburbs of urban and urbanized settlements are considered one of the most vulnerable groups. These are the families with 3-4 children in average, sometimes single-parents that acquire from the state land ownership. However, the given plots of land are located in districts without basic

[3] Bakashova et al.2013, page 8, http://www.wecf.eu/download/2013/June/HOMECOMFORTstudy.pdf

infrastructure or with poorly functioning one. Meanwhile, most of the mentioned young families live below the poverty level and do not have a stable source of income, therefore cannot afford improvement of their living conditions, including access to WSS services. The existence of this group is especially typical for Bishkek, towns and all the rayon centers.

Another vulnerable group are inhabitants of small remote settlements up to 700-750 people in size (60-70 households), that use borehole pumps as a source of drinking water. The ability to pay for the water supply services within this group is low, while the cost of water is very high. Such settlements can be found in all regions of the Kyrgyz Republic but are more typical for Naryn, Issyk-Kul, Jalalabat and Osh oblasts.

At the same time, a different situation can be observed in small settlements with 50-100 inhabitants, who use springs as a water source (mainly in the mountain regions). According to the conducted questionnaires, the population of such settlements is generally satisfied with water and sanitation conditions and do not require change in and expansion of WSS infrastructure.

The difference between southern and northern regions of the Kyrgyz Republic is also vivid. Several southern regions face the problem of emigration. Employable population, especially men, leave the settlements to seek for jobs in big towns, Bishkek and abroad (Russia, Kazakhstan). Therefore, the villages in these regions remain half-abandoned. The population left consists of mainly old people and children whose ability to pay for the WSS services is obviously low. The situation is extremely severe in the Batken oblast.

2.8 Identified Vulnerable Regions and Groups

Summing up the disparities in the country, there is a gap between the North and the South of the Kyrgzy Republic. Jalalabat and Osh oblast are most affected by poverty, inadequate water and sanitation and water related diseases (see Table 8). The situation in Talas and Issyk Kul oblasts is slightly better, though some of the core indicators signal a problematic situation (e.g. only 38% and 51% of the population respectively have an acceptable level of access to drinking water).

The specific vulnerable groups in the country include:

- Young families;
- Population of small settlements up to 700-750 people in size where borehole pumps are used;
- Rural population in the southern regions (especially Batken oblast).

Table 8. Overview on disparities in the country

Region	No daily access to running water[4]	Acceptable level of access to running water[5] (12-24 hours per day)	Villages without CRWSS[6]	Safe water in more than 500m distance	Access to improved sanitation[7]	Water Quality[8]	Water-related diseases[9]	Normalized poverty[10]	Female representatives in parliament 2008
Jalalabat oblast	1.57%	19%	48%	24.1%	15%			56%	18.2%
Osh oblast	1.92%	24%	42%	23.8%	14%			63%	14.8%
Batken oblast	1.77%	28%	49%	23.1%	6%			34%	14.5%
Talas oblast	3.48%	38%	18%	16.5%	9%			39.5%	11.5%
Issyk-Kul oblast	3.36%	51%	22%	20.2%	15%			28%	16.2%
Naryn oblast	0.06%	68%	24%	11.6%	9%			40%	13.3%
Chui oblast	1.01%	72%	7%	11.6%	39%			17%	24.8%
Bishkek city	0%	-	-	-	81%			21%	13.6%

[4] ARIS 2013
[5] ARIS 2013
[6] ARIS 2013
[7] Expert assessment
[8] Expert assessment
[9] Expert assessment based on State Sanitary and Epidemiologic Surveillance Department 2011
[10] National Statistic Committee 2012

3. Legal and juridical situation

This chapter gives on overview on the relevant legislation, governmental bodies and financing issues for water and sanitation.

3.1 Legislation and codes regarding water and sanitation.

The high level principles of water management are reflected in the Constitution and several laws of the Kyrgyz Republic. The Law of the Kyrgyz Republic "On a new edition of the Constitution of the Kyrgyz Republic" of 18 February 2003 states that *"...waters shall be the property of the Kyrgyz Republic, and shall be used as a basis for life and activity of the people of Kyrgyzstan and shall be particularly protected by the government"*. (National Programme 2013)
The country's legal framework for water-related issues includes:

- the Water Code (No. 8 of 12 January 2005, Chapter 7 "Potable water supply");
- the Law No. 21 "On Water" of 14 January 1994, stating that the quality of drinking water should meet the approved sanitary standards;
- the Law No. 33 "On Drinking Water" of 25 March 1999 (No. 81, in the Statutory wording of 29 September 2000; No. 118 of 28 June 2003; No. 240 of 20 July 2009; No. 206 of 12 November 2011);
- the Law No. 101 "On Local Self Government" of 15 July 2011, stating in Chapter 18 "Matters of local significance" that water supply for population falls under the management of local self governments.

Legislation governing the complex of sanitary and epidemiological requirements consists of the Law "On Protection of Health of the People of Kyrgyzstan" (2002), the Law "On Public Health" (2009), the Law "On Protection of Consumers' Rights" (1997).

The Law "On the Guaranteed Minimum of Social Standards" of 26 May 2009 includes, among others, social standards imposed in areas such as health, housing and utilities, environmental safety. In particular, social standards in the field of housing and utilities are focused on public services - water, electricity, maintenance of wastewater disposal.

Sub statutory regulatory legal acts are developed on the level of municipal governments and include the rules of using the public water supply and sanitation system the Kyrgyz Republic and rules of using the water supply and sanitation systems in Bishkek city.

Fragmentary and disparate laws and regulations have not created a sound legal framework and do not reflect a certain water and sanitation policy, which can to a large extent explain the poor performance of the Kyrgyz Republic's water supply and sanitation sector. For a long time there was no national WSS policy or strategy for development, coordination and organization of either rural or urban WSS sectors. Neither rural nor urban WSS sectors have been included in the Kyrgyz` Medium Term Development Plan (2012-14) (ADB 2013b).

Recognizing this gap, the Government of the Kyrgyz Republic is nowadays willing to undertake comprehensive reform in the water supply and sanitation sector. Therefore several strategic papers have been recently prepared or are underway. They include the National Programme on the Development of Water Supply and Wastewater Disposal (originally Water Supply and Wastewater Disposal Strategy in the Kyrgyz Republic (2013), The National Sustainable Development Strategy for the Kyrgyz Republic (2013) and the Action Plan for the Kyrgyz Republic 2013-2017. These documents also address the financial aspects of sustainable water supply and sanitation and issues of tariff-setting for the relevant services.

The National Sustainable Development Strategy for the Kyrgyz Republic for 2013-2017 (NCSD 2013) was approved by Presidential Decree No. 11 of 21 January 2013. The Strategy concentrates on increasing the economic and social prosperity of citizens which include dealing with the challenges in adapting infrastructure policies and the institutions of the sector, inter alia on how to deliver improved water supply, wastewater disposal and sanitation services.

The 5-year period (2013-2017) Plan of the Kyrgyz Republic Government sets the following targets for implementation:

- to develop the complex policy of the Kyrgyz Republic concerning water and sanitation (responsible body – State Agency on Construction, Housing and Public Utilities and Ministry of Health)
- to increase access of the rural population to safe drinking water on a stable basis by 2017: 10 rural settlements / villages per year, 50 villages in total (responsible body – State Agency on Construction, Housing and Public Utilities)
- to increase the access of the population to improved objects of sewerage system and sanitation from the current level of 24% (2012) up to 40% by 2017 (responsible bodies - State Agency on Construction, Housing and Public Utilities, Ministry of Health, local authorities, CDWUU).

The long-term (15 years) goals are reflected in the strategic documents and include[11]:

- to halve the number of people without sustainable access to safe water, wastewater disposal and improved sanitation;
- to ensure universal access of the population to running water supply by means of intra-house and yard standpipes or street standpipes within a radius of no more than 150 meters away from a household, providing water that meets the requirements of technical regulations "On the safety of drinking water" and at affordable cost;
- to provide continuous 24-hour water supply through improved efficiency; ensure the safety and improve the efficiency and reliability of existing systems under different climatic conditions;

3.2 Governmental structure (responsible authorities)

The main governmental body in the system of water economy state administration is the State Agency on Construction, Housing and Public Utilities under the Government of the Kyrgyz Republic. The Department of Water Supply and Sanitation Development within the Agency deals with the issues of domestic water supply and wastewater disposal. At the regional level these questions are managed by local authorities, drinking water suppliers, Community Drinking Water Users Unions (CDWUUs). However, the series of reforms have not yet been accomplished, and the system, undergoing serious transformations, does not comply with all the set tasks at the present time.

The State Agency on Construction, Housing and Public Utilities under the Government of the Kyrgyz Republic has the following responsibilities:

- Implementation of strategies for water supply and sanitation. The Agency is the most important state structure in the sector, which should take a more substantial and solid leading position;
- Provision of effective interrelations with significant institutions – the Ministry of Health, Ministry of Education and Science, Ministry of Finance, Ministry of Economics and others, representation of citizens' interests and needs in regard to drinking water supply and sanitation;

[11] Selectively

- Participation in development and implementation of technical regulations, standards and other statutory documents, including regional and international construction standards.
- Facilitation of cooperation with local authorities regarding water supply and sanitation services;
- Cooperation with other state bodies (ministries and institutions) to ensure that development of the WSS sector priorities are integrated into the national development strategy.

The Department of Water Supply and Sanitation Development within the Agency has undergone a great number of structural and functional changes, which resulted in outflow of highly-qualified personnel and rapid turnover in staff. There is no special division concerning the transfer of disposal functions in the Department. The budget funds for implementation of program activity have not been allocated since 2010. Since 2012 the Department expanded its functions and took responsibility for wastewater disposal (sanitation). Furthermore, no special subdivision is dealing with issues of wastewater management was created, and there are no staff members working specifically in this field.

The Department aims at creating a framework for sustainable development of drinking water supply and wastewater disposal in settlements. Among others, the functions of the Department is e.g. the general coordination of the sector development strategy implementation through the cooperation with the Working Group on water supply and sanitary specify the clear view of expectations, cooperation with all parties concerned, and to provide its openness and readiness to help; participating in drafting legal acts regarding drinking water supply and sanitation.

The agencies in the structure of government are oriented at performing functions of rendering state services to the population. The policy development is the prerogative of the ministries. General policy of the sector is formed by the Ministry of Economics and introduction of economic instruments should be made through this ministry. The Ministry of Economics tasks:

- develops and implements a universal state policy on integrated development of regions, and makes economic forecasts;

- takes part in assessment and expert evaluation of remedies of fiscal impact on the economic development;

- keeps a single register of state services, rendered by the state bodies of the executive government and their structural subdivisions;

- coordinates the process of regional development planning on the basis of medium-term and long-term programs of regions development;

- assists the regions in elaboration and monitoring of development programs (plans) implementation.

3.3 Analysis of the current local management in the WSS sector

In the cities, the local authorities – the city councils and administrative boards – are responsible for the issues of public services, including access to water and sanitation. In all the cities there are public utility companies for water supply and sanitation services (Municipal enterprises of water supply and wastewater treatment). Such enterprises also struggle with problems of a managerial and administrative kind. For example, expansion of services coverage is impossible without stocktaking of subscriber base (classification and detailing of subscribers' number and volume of water consumption). Conclusion of individual water supply agreements with legal entities, reassessment of tariffs with account to not pulled-out water, but in fact spent water. All this is impossible without the introduction of water metering devices.

In rural areas the local communities are distinguished in the form of aiyl okmotu. Aiyl okmotu consists of a representative body – aiyl kenesh, an executive body and aiyl okmoty chairman. Due to organizational reforms, several public resource management associations were created within the body of aiyl okmotu: Zhayit committees (for pasture management), WUAs (Water Users' Associations) and CDWUUs (Community Drinking Water Users Unions). Aiyl okmotus have a number of functions previously assigned to local authorities. This was formalized in the regulatory and legal framework (Government Resolution No. 828 of 28 December 2008 "On the transfer of the ownership of rural water supply (except regional centers) to the CDWUUs and their following operation"). However, service provision was often still seen as responsibility of local authorities, while required resources were transferred to the newly created association and unions.

CDWUUs were initiated in 2002 in the framework of the World Bank project on Rural Water Supply and Sanitation (RWSP–1). They are the community based democratic institutions responsible for water supply management on the level of villages. The CDWUUs are registered as legal bodies and administer funds and are responsible for planning, financing and administration of water supply within the area of jurisdiction. The CDWUUs were planned to become the main structure ensuring the stability of the systems of water supply and sanitation facilities upon the termination of the RWSP project. Currently, according to the Department of Water Supply and Sanitation Development, 633 CDWUUs are functioning across the country.

Having no own water supply systems, the rural local authorities were for a long time not able to sufficiently influence the quality of water supply services, as water supply systems were owned by CDWUUs. Local authorities were not eligible to govern CDWUUs. The governmentally approved obligation of local authorities to set tariffs for water supply contravened the rights of WSS systems' owners. The Government Resolution No. 59 of 2 February 2010 "On the transfer of the rural water supply systems from CDWUUs to the local authorities" made new adjustments to the local management of WSS sector. The Resolution on the transfer of the ownership of rural water supplies to the CDWUUs was considered to have lost force, and the CDWUUs were recommended to pass control over from the WSS system back to the municipalities. Such Resolution withdrew the issue of local authorities-CDWUUs relations, and responsibilities are complied to the administered functions. The Resolution lets local authorities to transfer the WSS services provision to other institutions, including the CDWUUs, but with the complete set of supervisory powers. Nevertheless, factual implementation of this legal act is in reality is insufficient[12].

Decentralization initiatives in Kyrgyzstan have transferred significant amounts of water and communal service infrastructure (along with responsibility for its maintenance and service delivery) to local governments. However, as a result of insufficient law knowledge and law amendments monitoring, many local authorities and CDWUUs do not have an adequate vision of situation at hand. Therefore at present time the dilution of responsibility for decision-making takes place, and decrease of human resources capacity in rural water and sanitation sector can be observed.

3.4 Tariffs for water supply and sanitation services

At present the tariffs for the supply of drinking water to the population are established for cities, regional centres and urban-type settlements by Vodokanals on the request of regulating organizations with approval of a regional antimonopoly governmental body. The tariffs are paid on a monthly basis. The formula for calculation of tariffs for water users is uniform and "flat", based on the water consumption

[12] The Law No. 101 of 15 July 2011 "On the Local Authorities and Local State Administration" states in its Article 18 (Matters of local significance) that the water supply is transferred to the matters of local authorities

(according to the Law "On Drinking Water"). The consumption norms for cold water for residential customers vary from 170 liters to 250 liters per person per day, depending on the type of residence (Regallet 2011). The tariffs are established for uncertain period of time and can be changed at any time. Where customers are metered, volumetric tariffs are applied.

A similar way of tariff-setting has been enforced for rural areas. The collection of tariffs is organized by the CDWUU, and revenues are used to fund the operation of WSS systems. However, starting from January 2013 the unified system of tariffs formation has been offered for implementation in rural areas of Kyrgyzstan[13]. "On approval of the draft guidelines defining prices (tariffs) for services to the rural associations of drinking water (CDWUU) to provide drinking water consumers"). The Guidelines were approved according to the Order of the State Agency for Construction and Regional Development of the Government of the Kyrgyz Republic No. 170 of 8 October 8 2012 "On Approval of recommendations for determination of prices (tariffs) of drinking water".

These recommendations (Guidelines) for the tariff-setting for drinking water supplies establish a uniform procedure for determining the cost of services (tariffs) to ensure provision for the rural population and other non-household consumers with drinking water. The tariffs for the rural population are set by local authorities of ail counties, according to the proposal of Community Drinking Water Users Unions (CDWUU) engaged in the operation and maintenance of water supply networks and facilities and are well coordinated with the regional antimonopoly authorities.

The Guidelines propose that tariffs should reflect the actual costs, taking into account the planned changes in the reporting year. The agreed tariff is the same for a certain range of consumers. The baseline for the determination of tariffs is the actual cost of water, which consists of the estimated work, services and natural resources, raw materials, fuel, energy, fixed assets, labor, and other costs of its production and sales.

Tariff collection for municipal services is generally not regulated by the legal acts because this sphere is considered to be of a treaty-made law. However, the poor state of the incoming payments due to different reasons (population insolvency, lack of control, poor quality of provided services), resulted from income decrease in local budgets. To confront such challenges, the local authorities, as a rule, issue legal acts of a non-normative nature (individual acts) in which they define retaliatory measures referred to the population and service providers. As far as these services are provided by the state and municipal organizations, the functions of payment collection for the provided services are performed by these organizations on contractual basis (civil law).

Currently, the proper maintenance of water supply and sanitation systems cannot be provided just by the collection of payments from the population. Tariff policy does not promote the change of situation and does not reflect the quality of provided services.

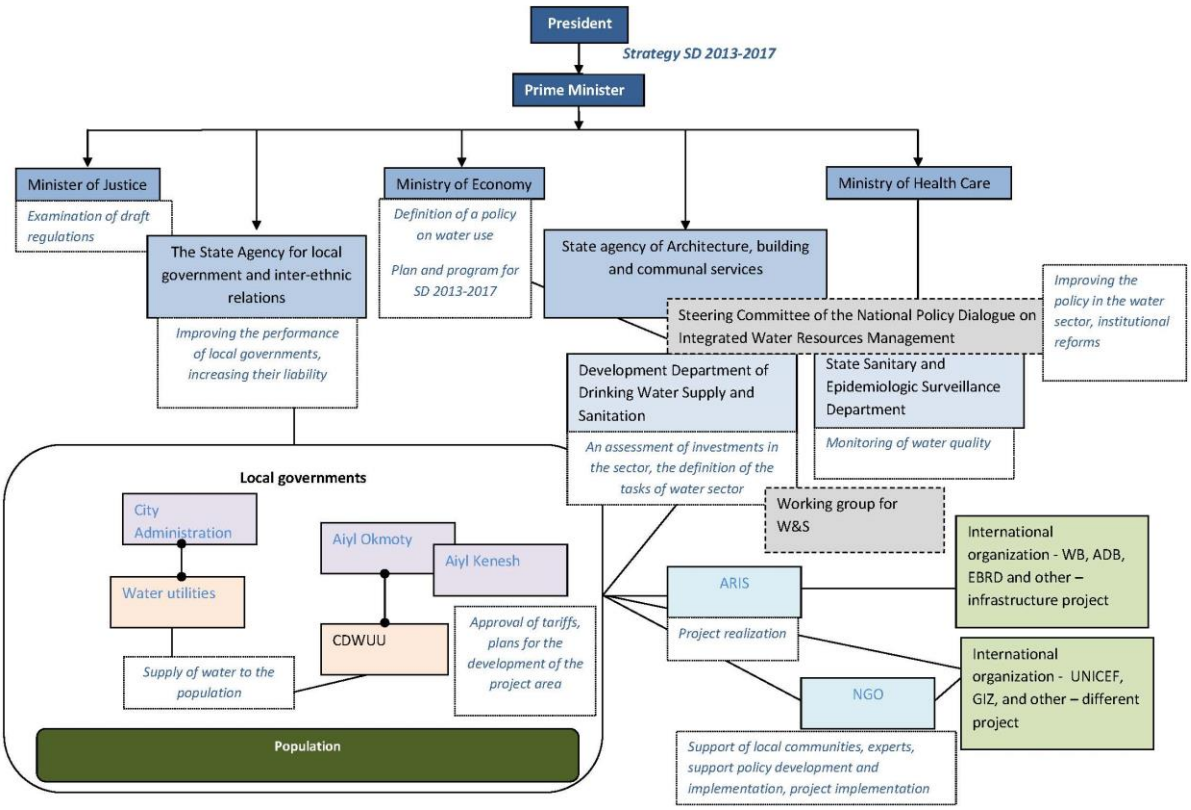
The main problems and limitations of the existing tariff-setting system

- no uniform system;
- no progressive tariffs;
- tariffs do not cover the operation and maintenance costs;
- tariffs do not reflect the real cost of water provision

[13] Order No. 97 of the Department for the Development of competition in the Ministry of Economy and Antimonopoly Policy of the Kyrgyz Republic of 27 September 2012

4. Stakeholder mapping

Involvement of all relevant stakeholders is a vital prerequisite for successful implementation of proposed mechanisms for sustainability. Stakeholders in the WSS sector include state institutions, local authorities, social and international organizations as well as non-institutionalized parties – different social groups of population. Interactions between the stakeholders in the WSS sector in the Kyrgyz Republic are reflected in the graph 2.



Graph 2. Scheme of the interactions between the relevant stakeholders

4.1 State institutions

Steering Committee of the National Policy Dialogue on Integrated Water Resources Management

The Steering Committee is responsible for improvement of the national water policy, including its financial and economic aspects, preparation of recommendations for institutional reforms of the water sector and modernization of the water sector standards. Taking into account the factual situation in the country, the Steering Committee plays a significant role in planning, implementation and promotion of activities aimed at expanding access of the population to water resources and services of water supply and sanitation as well as reducing water-related diseases.

Representatives of the following stakeholders participate in Steering Committee of NPDs on a regular basis:

- Department of Water Management and Melioration under the Ministry of Agriculture and - melioration of the Kyrgyz Republic;

- State Disease Prevention and Sanitary and Epidemiologic Surveillance Department, Ministry of Health of the Kyrgyz Republic;
- State Agency on Geology and Mineral Resources under the Government of the Kyrgyz Republic;
- State Agency on Environment Protection and Forestry under the Government of the Kyrgyz Republic;
- Agency on Hydrometeorology under the Ministry of Emergency Situations of the Kyrgyz Republic;
- Department of Water Supply and Sanitation Development under the State Agency of the Kyrgyz Republic on Construction, Housing and Public Utilities;
- Ministry of Foreign Affairs of the Kyrgyz Republic;
- State and municipal enterprises maintaining the centralized systems of water supply and sanitation, especially production-operating department "Bishkekvodokanal" and SE "Kyrgyz Housing and Utility Union";
- representative offices of Swiss Development and Cooperation, UNDP, EBRD, GIZ, WB, ADB in the Kyrgyz Republic;
- Kyrgyz Alliance for Water and Sanitation,
- Public Union "BIOM"

Department of Water Supply and Sanitation Development under the State Agency of the Kyrgyz Republic on Construction, Housing and Public Utilities

The Department is responsible for implementation of the law "On Drinking Water", development and improvement of legislation in the WSS sector, coordination between the center and regions and provision of assistance to the local communities and WSS enterprises, inter alia through professional training and capacity-building activities. It participates in elaboration of financial mechanisms in the WSS and coordination of various investments and implementation of respective projects. (The main functions of the Department are described in Chapter 3).

State Disease Prevention Sanitary and Epidemiologic Surveillance Department, Ministry of Health of the Kyrgyz Republic

The Department is in charge of development and harmonization of sanitary regulations and standards, statutes and hygienic norms, monitoring of drinking water quality, coordination of research and technical work for improvement of drinking water quality, collection of data on the health of the population It provides consultations and assistance to the local service suppliers in monitoring water quality and chloration and participates in WSS-related project such as construction and technical maintenance of water supply and sanitation systems.

State Agency on Geology and Mineral Resources under the Government of the Kyrgyz Republic

The functions of the agency include inventory of groundwater deposits and analysis of their extraction for agricultural, industrial and drinking water supply purposes. It is also responsible for preparation of standards, maintenance of the state water cadastre and state registry of water catchment systems (in regard

to ground waters) as well as for environmental monitoring and protection of ground waters from pollution and depletion.

In addition to these executive bodies in regulating water relations, water resources monitoring, system of drinking water supply management and public health guaranteeing the following institutions are indirectly involved: **State Agency of Antimonopoly Regulation under the Government of the Kyrgyz Republic** (harmonization of tariffs), **National Institute of Standardization and Metrology** (coordination of development of national standards and technical regulations; certification)**, National Statistical Committee under the Government of the Kyrgyz Republic** (collection of statistical data on the access to water and sanitation), **State Agency on Environment Protection and Forestry under the Government of the Kyrgyz Republic** (legal regime of protective sanitary zones for water sources for drinking water supply systems**.**

Water supply and sanitation services providers include municipal enterprises "Vodokanal" and CDWUUs. The functions of administration of water supply and sanitation systems in the rural areas are assigned to the Department of Water Supply and Sanitation Development within the State Agency on Construction, Housing and Public Utilities under the Government of the Kyrgyz Republic in 2012. Water supply of industrial and other enterprises is done on the basis of contracts with local enterprises of centralized water supply and sanitation. Control over exploitation and technical maintenance of centralized WSS systems in the rural areas is done through specialized services of local authorities or social organizations – CDWUU (The main functions of CDWUU are described in Chapter 3)**.**

Local authorities are the owners of WSS systems[14] and are responsible for provision of local communities with water supply and sanitation services, meeting their needs concerning sufficient volumes, hygiene and safety. They approve tariffs on WSS services (to be approved by territorial antimonopoly structures), which are based on stability of service rendered and open discussion with services suppliers, and which include the expenses for general maintenance for a period of 5 years. LAs provide information about water quality, usage standards and methods of water saving; they are responsible for inventory procedures (data on presence and condition of water sources; quantity and quality of drinking water; safety of drinking water supply systems), development and approval of programs for drinking water supply systems, management of protective sanitary zone organization and effective usage of water sources. With consent of the sanitary and epidemiological service, LAs have the right to take decisions regarding drinking water supply systems exploitation in case of emergency situations.

4.2 Non-state institutions

ARIS

Community Development and Investment Agency of the Kyrgyz Republic (ARIS) was established by the Decree of the President of the Kyrgyz Republic on 15 October 2003 in order to develop measures on investments attraction for poverty reduction, development and support of private enterprises within the framework of the National Poverty Reduction Strategy, strengthening activities of local authorities and capacity-building in local communities under the National Strategy "Decentralization of State Administration and Development of Local Self-Government in the Kyrgyz Republic until 2010".

The main goal of ARIS and its project is the assistance to the poverty reduction in rural and urban areas. The organization is responsible for administrating the Rural Investments Project and therefore for providing access of the population to drinking water.

[14] According to the Law No. 5 of 12 January 2002 "On Local Self-Government and Local State Administration"

Public Unions

Supported by the government and external donors, public unions have in the last decade actively fulfilled the tasks related to administration, operation and maintenance of irrigation infrastructure and rural water supply. Thus, 477[15] Water Users Associations and 28 Water Users Federations serving about 73% of irrigated land of the Kyrgyz Republic operated in 2012. In 2010, the Programme for Health Promotion covered 1254[16] villages in the country with a population over 2.7 million people (more than 60% of rural settlements). 1312 Rural Health Committees were formed in the last years; they provide assistance in health-related issues among the rural population on a voluntary basis. Different environmental NGOs, among others such as Central Asia Alliance for Water and Sanitation, Kyrgyz Alliance for Water and Sanitation, Ecological movement "BIOM", make significant contributions to the promotion of rational use of natural resources and raising public awareness regarding important issues of environment protection, water supply, wastewater disposal and sanitation.

Public unions also provide technical assistance to the Las and assist in sharing the best practices and experience in implementing the national and international (in collaboration with the foreign NGOs and donors) WSS-related projects.

International Organizations

Currently a large number of international organizations work in the water supply and sanitation sector. Such organizations as World Bank, European Bank for Reconstruction and Development, IFES and Asian Development Bank work on implementation of infrastructure projects. The planned range of WSS infrastructure projects for the period till 2016 are presented in the Appendix C. These projects also require an introduction of water solidarity mechanism (see the Attachment). UNICEF, GIZ, UNDP, Swiss Cooperation Office in Kyrgyzstan, GIZ (Transboundary Waters Administration Project) and several other organizations work on the improvement of legal and institutional framework, sustainable development and capacity-building in the WSS field.

At present the WSS sector in the Kyrgyz Republic is in poor state, therefore close cooperation among donors and supporting organizations can provide a great benefit in the sector.

[15] Agricultural economy development strategy in the Kyrgyz Republic up to 2030.
[16] According to the data of the Ministry of Health.

5. Analysis of the Financing and Current Donor Situation

5.1 Financial capacities for water and sanitation

Kyrgyzstan has no separate and defined budget line for urban and rural sanitation (GLAAS 2012). Operation and maintenance costs for utilities are only partly covered by user fees, predominantly in urban areas. Moreover, the average percentage of non-revenue water is generally very high – up to 55% (OECD 2007).

The ratio between the average income per cubic meter of water sold and specific operational costs reaches around 0.3 (OECD 2007). The more recent UNDP research (Regallet 2011) indicates respective improvement, however the situation across the country varies and the ratio ranges between 0.5 and approximately 1. Therefore, the disability of WSS sector to sustain its functioning, requires significant external investments.

Besides the necessity of funding for operating and maintaining the existing WSS infrastructure, the country, its specialized agencies and utilities require financial basis for further development of the sector and extension of the services provision. The National programme on water supply and sanitation development in the Kyrgyz Republic (2013) states that estimates of the required investments for the improvement in the water supply and sanitation sector are currently imprecise. However, the estimates taken from various past independent external studies show that the required financial support is generally large. Thus, achieving the goal of improved access to water supply and sanitation just in rural areas would cost around $400 million over the next 15 years. The study conducted by the Task Force for the Implementation of the Environmental Action Programme for Central and Eastern Europe, Caucasus and Central Asia (OECD 2009), suggests that capital investment of EUR 370 million should be made in the years 2008-2027 for the maximal coverage – meaning universal access to piped water supplies in urban (100% via house connections) and rural (50% house and 50% street connections) areas. Meanwhile the Strategy prepared earlier by the UK Department for International Development suggests the required investment for the water and sanitation sector of $238 million between the years 2008–2017. The models conducted by the WHO calculates that the total financial capital costs to achieve universal access to water and sanitation can reach 227 million US$ (with benefit-cost ratio – 0.4) for the water sector and 99 million US$ (with benefit-cost ratio of 1.27) for the sanitation sector.

Though providing different prediction numbers, the studies agree on the necessity of a significant investment into the WSS sector, which is not feasible just by the budget of the Kyrgyz Republic.

Based on current prices, the sum of the investments for constructing new water supply systems in a village is estimated in average at $500 000, while the average cost for the rehabilitation of already existing systems is $100 000. In addition about 50% of the 533 villages which received support for new water supply systems under the earlier Taza Suu programme requires further rehabilitation work, mostly because of poor design and construction.

Regarding the situation in the urban settlements, towns' Vodokanals' tentative assessment of required investments for the WSS sector, conducted in 2004, resulted in the sum of approximately $110 million – an investment required for all cities and small towns in the country. But since this assessment was made further deterioration of the infrastructure has taken place, therefore the current investment requirement for towns and cities is likely to be higher and can reach the sum of $200 million (National Programme 2013).

Prospects for meeting the investment needs for infrastructure rehabilitation, renewal and expansion from internal sources (e.g., by raising tariffs) are clouded by legal, regulatory, and political uncertainties, and by outdated commercial and managerial practices—particularly regarding billing and contracting (Regallet 2011). The investment needs cannot be covered by tariffs but must be funded through other sources, e.g. taxes or international donors.

5.2 Overview of current drinking water and wastewater tariffs

The average national tariff for drinking water supply and wastewater in 2010 was 42 som ($0.92) per person for non-metered households. The latest available data on water tariffs provided by the National Statistical Committee represents the difference in tariffs for residents of the oblast centres (Table 9).

Table 9. Residential drinking water and wastewater tariffs (per person per month) for oblast centres

Oblast centre	Monthly tariff (per person)	
	Som	$
Bishkek	53	1.15
Talas	16.10	0.34
Jalalabad	41	0.89
Osh	25	0.55
Batken	11	0.23
Tokmok	37	0.80
Naryn	30.12	0.63
Karakol	36	0.73

As for the households, where meters are used, Regallet (2011) mentions that the average national tariff for metered water consumption in 2010 was 3 som ($0.065) per cubic meter for residential customers; meanwhile for budget-funded and commercial organizations the tariff was significantly higher - 17 som ($0.37) per cubic meter. It is worth mentioning that the number of installed water meters in the country is extremely small: less than 4-5% of the households use water meters (OECD 2007, Regallet 2011).

In this regard, the data on water consumption in the Kyrgyz Republic should be provided. In general the reports give contradictive numbers (Regallet 2011), therefore the real water consumption for household/domestic needs in Kyrgyzstan may vary between 50-70 liters/capita/day up to 125 liters/capita/day based on expert assessments. The OECD report (2007) states that water consumption in the country is even higher and averages at around 200 liters per capita per day.

Regarding the prices for sanitation services, the national average residential tariff for sewage in 2010 was about 2.4 som ($0.05) per person per month, however this sum also varied across the country.

Most of the time charges for water and sanitation services are combined in one bill and payments are collected together.

According to the research conducted by UNDP in 2011, official consumer price data show that household water tariffs rose 87% during 2007-2010. The tariffs within Bishkek area almost doubled, having experienced a 119% increase. However, the official household survey data indicate that households in the three poorest deciles spend only 0.35 percent of their expenditures to water and sanitation (Regallet 2011). The other sources (OECD 2011b) state that households in the urban areas, for example in Bishkek, are paying less than 1% of their total disposable income on water. As for the rural areas, people there are spending not more than 0.5% of their disposable incomes on water, and in some areas they pay little or nothing. They are well below the suggested 2.5 or even 4-5 percent international affordability benchmark.

5.3 Capacity and willingness to pay for water and sanitation

Generally speaking, collection rates for WSS services from households have improved in the past 3-4 years, but vary widely across the country. This can be explained by different levels of institutional capacity and regional differences in acceptance of tariffs and income poverty. It is worth noting that even though permitted by law (which is not in line with the human right to water and sanitation), vodokanals do not discontinue services for non-payers as a general practice, which could help the collection process.

However penalties for late payments are in place and practiced by most vodokanal enterprises (Regallet 2011). According to Regallet (ibid.), collection rates of urban water supply and sewage tariff among households in 2009-2010 are in average higher than according to the reported data of OECD NPD mentioned above (Table 10).

Table 10. Collection rates of urban water supply and wastewater tariff revenues from households in 2009

City / town	Collection rate
Balykchy	78%
Kyzyl-Kia	83%
Shopokov	60%
Kant	100%
Naryn	58%
Talas	17%
Cholpon-Ata	93%
Jalalabat	97%
Kok-Jangak	36%
Mailuu-Suu	85%
Nookat	41%
Sulukta	53%
Uzgen	86%
Bishkek	93%
Osh	70%
Average	***70%***

As for the rural areas, the most unfavorable situation with the collection of payments can be observed in the Osh region (Table 11).

Table 11. Information on payments for rural water supply and wastewater tariff by households in 2012 (ARIS 2013)

Region	Tariff paid (% of villages in the region)		
	Yes	No	no information
Talas	53.8	30.8	15.4
Naryn	61.0	24.3	14.7
Issyk-Kul	73.6	18.0	8.4
Chui	78.4	7.9	13.7
Osh	44.3	39.4	16.3
Jalalabad	40.9	22.6	36.5
Batken	28.8	28.1	43.3

Regallet (2011) highlights that at a time when around one third of the country's population lives below the national poverty line, many citizens of the Kyrgyz Republic believe that they have a right to receive water at nominal cost. They view WSS issues as a government problem and responsibility.

Survey results about willingness to pay more for better quality communal services are contradictory (Regallet 2011). Some survey research indicate that much of the population—including poor households—seems generally satisfied with the quality of communal services. The UNDP research suggests that a majority of poor customers (in both rural and urban households) are unwilling to pay more for communal services even if their quality improves. On the other hand, a research conducted by the Asian Development Bank and USAID indicate a strong willingness to pay for improved services.

Similarly, the OECD NPD report (2009) states that the low level of affordability and the general poor level of service mean that there is a high level of dissatisfaction with the standard of service and a consequent unwillingness to pay for WSS unless there are clear improvements in services. The same report also highlights that collection rates in the country are low – less than 25% on average in rural areas and less than 50% on average in urban areas (OECD 2009).

The survey of 2013 (ARIS 2013) reflects a significant change in public attitudes (Table 12). As the table shows, a significant part of the country's rural population is prepared to pay more (however, under the condition of improved WSS services) the "problematic" regions where the population is least willing to pay include Talas and Osh oblasts.

Table 12. Willingness to pay more for improved water supply among the rural population

Region	***Willing to pay more (number of villages)***	
	Yes	***No***
Talas	38 (41.8%)	33 (36.3%)
Naryn	87 (64.0%)	23 (16.9%)
Issyk-Kul	117 (65.7%)	14 (7.9%)
Chui	247 (75.1%)	19 (5.8%)
Osh	273 (55.5%)	165 (33.5%)
Jalalabat	305 (70.4%)	101 (23.3%)
Batken	179 (85.2%)	25 (11.9%)

Meanwhile, residents of towns show even more willingness: the population of 30 Kyrgyz towns is prepared to pay more for the improved or even current level of WSS services. The population of only one town (Aidarken, Batken oblast) is not willing to raise its expenses on the WSS services.

According to CIA data (2013) the lowest 10% of the country's population share 2.8% of general income, while the highest 10% (the wealthiest households) share 27.8% of the income. The gap in purchasing power of the population is, however, not fully reflected in the water bills (Table 13).

Table 13. Shares of household expenditures in the poorest and the richest deciles allocated to water and sanitation expenditures by oblast in 2009 (Regallet 2011)

Region	***Poor***	***rich***
Batken	0.1%	0.1%
Jalalabad	0%	0.3%
Issy-Kul	0.7%	0.5%
Naryn	0.5%	0.1%
Osh	0%	0.2%
Talas	0%	0%
Chui	1%	0.4%
Bishkek	0%	0.5%
National	***0.3%***	***0.4%***

The National Programme (2013) highlights the need to **increase the level of "willingness to pay" by those who receive water supply services**. It underlines that the possible consequences of non-payment by those who can well afford to pay are the increase of tariffs for those who do pay, as well as further deterioration of services**.** It mentions the necessity to deal with relatively wealthy households and state organizations which avoid paying the bills or are unreliable in their commitment to pay.

The Programme also addresses the problem of low-income households (i.e., with recipients of means-tested monthly benefits or housing subsidies) and suggests that they should have an opportunity to restructure any of their accumulated debts on favorable terms.

5.4 Current subsidizing and cross-subsidizing

In the Kyrgyz Republic subsidizing of residential customers is mainly done in the form of subsidized rates – tariffs for water supply and sanitation services, which are lower than the real costs. In some cases, the local authorities (aiyl okmotu) provide subsidies to households with an income below the extreme poverty level.

Earlier full or partial exemptions from water supply tariffs (but not wastewater tariffs!) were available for certain groups of society, like World War II disabled veterans and disabled members of their families living with them (according to Articles 14, 15 of the Law No.14 of 08.05.1996 "On the veterans of war, armed forces and workers of the rear" and Government's Decree No.605 of 23.08.2006 "On the granting of social benefits in the Kyrgyz Republic). However these allowances were cancelled in 2009.

There are different groups of citizens who receive social benefits for water supply. Many of the social benefit payments are made to individual receivers, others go directly to the larger vodokanals. The sums are paid from the Public Budget. The majority of categories of receivers are based on non-poverty criteria, such as retired soldiers, policemen, war-wounded and victims of natural disasters.

Evaluation of subsidies in the WATER AND SANITATION sector in the Republic of Kyrgyzstan was a done in the framework of National Policy Dialogues (NPD) on state water policy, the programme headed by the Department of Water management ad melioration (Ministry of agriculture and melioration), carried out under the EU Water Initiative and supported by OECD and UNECE. According to the results of this research (Atkins 2012), provision of water supply for prices lower than the real costs (this includes centralized water supply systems) is considered as "harmful subsidies". The tariffs are set below cost recovery levels and do not fully cover basic operational costs (including salaries, energy, chemical usage, etc.), equipment upgrades and replacement. They are completely insufficient for further infrastructure expansion. Moreover, such subsidies are usually non-targeted, biased and often bring benefits to the privileged social and economic groups. Therefore they are directly related to the problem of equitable access.

The report gives a closer look at the advantages and disadvantages of the functioning subsidies, which include such type of subsidies as insufficient level of tariffs for the urban and rural water supply and sanitation services, meaning that these tariffs are insufficient for the sustainable service provision (Table 14). The report stresses the need in the legislation for improvement of the existing subsidizing mechanisms.

Table 14. Costs and benefits of subsidies (if form of reduced tariff rates)

Benefits	Costs
Financial and economic: consumers receive the services affordable according to their financial capacity (but not always of appropriate quality), which provide just the basic needs	**General.** Only partial reimbursement of cost for service providers. Deterioration of infrastructure "paid for" by the previous generations. Reduction in the quality of services. Future generations will have to pay for the rehabilitation of WSS systems.
Social: services available in terms of financial capacity satisfy population's basic needs and ensure health	**Financial and economic**: The quality of services continues to deteriorate. No expansion of WSS infrastructure to attract new customers.
	Social: poor wastewater treatment to the environmental pollution

There is substantial cross-subsidization of residential customers by industrial, commercial and state organizations, which implies higher tariffs for enterprises and organizations in comparison to the tariffs for the households. (OECD 2009).

As an example of cross-subsidies for WSS services Table 15 is presented below. It indicates tariffs for water supply and wastewater services in Bishkek between 2007 and 2011 (OECD 2011a). Values in brackets in each column show how many times higher the tariffs are for industry, commercial and state organizations than those for households.

Table 15. WSS tariffs in Bishkek (OECD 2011a)

Water supply tariff (KGS/m3)	**2007**	**2008**	**2009**	**2010**	**2011**
Households	1.9	2.36	3	4.24	4.48
Industry/commercial (multiple of household tariff)	3.95 (2.08)	5.2 (2.20)	7 (2.33)	7.77 (1.83)	7.95 (1.77)
State organizations (multiple of household tariff)	2.45 (1.29)	3.35 (1.42)	4.5 (1.5)	5.88 (1.39)	6.15 (1.37)
Wastewater tariff (KGS/m3)	**2007**	**2008**	**2009**	**2010**	**2011**
Households	0.5	0.59	0.7	0.95	1.00
Industry/commercial (multiple of household tariff)	1.5 (3.00)	1.5 (2.54)	1.5 (2.14)	1.7 (1.79)	1.75 (1.75)
State organizations (multiple of household tariff)	2.9 (5.8)	3.16 (5.36)	3.5 (5.00)	3.5 (3.68)	3.5 (3.50)

The table shows, that in average industrial and commercial enterprises have been paying approximately twice more for the total cost of WSS services than households, and state organizations have been paying

three times more. Meanwhile, the demand for the service by such organizations is usually proportionally lower. The exception can be tourist infrastructure facilities (e.g. hotels in the resort areas like Issyk-Kul Lake), which experience high demand for WSS services during the peak summer months. In these cases the cross-subsidy may not actually exist or it could even be the reverse: households may be paying more than their share of the total costs.

Since 2007 household tariffs have risen faster than industrial/commercial tariffs and this has led to a steady reduction in the size of the cross-subsidy. Water supply tariffs for state organizations have however, increased more quickly than household tariffs meaning that the cross-subsidy has increased in this case (OECD 2011a).

The advantages and disadvantages of such subsidizing, defined by the WS Atkins International Ltd. Research, are presented in the table 16.

Table 16. Advantages and disadvantages of the existing cross-subsidizing

Benefits	Costs
Financial and economic: lower tariffs for residential customers make WSS services more affordable, which brings benefits to the households. Commercial, industrial and state organizations, which are expected to have a greater ability to pay, help to cover the costs of Vodokanals in providing WSS services.	General: deformation of the water market, as higher costs are imposed on industry and state-financed organizations. Higher tariffs for industrial, commercial and state organizations may place an undue burden on them, reduce their productivity and stifle economic development.
Social: public health and well-being as the result of financially affordable WSS services. There is less social and political pressure surrounding WSS tariffs.	In some cases reverse cross-subsidy with households may occur.

5.5 International assistance

The majority of the Kyrgyz Republic's water supply and sanitation infrastructure investment is being financed externally through international donor funding. According to the GLAAS report (2012) Kyrgyzstan has been recently supported by 6 main donors, with leading roles for the Asian Development Bank (ADB) and Switzerland. Donors, which provided over US$ 1 million in aid in 2010 included Switzerland, ADB Special Funds, World Bank's International Development Association (IDA) and the United Kingdom (UK). The main externally funded public investment programs in the water supply and sanitation sector include the following (National Programme 2013):

- The World Bank's Rural water supply and sanitation projects 1 and 2 for rural water supply and sanitation (Taza Suu)
- The First and Second Rural Water Infrastructure Development Programme, financed by the Asian Development Bank
- The World Bank's Small Towns Infrastructure and Capacity Building project in 23 towns;
- The Asian Development Bank's Issyk-Kul Sustainable Development project (currently at an early stage of implementation);

- Water supply projects in Bishkek, Osh, Jalalabad, Karakol, and Kara Balta, to be funded by loans from the European Bank for Reconstruction and Development (EBRD), and the Swiss Economic Cooperation Organization (SECO) providing technical assistance.

Please see overview on the international assistance for the next years in Annex C.

One of the most significant initiatives of the development aid in the Kyrgyz Republic was the Taza Suu Program - a $70 million rural water supply and sanitation program which started in 2002. The first phase of the program (until 2008) comprised the World Bank's Rural Water Supply and Sanitation Project and ADB's Community-based Infrastructure Services Sector Project. During this phase the Department of Rural Water Supply (DRWS) was established. Investments in water supply infrastructure were planned for some 1000 villages and seven cities over a six-year period. Community drinking water user unions (CDWUUs) were to be directly responsible for receipt and repayment of credits, operation and maintenance of newly built water systems, and for tariff setting. To participate in the Taza Suu programme, rural communities had to cover 20 percent of total project costs—5 percent of which had to be in cash and 15 percent could be in kind contribution (e.g., digging trenches). In addition to supporting the development of CDWUUs, the Taza Suu programme strengthened the decentralized management of rural water-supply systems, as well as helping local communities to better understand the need to collect tariffs in order to cover service costs. (Regallet 2011)

The Programme temporarily halted and reversed the decline of the rural WSS sector. However, the achieved improvements seem to be short-lived. Due to sometimes poor construction and lack of funds for maintenance the newly created and rehabilitated systems nowadays show the signs of deterioration (ADB 2013a). Regardless of the failures, the Government of the Kyrgyz Republic later requested financing for a second, repeated operation, which started in 2009. The objective of the Second Rural Water Supply and Sanitation Project (RWSSP-2, closing date October 2014) is to assist in: (i) improving access to potable water for the participating communities; and (ii) to improving hygiene, sanitation and water-related practices at individual, family and institutional levels in the rural areas. The project consists of the following four components: (i) water supply infrastructure and equipment; (ii) sanitation and hygiene promotion program; (iii) institutional development; and (iv) project management.

The World Bank is providing technical assistance to develop the WSS sector. Starting from 2009 and up until now The World Bank has supported the country through both credits and grants for the Second water supply and sanitation project, aimed at improving access to potable water to the participating communities, and at improving hygiene, sanitation and water-related practices at the individual, family, and institutional levels in the rural areas.

The World Bank provided funding for improving WSS in urban settlements as well – through the Small Towns Infrastructure and Capacity building project (closing date September 2011). In 2010 due to the Project "Infrastructure and Capacity Building in Small Cities", a new billing system for utilities was introduced in 14 towns. It was designed to increase the collection rates, improve information to consumers about bills and tariffs, and to provide fast and accurate reports. The additional financing of the project was dedicated in 2009.

Apart from contributing to the Taza Suu Program, the Asian Development Bank is also independently supporting the reforms in the WSS sector proposed by the government of the Kyrgyz Republic. Since 2001 ADB has provided $66 million for rural WSS projects in the Kyrgyz Republic (ADB 2013a). This support, in the form of both loans and grants, ensured the implementation of the project on community-based infrastructure and the Supplementary Community-Based Infrastructure Services Sector Project. In 2009 ADB approved supplementary financing, however in May 2012, due to issues of corruption and misuse of the resources, it suspended the project (ADB 2013a).

In 2013 ADB offered technical assistance in developing the rural WSS strategy in Kyrgyzstan and coordinated it with the state government. For this purpose the ADB has planned to spend $810 000 of which $750 000 will be financed on a grant basis.

The Department for International Development of the United Kingdom (DFID) has also supported the projects in rural WSS sector, partly through the Taza Suu program.

The donors highlight the challenges faced during the implementation of projects, which include, inter alia, cost overruns, weak administration, poor selection of subprojects, poor performance of consultants, design institutes, and contractors, poor execution of works, with substandard or even secondhand equipment being installed, and poor sustainability of subprojects.

The EBRD is considering providing a sovereign facility of up to €20 million to co-finance (with other donors) priority water and wastewater rehabilitation projects in Bishkek, Osh, Jalalabad, Karakol, and Kara Balta (Regallet 2011, National Programme 2013). These funds would be on-lend to water companies, to address urgently needed water and wastewater infrastructure needs. EBRD is also planning to provide funds to improve tariff reform within affordability limits (including support to low income groups), increased collection rates (possibility with the establishment of the integrated utility bill collection system), and stronger contractual relationships between cities and service providers. These initiatives could provide wider benefits across the country's water and wastewater sector through the sharing of experience and knowledge gained from these projects.

According to the National Programme on water supply and sanitation development (2013), the main donors in the upcoming programs and projects are:

- The World bank: providing WSS services, Good management Practice, Monitoring progress, long-term strategies;
- UNICEF/DFID: providing WSS services;
- ADB: providing WSS services, improvement of legal framework, good management practice, improvement of transparency and confidence (capacity-building strategies and activities);
- EBRD and SECO: supporting improvement of water supply and waste water rehabilitation (financial support through individual and joint investments; technical assistance);
- **UNDP**: working on the issue of financing the future, which includes two main aspects – financial management guidelines published for AO and municipalities and financial training for WSS service providers;
- Also **World bank**: elaboration of national financial model with scenarios of achieving different levels of water supply and sanitation services. Proximal amount of technical support is 30 000 US$. Expected time for realization (elaboration) - December 2014

Section 5 *Making sure water and wastewater services are financially sustainable* of the National Programme on water supply and sanitation development (2013) is dedicated to the issue of sustainable financial basis for the functioning of the sector. The Strategy foresees the opportunities and instruments for the future financing of the sector. The donors supporting this type of activities are UNDP and ADB, and realization is planned for the period 2013-2014. The agencies responsible for implementation of the activities are the Community Development and Investment Agency of the Kyrgyz Republic (ARIS), Department for Water Supply and Sanitation Development (DWSS), working groups, aiyl okmotus (AO, rural administrative areas) and municipalities. (See Table 17)

Table 17. Financing the future

Financing the future	Responsible for implementation	Proposed source of funding	Proposed year of implementation	Technical assistance budget (US$)
Publishing Financial management guidelines for AOs and municipalities	DWSS	UNDP	2013	10 000
Financial training for WSS service providers	DWSS / ARIS	UNDP	2013-2014	20 000
Willingness to pay study	DWSS / Working group	ADB		60 000
Preparation of Guidelines for tariff-setting for vulnerable social groups	DWSS / Working group	ADB	2013-2014	20 000
5 year budget established by Aiyl Okmotu / Municipal service providers	AO & municipalities / DWSS		2014 onwards	-
Coordination of tariff strategies in local business plans	AO & municipalities / DWSS		2014 onwards	-

6. Conclusions

The population of the Kyrgyz Republic faces severe financial conditions and a number of inequalities summarized in Table 8 (Chapter 2), which need to be addressed.

In terms of access to water and sanitation, the following major inequalities have been identified:

1. between Jalalabat and Osh oblasts and other regions (basic indicators)
2. between big cities and rural areas/small towns
3. between women and men
4. between northern and southern regions (specific indicators)

The specific vulnerable groups in the country include:

- young families;
- population of small settlements up to 700-750 people in size where borehole pumps are used;
- rural population in the southern regions (especially Batken oblast).

Consideration of social and economic differences between the regions and various social groups is necessary for the efficient management of WSS sector as well as for targeted allocation of donor projects.

Solidarity mechanisms have not yet been clearly reflected in the regulatory framework of the Kyrgyz Republic. However, various policy papers and strategic documents (as mentioned above in Chapter 3) include a number of provisions concerning the change of water supply and sanitation system and tariff setting. Thus, the National Strategy for Sustainable Development of the Kyrgyz Republic for 2013-2017 (NCSD 2013) underlines that water must remain affordable for all.

The objective of the Strategy is to elaborate the policy for improved water and sanitation services, which would function in a sustainable way. The National Programme (2013) and the Action Plan foresee different respective measures, among others:

- introduction, through a legally set procedure, of a uniform tariff calculation methodology, exclusion from the Law "On Drinking Water" and other regulatory legal acts the provision on coordination of the tariffs with the authorized governmental bodies for antimonopoly regulations;
- improvement of customers' awareness of the importance of timely payment for water and wastewater services;
- provision of public access to information on tariff setting processes;
- elaboration of guidance for municipalities and Aiyl Okmotus as well as service providers, covering the topic of introducing social tariffs compatible with overall cost recovery and based on adequate consumption norms and connection charges.
- **necessity to ensure that there is a subsidizing process for water and wastewater services out of local budget for vulnerable groups.**

7. Recommendations

The authors of this study support the targets which were set during the National Policy Dialogue process under the Protocol on Water and Health. Complementary to them, the following general recommendations are made:

Target area: Quality of the drinking water supplied; Quality of waters, which are used as sources for drinking water

- To approve the sanitary norms and rules (SanPiNs) for water;
- To conduct a study of the status of zones of sanitary protection of water sources;
- To examine the construction projects \ reconstruction of water supply systems.

Target area: Access to drinking water

- To adopt the UNECE Protocol on Water and Health;
- To develop a flexible/progressive tariff policy on the use of drinking water;
- To develop gender-justified strategies for access to clean water, via:

  - Scientific research studies based on gender-differentiated statistics of disease incidence and mortality rate with breakdown by all types of water-related diseases (by regions, also considering high mountainous regions), age, income level, type of activity);

  - Gender-differentiated review of data of referral for medical aid, including first aid, in connection to access to clean water;

  - Information of population, medical workers, decision makers on the issues of access to drinking water.

Target area: Access to sanitation

- To introduce new technologies of ecological sanitary, including eco-sanitary toilets and improved ventilated toilets in the territory of social facilities (such as schools, FAPs, and etc.).

- To undertake assessment of the condition and estimate the required investment for the modernization of water supply and sanitation systems in 100 % of schools and kindergartens,
- On this basis to develop a program of rehabilitation and development of these systems until 2020, to ensure its sustainable financing (providing schools with access to safe drinking water and adequate sanitation will have positive multi-pronged social and gender effects).
- To develop additional articles SanPin 2.4.2.002-03 which would set the minimum requirements for the school pit latrines (their allocation, seats, doors, frequency of cleaning, cladding, etc.) and enable there changes through the Government.

Target area: Effectiveness of systems for the management, development, protection and use of water resources

- To develop methodology and conduct training of employees of local self-government authorities and members of local councils on the issues of socially-oriented planning of local budgets and development of local clean water development programs on risks for various social groups;
- To expand the practice of solidarity systems management of water supply and sanitation with the involvement of local government and rural public associations of drinking water (CDWUU) and fixing the responsibility of local communities;
- To actively involve women into various structures managing water, land and pasture resources (CDWUU, Vodokanal, local keneshes, local self-government bodies);
- To ensure management allowing use of water resources in a more just and efficient way (creation of water reserves, regulation of surface water flow, preservation of flood-plain forests);

Target area: Frequency of publication of information on the quality of drinking water supplied and of other waters relevant to the Protocol on Water and Health

- To conduct national and regional informational campaigns on sanitary issues, hygiene and sustainable use of water resources;
- To ensure access of citizens of cities and villages to the information about quality of tap drinking water or condition of surface waters used for drinking, as well as about research studies implemented in this area.

Herewith the authors provide targeted project activities with a particular focus on the water solidarity mechanisms:

General:

- To conduct a comprehensive survey of the current situation in the water supply and sanitation sector including tariff collection, and to set up a relevant national database (by NGOs and governmental agencies);
- To organize workshop/series of workshops for the authorities of the Kyrgyz Republic (wide representation required) on the best practices in water solidarity mechanisms, setting partnerships and supporting vulnerable groups;
- To start decentralized water solidarity mechanisms through establishing international partnerships, enabling therefore a new form of financial support. This mechanism should be used for a set period of time, with gradual switch to increase of domestic cross-subsidizing and other domestic tools.

- To arrange exchange visits for the representatives of water utility companies and municipalities to share best practices and to learn from each other.
- To ensure gradual switch from "harmful" subsidies in the form of reduced tariff rates to financial support through housing funds.
- To adopt such billing system which would implicate fees for non-payers and would be legally approved by local authorities;
- To introduce pilot joint billing system for electricity, water, sewage and garbage.

For urban areas:

- To improve cooperation between Municipal Enterprises "Vodokanals", "Housing Communal Offices" and Territorial Local Self-governance under the municipalities in order to share experiences, resources, implement joint action plans concerning the improvement of the community compliance related infrastructure services water, sanitation, energy and etc.
- To set up private-public partnerships: private water companies collect money through selling bottled water or soft drinks.
- To improve registration procedures regarding migration *in* and *from* towns which would allow to decrease the number of non-payers.
- To adopt and implement water safety plans for the urban water supply systems.
- To raise public awareness regarding the importance of paying WSS bills.

For rural areas:

- To set up a water fund (e.g. revolving fund) which can give social credit lines for village residents to improve their access to water and sanitation (e.g. investment for Ecosan). The fund should be managed by local authorities or CDWUUs;
- To enable capacity building and networking of CDWUUs and local authorities in the country on management of water supply and sanitation, e.g. setting up neighbouring partnerships supported at the national level;
- To establish partnerships and enlist the support of the Kyrgyz expat communities abroad.
- To arrange exchange visits for the representatives of CDWUUs and local authorities to share best practices and to learn from each other.
- To adopt water safety plans in the small scale water supply systems.
- To conduct study of sanitation protection zones of the existing rural water supply systems and water quality monitoring activities of the small scale water supply systems in the country.
- To establish national norms and standards for construction of ecosan and use of toilet products in agriculture.

Capacity building is needed at different levels:

- Up-grading universities curricula for water and sanitation management

- Vocational training for local authorities and CDWUUs
- Set up twinning programmes between Kyrgyz utilities and utilities abroad to build institutional capacity for good water and sanitation management
- Set up twinning programmes between Kyrgyz local authorities and CDWUUs and utilities abroad to build capacity for good water and sanitation management
- Strengthen regional laboratory centers of state sanitary utilities, sewage treatment plants, both technical and in terms of staff capacity building;
- Train employees of local governments and local councils of deputies on socially oriented planning of local budgets, clearly define the responsibilities of local government for the lack of water and failure to maintain proper sanitary conditions in the village;
- Simplify the laws and regulations on WSS - shorten the transfer - road of law towards implementation; reduce the currently involved institutions - define clear tasks and responsibilities of the needed and relevant institutions.
- Increase transparency of regulations regarding planning, implementation and financing of the water infrastructure - at all levels.
- Coordinate the international and national strategies and investments - set priorities for the regions the most in need.

8. References

ADB 2013a. Asian Development Bank. Kyrgyz Republic: Water Supply and Sanitation Strategy. Technical Assistance Report.

ADB 2013b. Asian Development Bank official web-site. Available at: http://www.adb.org/projects/search/508?ref=countries/kyrgyz-republic/projects (Last accessed 12 November 2013)

Aga Khan Branch Foundation 2010. Evgenii Semenov, Alexander Khromov, Oksana Balaeva and the Aga Khan Branch Foundation: Concept for improvement of operation of water supply and sewerage system in Naryn city.

ARIS 2013. Final survey on the World Bank and ADB projects coverage.

CIA 2013. Central Intelligent Agency: The World Factbook – Kyrgyzstan. Available at: https://www.cia.gov/library/publications/the-world-factbook/geos/kg.html (Last accessed 30 July 2013)

EBRD 2011, 2012. European Bank for Reconstruction and Development: Osh Water Supply Improvement and Jalalabad Water Rehabilitation Feasibility Studies; Kara-Balta Water Feasibility Study; Talas Water and Wastewater Feasibility Study

Gender aspects 2013. EWA and Social Technologies Agency STAACT: Analytical recommendations on gender aspects of access to clean drinking water and sanitation (Аналитические рекомендации: Гендерные аспекты доступа к чистой питьевой воде и санитарии)

GLAAS 2012. World Health Organization and UN-Water Report: Global Analysis and Assessment of Sanitation and Drinking Water. Available at: http://www.un.org/waterforlifedecade/pdf/glaas_report_2012_eng.pdf (Last accessed 12 November 2013)

National Programme 2013. National programme on water supply and sanitation development (Draft June 2013). (Проект Национальной программы по развитию водоснабжения и водоотведения, июнь 2013)

National Statistical Committee 2011. Available at: http://stat.kg/images/stories/docs/tematika/demo/Demo%20publ%202007-2011.pdf (Last accessed 11 October 2013)

National Statistic Committee 2012. Poverty rates by oblast, based on consumption.

National Statistical Committee 2013. Population of oblasts, rayons, cities and urban settlements of the Kyrgyz Republic in 2013.

NCSD 2013. National Council for Sustainable Development of the Kyrgyz Republic: National Sustainable Development Strategy for the Kyrgyz Republic for the period of 2013-2017. Available at: http://www.president.kg/ru/podpisannye_dokumenty/1466_tekst_natsionalnoy_strategii_ustoychivogo_razvitiya_kyirgyizskoy_respubliki_na_period_2013-2017_godyi/ (Last accessed 30 July 2013)

OECD 2007. Financing water supply and sanitation sector in EECCAA countries, including progress in achieving water-related Millennium Development Goals (MDGS). ENV/EPOC/EAP(2007)2. Available at: http://www.oecd.org/env/outreach/38182397.pdf (Last accessed 11 October 2013)

OECD 2009. National Policy Dialogue on Financing Urban and Rural Water Supply and Sanitation in the Kyrgyz Republic. Executive Summary. ENV/EPOC/EAP/WATER(2009)1. Available at: http://www.oecd.org/env/outreach/44174359.pdf (Last accessed 11 October 2013)

OECD 2011a. EAP Task Force. Improving the use of economic instruments for water resource management in Kyrgyzstan: The case of Lake Issyk-Kul basin. Available at: http://www.oecd.org/env/outreach/2013_Kyrgyz%20report%20on%20Eis%20for%20WRM%20Eng%20Web.pdf (Last accessed 11 October 2013)

OECD 2011b. National Policy Dialogue on financing urban and rural water supply and sanitation in the Kyrgyz Republic: Main outcomes and recommendations of the final report on the Financing strategy (Национальный диалог по отраслевой политике финансирования городского и сельского водоснабжения и водоотведения в Кыргызской Республике: Основные выводы и рекомендации заключительного отчета по Финансовой стратегии)

OECD 2012. Overview of key methods used to identify and quantify environmentally harmful subsidies with a focus on the energy sector. Draft report. ENV/EPOC/EAP(2012)2. Available at: http://www.oecd.org/env/outreach/EAP(2012)2_NP_Subsidies%20report_ENG.pdf (Last accessed 11 October 2013)

Regallet, Gabriel. 2011. Communal services in Kyrgyzstan: a poverty and social impact assessment. Available at: http://km.undp.sk/uploads/public1/files/vulnerability/Senior%20Economist%20Web%20site/PSIA_Communal_Services_Kyrgyzstan.pdf (Last accessed 24 July 2013)

State Sanitary and Epidemiologic Surveillance Department 2011. On the Condition of Control of the Centralized Water Supply Safety in the Kyrgyz Republic /Presentation/ (О состоянии государственного контроля безопасности централизованного водоснабжения Кыргызской Республики /Презентация/)

Target Setting 2013. UNECE, EU Water Initiation, Ministry of Foreign Affairs of Norway: Target setting in the context of the Protocol on water and health in Kyrgyzstan.

UNECE 2013. National Policy Dialogue on Integrated Water Resources Management in Kyrgyzstan. Performance review for 2008-2013. Available at: http://www.unece.org/fileadmin/DAM/env/water/meetings/NPD_meetings/2013/Kyrgyzstan/pb_rus.pdf (Last accessed on 11 November 2013)

WHO & UNICEF 2013. WHO / UNICEF Joint Monitoring Programme for Water Supply and Sanitation: Kyrgyzstan: estimates on the use of water sources and sanitation facilities (1980 - 2011). Available at: http://www.wssinfo.org/documents-links/documents/?tx_displaycontroller%5Btype%5D=country_files (Last accessed on 11 November 2013)

World Bank 2013a. Kyrgyz Republic Partnership Program Snapshot. Available at: http://www.worldbank.org/content/dam/Worldbank/document/Kyrgyzrepublic-Snapshot.pdf (Last accessed on 21 September 2013).

World Bank 2013b. Kyrgyz Republic - Poverty mapping: methodology and key findings. Available at: http://documents.worldbank.org/curated/en/2013/04/17585420/kyrgyz-republic-poverty-mapping-methodology-key-findings (Last accessed on 21 September 2013).

Appendix A. Urban sewage systems[17]

City	Sewage system	System quality
Bishkek	Present	Adequate
Osh	Present	Adequate
Cholpon-Ata	Present	Inadequate
Kant	Present	Inadequate
Kara-Balta	Present	Inadequate
Kochkor-Ata	Present	Inadequate
Kok-Jangak	Present	Inadequate
Mailuu-Suu	Present	Inadequate
Shopokov	Present	Inadequate
Balykchy	Present	No info
Karakol	Present	No info
Kara-Kol	Present	No info
Jalalabat	Present	No info
Batken	Absent	-
Isfana	Absent	-
Kara-Suu	Absent	-
Kerben	Absent	-
Nookat	Absent	-
Sulukta	Absent	-
Aidarken	No info	No info
Kadamjay	No info	No info
Kaiyndy	No info	No info
Kemin	No info	No info
Kyzyl-Kiya	No info	No info
Naryn	No info	No info
Orlovka	No info	No info
Ozgon	No info	No info
Talas	No info	No info
Tashkomur	No info	No info
Tokmok	No info	No info
Toktogul	No info	No info

[17] National Programme 2013

Appendix B. Case study of women leadership of the CDWUU in Konurolon village

Location: *Konurolon village, Ton rayon, Issyk-Kul oblast*

CDWUU Chairperson: *Guljan Matkazieva*

The following case represents the successful example of how a woman-activist can mobilise village residents to solve local social problems, including problems in the WSS sector.

Konurolon village is a typical mountain village located 2200 meters above the sea level in the Ton rayon, Issyk-Kul oblast. The original WSS of the village was constructed in 1946, but stopped working in 1994 due to the lack of maintenance. As a result, village residents had to fetch water from the irrigation channel 2 km away. This work was predominantly done by young women and children.

In December 2002 the village was selected to be included in the RWSS project. Local women and representatives of the village school took an active part in social mobilization process to establish the CDWUU and distributed information on the project's approach and principles. When at the Constituent Assembly the majority of the residents elected a woman-pensioner as head of CDWUU and another woman-pensioner the secretary; many men were skeptical.

Nevertheless, both women were former teachers and had influence on the decision-making process in the village. Village residents expressed strong interest in project implementation and consequently, the community was one of the first ones in the country to complete the collection of the 5% contribution.

The process of project implementation faced many inner conflicts and arguments as well as negative disposition to the Chair of CDWUU as she proved to be a persistent leader incorruptible in taking important decisions. Thus, the Chair considered the pipes delivered to the site by the contractor below standards and did not permit to use them for construction of WSS. The low quality of the pipes was confirmed by project supervision engineers and other institutions, and the CDWUU insisted on a new delivery of pipes that met quality standards.

Immediately after completion of construction, the CDWUU chairperson started a campaign for tariff payment; and during the last 6 years the tariff collection rate in the village reached 90-100%. The good results were achieved through participatory approach, proper community awareness raising activities and organizational capacity of the CDWUU. Currently the villagers are willing to pay the tariff and have already repaid the 5% of the loan to the Kyrgyz Government.

After completion of the WSS construction, active members of the community initiated, with the support of ARIS, construction of a first aid post (FAP) in the village and selected Guljan-edje to be the leader of the Rural Investment Committee. The construction of FAP and the performance of the Committee were both successful. Village residents recognized the valuable input of the CDWUU Chairperson and elected her as a deputy to Ayil Kenesh.

Appendix C. Overview on International Assistance in Water and Sanitation in Kyrgyzstan

International Assistance in Water and Sanitation (budget framework of the Kyrgyz Republic for 2014 -2016 prepared by the Ministry of Finance)							
	Project name	**2014**				**2015**	
		Internal		**External**		**Internal**	**External**
	Additional financing of the second rural water supply and sanitation project (WB)	24 750,0					
60	Additional financing of the second rural water supply and sanitation project (WB) (grant)		39 600,0				
60	Additional financing of the second rural water supply and sanitation project (WB) (credit)		59 400,0				
60	Stable development of Issyk-Kul (ADB)	226 908,0					
60	Stable development of Issyk-Kul (ADB) (grant)		306 840,6				
60	Stable development of Issyk-Kul (ADB) (credit)		750 395,3				
60	Stable development of Issyk-Kul 2 (ADB) (plan)	7 425,0		1 020,0			
60	Stable development of Issyk-Kul 2 (ADB) (grant) (plan)		49 500,0		306 000,0		154 800,0
60	Stable development of Issyk-Kul 2 (ADB) (credit) (plan)		49 500,0		306 000,0		258 000,0
60	Improving water supply of Bishkek city (Switzerland , EBRD)			1 530,0			
60	Improving water supply of Bishkek city (Switzerland) (grant)		63 657,0				
60	Improving water supply of Bishkek city (EBRD) (credit)		40 837,5		42 075,0		
60	Improving water supply of Bishkek city 2 (Switzerland , EBRD) (plan)			510,0		10 320,0	
60	Improving water supply of Bishkek city 2 (Switzerland) (grant) (plan)		0,0		142 800,0		103 200,0
60	Improving water supply of Bishkek city 2 (EBRD) (credit) (plan)		0,0		142 800,0		103 200,0

60	Improving water supply and sewage facilities in Osh city (Switzerland) (grant)		25 373,7				
60	Improving water supply and sewage facilities in Osh city (EBRD) (credit)		16 919,1				
60	Improving water supply in Osh city 2 (EBRD)			1 173,0		25 800,0	
60	Improving water supply in Osh city 2 (EBRD) (grant) (plan)		0,0		85 680,0		77 400,0
60	Improving water supply in Osh city 2 (EBRD) (credit) (plan)		0,0		117 810,0		51 600,0
60	Improving water supply and sewage facilities in Zhalal- Abad city (Switzerland) (grant)		31 808,7				
60	Improving water supply and sewage facilities in Zhalal- Abad city (EBRD) (credit)		22 567,1				
60	Improving water supply in Kara-Balta city (IFES, EBRD) (plan)			3 876,0			
60	Improving water supply in Kara-Balta city (IFES) (grant) (plan)		83 160,0		117 810,0		
60	Improving water supply in Kara-Balta city (EBRD) (credit) (plan)		55 440,0		78 540,0		
60	Improving water supply and sewage facilities in Talas city (EBRD) (plan)			4 080,0		19 350,0	
60	Improving water supply and sewage facilities in Talas city (EBRD , IFES , special fund for climate change of the Global ecological fund) (grant) (plan)		20 790,0		85 680,0		77 400,0
60	Improving water supply and sewage facilities in Talas city (EBRD) (credit) (plan)		13 860,0		57 120,0		51 600,0
60	Improving water supply in Kant city (Switzerland , EBRD)			2 040,0		13 932,0	
60	Improving water supply in Kant city (Switzerland) (grant) (plan)		13 860,0		57 120,0		51 600,0
60	Improving water supply in Kant city (EBRD) (credit) (plan)		10 395,0		42 840,0		41 280,0
60	Improving water supply in Tokmok city (Switzerland , EBRD) (plan			1 173,0		23 220,0	

	)						
60	Improving water supply in Tokmok city (Switzerland) (grant) (plan)				21 420,0		77 400,0
60	Improving water supply in Tokmok city (EBRD) (credit) (plan)				14 280,0		77 400,0
60	Improving water supply in Naryn city (EBRD) (plan)			1 122,0		23 220,0	
60	Improving water supply in Naryn city (EBRD) (grant) (plan)				21 420,0		77 400,0
60	Improving water supply in Naryn city (EBRD) (credit) (plan)				14 280,0		77 400,0
60	Improving water supply in Batken city (EBRD) (plan)			5 100,0		23 220,0	
60	Improving water supply in Batken city (EBRD) (grant) (plan)				21 420,0		77 400,0
60	Improving water supply in Batken city (EBRD) (credit) (plan)				14 280,0		77 400,0
60	Emergency assistance for reconstruction and restoring (ADB)	3 539,3		102,0			
60	Emergency assistance for reconstruction and restoring (ADB) (grant)						