

EAP Task Force

GROUP OF SENIOR OFFICIALS ON THE REFORMS OF THE WATER SUPPLY AND SANITATION SECTOR IN EASTERN EUROPE, CAUCASUS AND CENTRAL ASIA

THIRD MEETING

Water and Sewerage Utilities in the Kyrgyz Republic:

Performance Indicators

(Prepared by the *Kyrgyzzhilkommunsoyuz*)

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Water and Sewerage Utilities in the Kyrgyz Republic - Performance Indicators (Prepared by the *Kyrgyzhilkommunsoyuz*)

Introduction

The Kyrgyz Republic is located in the north-eastern part of Central Asia and borders on Kazakhstan, Uzbekistan, Tajikistan and China. It comprises 7 regions (*oblasts*), 41 administrative districts (in addition to town districts), 20 cities and towns, 30 urban settlements and 417 rural districts (*aiyl okmotu*) that include 1,900 rural communities.

The country has an area of 199,945 square km, with 90% of territory elevated more than 1,500 meters above sea level. Mountains divide the country into the northern and the southern zones. The climate is dry and continental. About 53.9% of the territory is farming lands, including ploughland (12.7%), forests (5.1%), water bodies (4.3%), and grazing lands and other territories (31.8%).

The population is 4,822.9 thousand persons according to the 1999 census data by the Kyrgyz National Statistics Committee, an increase of 131 thousand compared to ten years ago. An average family numbers 5 to 6 persons. In 1999, 1,615.4 thousand persons of the total 4,731.7 thousand citizens (or 34.1%) qualified as urban residents. Predominantly urban areas include Chui, Osh, Jalal-Abad and Issyk-Kul, while in the Naryn and Talas oblasts the percentage of urban population is minimal. About 49% of urban population and 50% of industrial potential are concentrated in the capital city of Bishkek. Rural population totals 3,116.3 thousand or 65.9% of the population. In 1999, pre-working age, working-age and pension-age citizens constituted 38.3%, 52.2% and 9.5% of total population, respectively. Women outnumber male population by 106 thousand persons.

The density of population is 24.0 persons per square km and varies from region to region (24.4 in the Jalal-Abadoblast; 17.8 in Issyk-Kul and 75.8 in Chui). 80% of the population lives in the remote Chui and Talas valleys located at altitudes up to 1,500 meters above sea level and occupying less than 15% of total territory. In the distant parts of the Fergana Valley the density of population may be as low as 100-150 persons per square km. There are almost no permanent settlements in highland valleys, *szyrts* (Alpine tablelands) and hillsides.

Over 1985-1995, total housing in Kyrgyzstan increased from 45,533 to 57,585 thousand square meters. Water, sewerage, gas and hot water coverage across public, state and residential properties, and cooperative housing are 93%, 88%, 91% and 71%, respectively. Water, sewerage, central heating, bath (shower) and hot water coverage in urban communities are 93.9%, 88.4%, 86.7%, 76.1% and 62.1%, compared to 54.8%, 46.0%, 30.4% and 20.8% for water, sewerage, central heating and shower/bath coverage in rural areas.

Operational and financial indicators of KZKS water and sewerage utilities

Introduction

The operations of water and sewerage utilities in the Kyrgyz Republic in recent years have been coordinated and monitored by KZKS (see Supplement for details). Records of the principal technical and operational indicators and the cost of production are maintained separately for water distribution and wastewater disposal. Data is also available with a breakdown by consumer groups (residential consumers, public sector, industrial and commercial users).

Following transition to market economy, housing and utility subsidies have been completely eliminated. The Government does not make any centralized capital investments in water and sewerage facilities, except in rare isolated instances. Utilities operate as self-supporting business units receiving revenue from rendered services and contracted work. Kyrgyz water utilities are state-owned and have not been reorganized into joint stock companies, with the exception of the Lebedinovka water utility (Chui oblast) which is a small joint stock enterprise.

The monitoring of the suggested indicators has been performed by KZKS for municipal and national water and sewerage facilities within the KZKS system was conducted for 18 of the 35 water utilities in the country (see table below). The results have been grouped by large water utilities (above 50 thousand residential consumers), small water utilities (below 50 thousand residential consumers) and water utilities that do not provide sewerage services. The town of Kara-Balta has two water utilities, and the data was collected and analyzed separately for each utility. The table below lists the towns covered by the survey. Figures in brackets show the number of residents at January 1, 2002. The water utility of Bishkek, the capital city, enjoys a special status and was not included in the survey. A number of very small water utilities were unable to provide the required data. Notwithstanding, we believe that the work done adequately reflects the current status of the sector and hope to be able to continue such surveys in the future.

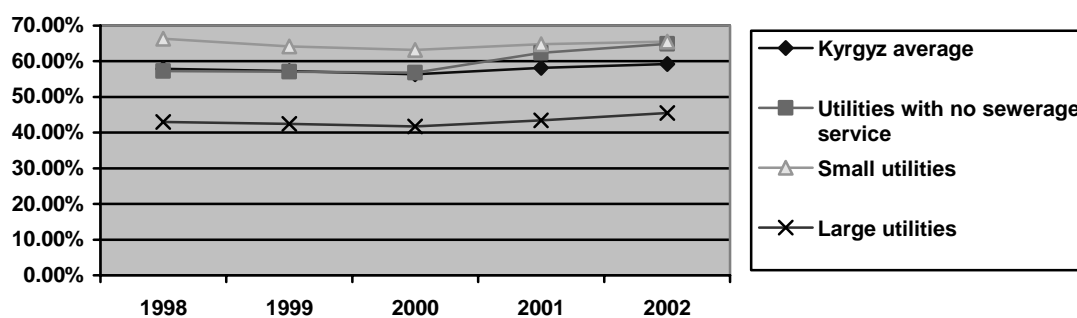
Large utilities	Small utilities	Utilities with no sewerage service
Jalal-Abad (92,800) Osh (245,200) Karakol (66,500)	Balykchi (45,000) Belovodskoye (16,200) Cholpon-Ata (9,100) Kant (23,000) Kara-Balta (47,300) - two entities Orlovka (5,500) Talas (32,000) Kyzyl-Kia (31,800) Naryn (41,200)	Chui (10,100) Lebedinovka (7,000) Tiup (11,200) Ak-Suu (16,700) Tokmak (56,600)

Coverage, water production and consumption

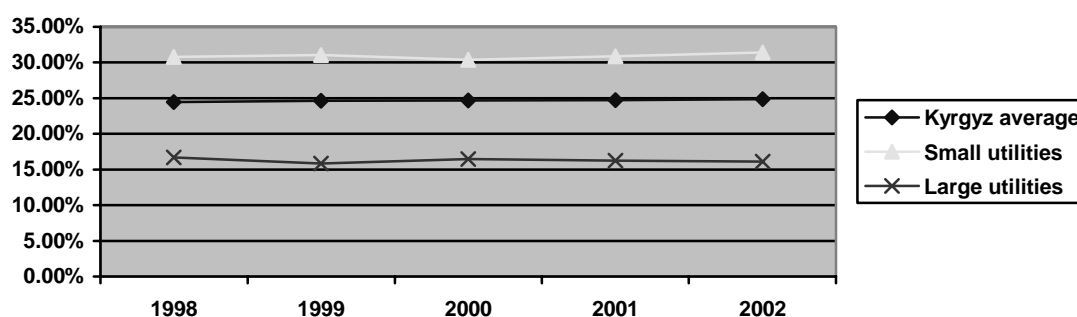
Indicators 1.1 and 2.1 Water and sewerage coverage

Towns and urban settlements in Kyrgyzstan (the "urban communities") have 93% water coverage and 88% sewerage coverage. This indicator includes the capital city, central oblast towns, urban settlements, and corporate and other non-utility systems in addition to the utility network. Coverage in other surveyed localities served by KZKS water utilities is somewhat lower and totals 59% for water service and 30% for sewerage.

Indicator 1.1 Water coverage by KZKS utilities



Indicator 2.1 Sewerage coverage by KZKS utilities



The relatively low water and sewerage service coverage in major towns has historic origins. These are old communities where residents, especially in older parts of the town, tend to have own water sources. Small water utilities have developed as in-house water providers of industrial enterprises. Hence, their water coverage is by definition higher than in old towns. The same is true for water utilities that do not provide sewerage services.

A major factor bearing on indicators 1.1 and 2.1 is the migration of population from small communities, which has thinned the revenue base of water utilities and also affected many utility financials. For example, population reduced from 10.2 thousand in 2000 to 9.4 thousand in 2002 (or by 8%) in the urban settlement of Chui, from 25 thousand in 1999 to 23 thousand in 2002 (by 8%) in Kant, from 11 to 7 thousand (more than 30%) in Lebedinovka, and from 7.6 to 5.4 thousand (30%) in Orlovka. A similar situation may be observed in many other towns where large enterprises that used to be the major local job providers closed down or significantly scaled down their operations. Meanwhile, migration to cities has continued.

Indicators 3.1- 4.3: Water production and consumption

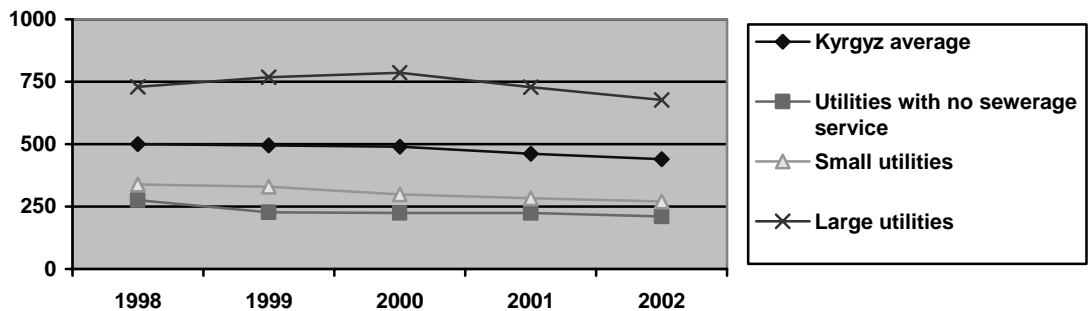
Annual water produced and annual metered water deliveries declined over 1998-2002 by 7.1% and 24.4%, respectively, not in the least due to the introduction of limits in the public sector, where the drop in consumption is especially evident at 66.7% (down from 7.8 million cubic meters in 1992 to 2.6 million cubic meters). The major drop in the industrial and commercial sectors also drove down the volume of water sold, from 9.0 million cubic meters to 3.2 million cubic meters, or by 64.4%, over the same period.

Average national water production reduced from 499 liters to 440 liters per person daily (or by 10%), with the industrial, commercial and public sectors factored in.

Monthly production per connection in 1998 was 87 cubic meters, down to 60 thousand cubic meters per month and 2 thousand cubic meters per day in 2002, or by 33.3%. However, these figures should be approached with account of an increase in registered connections from 77,881 to 109,010 (or by 40%),

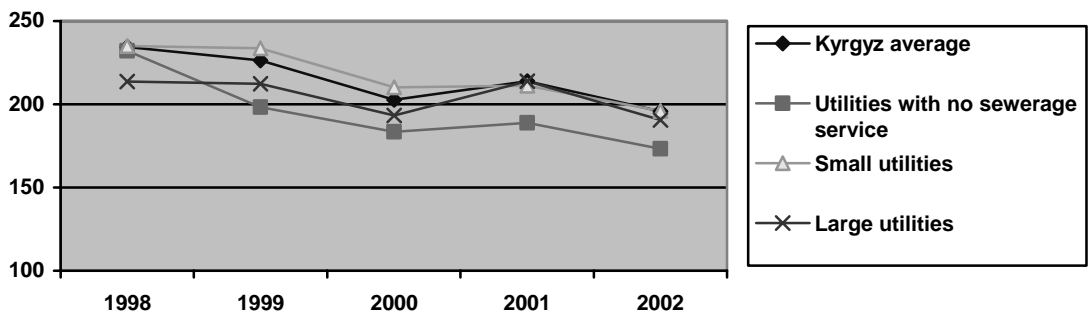
a reflection of greater access of other consumers to centralized water supply, which is a positive factor. Had the number of connections remained unchanged, monthly production per connection would have totaled 84.2 thousand cubic meters, equivalent to a 6.4% drop. The length of water networks grew by 51.4 km over 1998-2002, with a commensurate increase in the number of consumers and connections.

Indicator 3.1 Water production by KZKS utilities (liters per person daily)



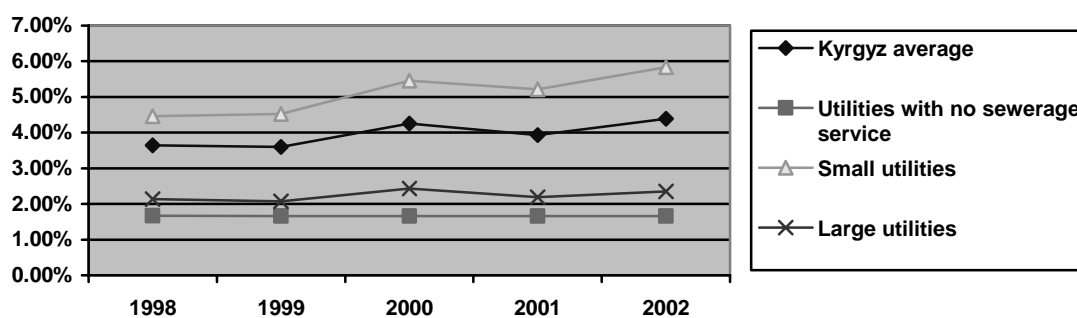
Actual average daily consumption per person declined from 245 liters in 1998 to 233 liters in 2002, with the consumption norm reduced to 102 liters per person daily (by 60%). Large water utilities serve industrial enterprises, and in certain areas water is also used for irrigation. If we access this indicator for residential consumers only, the picture is somewhat different: daily consumption per person totaled 150 liters in 1998; 129 liters in 2001 and 66.8 liters in 2002. This is explained by two reasons. In the first place, the actual number of residents using water services is higher than the number of registered tenants shown in utility bills. Secondly, in 2002 large water utilities in central oblast cities were divested to municipal authorities as directed by Government Resolution No. 608 of October 8, 2001. Therefore, in terms of residential consumption a comparison between 1998 and 2001 is more relevant, with the drop in consumption totaling 14% (from 150 to 129 liters per person daily), i.e. this indicator is more stable and authentic than the one which also includes the other two consumer categories (public sector and industrial users).

Indicator 4.1 Consumption of water produced by KZKS utilities (liters per person daily)



Water consumption exhibits a certain downward trend, albeit the decline is slower than in other CIS countries. One of the reasons behind declining consumption is the lack of metering (see chart below), which prevents accurate estimates of actual consumption. On the other hand, declining consumption has more to do with the reduced consumption standard for residential consumers, which results in lower water bills. In other words, the burden of social support has been shifted to water utilities.

Indicator 7.1: Metering practices among KZKS utilities (percentage of metered connections)



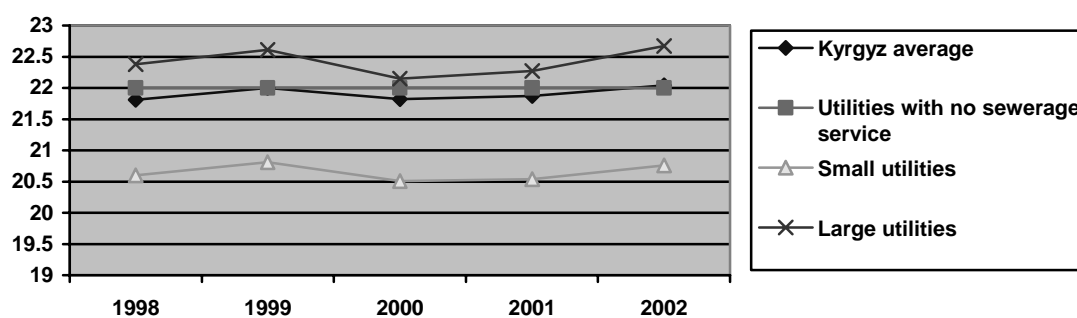
The average monthly use (consumption) of water per household in 1998 totaled 18.04 cubic meters in 1998, 16.71 cubic meters in 2001 (down by 17.7%), and 16.02 cubic meters in 2002 (a decrease of 22%). However, as indicated above, actual residential consumption is much higher than the standard-based figures depending on the quality of housing and the number of officially registered tenants¹.

Average water production reduced by 7.1%, while consumption dropped 15% in 2001 and 20% in 2002. This indicates the existence of 'unaccounted-for' process water consumed by units forming part of integral heating, water and sewerage facilities, i.e. there are major complexes incorporating water supply and sewerage systems and generation of heating that consume own water.

Of the total water connections in place, only 3.6% were metered in 1998 and 4.4% in 2002, with the increase primarily falling on the public sector. The number of metered water connections increased over five years from 8,068 to 16,985, or by 2.1 times.

Network operation and service quality

Indicator 15.1 Uninterrupted daily service



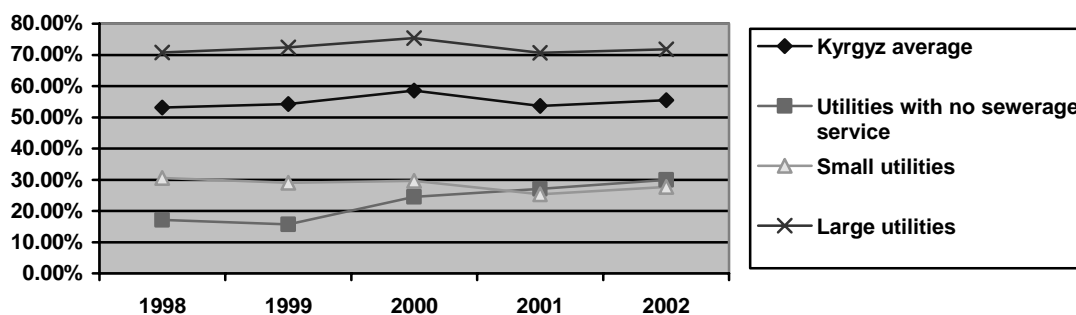
¹ The volume of billed water consumption varies depending on the quality of housing and is determined based on statutory consumption standards (liters per person a day, cubic meters per person a month and cubic meters per household a month). These figures are 35 liters per person a day, 1.05 cubic meters per person a month and 3.15 cubic meters per household a month for street standpipes; 60 liters per person a day, 1.8 cubic meters per person a month and 5.4 cubic meters per household a month for courtyard standpipes; 100 liters per person a day, 3 cubic meters per person a month and 9.0 cubic meters per household a month for households with centralized water supply but without sewerage; 165 liters per person a day, 4.95 cubic meters per person a month and 14.85 cubic meters per household a month for households with water and sewerage service; 170 liters per person a day, 5.1 cubic meters per person a month and 15.3 cubic meters per household a month for households with water supply, sewerage, bath, gas water heater and gas supply; and 310 liters per person a day, 9.3 cubic meters per person a month and 27.9 cubic meters per household a month for households with water supply, sewerage, bath, and hot water and gas supply.

Notably, Kyrgyz authorities consider uninterrupted water supply a priority task. Uninterrupted daily service in virtually all areas exceeds 20 hours, and in 2002 totaled 22 hours at 15 of the 18 water utilities.

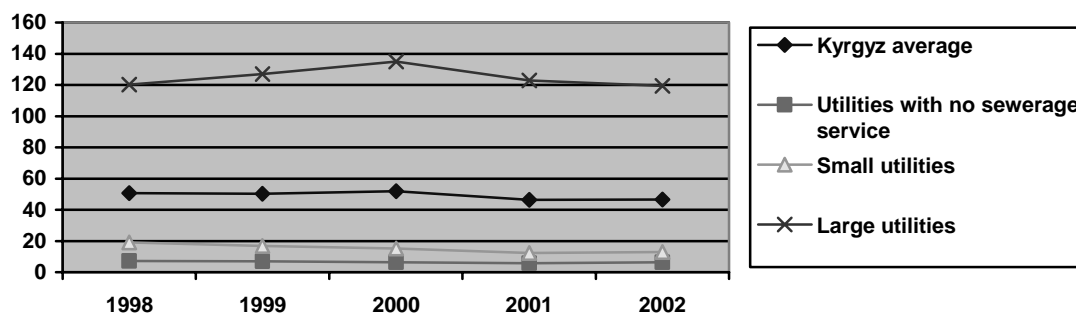
Indicators 6.1-6.3 Unaccounted-for water

Water losses are considerable due to dilapidated networks and the lack of dedicated investment in the water and sewerage infrastructure. Service proceeds cover only urgent and emergency maintenance and repairs. Large water utilities have been hit the hardest, heavily affected by the lack of investment, uncontrollable migration to cities and the resulting underestimation of the actual number of consumers. Small and medium-sized utilities so far have been able to cope with losses due to the absence of sophisticated engineering networks and because they are much younger on average than large water utilities, but given the absence of investment and fair tariffs, the general deterioration over time will probably affect them as well.

Indicator 6.1 Operating and non-operating water losses at KZKS utilities (%)



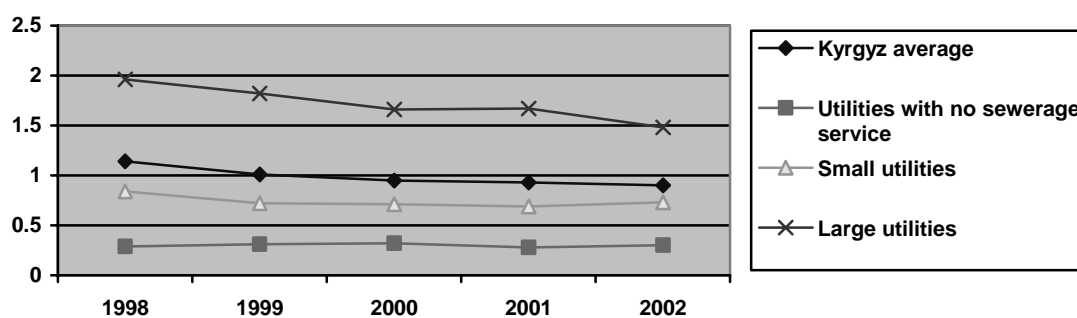
Indicator 6.2 Operating and non-operating water losses at KZKS utilities (cubic meters per km daily)



Indicators 9.1-10.2 Water and sewerage network malfunctions

Over 1998-2002, failures per km of water distribution network averaged 0.9-1.3 incidents, which translates into approximately one break per km of water networks. Breakage incidence for sewerage is similar at 0.7-1.2 blockages per km. As indicated above, utilities lack funds to repair the networks and apart from emergency operations, virtually no renewal or upgrading is performed. The number of water and sewerage service complaints remains virtually the same, as improvements require investment. So far, KZKS has managed to keep the situation under control, but more and more efforts will be required in the future to keep water and sewerage networks in working condition.

Indicator 9.1 Pipe breaks per km of water networks

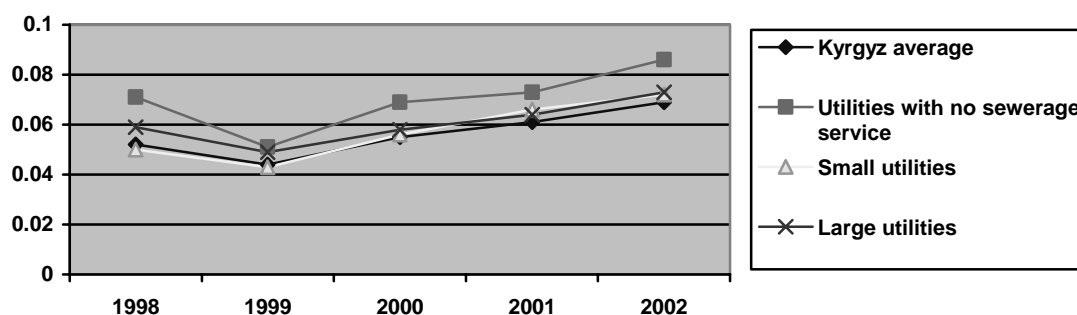


Sewerage network blockages and accidents averaged approximately 2.5 incidents per km.

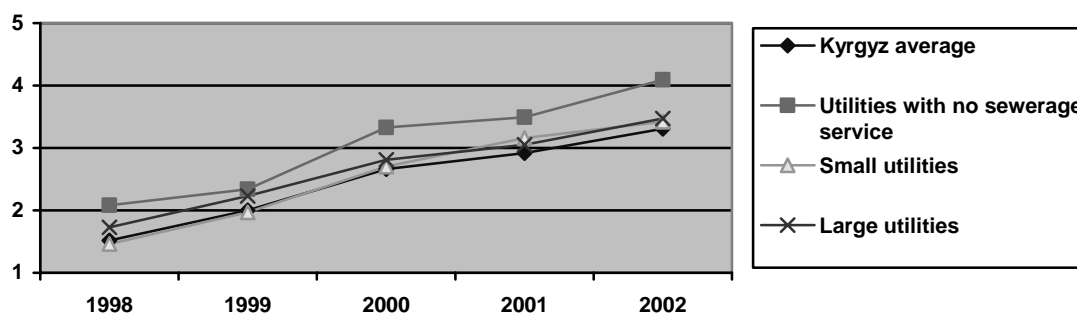
Costs of water production and sale, sewerage and wastewater treatment

As indicated above, the majority of towns and other settlements in Kyrgyzstan are located in mountainous areas. Accordingly, most utilities operate gravity water and sewerage systems. Also, virtually all water intake facilities use mountain river water and underground water sources. Hence, water preparation is largely not a major issue for most residential communities. Production costs are primarily made up of electricity charges, and utility costs increase commensurate with power tariffs. Wages and salaries paid by water utilities are rather modest, and per capita income in Kyrgyzstan is also low (per capita GDP ranges from \$300 to \$350). Due to these factors, both the tariffs and the costs of water and sewerage utilities are relatively low.

Indicator 11.1 Costs per cubic meter of water billed (\$)

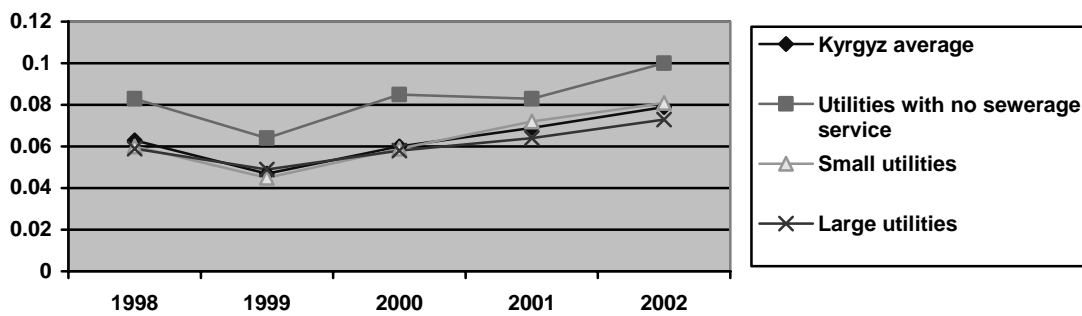


Indicator 11.1 Costs per cubic meter of water billed (KGS)

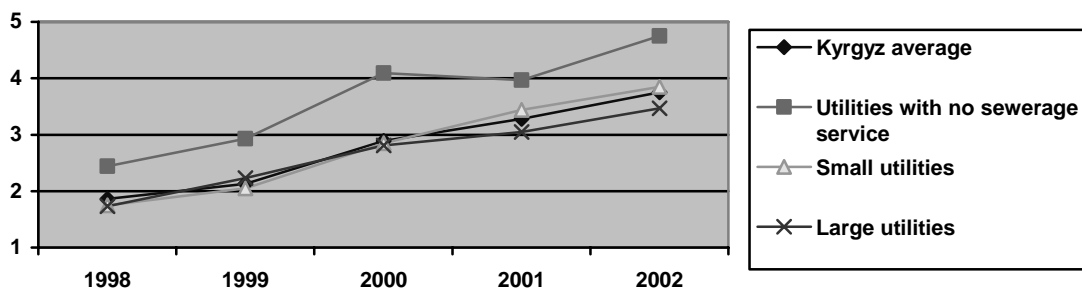


Average production costs per cubic meter of water billed and per cubic meter of water produced (sold) in US dollar terms increased over the five years from \$0.056 to \$0.061 and from \$0.055 to \$0.065, respectively.

Indicator 18.1 Average tariff (\$ per cubic meter)



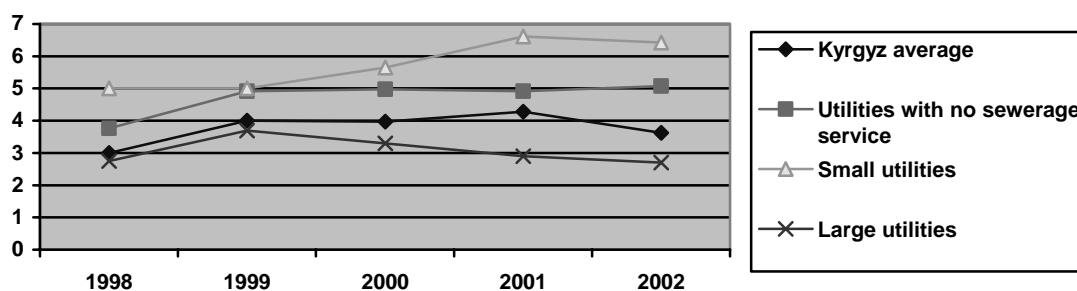
Indicator 18.1 Average tariff (KGS per cubic meter)



This indicator shows the actual average tariff charged by a utility to a consumer. The financial crisis in 1998-1999 significantly affected the tariffs in dollar terms, pushing them down 15-20%, and the previous level was not regained until two years later.

Kyrgyzstan has preserved the prior mechanism of tariff-setting which factors in three groups of consumers. Tariffs are approved separately for water and sewerage services to residential consumers, public sector entities and industrial and commercial enterprises. Access to clean potable water is a priority component of the Comprehensive Concept of Development of the Kyrgyz Republic for the period to 2010. Accordingly, to date residential tariffs have been sparing, and the ratio of residential charges to water service costs was 62.8% in 2002 (an increase from an even more modest 45.4% in 1998), while the ratio of residential tariffs to sewerage costs totaled 56.5% and 46.8%, respectively. Affordable charges are a requirement of the *Araket* national anti-poverty program that envisages a gradual increase of this ratio to 75% in 2005 and aims to keep vital water service affordable for the majority of the population. Overall average water charges in Kyrgyzstan in 2002 were slightly above costs at KGS 3.22 against KGS 3.16 per cubic meter, which translates into a cost-efficiency margin per cubic meter of up to 1.9% in relation to direct costs (as adjusted for depreciation). For sewerage, these figures are KGS 2.85 and KGS 2.63, a margin of 8.4% (also adjusted for depreciation). Cross-subsidizing remains the basis of social policy in one of the sectors (see description of the tariff structure above).

Indicator 21.1 Extent of cross-subsidizing (ratio of industrial to residential charges)



The ratio of revenues from industrial users to residential revenues reduced from 147.2% in 1998 to 100.6% in 2002 for water and from 216.4% to 165.6% for sewerage, another indication of the gradual convergence of tariffs for these two user groups. So far, there are no plans of transition to a single tariff, as it would trigger a dramatic surge of water and sewerage charges.

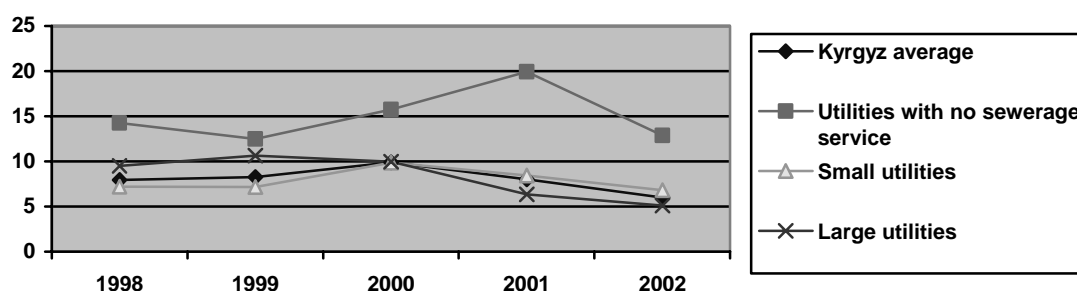
Total payroll with social taxes in 1998-2001 increased by 22.9%, and the ratio of payroll to production costs totaled 37.2% in 1998 and 36.3% in 2002, exhibiting a minor reduction. For water services, the ratio of payroll to total production costs over the same period declined from 34.8% to 32.4%, and for sewerage the ratio slightly increased (from 44.5% to 47.0%).

Energy costs amounted to 31.7% and 40.7% of total water production costs in 1998 and 2002, respectively, and 62.3% and 67.6% in material inputs, due to higher charges per kWh. For sewerage, energy costs totaled 28.7% and 25.5% of production costs, and 69.9% and 58.2% of material inputs. The proportion of electricity costs in total production costs are presented in the table below:

	1998	1999	2000	2001	2002
Water					
Proportion of energy in production costs,%	31.7	37.0	36.5	37.8	40.7
Proportion of energy in material inputs,%	62.3	66.2	66.7	66.3	67.6
Sewerage					
Proportion of energy in production costs,%	28.7	31.4	31.9	29.7	25.5
Proportion of energy in material inputs,%	69.9	62.9	61.3	56.4	58.2

Timely and full payments for services are a critical prerequisite of stable operation of water utilities. KZKS is committed to resolving this issue. However, the paying ability in towns with no sewerage service remains considerably lower compared to other communities. The Lebedinovka water utility deserves a special mention here, as it has managed to completely eliminate this problem.

Indicator 23.1 Collection / receivables (months overdue)

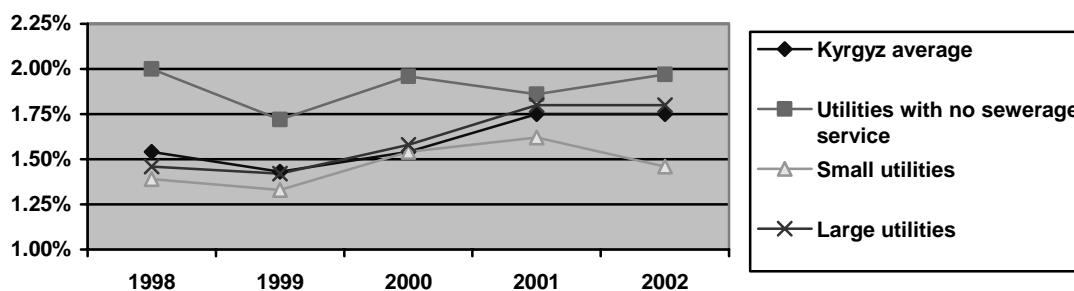


This indicator shows average debts due from all consumer groups. Accounts receivable from residential consumers increased for water services from 2.4 months in 2000 to 4.1 months in 2002, and for sewerage, from 1.3 to 2.6 months (by 1.7 and 2.0 times, respectively). Accounts receivable from industrial users increased for water services from 4.0 months in 2000 to 5.4 months in 2002, and for sewerage, from 0.3 to 2.6 months. In the public sector, there has been a major reduction in arrears by social and cultural institutions in recent years. Receivables for sewerage services reduced from 4.0 to 0.3 months, while receivables for water deliveries, which stood at 3.2 months in 2000, starting from 2001 are fully paid up as they arise, with gradual repayment of prior debts to a total of KGS 5.0-3.6 million. This has improved the financial condition of water utilities, which reported a KGS 1.0 million profit in 2002 after losses in 1998-2000. Profits from sewerage operations in 2002 totaled KGS 1.5 million.

Service affordability

Despite relatively low tariffs, water service payments are a major issue for a significant part of the population. However, indicator 19.1 *Service charges as a proportion of per capita GDP* shows that the ratio is above 2% only in those communities that do not have sewerage networks. Also, it should be borne in mind that should charges increase by a mere \$0.02 per cubic meter, approximately one third of consumers will be paying in excess of 5% of their income for water and sewerage services.

Indicator 19.1 Water and sewerage charges as a proportion of per capita GDP



Level of investment and value of fixed assets

Investments are built into tariffs only to a minimal extent. Own investments in water distribution network repairs and replacement of worn-out equipment totaled 5.8%, 3.76% and 0.33% of costs in 1998, 2000 and 2002, respectively, i.e. the scope of investments visibly declined. Investments in sewerage infrastructure amounted to 5.26%, 2.7% and 2.93% in the same years, i.e. the trend is identical. In some of the smaller cities, these indicators also reflect investments associated with the World Bank and the Asian Development Bank loans.

Water utilities have been receiving no capital investments from the budget virtually from the first days of transition to market economy. In combination with non-payments, this factor aggravates the issue of maintaining the facilities in working condition, let alone any renewal or replacement of fixed assets. The diminishing value of fixed assets is due to both disposal of fully depreciated plant and equipment that require major investments in maintenance if retained and used further, and the divestiture of some of the water and sewerage facilities in central oblast towns to municipal authorities.

Extent and quality of water conditioning and wastewater treatment

As indicated above, Kyrgyzstan has high-quality natural water sources, and water at virtually all water utilities complies with the statutory standards. Complete wastewater treatment and disposal are provided by the Bishkek water utility, while most KZKS utilities use mechanical purification technology. The situation with biological purification is more complicated due to absence of any investments in many years.

National energy consumption per cubic meter of water and wastewater

Year	Energy consumption per cubic meter of produced water, kWh/m ³	Energy consumption per cubic meter of wastewater, kWh/m ³	Average energy consumption per cubic meter of production, kWh/m ³ , total	Energy consumption per cubic meter of production in monetary terms, KGS/m ³	Approved tariff <u>kWh</u> stated capacity <u>tyiyn (KGS 0.01)</u> KGS per month
1	2	3	4	5	6
1998	0.68	0.49	0.64	0.20	<u>33.6</u> 16.8
1999	0.76	0.54	0.72	0.32	<u>60.0</u> 30.0
2000	0.73	0.53	0.70	0.34	<u>48.0</u> 38.4
2001	0.80	0.63	0.77	0.37	<u>60</u> 35.3
2002	0.83	1.53	0.88	0.26 ^{x)}	<u>72</u> 54

*) not all costs paid; debts to energy companies

Conclusions

1. Given the nation-wide coordination mandate of KZKS, the monitoring of operational activities of water and sewerage utilities over several years did not pose a problem.

2. Many indicators are not used in Kyrgyzstan and ought to be incorporated in the system of statistical reporting (number of connections, metering coverage of consumers, volumes of metered water delivered etc.) to identify the effective per capita consumption standards, secure efficient billing for residential services and enhance revenues.

3. Since water utilities receive no capital investments from the budget, the exclusion of depreciation from cost may result in the loss of a funding source to finance equipment repairs and upgrades. The profitability of utility operations is extremely low, not exceeding 5% for residential services, and this may distort production costs.

4. Water and sewerage coverage remains stable, but is significantly affected by continuing uncontrolled migration. Sewerage coverage has stayed low and cannot be increased without major assistance on the part of the Government and/or international donors.

5. The most difficult situation is observed in major cities (Osh, Jalal-Abad and Karakol) where water losses and network failure incidence are the highest (up to 70% of all water and 1.5-2 breakages per km, respectively). However, so far water utilities in these cities have managed to provide water service for residential consumers and other customers with minimal interruptions, although very harmful for the infrastructure.

6. Water tariffs remain low and do not incorporate many cost components, first and foremost investments (depreciation charges do not enable utilities to finance reconstruction, as the majority of equipment and networks were built or acquired a long time ago). Cross-subsidizing of residential consumers by other user groups is still the principal method of social support in the sector.

7. High-quality water and the peculiar geographic characteristics of the Kyrgyz Republic allow water and sewerage utilities to provide services at negligible cost. KZKS believes that modest investments will be suffice to eliminate current problems, increase the quality of services and make them more accessible.

Kyrgyzzhilkommunsoyuz

General profile

The State Association of Housing and Utility Enterprises and Organizations of the Kyrgyz Republic (*Kyrgyzzhilkommunsoyuz* or *KZKS*) acts as an executive authority for and on behalf of the Government of Kyrgyzstan. It coordinates the activities of legal entities in the housing and utilities sector while remaining an independent business enterprise providing various types of work and services directly for the founding parties on contractual basis.

KZKS was established in 1991 as a voluntary association of Kyrgyz housing and utility enterprises and organizations of various ministerial subordination and ownership types. The founding parties of KZKS are utility operators. The incorporation decision passed by the KZKS constituent assembly was endorsed by Resolution of the Kyrgyz Government No. 105 of March 26, 1991. According to the Charter, approved at the constituent conference on November 27, 1990, and the Regulations on KZKS, endorsed by Resolution No. 274 of the Kyrgyz Government of June 20, 1996, KZKS member companies, organizations and institutions remain fully independent business ventures.

Upon inception, KZKS comprised 143 entities employing over 28 thousand persons in 21 segments of the housing and utility sector, ranging from water and sewerage to area development and improvement and burial services. At the initial phase of its operations in 1992, KZKS provided water and sewerage services to 47 of the 58 Kyrgyz towns and district centers, using intake facilities capable of delivering 524 thousand m³ of water per day from 228 wells; 2,890 km of water distribution networks; 17 sewerage treatment facilities with total daily processing capacity of 332 thousand m³; and 405 km of sewerage networks.

As the role of local governance in the national social and economic development increased, a series of Presidential Decrees promoted further decentralization of management functions, with 19 of the 21 sectors delegated to the local level. Housing and utilities, area development and improvement in towns and district centers, and consumer services have been managed by oblast authorities since 1994-1995. At the same time, the more technologically sophisticated segments of the heating and water/sewerage infrastructure have been retained by KZKS. The Kyrgyz Government upheld this decision, and by Resolution No. 91 of March 20, 1995 amended accordingly the Regulations on KZKS, endorsed by Government Resolution No. 292 dated May 4, 1994.

KZKS goals and objectives

Pursuant to Section 3 of the Conceptual Framework of the Housing and Utility Reform in the Kyrgyz Republic approved by Resolution No. 520 of the Kyrgyz Government of August 5, 1998, technological assets, including engineering infrastructure (water, sewerage and heating networks, pump stations, treatment and boiler facilities) remain in national jurisdiction and are managed directly by KZKS, which retains all powers and functions relating to the development and business and operational management of heating, energy, utility and water/sewerage enterprises.

KZKS helps water utilities to resolve strategic issues, maintain partner relations with CIS countries, exchange experience, and acquire sophisticated equipment and chemical agents not produced in Kyrgyzstan.

KZKS's annual work program approximates 1 billion Kyrgyz Soms (KGS), or about \$21 million. The head office of KZKS employs 15 persons.

Pursuant to the Charter, the key goals and objectives of KZKS are as follows:

- assist in ensuring stable and reliable operations of water/sewerage and heating enterprises in towns and district centers of the Republic and satisfying the requirements of all categories of consumers for their services;
- carry out the full range of activities to prepare heating systems in towns and district centers of the Republic for the autumn/winter season, including overhaul of boiler facilities and heating networks, participation in tender-based purchases and centralized procurement of fuel (coal, fuel oil) to provide district heating, and maintenance of emergency stocks;
- implement the Government program of divesting social assets held by major producers;
- maintain constructive cooperation with local self-governance bodies in forecasting the development of vital services; develop current and medium-term budget projections, indicative plans of socio-economic development, prepare development programs for individual towns and regions and provide on-going implementation monitoring;
- coordinate sector regulatory, methodological and legal support, reform and transition to cost-effective operations and self-financing (development of methodological guidelines on pricing, rules, instructions, contracts etc. and their approval in accordance with the established procedure); participate in the drafting of laws relating to matters falling under the jurisdiction of KZKS, provide advice on the implementation of market arrangements within the sector and practical assistance to enterprises in resolving complex operational issues associated with technological, economic, legal and IT matters;
- on a daily basis, admit visitors (individual residents, employees of cooperatives, condominiums, housing operation and maintenance offices); collate documents concerning the provision of benefits and exemptions for housing and utility charges across all housing and utility enterprises and organizations on a nation-wide basis, irrespective of their ownership types and ministerial subordination;
- submit the above documents to the Ministry of Finance and the Ministry of Labor and execute offsets to reimburse the respective costs of service providers;
- perform specific work as engaged or directed by superior management bodies or requested by enterprises/organizations.

Water and sewerage infrastructure

KZKS activities are aimed at maintaining water distribution systems in working condition, providing sector regulatory and methodological support, training personnel in potable water quality control, pursuing an integral technological policy, improving the financial position, protecting the interests of the sector etc.

At present, KZKS water and sewerage utilities serve 37 towns and district centers. Potable water is provided by 124 intake facilities (101 underground and 23 open) with a total capacity of 88.241 million cubic meters per annum. The length of water distribution networks is 2,590.8 km.

Water is disinfected by bactericidal purifiers using hypochloride lime and liquid chlorine. Water and sewerage utilities consistently perform the required maintenance and repair work and replace piping and other equipment as resources become available to secure uninterrupted operation of water distribution facilities, the supply of potable water in accordance with the requirements of Sanitary Rules and Norms (SanPiN) 2.1.4559-96 *Potable water. Sanitary Requirements for the Quality of Potable Water Supplied by Centralized Water Systems. Quality Assurance*, and provision of water to residential and other consumers in line with the statutory standards.

Wastewater is processed at 15 sewerage treatment facilities with installed capacity at 284.7 thousand cubic meters per day. The length of sewerage networks is 362 km. The existing sewerage processing facilities provide complete biological treatment. The quality of treated wastewater complies with applicable requirements.

KZKS operates a Water Resource Environmental Laboratory organized at the Kyrgyz-Russian (Slavic) Institute with chemical equipment and other gear provided by KZKS. The Laboratory is used for training and re-training of lab personnel working at water and sewerage utilities.

Given the complicated financial position of the water and utility sector, KZKS maintains on-going efforts to source funds required for the repair of water distribution facilities. KZKS and individual utilities alike continuously work with investors to raise loans for the water and sewerage sector. Completed projects include the assessment of water and sewerage facilities by the Asian Development Bank and the World Bank. Based on the results of this assessment, ADB has planned investments in water distribution in the towns of Kara-Balta, Tokmok, Kant, Kyzyl-Kia, Uzgen, Kara-Suu, Jalal-Abad to a total \$5.8 million and in sewerage systems in Kant, Uzgen and Kara-Suu at \$4.8 million.

Action plans have been developed for ensuring safe operation of water and sewerage facilities, and the list of water and sewerage facilities compiled for the Batken and Lyailyak districts of the Osh oblast, the town of Osh, the village of Chatkal in the Jalal-Abad oblast, the towns of Talas, Naryn, Karakol, Cholpon-Ata and Balykchi, for inclusion in the Social and Economic Development Program for the period to 2009.

Pursuant to Decree of the President of the Kyrgyz Republic "On Further Measures to Enhance the Infrastructure of Residential Developments (New Housing) and Resolve the Social and Economic Issues Faced by Developers in the Kyrgyz Republic", infrastructure improvement measures have been designed for the towns of Talas, Osh, Karakol, Balykchi, Naryn and Dzhahalal-Abad; the village of Kerben; and the urban settlement of Toktogul.

KZKS professionals were directly involved in the development of critical programs for the entire national water sector, including the National Potable Water Program, the Fundamental Provisions of the National Water Strategy (Concept), the Law of the Kyrgyz Republic on Potable Water and the Law on amendments to the Law on Potable Water, and measures to protect the environment and secure rational use of natural water resources for the period to 2005.

Together with the Ministry of Finance and the Ministry of Environmental Protection of the Kyrgyz Republic, KZKS experts carry out comprehensive reviews of the technical condition of water and sewerage facilities. A great deal of work has been done to draft, agree and approve the Rules of Water and Sewerage System Use in the Kyrgyz Republic.

In accordance with the Law on Potable Water, KZKS has drafted and agreed with the Consumer Rights Protection Association the Service Contract to Supply Potable Water to and Accept Wastewater from the General Public and Housing Operators, and submitted to the Government of the Kyrgyz Republic and the Kyrgyz Ministry of Finance information on the required number of meters and a cost estimate for their acquisition and installation.

In addition, KZKS has drafted the Methodological Guidelines on Water and Sewerage Service Pricing which have been submitted for approval to the National Committee for the Protection and Development of Competition attached to the President of the Kyrgyz Republic.

District heating

In addition to water and sewerage facilities, KZKS is also very active in district heating and provision of heating services to public sector entities, and industrial and commercial enterprises in Kyrgyz towns and district centers. KZKS operates both utility and large corporate and other non-utility boiler houses transferred to KZKS as part of the Government's program to divest social assets held by major producers of strategic significance for the national economy. Heating utilities operate a total of 241 coal, fuel oil, electricity and gas boiler houses providing heating to residential consumers, public sector entities (schools, hospitals, office buildings etc.) and other users.

Housing

In recognition of the critical issue of housing maintenance, KZKS has always focused on introducing alternative management arrangements for privatized housing (which now constitutes 95% of total housing). An especially productive cooperation in this area has evolved between KZKS and the International City/County Management Association (ICMA). KZKS developed, and the *Zhogorku Kenesh*

(Parliament) of the Kyrgyz Republic subsequently approved, the Law on Housing Owners' Partnerships (Condominiums), assisting in the upkeep of residential properties.

Today, housing is one of the core activities of KZKS, given that Kyrgyzstan currently has 1,181 enterprises with own residential properties. The existing housing administrations and operation and maintenance offices are unable, due to objective reasons, to fulfill their tasks and require urgent re-organization and qualified assistance.

KZKS has drafted the Model Contract for Apartment Building Management (already approved by the Government) and the Model Rules for the Operation and Maintenance of Residential Buildings and Adjacent Land Plots in the Kyrgyz Republic, and participated in the development of the Contract for Technical Maintenance and Repairs of Apartment Building General Facilities (approved by the State Committee on Anti-Monopoly Policy attached to the Government of the Kyrgyz Republic).

Pursuant to the Rules of the Kyrgyz Republic on Provision of Utility Services to the General Public, approved by Resolution No. 783 of the Kyrgyz Government on December 11, 2001, amendments have been made to the Service Contract to Supply Potable Water to and Accept Wastewater from the General Public and Housing Operators.

Other documents pending review and approval include the Methodological Recommendations on Condominium Finances and a new draft of the Housing Code of the Kyrgyz Republic, with certain articles prepared by KZKS.

Therefore, there is a solid organizational basis in place for reinforcing the positions of management companies, in addition to the available regulatory framework. More importantly, the existing condominium associations in the Osh, Jalal-Abad and Chui oblasts and the Alamedin district of Bishkek are already essentially performing management company functions.

The KZKS Benefits and Exemptions Department admits visitors on a daily basis and provides the necessary explanations and advice on social protection matters, collates documents concerning the provision of benefits and exemptions coming from all Kyrgyz enterprises and organizations, irrespective of their ministerial subordination, and together with the Ministry of Finance and the Ministry of Labor executes offsets to reimburse service providers in accordance with the established procedure. Suffice to say that over 1997-1992 KZKS has summarized documents and executed expense reimbursement offsets relating to benefits and exemptions provided to the disabled, World War II veterans and equated social groups for a total of KGS 102.2 million (approximately \$2 million).

Tariffs for water, sewerage and heating services

Pursuant to Resolution No. 520 of the Kyrgyz Government dated August 5, 1998, KZKS is responsible for nation-wide monitoring and coordinating the implementation of the Conceptual Framework of Housing and Utility Reform and compliance with the state standards of the Kyrgyz Republic *Charges for housing and utility services per square meter of total space* and *The ratio of residential charges to housing repair and maintenance costs and the cost of utility services* as adjusted for the requirements of the *Araket* national anti-poverty program (50% in 2000; 75% in 2005).

The duty of monitoring the progress of the national housing and utility reform obliges KZKS to track residential tariffs and the costs of not only hot water service, but also the whole range of housing and utility services across all regions. As directed by the Government, KZKS participates, on a permanent basis, in the development of regulatory and legal documents, standards, rules, instructions and methodological guidelines on vital service tariffs and pricing. Hot water and sewerage services are subject to the Law of the Kyrgyz Republic "On Natural and Allowed Monopolies", while all water, sewerage and heating utilities are entered in the State Register of Monopoly Business Entities and are strictly controlled for compliance with statutory pricing standards. KZKS monitors, on an on-going basis, the costs of water and sewerage services, of generation, transmission and distribution of heating, operating and maintenance costs and capital expenditures, and works in close contact with territorial agencies of the State Committee

on Anti-Monopoly Policy attached to the Government of the Kyrgyz Republic and the State Energy Agency.

As requested by individual enterprises, KZKS conducts expert evaluations of proposed heating tariffs for compliance with tax, anti-trust and other legislation, helps companies to argue their positions with the State Energy Agency, and provides pricing assistance to water utilities.

Vital service providers, including water and sewerage utilities, cannot apply residential charges and tariffs for public sector consumers that have not undergone evaluation by KZKS and have not been agreed with anti-monopoly agencies and the State Energy Agency, which precludes the incorporation of unreasonable costs in tariffs.

As part of implementation of the *Araket* national anti-poverty program, KZKS on a monthly basis monitors the costs of sewerage and water services, of generation, transmission and distribution of heating, operating and maintenance costs, capital expenditures and the level of residential service charges.

Another strictly observed requirement is the maximum allowable residential tariff margin, which was reduced to 5% on May 10, 2000 by Resolution No. 50 issued by the National Committee for the Protection and Development of Competition attached to the President of the Kyrgyz Republic. Such tariff approval procedure is considered the optimum one as it allows enterprises and bodies of local self-governance in cities and district centers to use a flexible approach to production costs, establish differentiated tariffs based on local conditions and find quick solutions, which is quite important for stabilizing the financial condition of vital service providers.

Thorough consideration is given to the issue of maintaining affordable prices for vital residential water and sewerage services. The baseline documents followed by utilities in revising residential tariffs for these services are Government Resolutions No. 236 "On Measures to Implement the *Araket* National Anti-Poverty Program" of April 30, 1998, and No. 520 "On Conceptual Framework of Housing and Utility Reform in the Kyrgyz Republic" dated August 5, 1998, and the Law on Potable Water (as subsequently amended).

The transition of vital service providers to cost-effective operations and self-financing is closely intertwined with social protection measures, including observance of the statutory ratio of residential charges for housing and utility services to their cost. For example, for Phase I (2000) the ratio was fixed by Government resolutions at 50%, while the actual ratio for potable water in 2000 totaled 49.8%. The average cost of production, purification and provision of potable water across KZKS utilities capped KGS 2.17 per cubic meter. Residential charges per cubic meter of potable water averaged KGS 1.8.

The average cost of wastewater treatment and disposal totaled KGS 1.57, with residential customers paying an average of KGS 0.85 per cubic meter, or 54.1%. For Phase II (2005) the ratio was fixed at 75%, equivalent to a 5% annual increase of residential tariffs against the costs of service provision.

In 2002, the residential charge for potable water was KGS 1.69 per cubic meter with costs standing at KGS 3.16 (a ratio of 53.5%). For sewerage, the figures were KGS 1.37, KGS 2.63 and 52.1%, respectively. However, higher energy costs drove the average potable water and sewerage tariffs up to KGS 1.69 and KGS 1.37 in 2002, respectively, against the KGS 1.10 and KGS 0.95 stipulated by the Conceptual Framework, i.e. the actual ratio totaled 153.6% and 144.2%, respectively (these calculations factor in depreciation).