



# Water and Sanitation Issues in Azerbaijan and Measures directed to Enhancement of Equitable Access to Water

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# Water Resources

- Total water resources of Azerbaijan rivers make up 31.5 km<sup>3</sup>.
- Kura is major transboundary river. Total water resources of the Kura river are 26.6 km<sup>3</sup>
- Only 25-30% of total water resources of rivers is formed within the Azerbaijan Republic.

# Water provision

- As a water poor region, water supply over the Azerbaijan Republic territory makes up about 100 thousand  $\text{m}^3/\text{km}^2$ .
- The quotient amounts to an average of about 1 thousand  $\text{m}^3$  of water per person per year
- Water resources of the Republic are distributed very irregularly over administrative districts.
- Absheron and Kura-Araz lowlands are the most water poor regions.
- During the period of vegetation the river run-off amounts is only 10-20% of the annual amounts

# Map of Azerbaijan Republic



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# Water use

- Together water losses from the channel (river-bed) of Kura river lower course, in Azerbaijan Republic water resources at present is less than natural ones by 30 %.
- About 11.5 cubic km of water was used in Azerbaijan in 2005(16.4 in 1993)in total ( which makes 1.3 cub m per capita) is being used for different purposes. Of which 60-70 % goes to agriculture, 20-25% to economy and the rest for water supply of cities and other residential areas. Water losses makes up-3-4 Cub km.
- At present water resources of Kura and Ganikh in Georgia and water resources of Araz in Turkey, Iran and Armenia are decreased by 20% as a result of water intake.

# **Drinking Water Sources**

**From all volumes of water supplied to the city of Baku annually (16 cub. m/sec) the purest are waters of Khachmaz and Shollar lines (about 4 cub. m/sec).**

**Water from Djeiranbatan water intake (Samur-Absheron canal) is also of good quality (7.5 cub. m/sec)**

**Water taken from Kura river is more polluted. The available system enables to conduct settlement, filtration and chlorination of water before it enters the distribution network.**

**About 1.7 cub km of ground waters ( 20% of the total) annually is used for water supply to provincial towns and rural areas.**

**Government is implementing Oguz Gabala Baku water pipeline project (5 cub. m/sec)**

# WATER ISSUES

Main source of water supply, including drinking water is Kura river, pollution of which is major problem.

Only few of towns and regional centers of the republic are equipped with treatment facilities, which are totally deteriorated and perform only mechanical treatment of wastewater.

Due to unsatisfactory performance of treatment facilities all three countries of the basin, discharge polluted wastewaters into the Kura river and its tributaries.

Concentration of heavy metals (copper, nickel, chrome, etc.) in natural waters exceeds allowable concentrations.

Due to lack of water supply network, and its bad condition, water losses reach 50%

Many water transmission and distribution pipes, which are made of unprotected steel, are now over 40 years old. The rate of pipe breakages in cities is high (5-10 times higher than in Western Europe).

# Water-supply coverage

<b>Connected to water supply</b>	<b>%</b>
• Baku	95
• Sumgayit, Ganja	95
• Secondary cities	83
• Rural areas	11

*Source:* World Bank. Azerbaijan Water Supply and Sanitation Sector Review and Strategy.2000.

# Waste water coverage

- The waste - water network in Baku serves about 72 % of the city, but only about 50 % of the waste water is treated; 90 %- biologically and only 10 %- mechanically.
- In other urban areas in the country, the coverage drops up to 32 %. There are waste - water treatment plants in 16 cities and towns; most are partly or completely out of operation.
- In rural areas, on-site sanitation is used, primarily latrines.

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Source: Azersy

# Measures for enhancement of Equitable Access to Water

Measures to improve water provision for the  
population are as followings:

- Legal –Institutional improvement
- Improvement of the drinking water and sanitation infrastructure
- Use of additional sources of safe drinking water

# Measures for enhancement of Equitable Access to Water

This includes adopted by the government  
Legislation, programs and institutions

- Since independence many water related legislation and state programs have been developed
- Drinking water supply institutes reform in accordance with international requirements

# Measures for enhancement of Equitable Access to Water

## Use of additional sources of safe drinking water:

- For improvement of water supply for large Baku, safe drinking water sources of Oguz–Gabala will be used in started state project. Capacity of water supply will be about 5cub.m/sec
- Other different projects in regions of the country are also considering use of new sources of safe surface and ground water

# Measures for enhancement of Equitable Access to Water

## Improvement of the drinking water and sanitation infrastructure

- Many projects by government and donor organizations in Greater Baku and rural areas of Azerbaijan are directed at:
- Improvement of water supply system
- Improvement of drinking water treatment system
- Improvement of Sanitation system

# **State Programs**

**Water Policy of the country is also implemented through National Plans, State Programs and Action Plans**

**By the end of 1996, Government of Azerbaijan with support of World Bank, developed National environmental Action Plan, which highlights importance of water resources management and protection.**

**In 2006 by decree of president the State Program on improvement of ecological situation in Azerbaijan has been adopted**

## **State Programs**

- **On February 18, 2003, Government of republic of Azerbaijan adopted National Program for Sustainable Socio-Economic Development of the Country in the environmental context**
- **One section of the Program is fully dedicated to the Water Policy issues. According to National Program, by 2010, every person in the country shall have the access to the quality water.**
- **Program implies development of special program for rational use of water resources, encourages application of incentives for rational use, improvement of drinking water quality, revision of laws regulating activities concerned with ecosystems, protection of transboundary rivers from pollution, and involving riparian countries in rational use of water resources.**

# **State Programs**

**There are several programs on socio-economic development in the country:**

**State Program on Poverty Reduction and economical Development of the Country for 2003-2005 (February 20, 2003);**

**State Program on Socio-Economic Development of Regions of Republic of Azerbaijan for 2004-2008 (February 11, 2004); - -  
State Program on Tourism Development in Azerbaijan for 2002-2005 (August 27, 2002).**

**All these Programs pay special attention to water issues.**

# Water Agencies

**The following major Agencies are dealing with the issues of water resources management in Azerbaijan:**

- Ministry of Ecology and Natural Resources;
- Amelioration and Water Economy JSC
- Azersu JSC

## **“Azersy” Joint-Stock Company:**

**Before 11 July 2004 the issues of water supply of the cities of Baku and Sumgait were managed by Absheron Joint-Stock Company.**

**In July 2004 the water supply and sewerage services of other regions of the country were also given to this Company and the “Azersu” Joint-Stock Company has been created.**

**The basic function of “Azersu” is operation and rehabilitation of water supply and sewerage systems.**

## Drinking Water tariffs

- “Azersu” JSC in 2004 established different tariffs on the use of water by residents, budget organizations and in industry (0.04 USD/m<sup>3</sup>, 0.20 USD/m<sup>3</sup> and 0.5 USD/m<sup>3</sup> respectively).
- Owing to economic problems, lower tariffs were set for population (realistic tariffs are close to 0.10-0.15 USD/m<sup>3</sup> manats/m<sup>3</sup>).
- The collection of bills was 63.1% in 2006.
- Water meter installed till 2007: 196150 units
- For refugees fees are paid by the State Committee on Refugees
- Unaccounted for water in secondary towns reach 80% (ADB 2004)

# New Drinking Water tariffs(2007)

According to the decision of the Tariff Council:

• **The cost of 1 cu.m of water** is AZN 0.18 for population of Baku, Sumgait, Ganja, Khirdalan, Mingachevir, Ali Bayramli and Apsheron Peninsula, and AZN 0.70 for remaining consumers. In other regions of Azerbaijan, the residential consumer will pay AZN 0.14 and other consumers AZN 0.70. However, if the water is used as a raw material, the water will be AZN 12 per cu.m.

• **The increase also dealt with the sewerage services** for the population of Baku, Sumgait, Ganja, Khirdalan, Mingachevir, Ali Bayramli and Apsheron peninsula. The population will pay AZN 0.04 for the 1 cu.m of the waste water and other users AZN 0.20. In other regions, population will pay AZN 0.03 and other users AZN 0.20.

# The National Water Supply and Sanitation Project

Project is financed by WB in the amount of US\$230m

Envisages possibility of provision of safe, reliable and sustainable water supply and improvement of sanitation systems (WSS) in 20 Rayon of Azerbaijan, including -10 Rayons (1st phase) up to 2008, and 10 Rayons (2nd phase) up to 2009.

It is shown that:

- Water supply and sanitation sector in Azerbaijan is characterized by institutional weakness, unsatisfactory work, obsolete and half destroyed physical infrastructure and big financial constraints.
- As a result, water treatment plants do not operate normally in majority of regions, due to physically obsolete condition of water supply networks, water losses reach 25-50%, not all subscribers are provided with network, and those subscribers, who are provided, are supplied by water during 5-12 hours per day.
- Sanitation system is not available in majority of regions, waste water is discharged without treatment to environment-water sources, relief, topsoils (from sewers –to sanitation wells)
- .

# The National Water Supply and Sanitation Project

## Objectives of the project:

- improve water supply by rehabilitation and improvement of existing networks, to treat water supplied to network according to existing standards, to provide subscribers with water meters for regulation of water use;
- protect urban areas covered by the project from potential negative impact on surface and underground water sources, to install and rehabilitate selected sewage systems required for health and environmental needs;
- institutional strengthening for efficient management of potable water provision and waste water.
- Realization of the project will positively effect on environmental safety, economic, social development and health of population; will put the basis for correspondence to legislative requirements

# The National Water Supply and Sanitation Project

## Major project activities:

- (i) rehabilitation and extension of water supply and sewerage systems in twenty rayons;
- (ii) construction of wastewater and septic sludge treatment facilities;
- (iii) preparation of an urban Master Plan for the Baku area and updating the Water Supply and Wastewater Master Plan; and
- (iv) development and implementation of an Institutional Development Plan (IDP) for Azersu and its subsidiary companies, to improve the efficiency and sustainability of WSS services (including implementing a meter-reading/billing/collection system and a financial restructuring and recovery plan; implementing a demand-management program, improved technical and financial monitoring performance, etc.

# ADB Supported projects

Through a project supported by the Asian Development Bank (ADB), the Government of the Republic of Azerbaijan will improve the quality, reliability, and sustainability of water supply and sanitation (WSS) services in the towns of Goychay, Agdash and Nakhchivan by 2010.

## The project consists of two components:

- **Infrastructure development:** The construction of new and efficient distribution systems for Goychay and Agdash, and rehabilitation of the Nakhchivan system
- **Institutional development:** Promoting institutional reform and capacity building through private sector participation, the establishment of joint stock companies (JSCs) in each of the towns and community involvement through water user associations.

# ADB Supported projects

**ADP project will ultimately benefit 147,000 people in Goychay, Agdash, and Nakhchivan, providing access to adequate potable water at low costs by 2010 through WSS improvements and new infrastructure.**

## **These include:**

- New well fields to replace nonfunctioning ones, including those destroyed by floods
- New pipe systems, elevated reservoirs, and chlorinating facilities to replace the existing water distribution system
- New main and branch sewers, sewerage pumping stations, and waste stabilization ponds
- Institutional reform in Azerbaijan's WSS sector will begin with replacing the state-owned and operated SuKanals with open-type, JSCs in each of the project towns.

# KfW Supported projects

- With KfW support, a joint venture between the SuKanal and BerlinWasser International was established in 2001 in the secondary town of Imishly.
- A KfW loan, supplemented by a SECO grant, is directed for rehabilitation of WSS systems and establishment of new JSCs in the larger secondary towns of Ganja and Sheki.
- Coordination was close with the KfW-SECO team during project preparation, to ensure consistency in institutional approaches and a coordinated policy approach with the Government.

# WB Supported projects

GREATER BAKU WATER SUPPLY REHABILITATION PROJECT (LOAN / CREDIT IN THE AMOUNT OF US\$ MILLION 65.99, during 1996-2006).

## Pre project info:

- The Greater Baku area, which covers the city and its environs is not just the political capital, but also the economic, industrial and cultural center of Azerbaijan. By 1993 more than two thirds of the urban population, or about 2.5 million people, were concentrated in this area.
- Thus although as a result of the Soviet legacy about 95 percent of households were connected to the piped water network in Baku, the quality of services had declined significantly at the time the project was appraised
- On average water was available to individual families for only 22 days per month, for a maximum of 11 hours a day (In some areas households were limited to less than 6 hours of piped water a day)

# WB Supported projects

## GREATER BAKU WATER SUPPLY REHABILITATION PROJECT

- The poor quality of services was exacerbated by the lack of equipment, tools and spare parts, and the poor organizational and operating methods that were in place at the time.
- The water treatment plants serving the city were in serious need of repair and rehabilitation, and the distribution pipe network was badly corroded and in poor structural condition.
- In 1993 alone, almost 3500 leaks and bursts were attended to on the 2500 km long network in the city, and unaccounted for water was estimated at between 65-70 percent.
- Sewerage service levels were even lower than those for water supply, with only about a third of the population having access to a sewerage connection. Existing facilities were also in poor condition and most sewage was discharged untreated into the environment.

# WB Supported projects

## GREATER BAKU WATER SUPPLY REHABILITATION PROJECT

The primary objectives of the Project were:

- (a) to make emergency short term improvements in the water supply system to restore the water supply to Baku, in particular to the poorer elements of the population;
- (b) to improve the water supply system as a whole; and
- (c) to provide the basis for longer term planning and recovery.

# WB Supported projects

## GREATER BAKU WATER SUPPLY REHABILITATION PROJECT

### Beneficiaries:

- The main beneficiaries of the project were the population of the Greater Baku area, including the poor, who would all receive improved water supply services as a result of the improvements made under the operation.
- This would result in significant benefits in terms of convenience and savings on the costs of coping measures such as investment in storage tanks and water purification measures to deal with the poor services.
- The households in the Greater Baku area spent about 17 times more on coping measures for the poor quality of water supply services that they were receiving at the time than on the cost of their monthly water bills.
- The poor, who spent an average of about 7 percent of their income on water compared to the non poor who spent an average of 2 percent, were particularly vulnerable.

# WB Supported projects

## GREATER BAKU WATER SUPPLY REHABILITATION PROJECT

### Beneficiaries:

- However, the poor benefited from the increase in hours of supply from 6 to 13 hours (on average), with some areas moving up to 24 hours of supply.
- The poor also benefited from the improvements in water quality which met WHO standards at the end of the project.
- The Government is committed to ensuring that affordable services are provided to all its population, including the poor.
- The Bank is assisting the Government, through its ongoing policy dialogue and investment projects, to develop a social assistance program to mitigate the impact of sector reforms, including measures such as possible tariff increases on the poor.

# WB Supported projects

## GREATER BAKU WATER SUPPLY REHABILITATION PROJECT

### The performance indicators:

- (i) Improvement in hours of service from the pre-project average of 6 hours/day to an average of 12 hours/day by the end of the project;
- (ii) Reduction in unaccounted for water (UFW) from the pre-project level of 66 percent to 36.5 percent by the end of the project;
- (iii) Improvement in water quality and water pressure by the end of the project;
- (iv) Adjustment of residential and industrial water tariffs as necessary to cover operating costs;
- (v) Change in the billing system from flat to metered rate is occurring;
- (vi) Reduction in the ratio of employees per thousand service connection or households; and
- (vii) Institutional improvement

## Decree of the President of AR , June 21,2007, on measures on improvement of access of public to safe drinking water, during 2007-2008

The program on portable water provision of population of 100 villages using Kura and Araz rivers as drinking water will be implemented by the MoE and water supply system then transferred to municipalities. Main aim is to provide access people there to safe drinking water

- For work in 2007, 3 Mln AZN will be allocated by the Government.
- People of villages , without access to safe drinking water will get water treated by modern filters
- Pipelines ,tanks, treatment facilities and taps will be installed;
- Municipalities will be operating the water supply system, where social position of population also will be taken into consideration when developing of tariffs

# How above measures enhance Equitable Access to Water ?

Existing tariff system by Azersy doesn't consider special direct measures for enhancement of equitable access to water, however:

- By the relevant provision social support to low income people and families is provided by the government under different social programs
- The State Committee on refugees pay bills for refugees
- Program on provision of 100 villages of Azerbaijan by the MoE and municipalities supposes provision of equitable access to water, mainly is directed to people who can't afford use of safe water sources.

# How above measures enhance Equitable Access to Water ?

- improvement of water supply conditions by all above projects finally lead to improvement of reliable access to safe water.
- Decrease of water losses, in combination with installation of water meters finally will allow to decrease payment for water per capita (from 600 litre per capita now to 200 litre)
- Installing water meters is also supposed to play an important role in this sphere. improve Existing
- Improvement of quality of water supply decreases of percentage of expenditure of low income population to water and sanitation

# Sources of Information

- MoE: [www.eco.gov.az](http://www.eco.gov.az)
- USAID: [www.daiwater.com](http://www.daiwater.com)  
[www.scaucasuswater.org](http://www.scaucasuswater.org)
- NATO: [www.kura-araks-natosfp.org](http://www.kura-araks-natosfp.org)
- Azersu: [www.azersu.az](http://www.azersu.az)
- ECORES: <http://water-resources.iatp.az>



**Thank You!**