

Republic of Azerbaijan - Country Report

**WATER RESOURCES MANAGEMENT
IN THE REPUBLIC OF AZERBAIJAN:
OVERVIEW AND OUTLOOK**

Country Report

by

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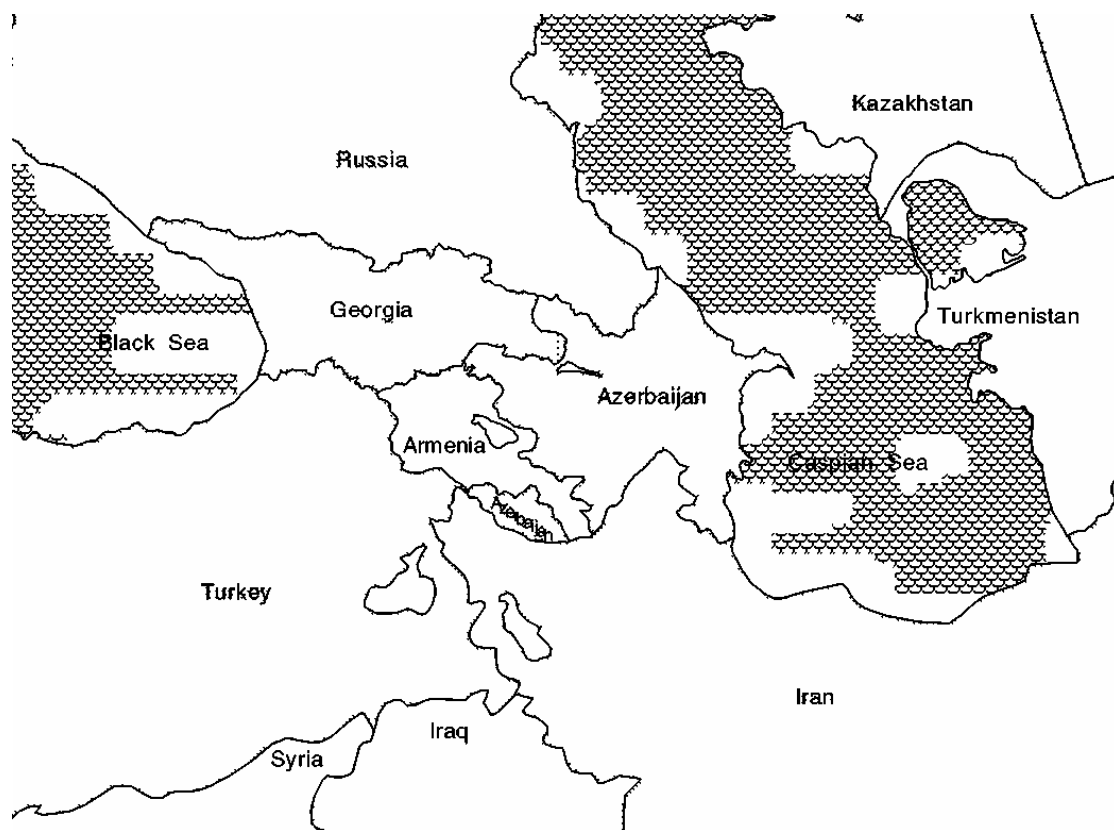
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Introduction

The water situation in Azerbaijan for last forty years has undergone significant changes. After purchase of independence Azerbaijan has confronted with insoluble problems as water pollution, exhaustion of water resources of arid areas, salinization of irrigated lands, rise of the Caspian Sea level, mud flow in mountain areas, development of water erosion, etc.

The submitted report includes scales and description of nation water problems, obstacles in way of their decision, legal and institutional supporting for improvement of existing situation and suggestions for actions to be included in the first stage action programme of the GWP initiative for Caucasus.

Geographical location of Azerbaijan



1. Rapid Assessment

The main problems and constraints in the national situation regarding water are following:

- Drinking water safety
- Water pollution and quality
- Water conservation and reducing of a water losses and leakage
- Flood flow and mud flow control
- Dam safety and control
- Protection of coastal areas of the Caspian Sea level rising.

The main problems in water sector with regional or cross-boundary impact are following:

- Integrated monitoring of the Kura and Araz Rivers
- Integrated Monitoring and Watershed Management Plan for Samur River
- Integrated Monitoring of the river delta and equatorial marine of the Caspian Sea

2. Major stakeholders in water sector are following:

- Public sector (Governmental organizations, municipalities, residential consumers)
- Private sector (Commercial organizations, farmer communities, etc.)

3. Public concern and participation in water resources management

Public participation in water resources management is included following:

- Governmental organizations that to finance from state budget
- Municipalities that to response for local self-financed and self-managed organizations, such as infrastructure, public works, local communities, etc.

- Residential consumers, as population, responsible for water management on the household level.

4. Institutional preconditions

Current institutional set-ups adopting integrated approaches to water resources management are following:

- Set-up the Water User Associations for on farm irrigation management transferring in the six pilot projecting areas;
- Set-up the Regional Water Company for supplying of water to the Greater Baku city and the Apsheron metropolitan area;
- Set-up the many central Project implementation Units (PIU) under subordination of Government of Azerbaijan and the World Bank for a water/wastewater and irrigation/drainage project implementation.

The planned set-ups are suggested by the World Bank for institutional strengthening water and wastewater sector and participatory of irrigation management.

5. Legislative aspects

Current legislation for regulating water resources is following:

Law on irrigation and Land Reclamation (1996)

Regulation for payment of water charges in agriculture (1996)

- Water Code (1999)
- Law on Water Supply and Wastewater (2000)

6. Capacity analysis

Current capacities define a certain number of main responsibilities. At present the Azeri water sector is characterized by a strong public presence, with large numbers of state enterprises holding monopoly positions.

The State Committee for Amelioration and Water Economy (SCAWE) is responsible for supervising the development of Azerbaijan water resources. The SCAWE department for Integrated Water Using is responsible for supervising of water use.-+ The water sector in Azerbaijan has rather monopolistic structure governed by state owned enterprises. At least 10 different kinds of organization are concerned with water resources, as summarized in the following table:

<i>Function</i>	<i>Water resources</i>	<i>Water supply</i>	<i>Irrigation</i>
Regulation	MOE, MOH, SCAWE	MOE, MOH, SCC, ARWC	MOE, SCAWE, MOA, MEF
Information, monitoring, health, EIA	MOE, MOH	SCC, ARWC, MOE, MOH	SCAWE, MOE, MOA
Operation and research	MOE, SCAWE, ARWC, SCC, MEF	SCC, ARWC	SCAWE, MEF, MOA

Notes: MOE - Ministry of Environment
MOH - Ministry of Health
MEF - Ministry of Energy & Fuel
MOA - Ministry of Agriculture
ARWC - Apsheron Regional Water Company
SCC - State Construction Committee

7. Current cases

Since 2000 USAID made some attempts for trans boundary initiatives concerning the Integrated Management of Kura/Araz Rivers. The USAID organized some national and International workshops in Azerbaijan, Armenia and Georgia with involvement of Turkey. Also EU TACIS initiatives are considering Integrated Management of Kura River.

8. Suggestions for actions to be included in the first stage Action Programme of the GWP initiative for Azerbaijan

- ***Development of a Strategy for Water Resources***

Numerous linkages exist between the surface and ground water components of water catchment areas (or river basins) and the different facets of water use, dictating the need for an integrated river basin management. A new management structure should also be reflective of the following principles:

- The value and use of water resources depend on the quantities and qualities available and on the reliability of both.
- The natural dry weather flow of surface waters derives almost entirely from ground waters, while ground waters are recharged by percolation from the surface.
- Overexploitation of surface water may reduce the capacity of the water to assimilate pollution safely and adversely affects fisheries and the environment.
- Fitness of water resources for their uses and protection of the aquatic environment depends mainly on control of the aspects of water quality.
- Uncontrolled discharged at the surface may percolate underground, causing rising levels and pollution, as in Apsheron.
- Conjunctive use of ground and surface waters (i.e., maximizing use of ground waters when river flows are low and resting them when river flows are high) can greatly increase yield from existing resources.
- New urban and industrial development increases not only demand for water resources, but

also demand for wastewater disposal and surface water drainage.

- Irrigational must be matched by drainage to protect soil structure, and drainage without adequate collector systems degrades river quality by increasing salt content.
- Migratory fish, such as sturgeon, have minimum flow requirements for migration and, in addition, dams may cut off large areas of spawning ground.
- Hydropower and other on-stream may be a vital potential water resource when used to reinforce dry weather flows downstream, and they may improve water quality and reduce flood peaks. The best benefit from these massive investments depends on setting up operating rules to balance the competing demands of different operating objectives.

- ***Development of the Electric Water resources Planning***

Effective planning requires:

an integrated institutional framework, for which a proposal is made later;

- development of planning skills; and
- development of sources of reliable data.

- ***Development of the New Institutional Framework***

To improve the existing situation, the following is proposed.

- A National Commission for regulation of Water resources should be set up and that water resources management responsibilities, financial resources, and facilities be transferred to it from the various bodies currently involved.
- A National Water Resources Strategy should be developed within a National Water Sector Policy to articulate views on the nation's current and future economic, social, and environmental needs for water resources management. The strategy should be reviewed and rolled forward at regular (perhaps two-year) intervals. The strategy and updates should be ratified at the Country president Administration.
- An overhaul and reorganization of information and monitoring systems, including field and laboratory measurement facilities, should be undertaken. Its key elements include: specification of information requirements; data quality requirements, particularly in flow metering and environmental control procedures; specifications should be attainable and related to needs; and effective data storage, processing (including validation), and dissemination to the point of use.

None of these requirements is met at present. In addition:

- to develop the information-gathering and plan-development processes and necessary skills, a pilot water resources survey and planning exercise should be carried out in one sub-catchment area, where surface and ground waters are both significant and a wide range of uses exists (e.g., water supply, wastewater reception, irrigation, commercial water use, hydropower, and fisheries); and
- the first National Water resources Strategy study should be undertaken building on experience and skills acquired in the pilot study; having regard for the time scale for implementing works related to water resources the strategy should relate to 5-, 10-, and 20-year planning horizons.

These activities should take advantage of experience in other countries of Caucasus.

Annex 1. Basic information

Table 1. Regional Water resources by country (th. m per year)

<i>Index</i>	<i>Azerbaijan</i>	<i>Armenia</i>	<i>Georgia</i>	<i>Iran</i>	<i>Russia</i>	<i>Turkey</i>
Per sq. km	370	222	763	60	198	238
Per capita	4.0	3.2	11.3	1.6	18.2	3.0

Table 2. Basic information concerning water resources and their use in Azerbaijan

<i>Area, th. km²</i>	<i>Population mln.</i>	<i>Yield (km³/y)</i>			<i>Total use (km³/y)</i>	<i>Yield-Use (km³/y)</i>
		Surface	Ground	Total		
86600	8.0	29	3	32	16.4*	15.6

* - Total abstraction includes net water use + efficiency rate

Table 3. Basic information concerning water resources and their use in Azerbaijan

<i>Surface waters (km³/y)</i>				<i>Ground water (km³/y)</i>				<i>Total Use (km³/y)</i>	<i>SW/GW (%)</i>
<i>Total</i>	<i>Communal</i>	<i>Agricultural</i>	<i>Industrial</i>	<i>Total</i>	<i>Communal</i>	<i>Agricultural</i>	<i>Industrial</i>		
11.9	1.1	9.6	1.2	0.90	0.32	0.36	0.22	12.8*	91/7**

* - Total use includes net water use

** - 2% forms the marine water mostly used in power and metallurgical industries in the Apsheron

Table 4. Major Problems of water resources management in Azerbaijan

<i>General Water Issues</i>	<i>Problems</i>
Water Supplying of the National Economy	<ol style="list-style-type: none"> 1. Dam safety and control 2. Modernization of main water systems 3. Rehabilitation of water distribution system on the local and household levels 4. Rehabilitation of the on-farm irrigation and drainage systems
Water Resources Conservation	<ol style="list-style-type: none"> 1. Drinking water safety 2. Water pollution and quality 3. Water losses reducing 4. Salinization of irrigated areas
Flood Control	<ol style="list-style-type: none"> 1. Mud flow control and protection 2. Coastal area protection from Caspian Sea level rising

* *Main water systems include main river intakes, channels, pipes, pumping stations, treatment plants.*

Table 5. Azerbaijan's gaps in water management

<i>General Water Issues</i>	<i>Problems</i>
Water Supplying of the National Economy	<ol style="list-style-type: none"> 1. Institutional weakness at national, regional and local levels 2. Lack of human resources development for planning, operating and management 3. Technological backwardness of water industry and availability of old soviet standards
Water Resources Conservation	<ol style="list-style-type: none"> 1. Legislative weakness of the existing legal base 2. Lack of the water conservation and saving principles and conception 3. Modernization of the wastewater systems
Flood Control	<ol style="list-style-type: none"> 1. Lack of adequate organizational structure 2. Lack of stronger legislative base 3. Lack of clear economic basis for financing

Table 6. Vision 2025

<i>General Water Issues</i>	<i>Priorities</i>
Water Supplying of the National Economy	<ol style="list-style-type: none">1. Sustainable water resources development2. High quality of drinking water and other water services to domestic consumers
Water Resources Conservation	<ol style="list-style-type: none">1. River Basin Management on the regional levels2. Water User Association Development for rural and urban areas
Flood Control	<ol style="list-style-type: none">1. Coastal and flood dangerous area management

Annex 2. List of relevant publications about water resources in the Azerbaijan

1. Mammadzadeh I. (1998) Water Situation in Azerbaijan: Problems, Future Scenarios and Recommendations. Proc. International Conference "Water: Looming Crises?" on World Water Resources at 21st Century, IHP-V, Technical Document in Hydrology, #18, UNESCO, Paris, France.
2. Mammadzadeh I., Poladova A., Mekhtiev E. (1999). Kura River Basin: Politics of International Cooperation. Proc. 7th International Conference on Environmental Challenges for Next Millennium, Jerusalem, Israel.
3. Mammadzadeh I., Nimer S. (1999). Identification of Greater Baku Water System on Hydraulic Modeling Basis Using GIS. Proc. 18th International Conference for Sustainable Water Resources Management, Graz, Austria.
4. Mammadzadeh I., Shamilova A. (1999). Reforming of Irrigation Sector in Azerbaijan: Institutional and Financial Issues. Proc. 17th ICID, Granada, Spain.
5. Mammadzadeh I. (2000). Water and Market: Conception, Models and Orientation Monograph (266 pages), AzPress, Baku city, Azerbaijan
6. Poladova A. (1998). Influence of climate to take ecosystem of the Azerbaijan arid zones. Proc. International Conference on Climate and Water, Espoo, Finland.