

# Initial Environmental Examination

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## ARM: Water Supply and Sanitation Sector Project – Subproject Artashat-Vedi Region

Prepared by Armenian Water and Sewerage Company for the Republic of Armenia and the Asian Development Bank.

**ASIAN DEVELOPMENT BANK FUNDED  
WATER SUPPLY AND SANITATION SECTOR PROJECT**

**WATER SUPPLY AND SANITATION SYSTEM IMPROVEMENT  
IN THE SETTLEMENTS OF THE REPUBLIC OF ARMENIA**

**INITIAL ENVIRONMENTAL EXAMINATION**

**Subproject Artashat-Vedi Region**



## **1.1 Scope of work**

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This report is developed for the improvement of water supply and wastewater systems of Mkhchyan, Aygepat, Yeghegnavan, Noyakert settlements in Artashat-Vedi area included in subproject XXIII.

The aim of the report is to estimate the impact of each freseen activity within the subproject on the environment, settlemets, areas of natural reservations and places of cultural importance.

The accurate and complete evaluation of the negative impact on the environment is of great significance for prevention the harmful impact of the construction works, operation and further maintanance as well as possible dismantling of water supply systems.

The impact during the construction can include damaging the vegetation, soil erosion, polution of air, poluting soil and water resources with lubrications, construction and everyday wastes. The negative impact during the operation period may be connected with the damage of some sections of water supply system.

The positive impact on the environment is conditioned by stable and effective implementation of water resources.

Social and economic impact of water supply and wastewater systems is mainly possitive as it exculdes mixing the irrigation, sewage and drinking water, reduces the danger of water infections, encreases the water supply duration to the population, provides stable water and effective consumption.

## **1.2 Description of the present water supply systems**

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Water supply and wastewater systems of the mentiones settlements are rather old, worn out and are in bad technical conditions. There is much leakage in Water supply system.

The quality indices of water are insufficient. Because of the worn out nets there is change in taste and color of the water (especially after rain), which is caused by the penetration of rain and partially sewage water into the system. Many entrance lines have no water meters and the existing water meters are clogges and damaged.

Mkhchyan, Aygepat, Yeghegnavan, Noyakert villages are situated in Ararat valley in the end of the villages supplied from §Garni§ springs, far from the conduit. The studies show that water supply to the districts far from conduits are worse than for the districts which are comparably close which is the result of water waste, incomplete water metering and leakage.

Mkhchyan and Aygepat villages have 4-6 hours a day.

There is absolutely no drinking water in Yeghegnavan and Noyakert villages, and water supply system constructed during Soviet period does not operate. Water is brought from the nearest settlements or it is bought.

**Sewarage system:**

There is no sewerage system in Mkhchyan, Aygepat, Yeghegnavan, Noyakert villages. Collected sewerage is removed from the houses through pipelines and filled into the concrete septic wells built near the houses. The population without sanitation junctions use yard toilets.

### **1.3 Biodiversity and sensitive nature areas**

**Flora**

The vegetation in Mkhchyan, Aygepat, Yeghegnavan, Noyakert villages of Ararat Region is desert type.

The following types of desert vegetations are common Halopfil included *Salsola ericoides* Bieb., *S. Dendroides* Pall., *S. Nitraria* Pall., *Halocnemum strobilaceum* (Pall.) Bieb.:

Actively operating agrecultural areas such as farmlands, seed-plots are also common.

Among useful vegetations the following types like *Tanacetum vulgare*, *Juniperus oblonga*, *Peganum harmala* are common.

**Fauna**

From representatives of vertebrate animals we can meet wild cane cat, bore, hare.

From representatives of invertebrate there are worms, crab, ants, bees, grasshopper, bedbugs, blue butterflies, moths, mosquitoes, house and field flies.

Hydro-geological, lithological and geological conditions

From hydrogeological viewpoint there are continental-volcanic and sedimentation complexes (fourth age and late pliocen ages), as well as alluvial and deluvial deposits. Among the newest geological structures there is modern lake-river, flood, slop sedimentations; boulders, sandsoil, clay.

There are the following field types-irrigable meadow type, gray maily carbonated deposite, as well as irrigable meadow, gray profile type.

The surface topography is specific with mountain plains, sloppy, plateau (1200-2100 m).

According to the types of the relief they are classified into IV accumulations (deposits, brought) relief, mountain valleys, alluvial-proluvial foothill slightly sloping, as well as alluvial – floody, plain relief type.

The degree of soil erosion is (class) I, up to 1%.

It is in the area with possible 8 rate earthquake.

**Climate**

The minimum air temperature is -30-34C, the maixmum temperature is +42C and more.

Specially Preserved Territories of Nature

A number of specially protected areas of nature are operating in the region.

- Khosrov foreststate reserve,
- Cochineal worm state reserve,
- Aragats alpine state reserve
- Khor Virap state reserve

The mentioned territories are rather distant from the territories of work implementation and will not be influenced in the result of the work.

As it is mentioned in the previous chapter there are no specially protected areas, forests, monuments and areas of cultural value in the territories immediately close to the working sites or settlements included in the framework of the project.

The designed works for the territory mainly include reconstruction and rehabilitation works for separate sections of water supply and wastewater systems.

The collection of the preliminary research data was conducted implementing the following questionnaire.

***B1. Are any of the following areas located inside or around the village or project site?***

		<b>Yes</b>	<b>No</b>	<b>Not identified</b>
<b>B1.1</b>	National park, protected area designated by the government (coast line, wetlands, reserved area for ethnic or indigenous people, cultural heritage), and areas being considered for national parks or protected areas	1	2	3
<b>B1.2</b>	Virgin forests, tropical forests	1	2	3
<b>B1.3</b>	Ecological important habitat areas (coral reef, mangrove wetland, tidal flats)	1	2	3
<b>B 1.4</b>	Habitat of valuable species protected by domestic laws or international treaties	1	2	3
<b>B 1.5</b>	Likely salts cumulus or soil erosion areas on a massive scale	1	2	3
<b>B 1.6</b>	Remarkable desertification trend areas	1	2	3
<b>B 1.7</b>	Archaeological, historical or cultural valuable areas	1	2	3
<b>B 1.8</b>	Living areas of ethnic, indigenous people or nomads who have a traditional lifestyle or special socially valuable areas	1	2	3

## **1.4 Environmental Impact**

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The impact of the foreseen activities on the environment is conditioned by the emission of construction waste and withdrawals during implementation of the building-construction works.

However the volumes of the designed works cannot create such amount of soil and construction wastes the transportation of which will have impact on the environment.

The impact on the hydro resources is conditioned by increase of the water-supply volumes, but it will be implemented on behalf of decrease of water losses and rehabilitation of water disbursing network.

Relevantly extra water volumes will not be engaged thus leaving the water balance of the territory unchanged.

The impact during implementation of construction works is conditioned by movig of the soil masses and its storage.

Most of the soil is used for backfill. The rest of it as well as the construction wastes will be implemented to level the area. The remainder will be transported to the special area arranged by the agreement with the community authorities.

Noise is reproduced when implementing building-construction works which is to be situated within the sanitary norm limits.