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## Table of Contents

<b>LIST OF ACRONYMS</b> .....	5
<b>EXECUTIVE SUMMARY</b> .....	6
<b>1. Inter-institutional Cooperation</b> .....	7
1.1. Atmospheric Air .....	7
1.2. Water Resources .....	7
1.3. Waste Management .....	11
1.4. Soil Protection .....	11
1.5. Biodiversity Conservation .....	12
1.6. Summary .....	12
<b>2. INFRASTRUCTURE</b> .....	13
2.1. Water Resources and Atmospheric Air Quality Monitoring .....	13
2.2. Hydro-meteorological Monitoring .....	14
2.3. Groundwater Monitoring .....	15
2.4. Waste Monitoring .....	17
2.5. National Academy of Sciences of Armenia .....	17
2.6. Data Flows .....	17
<b>3. CONTENT</b> .....	19
3.1. Country Reporting Obligations .....	19
3.1.1. Reporting under the Global MEAs .....	19
3.1.2. Reporting under the Regional MEAs .....	20
3.1.3. Reporting under the Sub-regional MEAs .....	21
3.1.4. National Reporting Obligations .....	21
3.2. Description of Environmental Data Availability .....	22
3.2.1. Air .....	22
3.2.2. Water .....	23
3.2.3. Waste .....	24
3.3. Description of Availability of Environmental Indicators .....	27
<b>4. ANALYSIS OF STRENGTHS AND WEAKNESSES FOR SEIS IMPLEMENTATION</b> .....	30
<b>5. NEXT STEPS</b> .....	32

## List of Figures

Figure 1:	Surface water and air quality monitoring network of Armenia.....	14
Figure 2:	Surface water quantity monitoring posts in Armenia .....	15
Figure 3:	Surface and groundwater quantity and quality monitoring network .....	16
Figure 4:	Graph of the average annual concentrations of dust in one of the stations measured against the MACs.....	22
Figure 5:	Sample map of the air quality monitoring of Gyumri air basin.....	23

## List of Tables

Table 1:	Monitoring points of the groundwater resources of the Republic of Armenia .....	9
Table 2:	Summary Information on Surface and Groundwater Monitoring Points.....	16
Table 3:	Stakeholder Institutions of the SWCIS .....	18
Table 4:	Air quality parameters and measurement methods.....	22
Table 5:	List of indicators determined in precipitations .....	22
Table 6:	Status of Data Population in the SWCIS .....	24
Table 7:	Origination and movement of waste, tons .....	24
Table 8:	Summarized financial indicators.....	25
Table 9:	Origination of waste according to types, groups, quantity and transportation .....	26
Table 10:	Classification of surface waters .....	29
Table 11:	Summary of positive and negative aspects in the field of information management .....	31

## LIST OF ACRONYMS

ADB	Asian Development Bank
AMD	Armenian Dram
ASHMS	Armenian State Hydro-Meteorological Monitoring Service
CEPA	Classification of Environmental Protection Activities
CIS	Commonwealth of Independent States
EBRD	European Bank for Reconstruction and Development
EC	European Commission
EIMC	Environmental Impact Monitoring Centre
ENPI	European Neighbourhood Policy Instrument
EU	European Union
FWUA	Federations of Water Users Associations
GIS	Geographic Information Systems
IAC	Information Analytical Centre
IPCC	Inter-governmental Panel for Climate Change
LAN	Local Area Network
LRTAP	Long-Range Transboundary Air Pollution
MAC	Maximum Allowable Concentrations
MEA	Multi-lateral Environmental Agreements
MNP	Ministry of Nature Protection
NSS	National Statistical Service
NWP	National Water Program
OECD	Organization for Economic Cooperation and Development
POP	Persistent Organic Pollutant
RA	Republic of Armenia
SCWS	State Committee on Water Systems
SEI	State Environmental Inspectorate
SEIS	Shared Environmental Information System
SNCO	State Non-Commercial Organization
SWC	State Water Cadastre
SWCIS	State Water Cadastre Information System
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environmental Program
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
USAID	United States Agency for International Cooperation
WRMA	Water Resources Management Agency
WUA	Water Users Associations

## EXECUTIVE SUMMARY

This report has been prepared to explore the options of introducing European Neighbourhood Partnership Instrument (ENPI)-Shared Environmental Information System (SEIS) project in Armenia. The overall objective of the ENPI-SEIS project is to promote the protection of the environment in the ENPI countries. Specific objectives include identification and further development of environmental indicators; improvement of capacities in the field of monitoring, collection, storage, assessment and reporting of environmental data; promoting setting up national and regional environmental information systems in line with the SEIS principles; establishment of SEIS and tracking progress of the regional initiatives.

The expected short-term outcome of the process includes a clear overview of existing situation as basis for improved national and regional reporting, and the long-term outcome of the process includes improved assessment of the quality of the environment at regional level by using common tools and methodologies; stronger institutional partnership at national level; trained experts in all SEIS components; and improved regional cooperation and partnership with regional and international bodies.

It is expected that SEIS will bring several benefits to the countries, including increased flexibility and greater use of data; simplification and efficiency in data flows; widespread availability of information and more consistent and integrated data and information input.

In the regional meeting held in Brussels in November 2010 the following priorities were agreed for ENPI East region by the representatives of the countries: water resources, atmospheric air protection, and waste management.

However, Armenia, in addition to above-mentioned regional priorities, included also soil management and biodiversity protection as priority directions.

This assessment report describes the existing institutional cooperation in Armenia in the field of water resources, atmospheric air, soil and biodiversity protection, and waste management, assesses current environmental inter-institutional cooperation in these priority fields and identifies the country's capacity for taking SEIS implementation forward.

Chapter 1 of the report describes the inter-institutional cooperation which covers the national governance for environmental information and statistics in the priority sectors, including the links among the different bodies. Chapter 2 on infrastructure describes the current status of environmental monitoring and information systems, including the structure of the monitoring and information systems used in the country and a description of the duties of those responsible for the management of the systems. Chapter 3 of the report presents the reporting obligations of Armenia according to multilateral, regional and sub-regional environmental agreements, and also describes environmental data and indicator availability, including analysis of existing datasets.

Chapter 4 analyzes the strengths and weaknesses for SEIS implementation in Armenia. Among the weaknesses the following factors are mentioned: (1) absence of appropriate legislative framework for introduction and maintenance of integrated environmental information management system; (2) lack of information flow management among stakeholder organizations; and (3) lack of state programs on implementation of integrated monitoring of the state of environment. Among the strengths and opportunities, the following factors are highlighted: (1) appropriate institutional structures; (2) existence of administrative statistical reporting system; and (3) recent positive developments in environmental monitoring sphere.

Chapter 5 proposes follow-up activities for implementation of ENPI-SEIS project in Armenia. Particularly, two potential pilot projects are proposed on development of a shared environmental information system: (1) for Lake Sevan ecosystem; and (2) for Debed River basin based upon the joint information system of Debed-Khrami trans-boundary river basin, developed in 2011 under the EU funded project: "Trans-Boundary River Management Phase II for the Kura River basin - Armenia, Georgia, Azerbaijan".

# 1. Inter-institutional Cooperation

## 1.1. Atmospheric Air

The **Environmental Impact Monitoring Centre (EIMC)** of the Ministry of Nature Protection is a state non-commercial organization in charge of carrying out monitoring of atmospheric air, quality of surface water and soil pollution. Air quality monitoring in Armenia has undergone significant changes during the last two decades. The air quality monitoring network was quite extensive during the Soviet Union, but was significantly impacted by the collapse of the Soviet Union. In 1997-1998 only in 4 cities of Armenia (Yerevan, Vanadzor, Alaverdi and Ararat) the atmospheric air quality was monitored (for 11 parameters). In 1997 the monitoring of carbon monoxide was terminated in Yerevan. In addition, several very important monitoring stations were completely closed.

In 1999 the cities of Gyumri and Hrazdan were added to the monitoring network. In recent years the situation has significantly improved due to provision and exploitation of contemporary equipment of air quality monitoring financed from the state budget sources and donor organizations.

For the purposes of monitoring of transboundary pollution, EIMC actively participates in the European Monitoring and Evaluation Program for monitoring of transboundary pollution under the Convention on Long-Range Transboundary Air Pollution (LRTAP). The air quality monitoring station in Amberd, situated at the altitude of 2070 m above the sea level, fully corresponds to the requirements of such program.

Due to recent developments, a hybrid monitoring network was formed for air quality monitoring. The air quality monitoring network currently consists of 300 passive sampling points for 2 major pollutant substances, providing average weekly data. In 18 points EIMC does active sampling of 4 pollutants (sulphur dioxide, nitrogen dioxide, ozone, and total gas), and in 7 stations, 4 of which are located in Yerevan, automated measurements take place. These automated stations perform monitoring of air quality, and possess about 30 automated analyzers. The number is not sufficient, and in optimal case there should be 3-4 times more. However, these equipments are made in United States of America (USA) and Japan and are very expensive, and the scarce financial resources and often their absence did not provide opportunity to EIMC to complete the technical upgrading and modernization of the monitoring network.

Most of the air quality data is available in Armenian language from the website of the EIMC at <http://www.armmonitoring.am>.

## 1.2. Water Resources

The **Ministry of Nature Protection (MNP)** has a wide scope of authority for natural resources management protection, which is fulfilled through various structural and separated sub-divisions of the Ministry (divisions, agency, including 6 water basin management authorities, state environmental inspectorate). Among other things the Ministry implements strategic management, protection and allocation of water resources with the main enforcement tools being the water use permits. Through its website ([http://www.mnp.am/index\\_eng.htm](http://www.mnp.am/index_eng.htm)), the Ministry of Nature Protection provides information on the water resources of the country.

However, the information is fragmented, not categorized, incomplete and is not comprehensive. Hence, the following information is available from the section on water: water use and discharge in 2008, water use permits issued by the Water Resources Management Agency (WRMA) in 2008 and 2009, monitoring results of the pollution of surface waters of the country, level of the Lake

Sevan, and report from the State Environmental Inspectorate (SEI) on violations of water use and discharge conditions.

The above-mentioned information is being uploaded on the website by the Information Analytical Centre of the Ministry of Nature Protection. The main tasks of the Centre are collection, processing and compilation of a database from statistical information received mainly from the State Environmental Inspectorate, as well as uploading the processed current monitoring information onto the web site of the Ministry. However, only the current (monthly) data concerning levels exceeding the set norms/standards is uploaded on the site. The data is not accumulated at the website, but is substituted each month.

The **Water Resources Management Agency** is responsible for carrying out water resources management and protection responsibilities under the Code of the Republic of Armenia (RA). This entity is charged with estimating water availability and ensuring water use efficiency, through the permitting and planning processes. It is also responsible for management of competing water uses and for ensuring that environmental needs are met. Moreover, the WRMA is charged with the coordination of the National Water Policy and the National Water Program development. It is also responsible for development of the river basin management and planning components described in the Water Code.

WRMA also manages the State Water Cadastre (SWC) and the State Water Cadastre Information System (SWCIS), which are developed to combine the different pieces of water monitoring and compliance assurance information into a sophisticated database management system. The SWC is a continuously functioning system, which registers integrated data on water resources quantity and quality indicators, watersheds, materials extracted from river beds, composition of biological resources, water users, water use permits and water system use permits.

It should be noted that SWCIS is a new approach to data management and sharing in Armenia. Many of the institutions have not fully bought-into the concept of “open” access. Although the water resources data are now available via the seven databases and SWC unified Data Warehouse, sharing of data among all institutions and the public has to be yet improved.

The EIMC of the Ministry of Nature Protection conducts monitoring at 131 sampling points throughout the country, and annually takes 1200 samples from surface water bodies (from each site 6-12 samples are taken per year). For each collected sample analysis of up to 48 parameters is being conducted.

In 2003, a MS Access-based water quality database with 45 water quality parameters was developed with the support of the United States Agency for International Cooperation (USAID). However, currently the monitoring program covers a total of 48 parameters and the database is no longer appropriate due to the increase in the parameters. It became necessary to use a special software package. Therefore the database developed with the assistance of USAID is currently not

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