



REPUBLIKA E SHQIPËRISE
MINISTRIA E MJEDISIT

Surface and underground water monitoring network in Albania

Albania Water/ Water Management Sector

The country counts a number of:

- **250 natural lakes** of different types and categories, where tectonic ones are Lake of Shkodra, Ohrid, Prespa and Butrint etc,;
- the **carstic** ones (**around 82**) are located at the
- the **glacial** ones (**around 56**) are located mostly in the Alps mountains.
- almost **650 artificial reservoirs and lakes** are spreaded in the whole territory, where some of them were build for construction of HPP
- space in the Adriatic and Ionian **coast has a total length of about 350 km** and a **coastline of 475 km**. Along this space there are allocated main rivers delta estuaries (Drini, Mati, Ishëm, Shkumbini, Erzeni, Shkumbini, Seman, Vjosa rivers),
- **lagoon** system with a general surface of **1500 km²**

Albania is a country, whose surface water and ground water resources far exceed their usage. Most of economic activities rely on utilization of water resources, where over 90% of energy production comes from HPPs, and agriculture fully depends on irrigation.

Also other sectors of economy like mining, industrial sector and tourism are also relied on clean and sufficient fresh water resources.

National Framework

- The environmental monitoring program is based on the “Environmental Protection” Law of 2011 and Decision of the Council of Ministers (DCM) of 2009: “Rules and procedures for composing and implementation of National Environmental Monitoring in Albania”.
- The National Environmental Agency (NEA) compile every year the National Environmental Monitoring Program where are defined the key indicators of the state, impact and pressure of the environmental components. The NEA is the competent authority to manage the National Environmental Monitoring Network.
- The Agency also carry out the monitoring of surface and underground water in collaboration with other contracted institutions.

- During the last decade, monitoring activities of water resources have been carried along the basins catchment in the whole territory of the country: in Drini, Mati, Ishem-Erzen, Shkumbini, Seman, Vjosa River basins, and in the coastal Ionian area.
- Several monitoring stations are established along the coastal line in main beaches area of the country, as Velipoja, Shëngjini, Durrës, Kavajë, Vlora, Dhërmi, Himarë, Borsh, and Saranda.
- Data obtained from these monitoring campaigns, are published every year on the Report of Environmental Conditions, published by the Ministry of Environment.
- The Ministry of Environment implemented a National Monitoring Project through the expansion and consolidation of an operational Integrated Environmental Monitoring System (IEMS), by using environmental standards and EU directives as a general reference framework.

The Albanian surface water monitoring network includes the monitoring of:

- River water quality
- Lake water quality
- Coastal and bathing water quality
- Irrigation water quality
- Impact of waste water discharges into coastal water quality in 3 cities: Durres, Vlore, Sarande
- Lagoon water quality

1. Monitoring of river water quality

- It is realized in 6 RBD (basins), in the main rivers Drin, Bune, Mat, Ishem Erzen, Shkumbin, Seman, Vjosë in 35 monitoring stations in upper, middle and down stream of the rivers, since 2002.
- The monitoring frequency: four times per year.
- **Parameters** : 14 physical-chemical parameters temperature, pH, alkalinity, electrical conductivity, dissolved oxygen, COD, BOD5, nitrite, nitrate , ammonium, total phosphorus, ortophosphate, river flow and suspended solids.
- **Heavy metals**: Cd, Pb, Hg, and Ni in some stations for 2006-2010 and 2014

2. Monitoring of lakes water quality

- It is carried out in Ohrit, Shkodra and Prespa lake. The monitoring frequency: 3-4 times per year, since 2002.
- **Parameters** : temperature, pH, alkalinity, electrical conductivity, dissolved oxygen, COD, BOD5, nitrite, nitrate , ammonium, total phosphorus, ortophosphate and transparency.
- The other parameters such as chlorophyll-a and bioindicators are monitored by different other projects.

3. Monitoring of microbiological quality of bathing water

- The monitoring is realized in 71 monitoring stations in the whole coastline in the most frequented beaches of the country since 2005
- **Parameters:** Fecal Coliforms – FC dhe Intestinal Enterococcus – IE
- The monitoring frequency: May-September

4. Monitoring of irrigation water quality

- The monitoring is carried out in 6 main rivers and in 10 reservoir in 2007 and 2014
- The monitoring frequency: Three times per year
- **Parameters:** Conductivity, acidity, Na, Ca, nitrate, nitrite, N-NH₄, Mg, chloride, sulphate, carbonate, potassium, phosphate

5. Monitoring of waste water discharges impact into coastal water quality in the cities

- The monitoring is realized in 10 stations since 2004.
- The monitoring frequency: 4 times per year
- **Parameters** : 13 physical-chemical parameters temperature, pH, alkalinity, electrical conductivity, dissolved oxygen, COD, BOD5, nitrite, nitrate , ammonium, total phosphorus, ortophosphate, and suspended solids.

6. Monitoring of lagoon water quality, trophic state.

- The monitoring is realized in Vain, Patok and Karavasta lagoon in 2006 -2011
- **Parameters:** clorophyll-a, transparency, pH, P-total, dissolved oxygen, photosynthetic pigments

Underground water

- The monitoring is realized in 41 stations Drinit, Mati, Ishem-Erzeni, Shkumbin, Seman, Vjosa basins and Jonic zone.
- The monitoring frequency: 2 times per year
- **Parameters** : pH, temperature, conductivity, total hardness, total mineralization, nitrate, nitrite, dissolved oxygen, NH_4 , Na, Ca, Mg, K, Fe, HCO_3 , Cl, SO_4 , CO_3 , static and dinamyc level
- **Heavy metals** : Cu, Zn, Pb, Co, Cr, Ni, and Cd

Albania is part of a several Conventions as:

The Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols.

The Convention's main objectives are:

- to assess and control marine pollution
- to ensure sustainable management of natural marine and coastal resources;
- to integrate the environment in social and economic development;
- to protect the marine environment and coastal zones through prevention and reduction of pollution, and as far as possible, elimination of pollution, whether land or sea-based;
- to protect the natural and cultural heritage;
- to strengthen solidarity among Mediterranean coastal States;
- to contribute to improvement of the quality of life.

According to this convention and its structure MED-POL, Albania has elaborate a monitoring and reporting system.

- **The Espoo (EIA in a transboundary context) Convention**, which sets out the obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. It also lays down the general obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries.
- **The Kyiv (SEA) Protocol**, now in force which, requires its Parties to evaluate the environmental consequences of their official draft plans and programmes.

- The **Convention on the Protection and Use of Transboundary and International Lakes**, also known as the **Water Convention**.

The purpose of this Convention is to improve national attempts and measures for protection and management of transboundary surface waters and groundwaters.

On the international level, Parties are obliged to cooperate and **create joint bodies**.

The Convention includes provisions on: monitoring, research, development, consultations, warning and alarm systems, mutual assistance and access as well as exchange of information.



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Thank you for your attention!!!