Sector policy of Water resources management in Republic of Macedonia

Ministry of Environment and Physical Planning
Republic of Macedonia
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Republic of Macedonia

• The Republic of Macedonia is situated in South-Eastern Europe, in the centre of the Balkan Peninsula. Around 2% of the territory of the Republic of Macedonia is under water cover. There are 35 rivers and 53 natural and artificial lakes.

• The longest river is Vardar, which 301 km are in the Republic of Macedonia, and mostly it flows through the central part of the country. On the southern border there are three large natural lakes: Lake Ohrid, Lake Prespa and Lake Dojran.
Responsibility and legal framework of Moepp

Ministry of Environment and Physical Planning (MoEPP) has the following competencies of the: state of the environment monitoring; proposing of measures and activities aimed at water resources, air and ozone layer protection, protection against noise, national parks and protected areas; remedial of polluted parts of the environment; cooperation with scientific institutions for development of standards and regulations to regulate environment protection; development of self-financing system from independent sources, types and levels of environmental charges and other payments; cooperation with civil associations.

With the provisions of the Law on Waters the Ministry of Environment and Physical Planning has the leading role in the water policies, and the responsibility for water resources and policies including: water use and exploitation, protection against harmful effects of water, river basin management plans, water extraction and pollution, sources for financing of water management activities, transboundary water resources management.
Water supply management

According to the Law on Self-government, drinking water supply is responsibility of the self government units, as well as wastewater collection, disposal and treatment of the wastewater. All cities have public utilities (enterprises), which manage the water supply systems. Municipality establishes the utility, owns the assets, approves the strategy for the public utility, appoints the General Manager, decides about the annual budget, the tariff changes and is responsible for the investments. In average of 70 % of population is connected to public water supply, while the remaining of 30 % has mainly local facilities in urban areas. On the national level water tariffs vary between 15 and 52 Eurocents per m3, with an average of 30 eurocent per m3 for domestic consumers. Average of collection rate is about 55 %.

<table>
<thead>
<tr>
<th>Municipality/city</th>
<th>Water supply norm (m³/capita/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skopje</td>
<td>0.400</td>
</tr>
<tr>
<td>Bitola, Kumanovo, Veles, Prilep, Ohrid, Struga, Shtip, Gostivar, Tetovo, Strumica</td>
<td>0.350</td>
</tr>
<tr>
<td>Skopje-Shuto Orizari, Kichevo, Kriva Palanka, Kratovo, Kavadarci, Negotino, Berovo, Pehchevo, Delchevo, Vinica, Kochani, Probishtip, Sveti Nikole, Krushevo, Valandovo, Gevgelija, Dojran, Radovish, Resen, Debar</td>
<td>0.300</td>
</tr>
<tr>
<td>Rural areas</td>
<td>0.200</td>
</tr>
</tbody>
</table>
Drinking water supply

- The water supply system is fairly developed. The available data indicates that c. 1.45 million people are connected to a water supply, which represents an average connection rate of 72.5%. The rate in urban areas is higher, where 82% to 100% of the population is connected (1.2 million people).

In rural areas, the overall connection rate is lower, ranging from 10% to 100%. There is no data available on the condition, operational efficiency, maintenance, or financing of rural water supply systems. According to local practice, once the system is put into operation, there is no regular maintenance or monitoring of the network conditions.
Situation of Sewage Treatment Systems

Sewage systems are used for collecting and disposing of urban wastewater and precipitation designed to collect and convey both, wastewater and precipitation water.

Only 12 cities have constructed separate sewage systems. City of Skopje has constructed separate system for wastewater (56%) and for precipitation water (18%). Usually, collectors for precipitation water discharge water into closest recipient, while wastewater is discharged downstream from the urban areas.

According to the data there is collector network of 280 km and 1.239 km of sewage network on national Level. According this, total number of dwellings is about 60% are connected to public sewage, 21% of dwellings have septic tanks and 12% of the dwellings have free wastewater discharge.

Management of the sewage systems is the responsibility of the same public utilities as the drinking water supply. Very low cost revenues doesn't allow sufficient and on time maintenance of the sewage systems.
Waste water treatment plants in Macedonia

There are eight treatment plants for urban wastewater in the country covering about 13% of current demand. There are not been identified officially designated sensitive areas in relation to the discharge of wastewater, as well as areas sensitive to contamination from nitrates and protected areas. Poor and insufficient monitoring data scattered in different monitoring, data collection, data ownership, poor cooperation between the institutions and the lack of an integrated approach to the management and lack of coordination leading to generally poor availability of data.

Lack of funds with regulatory authorities on basic instruments, accredited laboratories and qualified personnel in laboratories besides working capital for new treatment plants and wastewater collection systems are major obstacles to the implementation of government policy on treatment of urban wastewater.

Therefore the introduction of regular wastewater treatment in the country 's highest political priority at the local and national level.
# Existing wastewater treatment plants

<table>
<thead>
<tr>
<th>Settlements included</th>
<th>Berovo</th>
<th>Dojran</th>
<th>Krivogastani</th>
<th>Kumanovo</th>
<th>M. Brod</th>
<th>Sveti Nikole</th>
<th>Resen</th>
<th>Vranista</th>
</tr>
</thead>
<tbody>
<tr>
<td>Settled on</td>
<td>Berovo</td>
<td>Dojran, Nov Dojran</td>
<td>Krivogastani</td>
<td>Kumanovo</td>
<td>Makedonski Brod</td>
<td>Sveti Nikole</td>
<td>Resen, Jankovec, Carev Dvor, Ezerani</td>
<td>Ohrid, Struga, Trpejca, Pestani, Lagadin, Vraniste</td>
</tr>
<tr>
<td>No of inhabitants</td>
<td>14,000</td>
<td>3426</td>
<td>6150</td>
<td>105484</td>
<td>7141</td>
<td>18497</td>
<td>16,497</td>
<td>91,272</td>
</tr>
<tr>
<td>Sewage system coverage</td>
<td>-</td>
<td>56%</td>
<td>50%</td>
<td>80%</td>
<td>90-95%</td>
<td>95%</td>
<td>80%</td>
<td>75%</td>
</tr>
<tr>
<td>Treatment process*</td>
<td>M, B, C</td>
<td>M, B, C</td>
<td>M, B</td>
<td>M, B, C</td>
<td>M, B</td>
<td>M, B, C</td>
<td>M, B</td>
<td>M, B</td>
</tr>
<tr>
<td>Capacity (PE)</td>
<td>12,000</td>
<td>12,000</td>
<td>3,200</td>
<td>100,000</td>
<td>5,000</td>
<td>15,000</td>
<td>12,000</td>
<td>120,000</td>
</tr>
</tbody>
</table>
Water projects under IPA OPRD 2007-2013

• I. Prepared project and technical documentation for wastewaters collection and treatment in 13 municipalities Strumica, Tetovo, Bitola, Gostivar, Kavadarci and Debar and the City of Skopje, Tenders are published except for Skopje

• II. WWT planed for construcion in 5 municipalities.

• III. Rehabilitation and extension of the sewerage network in Prilep (second phase)
WWTPs

- Constructed/operational WWTPs
- WWTP planned for construction under IPA1
- Prepared technical documentation for construction of WWTP under IPA1
Main challenges and reforms

• The Macedonian water and wastewater infrastructure needs upgrading, as most of the infrastructure was installed more than 50 years ago. The performance of the water network could be improved, since nonrevenue water is high, at about 63%. Technical design and construction of infrastructure comply with the Macedonian, European, and International Organization for Standardization (ISO) standards. The expected deadline for full implementation of the Urban Wastewater Treatment Directive is 2026 for all agglomerations in less sensitive areas.
THANK YOU FOR YOUR ATTENTION!