

ENVIRONMENTAL INFRASTRUCTURE AS A TOOL OF THE SLOVAKIA POPULATION LIVING STANDARDS RAISING FINANCED BY EU FUNDS

Katarína IŽOVÁ¹, Kateřina BOČKOVÁ^{2*}

¹DTI University; izova@dti.sk, ORCID: 0000-0003-3331-771X

²DTI University; bockova@dti.sk, ORCID: 0000-0002-3728-628X

* Correspondence author

Purpose: Presented paper deals with the environmental infrastructure in the field of water management, especially with the analysis of the possibilities of obtaining funds from the European Union to ensure the implementation of projects, namely construction of public water supply, public sewerage and wastewater treatment in municipalities to increase living standards. The level of the environmental infrastructure in the field of water management speaks of the quality of life of the population, their living standards.

Design/methodology/approach: To achieve this objective, we divided the paper into two main parts. The first part deals with the analysis of the use of funds from various EU funds from Slovakia's accession to the EU to the present – pre-accession period, shortened programming period 2004-2006, programming periods 2007-2013 and 2014-2020. In the second part, we analyse the use of available funds in the given periods by Východoslovenská Water Company, Plc. to build the environmental infrastructure in the eastern Slovakia. In processing the article, we mainly used methods such as literature search, analysis, synthesis, comparison. We relied on available Slovak and foreign literature, including current legislation in the relevant analysed period. We performed an analysis of the possibility of financing projects from EU funds in the period before Slovakia's accession to the EU, in the programming periods 2004-2006, 2007-2013 and 2014-2020, and then we processed the data into clear tables.

Findings: The existing differences in the economic and social development of individual regions of Slovakia, which arose in the past and gradually intensified, need to be systematically addressed in order to reduce the regional disparities. Supporting and strengthening the development of less developed regions is one of the priorities of the government's regional policy of Slovakia.

Originality/value: In 2017, there were 2,413 independent municipalities in the Slovak Republic, which were supplied with drinking water from public water mains. Their share of the total number of municipalities is 83.49%. Despite the fact that in the years 2012-2017 there were 66 more municipalities with public water supply in Slovakia, there are still 477 municipalities, tj. 16.51% of the total number of municipalities, without public water supply.

Keywords: environmental infrastructure, EU funds, living standard.

Category of the paper: Technical paper.

1. Introduction

The term environmental infrastructure has become generally accepted and is an equivalent form of the term for health and environmental protection equipment. The fulfillment of its content is a topical issue, as it has not yet been exhaustively defined which elements and activities fall under it. It intervenes in all areas of overlapping and cumulative activities of people related to environmental protection. However, we can say that environmental infrastructure represents sets of buildings, equipment, systems, as well as industrial and environmental technologies for the protection of public health, as well as for the preservation, protection and restoration of the natural environment.

In the field of water management in the communal sphere, these are facilities, structures and systems whose main task is to ensure the protection of drinking water sources, sewerage and wastewater treatment as cited in Augustínová, Daubner (2010).

Presented paper deals with the environmental infrastructure in the field of water management, especially with the analysis of the possibilities of obtaining funds from the European Union to ensure the implementation of projects, namely construction of public water supply, public sewerage and wastewater treatment in municipalities to increase living standards. The level of the environmental infrastructure in the field of water management speaks of the quality of life of the population, their living standards.

Statistics on this level show that the percentage of the population in Central and Eastern European countries linked to public water supply varies from 53.3% to 98.8%, depending on the country. The link of the population to the public sewerage and wastewater treatment plant lags behind the level of drinking water supply and is in the range of 30% to 80%. According to the latest Report on the state of the environment of the Slovak Republic in 2018, the number of inhabitants supplied with water from public water mains in 2018 reached 4,859.94 thousand, which represented 89.25% of the total population of the Slovak Republic. The number of inhabitants living in houses linked to the public sewerage system in 2018 reached the number of 3,724 thousand, which represents 68.40% of the total population. 1,128 municipalities had a built public sewerage system (39.03% of the total number of municipalities in the Slovak Republic).

The existing differences in the economic and social development of individual regions of Slovakia, which arose in the past and gradually intensified, need to be systematically addressed in order to reduce the regional disparities. Supporting and strengthening the development of less developed regions is one of the priorities of the government's regional policy of Slovakia.

2. Financing of projects in Slovakia in terms of meeting the requirements of the Water Framework Directive

The fact that the water sector is one of the basic sectors of the national economy has been and is being realized by every state. Therefore, in the interests of economic development, protection of public health, the environment and meeting the basic needs of citizens, states, including Slovakia, regulate this area with special legal regulations and monitor the actual state of supply of safe drinking water, drainage and treatment of municipal wastewater.

2.1. Financing of projects before the accession of the Slovak Republic to the EU

In the course of 1999-2001, a number of programming documents for the area of regional development (Integrated Plan of Regional and Social Development of the Slovak Republic, National Plan of Regional Development of the Slovak Republic, regional and sectoral operational programs, etc.) were prepared and approved, which formed the framework especially for drawing funds from the PHARE, ISPA and SAPARD pre-accession funds. The pre-accession funds were divided according to the intervention and determined to act as predecessors of the Structural Funds and the Cohesion Fund, as seen in Figure 1.

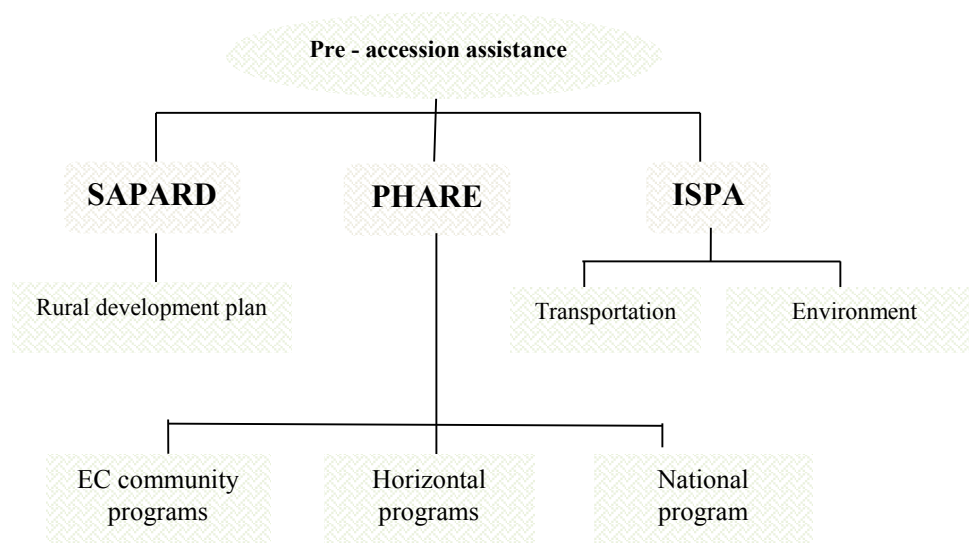


Figure 1. Pre-accession help (Source: PHARE©2003, ISPA©2003, SAPARD©2003).

In this way, PHARE and SAPARD were to be a preparation for the Structural Funds and ISPA a preparation for the Cohesion Fund. After Slovakia's accession to the European Union, the PHARE program ceased to exist. The latest assistance through this program was provided under the 2003 Financing Memorandum. However, Tóthová (2011) says, the absorption of funds continued after 2004 until the objectives of the individual programs were fully met.

ISPA, Instrument for Structural Policies for Pre-Accession was aimed at mobilizing other sources of funding (through public, private sources to international financial institutions of funding). ISPA has been used to help candidate countries comply with EU infrastructure standards and to provide part of the funding for environmental measures and transport infrastructure. The measures taken under ISPA should be implemented to the extent necessary to ensure a significant improvement in the quality and protection of the environment and also to improve the quality of the transport infrastructure network. The total cost of each of these measures was to be at least EUR 5 million. It was also necessary to strike a balance between environmental measures and transport infrastructure measures (see Table 1).

Table 1.
Approved ISPA investment projects

	Total eligible costs (EUR million)	ISPA grant (EUR million)
Total in 2000	63,76	31,88
Total in 2001	31,31	15,52
Total in 2002	94,04	57,34
Total in 2000-2002	189,11	104,74

Source: authors according to the Ministry of the Environment of the Slovak Republic.

The main priorities for improving the quality and protection of the environment were drinking water, wastewater, solid waste management and air pollution. In the area of drinking water and wastewater, according to PHARE©2003, ISPA©2003, SAPARD©2003, it was the financing of projects focused primarily on:

- reconstruction and intensification of existing wastewater treatment plants in municipalities above 2,000 registered inhabitants,
- equipping of existing large treatment plants (above 10,000 registered inhabitants) with equipment for the removal of nitrogen and phosphorus compounds,
- reconstruction of existing sewerage networks linked to wastewater treatment plants,
- completion of sewerage networks for wastewater treatment plants, construction of sewerage networks and wastewater treatment plants in municipalities with more than 2,000 registered inhabitants,
- construction of wastewater treatment plants in municipalities above 2,000 registered inhabitants,
- construction – reconstruction of drinking water treatment plants and of water supply network,
- construction of drinking water treatment plants and related water supply networks.

2.2. Project financing in years 2004-2006

The European Union is currently made up of 27 member states, representing the community and the internal market, with around 493 million citizens, which widens the economic and social disparities between them and their regions. The aim of European regional policy is to show the Union's solidarity through economic and social cohesion, by reducing disparities in the level of development of the various regions. European regional policy is based on solidarity and cohesion between regions, in that more than 35% of the EU budget, mainly from richer member states, can be used in disadvantaged regions. To this end, the European Union is developing various instruments, setting objectives and priorities in an effort to prevent the emergence and widening of regional disparities. The instruments for implementing regional policy are the EU structural funds. Slovakia gained access to them after its accession to the EU (1 May 2004). In the 2004-2006 programming period, regional development assistance was implemented in the EU through the aforementioned structural funds. A large part (up to 94%) of the structural funds was focused on three priority objectives:

- **Objective 1** – support for the development and structural changes of regions with lagging development, the so-called "lagging regions", in these regions the structural funds could provide up to 75% of the total cost of a given measure. The sources for this objective were the European Regional Development Fund, the European Social Fund and the European Agricultural Guidance and Guarantee Fund. In the case of Slovakia, all regions of Slovakia except the Bratislava region were eligible to draw assistance from the Structural Funds under this objective, i.e. the territory of the Trnava, Trenčín, Nitra, Žilina, Banská Bystrica, Prešov and Košice regions. In the Bratislava region, it was possible to draw assistance only under Objective 2 and Objective 3. The implementation of measures under this objective was carried out through operational programs.
- **Objective 2** – to support the economic and social transformation of areas facing the structural difficulties. Under this objective, areas undergoing of the socio – economic changes in the industrial and service sectors as well as declining rural areas were supported. In this case, the structural funds could provide funding of up to 50% of the total cost. The resources for Objective 2 were the European Regional Development Fund and the European Social Fund. Under Objective 2, it was possible to draw assistance from the structural funds only in the Bratislava region.
- **Objective 3** – the support for the adaptation and modernization of education, training and employment policies and systems. This objective provided the financial assistance to regions other than the regions covered by Objective 1, i.e. in Slovakia it was possible to draw assistance from the structural funds only in the territory of the Bratislava region. The source for this objective was the European Social Fund.

The European Regional Development Fund (ERDF) has helped to reduce disparities between the levels of development and living standards of the various regions, to redress major regional imbalances by participating in the development and structural adjustment of regions whose development is lagging behind. It has provided financial assistance for development projects in poorer regions. In terms of financial resources, this fund is the largest of the European Union's structural funds. In the years 2004-2006, the ERDF in the Slovak Republic participated under Objective 1 in financing measures of the Basic Infrastructure Operational Program and in financing measures in the Sectoral Operational Program Industry and Services, as well as in financing measures under Objective 2.

European Social Fund (ESF) has helped to develop employment by promoting entrepreneurship and equal opportunities, investing in human resources, in the skills of individuals, especially people with special difficulties in finding work, keeping a job or returning to work. This fund provided support to member states in implementing new active policies and systems to combat unemployment. In the programming period 2004-2006, 3 basic documents were co-financed from the European Social Fund in Slovakia:

- Sectoral Operational Program Human Resources under Objective 1,
- Uniform Programming Document NUTS II Bratislava, Objective 3,
- EQUAL Community Initiative.

European Agricultural and Guarantee Fund (EAGGF) has financed the EU's common agricultural policy. Its purpose was to provide the market support and to support the structural reforms in agriculture. It was divided into two sections:

- the guarantee section financed the price support and export subsidies measures to ensure the stable prices for producers,
- the balancing (advisory, indicative) section provided the subsidies for rationalization schemes, modernization and structural improvements in farming. In 2004-2006, in Slovakia, the EAGGF participated in the financing of measures under the Sectoral Operational Program Agriculture and Rural Development under Objective 1.

Financial Instrument for Fisheries Guidance (FIFG), one of the main instruments of EC structural and regional policy aimed at ensuring the balanced, harmonious development of the fishing industry. In 2004-2006, in Slovakia, the FIFG, together with the EAGGF, under Objective 1, co-financed measures in the Sectoral Operational Program Agriculture and Rural Development.

The Cohesion Fund was set up by the Maastricht Treaty as a solidarity fund in 1993 to help four less prosperous Member States: Greece, Portugal, Ireland and Spain. It was to help these least prosperous countries (GDP per capita below 90% of the EU average) to participate in both economic and monetary union. Thanks to its help, Portugal, Greece, Ireland and Spain have been able to meet the strict convergence criteria and become part of the euro area. The main difference from the Structural Funds is that its basic cell was the state. The fund was designed to support large infrastructure investments in transport and the environment with

a cost of over ten million euros. Given that the GDP per capita of Slovakia did not reach 90% of the EU average, it also applied for these funds. The 50:50 principle applied to projects submitted under the Cohesion Fund, which means that half of the allocation for a given country had to go to the development of transport infrastructure and half to the development and protection of the environment. Between 2000 and 2006 (the EU budget period), the annual budget of the Cohesion Fund reached €2.5 billion, for a total of €18 billion over seven years. The amount of funds from the Cohesion Fund for the shortened programming period in the years 2004-2006 in the total amount of 576.13 mil. euros.

In the Slovak Republic, this fund in the field of the environment financed projects aimed at supplying the population with drinking water, sewerage and wastewater treatment. The projects supported by the Cohesion Fund for the environment were and are in accordance with the following principles:

- maintaining protection and improving the quality of the environment,
- significant impact on human health,
- compliance with the objectives and principles of EU environmental policy,
- respect for the "polluter pays" principle,
- contribution to the gradual achievement of economic and social cohesion of Slovakia with the EU,
- involvement of public-private property harmonized with EU and Slovak legislation.

Projects co-financed by the Cohesion Fund in the field of water management supported activities in accordance with the EU Water Framework Directive and related EU directives.

The Community Support Framework, which was the basic agreement on the provision of assistance from the European Union Structural Funds to the Slovak Republic, was followed by individual programming documents, which further determined and specified priorities in individual areas. The operational programs contained specific priorities on which structural support was focused under Objective 1. In the programming process for 2004-2006, the Slovak Republic adopted one operational program and three sectoral operational programs (SOPs) – Human Resources, Industry and Services, Agriculture and Rural Development.

The Basic Infrastructure Operational Program followed the objectives and priorities of the National Development Plan. It is a program document of the Slovak Republic for drawing assistance from the structural funds of the European Union, aimed at solving the problems of development of Objective 1 regions in the Slovak Republic. The Basic Infrastructure Operational Program focused on eliminating existing regional disparities, which were identified and described in the NDP (National Development Plan) for areas of transport, environmental and local infrastructure. The aim was to improve local conditions by ensuring the equal access of local development centres to individual infrastructures.

For the environment, within it and for the area of water, a detailed SWOT analysis (see Table 2) is prepared.

Table 2.
SWOT analysis

<p>STRENGTH</p> <ul style="list-style-type: none"> - the existence of a planning process for the protection and rational use of water and in water management by river basin, through hydro-ecological river basin plans and river basin management plans in accordance with the principle of the sustainable use of water resources creates conditions for conceptual action in this area, which includes deficit management drinking water in the relevant regions of the Slovak Republic, - charging for the discharge of polluted wastewater and for abstraction is an important means of applying the "polluter pays" principle, which is one of the economic instruments required in the framework of the implementation of the Water Framework Directive, - reduction of abstraction and use of groundwater and surface water, which is positively reflected in the balance assessment of water consumption and its available resources, but also by reduction of surface water pollution due to a decrease in wastewater production, - legislative and procedural protection against floods, - favorable situation in the field of water protection and use in terms of legislation, planning process and monitoring. 	<p>WEAKNESS</p> <ul style="list-style-type: none"> - the persistent difference between ensuring the link of the population to public water mains and low links to sewers and wastewater treatment plants as well as the absence of wastewater treatment plants in smaller towns and villages causing continuous pollution of surface waters as well as groundwater, - despite the growing share of the population connected to public water supply, public sewerage and WWTPs, Slovakia is still below the average of EU member states in this area, - poor technical condition in distribution water supply networks, causing high losses in the amount of supplied water, - insufficiently implemented preventive measures for the protection of water quality and quantity, - requirements for the provision of new water resources also result from the tightening of drinking water quality indicators - polluted water resources are shut down. This situation requires the construction of new water sources, respectively to ensure the supply of water from other suitable sources or water treatment, for which it is necessary to use costly technologies, - insufficient flood protection measures, - uneven regional equipment with environmental infrastructure in the area of drinking water supply for the population and endangering the protection of surface waters and groundwater by insufficient wastewater treatment, - insufficient measures for protection against floods, lack of resources and material equipment for the management and operation of watercourses and insufficient material provision of the flood rescue service.
<p>THREATS</p> <ul style="list-style-type: none"> - in order to meet the proposed measures, the natural conditions in Slovakia have created a relatively favorable situation in the usable amount of water as well as the development of a decrease in water quantity requirements and a decrease in the volume of pumped water as a trend in their more efficient use. Also, the declining trend of wastewater discharges as point sources of pollution leads to a reduction in surface water pollution due to a decrease in outputs from industry and agriculture as a manifestation of the introduction of new technologies in production, - increasing the number of households linked to public water mains, public sewers and wastewater treatment plants will create conditions for improving the environment, drinking water quality and the degree of wastewater treatment. This will also meet environmental goals – good water status and thus better health of the population. 	<p>OPPORTUNITIES</p> <ul style="list-style-type: none"> - unsatisfactory level of wastewater treatment and low level of the population link to sewerage networks pose major risks in terms of the preconditions for meeting the set measures and the overall high costs of complying with European Union directives in the field of water management. Overloading of some wastewater treatment plants, especially in large urban centres, in order to meet the requirements of the Municipal Wastewater Treatment Directive, it will be necessary to ensure their intensification in connection with the fact that Slovakia is a sensitive area and nutrient removal.

Source: authors according to the National Strategic Plan for Rural Development of the Slovak Republic.

2.3. National Strategic Reference Framework

The 2007-2013 programming period was the first period for the Slovak Republic in which it had the opportunity to use more than 11 billion euros from EU funds and their co-financing during its entire duration. Funding could be obtained from the same funds as in the previous shortened programming period in the years 2004-2006. In the past it was and still is the following funds:

- European Regional Development Fund,
- European Social Fund,
- Cohesion Fund,
- European Agricultural Guarantee Fund,
- European Agricultural Fund for Rural Development,
- European Fisheries Fund.

In the field of the environmental infrastructure, it was possible to obtain funding for projects in areas such as:

- supply of the population with drinking water, drainage and treatment of municipal wastewater,
- monitoring of the quantity and quality of surface and groundwater, flood protection, including the establishment of a flood warning and forecasting system,
- protection of the atmosphere, the ozone layer and minimization of the adverse effects of climate change, including the promotion of renewable energy sources,
- increasing of the share of separated waste through the introduction of new and streamlining of existing systems of separate collection of municipal waste,
- increasing of the amount of recovered waste,
- reduction of hazardous properties of waste and management of hazardous waste,
- reducing the risk of the impact of environmental burdens on human health and the ecosystem,
- care for protected areas, improving the public environmental awareness,
- reducing the risk of landfills affecting human health and the ecosystem.

It is also necessary to include the Norwegian Fund, which aims to contribute the reducing economic and social disparities in the European Economic Area through grants for investment and development projects in areas such as environmental protection, promoting sustainable development, preserving Europe's cultural heritage, health and children care, research, regional policy and cross-border activities.

Funding can also be obtained from the Swiss Fund for the support and improvement of the environment and environmental infrastructure, for its renewal and modernization. Switzerland provided the Slovak Republic with approximately EUR 44.57 million during the years 2008-2012. These funds are part of the Swiss contribution for the ten new member states of the European Union, which joined the EU on May 1, 2004 (HSSR©2020). Addressing the issues

of quality of economic growth, the implementation of projects in the field of drainage and wastewater treatment not only contributes to a higher quality of life and protection of water from pollution, but also plays a dominant role in fulfilling the vision in this programming period. Therefore, the strategic goal is formulated as: *Significantly increase the competitiveness and performance of the regions and the Slovak economy by 2013 while respecting sustainable development.* The NSRF strategy, priorities and objectives are implemented through 11 operational programs within the individual objectives of EU cohesion policy.

The Operational program Environment has been designated for the environment, the global goal of which is *improving the state of the environment and rational use of resources through the completion and improvement of the environmental infrastructure of the Slovak Republic in accordance with EU and Slovak regulations and strengthening the environmental component of sustainable development* and which is based on long-term principles, priorities and objectives of Slovakia's environmental policy, as well as the obligations of the Slovak Republic arising from the Integrated Approximation Strategy, from the Joint Strategy for the Implementation of the Water Framework Directive and the Treaty of Accession to the EU. EC funds in the amount of EUR 1,800,000,000 were prioritized to support activities aimed at fulfilling the obligations arising from the transitional periods, but according to the NSRF Report for 2007, as of 31 December 2007 to draw funds from EU assistance or from the state budget did not occur.

Table 3 lists the regional projects for the measure Integrated protection and rational use of water within the Operational program Environment in individual regions of Slovakia.

Table 3.

Implementation of regional projects of the OP Environment for the measure Integrated Protection and Rational Use of Water as of 31 March 2010

Region	Number of submitted projects	Number of approved projects	Number of rejected projects
Bratislava	18	8	3
Žilina	27	8	11
Trnava	40	14	6
Nitriansky	40	19	5
Trenčín	26	13	3
Banská Bystrica	43	20	7
Prešov	53	18	10
Košice	29	10	8
Total	276	110	53

Source: authors according to the Ministry of the Environment of the Slovak Republic.

Table 4 contains a summary of funds provided to individual large territorial units in a given programming period for the Operational program Environment.

Table 4.

Funds provided to individual large territorial units in the given programming period for the OP Environment

Large territorial unit	Contracted funds			Spent funds		
	EU sources	Slovakia sources	Total	EU sources	Slovakia sources	Total
Bratislava	75 164 069,6	10 852 568	86 016 637,7	28 842 739,7	4 547 608,2	33 390 347,9
PWM*	43 617 685,9	5 616 018,8	49 233 704,7	7 589 344,9	892 864,2	8 482 209
B. Bystrica	166 774 609,4	23 733 324,1	190 507 933,6	40 029 786,5	5 999 431	46 029 217,5
PWM*	72 916 028,7	9 924 233,3	82 840 262	11 456 722,7	1 566 743,4	13 023 466,1
Žilina	195 584 540,6	32 298 461,3	227 883 002	38 642 698,6	5 990 056,4	44 632 755
PWM*	46 163 548,3	10 538 026,6	54 039 965,8	9 481 365,5	1 435 337	10 916 702,6
Košice	125 317 139,6	16 622 501,8	141 939 641,4	27 362 165	3 550 189,4	30 912 354,4
PWM*	81 001 324,8	12 376 356,1	93 377 680,9	13 377 956,9	2 199 726,6	15 577 683,5
Prešov	197 341 184,6	27 844 560,7	225 185 745,3	55 632 559,8	7 921 239,7	63 553 799,5
PWM*	60 265 479,2	8 177 377,8	68 442 857	18 963 777	2 590 414,9	21 554 192
Nitra	137 024 805,4	19 357 846,2	156 382 651,5	19 737 092,2	2 686 366,7	22 423 458,9
PWM*	81 958 047	12 219 185,9	94 177 232,9	6 794 730,9	985 585,9	7 780 316,9
Trenčín	114 644 303,3	16 418 966,5	131 063 269,8	32 901 896,1	4 601 283,4	37 503 179,5
PWM*	32 586 080,5	4 578 705,3	37 164 785,7	25 500	3 000	28 500
Trnava	98 217 739,1	13 853 028,7	112 070 767,8	25 280 659,61	3 576 035,8	28 856 695,4
PWM*	26 564 771,2	3 367 320,6	29 932 091,8	9 632 606,84	1 311 557,1	10 944 164
Total	1 110 068391,6	160 981 257,4	1 271049 648,9	268 429 597,6	38 872 210,6	307 30808,2
PWM* total	445 072 965,6	66 797 224,4	511 870 189,9	77 322 004,88	10 985 229,2	88 307 234,1

PWM* - projects in the field of water management - drinking water supply, sewerage and municipal wastewater treatment.

Source: authors according to the Ministry of the Environment of the Slovak Republic.

Another financial instrument for the environment was the LIFE + program, which was designed to complement the main funding programs. This program supported in particular the implementation of the 6th Environmental Action Program, which aimed to combat the climate change, to halt nature decline and biodiversity loss, to improve the environment, health and the quality of life, to promote the sustainable use and management of natural resources and waste, as well as to develop the strategic approaches to policy development and implementation, to raise the awareness. LIFE + has two lines:

1. **LIFE+ Implementation and Management.** This line supported the modelling and development of scenarios, studies as well as concepts, proposals and demonstration of new approaches to monitor and evaluate the key priority areas including areas covered by strategic thematic programs (i.e. resources, waste reduction, air, soil, marine environment, pesticides, urban environment). This has contributed to consolidating the knowledge base, improving the synergies and consistency of monitoring and evaluation on a European basis, thus improving the development and implementation of EU environmental policy. The percentage of funds represents 75-80% of the total volume of funds.

2. **LIFE + Information and Communication:** This line supported EU environmental policy through information, communication, awareness raising and dialogue, thus helping to strengthen the participation of individuals and groups in European civil society in an informed and active way in environmental protection and sustainable use of resources. The percentage of funds for this line represents 20-25% of the total volume of funds.

The choice of a single instrument was based on the need for simplification, as well as on the lessons learned and recommendations of previous evaluations. The Directorate-General for the Environment currently manages several different programs centrally – LIFE, the Sustainable Urban Development Program, the NGO program, the Forest Focus Program, general policy development and implementation tools (which have both internal and external dimensions). Each of these different programs has its own remit and administration, as well as the committee procedures, the management of which requires considerable resources. LIFE+ also continues to support NGOs, local and regional authorities. The appropriations are sufficient to enable these activities to be financed in accordance with the commitments made in the previous period.

In terms of objectives, the funding could be provided, *inter alia*, to support the implementation of the priorities of the 6th EAP, on the following topics:

- climate change: the European Climate Change Program (and any ongoing program),
- nature and biodiversity,
- protection of the environment and health.

LIFE+ could finance the studies and surveys, the modelling and scenario building, the monitoring, capacity building assistance, demonstration of policy approaches and tools, training, seminars and workshops, networking, best practice bases, awareness campaigns, information and promotional activities (Regulation of the European Parliament and of the Council concerning the Financial Instrument for the Environment).

2.4. European Union Cohesion Policy 2014-2020

The European Union shall develop and pursue its actions leading to the strengthening of its economic, social and territorial cohesion in order to promote the overall balanced development of its Member States. It focuses primarily on reducing disparities between levels of development in individual regions and backwardness in the most disadvantaged regions. In the 2014-2020 programming period, the EU has set aside almost €349.4 billion to achieve its cohesion policy targets. The aim of this policy was and is to support job creation, business competitiveness, economic growth, sustainable development and improving the quality of life. To achieve these aims, funding is allocated to projects implemented by beneficiaries in the member states. Member state authorities select projects for funding and monitor their implementation. It is important that these funds are allocated efficiently, especially in terms of achieving the expected results. One of the funded thematic objectives is the preservation and

protection of the environment and the promotion of efficient use of resources. The LIFE program serves this purpose. The total EC budget for the LIFE program in the programming period 2014-2020 amounted to €3,456,655,000. From the above, the sub-program Environment receives financial coverage in the amount of €2,592,491,250 and the sub-program Climate Protection €864,163,750. The co-financing rate of LIFE projects from the LIFE program from EU resources in the period of the 1st multiannual work program (2014-2017) is 60% for the so-called traditional projects and in the period of the 2nd multiannual work program (2018-2020) in the amount of 55% for the so-called traditional projects.

According to the Proposal for Ensuring the Coordination of EU Cohesion Policy after 2013, within the EU cohesion policy it was necessary to prepare at national level a main strategic document for the use of structural funds and Cohesion Fund after 2013, which was the result of negotiations between the Slovak Republic and the European Commission, and which determines the priorities for investment, allocation of domestic and European funds to priority programs and areas.

3. Analysis of the use of EU funds in eastern Slovakia

One of the obligations of the Slovak Republic in the field of public sewerage and municipal wastewater treatment, which are set out in the Treaty of Accession of the Slovak Republic to the European Union, is to continuously ensure adequate wastewater treatment in all agglomerations below 2,000 equivalent inhabitants, which have built a sewerage network and also gradually connect the population to the public water supply (Augustínová, Daubner, 2010).

3.1. Brief characteristics of eastern Slovakia

The region of eastern Slovakia covers an area of 15,729 km² (32% of Slovakia's area). Administratively, the region is divided into Košice and Prešov self-governing regions. These are further divided into 24 districts in which there are a total of 40 settlements with city status. The region has undergone complex developments throughout its history. It consists of the historical regions of Spiš, Šariš, Zemplín and Honta. The division of eastern Slovakia is shown in the following Figure 2.



Figure 2. Map of eastern Slovakia (WIKIEDIA.SK©2020).

As a part of a search of literature and available information, we mapped the situation in the field of municipal wastewater management in individual districts of eastern Slovakia and towns and municipalities, which are shareholders of the Východoslovenská Water Company, Plc. and with which they have an operating contract to ensure drinking water supply, drainage and treatment of municipal wastewater. We have summarized the results of this analysis in the following tables 5-7.

Table 5 shows the division of municipalities in the Košice and Prešov regions into size categories according to the number of inhabitants. Our intention is to point out the number of municipalities in individual districts, which have less than 2,000 inhabitants.

Table 5.
Distribution of municipalities by population

District	Up to 200 RI	200-500 RI	500-1000 RI	1000-1500 RI	1500-2000 RI	Total municipalities to 2000 RI	Municipalities above 2000 RI	Total
Bardejov	18	36	24	5	0	83	3	86
Humenné	12	23	19	5	0	59	2	61
Prešov	8	30	30	12	6	86	5	91
Sabinov	5	14	10	7	2	38	5	43
Stará Ľubovňa	22	19	16	9	3	69	7	76
Svidník	55	36	12	1	0	104	3	107
Stropkov	22	15	3	0	0	40	1	41
Medzilaborce	10	11	1	0	0	22	1	23
Snina	14	8	6	2	0	30	4	34
Vranov n/T	13	21	15	8	3	60	8	68
Košice - neighborhood	11	41	29	17	5	103	11	114
Rožňava	10	19	22	4	3	58	4	62
Sobrance	5	33	6	2	0	46	1	47

Cont. table 5.

Michalovce	3	23	39	5	4	74	4	78
Trebišov	3	24	33	12	4	76	6	82
Total	211	353	265	89	30	948	65	1 013

Source: authors.

Table 6.

Municipalities with and without connection to public water supply and public sewerage in the districts of Východoslovenská Water Company, Plc.

District	Municipalities up to 2000 RI				Municipalities above 2000 RI		Total		
	with public water supply	without public water supply	with public sewerage	without public sewerage	with public water supply	with public sewerage	up to 2000 RI	above 2000 RI	Total
Bardejov	58	25	5	78	3	1	83	3	86
Humenné	32	27	1	58	2	2	59	2	61
Prešov	50	36	6	80	5	3	86	5	91
Sabinov	15	23	6	32	4	4	38	5	43
St. Ľubovňa	28	41	7	62	4	4	69	7	76
Svidník	35	69	6	98	2	2	104	3	107
Stropkov	19	21	0	40	1	1	40	1	41
Medzilaborce	9	13	0	22	1	1	22	1	23
Snina	5	25	1	29	4	2	30	4	34
Vranov n/T	33	27	5	55	4	3	60	8	68
KE - okolie	66	37	11	92	11	4	103	11	114
Rožňava	45	13	6	52	4	2	58	4	62
Sobrance	30	16	6	40	1	1	46	1	47
Michalovce	47	27	10	64	4	3	74	4	78
Trebišov	60	16	6	70	6	4	76	6	82
Total	532	416	76	872	56	37	948	65	1 013

Source: authors.

Table 7.

Spent funds from EU funds in eastern Slovakia

PROGRAMMING PERIOD 2004-2007	
ISPA	208 813 621,36
Cohesion Fund	11 444 046,28
PROGRAMMING PERIOD 2007-2013	158 179 656,48
PROGRAMMING PERIOD 2014-2020	
IROP	15 297 128,25
Total	393 734 452,37

Source: authors according to VODARNE.SK©2020.

The EU White Paper on Environmental Liability states that the protection of the environment is in the public interest and that the state (or the relevant territorial part) is obliged to act in the event of a threat. Therefore, it is the duty of the state to solve the sewerage and treatment of municipal wastewater in municipalities with less than 2,000 PE.

The problem of small municipalities to meet this requirement is the limited sources of funding for projects in the field of municipal wastewater management. Nevertheless, many of them, within their competences in the field of water management, are taking the initiative to build a public water supply, public sewerage and wastewater treatment plant.

Conclusion

The basic environmental objective in the field of water management is to achieve good water status in accordance with Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for community action in the field of water policy and thereby improving the standard of living and quality of life. The basic goal of the WFD is to implement measures to achieve good status of all waters by 2027 at the latest, through the fulfillment of environmental objectives. In the area of water management, Slovakia faces problems in meeting its obligations to the EU. Upon accession to the European Union, the Slovak Republic undertook to drain all agglomerations with more than 2,000 registered inhabitants by 2015 in accordance with the requirements of Council Directive 91/271/EEC on urban waste water treatment. At the same time, sewerage is an important factor in the case of smaller agglomerations, with an overlap on landscape protection, biodiversity, but also the quality of life and health of the population.

The basic environmental objective in the field of water management is to achieve good water status in accordance with Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for community action in the field of water policy. Important activities include the monitoring and evaluation of water, which is an important tool for effectiveness evaluating of measures taken to achieve this environmental goal.

Another priority of the Slovak Republic in the area of drinking water supply is to increase the number of inhabitants supplied from public water mains and to ensure the supply of safe drinking water without negative impacts on the health of the population and the environment and thus to increase and improve living standards. The number of inhabitants supplied with water from public water mains in 2017 reached 4,836.13 thousand, which represents 88.94% of the total population of the Slovak Republic. In 2017, there were 2,413 independent municipalities in the Slovak Republic, which were supplied with drinking water from public water mains. Their share of the total number of municipalities is 83.49%. Despite the fact that in the years 2012-2017 there were 66 more municipalities with public water supply in Slovakia, there are still 477 municipalities – 16.51% of the total number of municipalities, without public water supply. Residents are currently supplied with drinking water from individual domestic wells, in which regular monitoring is not provided as in public water supply and many times the quality of this water in domestic wells does not meet the requirements of Council Directive 98/83/EC on the quality of water intended for human consumption. The indexes indicate a huge inequality not only at the district level, but especially between the size groups of local governments. With the decreasing size of municipalities, the number and share of the population without access to sanitation infrastructure is growing rapidly. Completion of the sanitation infrastructure in small municipalities is therefore an important public interest and

should be the subject of investment measures financed by European Union funds in the years 2021-2027. At the same time, it will be necessary to proceed.

Monitoring of the status of surface waters and groundwater is an important tool enabling the evaluation of the effectiveness of the implemented measures and, if necessary, the adoption of new measures.

References

1. Augustínová, E., Daubner, P. (2010). *The level of municipal waste water treatment vs. available financial means from the resources of EU*. SGEM 2010: 10th. International Multidisciplinary Scientific Geoconference. Bulgaria, Sofia: Stepf92 Technology Ltd., pp. 89-96.
2. Commission Announcement No. 2007/725 accompanying the Announcement "A single market for 21st century Europe". Services of general interest, including social services of general interest. Available at <http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007DC0725:SK:NO>, 2020.04.10.
3. Council Directive no. 91/271/EC concerning urban waste water treatment.
4. Council Directive no. 98/83/EC on the quality of water intended for human consumption.
5. EU Commission (2008). *DG Environment Promoting Innovative Business Models with Environmental Benefits: Final report*.
6. European Commission (2020). Available at http://ec.europa.eu/environment/water/waterurbanwaste/implementation/factsfigurs_en.htm, 2020-04-10.
7. Handelskammer Schweiz Slowakische Republic (2020). Available at www.hssr.sk, 2020.04.10.
8. Ministry of The Environment of the Slovak Republic (2008). *Plán rozvoja verejných vodovodov a verejných kanalizácií pre územie Slovenskej republiky*. Bratislava.
9. National Program of the Slovak Republic for the Implementation of Council Directive 91/271/EEC concerning urban waste water treatment as amended by Directive 98/15/EC in the format provided by Commission Decision 98/481/EEC, Annex 3.
10. National Strategic Reference Framework (2011). *Prehľad pomoci v programovom období 2007-2013 podľa VÚC*. Available at <http://www.nsrr.sk/cerpanie/>, 2020.04.10.
11. National Strategic Reference Framework (2011). *Prijímatelia finančnej pomoci z fondov EU pre roky 2007-2013 k 31.10.2011*. Available at <http://www.nsrr.sk/cerpanie/>, 2020.04.10.
12. Office for Publishing EU Publications (2011). *Politika súdržnosti 2014-2020. Investície do rastu a pracovných miest*. Luxemburg: Office for Publishing EU Publications.

13. PHARE, ISPA, SAPARD (2003). *Od nástrojov predvstupovej pomoci po štrukturálne fondy Európskej únie v Slovenskej republike*. Bratislava: Delegácia Európskej komisie v Slovenskej Republike.
14. Statistical office of the Slovak Republic. Available at <http://portal.statistics.sk/showdoc.do?docid=95>, 2020.04.10.
15. Tóthová, L. (2011). *Úloha MŽP SR v predvstupovom procese do Európskej únie*. Available at <http://www.logincee.org/file/1689/library>, 2020.04.10.
16. Water Framework Directive 2000/60/EC.