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ASPECTS CONCERNING CONTRIBUTION OF WATER SUPPLY AND SANITATION NETWORKS (WSS) INVESTMENTS TO SUSTAINABLE DEVELOPMENT GOALS (SDGs) IN ROMANIA

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Abstract

As shown in previous research, in Romania there is a significant gap of development of water supply and sanitation networks (WSS), with significant regional and urban-rural disparities. In the light of the 2030 Agenda and the 17 sustainable development goals (SDGs), a sustainable development can only be achieved through a holistic approach, in which the links between several SDGs are harnessed. Today, with the start of the SARS-COV-2 pandemic in 2020, public health and personal and family hygiene are the highest priorities, practically reaffirming the crucial importance and synergies of SDGs such as SDG1- No Poverty and SDG6-Clean Water and Sanitation. In this context, the paper analyses some current trends, benefits and contributions of European and Structural Investment (ESI)-funded WSS projects in Romania, through the Large Infrastructure Operational Program. The conclusions present some recommendations and perspectives on the continuation of sustainable development efforts for the water and wastewater infrastructure sector in Romania, especially those increasing access to public WSS services in poorly served rural areas.

Key words**:** *: sustainable development, objectives, rural, infrastructure, water supply and sanitation (WSS)*

INTRODUCTION

One of the most important issue in sustainable development is ensuring the availability of the natural resources for all the present and future needs of economic and social development.
The Agenda 2030 calls for a global and holistic approach to tackle most of the new, growing challenges linked to the factors that may jeopardize the prospects of sustainable development, such as the climate change, the water scarcity and the Sars-Cov-2 pandemics.
Romania has long since started to struggle for sustainable development, at least from a conceptual viewpoint, as developed in the early (published before year 2000) outstanding papers of Romanian Academy researchers.
Although some important steps and progress towards sustainable development have been done since Romania has become a member state of the European Union, there is still a lot of work to be done on the implementing side.
The EU cohesion policy represents the opportunity to develop many sectors of the Romanian economy representing essential pillars of the sustainable development, such as the infrastructure capital.
This research approaches developments on the SDGs (Sustainable Development Goals) in Romania, related in particular to the implementation of the L.I.O.P (Large Infrastructure Operational Program), Priority Axis AP3: Development of environmental infrastructure under efficient resource management conditions, for the strategic objective SO 3.2: Increasing the level of urban waste water collection and treatment, as well as the level of ensuring the supply of drinking water to the population [12].
The authors share some experience with the complicated issue of sustainable development of the water sector by implementing the Water Framework Directive (mainly of the water supply and sanitation (WSS) network in Romania. This topic of research has been approached in previous papers from some

different perspectives of economic and environmental analysis, enabling the development in time of a more and more synthetic assessment and a sustainable development statement.
The main issues that have been already highlighted or assessed in these papers are related to:
-The problems and requirements of promoting increased access to WSS [8];
-The correlation between water infrastructure and economic development [7];
-The importance of water security for a sustainable agriculture development [5];;
-The impact of the regionalization of the WSS operating companies on increasing the access in the rural areas of Romania [9].
The present paper resumes some of the WSS sustainable development issues in Romania, from a more multidimensional viewpoint of the SDGs in the Agenda 2030, taking also into consideration some new challenges and emergencies raised by the Sars-Cov-2 pandemics in 2020.

MATERIALS AND METHODS

Theoretical, qualitative and quantitative analysis is used to describe the progress or the situation of the research subject, namely of some Sustainable Development Goals (SDG1 and SDG 6) indicators in relation to the progress of WSS major infrastructure projects [3].
The methods and materials include: A literature review mainly based on previous research outcomes; Conceptual analysis; Analysis and synthesis of main strategic objectives of the Large Infrastructure Operational Program for sustainable development in the Romanian WSS sector; Tables, graphs and figures on the nature and direction of evolution, either extracted from relevant national/international reports or based on own data computations, in view of a comparative analysis for the trends of selected indicators.
The Eurostat monitoring indicators and the country report corresponding to the 2020 European Semester shall be used for reference and comparisons.
Progress is being analysed both in relation to the SDG targets and the evolution of the indicators in Romania vis-à-vis the EU, given that our country benefits from European Structural and Investment (ESI) funding precisely to reduce the gap with the EU average. This approach is supposed to emphasize the effectiveness of these programs and/or make new efforts aware.

RESULTS AND DISCUSSIONS

Requirements and challenges for sustainable development in the national context

In the case of Romania it was needed, about 30 years since, a more special awareness and the effective change of the development paradigm, in the sense of principles and requirements of sustainable development. Identification and adaptation of sustainable development concepts and requirements to the particular situation of Romania as a former socialist developing country for which it was necessary to identify the best way forward, was required for:
-Efficient and harmonious transition, from the centralized and planned socialist economy to market economy, based on the legacies of supply and demand;
-Sustainable economic growth, i.e. sustainable in terms of natural, economic, social and environmental resources, i.e. sustainable development.
The dimensions of the environmental irreversibility, for the case of Romania, were well highlighted and analysed, in early contributions of the Romanian Academy researchers.
The papers of [1, 11,14] may be cited, being interesting to note that some of these critical environmental aspects, which threaten the prospects for sustainable development, are still valid today: the torrentiality of the waters and the clogging force of the reservoirs, due to the disquiet of forests, of large river basins; the increased climatic instability of our biogeographical space, subject to periods of extreme intensity and duration; deterioration of the geography of uses by reducing the wetlands of the Romanian landscape (Danube

Delta, lakes, floodplains, etc.); accelerated expansion of soil erosion, reaching 6 million ha of agricultural land.

The conclusion is, once again, true and visionary: from a certain threshold of environmental sustainability, the problem of survival is the same for the whole planet, a fact that determines the need to globalize sustainable development actions.

Finally, one area that required funding and development to support the entire process of sustainable development of Romania is the environmental infrastructure, namely the water supply and sewerage (WSS) infrastructure that still presents a urban-rural or/and European-national development gap. [8, 6].

With the current national sustainable development strategy (SNDD) 2030, Romania is setting itself the national framework for supporting Agenda 30 and implementing the set of 17 SDGs. The strategy supports Romania's development on the three main pillars of sustainable development, namely the economic pillar, the social pillar and, of course, the environmental pillar.

Thus, the following principles and directions of action can be summarized (Romania's SNDD 2030, 2018) [16]:

- For the economic pillar it is considered necessary to guarantee long-term economic growth that benefits the citizens of Romania. Such an approach will create a culture of entrepreneurship in which citizens can integrate and accomplish material and aspirational goals;
- Reforms and economic growth are also closely linked to the social pillar of Romania's sustainable development. Efforts and investments are needed here to reach a cohesive society that benefits from some much-needed progress: improving the education and health system, reducing inequalities between men and women, or urban and rural areas.
-The environmental pillar has become more robust as awareness of environmental importance has increased significantly in recent years, both in terms of the natural and the anthropogenic environment.

Sustainable development of WSS services in Romania through ESI-funded programs

As further detailed and developed, investments in environmental infrastructure and especially in WSS infrastructure or irrigation systems continue to pose particular challenges in the context of the 2030 Agenda for Sustainable Development.

The quantitative and qualitative state of the waters has a major impact on the associated ecosystems; thus, only the rational use and responsible management of water resources can ensure the sustainable development of a country or region.

Therefore, especially since Romania has adopted the environmental EU acquis, investment needs in the field of environmental and water infrastructure are a great challenge for our country, from an economic, financial and administrative point of view, especially in the context of the global health, environmental and economic crisis. Thus, for the period 2010-2027, the total costs for the implementation of the Water Framework Directive (2000/60/EC) or European Water Quality Directives and the program of measures at national level amount to around EUR 20 billion.

To conceptually support these investments, identifying and verifying the correlation between environmental infrastructure and sustainable economic development at local, regional or national level is still a methodological conceptual challenge for economic research [7].

The urge to achieve Sustainable Development Goal (SDG) 6-Clean water and sanitation – by ensuring availability and sustainable management of water and sanitation for all, was more than ever needed in the current pandemic [4].

There is clear and sufficient evidence pointing to the correlation between a lack of access to clean sanitation or hygiene and the risks of acquiring SARS-CoV-2. Sanitation is important since “standard wastewater treatment processes are effective for enveloped viruses, including SARS-CoV-2. Each stage of wastewater treatment combining physical, biological and chemical processes results in a further reduction of the

potential risk of exposure and accelerates pathogen reduction" [19].

As there will be pointed further in this research, based on the latest reports [18, 3] in many parts of the world but also in Romania there are still high-percentages of households without access to a bathroom at home.

Table 1. Global targets (6.1. and 6.2) status of progress on SDG 6- Water and sanitation for all

Global target	**Global indicator Status**	**Summary and priority areas for acceleration**
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all (100%)	6.1.1 Proportion of population using safely managed drinking water services Baseline:70% (2015) Latest: 71% (2017)	Achieving the SDG global target 6.1 by 2030 will require a four-fold increase in the current rate of progress. 7 out of 8 SDG regions are currently off track. 785 million people still lack even basic drinking water services. Among these, 8 out of 10 live in rural areas and nearly half live in Least Developed Countries.
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all (100%) and end open defecation (0%), paying special attention to the needs of women and girls and those in vulnerable situations.	6.2.1a Proportion of population using safely managed sanitation services Baseline:44% (2015) Latest: 45% (2017)	Achieving the SDG global target 6.2 by 2030 will require a four-fold increase in the current rate of progress. No SDG region is currently on track. 2 billion people still lack even basic sanitation services. Among these 7 out of 10 live in rural areas and 3 out of 10 in Least Developed Countries.
	6.2.1b Proportion of population with a handwashing facility with soap and water available at home Baseline:60% (2017) Latest: 60% (2017)	There are currently insufficient data to estimate global trends in access to basic handwashing facilities. Over half of the population in rural areas and nearly three quarters of the population of Least Developed Countries lack handwashing facilities with soap and water. In Sub-Saharan Africa 2 out of 5 people have no handwashing facility at all.

Source: Summary Progress Update 2021-SDG 6 - Water and Sanitation for all [4].

Data are raising concerns, since good hygiene practices play a central role in helping contain the spread of COVID-19.

Considered as a goal concerning the lifeblood of society and the planet, progress towards the eight SDG 6 targets is expected to have catalytic effects across the entire 2030 Agenda.

Estimates on the progress and challenges in the SDG6 (in Table 1) come from the latest UN Water Report (Summary Progress Update 2021: SDG 6 — water and sanitation for all) and the general conclusion is that: „The world is not on track to achieve SDG 6" [4].

In Romania, the state of development of the WSS sector is among the poorest in Europe, a fact already reported in previous publications: especially "in rural areas at regional levels, inadequate water treatment, poor sewerage network and low access to centralized water and wastewater systems are the main weaknesses of this environmental sector" [8].

Another issue of concern is that the worst quality of groundwater in Romania is in the rural areas, where the sewerage network is underdeveloped or totally missing and the waste water gets directly into underground. The presence of nitrates in high concentration in the underground waters affected human health in some areas.

Regarding the agri-food sector, the too slow progress of the overall national agri-food system, the still large discrepancies and non-convergence between our country's agriculture and that of the other EU countries, the existence of large severe rural poverty areas, as well as the precarity of Romania's population's food security have been signalled and analysed in [5].

From most country-specific documents and assessments for Romania (quoted in the following sections), but also from other previous studies it can be concluded that, in the environmental infrastructure sector, there is still a substantial gap between Romania and other Member States, as well as between Romania and European averages.

Therefore, support for this sector (Environment) through specific investment programs and reforms financed by the European ESI Funds is still particularly necessary in Romania, in order to progressively alleviate the significant gaps in the existing sector but also to address in advance possible new environmental problems and challenges, such as those arising as a result of the serious public health crisis triggered by the pandemic with Covid-19 (2020), with a particularly strong negative impact in the area of sustainable development.

Critical aspects in the implementation of LIOP Priority Axis 3

This section proposes an evaluation of the interim results and performance recorded in the implementation of Priority Axis 3 of the Large Infrastructure Operational Program (LIOP), for specific objective SO 3.2. in view to a further correlation with progress or stagnation on some SDGs (especially relevant to the environment) in Romania [12].

In general, the package of measures contained in the LIOP is a continuation of efforts made under the Sectoral Operational Program Environment (SOP Environment) 2007-2013.

The measures cover the most significant and demanding areas of environmental infrastructure.

An overwhelming proportion of the funds will be directed to the areas where Romania must comply with the environmental acquis (and the obligations established under the Accession Treaty). This in itself is a factor of sustainable development as compliance with the acquis requires sustainable growth; a pillar of the Europe 2020 strategy.

In line with the Guide to Thematic Objectives, LIOP draws attention to the Regional Water Master Plan and their compliance with the Hydrographic Basin Management Plans. A complementary program for rural areas is financed through the European Fund for Agriculture and Rural Development (EAFRD), with coordination taking place at operational level. Certain projects initiated under POS Environment 2007-2013 have not been completed in time. Some will be completed on the basis of national funds and others are proposed for 'staging' on the basis of funds currently allocated.

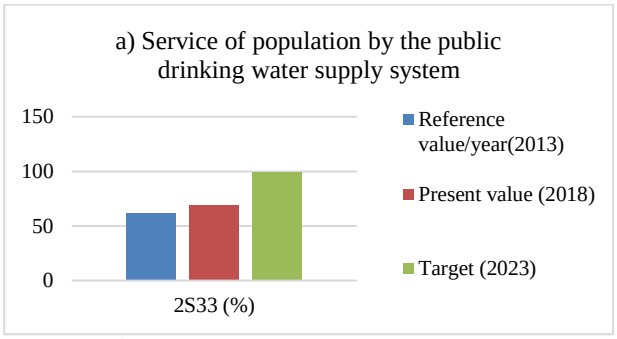
With regard to the specific objective of OS3.2 - Increasing the level of urban waste water collection and treatment, as well as the degree of ensuring the drinking water supply of the population, it can be said that the level of implementation and achievement of the targets at the end of the program is modest, especially taking into account that the results of financial implementation are generated almost entirely by phased projects (approximately 78% of the sector payments of 230.94 million. euro represent payments from phased projects).

The pace of implementation of phased projects is still slow, with significant delays from the original timetable. Their implementation had reached just 301.73 million euros of the total eligible value of phased projects of 963.27 million euro. Euro (2019).

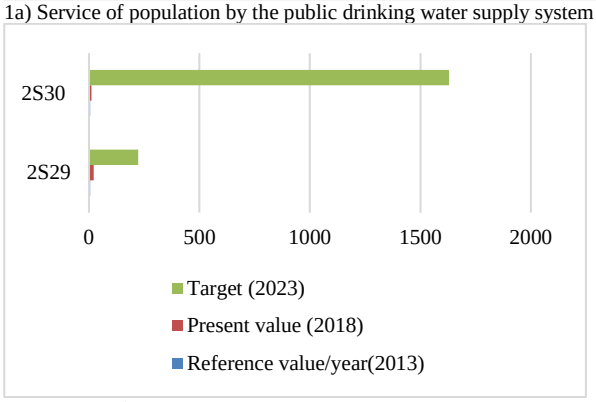
This reveals complex problems in the implementation of major projects based on a large number of various works contracts requiring simultaneous management. In addition, major delays in the preparation of new investment projects are recorded at axis 3 level. However, the contracting level of 82.26% completed by the projects in preparation attests an acceptable level that provides a sufficient basis for the implementation of the axis in approved terms.

Outcome indicators are presented as follows (2019):

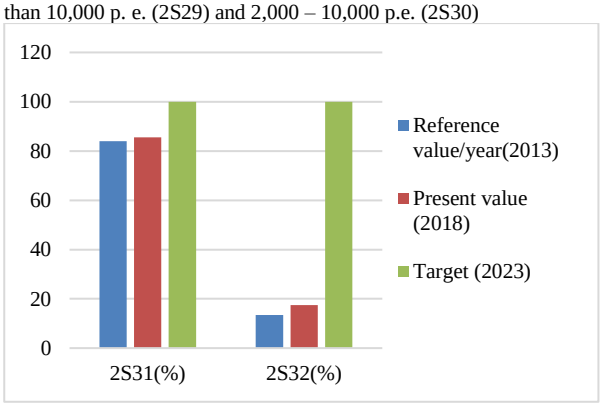
- 2S29 Number of compliant wastewater treatment plants WWTPs serving agglomerations of more than 10,000 p.e. (population equivalent): the reached value is 22 up from 15 in 2017; a number of 117 WWTPs meet 2/3 compliance criteria laid down in Article 5 of Directive 91/271/EEC;
- 2S30 Number of compliant WWTPs serving agglomerations of 2,000 to 10,000 p.e.: the reached value is 12 up from 7 in 2017; 524 WWTP meet only the criteria for the structure of the treatment plant laid down in Directive 91/271/EEC, Article 5;
- 2S31 The connection of biodegradable organic loading (in equivalent inhabitants) to systems for the collection of wastewater in agglomerations with more than 10,000 p. e.: the value is 85.6% down from 86.56% in 2017;
- 2S32 Level of connection of biodegradable organic loading (in equivalent inhabitants) to collection systems in agglomerations with 2,000-10,000 p.e.: the value reached is 17.5% up from 17.08% in 2017;
- 2S33 The degree of service of population by the public drinking water supply system: statistical data available in 2019 (NSI) indicate a value of 69.4% (up from 67.5% in 2017.



1a) Service of population by the public drinking water supply system



1b)Number of compliant WWTPs serving agglomerations with more than 10,000 p. e. (2S29) and 2,000 – 10,000 p.e. (2S30)



1c) The level of connection of biodegradable organic loading (in equivalent inhabitants) to collection systems (in agglomerations with more than 10,000 p.e. (2S31) and 2,000 – 10,000 p.e. (2S32) - %)

Fig. 1. LIOP Goal 3.2 Specific outcome indicators, Priority Axis 3

Source: Adaptation and own processing by LIOP (April 2020 version) and implementation reports [12].

The level of service of the population by the public drinking water supply system (2S33) increased by 13% in 2018, but an increase of another 43.3% is needed to reach the target value in 2023, so it would require a tripling of the growth rate of this indicator (Fig 1a).

Figure 1 (a, b, c) analyses these result indicators and highlight the following issues related to the impact of the WSS investments made.

The level of connection of biodegradable organic loading (in equivalent inhabitants) to collection systems in agglomerations with more than 10,000 p.e. (2S31) and 2,000 – 10,000 p.e. (2S32) recorded slow increases, but with large differences in impact, as follows (Fig. 1c):

-2S31 increased by less than 2% in 2018, and an increase of another 13% needed to reach the 100% target, but this is possible by 2023 (urban sewage);

-For 2S32, which actually refers to sewerage sanitation in rural areas or small towns, the increase is the same, extremely modest, of only 4% while it would take another 82% to achieve the target, this being impossible until 2023.

In terms of the number of compliant WWTP (wastewater treatment plants) serving agglomerations of more than 10,000 (population equivalent) p.e. (2S29) and 2,000 to 10,000 p.e. (2S30) the situation is very inadequate, although there is some intermediate progress of the work that has not been recorded in the results because the WWTP is not operating at the projected all capacity, although they are completed (Fig.1 b).

The impression is that in this area of WSS infrastructure investment funded by LIOP, the pace of preparing and implementation of major projects is very slow, given that the process has started relatively early, many projects being actually phased out of the average POS. However, these major WSS projects will form the basis for the portfolio of the forthcoming financial program, taking into account the significant investment needs to comply with the European Wastewater Directives.

As analysed in the next chapter, this perpetual lag in Romania in terms of environmental infrastructure and especially water and wastewater seriously hinders Romania's progress towards the Sustainable Development Goals SDG1, SDG6 and all connected SDGs.

Progress on the SDGs

SDG 6 is to ensure availability and sustainable management of water and sanitation for all by 2030 is critical to sustainable development. Safe drinking water and sanitation are human rights.

Besides, frequent and correct hand hygiene is one of the most important measures to prevent infection with SARS-CoV-2. (UN Water, 2021) [18].

Access to these services, including water and soap for handwashing, is fundamental to human health and well-being [8].

Taking in consideration the complex links and synergies of the SDGs [10] the contribution of the water supply and sanitation services is considered essential for:

-adequate nutrition (SDG2-No hunger);

-healthcare and prevention of diseases (SDG3-Good health);

-normal functioning of schools (SDG4-Education);

-business or institutions (SDGs-8, 9, 16).

Besides, larger access to WSS enables the better participation in society of women, girls and marginalized groups, thus it is a factor of progress towards SDG 5-Gender equality, as prefigured in a dedicated paper [6].

Unfortunately, efforts in Romania, the EU and around the world to implement the Sustainable Development Goals have been severely affected or impacted in 2020 by the health, economic and environmental crisis caused by the SARS-COV 2 pandemic.

The effects and the measures taken to mitigate the impact of the pandemic have been resented globally especially by:

- the health systems unable to cope with the disease;
- (up to 90 per cent) students unable to attend school;
- businesses shutting down affecting global value chains. Unfortunately the SARS-COV 2 pandemic may lead the return of up to 71 million people into extreme poverty undernourishment in 2020 [17].

However, as a result of economic growth and development policies or reforms achieved in recent years, the indicators suggest that Romania is making progress towards the United Nations Sustainable Development Goals (SDGs).

Table 2. Indicators measuring Romania's progress towards the SDGs: SDG1-No poverty

SDG-Sub-theme Indicator		***Unit***	***Romania***		***EU-28***	
			Starting value	Latest value	Starting value	Latest value
SDG1-No poverty						
Basic needs	Population living in dwelling with a leaking roof, floors or foundation or rot in window frames or floor	% of population	16.2	10.1	15.6	13.9
	Self-reported unmet need for medical care	% of population over 16	10.9	4.9	3.7	2.0
	Population having neither a bath, nor a shower, nor indoor flushing toilet in their household	% of population	33.7	25.6	2.2	1,7
	Population unable to keep home adequately warm	% of population	14.7	9.6	10.7	7.3
	Overcrowding rate	% of population	50.6	46.3	17.0	15.5

Source: Own selection- extract from country report Romania, 2020 European Semester (SWD (2020) 522 final) [2].

Romania has managed to advance 4 positions in the international ranking on the SDGs implementation (from 42 to 38), a fact stated in the 2020 Global report on the 2030 Agenda [15].

Some of these SDGs (mainly related to the implementation of the priority axis 3 of the L.I.O.P) have been analysed by us to verify their progress, factors and prospects.

In this respect, for SDG 1, "No Poverty", there are analysed the indicators expressing poverty through the degree of access to infrastructure and public services, in order to achieve the basic needs of the Romanian population (Table 2).

Although there is progress from 2013 to 2018 to observed, there are two indicators where Romania's situation is much worse than the EU's (average) situation:

(a)The population with no bathroom, shower, and indoor toilet with running water in the household; the rate has fallen further in Romania (from 33.7% in 2013 to 25.6% in 2018) but is still extremely high (20 times higher) compared to only 1.7% in the EU.

(b)The rate of overcrowding of homes is 46.3%, which is three times higher than the average in the EU (15.5%).

These aspects of lack of access to water supply and sanitation (WSS) services and the impossibility of social distancing are currently gaining new valences and risks from the poor hygiene and living conditions, in the SARS-COV-2 global health crisis.

The conclusion is that for the time being, in Romania, poverty remains high and access to essential public services is limited. The risk of poverty mainly affects rural areas and vulnerable groups.

Table 3. Indicators measuring Romania's progress towards the SDGs: SDG6-Clean water and sanitation

SDG-Sub-theme Indicator		*Unit*	*Romania*		*EU-28*	
			Starting value	*Latest value*	*Starting value*	*Latest value*
SDG6-Clean water and sanitation						
Sanitation	Population having neither a bath, nor a shower, nor indoor flushing toilet in their household	% of population	33.7	25.6	2.2	1.7
	Population connected to at least secondary wastewater treatment	% of population	35.3	46.5	N/A	N/A
Water quality	Biochemical oxygen demand in rivers	Mg O_2 per litre	3.33	3.22	2.06	2.00
	Nitrate in groundwater	Mg NO_3per litre	N/A	N/A	19.2	19.1
	Phosphate in rivers	Mg PO_4 per litre	0.096	0.098	0.096	0.093

Source: Own selection- extract from country report Romania, 2020 European Semester (SWD (2020) 522 final) [2].

As may be seen (Table 3), the importance of access to environmental infrastructure is supported by the presence of some multifunctional indicators, which certify the synergistic link between some of the SDGs.

For instance, the population that has neither a bath, nor a shower nor an indoor toilet with running water in the household is a common indicator of sustainable development for the SDG1 Poverty-Free and the SDG 6 Clean Water and Sanitation.

In the case of sanitation, as seen from figure 2, compared to 2013, in 2018 there was a decrease in the percentage of the population who did not have access to a bathroom, shower and toilet in the house, from 33.7% to 25.6%; however Romania still remains well above the EU average of only 2% and comes first in the EU.

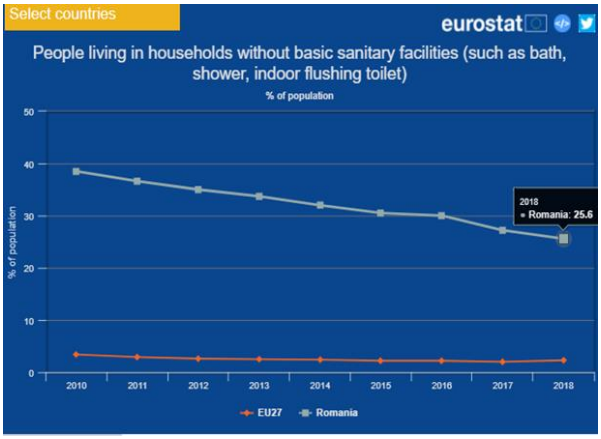


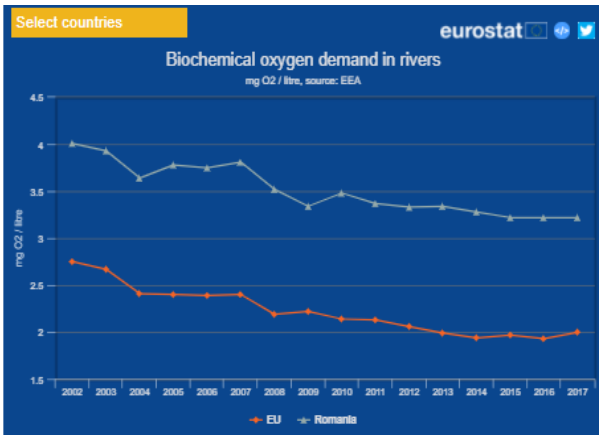
Fig. 2. Dynamics of the population rate without a bath with indoor toilet and running water in the household, in Romania and the EU 27
Source: Eurostat, 2020 [4].

In 2019, the recent estimate of this Eurostat indicator of poverty for Romania is a rate of 22.9% of the population without a bath, indoor toilet and running water in the household (with reference to the toilet in the home the rate is 24.2%); however, this is an outstanding progress considering the high initial rate of 41.5%, in 2007 (year of Romania's accession to the European Union).

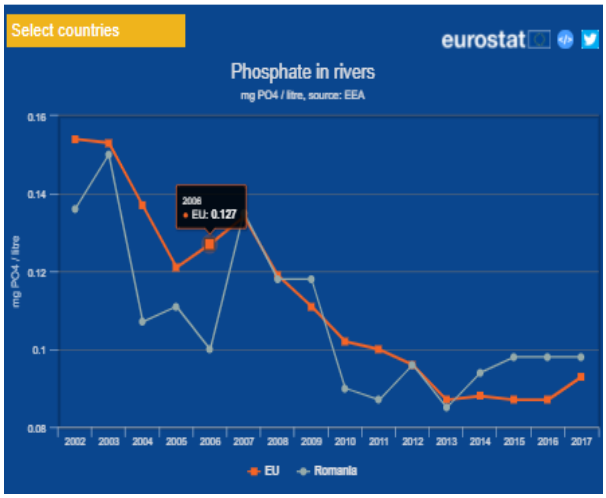
So the development of the WSS infrastructure through the ESI funds (through major projects by the SOP Environment 2007-2013 and respectively the L.I.O.P 2014-2020) has increased the number of inhabitants connected to water supply and sanitation services in

Romania, especially in poorly served rural areas. However, Romania continues to come first in the EU at this indicator of lack of access to WSS, which means a persistent deficit in sustainable development and an endemic state of poverty (a common indicator with SDG1 No poverty).

Also in terms of water quality, from figure 3 it is noted that although some progress has been made, this is not obvious, so that between 2012 and 2017 the biochemical oxygen consumption in rivers decreased by 4%, but this remains 60% higher than the average in the EU-28 (Figure 3 a). Phosphate levels in rivers have increased slightly in Romania and decreased in the EU, but are now almost similar (+/- 5%) (Figure 3, b).



(a)Biochemical oxygen demand in rivers, evolution in Romania and the EU



(b)Phosphate in rivers, evolution in Romania and the EU

Fig. 3. Water quality indicators of SDG6 – Clean water and sanitation, in Romania and EU

Source: Eurostat, https://ec.europa.eu/eurostat/web/sdi/clean-water-and-sanitation [4].

The modest progress under these SDG 6 - Clean water and sanitation, water quality and availability indicators is closely and directly linked to the too slow or insufficient implementation of the L.I.O.P (Priority Axis 3), previously analysed.

Development of water and sewerage network infrastructure, the construction and rehabilitation/ modernization of sewage treatment plants, sewerage networks and waste water treatment plants are still a priority of sustainable development in Romania.

CONCLUSIONS

As shown since the first chapter, in Romania in the transitional stage the concept of sustainable development was accepted more declaratively, as a result of appropriation of the UN documents in this field. However, this generous and complex concept was thoroughly studied and grounded quite early by researchers from the Romanian Academy.

After 2000, with the start of EU accession, sustainable development is an integral part of legislative and institutional construction, reflected in the main directions of state policy. It can be said that the adoption of the common environmental acquis and the application of agreed working instruments at EU level are the main driver of Romania's accelerated alignment with the principles and practices of sustainable development.

Normally, access to the European Structural and Investment (ESI) Funds can enable Romania to make increasing progress for local, sectoral and national sustainable development, synergistically and coordinated, at all 17 Sustainable Development Goals.

For this sustainable development in line with the UN 2030 Agenda, Romania has adopted Romania's National Strategy for Sustainable Development 2030, which allows it to channel ESI and national funds to implement these SDGs and also to:

-develop in a balanced way the regions left behind – addressing SDGs 1, 3, 6, 8, 10, 11;

-modernise transport and environmental infrastructure – addressing SDGs 6, 7, 9, 11, 13;

support rural development- addressing SDGs 1, 2, 3, 4, 5, 6, 8, 10, 11, 12, 15.

The overwhelming majority of resources allocated in the environmental section of the LIOP concern, as in the previous case of POS Environment, compliance with European Community legislation - the environmental acquis. The problem is that Romania has not yet managed full compliance with the EU environmental acquis, so investment and development efforts must continue, in order to progressively alleviate the existing important gaps but also to address in advance possible new environmental problems and challenges, such as those arising as result of the serious public health crisis triggered by the pandemic with Covid-19 (2020), which can have a particularly strong negative impact in the area of most Sustainable Development Goals.

Although investments in water and wastewater infrastructure (through major regional projects) have contributed to both reducing poverty and increasing population access to water and sewerage sanitation services, Romania still remains the poverty leader in the EU at the multifunctional indicator rate of the bathroom less population, without indoor toilet and running water in the household (SDG1-No poverty and SDG6-Clean water and sanitation).

In order to comply with the requirements of the SDG1, SDG3, SDG6, SDG 9, SDG 10 (and in synergy all the sustainable development needs of Romania) it is necessary to take into account the many problems in the provision of water and sanitation sewerage services, especially in the area of rural localities where households or even streets within the localities are not connected to the sewerage network.

In fact, it is important to be aware at least now, in the context of the epidemiological situation caused by the spread of the SARS-CoV-2 coronavirus, that ensuring adequate and equitable access to sanitation and hygiene for the whole population, with priority to schools and dispensaries, is a public health problem for which the state of emergency was established by Decree No. 195/2020 on the state of emergency on the territory of Romania, prolonged with numerous states of alert.

As regards the water supply and sewerage sector, financed by LIOP Priority Axis 3, specific objective 3.2., Romania receives funding of EUR 3.22 billion in the current programming period. With this contribution of 3 billion. €, future investments to be made will cover about 25% of compliance needs, substantial financing from other sources is required and some measures are expected.

There is much hope that support for the faster development of the WSS systems in poorly served areas can be provided through the NRRP.

The allocation proposal from the National Recovery and Resilience Plan (NRRP) for the water and sewerage network and irrigation systems would be a total of 4 billion. Euro.

It would represent maybe the last chance for Romania to recover the substantial gap in the sustainable and equitable development of the water supply and sanitation systems, since access to these utilities represents a basic need for fighting poverty and pandemics.

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