

Challenges and solutions for rural wastewater management in Romania

Gheorghe Constantin

Director

Ministry of Environment, Water and Forests of Romania

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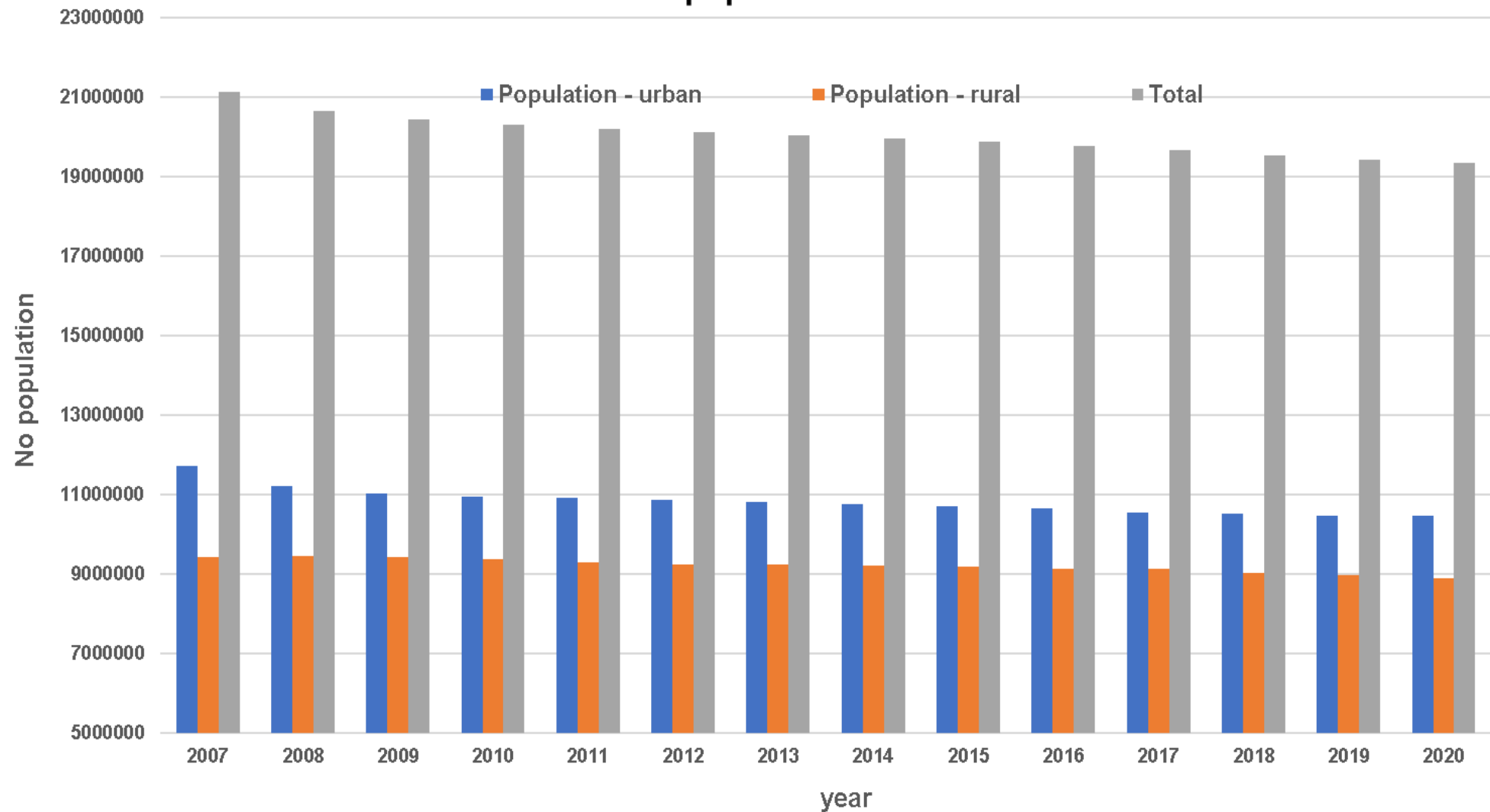
Main challenges related to the implementation of the UWWTD

- Important change in the population equivalent at the national level
- Very low level of infrastructure in the rural area
- Large part of rural population with low income in the rural area
- Decreasing trend of population
- Population aging in the rural area
- Increase of agglomeration with less than 2000 i.e.
- Large number of small agglomerations
- Poor development of the water infrastructure in the rural area

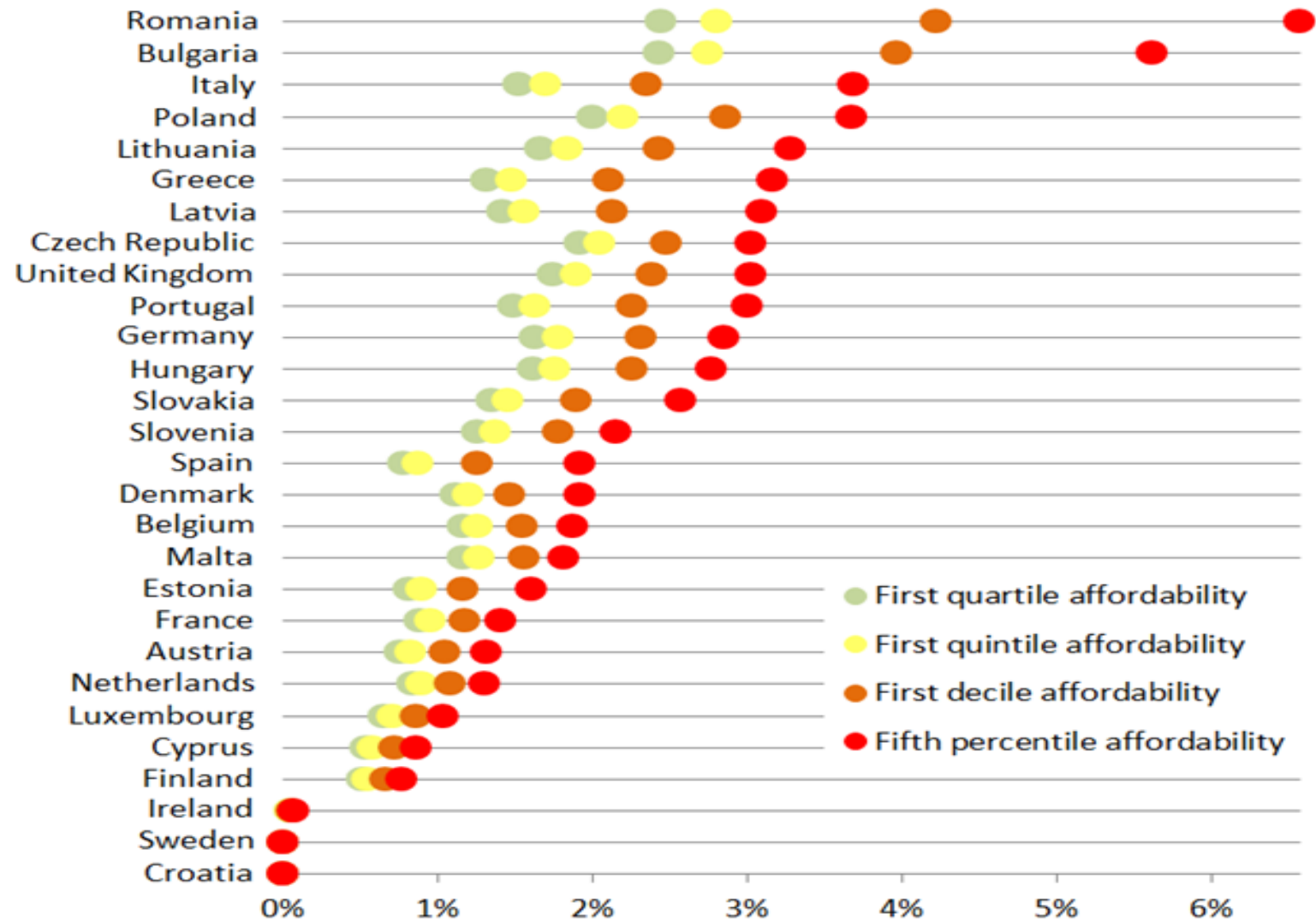
Situation of WWT in agglomeration

No. crt.	Size of aglommeration (l.e.)	Number of aglommeration	Number of i.e.	Number of i.e. connected to the sewerage	Number of i.e. connected to the WWTP	% sewerage	% treatment
1	>10.000	198	13.651.081	11.828.934	11.312.480	86,65	82,87
2	2.000 – 10.000	1698	6,721,472	1.267.239	1.088.382	18,85	16,19
Total >2.000 i.e.		1896	20.372.553	13.096.173	12.400.862	64,28	60,87

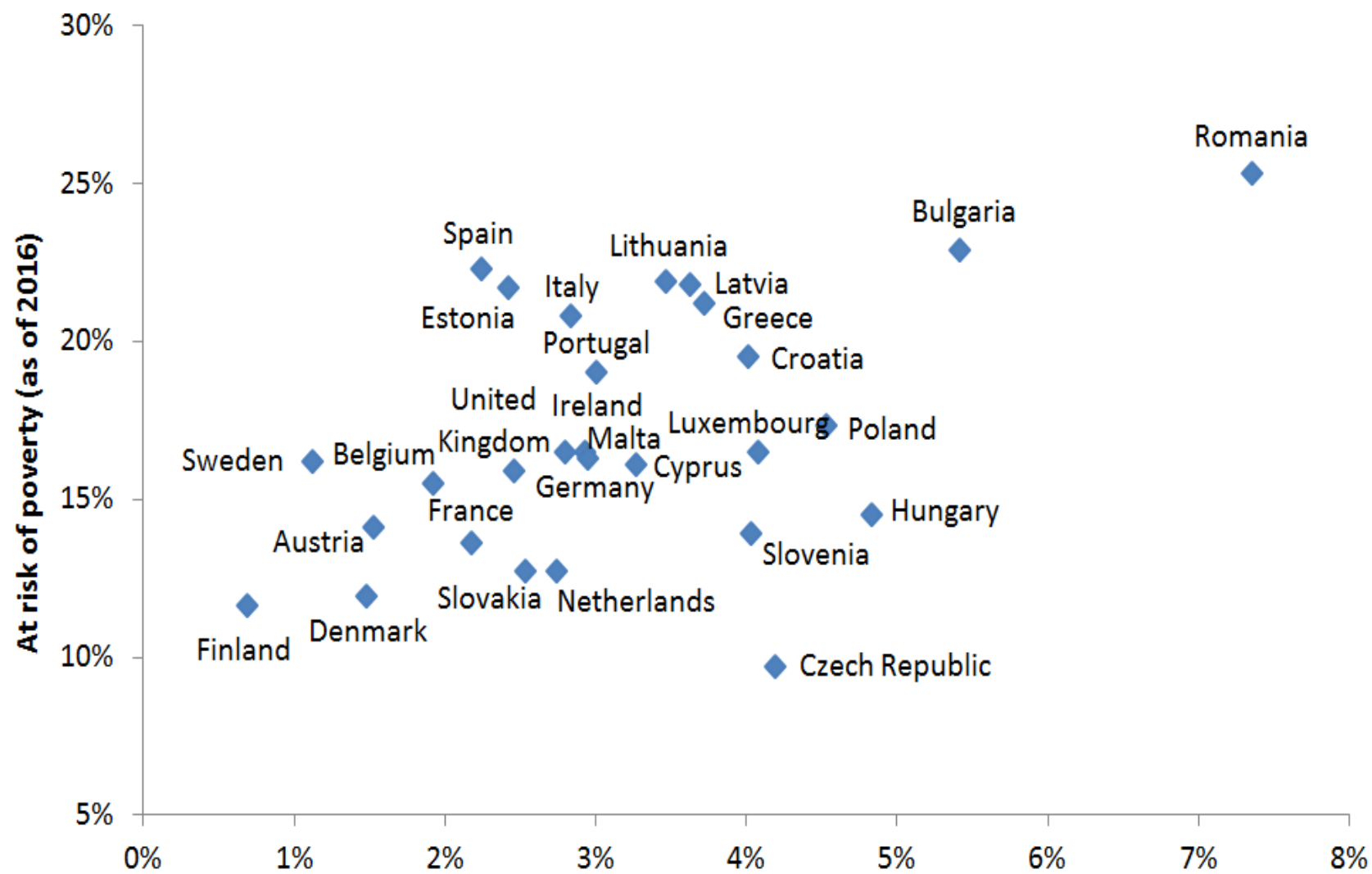
Evolution of number of population in rural and urban areas



Percentage of water and sewage expenditures from household incomes



The part of the population at risk of poverty





Approach for the wastewater treatment in rural area

- Regionalization including urban and rural area
- Individual Appropriate Systems
- Financial support for water supply and sanitation
- Alternative intelligent public system for waste water treatment

Advantages of regionalization

- Improved technical capacity
- Improved financial capacity
- Improved lending capability
- Improved investment planning
- Optimization of available resources
- Capacity to operate of existing regional systems
- Capability to meet EU W & WW Directive
- Tariffs leverage around the region (urban/rural)

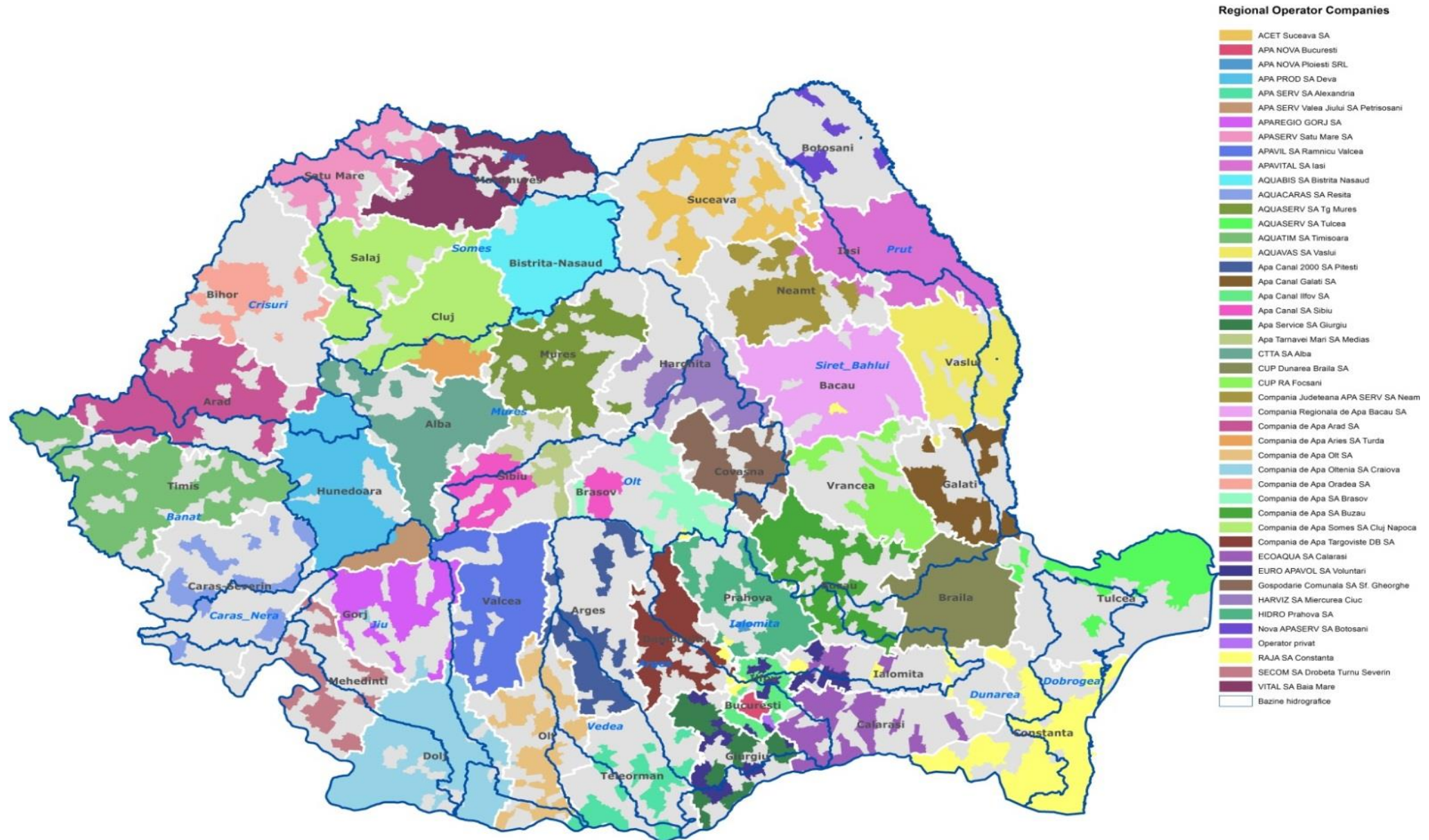
Water utilities multiplication after 1990

42 county utility operators in 1989 across Romania



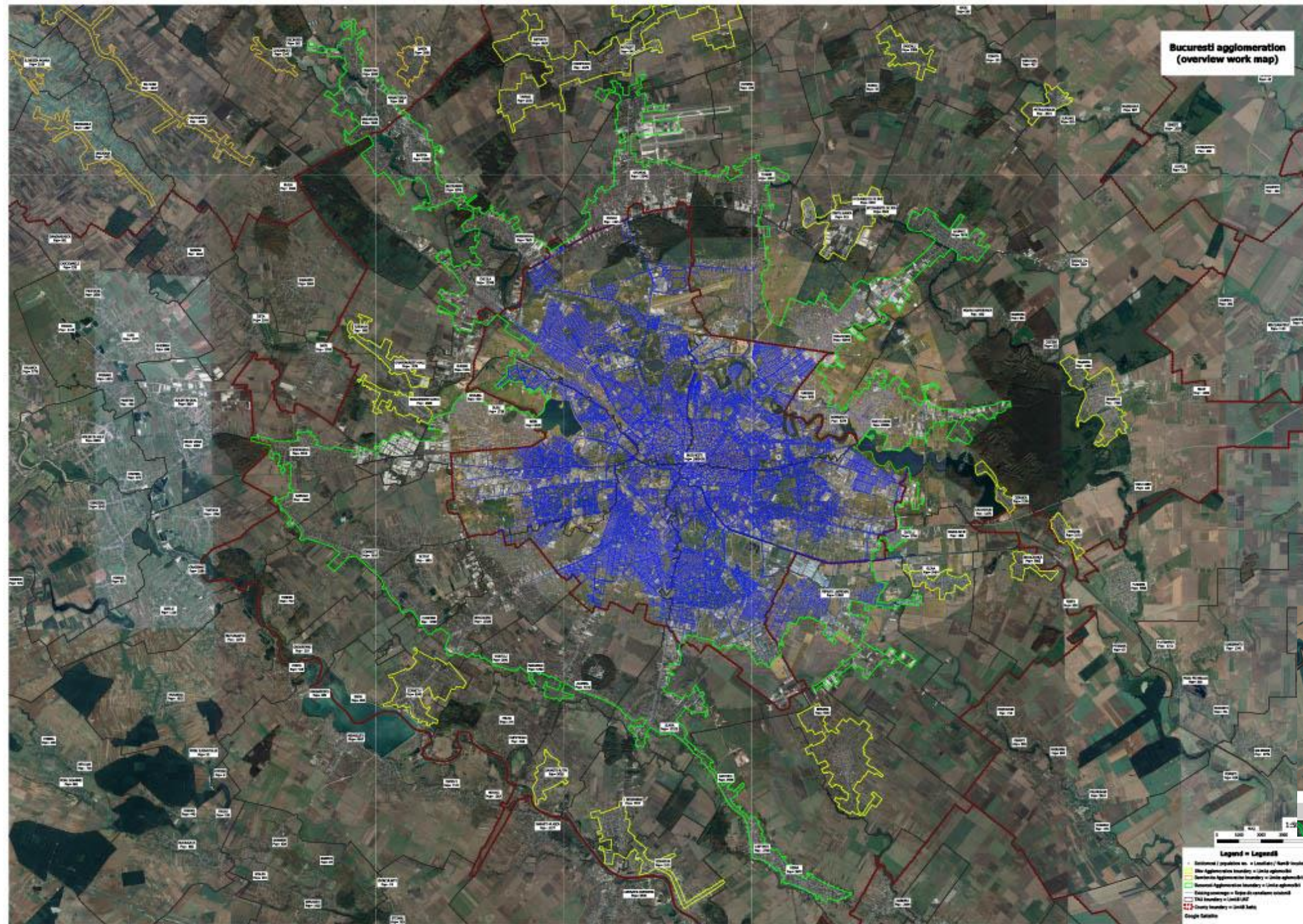
More than 400 local & county water-sewage operators in 1992

Counties and basin areas operated by ROCs



Current status of water operators in Romania *Source: ANRSC*

Type of WSS operators	% Connected to water services	Population served with piped water	% Connected to sewage services	Population served with piped sanitation
Regional operators	71.64	9 million	70.82	6.9 million
Large private operators (mixed capital companies) in Bucharest in Ploiesti	15.33	2 million	20.11	1.7 million
Other small local private operators	2.60	0.1 million	1.81	n.a.
Municipal operators organized as departments or public companies	10.42	1.5 million	7.26	0.9 million
Total population served by WSS providers		12.6 million		9.5 million



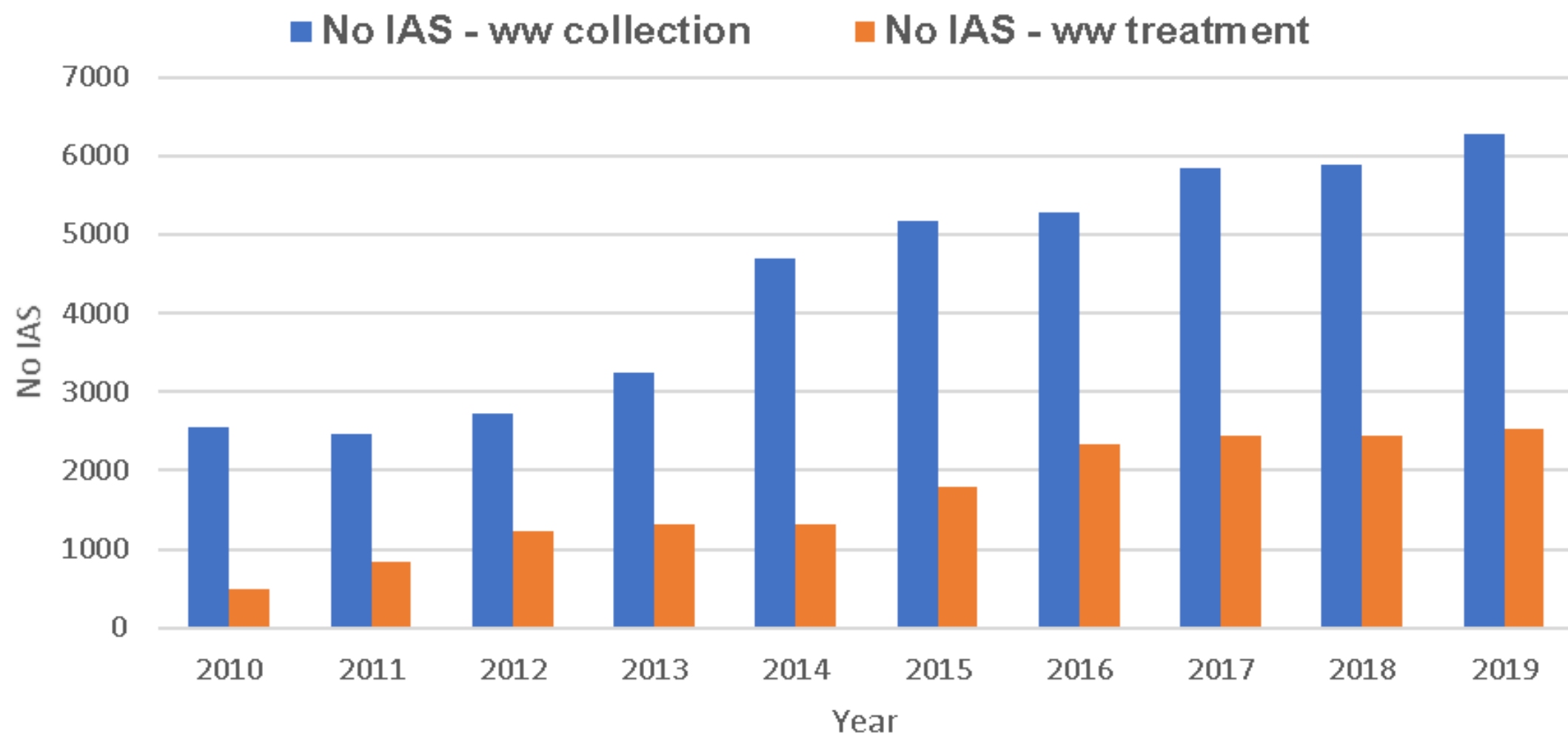
Legend = Legendă

- Settlement / population no. = Localitate / Număr locuitori
- Ilfov Agglomeration boundary = Limita aglomerației
- Dambovită Agglomeration boundary = Limita aglomerației
- Bucuresti Agglomeration boundary = Limita aglomerației
- Existing sewerage = Rețea de canalizare existentă
- TAU boundary = Limită UAT
- County boundary = Limită Județ
- Google Sattelite

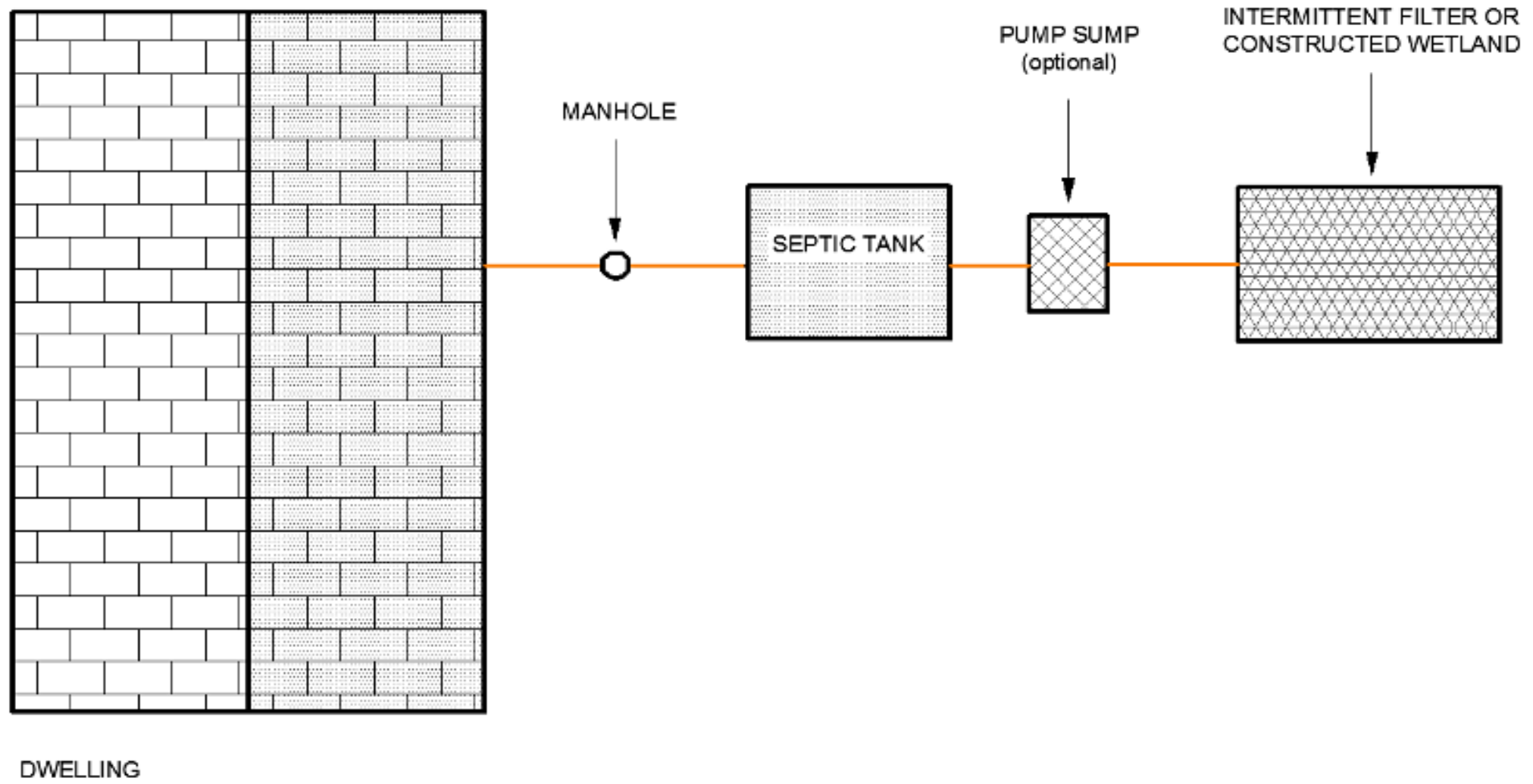
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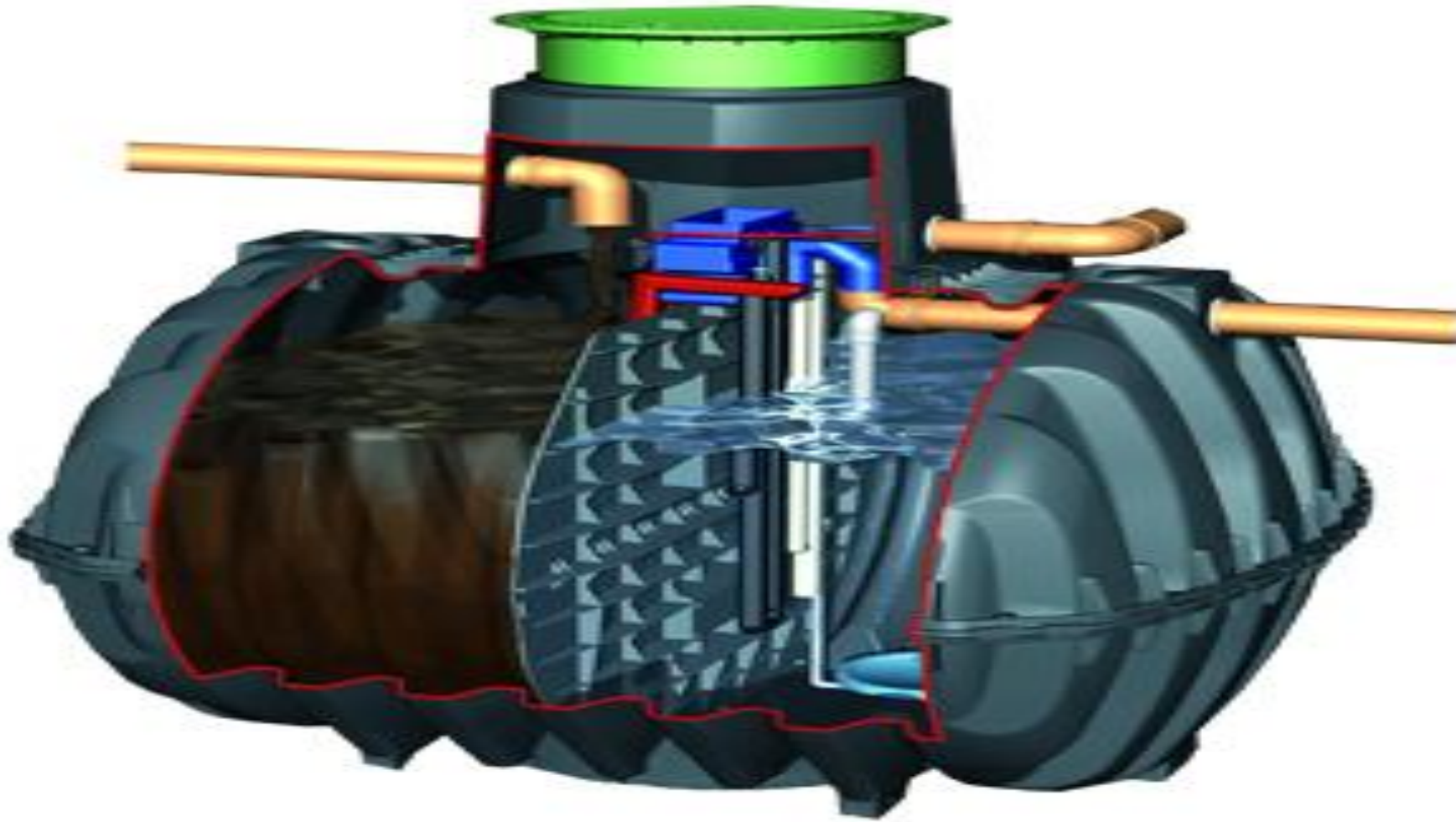
Evolution of no IAS



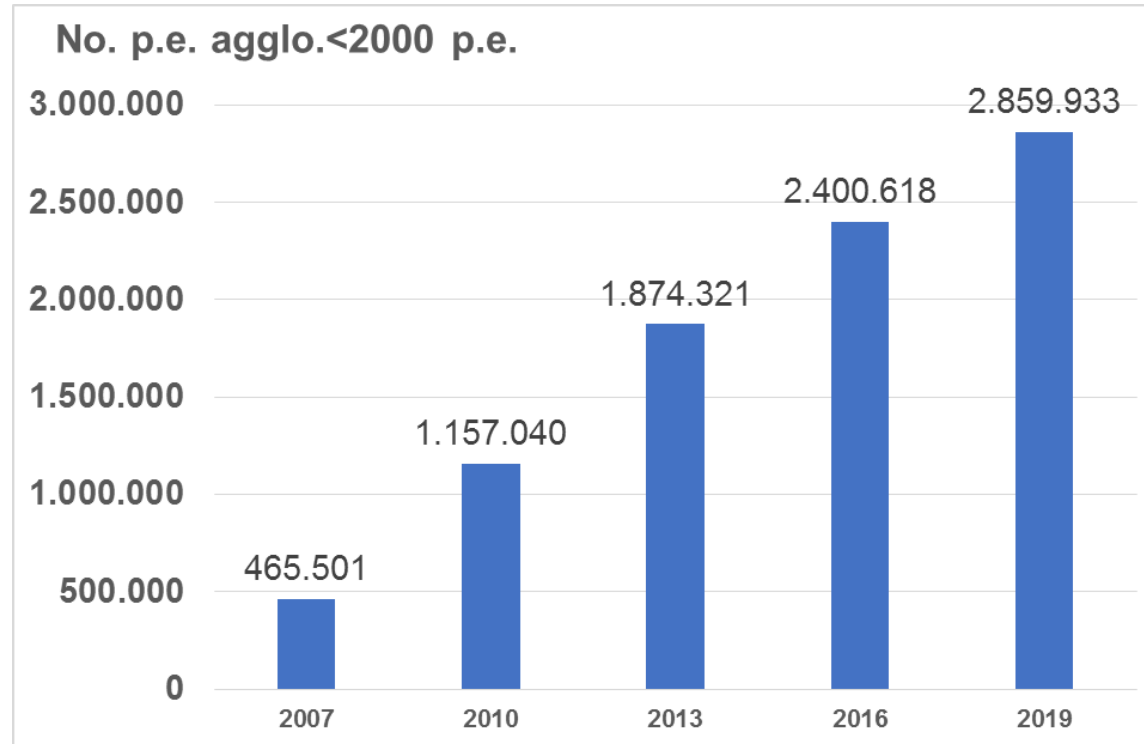
Septic tank with pre-treated effluent filtration system (buried vertical sand filter)



Sequencing Batch Reactor



Agglomerations <2000



- increase number and load of very small agglom.
- 3167 agglom.: 2.86 mil. p.e. – 12 % of total national p.e.

- 336 agglomerations with centralized collection (10 %)
- Centralized treatment systems (5%)
- Collection IAS (12 %), treatment IAS (17%)
- Local individual systems (60 %) → diffuse pollution

Alternative intelligent public system for waste water treatment (1)

- Sewer connections
- Intelligent wastewater collection basins
- Means of emptying and transport
- Technological basins for taking over domestic wastewater
- Wastewater treatment plants

Alternative intelligent public system for waste water treatment (2)

- Property of the local community
- Operated by the community or by a regional operator
- All the assets build on the public domain from the public money
- Many houses connected to the basin
- Operation supported by the users and local government
- Introduce equity

Financial support for water supply and sewerage

Law 215/2018 amending and supplementing Law 241/2006

- granting monthly aid from the local budget for families and single people who have an average monthly net income below the minimum gross wage in the country
- meaning the equivalent value of the water supply and sewerage service, within the limit of a water consumption, respectively of a quantity of wastewater discharged to the sewerage network of 75 l / person / day.

Way forward for rural wastewater treatment in Romania

- Continue to implement regional projects for urban waste water or agglomerations with more than 2000 i.e.
- Prioritization of the projects based on environmental impact and effectiveness
- Provide financial support for the UWWT in the rural areas
- Encourage innovative and cost efficient solutions for the agglomerations with less than 2000 i.e.
- Change of legislation in order to stimulate connection to the sewerage in rural area.



**Thank you for
your attention!**