FACTORS AND CHALLENGES OF REGIONALIZATION IN THE WATER AND WASTEWATER SECTOR

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Abstract*. This paper investigates some general issues related to the opportunity of regionalization, involving the aggregation of several towns for the provision of drinking water and wastewater services, as well as some particular features and challenges of the process in Romania. The main driver for the aggregation/regionalization of utilities is usually the potential to realize economies of scale by providing services to a larger customer base and at a lower cost, also increasing the size and efficiency of new investments by sharing infrastructure projects and accessing international funding.*

Key words: *Regionalization, aggregation, water supply and wastewater services*

JEL Classification*: L95, L25, H54*

1. Factors for the aggregation and regionalization of water supply and wastewater services

A regional public water supply and wastewater utility represents the entire technological, operational and managerial system resulted from the combination of two or more local drinking water supply and wastewater systems. The main objective in creating a regional drinking water and wastewater system operator is to optimize the performance of the operations and quality of supplied services, by using joint resources and facilities.

Therefore, the process of regionalization consists in concentrating and integrating the services rendered by a group of administrative-territorial units. The new regional unit covers a certain geographical area delineated by a hydrographical basin and/or administrative boundaries. It is also a strategic guideline that the regional operation of water supply and wastewater services should be performed in an area covering at least

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100,000 population equivalents and as much urban agglomerations in a county or hydrographical basin as possible.

For the purpose of regionalization, the aggregation may be defined as the grouping of several municipalities into a single administrative structure for the regional provision of a particular service.

Generally, these aggregated structures vary along three dimensions:

1. *the scale*: Aggregated structures can group two neighboring municipalities, or several municipalities in a single region or across a broader territory;
2. *the scope*: Aggregated structures can provide a single service (for example, bulk water supply) or all services, from raw water abstraction to sewerage treatment;
3. *the process*: Municipalities may form aggregated structures voluntarily based on mutual interests; alternatively, a higher level of government, driven by the overall public interest, may impose or stimulate the aggregation process.

The aggregation/regionalization of water utilities does not take place very often since it has a relatively high risk of failure when political will is lacking, the potential benefits are not clearly understood, or the regionalization process is perceived as too complex.

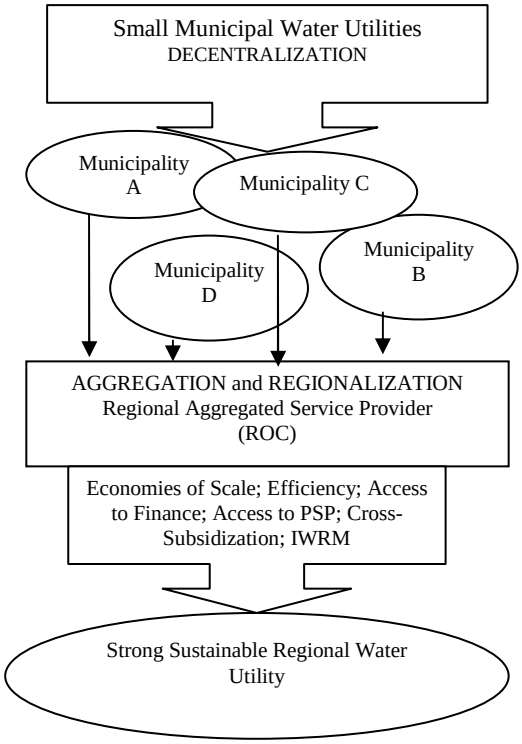
Water systems reforms such as aggregation and regionalization are usually considered when there are perceived inefficiencies in the management of water supply and sanitation (WSS) services, either because service providers are too small to provide an efficient service and/or since former decentralization of public services has led to a very fragmented water sector.

The main factors driving the consideration of aggregation (regionalization) and thus increasing the water utility's size include:

- Increased efficiency through economies of scale
- Access to water resources and integrated water resources management
- Broader former decentralization processes
- Enhanced professional capacity in larger scale of operation
- Access to finance or/and to private sector participation
- Cost sharing between higher- and lower-cost service areas.

These main factors driving the aggregation/regionalization process of reform of drinking water and wastewater services (as represented in Figure 1) may be considered also potential benefits, as we shall focus more in detail below.

Figure 1 - The process of aggregation and regionalization of water utilities



a) Increasing efficiency through economies of scale

Usually the main factor driving the aggregation/regionalization of utilities is the need to improve efficiency of service provision, since small-town water services are often inefficient because they are too small to access certain services or cannot realize the full benefit of the infrastructure. The major motivator is therefore to generate economies of scale to share total production costs over a larger demand base and reduce the unit costs of production.

From the point of view of operating water services, it would therefore be important to identify the “optimal size” of service provision. Such an exercise is a difficult one, however, because results depend on the specific circumstances of each water service and many factors can impact on the relative efficiency of different services (employment rules, access to international markets, topographical conditions, water availability etc.). Although there is evidence of economies of scale, it has often been difficult to quantify them precisely or to identify at which point economies of scale start tailing off because of inefficient production size.

There are still some quite recent international studies and research papers aiming to find out whether there is or not a significant link between the size and the efficiency of water utilities. For instance, earlier econometric research (Garcia and Alban, 2001) using data from high-income countries concluded that water providers may operate cost-effectively through a range of sizes, with even small utilities facing economies of scale that can be significant.

A more recent study (Tynan and Kingdom, 2005) has more interesting outcomes since it provides a first look at the link between a provider's size and its unit costs using data from low-, middle-, and high-income countries. This econometric research assesses the economies of scale facing water and sanitation providers, by investigating operating costs as a function of the size of the company, using several different specific indicators (measures) of the size. It shows eventually that water utilities could reduce per-customer operating costs by increasing their scale of operation.

This study showed that a relatively consistent scale factor is around 0.8, which means that a doubling in output would lead to an 80 percent increase in costs. Most important, and in agreement with other studies previously carried out, it showed that evidence of economies of scale (when increasing their size) is much stronger for smaller utilities (serving less than 125,000 people) than for larger ones, for which economies start tailing off.

The main conclusion is that neighboring small water services providers may be able to lower customer costs by merging and operating as one larger regional utility. The Regional Operating Company will therefore gain in profit and be able to sustain further investments and development of water infrastructure, since there are potential reductions in investment costs from a more efficient scale.

b) Access to water resources and/or integrated water resources management

The need to improve access to water resources, because of unequal access to water resources by different localities within a region or country can be a strong driving factor for the regionalization. Alternatively, managing water resources at a higher level than the municipal level may be required because of overall water scarcity or unreliability, which creates the need for large bulk water supply schemes.

The process of aggregation and regionalization may be pursued when the national (or regional) government seeks to implement integrated water resources management, whether to effectively allocate resources, to address environmental considerations, to improve the efficiency of water resources management and/or to implement the Water Framework Directive 2000/60/EC.

Early (since 1974), in England and Wales, high projected-demand growth rates and perceived pollution problems resulted in a central-government-led regionalization and aggregation of more than 200 water supply companies and 1,400 sewerage authorities into 10 Regional Water Authorities (RWAs); they were simultaneously in charge of integrated water resources management and water and wastewater service provision. The new water authorities' coverage areas were determined based on river basin boundaries.

To improve collection, treatment, and disposal of wastewater, aggregated regional wastewater service providers can adopt a more comprehensive and better-suited approach than isolated ones can. However, it is rare and maybe not advisable to create regional water service providers so big, based on river basin boundaries, since the above mentioned very example suggests that water resources management and service provision functions should be better separated (in that case, the RWAs induced classic "poacher and gamekeeper" conflicts, so those functions were later split when private sector participation was introduced in English water services).

c) Broader former decentralization processes and the aggregation

It is a commonly held view that water services should be decentralized to the lowest political level, i.e. the municipal level, to make them more responsive to the needs of the local population. However, experience has shown that a blind application of this principle is unsatisfactory because most small and medium-size towns lack the capacity to provide beyond a very basic level of public services. Increasingly, reports on the water sector reform around the world observe that decentralization in the water sector may not yield all of its expected benefits without stronger governance skills at the local level and that small-town service providers would therefore turn to aggregation to overcome these drawbacks.

Therefore, the aggregation/regionalization of water services may be the proper choice of small towns that have acquired increased powers and responsibilities because of decentralization and choose to aggregate to be able to carry out those responsibilities adequately. For example, in France, responsibility for water and sanitation services belongs to the country's 36,000 municipalities, the majority of which are very small. These responsibilities are beyond what many small municipalities can reasonably provide, and therefore local authorities have increasingly turned to aggregation as a means to effectively provide those services.

d) Enhanced professional capacity in larger scale of operation

The need for sufficient professional and skilled support is one of the most common drivers for aggregation and regionalization of water utilities. Although small municipalities may have sufficient capacity to carry out routine operating and management activities for water services, they often lack capacity for more skilled activities (such as system planning and design, financial management, efficient procurement, advanced maintenance and repairs, water-quality testing, and information technology).

Usually, the lack of sufficient professional staff and skilled operatives stems from the inability of smaller units to generate sufficient revenue to support the type of operation needed to provide efficient and effective water services. By aggregating the services and revenue from a number of smaller towns, a critical mass can be achieved capable of supporting the full range of functions, in the larger operational entity created (Regional Operating Company).

e) Access to finance or/and to private sector participation

Accessing long-term finance can act as a main driver for aggregation/ regionalization. The combination of large investment requirements with relatively low cost-recovery levels is typical in the water sector, so that accessing long-term finance is a crucial element for a sustainable development in this sector.

The provision of long-term finance can be a complex quite risky exercise for financiers (central governments, international donors, or commercial lenders). It is often considered more efficient to provide a larger long-term loan to a single entity than smaller loans to a higher number of entities since thus the single loan is subscribed by several entities who can implicitly guarantee each other in the event of default.

For example, in Hungary (as well as in Romania) large-scale capital investments are needed to meet the European Union (EU) environmental directives, especially for wastewater treatment. In order to encourage the process of implementation, the Hungarian government has determined a minimum size of loans and is giving a bonus for municipalities applying as a group versus individual municipalities.

The aggregation and regionalization may also be considered in the context of introducing private sector participation.

In this respect, aggregating well-performing utilities with less successful entities may be ordered by central governments to prevent “cherry picking” by private operators (that is, the deliberate provision of services only in the most attractive and profitable areas to serve) and to increase investments to areas that otherwise would be undesirable. Regionalization may also involve creating a large entity out of many smaller entities because such small entities would be unable to secure private investment by themselves, since only a larger demand base attracts a private operator.

In some cases, aggregation and regionalization may not be directly linked to the introduction of private sector participation, but they lay the basis for later successful introduction. As mentioned, although it was not the original intention, the creation of regional water authorities based on river basin boundaries in England and Wales in the mid-1970s created an attractive (large enough) demand base for the subsequent privatization of water and sanitation services in 1989.

f) The cost sharing between higher- and lower-cost service areas

Regionalization in the water/wastewater sector gives the potential to share the costs of water services between those areas with higher costs and those with lower costs. Whether cost sharing takes place depends on whether tariffs and service levels are equalized throughout the service area of the aggregated regional entity.

Unfortunately, in some cases, cost sharing (effectively cross-subsidization between low- and high-cost service areas) may be seen as a constraint for the aggregation/ regionalization, because low-cost towns may resist aggregating with other towns that are more expensive to serve.

However, cost sharing has been an explicit driver for the regionalization through aggregation. That was the case in Scotland, for example, where the creation of a single large water service provider was driven by the government's political willingness to cross-subsidize the region of Highlands and Islands (with very dispersed population and expensive to serve) by other lower cost areas.

To conclude, we may say that there are some important benefits of the regionalization and aggregation of water and wastewater services, which may act as driving factors of the process. However, each of these driving factors may also face some specific constraints or perceived disadvantages, as we shall try to summarize in Table 1 below.

Table 1

Potential benefits and constraints of the aggregation/regionalization

Administrative aggregation and regionalization of water service providers	
Potential benefits	*Potential constraints*
Economies of scale in procurement and support functions; economies of scale in designing works for neighboring towns	Existing installations may limit potential for efficiency gains as they cannot be redesigned; resistance from labor against staff reductions
Better and easier access to water resources in water scarce areas	Lack of incentives to share water; sharing of water access would lead to tariff increase for water-rich municipalities
More integrated approach to water resources management	Administrative boundaries are often not aligned with river basin boundaries; conflicts and lack of coordination between water users
Enhanced professional capacity through transfer of management, technical know-how and expertise	Lack of local recognition of a need for support and potentially higher costs from external support; distance between population centers
Access to banking finance and international donors	Higher risk for municipalities due to joint liabilities for the loans
Access to private sector participation; can be combined with economies of scale to dramatically improve efficiency of operations	Participation of the private sector for the provision of utilities may generate popular and political resistance
Cost sharing between high- and low-cost service areas	Resistance of communities with lower costs to subsidize those with higher costs

Increased cooperation between municipalities can lead to cooperation for other public services of projects	Loss of democratic accountability; limited potential for direct comparative competition between service providers
More effective approach to environmental protection and sustainable development in the water sector for the served region	Political will required at central and local levels

***Source**: Own comments and synthesis, mainly based on the references*

2. Expectations and challenges in the regionalization of drinking water and wastewater services in Romania

One major aspect of the Romanian drinking water and wastewater sector policy, which aims at improving sector performance through better management as well as benefiting from economies of scale, is now the regionalization of the drinking water and wastewater services.

The current situation of the water supply and sanitation sector in Romania and at regional levels is critical, as we shall briefly point out below; inadequate water treatment, poor sewerage network and low access to centralized water and wastewater systems are main weaknesses of the environmental sectors. Therefore, only 52% of Romania's population is connected both to water and sewage services and more than 70% of the wastewater is untreated or insufficiently treated and flows directly into natural receivers.

Only about 65% of the population benefit from mains drinking water supply and indoor plumbing. This includes 98% of urban population and 33% of the rural population, quite low ratios in comparison with those in Europe, respectively 96 - 100% of the population connected to public water supply network in urban areas and 87% in rural areas. This situation is mainly due to the long-term under-investments in the water supply and sewage systems.

Water pollution is one of Romania's largest environmental issues, with negative impact on fish breeding, irrigation, and drinking water supplies. Poor water quality arises mainly from poor controls over industrial effluents and discharges and from inadequate wastewater infrastructure.

The water utilities management is often poor due to excessive fragmentation of water systems in small and medium municipalities that have limited financial and institutional capacity. Therefore, important strategic developments are needed with a view to increase the efficiency and viability of public services providers and to ensure adequate level of water services delivered to the population within affordable limits.

To sum up, the main current problems in the field of the water sector in Romania may be described as follows:

a) quite low percentage of population connected to centralized drinking water supply and/or to sewerage sanitation;
b) insufficient and/or low quality of drinking water;
c) absence of / insufficient wastewater treatment facilities;
d) water system fragmented in small and medium communities and poor management of water services.

It is embarrassing but true: proper water supply and sanitation is still a development issue in Romania, in 2008, even after acceding in the European Union. The actual development gap of water supply and sewerage utilities not only hinders Romania from fulfilling EU water quality standards but also jeopardizes human and environmental safety in some regions and areas (mostly rural) and therefore inhibits the start up and development of new businesses, capable to plenty use and enhance potential value of local natural and human capital.

The reform and development of the water sector in the next years is governed by the Sectoral Operational Programme Environment (SOP ENV). The overall objective of SOP ENV is to protect and improve the environment and living standards in Romania, focusing in particular on meeting the environmental acquis; since Romania has become an EU member state, it must comply with the EU Directive 98/83/EC on drinking water quality by 2015 and the Directive 91/271/EC on waste water treatment by the end of 2018.

In order to cover a part of the measures required for EU standard compliance, Romania benefits from EU financing, i.e. from the Cohesion Funds, but financing is granted under the fore mentioned SOP Environment programme. The aim of SOP Environment is to reduce the environment infrastructure gap that exists between the European Union and Romania both in terms of quantity and quality. One of the specific objectives is the improvement of quality and access to water and wastewater infrastructure, by providing water supply and wastewater services in line with EU practices and policies, in most urban areas by 2015 and by developing efficient regionalized water and wastewater management structures.

Actually, the accomplishment of these objectives faces many challenges since the status and performance of many municipal water utilities in Romania is quite poor due to:

- Lack of investments for rehabilitation / extension of water / wastewater infrastructure;

- Inappropriate maintenance and operating services;
- High volume of unpaid water caused by network leakages (non-revenue water) and low level of payment collection (collection efficiency) from the consumers;
- Inefficient management of the operating, maintenance and personnel costs;
- Lack of experienced staff for promoting, management and implementation of large-scale investments;
- Unclear role and responsibilities of institutions/authorities involved in management of public utilities;
- Inappropriate institutional framework.

Therefore, the Priority Axis 1 of SOP Environment entitled "Extension and modernization of water and wastewater systems" mainly aims to:

- provide adequate water and sewerage services, at accessible tariffs and adequate drinking water quality, in all urban agglomerations;
- improve the quality of watercourses and the level of sludge management for wastewater treatment plants ;
- create new efficient water management structures.

Table 2 summarizes in several indicators some of the outcomes expected through the implementation of the Priority Axis 1 of SOP Environment in Romania.

Table 2

Outcomes expected by implementing Priority Axis 1

Indicator	Unit	Baseline (2006)	Target (2015)
1. Localities provided with new/rehabilitated water facilities in a regional management system	Number	60	300
2. New/rehabilitated wastewater treatment plants	Number	30	200
3. Population connected to basic water services in a regional system	%	52	70
4. Wastewater treated (of the total wastewater volume)	%	35	60
5. Number of Regional Water Companies (ROC) created	Number	10	35

***Source**: Ministry of Environment and Sustainable Development, SOP ENV, 2007.*

The strategic approach to achieve the above mentioned objectives for the development of the Romanian water services is the process of regionalization, meaning the implementation of an institutional framework within a project area, suitable to combine the water supply and wastewater services related to the development areas in that region, within a common operating process.

The regionalization is a key element in improving the quality and cost efficiency of local water infrastructure and services, in order to fulfil environmental targets, but also to assure sustainability of investments and operations, of long term water sector development strategy and of regional balanced growth. Regionalization of the water services in Romania is also planned to overcome excessive sector fragmentation and to achieve economies of scale.

The regionalization process consists of concentrating the operation of the services provided to a group of municipalities within a geographical area defined with respect to a river basin and/or to administrative boundaries (municipalities, county). Actually, the regionalization of water services aims to provide that 2,600 localities of more than 2,000 inhabitants meet 2018-performance targets established by the SOP Environment, by concentrating the management of water and wastewater services in around 50 stronger operators, set up and developed by merging the existing local utilities into so called Regional Operating Companies (ROC).

Hence, for the Romanian drinking water and wastewater operators, this regionalization means aggregation of two or more local - usually municipal - operators into one regionally working operator. The respective local councils will therefore no longer have each an operator working solely for their community, but will participate in a regional operating company (ROC) that will serve a number of towns and communities aggregated in an Intercommunal Development Association (IDA).

To this end, individual local authorities will form as common shareholders the Regional Operating Companies (ROC) and set up the so-called Inter-Community Development Associations (IDA) to whom they delegate the exercise of their shareholder rights. The collaborative structure will allow the beneficiary local authorities to control the Regional Operating Company and to better monitor and supervise the implementation of the water infrastructure rehabilitation and modernization works.

The association brings the capacity to the local councils to meet in the form of a legal entity for purposes to fix, on a territorial regrouping scale, their common objectives and priorities. This aggregation of several administrative-territorial units in order to delegate the joint management of their drinking water and wastewater services may also respond to the need of balancing the development level of the administrative-territorial units and to the principle of solidarity and cohesion, as one of European Union’s fundamental values with positive effects on all consumers.

Accessing EU funds for the investment needs will be the main incentive to move from a large number of weak services providers to a limited number of big and strong self-sustainable regional operators, capable of providing better services at affordable

levels of tariffs, which ensure full cost recovery and loan reimbursement for local authorities. In this context, the association of neighboring localities aiming to create regional structures able to attract international funds for their investment needs in the water sector (funds that cannot be attracted individually), is already a trend in Romania.

Actually, the process of regionalization of water services was initiated by Romanian governmental authorities since 2001 and supported largely by some pre-accession programmes (PHARE, ISPA), in order to assist the local authorities in strengthening their local capacity to control effectively their activities and to implement integrated multi-annual capital investment, on purpose to eventually improve the standards of municipal water and wastewater services.

The regionalization process in the water sector is currently in different stages: while some areas of the country have completed it, some others are well in progress, in line with pre defined own action plans (the current stage of the regionalization process in Romania, in June 2008 is represented by the map the Appendix). Laws No 51/2006 on community services of public utilities (with subsequent amendments) and 241/2006 on water and sewerage services (with subsequent amendments) represent the legislation on which basis an appropriate contractual framework has to be established.

Creating the efficient, financially viable and autonomous integrated regional service providers able to plan and implement investments in the context of a process of consolidation in the sector, in line with EU policies and practices -may face some additional challenges.

First of all, addressing the commitments to comply with environmental EU standards, on a background of serious under-investments and deficient services in the water sector, involves high-level investment needs all over the country. The estimated investment needs amount to about 19 billion Euro up to 2018, out of which 10 billion Euro up to 2013. Since many of the transition periods for the EU directives are agreed up to 2013, the next 5 years will face highest investment pressure for the IDA and ROC, for a rapid and sustainable development of the drinking water and wastewater services at regional level in Romania.

Since the European funding under the SOP Environment for the water sector is limited to only about 3 billion Euro, the co-financing is another key challenge and all the arrangements must be made before project application is submitted for approval. Despite stronger local autonomy, municipalities have limited budgetary resources and their associations will need to jointly subscribe loans from international and commercial banks willing to support the co-financing of projects.

A mechanism to ensure co-financing for the Structural and Cohesion Funds should be available in order to support the programme co-financing. In this respect, the Ministry of Economy and Finance has decided that the greatest share of co-financing will be supported from the state budget (up to 13% of the financing gap, as compared to 2-5% of the financing gap supported by the local authorities), and a pre-financing strategy be proposed in order to support beneficiaries to start quickly the projects.

Besides, as former experience in the sector shows, there is a need to hurry up the process of investment implementing, and procedures may be clumsy during the ”learning curve” for the new established regional operators. A good procurement strategy and an experienced managerial team will be required; nevertheless, one of the advantages of the aggregation and regionalization of water utilities is the potential to externalize some of the procedures, by involving some PSP (Private Sector Participation) in the implementation and future co-financing of the water infrastructure projects.

Defining and assuming a clear role of responsibility in the management and implementation of the projects is a most important challenge. A too centralized system for the management and implementation of pre-accession programmes created many times bottlenecks in the decision process, causing major delays in project implementation and low absorption of funds. Therefore, the responsibility of public procurement resides now at beneficiary level, so they should become now much more responsible and interested in their own projects. The IDA and the delegated ROCs must therefore approve, develop and implement a Master Plan for the integrated long-term development of drinking water/wastewater systems in their defined area.

Taking into account that the Regional Operating Companies will be contracted by direct award, this newly established legal framework has to prove that 'in-house' requirements established by case law of the European Court of Justice applies. This means that the association of municipalities (IDA), which is a contracting authority, controls the ROC concerned in the same way as the municipalities control their own departments, and that the ROC carries out the essential part of its activities together with the controlling IDA, while being entirely in public property.

Another challenge is related to the adoption of unique water service tariffs, in the medium term, as required by the EU directives and thus allowing for the benefits of the regionalization in the water sector (such as economies of scale, cross-subsidization etc., as described in the first part of this paper). Therefore, to assure long-term sustainability of the regionalized structure, the IDA together with the ROC will have to arrange the transition of tariff systems differentiated by the associated municipalities to an equalized unique tariff system.

Enhancing the professional capacity, attracting and motivating trained professionals and efficient transfer of know-how are challenges for the well functioning and development of the regional operators, as potential beneficiaries in the water sector that represents more than 60% of the estimated SOP Environment interventions in Romania. Therefore, technical assistance is required, not only to improve the institutional capacity of the regional beneficiaries, but also to ensure better familiarization with EU acquis requirements and principles.

Addressing the urgent needs for the wastewater treatment in almost all the towns and counties of Romania is a key challenge for the regionalized water services, since this issue has been neglected for too long and wastewater treatment requires competent and committed staff. Usually, operation of wastewater plants tended to be poor because wastewater treatment was the easiest, least visible element to be cut by the small, inefficient water utilities, when recurrent costs exceeded their revenues.

The regionalization of the water services in Romania is still ongoing and should be completed only by the end of 2009. As a result, 22 regional companies are already in place, other 15 are nearing completion of institutional set up and other 6 are in different stages of development (see the map in the Appendix).

As stated, accessing EU funds for water sector investments represents a key element to move from the large number of weak services providers to a limited number of large-scale and strong operators, capable of providing sustainable services at affordable levels of tariffs, which will ensure full cost recovery and further water systems development. However, only after a few years of functioning of these large-scale regional water and wastewater system operators we shall be able to evaluate, using comparable data and performance indicators, whether the expected efficiency gains and economies of scale and scope have been got through the aggregation and regionalization.

Despite many challenges and constraints, *the main benefits in operating water and wastewater services at regional level* should be at least one or more of the following:

1. Improvement of service quality;
2. Achievement of scale economies affecting the efficient operation of some cost categories;
3. Integrated systems and more professional management are expected to result in time in reduction of water loss, promotion of resource preservation, optimal investment and protection of water sources;
4. Strengthening of the capacity to prepare and implement investment projects as well as of the capacity to negotiate financing;

5. Operation management by modern and efficient management instruments and reduction of political involvement in the course of business.

The regional approach used for promoting integrated water and wastewater systems in Romania, aims to maximize cost-efficiency gains from scale economies in order to optimize the overall investment costs and the operational costs induced by such investments.

The core objective of the regionalization is actually to promote greater efficiency and higher quality in the provision of local public water services, through financially sustainable investment and independent, well-managed operations. At the same time, the process should also act as a factor of higher and effective regional economic growth and sustainable social development.

Bibliography

Baretti, A., Kingdom W., Van Gineken M., "Characteristics of Well Performing Public Utilities", *Water Supply and Sanitation Working Notes*, No.9, 2006, WB.

Caplan K., Mugabi J., Leda Scott, "Assessing Partnership Performance: Understanding the Drivers for Success", Building Partnerships for Development, 2007.

Ehrhardt D., Grovin E., Halpern J., O'Connor S., "Economic Regulation of Urban Water and Sanitation Services: Some Practical Lessons", *Water Sector Board Discussion Paper Series*, No.9, 2007, WB.

Frone Simona, Frone D.F., "Trends in the optimal size for water utilities and regionalization", paper presented at the International Symposium "Social Development and Economic Performance", Satu Mare, June 2008.

Garcia S., Alban T., "The Structure of Municipal Water Supply Costs: Application to a Panel of French Local Communities", *Journal of Productivity Analysis* 16 (1), 2001.

Kingdom W., "Models of aggregation for water and sanitation provision", *Water Supply and Sanitation Working Notes*, No.1, 2005, WB.

MMDD (Ministerul Mediului şi Dezvoltării Durabile), "Programul Operaţional Sectorial Mediu 2007-2013", versiunea finală 2007.

MMDD (Ministerul Mediului şi Dezvoltării Durabile), AM (Autoritatea de management) pentru POS Mediu, "Sectorul de apă: prioritatea nr. 1 a POS Mediu", comunicare la EXPOAPA 2008.

Platon V.(coord.), Constantinescu Andreea, Jurist Sorina, “Protecţia mediului şi politici de dezvoltare regională; problematica gestiunii deşeurilor la nivel regional”, Studiu I.E.N, 2007.

Tynan N., Kingdom B., “Optimal Size for Utilities? Returns to Scale in Water: Evidence from Benchmarking”, *Public Policy for the Private Sector*, 2005, WB.

UNDP, “Beyond scarcity: power, poverty and the global water crisis”, *Human Development Report 2006.*

Uniunea Europeană, Guvernul României, “Ghid privind regionalizarea operării serviciilor de apă şi apă uzată”, 2008.

Wright A.M., “Toward a Strategic Sanitation Approach”, UNDP-World Bank Water and Sanitation Program, 1997.

http://ec.europa.eu/environment; http://fin-apa.ablog.ro.

http://www.inforegio.ro; http://web.worldbank.org/watsan.

http://esa.un.org; http://www.mmediu.ro; http://www.ara.ro.

Cadrul Institutional / Institutional set-up