

CLUJ WATER SUPPLY BETWEEN PAST AND FUTURE

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ABSTRACT – Cluj water supply between past and future. 1892: By Cluj Cityhall decision, Water and Sewage Plants are established, taking over the patrimony available at the date:

- "Barnutiului" Garden source, about 1,700 cubic meters/day
- One 140 cubic meter storage tank within "Carolina" Hospital
- 4.4 km of water network, 0.13 km of sewage network
- The city has some 35,000 inhabitants

Such is the short description in some monographies the beginning of the institutionalized water supply in the town of Cluj.

Today? Exactly how since 1995 the history of Cluj Napoca municipality could not be described outside the development of the county system, in the same way, since 2006 the development of the county water and sewage infrastructure could no longer be separated from the Cluj-Salaj regional one and in the same way the future could not be imagined outside the development of the Somes Tisa basin.

The facts of this development? From 1887 to 2010 and looking forward toward 2018, from 4.4 km of water network at the end of the 18th century to a regional system measuring 1060 km with 3 water treatment plants in two counties, from 0.13 km of sewage to 730 km with 13 waste water treatment plants. From 35,000 inhabitants to a population of three quarters of million people.

Between these facts are almost 120 years, major modernization and expansion investment programs amounting to more than 334 Million Euro's (within the last 10 years).

This is the essence of Cluj water supply history in amazing but dry figures which cannot depict the people, nor their thoughts, problems efforts, plans to achieve the creation of a modern utility infrastructure worthy of an european community of the XXIst century.

First proofs of the existance of public water supply and sewage on the territory of Napoca "municipium", later "colonia", the Samus (today Somes) river based capital of the roman province of Dacia Porolissensis, come from archaeological artifacts from the 118 - 119 A.D. period.

A few springs on the northern slope of Feleacul hill were tapped those days the water being transported through ceramic tubes to some fountains in the ancient Napoca. Tracks of those works are visible even today in the area of the University Clinics. The artifacts seem to indicate also elements of sewage works in the area of St. Michael church, Museum Square and the former Biazini Hotel (Avram Iancu street).

Centuries later, in 1881, Union Bank of Vienna offered it's technical and financial assistance to build a water supply and sewage system for Cluj (spool 168,

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position 133 Cluj City hall archive). Archives from 1887 confirm the commissioning of the first water source (west to the current stadium) built with joint city hall and "Francisc Iosif" Local University funds and which supplied the University, Carolina Hospital (today's Museum Square) as well as a few buildings downtown through a 1677 m long cast iron pipe. The town's population at that time was of some 32,000 inhabitants.



Fig. 1. The first water source (partial drawing),

In 1889, Cluj Cityhall organized a contest in order to develop a long term project for the city water supply and sewage network. In November 8th 1892, Cluj town Water and Sewage Plants were established - the first institutionalized public service of it's kind.

In 1898, Floresti underground water source is commissioned - a series of wells supplied from the ground water on the right bank of Somesul Mic river, some 3 km upstream downtown, with a water flow of some 600 – 800 cubic meters/day. In 1900, the town had some 42 km of water pipes, two water storage tanks with an



added capacity of 2,700 cubic meters and some 24.5 km of sewage network for a population of some 70,000 inhabitants. By 1940 there were already some 160 km of water pipes, 68 km of sewage pipes, storage tanks with a capacity of 6,000 m³ and those some 114.000 inhabitants were receiving an daily 16 – 17 th. m³ of water. At the end of 1968 the water shortage started a decade before aggravated due to population increase (185,000 inhabitants) and industrial development. Based on the ascertainment that Floresti underground source could no longer meet the future water demand, a study is developed for an additional 20 years perspective and in May 14th 1974 the new Gilau surface source is commissioned (with water treatment plant), at first with a flow of 60,000 m³/day, later 170,000 m³/day. In 1975 the first Waste water treatment plant is commissioned also, with an initial flow of 1,200 l/sec.

During 1990–1995 the Company is servicing Cluj-Napoca municipality only with an infrastructure comprising 412 km of water networks and 310 km of sewage networks. In 1995 starts the county expansion stage, 22 rural localities located mainly along the route Gilau–Cluj-Napoca–Gherla being taken over in the system serviced by te company and in 2000 Somesul Cald reservoir is adopted also as complementary raw water source, due to the gradual silting up of Gilau reservoir.

Between 1997 and 2006, the major European co-funded infrastructure modernization and expansion investment programs are started whose overall value is today in excess of 334.35 Million Euro's. Also in this period start to emerge and to take shape the national and local strategies regarding the future of water supply services in terms of sustainable development and hydrographic basin based integrated management of the water resources.

Table 1. The history of infrastructure development – population rapport

Year	Water network (km)	Sewage network (km)	Town's population (nr.inhabitants)
1887	2,2	0,6	32.000
1892	4	0,6	35.000
1900	43,2	21,9	48.700
1918	76,4	45,46	61.000
1945	169	71	110.000
1990	412	310	330.000
2009	951,14	603,7	645.000

At July 1st 2006, SOMES Water becomes the first and largest regional company in the country to cross the administrative borders of it's own county, taking over further seven municipalities and (initially) 53 rural localities in Cluj and Salaj Counties, the inceptive core of a presumptive sole operator in the Somes-Tisa hydrographic basin. A total of some 610.000 beneficiaries in the two counties are serviced through a system comprising over 850 km of water network and 604 km of sewage network, three WTP's (water treatment plants), six chlorination facilities for ground sources and 13 WWTP's (waste water treatment plants).

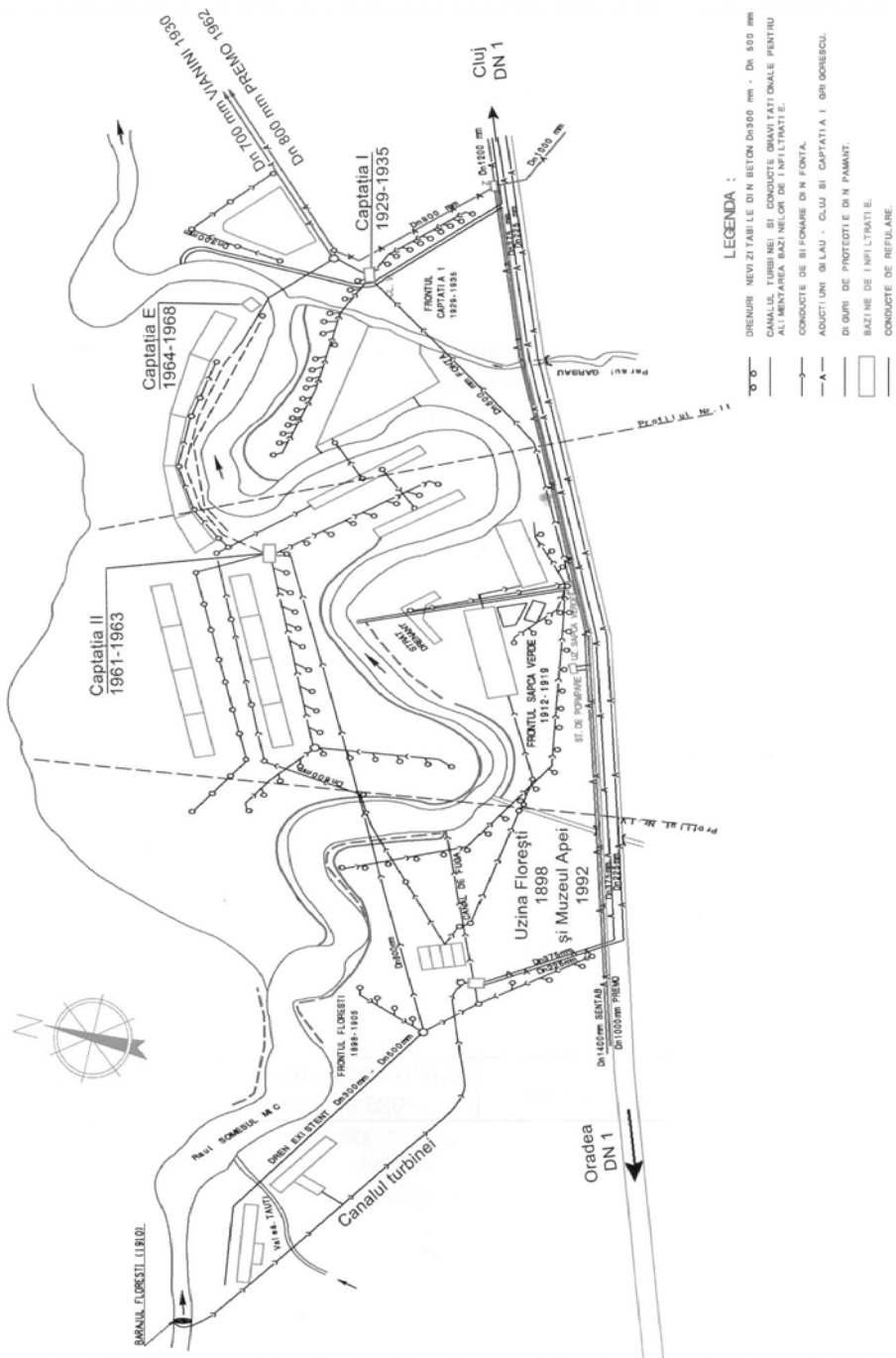


Fig. 2. Florești underground source 1898-1968



The system at that time was characterized by major discrepancies between the initial area of service and the one newly taken over, in terms of the condition of the infrastructure, and the quality of the water and of the environment. For instance three of the cities in Salaj County newly taken over were lacking any kind of significant infrastructure modernization investments since the 70's, had major network losses and daily water supply shedule.

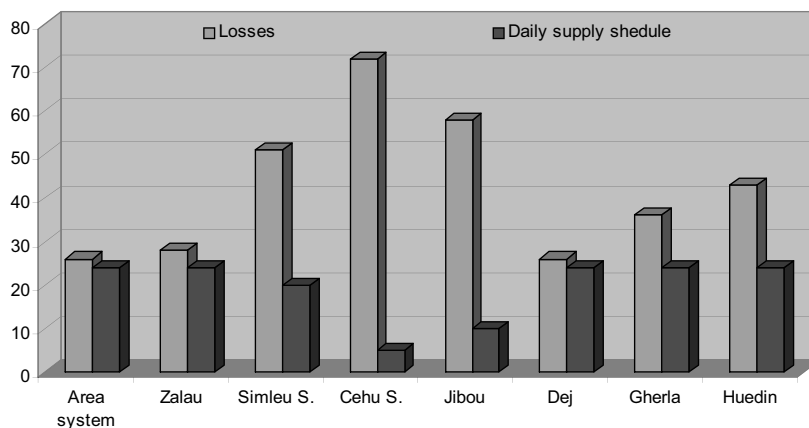


Fig. 3. Situation of water loss (%) and daily supply shedule in the newly taken over towns in July2006

In the period following the restructuring into regional operator, the Company develops it's Master Plan – the 2008–2026 Long Term Investment Coordinating Strategy whose objective is to asses the necessary investments in order to modernize the entire area serviced in view of the compliance with the provisions of Chapter 22 – Environment from the accession treaty.

The Master Plan, in accordance with the national strategy in the field, is emphasizing some major directions:

- Increased access of population to EU compliant water services in most urban areas by 2015 and by 2018 in the rural areas;
- Providing water and waste water services with acceptable tariffs for all urban localities with an equivalent population of more than 10,000;
- Providing good quality drinking water for all urban localities;
- Improvement of the water quality;
- Improvement of waste water sludge treatment;

In parallel took place the further increase of the area serviced by taking over of new rural localities establishing their own water networks from local or centralized sources with various pre or post accession fundings. At December 31st 2009, the regional area comprised eight cities and towns and 81 with some 645,000 users serviced through 951.14 km of water network and 603.7 km sewage network.



POSSIBLE ACCESS TO A DRINKING WATER SYSTEM

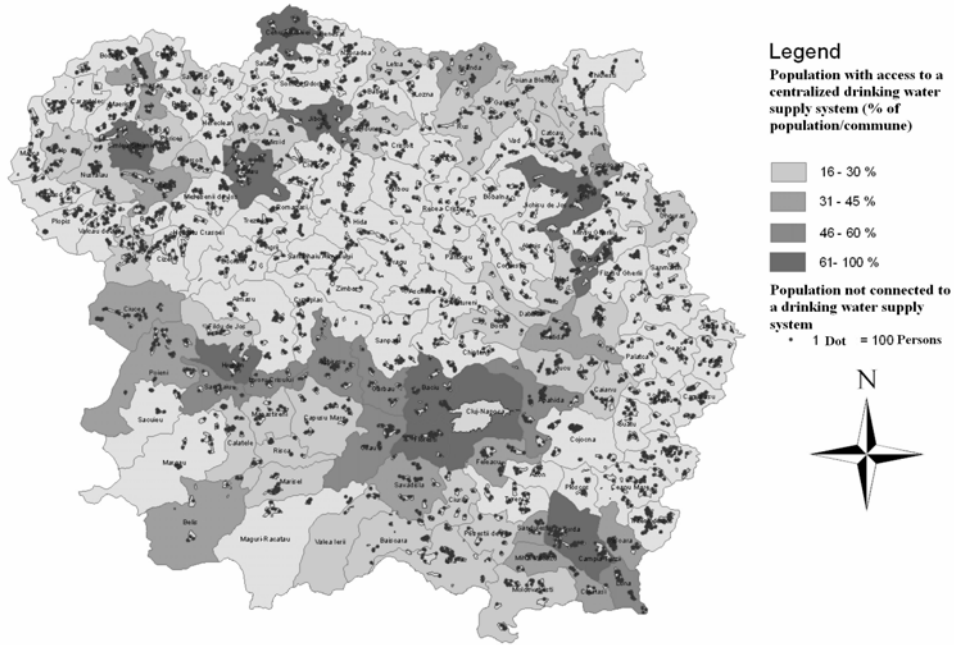


Fig. 4. The regional strategy for water services

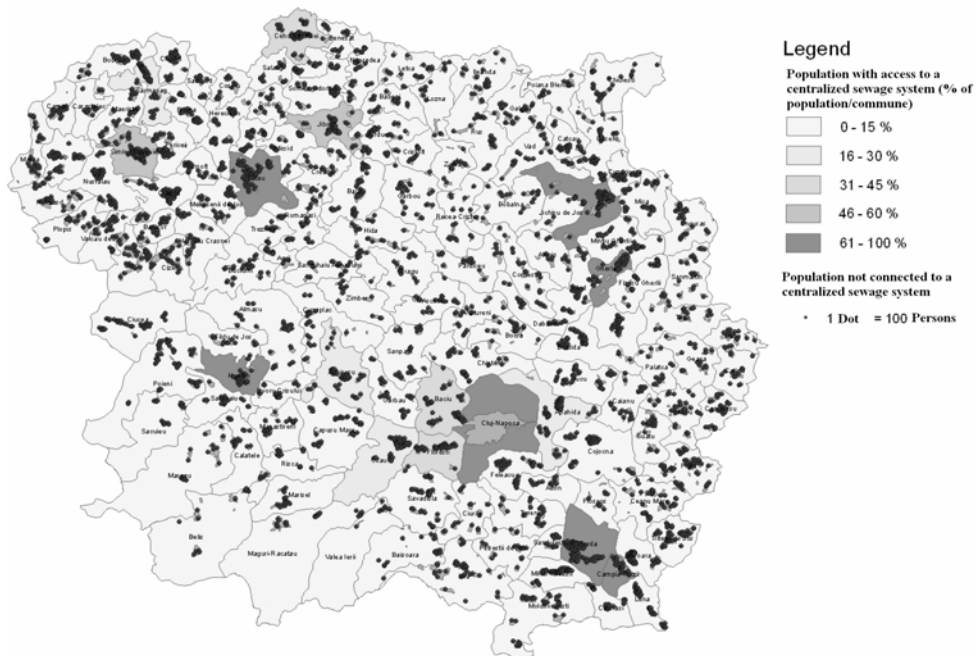


Fig. 5. The regional strategy for sewage services

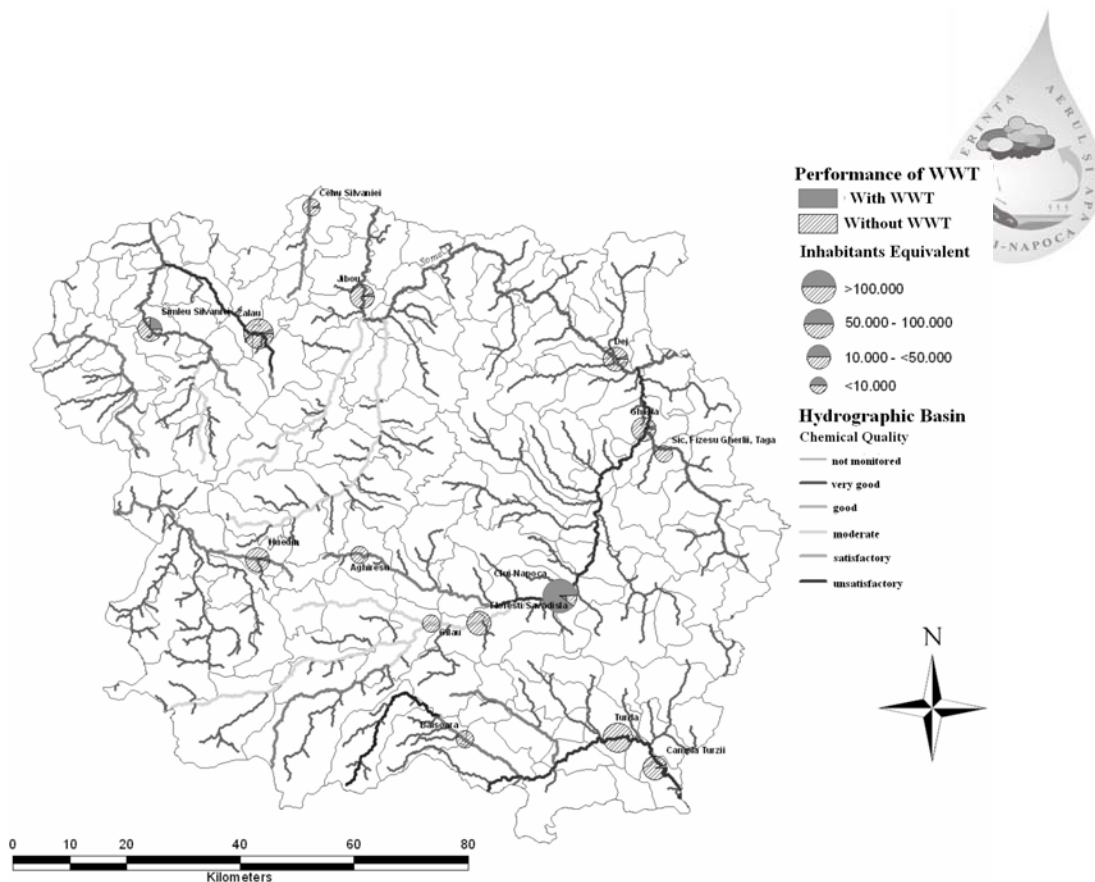


Fig. 6. The regional strategy for waste water treatment performance

SOMES Water is today best positioned, both from the economic and institutional standpoint as well as from the perspective of the availability of good quality and enough quantity natural water resources, to become the future sole operator for the Somes-Tisa hydrographic basin.

This would mean a service area on five counties in north-western Romania (Cluj, Salaj, Satu Mare, Bistrita-Nasaud and Maramures), with an overall surface of 26,614 square km, a population of some 2.14 Million inhabitants and an estimated number of users of more than 1.2 Million persons.

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