

Planning, the weapon of the Autonomous Service

With the creation of the National Metallurgical Company (CSN), the municipality of Volta Redonda became the cradle of Brazilian metallurgy. Located on the axis Rio de Janeiro, Sao Paulo, with the privatisation of CSN in 1993, Volta Redonda faced economic recession and started paving its own path by incorporating new administration practices to satisfy the demand for efficient public services. One of the best examples of this modern administration is the Water and Sewage Autonomous Service (SAAE), which adopted a broad programme to combat losses and restructuring of incomes to reverse the 67% reduction of the Autonomous Service's revenues.

The privatisation of the National Metallurgical Company (CSN) in 1993, by Itamar Franco's government, was a factor that contributed to economic recession in Volta Redonda.

Since its creation, the municipality's trajectory was marked by the presence of CSN.

Under private administration, CSN, which used to be the biggest employer in Volta Redonda, went on a dismissal spree, which caused a huge disturbance in the municipality's economy.

The economic downturn had a direct impact on the incomes of the municipal administration. CSN was creating incomes, tariff revenues and eventually consumers of public services.

To illustrate the impact, between 1998 and 2005, the revenue loss of the Water and Sewage Autonomous Service of Volta Redonda (SAAE) was 67% of the income from CSN, its main client.

The great challenge for SAAE was to overcome this loss, since, besides the sharp fall in incomes from its main consumer, the resulting unemployment was reflected in the inability of the consumers to repay their debts.

The connection between SAAE and CSN has remained since the creation of the Autonomous Municipal Service in December 1967. Eighty percent of the water supplied for public consumption was treated at the treatment plant of CSN. The remaining 20% was treated by SAAE itself at the treatment plant of Santa Rita. In 1979, the situation changed. This was when the Water Treatment Plant of the Belomonte district started operating with an initial treatment capacity of 390 litres per second, which was subsequently increased to 2000 litres per second in 2001.

Two years later, with the implementation of the geoprocessing system, SAAE started monitoring the users register and achieved better control over water and sewage networks. By updating the register, there was an increase in the number of connections monitored by SAAE, from 65,896 in 1990 to 104,776 in 2005.

Volta Redonda, Rio de Janeiro

Population estimate, 2005: 255,695 / Index of water consumption monitoring: 100% / Number of water connections: 63,564 / Number of sewage connections: 63,446 / Average duration of water supply disruptions: 2 hours per month / Coliforms outside the limit: not detected / Water supply network length: 861,000m / Sewage collection network length: 695,000m / Total cost of the service per m³ invoiced: R\$ 0.81 / Average tariff charged: R\$ 0.66 per m³ / Index of invoice revenue loss: 32.2% / Productivity Index: 3.6 workers per thousand water and sewer connections / Gross annual operational revenue (direct and indirect): R\$ 18,725,197.00 / Gross annual expenses with the service: R\$ 23,123,738.00 / Annual utilisation cost: R\$ 21,850,641.00 /

Source: SNIS 2003, IBGE 2000

In 1986, Volta Redonda was the first municipality of South Rio de Janeiro State to treat sanitary sewage following the inauguration of the Santa Cruz Sewage Treatment Plant. Almost twenty years later, six treatment plants are operating, treating 15% of the municipality's sanitary sewage.

The Industrial Federation of Rio de Janeiro (FIRJAN) identified SAAE as the best public service provider in the area.

Given the new economic circumstances, SAAE is aiming to achieve perfect service quality and the approval of institutions and consumers. In 2005, the Autonomous Service received 200 technical visits from other sanitation companies and municipalities interested in adopting SAAE's model for service assistance, which is also a recipient of the ISO 14000 and ISO 9000 certifications.

Sustainability of sanitation services

The executive director of SAAE Volta Redonda, Paulo Cezar de Souza, affirms that "SAAE has aimed to conduct physio-economical and financial diagnostics to identify threats and opportunities arising from today's conditions of financial and environmental responsibility, social commitment and revenues reduction. Under these circumstances, actions involving all administrative and technical personnel were developed in order to rapidly identify and solve problems. These actions contributed to the development of important projects that are currently being implemented".

Despite the change in the financial situation of the municipality, SAAE is financially sustainable. Tariffs guarantee most of the investments. Around 15% of the revenues, on average R\$ 3 million per year, are reinvested in the Autonomous Service.

There are many initiatives to recover and increase revenues. The campaign "Be OK with Water", trained employees to carry out visits to big consumers, seeking to negotiate debts and divide them up into 72 instalments. SAAE also defined the parameters of tariff collection for sewage service by users possessing artisan wells for water supply.

SAAE has been modernising its water supply monitoring system in neighbourhoods equipped with boosters and elevation stations.

A computerisation programme for boosters, elevated stations and reservoirs was implemented, aiming to collect real time data on flow, pumping and tube pressure, reservoir level, electricity stability and temperature of the system's motors in eight units; thus increasing the population's confidence in the system, while, at the same time, reducing electricity consumption and water overflow in the reservoirs. SAAE invested around R\$ 365,000 in the system.

With the construction of five reservoirs that have a total capacity of 18 million litres, five elevation stations, 13,000 metres of sanitary sewage collection and 53,000 metres of treated water distribution, SAAE guarantees potable water supply to the population for the next 25 years. These works are part of the Four Stations Project, which cost R\$ 15 million and will address the needs of 106,000 inhabitants.

The SAAE programme, Control and Management of Losses, oversaw the definition of six photometer districts, aiming to monitor the pressure and flow in certain areas and collect real time data by using a datalogger.

The R\$ 150,000 investment resulted in a significant savings of water. For example, the potometer district of Santo Agostinho, one of the biggest in the municipality, in conjunction with two potometer stations, saved 16,200 cubic metres of water every month.

The municipality is divided into 14 natural basins

SAAE subdivided the municipality into 14 basins, which are studied individually in an attempt to eliminate all cases of raw sewage release into waterways, and forward it for treatment instead.

The “Clean Water” Programme aims to reduce the organic load thrown into the main waterways of the municipality, thus assisting the decontamination of the Paraiba do Sul River. The Programme cost is estimated at R\$ 56 million.

Volta Redonda is one of the founding municipalities of the Users Association of the Medio Paraiba do Sul Basin. The association was in order to create and implement projects for the improvement and control of environmental conditions and water use in the middle of the Paraiba do Sul River Basin and its sub-basins.

The main focus of the Association is the treatment of sanitary sewage and industrial effluents in coordination with regional city halls and companies.

SAAE has been acting on issues related to the participative management of water resources. SAAE is a permanent member of the Institutional Technical Chamber and a substitute member of the Committee for the Integration of the Hydrographical Basin of Rio Paraiba do Sul (CEIVAP).

This participation secured permission for the construction of two Sewage Treatment Plants whose cost totalled R\$ 1 million. The resources came from the revenues derived from the use of water from the Paraiba do Sul River.

The Autonomous Service is expanding the monitoring of streams and watercourses through the extension of the Water and Effluents Laboratory. Microbiology laboratories were well-equipped, increasing the number of parameters analysed. This way SAAE hopes to obtain certification from Foundation of Environmental Engineering of Rio de Janeiro State (FEEMA) and National Institute of Metrology, Standardization and Industrial Quality (InMetro).

The new laboratories will measure the efficiency of Sewage Treatment Plants and evaluate the water quality in watercourses of the urban and rural areas, and collect important information for the programmes of environmental conservation and life quality improvement.

SAAE signs partnerships for the “Water Network” Programme

SAAE, through the “Water Network” Programme conducts pilot programmes in the streams of Acude, Uniao and Carvalhos, in partnership with AMPAS (Association of the Users of the Paraiba do Sul River Basin), Agenda 21, the Municipal Education Secretary and Environmental Coordination (COORDEMA). The Programme aims to install a permanent work system in order to carry out a socio-environmental diagnostic of streams, decontamination and plant seedlings.

The “Water Network” Programme is an important initiative for achieving water resource sustainability, and thus, a sustainable life concept by using specific information and educational instruments. Furthermore, it promotes continuous education for teachers and members of the community. Apart from recovering spring areas, the objective is to increase the population’s awareness on the programme’s relation to springs and its importance for the preservation of the Paraiba do Sul River.

Sanitation Services for the rural zone

75 people live in the rural areas of Volta Redonda water supply and sewage collection services.

Assistance indexes have resulted in a zero infant mortality rate from water related diseases, according to the Municipal Secretary of Health.

The investments have been accomplished with resources that were basically derived from the Municipal City Hall and from tariffs.

The “other” Volta Redonda (Turnaround) that occurred in the Municipality

The municipality of Volta Redonda, previously a district of Barra Mansa, emerged as a result of the installation of the National Metallurgical Company (CSN).

In the 40s, the district, actually a town of less than 3,000 inhabitants, began to transform with the inauguration of CSN.

At the end of 1941, the first workers arrived in Volta Redonda for the construction of the plant. They were sheltered in huts on hilltops while the residences for the families were constructed.

The residences did not have toilets or bathrooms. Toilets, cold water showers and laundry facilities were public and intended for collective use.

Residential blocks started multiplying in the industrial area, bringing the work place closer to the residences. At the same time as plant construction, the Workers’ Town was created, which was initially planned for 4,000 residences.

Work and living conditions were equally harsh: silence in the residences, a workday of 10 hours, discipline at work and repression and violence by the CSN’s own police were common place at the time. With minimal sanitation and hygiene conditions, the workers had their meals at the stonemasons workshop, served in lunch pails brought by delivery vans known as “amelias” – (from the samba song “*Ai que saudades da Amelia*” (Oh, I miss Amelia), of Mario Lago and Ataulfo Alves).

The residences did not have toilets or bathrooms. Toilets, cold water showers and laundry facilities were public and meant for collective use.

The funds for the installation of the metallurgical plant came from the United States of America in exchange for Brazil’s support given to the allies in the Second World War. Brazil was at war and CSN was considered an industrial unit of military interest, since it was a supplier to the country’s arms industry. The workers were not entitled to vacations, nor could they miss more than eight days of work; otherwise, they would be considered deserters and subject to military law.

The then president of the Republic, Getúlio Vargas, was stressing the difference between ‘soldiers’ and ‘workers’ in his discourses, creating a climate of war and national mobilisation regarding the construction of the plant.

In July 1946, the plant was inaugurated and in May 1948, the production line started operating at full capacity. In 1952, the Pro-Emancipation Civic Centre was created, which organised the movement for the political and administrative autonomy of Volta Redonda. A plebiscite, carried out in June 1954, confirmed the emancipationist inclination.

The municipality of Volta Redonda was created by Law nº 2.185, on July 17, 1954. On October 13, there were elections. And on February 6, 1955, the first municipal government took office.

Only after 1967, CSN started handing over urban tasks, passing to the municipality the legacy of the company, such as streets and squares. That same year, SAAE was inaugurated.

In the workers city, 3,003 houses had been handed over to the workers. The city continued to be administered by CSN and demonstrated better patterns of infrastructure quality, equipment, urban services, residential and environmental conditions. “Another” Volta Redonda was developed under the administration of Municipal City Hall. Only after 1967, CSN started handing over urban tasks, allocating to the municipality the legacy of the company, such as streets and squares. That same year, SAAE was inaugurated.

On January 1, 1968, city hall and CSN signed a handing over agreement of urban services and thus initiated the unification process of the urban space, bringing under the same administration, the Workers’ City and the Old City. The residences belong to CSN company were being sold, completing the integration process of public space of the municipality.

With the collaboration of Celia Martins Pires, Thiago Duarte Soares and Joselanda Monteiro