22nd ICID Congress &
65th IEC
14-20 September 2014
Gwangju, Rep. of Korea

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International Commission on Irrigation and Drainage

Multiple use water service, a way for better livelihood in rural areas

Solidarity between usages for sustainability examples from France

François Brelle

Multiple use water service by Canal de Gignac WUA

The Gignac Canal “ASA” (water user association) was created in 1890 near Montpellier (South France). Its irrigated area is around 3000 ha.

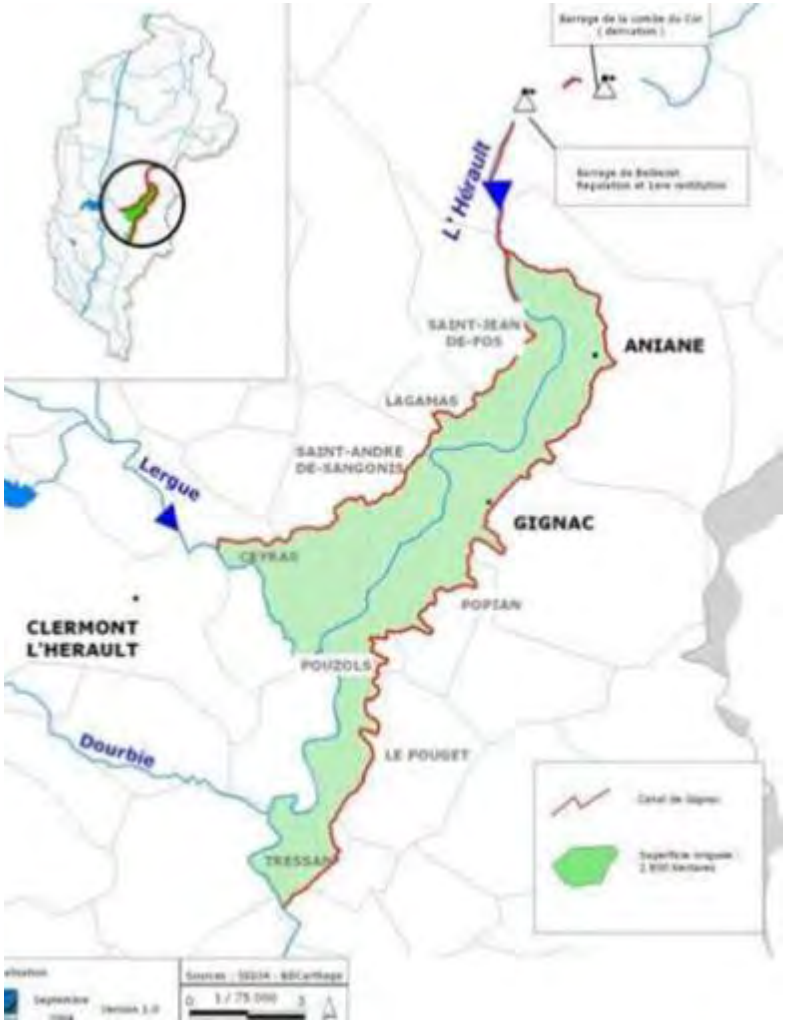
Water usages have noticeably changed over time, especially since the 1980s when cultivated lands started changing into residential areas in the vicinity of the villages.

Meanwhile, environmental regulations and rises in manpower costs have bound the ASA to invest for a higher efficiency of the system.

Multiple use water service by Canal de Gignac WUA

The WUA decided to **diversify the water service**, especially towards the needs of the residential areas, along with an **adaptation of water service pricing**.

The **diversification of the service** has allowed the WUA to reduce volumes withdrawn from the Herault River and thus to **better manage the restrictions by drought times** (2002, 2005, 2006), along with an **increase of WUA's revenue by 50 %**, coming mainly from urban users, who have been associated in the governance.



Multiple use water service by Canal de Gignac WUA

The owner and operator of ancient hydraulic system had to :

- adapt rules and methods to social and economical changes,
- invest for complying with new regulations (mainly environmental) and new water service requirements.

The solution is grounded first on a major statutory reform and its success results of the acceptance by the farmers that others can join them for governing the institution and manage the water resource.

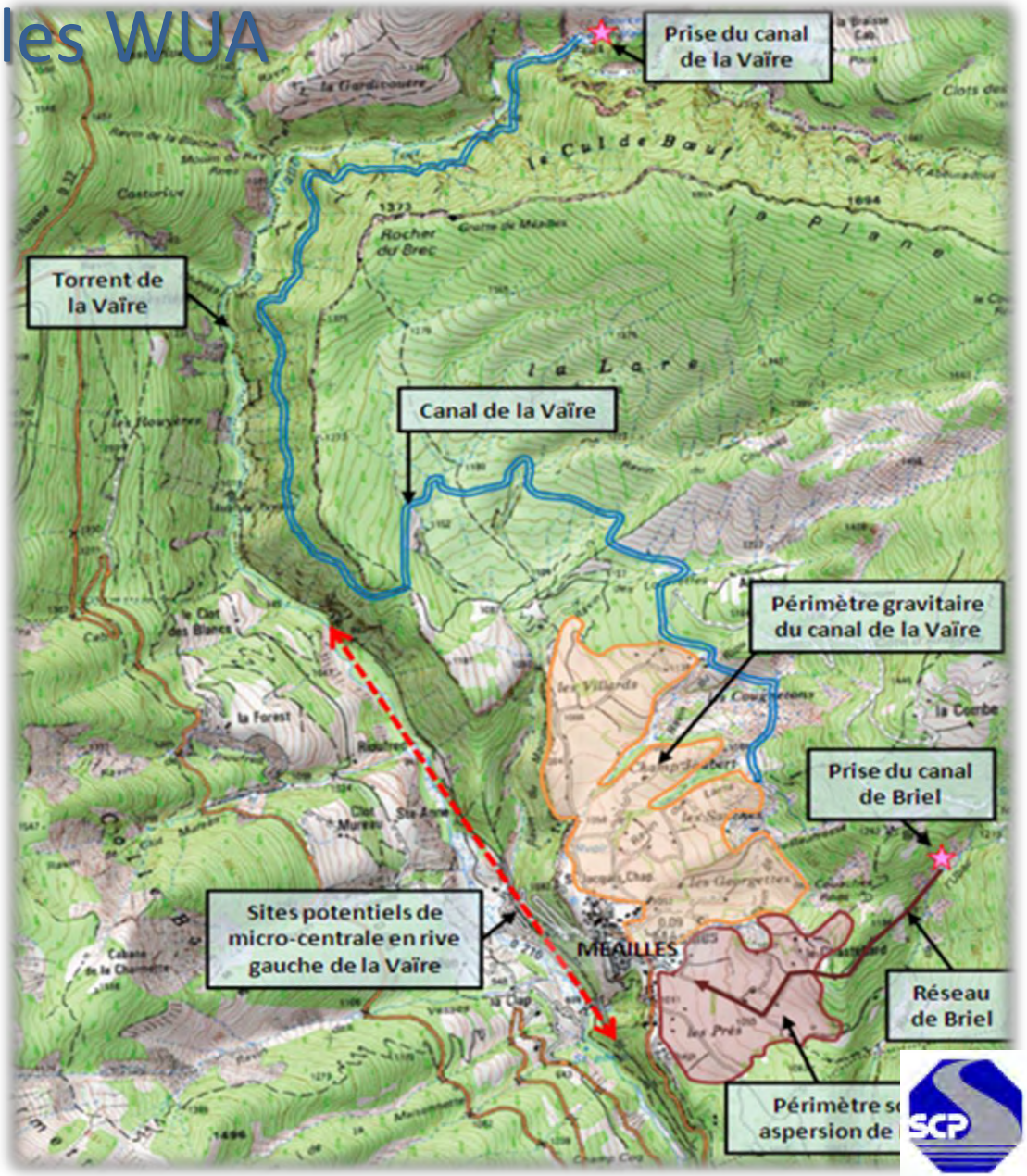
Flow control has been modernized. Changing from canal distribution for low pressure pipelines, along with a new management of water distribution, were also hard challenges.

Hydropower generation for a sustainable Irrigation : The case of the Meailles WUA

The WUA of Meailles, a small mountain village in Southern French Alps, owns an operate a canal for the irrigation of around 140 ha. For this purpose, the WUA has a water right of about 150 l/s.

Hydropower generation for a sustainable Irrigation : The case of the Meailles WUA

Due to the difficult topography and the hard weather conditions in winter due to the high elevation, the WUA encounters difficulties for maintaining the head works, especially the upstream portion of the canal, on the edge of a cliff and thus with no access to vehicle nor any machinery.



Hydropower generation for a sustainable Irrigation : The case of the Meailles AUEA

Expensive hand maintenance is therefore necessary, and volunteers are more and more lacking.

The canal - and thus the WUA - may soon get to a point of no return and perish.

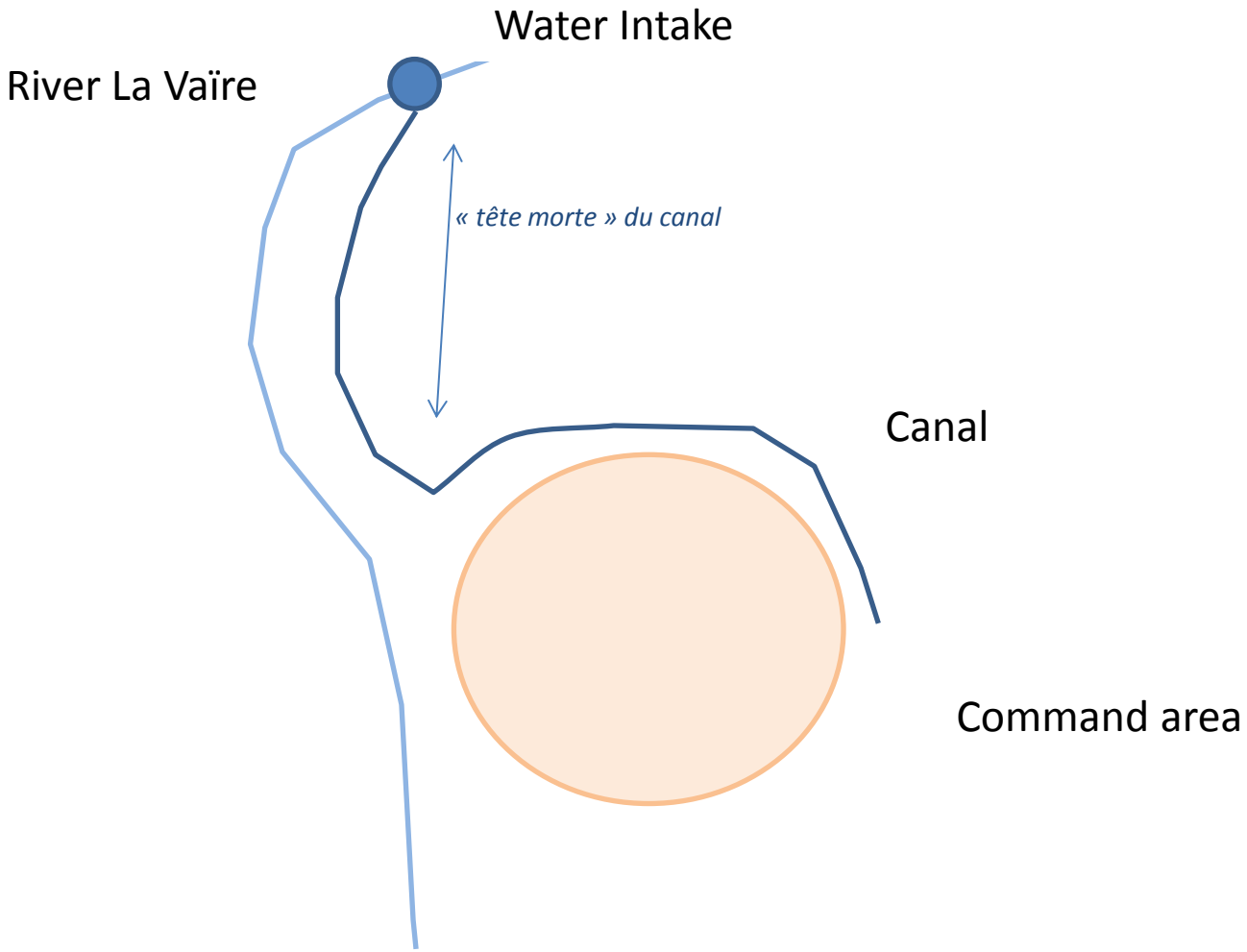
Getting an additional revenue by generating hydropower was thought as early as the 80s. But environmental constraints as well as questions about the water rights prevented the project from progressing.

Hydropower generation for a sustainable Irrigation : The case of the Meailles AUEA

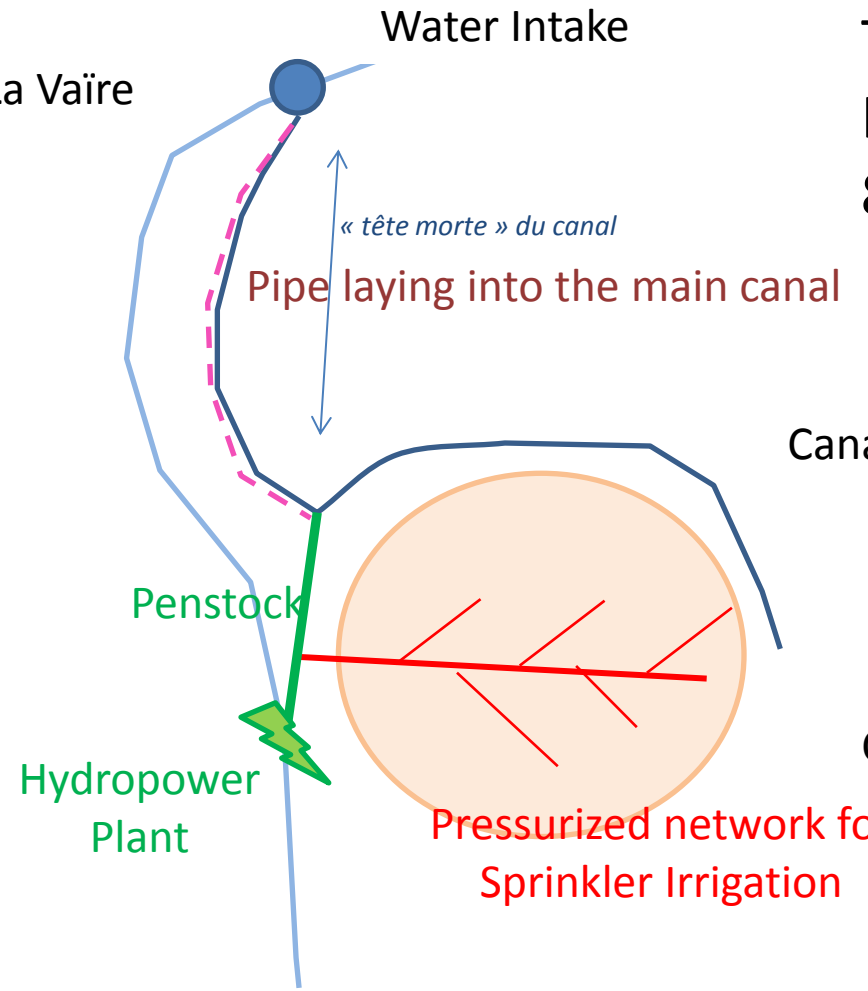
But things have changed, and the project is now acceptable by the Administration, as it shows number of positive impacts :

- Modernize the water intake will allow bringin it up to standards and thus improving the ecological continuity of the river,
- Additional revenue for the WUA will revitalize agriculture and contribute to maintaining the population in the area,
- Pressurization and modernization of the distribution network with conversion to sprinkler irrigation, so as to reduce water abstraction from the river,
- The project will be part of a wider integrated project of territorial land development aiming at improving livelihood in this rural mountain area.

Hydropower generation for a sustainable Irrigation : The case of the Meailles AUEA



Hydropower generation for a sustainable Irrigation : The case of the Meailles AUEA



Total Project 3 Million €
Investment payback within 8 to 9 years

Multiple use water service by Canal de Provence

On the initiative of the French Ministry of Agriculture, the "Société du Canal de Provence" (SCP) was established in 1957 by three local authorities of South-Eastern France.

Multiple use water service by Canal de Provence

SCP is a public company, of which equity capital is shared as follows :

- 82% local authorities in the Provence-Alpes-Côte d'Azur Region,
- 16 % banks and development agencies,
- 2% by agricultural boards within the Region.

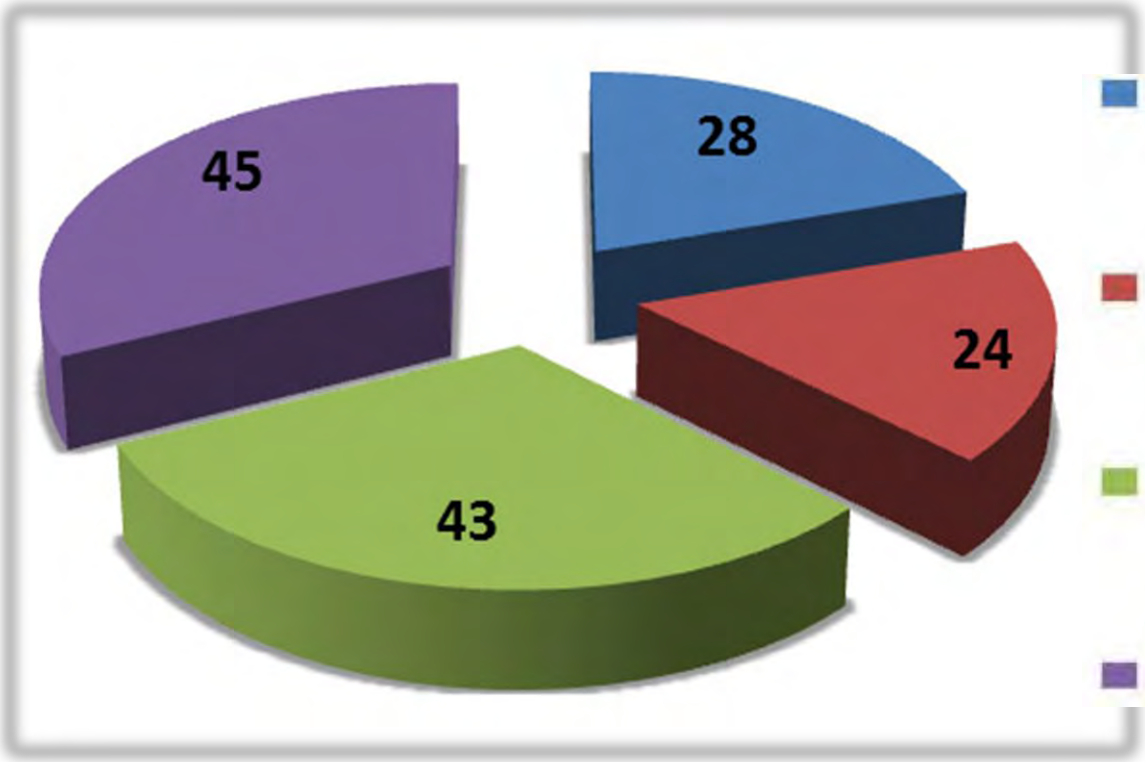
SCP was awarded in 1963 a concession contract by the French State.

The contract was transferred to the Region Authority further to decentralization law en 2008.

Multiple use water service by Canal de Provence

SCP's mission is to develop facilities and manage regional water resources, in order to provide a safe and reliable water supply for agriculture, industry and domestic use, both in urban and rural areas.

The 180 Million m^3 distributed by SCP in 2013 are breaking down as follows :



Multiple use water service by Canal de Provence

SCP has built and operates 6 small hydropower plants installed on the infrastructures.

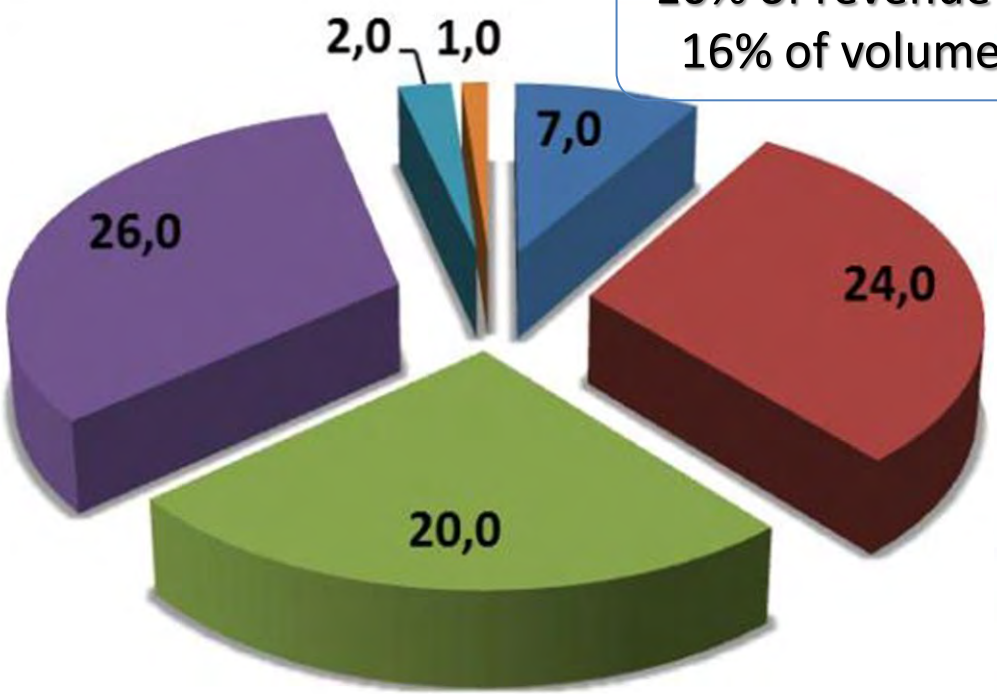
Total power installed is around 2,5 MW.

The energy produced is around 6 GWh/year.

This represents almost 30% of the total energy consumed by pumping stations within the hydraulic system.

Multiple use water service by Canal de Provence

SCP's turnover related to water service and energy production was amounting 80 Million € in 2013, breaking out as follows :



Solidarity between usages allows discounting farming irrigation water service by 60%.

Multiple use water service by Canal de Provence

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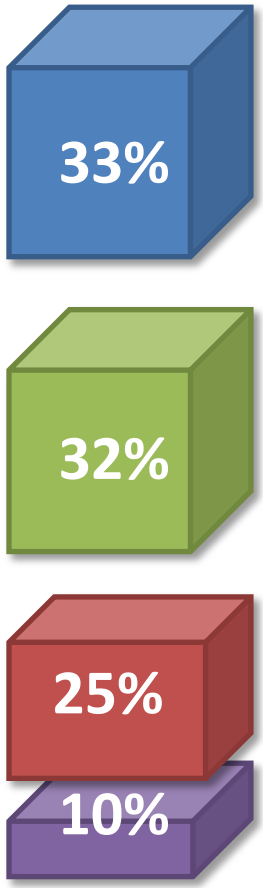

Asset development : SCP pays back the loans granted for regular investment in infrastructures and distribution networks (40% subsidized).

Renewal: the company's assets, worth 2.4 billion €, must be maintained in perfect working order and regularly renovated before handing over to conceding authority at the end of the concession contract.

Day-to-day operation and maintenance.

Taxes and miscellaneous charges.

Zero dividends: rather than being distributed, shareholders have chosen to reinvest revenue for development and renewal.

Multiple use water service by Canal de Provence

SCP is now 57 years old. Its concession contract will end in 2038.

Thanks to shareholders' common long term view and willingness for regional land development,

- Its accounts are balanced,
- It has the necessary cash so as to investing for development as well as continuously renewing the facilitiesT

There is no conflicts between various usages, neither technical nor economical, water service pricing relying on a tacit mutual agreement for solidarity.

This solidarity goes beyond the pricing policy, as water service revenue is partly mobilized for financing waste treatment facilities for villages in the upstream part of the watershed, in a view of preserving the quality of the water resource.