

STUDY CASE



Village of Ndiobène (Louga)

2022

Distributor **Tx-H2O**

Project Installation of a waterproof System O)) treatment unit in a private residence located in the village of Ndiobène

Treatment capacity **60 EH**

Type of discharge **Collecting and recycling of treated water**

Area of System O)) **47 m²**

Site specifications Wastewater from the private residence and some neighboring residences is collected in two septic tanks and then treated by the System O)) technology installed in the backyard.



Water quality before and after System O)) treatment

BACKGROUND

With a growing number of residents (temporary and permanent) in the owner's villa, he is obliged to do a weekly emptying to prevent his septic tanks from overflowing. His property is located in the village of Ndiobène, 5 km from the commune of Koki in the Louga region. There is no sewage system in this area and access is difficult for a vacuum truck. Moreover, this area is hot and arid with rainfall that is becoming increasingly rare. Thus, large areas remain unexploited because of the cost of access to water.



PRIMARY TREATMENT

The System O)) installation is preceded by a primary treatment. The untreated wastewater is collected in 2 septic tanks. Inside these tanks, it is divided into layers with the fat rising to the surface and the solids falling to the bottom. At the exit of the septic tanks, the wastewater flows towards the System O)) in a gravitational way following a natural slope.



DISTRIBUTION

The installation is composed of a cell of 5 rows of Advanced Enviro))Septic pipes.

The wastewater leaves the septic tank and lands gravitationally in the distribution box which distributes it equally among the 5 rows of pipes. The optimal operation of a System O)) installation depends on an even distribution of the wastewater through the rows of pipes.

This is achieved through equalizers that are installed inside the distribution boxes. They have indentations that are manually adjusted during installation and do not need to be adjusted afterwards. They are the only parts that can move in the entire system. The pipes have a 20 year warranty.





SECONDARY TREATMENT

The wastewater flowing through the pipes is treated by the presence of a bacterial biomass inside them that assimilates the pollutants before discharging it to the filtering sand. The latter then allows the final polishing of the effluent during the infiltration of this water.

The System O)) septic installation therefore combines distribution, treatment and infiltration of water into a single activity.



COLLECT AND RECYCLE

The owner having opted for a watertight System O)) installation, the treated water is recovered by a collecting system and then redirected into a recovery reservoir from which it will be used for irrigation. He plans to start a market garden in his backyard.



ECONOMIC ADVANTAGES

Overall :

- There is no electrical expense for the processing because no component of the System O)) technology requires electricity since the water flows by gravity and the processing occurs naturally.
- The System O)) installation requires little or no maintenance because the technology has no mechanical parts to repair or replace, and there is no filtering media to replace. In addition, it does not clog. Therefore, there is no maintenance to do once installed.

Specific to this case :

- Thanks to this System O)) installation, the owner makes considerable savings for the emptying of his septic tanks, which allows him to obtain a return on investment in 3 and a half years.
- By reusing the treated water for the irrigation of his farm, he also saves on the costs related to water access and consumption.
- The simple installation of System O)) was carried out entirely with local labor from the village of Ndiobene under the supervision of experts from Tx-H2O.



ENVIRONMENTAL ADVANTAGES

The wastewater discharge is estimated at more than 400 m³/D in the area. As mentioned above, there is no sewage system. Septic tanks are emptied by vacuum trucks. These trucks often break down or are late in emptying the tanks, which then overflow and spill into the environment, creating major environmental damage (pollution of the water table, release of odors, presence of wastewater inside homes, etc.). With the System O)) installation, these overflows are redirected and treated naturally and the water is reused for irrigation and green spaces.

Purification performance well below the country's standards:

- Less than 40mg/L of BOD5 (biochemical oxygen demand over oxygen demand)
- Less than 50mg/L of suspended solids (SS)
- Less than 2000 CFU/100ml of fecal coliforms



System O)) distribution box



Completed System O)) installation



Visual quality of the water at the entrance and exit of the system