

SSP FOR INTERTOWN MUNICIPAL WASTEWATER SYSTEM

BENAVENTE, PORTUGAL

CASE STUDY

General data

Location	Benavente, a county town in the municipality of Benavente, in Ribatejo Province, Portugal.
Scope: SSP boundaries and focus activities	<p>Scope: Benavente's sanitation system and the catchment protection area of the water sources that supply Benavente. The area includes:</p> <ul style="list-style-type: none"> • Three catchment areas • A water supply subsystem • Wastewater drainage and treatment subsystems • Storm water collection subsystem • Private water supplies (approximately 140 boreholes for private and public uses) • Individual household septic tanks • Reuse of sludge effluent from the sewage works • Agricultural effluents reuse: slurry/manure • Use of Pesticides, industrial waste/effluent <p>See Pertinent context below for more background.</p>
Scale of SSP system	Approximately 9,200 inhabitants, in an area of approximately 130 km ² .
SSP objectives	<p>The SSP objectives were to:</p> <ul style="list-style-type: none"> • Assess and manage risks in a holistic manner • Establish mitigation plans and identify opportunities to improve the quality of service provided in a cost effective and sustainable way • Increase robustness of the whole water and wastewater service • Promote the reuse of treated wastewater and sewage sludge • Enhance environmental protection
SSP teams	<p>Three teams were formed for SSP development:</p> <ol style="list-style-type: none"> 1. Project Coordination Team (WHO, a national SSP facilitator/consultant (Aquawise Consulting)) 2. SSP Team 3. Multi-stakeholder Team
Key stakeholders	Environmental, catchment, agriculture and health authorities, regulator, civil protection and emergency response services, farmers and water sector associations.
SSP timelines	<p>SSP development phase: January to June 2014.</p> <p>SSP development is ongoing.</p>
Lead organizations and supporting agencies	<p>Municipality of Benavente</p> <p>World Health Organization (WHO)</p> <p>Águas do Ribatejo, E.M., S.A. (AR)</p>



Pertinent context

The SSP area is a rural area with some urban settlements, and is located above the Tagus-Sado aquifer, one of the most important and most productive in Portugal.

The intermunicipal company, Águas do Ribatejo, used SSP to help focus their efforts in meeting the expectations of their customers whilst protecting the environment. As it had recently completed a WSP on the water sources and their catchments, it integrated WSP and SSP to provide a full understanding of the environmental risks. All sanitation activities were considered. These include storm water collection, septic tanks, treated sewage sludge handling and farming.

During the SSP development, there was no reuse of treated wastewater in the area, and the SSP explored reuse benefits and risks. However several farmers unofficially used streams for irrigation and these streams contain varying quantities of untreated effluent from the overflow of the sewerage system or illegal discharges from private drainage systems.

Key identified risks

The hazardous events with the highest risks in the wastewater drainage and treatment system were:

- Exposure to raw sewage leading to sickness/infection, due to insufficient trained staff to undertake work and inappropriate personal hygienic practices.
- Discharge of wastewater that does not meet quality standards, due to flow and load variations of the WWTP affluent, uncontrolled and unknown discharges, failure in wastewater treatment plant and no redundancy treatment process and stand by equipment.
- Contamination of watercourses and land due to flooding from stormwater systems contaminated with sewage and no flood attenuation (retention or detention systems).
- Damage to public and private areas and properties, due to collapse of old infrastructure that is in poor condition, and blockage due to sand, oils, fats and other improper materials discarded to sewer.



Key outcomes and benefits

For Águas do Ribatejo, the SSP development process gave improved understanding of sanitation system risks and efficacy of existing controls. This is expected to lead to:

- Reduced risk of prosecution and better image and reputation.
- Better use of waste.
- Reduce health and safety risk to work force.
- Improve communication internally and with relevant stakeholders.

Vision for scaling and next steps

At the time of printing, the operator is currently focusing in the implementation of its WSP. Once that is ongoing, it will continue with the SSP.

Enabling policy environment linkages and implications

One of the major achievements in this study was to bring together national representatives of the stakeholders to discuss SSP in Portugal.

SSP in Benavente has accelerated the creation of two working groups to deal with the application of sewage sludge in agriculture and was a major initiator and contributor to a better articulation between the Ministries of Agriculture and Environment.

The regulator has also acknowledged the importance of the SSP approach and has translated the SSP manual to Portuguese and will use this in their promotions of the SSP approach.

Potential for RRR business support

Águas do Ribatejo subcontracts the management and disposal of the sludge produced at the WWTP. SSP can support sludge operators to evidence that sludge transport, treatment and spreading is strictly controlled and in accordance with national regulations.



Success factors

These factors contributed to the success of this SSP system:

- The commitment of Águas do Ribatejo board of administration to the project by providing the necessary resources (financial, staff, information, etc.) to ensure that long-term engagement in the implementation of the SSP is achieved.
- Involvement of relevant stakeholders with different knowledge and responsibilities to provide a common understanding of sanitation risks and how they are currently being managed.

Challenges

Major challenges encountered were:

- Limited information and in the right format.
- Little or no epidemiological evidence which makes it difficult to associate the illness with its cause.
- High number of stakeholders involved, and lack of communication lines between major stakeholders.
- Ongoing ownership of the SSP (stakeholders may not carry out the actions on the improvement plan).
- Insufficient human and financial resources.
- No regulatory drivers to encourage any stakeholders to complete such a detailed risk assessment.



MORE INFORMATION/REFERENCES

SSP manual Examples 1.9 & 2.2

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