

WATER-SMART MANAGEMENT OF BATHING AREAS VIA DIGITALISATION

CHALLENGES AND OPPORTUNITIES

*The Workshop “Digitalization of Bathing Water Management” organized by [Water Europe](#) (WE), together with the Horizon 2020 project [digital-water.city](#), the EU-LIFE project [iBathWater](#) and the Synergea project took place online on the 5th of April. It was moderated by **Pascale Rouault**, KWB Department Leader urban systems, Co-Leader of Water Europe’s Working Group Water & Zero Pollution.*

The objectives of the workshop were to:

- Draw concrete policy recommendations for the ongoing revision of the Bathing Water Directive (BWD),
- Explore the benefits of digital innovations such as online sensors, machine learning, process-based models and mobile apps for managing microbial safety of bathing water sites,
- Promote an open-source data-driven early-warning system, which is currently developed within digital-water.city.

Status of evaluation of Bathing Directive

Sylvia Bartolini, Head of Unit DG ENV.C2 Marine Environment & Water Industry, European Commission (EC), who is in charge of the revision of the Bathing Water Directive (BWD), and **Maja Dorota Feder**, Policy Assistant, Clean Water Services, DG ENV, EC explained the BWD evaluation. The applied ‘back-to-back’ evaluation together with the impact assessment consists of evaluating all aspects at once with one public consultation. As Sylvia Bartolini said, “This Workshop could not have been organised at a better timing for [them] because [they] are at the stage of evaluating the directive”. It must be examined if it has met its objectives of protecting the environment and public health, and if it is still fit for purpose in the current political context of the Green Deal and the Zero Pollution Action Plan. The focus is put on different elements, including the detection of newly emerged harmful substances, better information for the public as well as digitalisation, to find the best practices to achieve the objectives. The BWD is revised in parallel to the Urban Wastewater Treatment Directive, which are closely linked.

Which water-smart drivers must be included in the BWD?

Loïc Charpentier, Innovative Water Policy Manager, Water Europe, stressed the recommendations of the innovative water eco-system to make the BWD water-smart:

- Reinforce public health through robust and frequent monitoring and clarification,
- Be aligned with the latest state of research, technology & innovation,
- Encourage the development of an inclusive management of bathing water,
- Encourage the use of digital tools for bathing water-smart management,

- Promote the use of grey and green infrastructure and draw on synergies with other water-related legislation.

Two examples of digital solutions: Paris and Berlin

Jean-Pierre Tabuchi, Technical Advisor at the Territorial Strategy Direction and **Sofia Housni**, Project Manager at the Innovation Direction SIAAP, Greater Paris Sanitation Authority, presented several digital solutions developed, deployed, and tested in the context of bathing sites management in the region of Paris. It includes an early warning system, a deterministic model PROSE, and the monitoring device ALERT V2.

Sebastian Hoppe, Group Leader and Acting Head of Unit for Water Hygiene and Environmental Health Protection, Surveillance and Epidemiology of Infectious Diseases, Regional Office for Health & Social Affairs Berlin (LAGeSo), highlighted the challenges, benefits and outlook of bathing water-smart management in Berlin. The early warning system facilitates the management and improves considerably the level of services for health protection.

Three examples of monitoring solutions

Three examples demonstrated that online monitoring is possible, accurate and robust and they should be considered by the new Bathing Water Directive.

- **Miguel Gillon-Ritz**, Head of Unit Large water cycle and water quality, Water and Sanitation Department, City of Paris presented Coli Minder Technology.
- **Dan Angelescu**, CEO and R&D Director, Fluidion, explained a fully automated in-situ microbiology management using ALERT V2 technology.
- **Montserrat Batlle**, Senior Innovation Specialist, ADASA Sistemas, presented AquaBio.

Innovative modelling solutions

Wolfgang Seis, Researcher, Center of Competence for Water Berlin, presented an open-source application for developing and implementing data-driven early warning systems for river bathing locations and invited participants to test its prototype developed.

Blanca Aznar, Urban Services – Urban Ecology, Operation Direction, Barcelona Water Cycle, BCASA showed the practical use of bathing water modelling and integrated beach management in Barcelona.

Marta Rodrigues, Research Officer, Hydraulics and Environment Department, National Laboratory for Civil Engineering (LNEC) introduced the project SINERGEA - digital platform for bathing waters management in coastal cities.

Finally, Pascale Rouault moderated the exchange between the experts and the attendees on the challenges and bottlenecks of using digital solutions for bathing water management. The main conclusions of the exchange are:

- A major advantage of digital tools is to get more time of use of bathing sites.
- Models can also support finding the best time for informative sampling.
- A combination of new measurement and modelling approaches can be really efficient for bathing water management.
- The new BWD must consider local situations in the deployment of digital solutions and provide flexibility to adapt to the different needs of the water managers.

- Stimulus in the EU legislation is needed, as well as collaboration with local stakeholders (e.g. Water Oriented Living Labs).
- Need to better capture the potential of digital solutions in the new BWD. For example, the revision of the directive should be more flexible in terms of duration of compliance, or it may be possible to evaluate bathing places after discarding the short-term events, if we are able to predict them.
- Their impact should be assessed carefully, particularly the indirect benefits.
- Citizen empowerment should be addressed (e.g. collecting sample data across the cities).
- There is a need to consolidate our capacity of water management with a systemic approach (e.g. digital twin).

Andrea Rubini, Director of Operations, Water Europe concluded the workshop, stressing out that the discussions on Bathing Water Directive will continue with a series of meetings:

- *Workshop on the review of the BWD impact assessment - 28-29 April:*
https://ec.europa.eu/eusurvey/runner/BWD_Workshop_Impact_assessment_April.
- Water Innovation Europe 2022 on the 14-15 June in Brussels
<https://watereurope.eu/water-innovation-europe/>
- EC workshop in June (more information will come soon)