Interreg Baltic Sea Region

Co-funded by the European Union

SUSTAINABLE WATERS EMPEREST

Report on the promotional campaign for local authorities and the developed capacities of infrastructure and public service providers

Combined deliverable of Group of Activities 3.2. and 3.3.

EMPEREST – ELIMINATING MICRO-POLLUTANTS FROM EFFLUENTS FOR REUSE STRATEGIES

Riikka Vainio (Turku University of Applied Sciences), and Vanessa Ingold (German Association for Water, Wastewater and Waste, Regional Group North-East), December 2025

Imprint

This publication has been developed within the project **EMPEREST – Eliminating Micro-Pollutants from Effluents for Reuse Strategies,** co-financed by the Interreg Baltic Sea Region Programme 2021–2027, and helping to drive the transition to a green and resilient Baltic Sea region.

EMPEREST consortium: Union of the Baltic Cities Sustainable Cities Commission c/o City of Turku (FI), Baltic Marine Environment Protection Commission – Helsinki Commission (HELCOM) (FI), University of Tartu (EE), Berlin University of Technology (DE), Turku University of Applied Sciences (Turku UAS) (FI), Gdańsk Water Utilities (PL), Water and Sewage Company Ltd of Szczecin (PL), Tartu Waterworks Ltd (EE), Tallinn Water Ltd (EE), "Kaunas water" Ltd (LT), Turku Region Wastewater Treatment Plant (FI), DWA German Association for Water, Wastewater and Waste DWA Regional group North-East (DE), Environmental Centre for Administration and Technology (LT), City of Riga (LV).

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Union.

Contract: EMPEREST – Eliminating Micro-Pollutants from Effluents for Reuse Strategies no. C013

Title: Report on the promotional campaign for local authorities and the developed capacities of infrastructure and public service providers.

Version: December 2025

Authors: Riikka Vainio, Turku University of Applied Sciences (Finland))
Vanessa Ingold, German Association for Water, Wastewater and Waste, Regional Group North-East (DWA).

Contributor: Nikolaos Tzoupanos, Technical University of Berlin (Germany)

Layout: Laura Sarlin, City of Turku

How to cite: Ingold, V & Vainio, R. (2025, December). Report on the promotional campaign for local authorities and the developed capacities of infrastructure and public service providers. Combines Deliverable 3.2 and 3.3 of the EMPEREST project, co-funded by Interreg Baltic Sea Region. Turku University of Applied Sciences and the German Association for Water, Wastewater and Waste, Regional Group North-East (DWA).

Project note

The EMPEREST project supports local authorities, service providers and policy-making community in finding ways to reduce PFAS (Per- and polyfluoroalkyl substances) and other organic micropollutants from the water cycle. The project has four activity strands to fulfil its aims. First, in close cooperation with HELCOM EMPEREST prepares methodological recommendations to monitor PFAS group in the aquatic environment. Second, local authorities address the subject on the city level by developing a PFAS risk assessment framework to identify and assess PFAS-related risks and propose relevant risk mitigation strategies. Third, EMPEREST supports water utilities in making informed decisions about cost-effective treatment strategies and investments for removing micropollutants from wastewater. Finally, capacity building takes place for both local authorities and public service providers to inform them about the recent developments in the field and train them with tailored materials and tools.

Table of Contents

1. Introduction

1.1. Description of this deliverable

In this document, we describe the outreach done to disseminate results and tools of EMPEREST to local authorities and public service providers. The EMPEREST project supports local authorities, service providers and policy-making community in finding ways to reduce PFAS (per- and polyfluoroalkyl substances) and other organic micropollutants from the water cycle. The EMPEREST project consortium consists of 14 partners and eight associated organisations from Estonia, Finland, Germany, Latvia, Lithuania and Poland, including water utilities, universities, local authorities and water associations. The project has four activity strands, products of which are described in more detail in section 1.3.

While outreach to these target groups has been done throughout the project, specific transfer activities, such as a social media campaign, were carried out during the last year of the project in Group of Activities (GoA) 3.2. Transfer of tools, methods and training for local authorities and 3.3. Transfer of tools, methods and training for infrastructure and public service providers.

In addition to describing the outreach activities, this document can also be used as guidelines on how to make project results visible in the Baltic Sea Region (BSR) and beyond.

Transfer of EMPEREST results of regional level via science-policy dialog, led by HELCOM, is not included in this document.

1.2. Target groups of the transfer activities

The main target groups for transfer activities of the EMPEREST project are the local authorities and the public service providers, e.g. wastewater treatment plant operators. 'Local authorities' includes cities and municipalities, but depending on the country, might include also other actors, such as certain regional authorities. The involvement of both local authorities and public service providers is crucial while aiming for a more resilient and sustainable water management, due to their important options of action. Also, in many cases, water and wastewater companies are owned by municipalities, intertwining the roles of the two actors.

We realized during the transfer activities that the interests of the two groups are not easy to separate. In our events and social media campaign, most of the time the two groups were present because their needs of information are quite similar. Also, it is beneficial for both sides to intensify exchange, for which EMPEREST events and solutions could be used. We therefore decided to focus on the transfer not only on one target group separately, but jointly on both, and to write this document as a joint report on the transfer activities.

1.3. Transferable EMPEREST outputs and solutions

The transfer activities described later in this document aim to increase knowledge and understanding of PFAS and other micropollutants and promote the EMPEREST project results and solutions to the target groups.

1.3.1. Results of piloting advanced wastewater treatment technologies

In EMPEREST, two mobile pilot plants were built in Tartu, Estonia and Gdańsk, Poland, to evaluate the efficiency of advanced treatment technologies in reducing micropollutant concentrations in wastewater. The two mobile pilot plants were tested in seven BSR cities as part of the EMPEREST project. The report **Strategies and technological means for minimising organic micropollutant emissions from WWTPs** contributes to ongoing efforts to identify scalable, cost-effective, and environmentally sustainable solutions for mitigating the impact of organic micropollutants in treated effluents. The work provides wastewater treatment plant operators with valuable information for future investments in advanced treatment technologies to fill the requirements of the revised Urban Wastewater Treatment Directive (UWWTD).

1.3.2. PFAS risk assessment tool for local authorities

During the project, a **PFAS risk assessment tool** for local authorities was developed. The purpose of the Excel-based tool and the accompanying document **PFAS risk assessment plan for local authorities** is to provide local authorities with a guidance for the PFAS risk assessment in a municipality. The tool covers the whole municipal water cycle from drinking water abstraction, water treatment, water supply system, wastewater collection, and wastewater treatment to treated wastewater discharge.

1.3.3. Training package for water experts

A training materials package for PFAS and other organic micropollutants in wastewater effluent, available in the Baltic Smart Water Hub, provides comprehensive knowledge about PFAS and is addressed mainly to water experts, but also to anyone interested on the topic. This **training package** is especially addressing local authorities and water service providers, but also national water associations, environmental centres and other relevant multipliers.

The training package is integrating information for those with beginners' knowledge to those with already advanced knowledge on PFAS in wastewater. The materials include compilation videos of expert talks, as well as full presentations with slides.

1.3.4. Methodological recommendations for the monitoring and assessment of PFAS in the aquatic environment

In this strand of work **methodological recommendations for the monitoring and assessment of PFAS in the aquatic environment** were developed. The recommendations' approach is based on the latest developments in the assessment of PFAS, the document also includes an example of the assessment based on a collection of PFAS monitoring data from the BSR, supported by sampling by EMPEREST partners. While the recommendations are aimed mainly for developing national and Baltic Sea level monitoring, the information can also be of interest for local level authorities.

2. Capacity building

In EMPEREST, capacity building has been an integral part of the project. Capacity building was done in project activities, such as international and national workshops and other events open for people external to the project, as well as practical training via excursions for project partners. The EMPEREST training package compiles materials from these events together for other interested people to benefit from.

2.1. International EMPEREST Workshops

Throughout the project, EMPEREST organized four international public workshops and one final conference to involve external experts from the Baltic Sea Region and beyond. These events, with high numbers of participants, were excellent opportunities to communicate EMPEREST insights to international audiences and to discuss and increase the knowledge in the region by informing about the topic of PFAS and other micropollutants. Moreover, the involvement of external participants was very sustainable, resulting in a large group of interested people who followed the EMPEREST project throughout its duration time over various channels and visited several workshops and events. Those channels were mainly social media, such as LinkedIn, and EMPEREST website and newsletter. Other social media channels like Facebook and Instagram were used by the EMPEREST partners to disseminate news from the project.

Each workshop was dedicated to one main topic of the EMPEREST project and the project partners who hosted it put a focus on their work and country specific situation. The speakers in the workshops included project partners and external experts, the latter most often from the country where respective workshop was organized. Event participants came from the countries of project partners, but also from other countries in the BSR and even beyond. To measure the workshops' impact, we conducted feedback sessions after every workshop with the participants. Based on the feedback, we can say that EMPEREST successfully increased the capacities of public service providers, local authorities and other water experts in the BSR.

2.1.1. Workshop #1 Tartu

On 13-14 February 2024, the **first international and public workshop of the EMPEREST project** took place in Tartu, Estonia, in a joint format together with the project ZeroPFAS II (funded by Swedish Institute). This workshop, titled "Raising awareness and initiating actions towards socio-environmental resilience to PFAS", was designed to draw attention to the topic of PFAS and to involve water experts who were still unfamiliar with the topic. With **over 80 participants**, the start of the international workshop series of EMPEREST was very successful. **Out of 60** people who answered to the feedback survey, **56 said that their knowledge about the problem of micropollutants in the water cycle 'increased' or 'rather increased'** by this workshop. The biggest group of participants were service providers from the water and wastewater sector (36 % of all participants). Also, in the frame of the workshop, the university of Tartu and the Tartu Waterworks seized the opportunity to present and thoroughly explain the conceived pilot plant during the construction phase.

Fig. 1: Group picture EMPEREST workshop nr. 1 in Tartu. © Mariia Andreeva

2.1.2. Workshop #2 Gdańsk

On 11 June 2024, the Gdańsk Water Utilities hosted **the second international workshop of EMPEREST** with the topic "Technological solutions for removing organic micropollutants from wastewater", where **over 65 people** participated. The workshop was organised as a partner event of the EU Green week 2024: Towards a water resilient Europe. As one of the two pilot plants of EMPEREST was developed in Gdańsk, the event focused on introducing technical methods to eliminate micropollutants and PFAS from water. In addition to the methods that are still in the research stage, currently applied methods for advanced wastewater treatment were presented and companies were invited to an exhibition for presenting their solutions. Also, the changes in the urban wastewater treatment directive regarding advanced wastewater treatment and limits for nitrogen and phosphorous were presented and discussed.

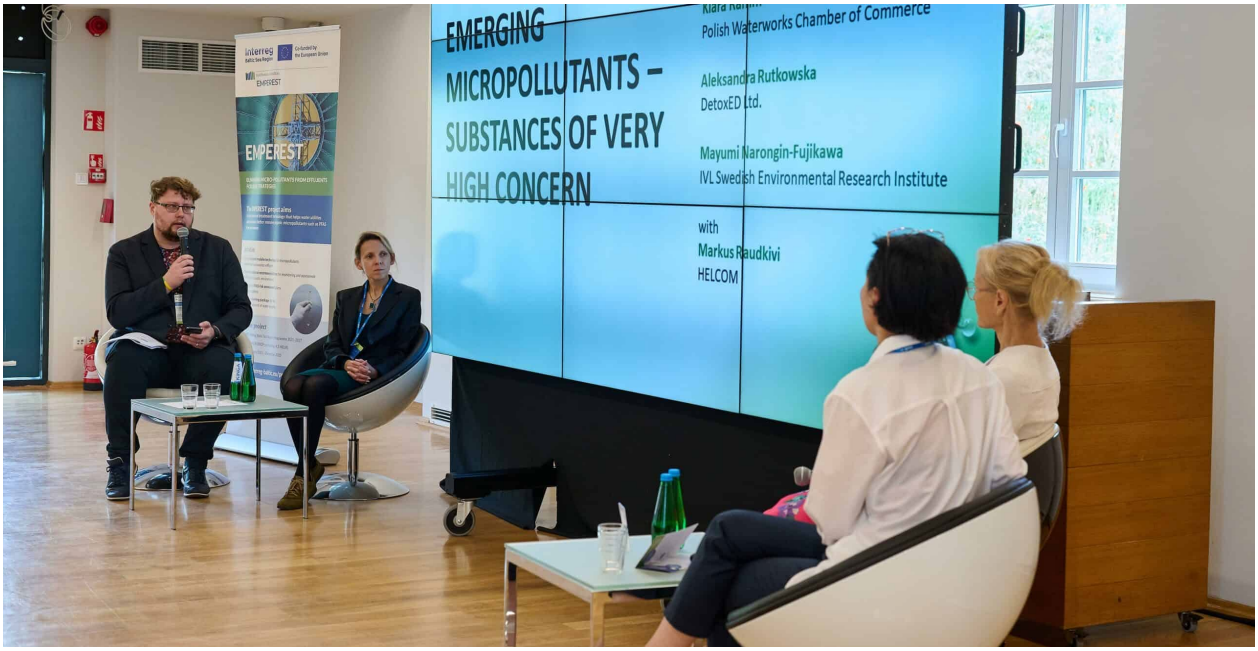

Fig. 2: Panel discussion at the 2nd international workshop of EMPEREST. © Gdańsk Water Utilities (GIWK)

On the following day, a study visit to explore the newly deployed pilot container on site at the wastewater treatment plant took place. In the feedback, **all participants answered that at the end of the event, they 'have' or 'rather have' an overview about the upcoming changes in the revised UWWTD**. Also, all **participants 'agreed' or 'rather agreed' with the statement "The workshop helped to understand the technical possibilities for PFAS elimination from wastewater."**

2.1.3. Workshop #3 Riga

The City of Riga, together with the associated partner Riga Water Ltd. hosted the **international workshop #3 of EMPEREST** on 10 October 2024. The title of this workshop, with **about 60 participants**, was "Assessing risks and finding solutions to PFAS in local urban environment". The event was therefore dedicated to the local-level stakeholders, and the aim was to increase their knowledge and abilities to reduce micropollutant emissions. Project partner City of Riga presented the draft of EMPEREST risk assessment tool for local authorities. Also, the individual possibilities to reduce PFAS use and emission were addressed in the workshop, as well as the status of PFAS pollution in the aquatic environment, the laboratory analyses of PFAS in water samples, and lessons learned from Sweden where groundwater was found to be contaminated with PFAS. The feedback evaluation has shown that **70% of the participants 'agreed' or 'rather agreed' with the statement "I would consider using the EMPEREST risk-assessment tool myself"**. And on a general level, **over 80%** answered that they **gained knowledge about the environmental PFAS concentrations in the Baltic Sea area**.

2.1.4. Workshop #4 Szczecin

EMPEREST Workshop #4 "Unlocking innovative solutions and developing capacities in the wastewater sector" took place in Szczecin on 13 May 2025 and brought together **70 participants**. Local host was the project partner Water and Sewage Company Ltd. of Szczecin. In this workshop, challenges of micropollutants removal and analysis were presented to the audience consisting largely of public service providers and water operators. The experiences and first results from the pilot container of Gdańsk, tested also at the wastewater treatment plant in Szczecin and Kaunas, were presented. A World Café session in the afternoon of the workshop helped to learn about each other's views and to engage in discussions about the criteria for future wastewater treatment plant investments, the polluter-pays-principle, the use and dissemination of the training material and the practical application of the PFAS risk-assessment tool. The feedback showed that in total **90% of the participants stated that they 'have' or 'rather have' a better understanding of PFAS analysis and its challenges** after the workshop and that **they 'have' or 'rather have' gained knowledge about the technologies to remove micropollutants from wastewater (86 %)**.

Fig. 3: Impressions from the World Café session at the workshop in Szczecin. © Mariia Andreeva

2.1.5. EMPEREST Final Conference

Almost 170 participants from the water sector gathered for the final conference of EMPEREST, organized in collaboration with the APRIORA project on 19-20 November 2025 in Berlin. The conference reached **more than 90 external water experts**, involved **over 6 related projects** in the BSR and **6 companies** who presented their solutions for advanced wastewater treatment. The high-level political representation included the European Commission, German and Finnish national level, as well as the local senate from Berlin. Besides the policy dimension, the event was dedicated to presenting the results of the EMPEREST project: the data analysis of PFAS in the BSR, the technology pilots for micropollutants removal from wastewater, PFAS risk assessment tool for local authorities and the training materials. Also, the interim results of APRIORA project were presented. The two-days conference gave an opportunity to network and connect among different institutions, projects and stakeholders. Not only in the slots dedicated to networking, but also during the cultural program, the networking dinner and the excursions. Already before the event the conference had raised great interest, so that we were forced to close the registrations before the deadline because it was fully booked. **The feedback during and after the event was very positive** which was extremely rewarding, such as these two replies show:

“Well organized, great presentations, amazing results, thanks for the co-operation!”

“One of the best organized conferences I have ever visited. Excellent program and speakers as well as very useful insights and contacts. Thank you very much!!!”

Fig. 4: Group picture at the EMPEREST final conference in Berlin. © Mariia Andreeva

2.2. National events in the Baltic Sea region

To involve more local stakeholders, many local events were organized by EMPEREST partners in the national languages. The target groups that we wanted to reach were not only international ones. Therefore, it was a very important step to spread information about the project, the results and the problem of PFAS and micropollutants, at local level and in local languages. Via the local networks of the partners, it is more straightforward to reach to the target groups than it is as an international organizer, as local speakers also attract local audience. The target audiences were mainly the local public service providers and local authorities. The local events were organized by project partners in Rostock, Turku, Helsinki, Riga, Kaunas, Gdańsk, Szczecin, and EMPEREST was presented by project partners in more events in the BSR (see table 1).

For example, the national event organized by DWA-NO, together with the Technical University of Berlin and in cooperation with the APRIORA project in Rostock (12 February 2025) was attended by around 100 participants, including many representatives of local and regional authorities and public service providers from the region, as well as universities and private companies.

On 15 May 2025, the project partner City of Riga organized an online event together with the Latvian Water Supply and Sewerage Association LUKA. Besides information about micropollutants regulation in the EU, the risk assessment tool was also presented to the more than 40 members of LUKA who attended the event.

Also, the project partner ZWiK Szczecin addressed national water specialists, operators, technologists and practitioners in a conference about innovations in the field of wastewater treatment on 11-12 June 2025. In the end of August 2025, HELCOM and UBC SCC organized several events with national stakeholders and experts where the EMPEREST project results were presented, and awareness was raised for the topic of PFAS and micropollutants. However, not only water experts were reached by the local events: EMPEREST partner in Gdańsk, GIWK organized an information stand at a Municipal event (“The Clean City of Gdańsk Festival”) on 24 May 2025, to inform general public about PFAS, micropollutants and EMPEREST as such.

These are just a few examples; you can find a detailed overview of the events in Table 1.

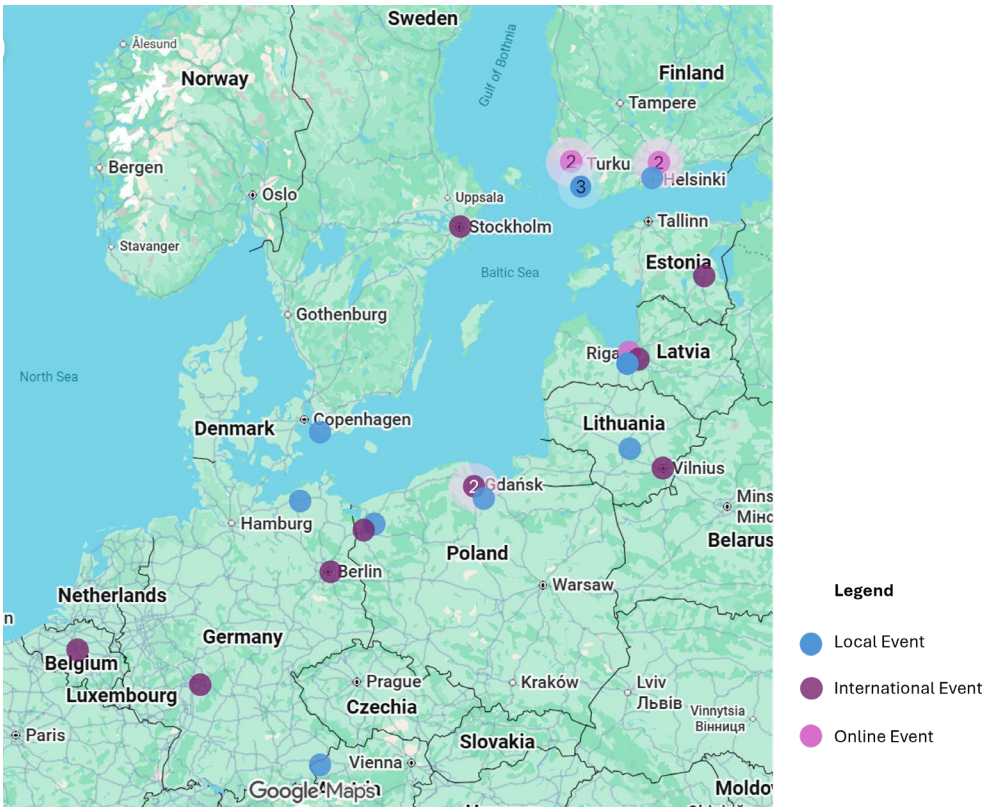

Fig. 5: Overview map of transfer events of EMPEREST project between February 2024 and November 2025.

Table 1: List of local transfer events from EMPEREST partners and events with presentations on EMPEREST project during the year 2025.

Place	Date	Organizers	Content	Audience and comment
Rostock, Germany	12.02.2025	DWA-NO, TU Berlin, APRIORA	Awareness raising, regulations on micropollutants and PFAS, EMPEREST results.	Public service providers, local authorities, universities and private companies.
Reichersberg, Austria	12.03.2025	VTA Austria GmbH	Presentation of EMPEREST and the PFAS topic at VTA-Umwelttag.	Local public service providers.
Kaunas, Lithuania	19.03.2025	ECAT-Lithuania and Kaunas Water company	PFAS situation in Lithuania including PFAS treatment results from EMPEREST piloting activities.	Local authorities, public service providers and specialists.
Frankfurt, Germany	26.-27.03.2025	PROMISCES Project	Poster presentation of EMPEREST results.	Scientific audience.
Online	28.03.2025	UBC SCC	UBC TALKS Webinar on: “Introducing new era of toxic-free water cycle.”	Public service providers, local authorities.

Online	31.03.2025	HELCOM	Hazardous substances in the BSR, EMPEREST monitoring results (EMPEREST Output.2.1).	International audience at the HELCOM Stakeholder event.
Online	15.05.2025	City of Riga, Latvian water utility association	Awareness raising and regulations on PFAS, Risk assessment tool.	Local public service providers.
Gdańsk, Poland	24.05.2025	Municipality of Gdańsk	Awareness raising on PFAS and micropollutants.	General public.
Turku, Finland	10.06.2025	Turku Region WWTP, UBC SCC	Upcoming changes EU-UWWTD regarding the removal of hazardous substances, study visit to the technology pilot.	Public service providers, universities and private companies.
Szczecin, Poland	11.-12.06.2025	Water and Sewage Company Ltd of Szczecin	Implementation of new EU-UWWTD, EMPEREST results on technology pilots.	Technical specialists, public service operators.
Helsinki and online	26.08.2025	HELCOM	Updates on EU Regulations environmental standards directive, presentation of EMPEREST Output 2.1.	National authorities and agencies, EMPEREST monitoring task force members.
Turku, Finland	27.08.2025	UBC SCC, Turku UAS	Awareness raising at the Europe Forum.	Finnish local, regional and national authorities, other stakeholders.
Malmö, Sweden	03.10.2025	UBC SCC	EMPEREST workshop at the UBC Sustainable Cities Commission meeting.	Local authorities.
Riga, Latvia	30.10.2025	Riga City Municipality and SIA Rīgas ūdens	PFAS risk assessment tool, EU UWWTD requirements related to micropollutants, Practical examples.	Latvian water utilities, municipalities, national institutions.
Slupsk, Poland	04.11.2025	UBC SCC	Presentation of EMPEREST at 2 sessions of UBC SCC at the XVIII UBC General Conference.	Local authorities.
Vilnius, Lithuania	24.-25.11.2025	Riga City Municipality and BEF Germany	Presentation of EMPEREST results at the HAZGONE platform meeting.	Environmental networks, associations, regional authorities.
Kaunas, Lithuania	04.12.2025	ECAT	Awareness raising and presentation of EMPEREST results.	Local authorities, public service providers, environmental specialists.
Turku, Finland	9.12.2025	Turku UAS, UBC SCC, City of Turku, City of Helsinki	Awareness raising and presenting EMPEREST results	Local authorities, environmental experts, other stakeholders

2.3. Practical Training

2.3.1. Excursion to Switzerland and South Germany

How does the quaternary wastewater treatment exactly look like and how does it work in practice? To extend our knowledge in this matter, partners from the EMPEREST consortium visited wastewater treatment plants with advanced treatment technology in Switzerland and Germany in a 3-day trip, organized by the Technical University of Berlin in November 2023. The application of quaternary wastewater treatment is still new in the BSR, but after the revision of the UWWTD, those technologies will have to be applied at many plants in the future. As EMPEREST is testing a combination of advanced wastewater treatment technologies in two pilot containers, it was extremely valuable to increase our own knowledge about the big scale application of ozonation (WWTP Werhözli in Zürich), granular activated carbon filtration (WWTP Immendingen) and powdered activated carbon (WWTP Steinhäule, Ulm). 17 out of 20 participants stated that their knowledge about the removal of organic micropollutants from wastewater has 'expanded' due to the excursion and 3 participants stated that it has 'rather expanded'.

Fig. 6: WWTP Werdhölzli in Zürich. ©Nikolaos Tzoupanos

Fig. 7: WWTP Immendingen. Basins for granular activated carbon filtration. © Nikolaos Tzoupanos

Fig. 8: WWTP Steinhäule, Ulm. Reaction basins for powdered activated carbon. © Nikolaos Tzoupanos

Fig. 9: Group picture participants of the excursion. © Nikolaos Tzoupanos

2.3.2. Visit at the IFAT fair in Munich 2024

A group of EMPEREST partners visited IFAT, the international fair for Water, Sewage, Waste and Raw Materials Management on 13-17 May 2024 together. The aim was to increase the knowledge about the newest technologies and developments in the field of wastewater treatment technologies. Appointments

were made at the several booths from relevant companies: Weber Ingenieure, Xylem, MECANA, VTA Group, Nordic Water, Donau Carbon and ect2.

Fig. 10: EMPEREST partner group picture at IFAT 2024 in Munich. © Nikolaos Tzoupanos

2.3.3. Hands-on trainings at EMPEREST technology pilots

During the international EMPEREST workshops in Tartu and in Gdańsk, the opportunity was seized to introduce the functions of the pilot containers at the sites. These trainings were very useful to understand the different steps of treatment technologies in the two pilots. In Tartu, the pilot was under construction during the visit, and the participants had the chance to see the elements of the whole process one by one. In Gdańsk, the pilot container was already in operation and loaded with the effluent of the GIWK wastewater treatment plant during the training. Other hands-on trainings were held in Turku at the Turku wastewater treatment plant with 50 water experts on 10 June 2025. Furthermore, a practical training took place at the operating pilot container at the partner meeting in Kaunas on 18-19 March 2025. By the end of the project, the container from Gdańsk reached Riga where another training was organized on 30 October 2025 with 45 participants from Latvian water utilities, municipalities, national institutions.

Fig. 11: Hands-on-Training at pilot container in Gdańsk, the workshop #1 in June 2024. © GIWK

Fig. 12: Turku WWTP, Visit of the pilot container in June 2025. © Tero Säteri

2.4. Involvement of externals

In the beginning of the main “Transfer year” of the EMPEREST project, meetings were organized in January and February 2025 with several external water experts in the BSR to explicitly get their feedback on the developed tools and materials. We met with representatives from Vilniaus Vandeny (Lithuania), Kouvolan Vesi (Finland), Estonian Waterworks Association (EVEL) and from the Latvian Waterworks and Wastewater Association. The feedback obtained in these meetings helped to improve the EMPEREST tools and materials and tailor them to the needs of the users. Also, by these means we raised the interest about our results. We sent the finished materials to the same experts in October 2025 and received a great interest. In addition, some of the experts announced that they would use the materials in their own events.

EMPEREST raised the capacities of many institutions throughout the BSR. Besides the partners and associated organisations, **the capacity of 25 external institutions increased due to the work of EMPEREST**. Among those are 8 local, regional or national authorities and 5 public service providers. Via the engagement of EVEL (Estonian Waterworks Association) and FIWA (Finish Water Utilities Association), many more operators could be reached.

3. Outreach

3.1. Social Media Campaign

3.1.1. Materials for social media

As part of the transfer activities, social media materials were produced and shared by project partners. The purpose of the social media campaign was to raise awareness about the PFAS issue and promote the EMPEREST solutions and results. The social media campaign had two parts: in spring 2025, the materials focused on awareness raising and in autumn 2025 on promoting the EMPEREST results.

Common visual materials and suggestions for captions were prepared by Turku University of Applied Sciences and translated into the national languages of the EMPEREST countries by project partners. Because the project partners had different possibilities on, for example, how many posts they can post on their organisation's social media channels, different versions of the posts were made to make the campaign adaptable for each participating organisation. Each organisation could e.g. choose to post one longer post, providing a brief overview to the topic, or a series of posts dwelling more in depth of the topics. Materials were designed to be suitable for use in the most common social media platforms, like LinkedIn, Instagram and Facebook.

Each post was designed to have a specific topic, introducing some aspect of the PFAS problem (e.g. PFAS health effects, sources of PFAS). The contents were made to be professional and realistic, and to present solutions and promote the project outputs, with call-to-action to find the resources in the EMPEREST website of the Baltic Smart Water Hub. While learning about toxic chemicals, such as PFAS, can be worrying, the aim was to avoid fearmongering and instead motivate target audiences to action.

Fig 13. Examples of some of the produced social media materials

3.1.2. PFAS investigator video series

In addition to picture-based social media posts, a "PFAS investigator" five-part video series for social media was prepared by Turku University of Applied Sciences. In the videos, the aim was to discuss the PFAS issue in a professional and informative way, while simultaneously keeping the tone light-hearted to attract more viewers. The light tone was achieved by e.g. including some humorous clipart, like cats, to pace the video and making a common intro for the videos, which drew inspiration from old investigator TV shows. The videos were short, ca. 1 min long each, and fast-paced, designed specifically for today's social media environment. Videos could be posted e.g. in LinkedIn, as YouTube shorts, or Instagram or Facebook reels. The spoken language of the videos was mostly English, and subtitles were translated into the project partners' national languages.

The topics of the PFAS investigator videos were the following:

- Part 1: Have you heard of PFAS? – telling what PFAS are, what are some of their health effects and welcoming viewers to follow the PFAS investigator series.
- Part 2: PFAS & the environment – discussing how PFAS has spread into the environment, and how PFAS can bioaccumulate into wildlife or contaminate drinking water
- Part 3: Products with PFAS – introducing everyday items which may contain PFAS and also talking about "PFOA-free" declarations, which might mislead consumers.
- Part 4: PFAS sources & municipalities – going over five steps for municipalities
- Part 5: Wastewater treatment & PFAS – discussing the removal of PFAS and other micropollutants from wastewater, including an interview from the CEO of Turku Region Wastewater Treatment Plant.

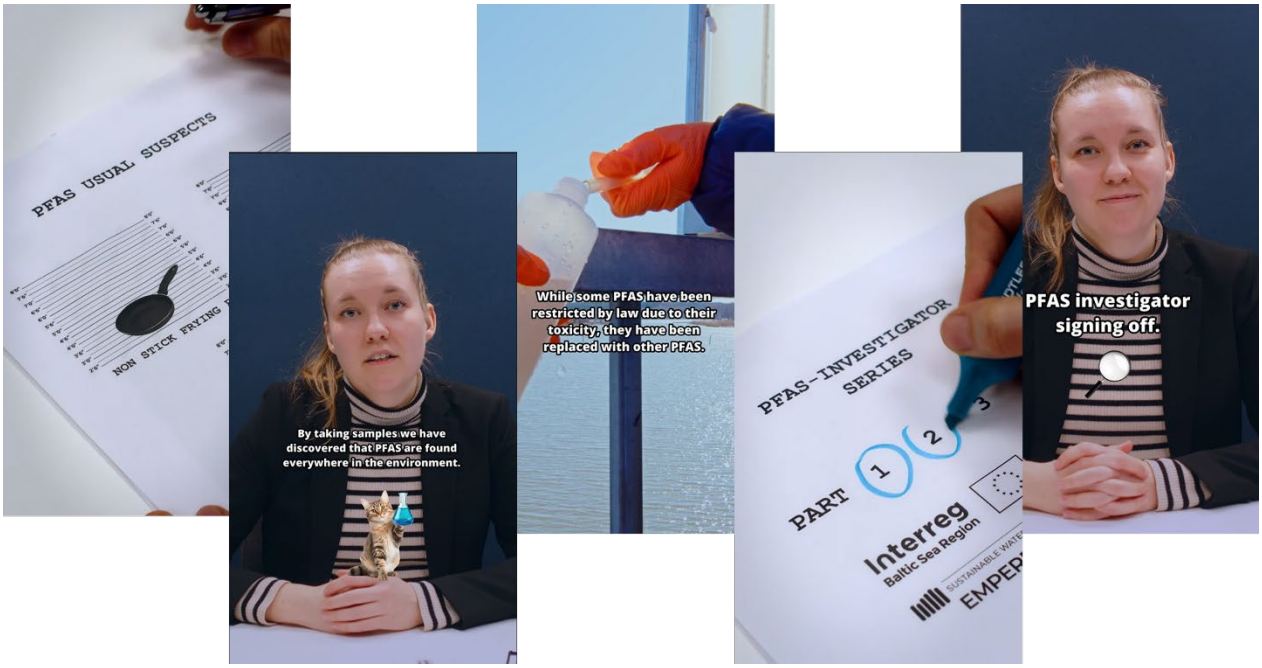

Fig. 14. Screenshot examples from the PFAS investigator video series.

3.1.3. Reach in social media

The materials produced for the social media campaign were shared in all project countries via project partners' social media channels (Instagram, Facebook, LinkedIn, Youtube), and on **EMPEREST project LinkedIn account**. As each social media platform measures the engagement and reach of posts in different ways, compiled statistics show that the social media campaign has reached thousands of people across different countries and social media platforms. For example, only in LinkedIn, the number of reaches, measuring the number of unique audience count, on the EMPEREST social media materials by December 2025 reached over 60 000. As the social media materials were posted in different partner organisations' social media platforms, the materials have reached also different follower bases, including also local authorities and wastewater operators.

In addition to the specific social media campaign executed during the last year of the project, EMPEREST has been visible on different social media platforms throughout the project duration. Social media posts have been made on EMPEREST's official LinkedIn account and partners' social media accounts in different platforms, increasing awareness about the project activities already before the results and outputs of the project were ready.

3.2. Other external communications and visibility

3.2.1. Project story video

In addition to the PFAS investigator videos, a longer project story video was created. The project story video tells about the PFAS and micropollutant problem through the perspective of EMPEREST project, presenting what the project has achieved during its three-year duration. The video is available on **YouTube** and has been shown in events, such as the EMPEREST final conference in Berlin, and shared in social media, e.g. LinkedIn.

3.2.2. Website and newsletter

Throughout the project, **EMPEREST website**, build under the Interreg BSR website, has been updated with topical articles. The texts have included updates on the progress of project activities and events, but also articles and interviews related to the PFAS and micropollutant issue in general, tying the project activities into the broader perspective. These articles include for example interviews with EU former MEP Nils Torvalds and Louise Floman, coordinator of the Policy Area Hazards at the EU Strategy for the Baltic Sea Region. During the whole project, a total of 38 articles has been published on the website. In addition to the articles, all EMPEREST outputs can be found at the project website. By December 2025, the project website had been visited by over 2600 people.

During the implementation, the project has also been sending out an EMPEREST newsletter twice a year to external people who have subscribed (over 120 incl. national stakeholders, local authorities and water utilities). The newsletter has included project activity updates, outputs and advertise project events, such as the workshops and final conference.

4. Conclusions: lessons learned and future considerations

4.1. Evaluation of the reach out, capacity building and transfer of the results, materials and tools of EMPEREST into the BSR

The outreach and capacity building done in the EMPEREST project to transfer the results, materials and tools in the BSR was overall very successful.

Via systematic feedback collection in public events, we could see that, for example, the EMPEREST Workshops #1 – #4 were very well received. Between 90% and 100% of the 285 total participants stated that they gained relevant knowledge about the topic of PFAS and micropollutants in the EMPEREST Workshops. Together with the final conference, EMPEREST project had more than 445 participations of international experts in physical events throughout the project. This number does not include the participants of the more local stakeholder events organised by EMPEREST project partners.

Based on the results of the survey provided by Interreg BSR funding programme on increased organisational capacity, enquiring about increased knowledge or skills, adopted tools, etc., EMPEREST project has helped to spread awareness of PFAS and other micropollutants in the BSR. Many of the organisations who submitted an answer mention gaining a deeper understanding about the PFAS issue, for example health and environmental problems and PFAS in wastewater, advanced wastewater treatment technologies and risk assessment, among other topics.

Public service providers who answered the increased organisational capacity survey highlighted that the EMPEREST project made them more prepared for the implementation of the revised UWWTD, especially regarding the choice of quaternary treatment technologies. The foresight of the project, to address micropollutants and PFAS in wastewater, made EMPEREST highly relevant also due to the timing of the revision's publication.

Local authorities who answered the survey highlighted that they gained better understanding of the PFAS issue and about the levels of PFAS in different matrices, and knowledge on how to identify potential PFAS sources. The PFAS risk assessment tool and plan to utilize it in the future were mentioned is several replies.

Online, EMPEREST social media campaign and other social media activities, EMPEREST website, and newsletter have reached thousands of people across the BSR, further spreading the knowledge about the micropollutant issue and the project results. While the social media materials were designed especially to local authorities and water service providers, the materials have also reached other audiences, such as regular citizens.

4.1.1. Involvement of target groups in the development process

One aspect which helped EMPEREST raise awareness and making and transferring the tools and solutions successfully was that the target groups of the project, including local authorities and wastewater operators, were included in the project consortium. This made it possible to do capacity building and development work with the target groups internally in the project but also brought the existing networks of stakeholders onboard. For example, water utility associations, such as DWA in Germany, were included

as partners or associated partners of the project. This inclusion of target groups in the project played a key role in the success of the project. In addition to this, also external organisations, such as water utility associations from the BSR, were involved in the development process. This was very fruitful for tailoring the materials and helped in the successful dissemination later in the project.

4.1.2. Local language is important

We learned that to efficiently raise awareness especially on a complicated topic such as PFAS and other micropollutants, communication in local languages is important. While international workshops and webinars help to foster collaboration between stakeholders in different countries, local level events in local languages can help to attract attention of also those experts and stakeholders, who might not see themselves part of the target audience of international events. Similarly, when doing communication activities in social media, or making training materials, providing the materials in local languages, even if only by making subtitles to an English video, helps to reach wider audience.

4.1.3. Consider starting every workshop with the basics

One issue which we noticed when organizing the workshops, was that when addressing complicated topic such as PFAS, it is important to take into consideration differing levels of background knowledge of participants. To bring all participants closer to the same level of PFAS knowledge, all EMPEREST workshops started with an introduction of the PFAS problem, such as health and environmental effects, pollution levels in the environment and legislative basis, before going deeper into the respective topic of each workshop. The introductory part is very important to on board all participants and can be similar in every event. Therefore, an efficient way to handle this could be to make a transferable presentation that can be used also in other events about the topic.

Downside of starting all events in a similar introductory presentation is that people participating in multiple events hear the same things several times. While this is difficult to avoid completely, the presentations can be tailored according to the topic of the specific event, taking a bit different perspective or emphasis on the basics.

4.1.4. Involving the general public

PFAS and micropollutants affect our whole society, not just professionals and authorities in certain fields. Therefore, also the public should be informed about the topic and its problems to health and nature, which could be implemented by relevant stakeholders (e.g. cities and municipalities).

In a world café station at the EMPEREST workshop in Szczecin, we asked the participants who should receive training about PFAS and related issues. Many answers included general public, especially young people and children. While these target groups were not the stakeholders of the EMPEREST project, the answers show that there is interest in more generalised materials and information for wider audiences. Such materials could potentially be spread through local authorities such as municipalities in e.g. schools, helping the future professionals to understand the micropollutant challenge already from young age.

4.2. Capacity building beyond EMPEREST project

Currently, multiple different projects inside and outside BSR are working to find solutions to the micropollutant problem. Connecting with other projects working on similar issues can help to transfer the results via both project's or stakeholder's networks.

During its three years of implementation, EMPEREST has collaborated with many projects and experts working on the topic of PFAS and other micropollutants, such as the ZeroPFAS II and APRIORA projects. Involvement of water associations, and intergovernmental organizations, such as project partner HELCOM, have helped to spread awareness and the project results to their networks also outside the BSR. For example, the PFAS monitoring recommendations of EMPEREST have been shared to OSPAR commission, working in the North-East Atlantic region. Involvement of stakeholders can also foster new projects and collaboration. One result of such collaboration and networking is for example the Interreg Central Baltic BalticPFASResolve project, which will continue building upon the EMPEREST results, particularly on the PFAS risk assessment tool.

Collaboration with other projects, experts and stakeholders, such as regular communication, organizing joint events or invitations to workshops is very important, and should be planned as part of the project from the start. Such collaborations ensure that the results and knowledge pass on and does not stay only in the network of the project partners. There can never be too much collaboration.