



Summary of communication and clustering activities in year 1

Deliverable D5.6, WP5

Project Number	101081980
Project Title	Climate-resilient management for safe disinfected and non-disinfected water supply systems
Project Acronym	SafeCREW
Project Duration	November 2022 – May 2026
Call identifier	HORIZON-CL6-2022-ZEROPOLLUTION-01-04
Due date of Deliverable	Month 14, 31.12.2023
Final version date	Month 14, 20.12.2023
Updated version date	Month 21, 16.07.2024
Dissemination Level	PU (public)
Deliverable No.	D5.6
Work Package	WP5
Task	T5.2, T5.5, T5.4
Lead Beneficiary	Tutech Innovation GmbH (TUTECH)
Contributing Beneficiaries	DVGW-TUHH, all partners
Report Author	Margarete Remmert-Rieper (TUTECH)
Reviewed by	Barbara Wendler (DVGW-TUHH)
Approved by	Anissa Grieb (DVGW-TUHH)
Updated by	Margarete Remmert-Rieper (TUTECH)
Update approved by	Mathias Ernst (DVGW-TUHH)



History of Changes		
Version	Publication Date	Change
0.1	7 December 2023	Preparation of report for review
0.2	19 December 2023	Final review
1	20 December 2023	Submitted to commission
1.1	15 July 2024	Final review
2	16 July 2024	Submitted to commission
3		

History of Changes	
Date/section	Nature of change and reason
15.07.2024 page 2	To address the reviewers' comment: When updating the deliverable, please include in the history of changes where and what have been added comparing to the initial version of the deliverable. This will facilitate to review the deliverable": Previous "History of Changes" renamed to "History of Versions". "History of Changes" added.
15.07.2024, page 15, section 3.4	To address the reviewers' comment "Overall, the deliverable is good. It is however too descriptive and should provide some key elements and feedback that arose from the Focus Group's meetings. These outcomes and results should also be included in D. 5.3 as they will be important to form the market." Two text blocks have been added to provide some key elements and feedback: " After an introductory presentation of SafeCREW the EurEau members focused their discussion on the relevance of the expected results, specifically regarding whether the case studies are sufficiently representing the European drinking water sector. An analysis of the types of water sources and disinfection practices will thus be evaluated within the project, e.g. by the planned survey." And "This focus group emphasised the importance of being prepared for rising temperatures in the drinking water distribution networks and shared their professional experience as technical staff on current drinking water management approaches with SafeCREW. They highlighted the diversity of regional drinking water supply systems, which will result in a variety of measures of adaptation to climate change. In addition, they asked for easily to understand guidelines on how to manage drinking water treatment under climate change conditions and offered their support as engaged sparring partners. In conclusion, in general the approach of SafeCREW has been confirmed as valid and necessary in both focus groups. Both focus groups highlighted the diversity of drinking water supply on a regional as well as on the European level and are highly interested in being involved in future exchange and interaction. With both events, SafeCREW achieved its objectives to build trusting relationships for future validation of its results and to increase its understanding of the needs and challenges of water utilities. The current feedback will also feed into the pathway to stimulate market uptake."
15.07.2024, page 16, section 3.4	To address the reviewers' comment "The report should provide an outline of the ENDWARE meeting." The paragraph on the ENDWARE meeting has been expanded:



	<p>“The European network of drinking water regulators (ENDWARE) met on May 8th-9th, 2023 in Zagreb. ENDWARE is an informal network of EU drinking-water regulators who meet twice per year for exchange of information and experience. UBA provides policy advice to the German Ministry of Health and, in this role, is engaged in the exchange with ENDWARE. On invitation by the German Ministry of Health, UBA contributed a presentation in order to initiate an exchange on SafeCREW’s significance for DWD watch lists with the 30 representatives of the European Commission, public authorities and drinking water regulators. This first presentation raised the awareness on SafeCREW’s objectives and built the foundation for exchange in future meetings. In these future meetings, SafeCREW will then contribute evidence-based recommendations to improved regulation fit for climate change in the drinking water sector.”</p>
15.07.2024, page 18, section 4	<p>To address the reviewers’ comment “The documents developed for the ZP4Water (cluster strategy, action plan, flyer and roll-up) should be made available on the project website.”</p> <p>The documents developed for the ZP4W Cluster have been made available on the SafeCREW website: https://safecrew.org/resources/ and https://safecrew.org/zeropollution4water/.</p> <p>On p. 18, third paragraph, links to the ZP4W documents on the SafeCREW website have been added.</p>
15.07.2024, page 20, section 5	<p>To address the reviewers’ comment “Moreover, even if tables are put in annex to follow the activities conducted, there is no analysis of the progress compared to the objectives. Such an analysis, ideally based on a unique and complete list of communication and dissemination activities, would be very useful to measure the project's impact.”</p> <p>A new section 5 “Analysis of the first year of communication and dissemination” has been added.</p> <p>Previous sections 5 and 6 are now sections 6 and 7.</p>
15.07.2024, page 20, section 5	<p>To address the reviewers’ comment “Finally, after 1 year, the vision of SafeCREW should have been developed, but it is not presented in this deliverable, nor on the website; please do include it on the website, as this is the major digital communication channel for SafeCREW.”</p> <p>The SafeCREW vision forms the introduction of section 5.</p> <p>And:</p> <p>“Our vision: We want to ensure drinking water continues to meet high-quality standards for all EU consumers in the face of the effects of climate change by supporting water utilities in climate-resilient management procedures for safe disinfected and non-disinfected water supply systems.” has been included on the website: https://safecrew.org/about/</p>
15.07.2024	Copyright added to several figures.



Part. No.	Participant organisation name	Short name
1 (Coordinator)	German Association for Gas and Water, local research branch at Hamburg University of Technology	DVGW-TUHH
2	Politecnico di Milano	POLIMI
3	Berlin Centre of Competence for Water	KWB
4	BioDetection Systems B.V.	BDS
5	Centre Tecnològic de Catalunya (EURECAT)	EUT
6	German Environment Agency	UBA
7	Helmholtz-Centre for Environmental Research	UFZ
8	Consorci Concessionari d'Aigües per als Ajuntaments i Industries de Tarragona	CAT
9	Tutech Innovation GmbH	TUTECH
10	Metropolitana Milanese SPA	MM
11	Multisensor systems Ltd.	MSS



Abstract

This deliverable summarises SafeCREW's communication, dissemination and cooperation activities as well as the clustering activities in the ZeroPollution4Water Cluster. The clustering activities have been joint activities of seven Horizon Europe projects dedicated to safeguarding drinking water quality and protecting groundwater from climate change impacts. The deliverable builds on and complements the two previous deliverables, D5.1 Initial Plan for Exploitation, Dissemination and Communication (PEDR) and D5.2 Project website and flyer release, and is linked to the tasks 5.2, 5.5, 5.4.

Communication and dissemination in the project as well as clustering activities serve to build rising engagement in the EU water sector to ensure a broad uptake of the solutions and technologies delivered. To achieve this, a thorough stakeholder mapping has been conducted in the PEDR. It builds on the partners' networks, which provide relevant multipliers, in order to reach out to water professionals in water utilities, water industry, regulatory bodies, the scientific community, the interested public and policy makers. The relevant stakeholders are addressed by a number of multi-channels, wide-scale online and on-site campaigns to create a critical mass of information exchange, promote collaboration, especially amongst the ZeroPollution4Water Cluster, and knowledge transfer and collect useful feedback. Based on a schedule of upcoming events and key activities, a series of communication, dissemination and clustering actions have taken place. The first year focused on creating the visibility of the project and its objectives as well as highlighting the benefits of European funding for society.

The communication and clustering activities of the first year build a good foundation for further cooperation and the uptake of results. In particular, the collaboration in the ZeroPollution4Water Cluster will allow enhanced outreach to the target groups and increase the impact on policy and technology development. In the next period, scientific publications and training events will transfer first SafeCREW research results towards the community. Finally, policy briefs and guidance documents will support climate-resilient management for safe disinfected and non-disinfected water supply systems.



Table of contents

Abstract	5
Table of contents.....	6
Abbreviations	7
1. Introduction.....	8
2. Target groups and stakeholder mapping	8
2.1 Utility route - Public sector (water utilities, actors in the EU and UK, associations, professional networks and water professionals, TG 3).....	9
2.2 Regulatory route – Authorities & policy maker on local, regional, national, international and EU level (TG4)	10
2.3 Science and regulatory route via related EU projects (mainly ZeroPollution4Water Cluster, TG2)	10
2.4 Science and commercial route – (Research communities, private sector and civil society, TG 1, 5, 6).....	11
3. Communication and dissemination activities in the first year	11
3.1 Visual branding and communication.....	11
3.2 Digital communication activities	12
3.3 Public facing communication activities	13
3.4 Publications and events as dissemination tools – activities in the first year	14
4. Clustering activities in cooperation with the ZeroPollution4Water Cluster	17
5. Analysis of the first year of communication and dissemination	20
6. Future communication and dissemination	21
7. Conclusion	21
Annex - Tables documenting the communication and dissemination activities.....	23



Abbreviations

BWB	Berliner Wasserbetriebe
DBP	Disinfection byproducts
DoA	Description of Action
DG ENV	Directorate-General for Environment
DVGW	German Technical and Scientific Association for Gas and Water
DW	Drinking water
DWD	Drinking Water Directive
DWDN	Drinking water distribution network
DWTP	Drinking water treatment plant
EC	European Commission
EU	European Union
GA	Grant Agreement
HW	Hamburg Wasser
IWA	International Water Association
KPI	Key performance indicator
PEDR	Plan for Exploitation, Dissemination and Communication of Results
R&D	Research and development
R&I	Research and innovation
SMEs	Small and medium-sized enterprises
STEM	Science, Technology, Engineering and Mathematics
TG	Target group
THM	Trihalomethane
WG	Working group
WP	Work package
ZP4W	ZeroPollution4Water Cluster



1. Introduction

This report summarises the communication and clustering activities of SafeCREW during the first twelve months. These activities have been conducted in accordance with the first version of the Plan for Exploitation, Dissemination and Communication of Results (PEDR, D5.1, submitted 25 April 2023). It builds on Annex 1 of the Grant Agreement, chapter 2.2 and the tasks described in Work Package 5.

SafeCREW will increase the preparedness of the EU water sector for challenges arising from climate change and will support the EU's leading position in science-based policy making for drinking water consumer protection. Transferable tools will be provided to water utilities, national and EU regulators, researchers and enterprises. SafeCREW aims to support the novel EU Drinking Water Directive (EU DWD) by developing guidance for disinfected and non-disinfected drinking water supply systems. To promote the uptake and to facilitate the further exploitation of SafeCREW results, well targeted communication and dissemination activities are needed. According to the Plan for Exploitation, Dissemination and Communication of Results, the first year has been dedicated to establishing the communication channels and to raise awareness about the project and its objectives.

In the beginning, target groups and relevant stakeholders have been identified and described. Based on their needs and interests, communication activities to inform them about the project and its results and a dissemination strategy have been designed and conducted. An important building block of the communication and dissemination strategy is the cooperation with the ZeroPollution4Water Cluster, which will enhance the influence on policy and regulation to ensure better drinking water management.

2. Target groups and stakeholder mapping

SafeCREW's approach to achieve broad uptake of solutions follows four different dissemination and exploitation routes (Figure 1): 1) Science route: the R&D partners will disseminate the results to special journals and conferences. Some partners are also active in R&D driven networks such as NORMAN, WaterShare and AIOTI, which will help leverage the knowledge produced. 2) Utility route: By co-creating and disseminating SafeCREW solutions via the two actively involved utilities CAT and MM as well as the cooperating water utilities HW and BWB, other end-users at local and national levels will learn directly from practitioners. 3) Regulatory route: By having one regulatory body in the consortium (UBA), SafeCREW results (e.g. protocols for testing of relining materials, transition guidance) can be directly transferred to EU member states and via the WHO Collaborating Centre to international level. 4) Commercial route: The two SMEs BDS and MSS, directly involved in the solution development, can pave the way to commercial exploitation.



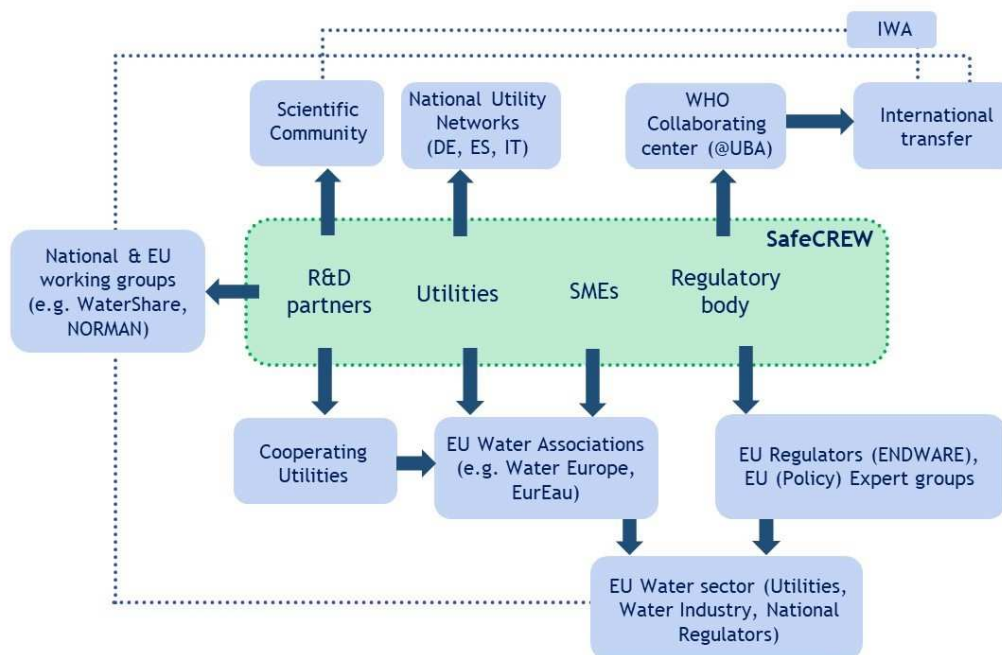


Figure 1: SafeCREW dissemination and exploitation routes (GA, p.117, Annex 1 – DoA, Copyright SafeCREW)

Following the four exploitation routes, and for SafeCREW’s vision and key messages to reach the widest pool of relevant actors possible, the key stakeholders have been organised into six target groups (TG):

- TG 1:** Research communities (experts, academics, R&D centres, consultants) – Science route
- TG 2:** EU projects (mainly ZeroPollution4Water Cluster, SafeCREW community, related Horizon Europe projects) – Science route and regulatory route
- TG 3:** Public sector (water utilities, actors in the EU and UK, associations) – Utility route
- TG 4:** Authorities & policy makers (local, regional, national, international, EU) – Regulatory route
- TG 5:** Private sector (technology, water-contact or relining material providers) – Commercial route
- TG 6:** Civil society (NGO/CSOs) and citizens/residents (drinking water consumers)

The relevant stakeholders and their needs are analysed below.

2.1 Utility route - Public sector (water utilities, actors in the EU and UK, associations, professional networks and water professionals, TG 3)

The utility route forms one of the two most important dissemination and exploitation routes. Water utilities are responsible for safe and secure drinking water supply for their residents. Currently, they have well-established water management tools for quality monitoring, water treatment and distribution in place, which follow existing regulation. However, climate change will very probably result in yet unknown deterioration of source water quality. The EU Drinking Water Directive (DWD) and its watch lists will develop further and ask for adaptations in risk assessment and water



management. Utilities therefore will need access to improved knowledge on climate change impacts, new monitoring tools and guidance on climate resilient risk-based water management procedures. Main target groups are the utilities, their management and technical staff who may need new skills and knowledge to employ climate resilient methods and tools. They need access to the results in a simple and practical way to implement improvements efficiently.

Water related associations and professional networks provide a feasible route for dissemination to the target groups. Main water associations on the European level are EurEau and Water Europe. EurEau, the European Federation of National Associations of Water Services, enables dissemination to the utilities via the national member organisations and the specific committees. DVGW-TUHH as part of the German technical association of Gas and Water (DVGW) is well connected to the representatives of EurEau.

National and transnational boards such als DVGW-DIN technical Comités on disinfection/water treatment technologies and workers' councils, e.g ver.di's Federal Specialist Group on Water Management, as representatives of water utility staff and technicians are interested in future changes of water management and the influence on the work of the water utility staff and technicians whom they represent. SafeCREW partners have well-established communication routes into the national and regional water associations and are well connected to the utilities in their region and will use these channels to present results and stimulate discussion, feedback and uptake.

2.2 Regulatory route – Authorities & policy maker on local, regional, national, international and EU level (TG4)

Regulatory authorities and policy makers are responsible to design, issue and implement legislative and regulatory measures which ensure safe and secure drinking water supply. Similar to water utilities they need access to the relevant knowledge and scientific advice on safety and health risks and mitigation measures and thus form another important target group of SafeCREW. The EU DWD is one major means of legislation; and SafeCREW aims at providing input to the DWD and its watch lists. SafeCREW partner UBA is a regulatory body itself and well embedded in the national, international and European bodies for water legislation and regulation. On the international level, it hosts the WHO Collaborating Centre and it is engaged in ENDWARE (European network of drinking water regulators). In the second half of the project, UBA will disseminate SafeCREW policy and regulation recommendations via these channels into European water regulation and legislation.

2.3 Science and regulatory route via related EU projects (mainly ZeroPollution4Water Cluster, TG2)

A significant number of Horizon 2020 and Horizon Europe projects address security and zero pollution of water resources and supply, among them SafeCREW and its six sister projects under CALL HORIZON-CL6-2022-ZEROPOLLUTION-01-01/-04 (Table 1). These seven projects have a significant potential to pool resources, exploit synergies, and thus increase the body of knowledge as well as the impact on safe and secure water supply. The European Commission (EC), especially DG ENV, expects high impact on policy shaping and effective water management from their cooperation and has initiated the formation of the ZeroPollution4Water Cluster (see chapter 4). In addition, SafeCREW partners have a track record of concluded and ongoing European projects and will use these opportunities for mutual



exchange and learning. Cooperation of SafeCREW with the ICT4Water Cluster is currently under preparation in order to benefit from mutual exchange and to enhance the outreach on modelling, soft sensors and data driven water management.

Table 1: Related EU projects in the ZeroPollution4Water Cluster

ZeroPollution4Water Cluster	
HORIZON-CL6-2022-ZEROPOLLUTION-01-04	H2OforAll , intoDBP , SafeCREW , ToDrinQ
HORIZON-CL6-2022-ZEROPOLLUTION-01-01	MAR2PROTECT , NINFA , UPWATER

2.4 Science and commercial route – (Research communities, private sector and civil society, TG 1, 5, 6)

Research communities, private sector and civil society round off the target groups which benefit from SafeCREW results. SafeCREW aims at contributing to scientific progress on simulation models for DBP and water quality prediction, which will stimulate further research and university curricula on water management solutions. The worldwide distributor network of MSS and the engagement of SafeCREW researchers in the International Water Association (IWA) as well as in the IWA Young Water Professionals serve as examples for the commercial and scientific dissemination route.

Citizens/residents as water consumers will be provided with information about how drinking water suppliers adapt to climate change scenarios. This will build trust in the technical expertise of EU water utilities. The younger generation of water professionals needs role models in climate and water related research and adaptation strategies. Innovative scientific knowledge will expand their education and inspire future career paths in water related environmental engineering.

3. Communication and dissemination activities in the first year

Based on the analysis of the four dissemination routes and six target groups in the previous chapter, this chapter will describe the communication and dissemination activities conducted in the first year of SafeCREW. The external communication activities described here aim at informing the general public about the project and the benefits of European funding for society, raising the awareness of the stakeholders identified and laying the basis for dissemination, exploitation and uptake of results. In order to create a critical mass of information exchange, promote collaboration and knowledge transfer and collect useful feedback, a number of multi-channels, wide-scale online and on-site campaigns has been set up in the first twelve months.

Communication tools comprise mainly visual and digital communication. They lay the foundation to a range of different publications, presentation at conferences and working groups as tools and channels for the dissemination of results. The SafeCREW partners are members in a number of professional networks and use these as main dissemination channels.

3.1 Visual branding and communication

A visual branding was developed in the first four months, which comprises the logo, the SafeCREW colours and templates for presentations and publications. The graphical abstract visualises the approach and the flyer summarises the objectives of SafeCREW. The website safecrew.org was launched in January 2023 (see D5.2).





Figure 2: SafeCREW flyers (Copyright TUTECH)

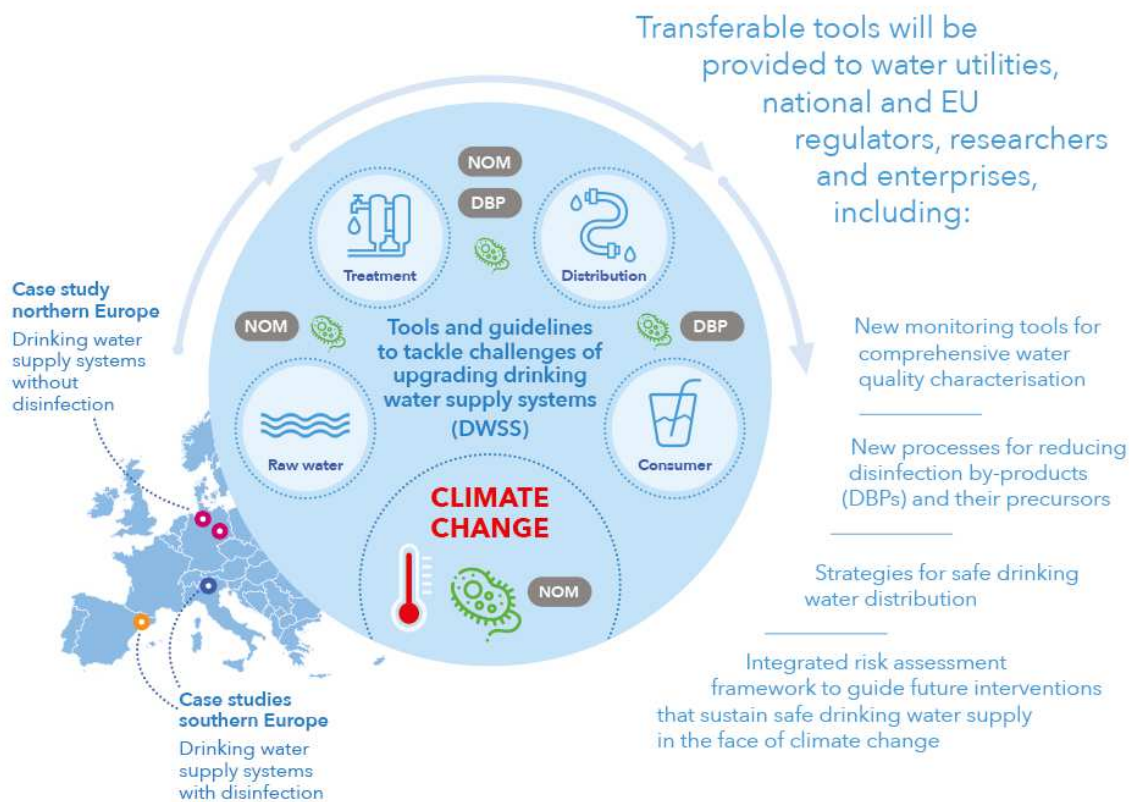


Figure 3: Graphical abstract of SafeCREW (Copyright TUTECH & SafeCREW)

3.2 Digital communication activities

The [project website](#) is the major digital communication platform of SafeCREW. It explains the aims and objectives clearly and introduces the SafeCREW case studies. The website presents the activities and results in a simple format to ensure all target groups have access to the material and an interface to interact in case of further needs or unclarities. Current information on achievements, events and



Funded by the European Union under grant agreement No 101081980. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

interesting facts about drinking water and research have been highlighted in 14 blog posts during the first twelve months. The website currently links to press releases, events, other related projects and resources. Results, deliverables and publications will be displayed once they are published. In addition to the website, Social Media accounts on LinkedIn and X (former Twitter) have been established. Until October 31st, 2023, 28 LinkedIn and 68 X-posts have been published, creating awareness on SafeCREW research and outcomes. These activities resulted in more than 1500 web site visits and 21 downloads, 424 page views, 351 reactions and 120 followers on LinkedIn and 3200 impressions, 218 engagements and 34 followers on X. The blog posts attract water professionals beyond research and the own consortium. 10% of visitors and followers on LinkedIn belonged to water utilities, 13% visitors and 20% of the followers represent engineering services and industry.



Figure 4: SafeCREW website – landing page and news blog (Copyright TUTECH)

3.3 Public facing communication activities

In addition to digital communication activities, a first press release was published on December 1st, 2022, which informed about the start of the project. EUT, POLIMI and MSS also published press releases on the start of SafeCREW via their communication channels. Details about the European wide outreach as well as the uptake by two professional journals have been documented in deliverable D5.2 Project website and flyer release. Articles about the researchers Beatrice Cantoni and Anissa Grieb and were published in Frontiere, the research newsletter at POLIMI, and in the TUHH-Spektrum in June and October 2023, respectively. Both articles inform the public about challenges on drinking water quality and show female professional role models in European funded projects who may inspire students to follow their career path.



SafeCREW researchers also engaged in several events and workshops to encourage students, in particular girls, to studying science and engineering and engaging in the adaptation to climate change (see table 3). On February, 11th, 2023, the International Day of Women in Science, PhD candidate Laura Vinardell (EUT) explained her research about disinfection by-products prediction in distribution networks to students in Barcelona, thus acting as a role model. On February, 23rd, 2023, Manuela Antonelli and Beatrice Cantoni (POLIMI) contributed to a podcast episode on water in the course of the SWITCH podcast series issued by ABB Italy “Let’s change today for a more sustainable future” (still [online](#) available). In September 2023, Anissa Grieb, presented current topics in the water sector and the SafeCREW approach to the Teachers’ Science Club, an initiative offering current research results to train STEM teachers. Mathias Ernst presented “Water resources and water supply in times of climate change” at the 6th climate congress at University of Hamburg, a scientific congress for high school students. An interview was given to students of a 12th class at a vocational school in Germany. They have been involved in a project on drinking water and were interested in the European dimension of the SafeCREW approach and the situation in Germany.



Figure 5: SafeCREW researchers engaged with students (Copyright: Initiative NAT – Jann Wilken and EUT)

3.4 Publications and events as dissemination tools – activities in the first year

During the first twelve months, SafeCREW researchers Jon Wullenweber (DVGW-TUHH), Laura Vinardell (EUT), Beatrice Cantoni (POLIMI) and Maolida Nihemaiti (UFZ) presented four posters at two **international scientific conferences** and one internal workshop in the US, Spain and Germany. Two of these posters were awarded for their high quality. In addition, Beatrice Cantoni (POLIMI) acted as the discussion leader of the session “Chemical and Biological Assessment of Disinfection/Oxidation Processes and Their By-products” at the Gordon Research Seminar (GRS) in July 2023 (see table 4). Carlo Punta (POLIMI) gave an invited lecture at the workshop “Zero pollution - ecotoxicology for safe and sustainable remediation” during the RemTECH Europe on September 22nd, 2023 and the first SafeCREW Master Thesis “Early-warning system for pathogens detection in drinking water: assessment of passive sampler performance and optimal positioning” has been awarded in October 2023 at POLIMI.

MSS organised a **Distributor Conference** on October 15th-16th, 2023 in Manchester, UK. More than 40 distributors of MSS products received an in-depth introduction about SafeCREW presented by MSS and about EUT’s research on modeling THM formation potential. The two presentations aimed at engaging the distributors in paving the way for using the knowledge.





Figure 6: left: Beatrice Cantoni (POLIMI) at GRC; right: MSS Distributor Conference in Manchester (Copyright M. Nihemaiti and MSS)

Until October 2023, the consortium engaged with stakeholders from regional, national and European water utilities, policy makers and the water related industry in two focus groups, seven working group meetings and a first common workshop/seminar with the ZeroPollution4Water Cluster (see Table 5).

Throughout the project, three **focus groups** are planned to get direct input and feedback from water experts who are involved in future developments of drinking water management. The EurEau 1-Drinking Water Committee was chosen as the first focus group. The engagement with EurEau and its Drinking Water Committee had started with a virtual preparation meeting on February 28th, 2023 with the (at that time) President Dr Claudia Castell-Exner and the Secretary General Dr Oliver Loebel of EurEau, who offered their support and feedback throughout the project. At the meeting on June 15th, 2023 in Tallin, Estonia, challenges and needs in drinking water management were discussed with the 80 European water experts, including lab leaders. After an introductory presentation of SafeCREW the EurEau members focused their discussion on the relevance of the expected results, specifically regarding whether the case studies are sufficiently representing the European drinking water sector. An analysis of the types of water sources and disinfection practices will thus be evaluated within the project, e.g. by the planned survey. An additional focus group on German level took place on July 6th, 2023. Following the presentation, 25 workers' council representatives from German water utilities (trade union ver.di) engaged in an exchange about "Changes in raw water quality – requirements of safe water supply" and contributed current experiences in their water utilities, their needs and expectations to be able to uptake the SafeCREW results. This focus group emphasised the importance of being prepared for rising temperatures in the drinking water distribution networks and shared their professional experience as technical staff on current drinking water management approaches with SafeCREW. They highlighted the diversity of regional drinking water supply systems, which will result in a variety of measures of adaptation to climate change. In addition, they asked for easily to understand guidelines on how to manage drinking water treatment under climate change conditions and offered their support as engaging sparring partners. In conclusion, in general the approach of SafeCREW was confirmed as valid and necessary in both focus groups. Both focus groups highlighted the diversity of drinking water supply on a regional as well as on the European level and are highly interested in being involved in future exchange and interaction. With both events, SafeCREW achieved its objectives to build trusting relationships for future validation of its results and to increase its understanding of the needs and challenges of water utilities. The current feedback will also feed into the pathway to stimulate market uptake. The next two focus groups are planned for the third year of the project with the aim to get feedback on the SafeCREW results and next steps for utilisation.





SafeCREW partners introduced the project approach to more than 180 regional and national water utilities, policy makers, water professionals and regional actors in seven working group meetings in Germany, Italy and Spain in the first year. POLIMI engaged in a mutual exchange with the Dutch Advisory Group on Water Quality who aim to inform themselves twice a year on water related challenges and solutions in other countries, this year Italy. In Germany, SafeCREW has been introduced to the Working Group

Drinking Water Hygiene of the DVGW Regional Group North, the DVGW Working Committee Disinfection Procedures “NA 119-07-15” and the 26th Drinking Water Colloquium at TUHH. At the Geofluid 2023 in Piacenza, Italy, MM introduced SafeCREW to the Associazione Acque Sotterranee (the SiCaptAS working group of the Italian section of the International Association of Hydrogeology). CAT engaged in Catalonian working group meetings with the Board of exploitation No. 11 - Lower Ebro Basin of the Ebro Hydrographic Confederation (CHE) and with the CAT Advisory Public Panel (see table 5).

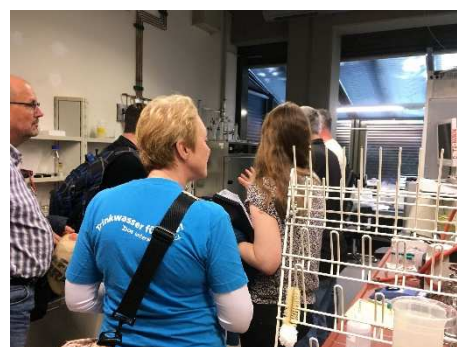


Figure 7: left: Dutch Advisory Group at POLIMI; middle: MM at Geofluid; right: ver.di representatives in DVGW-TUHH lab (Copyright POLIMI, MM, TUTECH)

The European network of drinking water regulators (ENDWARE) met on May 8th-9th, 2023 in Zagreb. ENDWARE is an informal network of EU drinking-water regulators who meet twice per year for exchange of information and experience. UBA provides policy advice to the German Ministry of Health and, in this role, is engaged in the exchange with ENDWARE. On invitation by the German Ministry of Health, UBA contributed a presentation in order to initiate an exchange on SafeCREW’s significance for DWD watch lists with the 30 representatives of the European Commission, public authorities and drinking water regulators. This first presentation raised the awareness on SafeCREW’s objectives and built the foundation for exchange in future meetings. In these future meetings, SafeCREW will then contribute evidence-based recommendations to improved regulation fit for climate change in the drinking water sector.

About 180 European water professionals, utilities and policy makers have been addressed by a common event of the ZeroPollution4Water Cluster at the Water Projects Europe event in Brussels on October 19th, 2023. In cooperation with the ZeroPollution4Water Cluster, the first of four planned webinars “All about DBPs” has been scheduled for November 30th, 2023.

A summary of these communication and dissemination activities is displayed in tables 3-5 in the annex. To evaluate the success of communications measures, the KPI are given in table 2. All KPI have been met in the first twelve months.



4. Clustering activities in cooperation with the ZeroPollution4Water Cluster

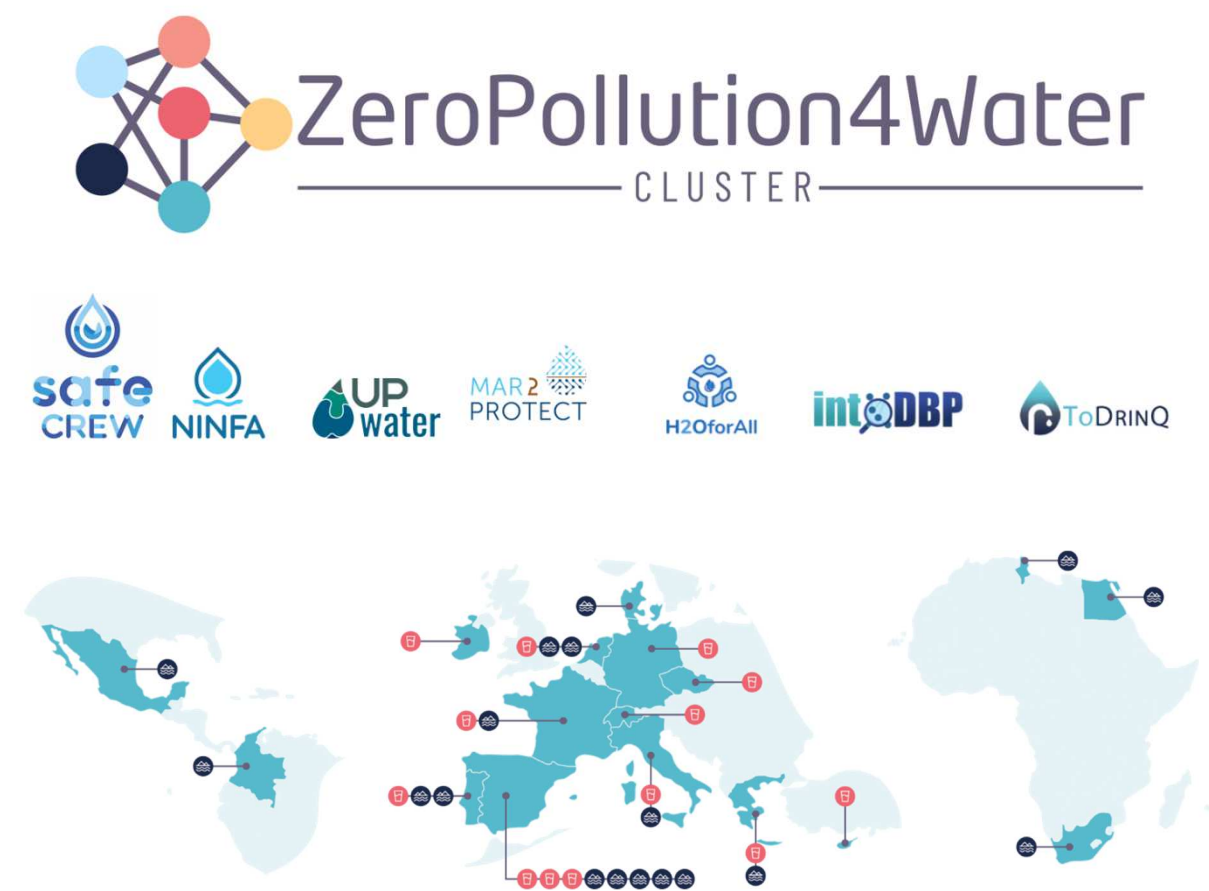


Figure 8: The ZeroPollution4Water Cluster, its cooperating projects and their 31 case studies (Source: <https://zeropollution4water.eu/>)

SafeCREW has joined forces with the ZeroPollution4Water Cluster (ZP4W). The ZP4W Cluster is an initiative that originated from the coalition of seven projects (see table 1) funded from two Horizon Europe 2022 topics calling for:

- Preventing groundwater contamination and protecting its quality against harmful impacts of global and climate change.
- Securing drinking water quality by protecting water sources against pollution, providing innovative monitoring and treatment solutions, and ensuring safe distribution.

Focused on the European Union's Zero Pollution ambition and the European Green Deal, the cluster aims to improve water quality, safeguard drinking water sources, and protect groundwater against the harmful impacts of global and climate change.

By leveraging the collaboration and synergies between the collaborative projects funded through Horizon Europe, the cluster aims to develop advanced preventive and mitigating strategies, effective risk assessment and management systems, and innovative monitoring and treatment solutions for drinking water and groundwater.



Funded by the European Union under grant agreement No 101081980. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

In addition to research and innovation, the Cluster is committed to influencing policy development and implementation. It utilises the Project4Policy methodology to shape EU policies related to water quality and pollution prevention. Collaborating with the European Commission's relevant policy directorates and agencies is integral to drafting a policy agenda based on case studies, success stories, and best practices from the Cluster projects. These efforts aim to support the implementation of EU policies, particularly within the context of the Zero Pollution initiative and the European Green Deal.

In summary, the ZeroPollution4Water Cluster's strategy combines research excellence, collaboration, knowledge exchange, and policy influence to achieve its objectives of creating a toxic-free environment, enhancing water management, and realizing a Water-Smart Society.

The ZeroPollution4Water Cluster is coordinated by Water Europe, which is partner of three of the sister projects. Since its Kick off meeting (KoM) on March 9th, 2023, the Cluster organised itself in six working groups (WG), developed its [Cluster Strategy](#) and the underlying [action plan](#) for the first twelve months. SafeCREW participated in all working group meetings and contributed significantly to the setup of the Zeropollution4Water.eu website, Social Media accounts, the [flyer](#) and the [rollup](#). Flyer and rollup were published on October 19th, 2023, the website is online since November 16th, 2023 and first [LinkedIn](#) and [X](#)-posts have been published shortly after the website launch.

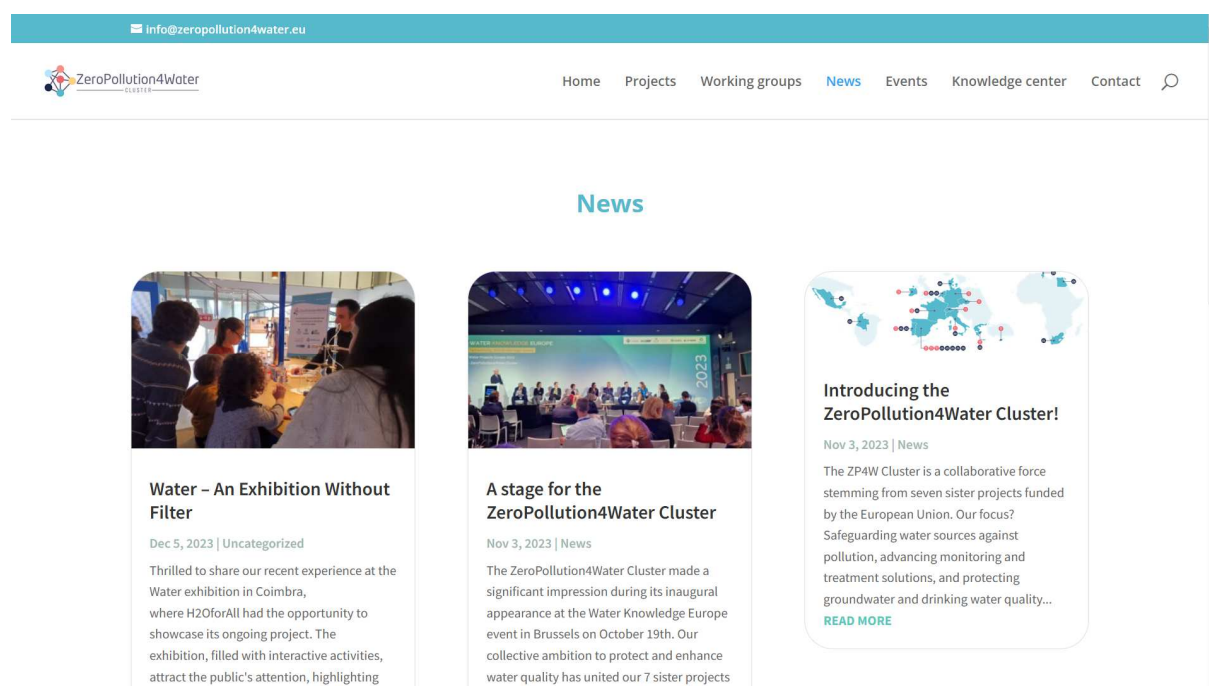


Figure 9: Screenshot from Zeropollution4Water website (Copyright ZeroPollution4Water Cluster)



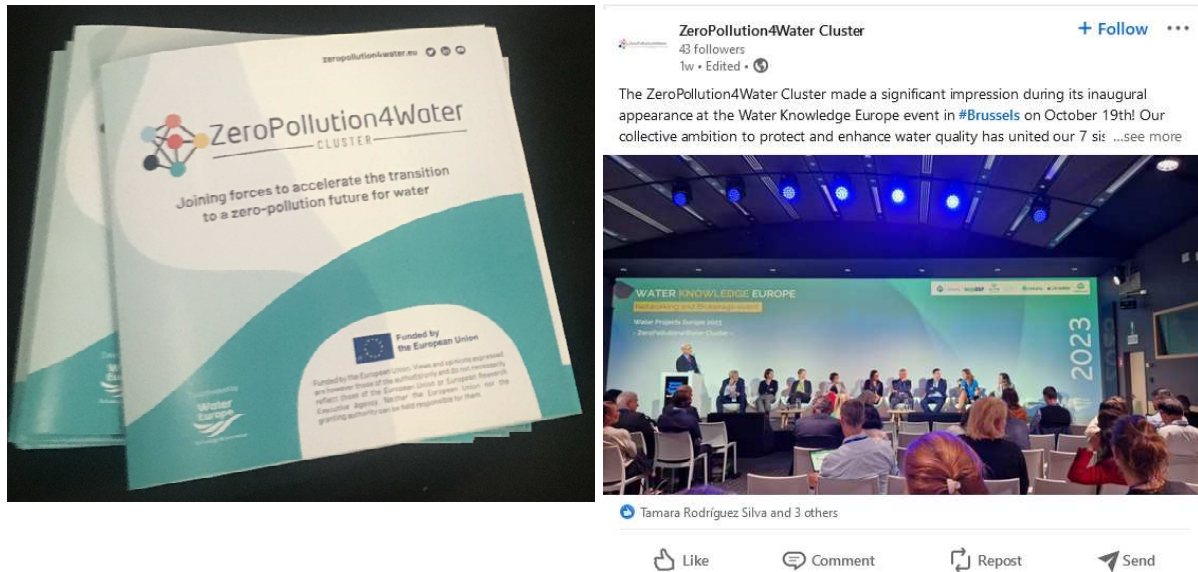


Figure 10: left: ZP4W flyer; right: Screenshot of ZP4W LinkedIn Post (Copyright Water Europe and TUTECH)

The first public event of the ZP4W Cluster took place on October 19th, 2023 in Brussels. Hands in hands with the seven projects, Water Europe organised it as a Water Projects Europe event (WPE23). Water Projects Europe is a series of events of Water Europe made to learn from and build on the experience of innovative projects working on converging topics. The ZeroPollution4Water Cluster shares the event's objectives to foster collaboration and synergies between EU-funded projects; to develop strategies for the market outreach of the projects' outcomes; and to extract and valorise components useful to policy building. Representatives from the projects and the European Commission introduced the audience to the Cluster's potential, ambitions, and relevance to the European landscape during the two and a half-hour session in the umbrella event Water Knowledge Europe.



Figure 11: left: Representatives of the seven sister projects of ZP4W, Violeta Kuzmickaite (REA); right: SafeCREW presentation at the Water Projects Europe (Copyright Water Europe and TUTECH)

The Water Projects Europe Workshop 2023 served as a platform to delve into the contribution to implementation of EU Legislation and Research & Innovation of the seven sister projects. It provided the opportunity to explore how the projects can complement and support one another in achieving the shared goal of ensuring water quality and safeguarding public health. During the event, SafeCREW



Funded by the European Union under grant agreement No 101081980. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Research Executive Agency. Neither the European Union nor the granting authority can be held responsible for them.

and the other six projects shared their insights and knowledge on their ability to implement control at the source in order to preserve the quality of groundwater or surface water, to implementing risk management plans, and to fill the Research and Innovation gaps. The event will result in a first policy brief of the Cluster. Water Europe, intoDBP and ToDrinQ will take the lead on this common policy brief.

SafeCREW values the huge potential of the Cluster to build a critical mass of knowledge and expertise to effectively participate to the debate on water effective management and contribute to policy development. Thus, SafeCREW has actively participated in all six working groups (WG) and all clustering activities during the inauguration period and is committed to continue this engagement. SafeCREW leads the WG5 Data Management and Sharing and has contributed significantly to WG2 Policy Advisory, WG3 Communication and WG4 Technology and Innovation. SafeCREW kicked off the collection of all case studies in the ZeroPollution4Water Cluster and will lead the development of the first draft of a Case Study Inventory. This Case Study Inventory will serve as a communication measure as well as the basis for the activities of the technical working groups.

A first joint webinar, led by H2OforAll and SafeCREW has been scheduled for November 30th, 2023. The webinar “All about DBPs (Disinfection by-products)” attracted more than 80 registrants by November 23rd, 2023. These represent a significant number of water professionals from utilities and from countries beyond those represented by the seven consortia of the ZeroPollution4Water Cluster.

5. Analysis of the first year of communication and dissemination

SafeCREW pursues the vision, to ensure drinking water continues to meet high-quality standards for all EU consumers in the face of the effects of climate change by supporting water utilities in climate-resilient management procedures for safe disinfected and non-disinfected water supply systems. It aims to support the novel EU Drinking Water Directive (DWD) by generating advanced knowledge and developing tools and guidelines for disinfected and non-disinfected drinking water supply systems. SafeCREW's communication and dissemination activities as well as clustering activities have been designed to support the broad uptake of the solutions and technologies, which will be delivered in the course of the project. The first year has been dedicated to establishing the communication channels and to raise awareness about the project and its objectives and the means proved successful. It was possible to present the project and its goals in more meetings and events than originally planned (see tables in the annex). SafeCREW has been actively approached by water professionals seeking information and has also been invited to relevant working groups. This indicates the high interest of the stakeholders in the SafeCREW approach. The already existing networks of the consortium turned into trusting relationships to water utilities, their associations, regulators and policy makers on the regional, national and EU level. Targeted information in seven meetings and two focus groups engaged more than 200 professionals from utilities, regulators and policy makers in active discussions. All meetings and events confirmed the need for SafeCREW's solutions. Valuable insights on the diversity of the water sector and into needs and demands of the stakeholders could be gathered and will feed into the targeted development of tools and solutions. The goals to ensure visibility, inform about the project, gather insights and establish trusting relationships have been fully achieved. In-depth future interaction kicked off and prepared the ground for the implementation of results, which will enable measurable impact in the following period. Moreover, coming high quality scientific publication on new sulfonated DBP, analytical methods and treatment options in technical journals will boost the visibility in the relevant scientific community.



6. Future communication and dissemination

In the next twelve months first results of SafeCREW will become available. This will shift the focus towards dissemination of these results. The preparation of scientific publications and conference contributions will become one major activity, accompanied by continuing participation in at least two working groups of water associations representing regional, national and European water utilities or policy or regulatory bodies. At least one additional webinar will be organised in order to train water professionals in safer managing of drinking water networks. EurEau has offered its Innovation Sharing Platform as a channel.

SafeCREW will continue its close collaboration with the ZP4W Cluster. Based on the upcoming annual action plans of the ZP4W Cluster, this will include the finalisation of the Case Study Inventory, the participation in joint events engaging with the EC policy makers, joint policy briefs and training webinars for water utilities. The ZP4W posting of general news about the projects will serve to engage with the civil society and increase their knowledge on how to reduce water related health issues.

An exploitation roadmap will be designed and delivered in April 2024 (D5.3), and dedicated communication and dissemination activities will support the exploitation roadmap. The exploitation roadmap will contain a balance of commercial and public valorisation of the results thus maximising the impact on safe and secure drinking water management.

With further consolidation of the results, the dissemination activities will focus on providing guidance and tools to water utilities, e.g. strategies for safe drinking water distribution and an integrated risk assessment framework to guide future interventions that sustain safe drinking water supply in the face of climate change. Input to policies and regulations will include protocols for testing materials in contact with disinfected water and two policy briefs, one regarding disinfection and disinfection by-products and one to support unavoidable transition from non-disinfected to disinfected networks.

Two short project videos are planned in the course of the project (M30, M36), one to summarise results for water professionals, the other to communicate SafeCREW's goals and results to the general public. Participation in local public-oriented activities will continue to inform residents. At the end of the project, a public Final Report will aggregate the guides and recommendations and summarise the results as a means for knowledge transfer beyond the project duration.

As all partners will embed the results of SafeCREW into their own research and development agenda, scientific, teaching as well as entrepreneurial exploitation will be continued beyond the project duration. To facilitate long-term use, results and reports will be stored on durable repositories at the partners' institutions and beyond.

7. Conclusion

This summary of communication and clustering activities in year 1 reviews the communication and dissemination activities of the SafeCREW project between November 1st, 2022 and October 31st, 2023. These first twelve months formed the initiation phase of the project with the start of the experimental work and related actions. Informing about the SafeCREW objectives and approach and establishing interaction with the stakeholders has been the main communication goal in this phase in order to prepare the channels for the dissemination and exploitation of results in the upcoming years. The formation of the ZeroPollution4Water Cluster offers the potential to exploit synergies between seven projects funded by Horizon Europe and aiming at securing drinking water supply under climate change



conditions. A visual communication pack, the SafeCREW website and Social Media activities have been launched (documented in D5.2), the Plan for Exploitation and Dissemination of Results (PEDR, delivered as D5.1 in April 2023), has been refined. Based on the PEDR, the interaction with major stakeholders, e.g. regional, national and European associations of water utilities, started successfully and will allow continuous mutual exchange and cooperation. Working group meetings, workshops, webinars and digital communication have attracted more than 200 water professionals from research, utilities, industry and policy beyond the geographical reach of all ZeroPollution4Water Cluster projects. Public engagement raised the interest of students in water research as a means to adapt to climate change.

The communication and clustering activities of the first year build a good foundation for further cooperation and the uptake of results. In particular the collaboration in the ZeroPollution4Water Cluster will allow enhanced outreach to the target groups and increase the impact on policy and technology development. In the next period, scientific publications and training events will turn first SafeCREW research results into practice. Finally, policy briefs and guidance documents will support climate-resilient management for safe disinfected and non-disinfected water supply systems.



Annex - Tables documenting the communication and dissemination activities

Table 2: KPIs for communication channels (numbers achieved in black, numbers planned in grey)

KPI for communication	Phase I (M1-12)	Phase II (M13-30)	Phase III (M30-42)	Overall	Targeted audience
Website views	1565 (42 per week) / 300	700	1000	2000	All stakeholders
LinkedIn posts / X-tweets	28/68 (12/24)	18/45	12/36	42/105	All stakeholders
Posts or press releases	14 website posts/ 1 press release (2/1)	6/1	6/2	14	All stakeholders
Number of accesses to press release	919 (300)	300	300	900	All stakeholders
Video views			300	300	All stakeholders
Number of key activities	10 / 5	7	7	19	All stakeholders

Table 3: Public engagement (November 1st, 2022 – October 31st, 2023)

Activity	Period	Topic	Targeted stakeholder groups
Teaching undergraduates	11 February 2023 (M4)	<i>International Day of Women and Girls in Science (focus UN SDG): Laura Vinardell, PhD candidate at EUT explained her research about disinfection byproducts prediction in distribution networks to students at "Institut Eduard Fontseré" (Hospitalet de Llobregat, Barcelona) and acted as role model.</i>	Young generation/general public: 12 year old students in three different classes
Contribution to podcast by ABB Italy on "Water for a sustainable future"	23 February 2023 (M4)	Contribution to ABB Italy podcast "SWITCH, Cambiamo oggi per un domani più sostenibile" (let's change today for a more sustainable tomorrow"), episode on "Water". Manuela Antonelli and Beatrice Cantoni (POLIMI) presented the goals of SafeCREW in addressing the climate-induced issues of drinking water disinfection.	Public society and industrial stakeholders (permanent ABB podcast channel, number of audience not available)
Phone call/interview with student of 12 th class	8 September 2023 (M11)	Margarete Remmert-Rieper informed student of 12 th class of KBS Eutin, currently involved in a project on drinking water, about the objectives of the SafeCREW project, esp. the European dimension as well as the German situation	Young generation/general public: vocational school, one student on behalf of school project
Lecture to science teachers	12 September 2023 (M11)	Anissa Grieb, coordinator of SafeCREW. Engaged in a talk and active discussion about SafeCREW and current topics in the water sector at the Teacher's Science Club , a cooperation of Schülerforschungszentrum	General public: 20 teachers in science, technology and engineering



Activity	Period	Topic	Targeted stakeholder groups
		Hamburg and the Körber-Stiftung, an initiative offering the opportunity for STEM teachers to inform themselves about current research.	
Lecture to upper grade students in Hamburg	21 September 2023 (M11)	Kk23 – 6 th climate congress at University of Hamburg, scientific congress together with Hamburg's universities and upper grade pupils from secondary schools with STEM profiles, focusing on climate research and future scenarios. Mathias Ernst presented "Water resources and water supply in times of climate change"	Young generation/general public: <650 students

Table 4: Contributions to scientific conferences

Event type / Conference	Focus. target group, number of participants	Project month	Representation of SafeCREW
1 st Workshop of TUHH's Research Cluster (RC) "Biobased Process and Reactor Technologies", Hamburg	Internal workshop on biobased processes and reactor technologies, 30 PhD of the RC present posters on their research	12 June 2023 (M8)	Jon Wullenweber (DVGW-TUHH) achieved award for his poster "Chlorine based disinfection byproduct (DBP) precursors removal during drinking water treatment"
6 th IWA International Conference on Eco-Technologies for Wastewater Treatment (https://www.ecostp2023.org/)	Transfer of knowledge into practice, resilient future for water management, 150 participants	26-29 June 2023 (M8)	Poster by Laura Vinardell (EUT): "Synergistic cytotoxicity of specific combination of water disinfection byproducts assessed by bacterial reverse mutation tests"
GRC conference on water disinfection, byproducts and health , Options and Limitations of Disinfection and Oxidation Processes for Water Safety, (Mount Holyoke College, South Hadley, United States)	International scientific conference focused on cutting-edge research in the area of water disinfection, DBPs and health, prioritizing time for discussion;	30 July – 4 August 2023 (M9)	Maolida Nihemaiti (UFZ): Poster award for "Revisiting disinfection byproducts with supercritical fluid chromatography-high resolution-mass spectrometry: identification of novel halogenated sulfonic acids in disinfected drinking water"; Beatrice Cantoni (POLIMI): poster "SafeCREW: a holistic project to reduce NOM and DBPs in drinking water and minimize the human health risk under climate change scenarios" and Discussion Leader of the session "Chemical and Biological Assessment of Disinfection/Oxidation Processes and Their Byproducts"
RemTech Europe , Ferrara Fiera, Ferrara, Italy	International Conference and Exhibition on land and water remediation markets and technologies, knowledge sharing and discussion; workshop "Zero pollution - ecotoxicology for safe and sustainable remediation", organised by Italian Language Branch of the Society of Ecotoxicology and	22 September 2023 (M11)	Carlo Punta (POLIMI): Invited lecture at workshop "Zero pollution - ecotoxicology for safe and sustainable remediation": "Environmental safety of nanotechnologies for environmental remediation: The case study of bio-based nanostructured materials between past and future" to show how materials successfully developed by POLIMI unit for waste water remediation (past) can be considered



Event type / Conference	Focus. target group, number of participants	Project month	Representation of SafeCREW
	Environmental Chemistry 150 participants		for treating drinking water to remove disinfection byproducts (future)"
Distributor conference of Multisensor Systems (MSS), Bridgewater Hall, Manchester, UK	> 40 people from the worldwide distributor network of MSS, 2 days conference with a 40 minutes slot about SafeCREW	15-16 October 2023 (M12)	Organised by MSS, two SafeCREW presentations (MSS, EUT): introduction and information about modeling of THM formation potential
Water Projects Europe back to back with Water Knowledge Europe 2023 , Brussels	Specialised brokerage event of Water Europe, key actors across the water value chain	19 Oct 2023 (M12)	First ZeroPollution4Water Cluster event, SafeCREW participated and presented

Table 5: Key dissemination activities in the first year (November 1st, 2022 –October 31st, 2023)

Activity	Period	Topic	Targeted stakeholder groups
Focus groups #1A of 3	15 June 2023 (M7)	"Challenges and needs in DW management; tasks for SafeCREW" together with EurEau; organiser DVGW-TUHH; preparations started on February 28 th , 2023, with a virtual meeting with the President Dr Claudia Castell-Exner and the Secretary General Dr Oliver Loebel of EurEau; virtual module during Committee meeting in Tallinn, Estonia	EurEau 1 - Drinking water committee; 80 European water experts, including lab leaders
Focus groups #1B of 3	6 July 2023 (M8)	"Changes in raw water quality – requirements of safe water supply": presentation of SafeCREW by speaker of DVGW-TUHH; physical meeting at TUHH with the Federal Specialist Group Water Management of ver.di during their Water Management Seminar; goal to collect needs and expectations and stimulate further interaction.	Water utility staff/technicians: 25 workers' council representatives from German water utilities (trade union ver.di)
Seminars and workshops #1 of 2	19 October 2023 (M12), together with ZP4W	Water Projects Europe (Brussels): Boost synergies between the twin topics HORIZON-CL6-2022-ZEROPOLLUTION-01-01 & HORIZON-CL6-2022-ZEROPOLLUTION-01-04 in contributing to clean water and zero pollution demonstrations in a climate change (back-to-back to Water Knowledge Europe) – common activity with ZeroPollution4Water Cluster (ZP4W).	180 participants from European Commission (EC), policy makers, public and private water sector, EU projects
Webinars #1 of 4	Scheduled for 30 November 2023, together with ZP4W	"All about DBP (Disinfection byproducts)": 90 minutes webinar organised by H2OforAll and SafeCREW as first common ZP4W Cluster webinar; focus on formation and detection of DBPs in drinking water, training water professionals	EC, all target groups, with a focus on researchers; >80 registrants by Nov 23 rd , 2023
Networking with water associations		<i>Contribution to 2 working group meetings per year in first 3 years & to 1 meeting in final year.</i>	<i>National regulators, utilities, local/regional actors, research community</i>
#1	3 November 2022 (M1)	Working Group Drinking Water Hygiene of DVGW Regional Group North, short introduction of SafeCREW by Anissa Grieb (DVGW-TUHH)	15 participants, mostly German policy makers, utilities, associations



Activity	Period	Topic	Targeted stakeholder groups
#2	16 February 2023 (M4)	Organisation of 26 th <u>Drinking Water Colloquium</u> at TUHH, including the introduction of SafeCREW by DVGW-TUHH	100 participants, mostly from German water utilities, water utility associations, health authorities, research centres
#3	13 March 2023 (M5)	Meeting of the CEO of CAT with the CHE (Ebro Hydrographic Confederation) committee; explanation of the SafeCREW project, as it covers the impacts of climate change on the river waters.	27 regional utilities, policy makers, regulators, water professionals, water users: CHE (Ebro Hydrographic Confederation) committee)
#4	4 April 2023 (M6)	Visit of the Dutch Advisory Board on Water Quality at Politecnico di Milano (POLIMI), Department of Civil and Environmental Engineering (DICA) – Environmental Engineering Research group, The Dutch Advisory board aimed at gathering information about water issues in other countries and regions, mutual exchange and provision of feedback to SafeCREW	20 Dutch water experts working for drinking water utilities and laboratories
#5	18-19 April 2023 (M6)	DVGW: DVGW Working Committee Disinfection Procedures “NA 119-07-15”, introductory presentation of SafeCREW project by speaker of DVGW-TUHH with the goal to initiate and stimulate engagement for further interaction	12-15 German water utilities, water utility associations, health authorities, German water research centers
#6	13 September 2023 (M11)	<u>Associazione Acque Sotterranee</u> : "Groundwater for human consumption: novelties introduced by the recent Legislative Decree 18/2023, applications and case studies - SiCaptAS Working Group - IAH-Italy Committee"; presentation of MM (Fabio Marelli, Sara Rizzo) together with Luca Alberti from POLIMI on "Sustainable and resilient management of groundwater resources, the support of numerical modelling in the realisation of the Milan WSP"; organised specifically for the GeoFluid 2023 , Piacenza, Italy	About 50 water professionals, geologists, and engineers (national utilities, local/regional actors)
#7	26 October 2023 (M12)	CAT: Public Advisory Panel meeting of CAT (included in CAT's Corporate Social Responsibility program): introductory talk about SafeCREW.	17 stakeholders representing local/regional actors, national regulators, utilities, research community (Catalan)
Events with regulators, standardisation bodies #1 of 3	08-09 May 2023 (M7)	Exchange on SafeCREW's significance for DWD watch lists; ENDWARE-meeting in Zagreb; German Ministry of Health invited UBA to contribute a short presentation to introduce the project	30 people: European Commission (EC), public authorities, DW regulators

