

State of art

AdSWiM project | WP2 | Municipality of Udine

Steering Committee Meeting | online | 14.12.2021 |

Activities in WP2.2: New social graphic design for events and workshops

REMTECH
Europe

September 24, 2021.
Adswim workshop and course.
14.30-19.00 central european summer time

Remtech Europe
September 24, 2021

WASTEWATER CONTROL AND SEAWATER QUALITY: IT IS POSSIBLY TO DO IT , ACTING DIFFERENTLY?



**LA TUTELA DELL'ECOSISTEMA DEL MARE
ADRIATICO E DELLE SUE COSTE: l'esperienza del progetto
AdSWiM ed il coinvolgimento del territorio**

16 settembre 2021 alle 15.00, presso l'Aula Gusmani
di Palazzo Antonini dell'Università degli studi di
Udine .

Local workshop in Udine
September 16°, 2021

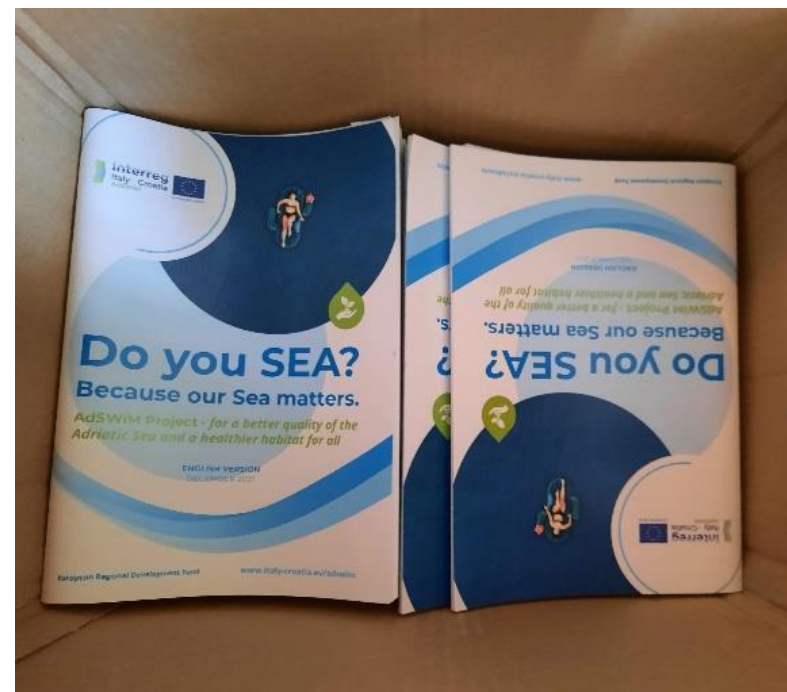


Activities in WP2.2: New social graphic design for new year greetings card



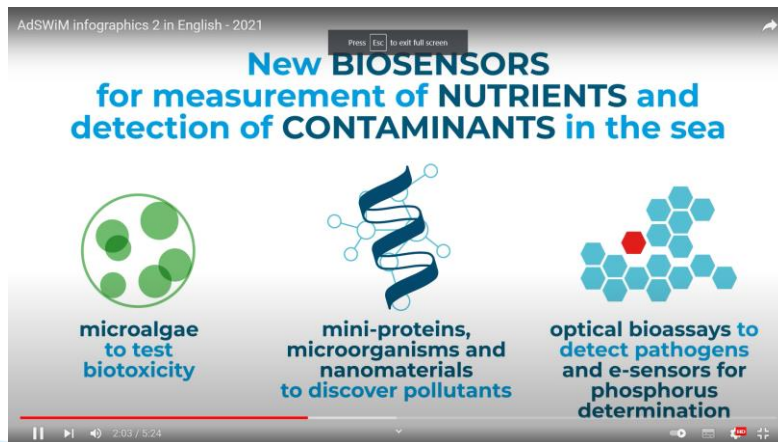
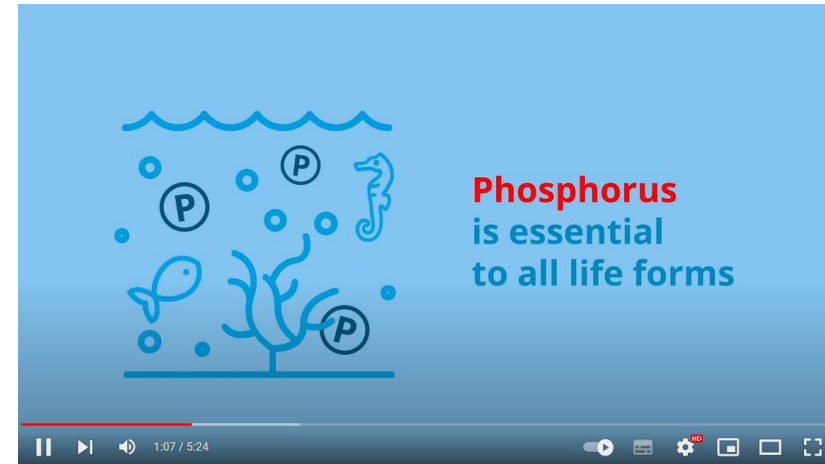
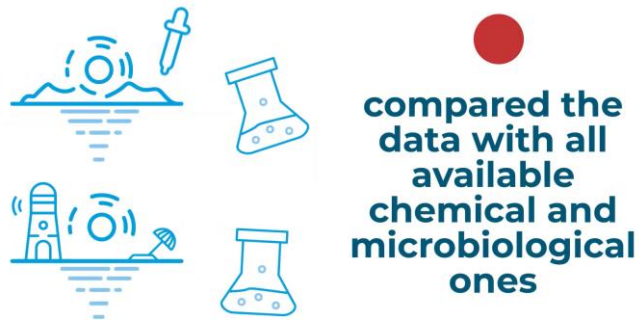
Activities in WP2.2: Brochure

The brochure has been produced in ITA, CRO and ENG both in a online and printable version



Activities in WP2.2: Animated infographic

The second animated infographic has been completed and published on AdSWiM Youtube channel (<https://www.youtube.com/watch?v=97cW3d4VmYg&t=11s>).



Activities in WP2: One campaign – 3 targets

Four social campaigns have been launched on social media in this semester: The Mediterranean Sea (July 8th); International Girls Day (October 11th), World Science Da (November 10th) Children Rights Day (November 20th).



www.italy-croatia.eu/web/adswim



Activities in WP2: Promotional material printing

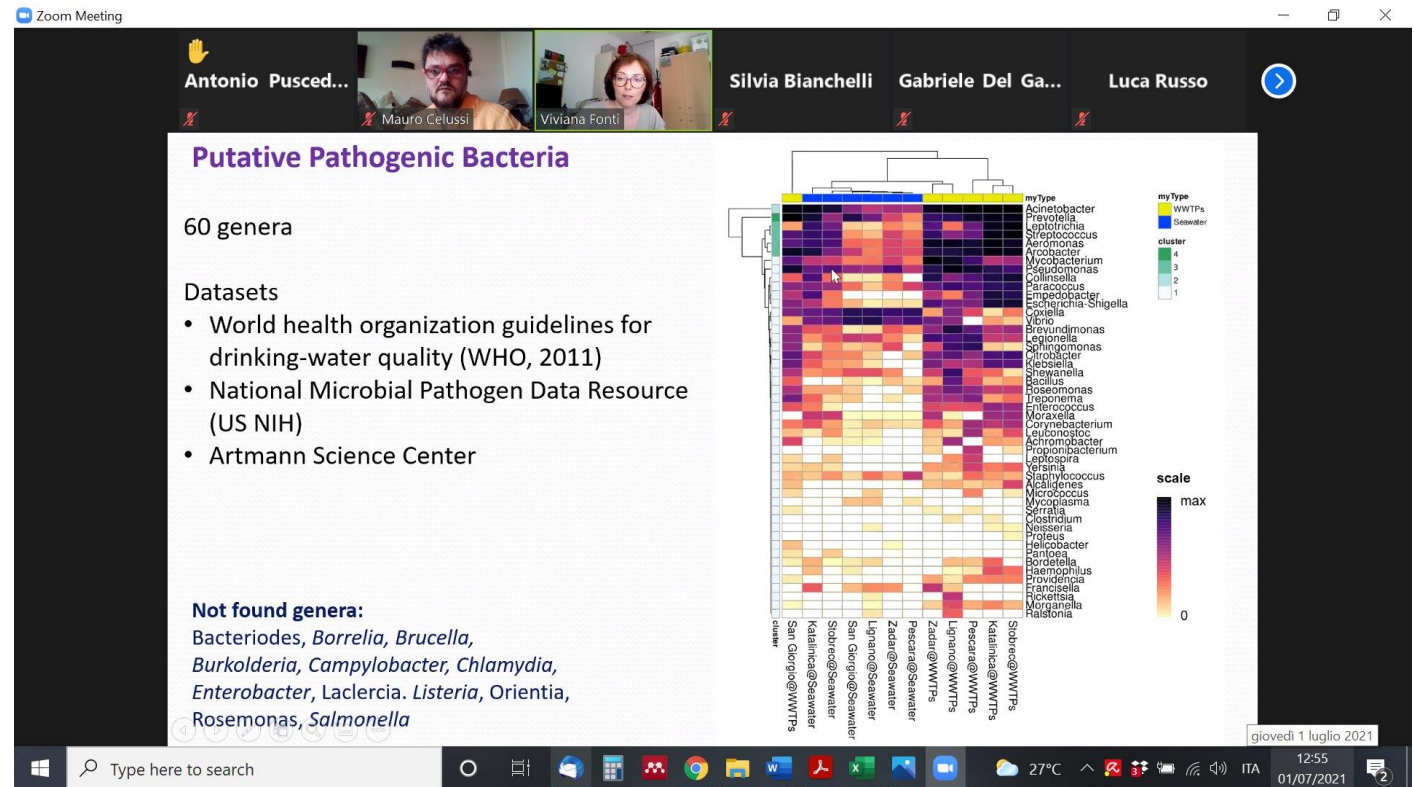


Activities in WP2.4: what has been done from July 2021

International event AIOIL Congress participation

[Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - OGS](#)

researcher Mauro Celussi, moderated the session entitled "New prospects in integrated [#marine #ecology](#): from [#biodiversity](#) to ecosystem services" at the 25th [#AIOILCongress](#) that takes place online between 30 June and 2 July 2021.



Activities in WP2: what has been done from July 2021

Online international event



New scientific contribution from our partners [Università degli Studi di Udine](#) and [Univpm Università Politecnica delle Marche TraCE Lab](#) related to the technological innovations and [#wastewater](#) management.

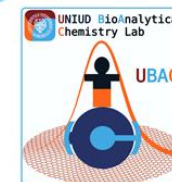
Bioanalitica 2021 | Electrochemical Sensors

POM/PMO-decorated Plastic Electrode for the Sensitive Detection of Phosphate in Oligotrophic Seawaters

[Sondes Ben Aissa](#), Anna Annibaldi, Sabina Susmel.

Online Conference | 13 July 2021

www.italy-croatia.eu/adswim
European Regional Development Fund



Activities in WP2: what has been done from July 2021

Online international event

July 27. Dr. Viviana Scognamiglio, PhD from our Italian partner IC - CNR- Institute of Crystallography, National Research Council – CNR (PP5) [Adswim Ic-Cnr](#) presented the Adswim research work and project partial results during the International [#Biosensors](#) Conference 2021..



Activities in WP2: what has been done from July 2021

Online international event

September 23. [Project Watercare](#) joint event with [Comune Di Udine](#) and [Zavod za javno zdravstvo Zadar](#) as Adswim representative



September 23, 2021.
Joint conference online on ZOOM.
10.00-13.00 central european summer time

“Conversation on practices and methods for sustainable marine eco-system”



Online Conference
WATERCARE, ADSWIM, ASTERIS AND ECOMAP

“Conversation on practices and methods for sustainable marine eco-system”
Zoom Platform
Agenda

23 rd September 2021	
9:45 – 10:00	Registration
10:00 – 10:15	Moderator introduction to the event <i>Ivana Kristović, Dubrovnik Neretva Region, WATERCARE</i>
10:15 – 10:30	Water management solutions for reducing microbial environment impact in coastal areas <i>Elisa Baldrighi, CNR IRBIM, WATERCARE</i>
10:30 – 10:45	Sampling of WATERCARE sites <i>Vedrana Špada, Università Istriana di scienze applicate, WATERCARE</i>
10:50 – 11:05	Moderator introduction to next project and speakers Wastewater & Adriatic Sea Quality: The Laboratory Experience in Interreg IT-HR ADSWIM Project <i>Jadranka Šangulin, Institute of Public Health of Zadar, ADSWIM</i>
11:05 – 11:20	Comparative analysis of Italian and Croatian legislation on watercare: critical issues and opportunities <i>prof. Leopoldo Coen, consultant for Municipality of Udine, ADSWIM</i>
11:25 – 11:40	Moderator introduction to next project and speakers Risk of salt intrusion in coastal aquifers related to future climate scenarios <i>Gaia Galassi, University of Urbino, Department of Pure and Applied Sciences and Marche Region, Environmental Assessment Office, ASTERIS</i>
11:40 – 11:55	An adaptation plan for the salt water intrusion into the coastal aquifer of Fano (PU, IT): management of risk in sea level rise scenarios <i>Nicola Quaranta, GEO engineering s.r.l., Turin, ASTERIS</i>
12:00 – 12:15	Moderator introduction to next project and speakers Water recovery pilot plant through the installation of accumulation tanks in the beach showers, for the recovery of water to be used for irrigation <i>Lorenzo Braida, Bibione Mare S.p.A. di San Michele al Tagliamento, ECOMAP</i>
12:15 – 12:30	Pilot Actions in Spinut and Strozanac marinas for the containment of water pollutants <i>Diego Santalana, International projects coordinator Upper Adriatic Technology Park, ECOMAP</i>
12:30 – 13:00	Wrap up, discussion, main conclusions (all participants)

European Regional Development Fund



ZAVOD ZA JAVNO ZDRAVSTVO ZADAR



Activities in WP2: what has been done from July 2021



SESSION 23
Wastewater control and seawater quality: it is possible to do it acting differently?

24 SEPTEMBER FRIDAY
14.30 – 19.00 CEST (Central European Summer Time)

Opening

14:30 Welcome from AdSWiM and Remtech Europe
Sabina Susmel (Università degli Studi Udine_AdSWiM project) Marco Falconi (ISPRA, Remtech Europe)

14:45 Welcome from the chairs
Sabina Susmel (Università degli Studi Udine_AdSWiM project) Marvin Unger (SERDP-ESTCP, Remtech Europe)

Presentations

15:00 Biosensors for environmental analysis: Trends and perspectives
Dr. Ilaria Palchetti Università degli Studi Firenze

15:45 Algae based biosensors and total toxicity
Dr. Viviana Scognamiglio (IC-CNR-Rome_AdSWiM project)

16:15 Coffee break

16:30 Molecular tools for new insights into the microbiology of treated sewage and consequences on coastal seawaters
Dr. Viviana Fonti (OGS-Trieste_AdSWiM project)

17:00 Depuration plant, Wastewater and Adriatic Sea: experiences in Interreg IT-HR projects (VIK/PHI-Zadar/CAFC/ACA)
Ing. Božidar Čapalija, Dr. Jadranka Šangulin, Ing. Nicola De Bortoli, Ing. Giovanna Brandelli (AdSWiM-Watercare)

17:45 Intervention of the participant suggestions on analytes of interest and / or emerging problems

18:15 Conclusions

19:00 End of the session

Online international event

September 24: Adswimproject
on Remtech today: Adswim
project on RemTech Expo
Ferrara Fiere today

Activities in WP2: what has been done from July 2021

Online international event



UNIVM at Sealogy in
Ferrara
19 November 2021



Activities in WP2: what has been done from July 2021

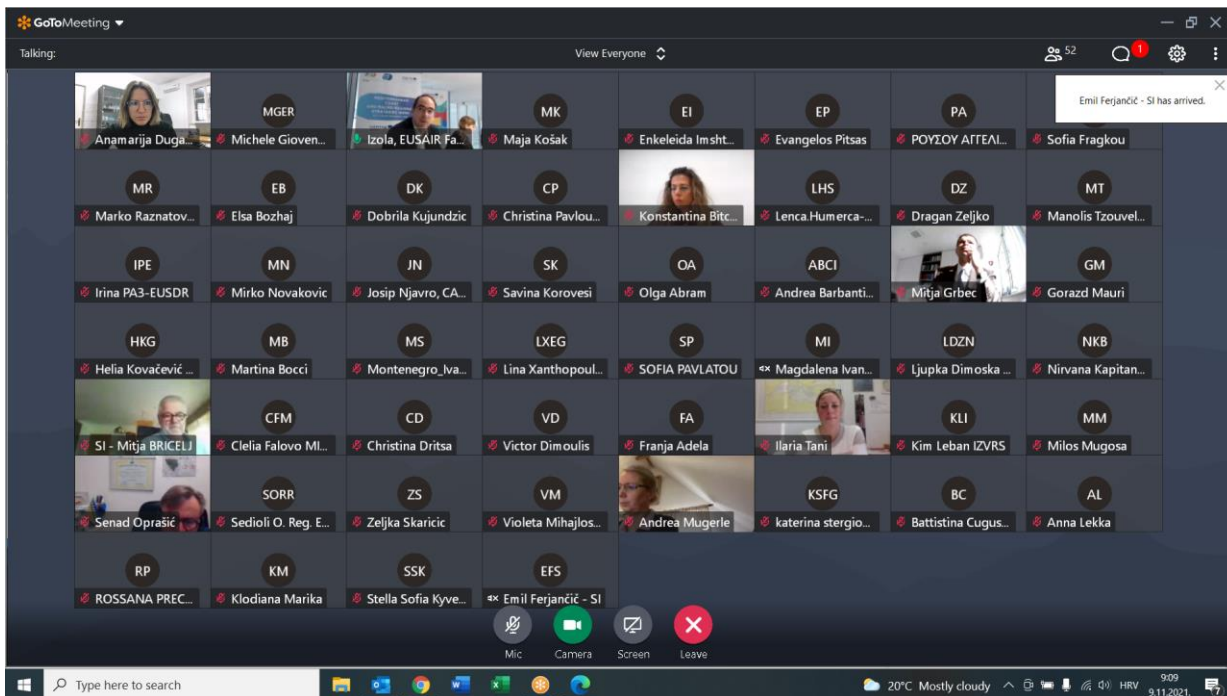
Online international event



On October 10, 2021, Our Project AdSWiM was presented at a National policy roundtable which gathered 22 key stakeholders that are co-creating the legal and policy framework in Croatia. The roundtable was organized on Thursday, 7th of October 2021 at the Dioklecijan Hotel & Residence, Split by PP9 (Split Water and Sewerage Ltd.) within Project City Water Circles - CWC (co-financed through the Transnational cooperation program INTERREG Central Europe 2014.-2020.), Boris Bulović, Project Manager of Vodovoda i kanalizacije d.o.o. Split provided participants with interesting information about the AdSWiM project, its main objectives, and results. The main goal of the CWC roundtable was to develop a dialogue regarding the country's national frameworks and the developed national level policy recommendations. Moreover, a creative debate and brainstorming session was encouraged in order to underline the key data and stimulate further sustainable development. More about Adswim: <https://lnkd.in/dpzVnyQy>

Activities in WP2: what has been done from July 2021

Online international event



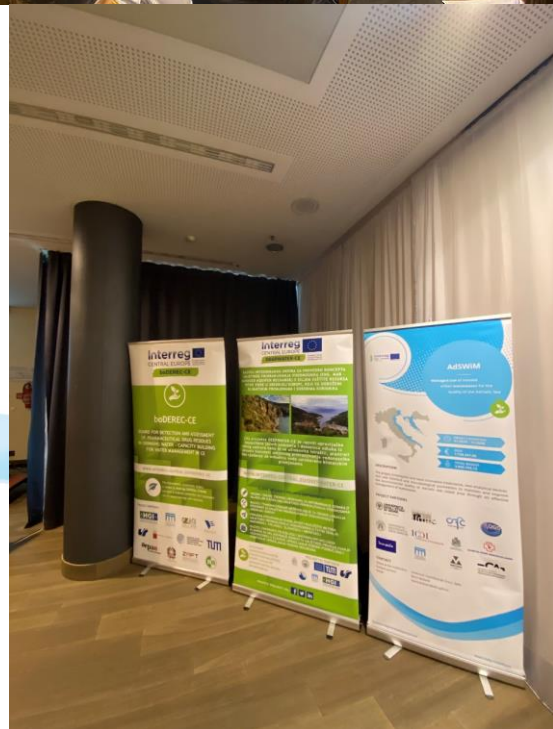
On November 9, 2021, a joint workshop of TSG3 and TSG1 was organised with the focus on the state of the art and further enhancement and recognition of marine protected areas (MPA) and spatial planning at #sea and river basins in @EUSAIR region. Our #adswim partner's representative dr Anamarija Krilić (participated in the international event applied chemistry specialist at Izvor Ploče Doo Ltd.)

Activities in WP2: what has been done from July 2021

Online international event



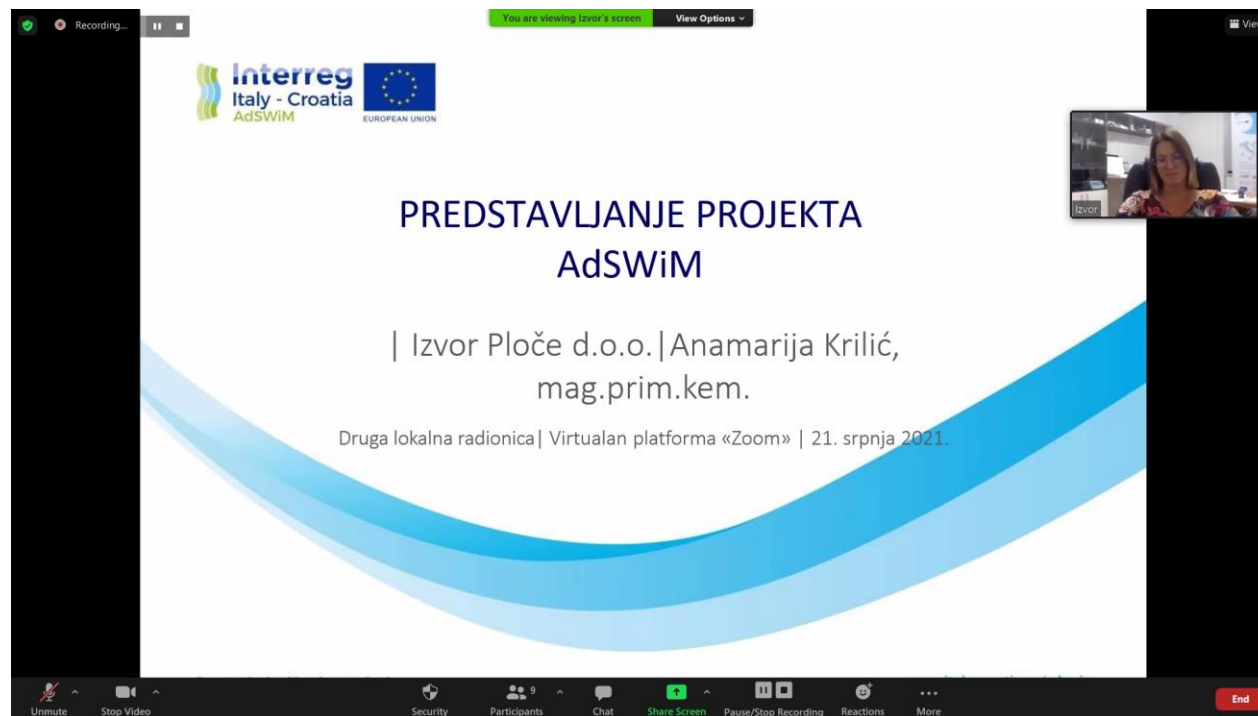
On November 25, 2021, Our Project AdSWiM was presented at the 5th Stakeholder Group meeting which gathered various key stakeholders and external experts working on the Project. The meeting was organized within the Project City Water Circles - CWC (co-financed through the Transnational cooperation program INTERREG Central Europe 2014.-2020.) by Split Water and Sewerage Ltd., one of the Croatian AdSWiM Partners (PP9) that held the meeting in blended edition. The participants were provided with interesting information about the Project AdSWiM, its main objectives, and results. The main goal of the CWC Stakeholder Group meeting was to develop a dialogue regarding water efficiency and reuse, as well as showcasing the pilot project results and future actions. Moreover, a creative debate and brainstorming session with a panel of experts was encouraged in order to underline the key data and stimulate further sustainable development.



Activities in WP2: what has been done from July 2021

Online local workshop

July 21. The Croatian partner Izvor Ploče Doo (PP8), has organized the second local workshop via virtual platform “Zoom” and gathered several experts from water utility companies of Vrgorac Ltd. and Metković Ltd. The main goal of the workshop was to present the innovative technologies for wastewater treatment and purification - aerobic granular biomass, photo-disinfection, and the possibilities of their application in the process of wastewater treatment and purification of the Vrgorac agglomeration.



Activities in WP2: what has been done from July 2021

Online local workshops

Izvor Ploče Doo (PP8) organized the third local **workshop** that was held on September 10, in Bluesun Hotel Elaphusa, Bol, as a part of the international **#SplitTech** conference. The workshop gathered several experts from utility companies and numerous other experts in the field of water utilities. The main goal of the workshop was to present the project and its main objectives, together with the innovative technologies for wastewater treatment and purification. There was the possibility to follow the presentation also on line in blended edition. .



Activities in WP2: what has been done from July 2021

Local workshop Municipality of Udine

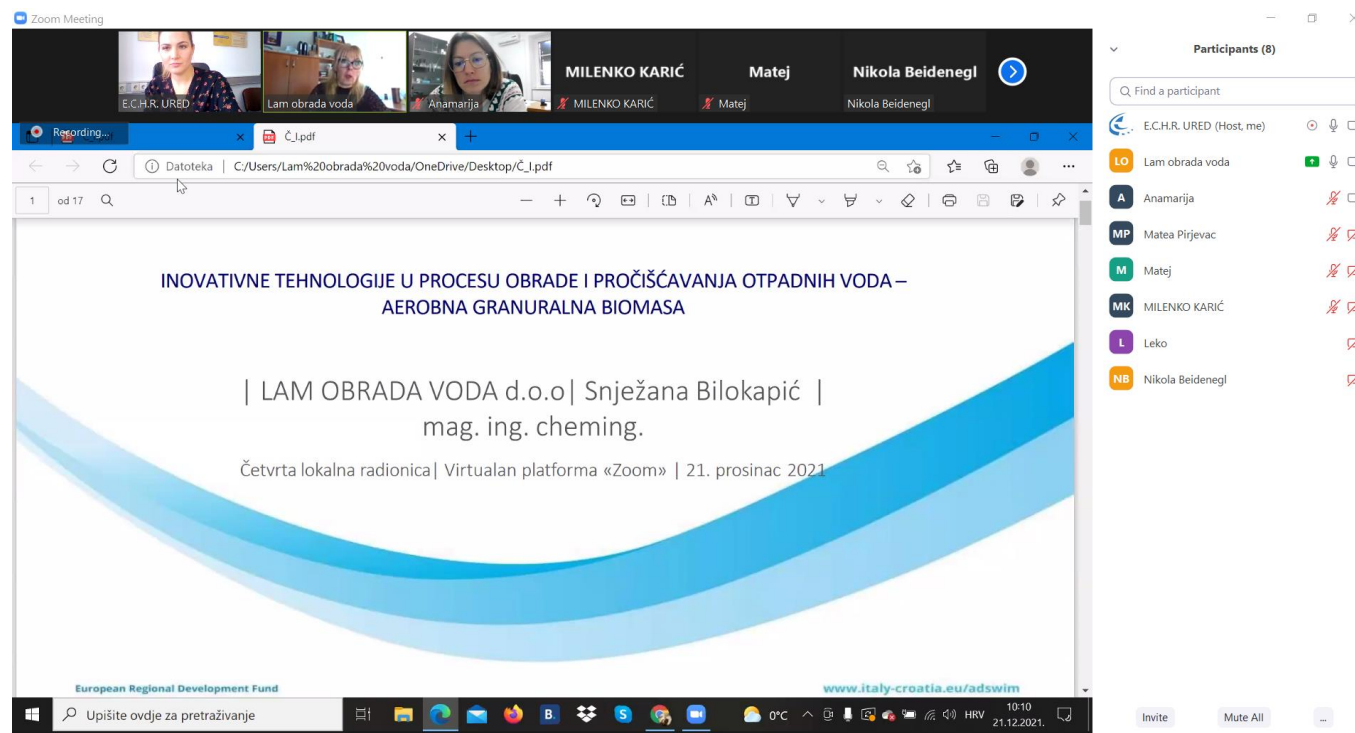
September 16th Adswim event - local workshop, blended edition dedicated to "THE PROTECTION OF THE ECOSYSTEM OF THE ADRIATIC SEA AND ITS COAST", organized by the Municipality of Udine and University of Udine, in collaboration with the Institute National Oceanography and Experimental Geophysics - OGS and with CAFC SpA.



Activities in WP2: what has been done from July 2021

Online local workshop

On December 21, our partner Izvor Ploče Doo has organized the fourth local workshop via virtual platform “Zoom” and gathered eight participants. The main goal of the third workshop was to present the project final results, together with the innovative technologies for wastewater treatment and purification - aerobic granular biomass as well as the possibilities of their application in order to increase the quality of Adriatic Sea.



Activities in WP2.4: what has been done from July 2021

Kids summer labs with UNIVPM

Also this summer on August 3 and 4 Adswim Labs were organised [BaiaMetauro](#) (Fano,) thanks to the collaboration of the [Univpm Università Politecnica delle Marche](#) (Polytechnic University of Marche), [Reef Check Italia Onlus](#) and Summer Camps [Centri Estivi Sportivi JUMP](#).



Activities in WP2.4: what has been done from July 2021

Kids summer labs with UNIVPM

September 9. After the success of labs organised in August, the Polytechnic University of Marche ([Univpm Università Politecnica delle Marche](#)), Department of Life and Environmental Sciences (DiSVA) - [TraCE Lab](#), with the precious collaboration of the summer camp [Centri Estivi Sportivi JUMP](#), organised new labs for 18 kids and families on the beach of [#Senigallia](#)



Activities in WP2: what has been done from July 2021

Local event/workshops



September 24th this [Sharper - Notte Europea dei Ricercatori](#)- Researchers' Night with our partner [Univpm Università Politecnica delle Marche](#) and their lab [#DEPURIAMOIL ARE: DO YOU SEA? \(let's clean the sea: do you Sea?\)](#) focused on the [#wastewater](#) depuration.

Activities in WP2.4: what has been done from July 2021

Guided study visits – students

Educational #Adswim guided visit at the Fano treatment plant for 40 students of the three-year and master's degree courses in Environmental Sciences of the Univpm Università Politecnica delle Marche (Polytechnic University of Marche) was held on October 21, 2021.



Activities in WP2.4: what has been done from July 2021

Didactic modules for teachers

December 2021 -Univpm Università Politecnica delle Marche visited the primary schools involved in the in the #AdSWiM didactic module “Do you Sea?” and delivered certificates and gadgets to teachers, classes and pupils (2 schools, 18 teachers, 7 classes) and 1 secondary school (1 teacher and two classes) in different moments and during different ceremonies held in presence of the schools’ principals, head teachers and educational representatives.



Activities in WP2.4: what has been done from July 2021

Press release

One press release has been launched in this semester in the framework of the local workshop "THE PROTECTION OF THE ECOSYSTEM OF THE ADRIATIC SEA AND ITS COAST", organized by the Municipality of Udine and University of Udine _ September 14 2021

Activities in WP2.4: what has been done from July 2021

Press release

prepared on October 16th 2021 in occasion of the CAFC article

L'esperienza del progetto AdSWiM ed il coinvolgimento del territorio

CAFC S.p.A. è uno dei partner del progetto Interregionale Italia - Croazia "AdSWiM" uso gestito delle acque depurate per la qualità del mare Adriatico.

È un progetto Europeo di cooperazione transfrontaliera, coordinato dall'Università di Udine - Dipartimento di Scienze AgroAlimentari Ambientali e Animali - e comprende dodici partner fra italiani e croati che lavorano per migliorare la qualità del mare, applicando tecnologie innovative di monitoraggio, trattamento e gestione delle acque reflue urbane.

CAFC ha sempre collaborato, ed anche questo progetto ne è la dimostrazione, con le Università e gli istituti di ricerca vicini, su tematiche ambientali, sulla gestione della risorsa idrica, dalla sua protezione negli acquiferi di emungimento, al suo rilascio all'ambiente circostante.

L'interesse alla partecipazione in Adswim è stato subito colto; dalla stesura dell'idea progettuale emergeva infatti la possibilità di studiare, indagare e confrontarsi con specialisti di altissimo livello, l'ambiente idrico dell'Alto Adriatico, e quindi meglio comprendere le influenze ed eventuali connessioni con le infrastrutture depurative. L'opportunità di far parte di una rete operativa e gestionale, non solo per armonizzare le politiche di trattamento delle acque ma anche per applicare tecnologie innovative di monitoraggio e prassi gestionali comuni è stata quindi pienamente condivisa.

"L'ecosistema complesso dell'ambiente lagunare e marino costiero - spiega il presidente di CAFC S.p.A. Salvatore Benigno - merita attenzione particolare e solamente con importanti sinergie di studio riusciamo ad approfondire le conoscenze finalizzate a meglio comprendere le particolarità della quale ci stiamo occupando. Mettiamo quindi a sistema conoscenze e competenze per un modello di governance condiviso dell'ambiente marino. Da parte nostra la condivisione dei nostri dati e delle nostre valutazioni disponibili di nostra



competenza saranno sempre accessibili dagli Enti che, in rete, si interessano e si confrontano sul tema".

Proprio per questo, dopo 30 mesi progettuali si è sentito l'esigenza di organizzare, il 16 settembre u.s., un workshop dedicato a "La tutela dell'ecosistema del Mare Adriatico e delle sue coste", per condividere con gli amministratori locali, i tecnici, i media e i cittadini per condividere le attività di ricerca, le esperienze tecniche e gli approfondimenti legislativi che hanno caratterizzato il progetto.

L'obiettivo è stato quello di restituire al territorio locale le esperienze del lavoro svolto dai 12 partner italo croati che si sono impegnati nello sviluppo di un modello innovativo di uso gestito delle acque depurate e con un impatto di so-

stenibilità ambientale elevato, che potrà, una volta testato, essere trasferito anche ad altri impianti di depurazione, in modo da uniformare e condividere modelli di gestione delle acque reflue trattate su tutto il territorio lungo le coste adriatiche, come sottolinea il motto di AdSWiM: il mare Adriatico è uno, la sua cura è di tutti!

Il progetto europeo, che si concluderà a dicembre 2021 con una conferenza di chiusura, è stato premiato di recente come esempio di buona pratica dal Programma Italia Croazia 2014-2020, per l'impegno ed il coinvolgimento cittadino, in particolare per il coinvolgimento di oltre 600 alunni e 80 insegnanti raggiunti con le attività di formazione mirate ed un modulo didattico creato ad hoc, grazie ad una campagna di sensibilizzazione convincente intitolata "DoyouSea? - Viviil-Mare - e tradotta in tre lingue (italiano, croato e inglese).

La progettazione europea è di stimolo nel progredire e proseguire nella giusta direzione per creare sinergie territoriali proprio in tal senso.

CAFC investe ogni giorno per garantire ai cittadini dei territori su cui operiamo un futuro sostenibile; investimenti materializzati anche nelle progettazioni innovative e nella partecipazione/contribuzione a ricerche.

Un ambiente sano e sostenibile, acqua ed energia pulita, in armonia e nel rispetto delle risorse che fornisce la natura: queste sono le condizioni necessarie, essenziali, alla vita e dobbiamo lottare con forza per mantenerle e migliorarle.



Activities in WP2.4: what has been done from July 2021

Press release

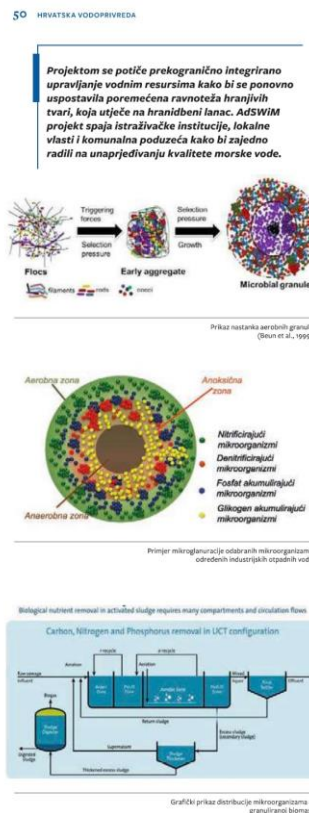
December 14°, 2021

The Final AdSWiM Event
online
December 14, 2021
10 am - 15.30 pm



Activities in WP2.4: what has been done from July 2021

Publications – Academic issue



Projekt "Upravljano korištenje pročišćenih komunalnih otpadnih voda radi kvalitete Jadranskog mora" (AdSWiM), počeo je u siječnju 2019. godine. Nositelj projekta je Sveučilište u Udini. Fakultet građevinarstva, arhitekture i geodetije jedan je od 5 projektnih partnera iz Hrvatske (Zavod za javno zdravstvo Zadar, Izvor Ploče d.o.o., Vodovod i kanalizacija Split d.o.o., HELEA LAB d.o.o.) i ukupno 6 iz Italije (Sveučilište u Udini, Grad Udine, CAPC d.o.o., Nacionalni institut za oceanografiju i eksperimentalnu geofiziku, Politehnički institut u Marche, Institut za kristalografiju – Nacionalno istraživačko vijeće, Grad Peschiera). Projekt se financira u okviru 2014 – 2020 Interreg V-A, Italy – Croatia CBC Program. Ukupna vrijednost projekta je 2.025.703,13 eura od čega se 85 % financira iz sredstava Europskog fonda za regionalni razvoj. Predviđeno trajanje projekta je do kraja 2021. godine.

Kvaliteta vode u Jadranskom moru je izrazito heterogena. Ekološke, zdravstvene i higijenske karakteristike vode razlikuju se od područja do područja u Jadranskom moru. Na nekim područjima mijenja neravnotežu između hranjivih tvari (fosfor u usporedbi s dušikom) koja se uslijed postojanja može obnoviti remineralizacijom organske tvari, a ona uvelike ovisi o sastavu i reproduktivnom kapacitetu mikrobnog zajednice.

Ciljevi projekta i glavne aktivnosti

Opći cilj projekta je unaprijediti kvalitetu vodnih tijela te ekološko stanje morskog i obalnog ekosustava. Specifični ciljevi projekta su: poboljšati ekološko stanje Jadranskog mora kroz planirano korištenje pročišćenih otpadnih voda, prikupiti biološke parametre, koristiti analitičke uređaje i inovativne tretmane kako bi se zaštitila vodna tijela, postaviti i razmijeniti modele upravljanja te procijeniti efikasnost regulatora.

Glavne aktivnosti projekta su: zaštita i poboljšanje kvalitete vode za kupanje putem upravljanja urbanim pročišćenim otpadnim voda, procjena značaja novih bioloških parametara u kontroli kvalitete vode za kupanje, definiranje prekograničnih modela za upravljanje postrojenjima za pročišćavanje otpadnih voda, predlaganje inovativnih provjera učinaka planova praćenja, kako bi se bolje poistovjetile teritorijalne značajke, optimizacija inovativnih analitičkih alata za određivanje E_{col} i intestinalnih enterokoka i inovativna obrada pročišćene otpadne vode za zaštitu morskih i priobalnih površinskih voda.

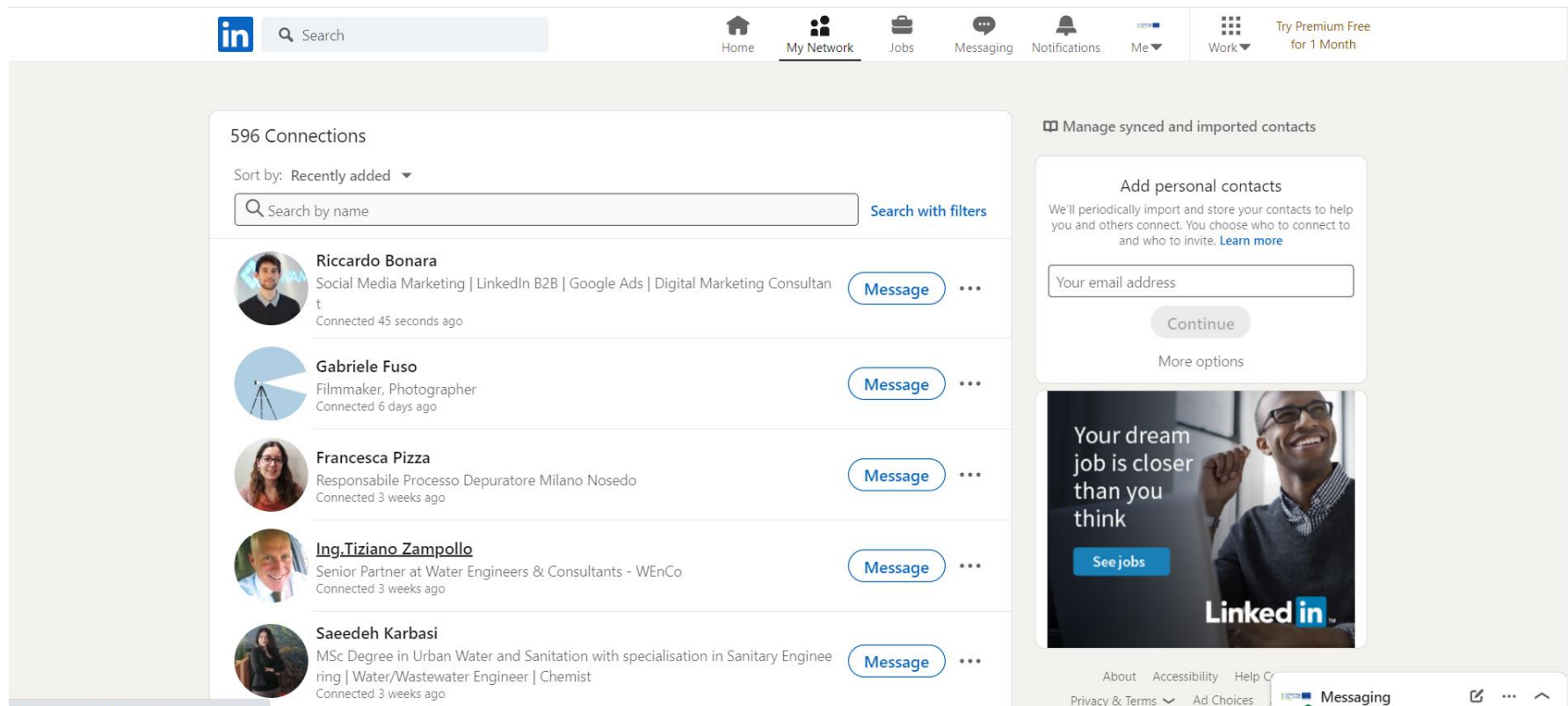
AGS tehnologija

Jedna od projektno predloženih, inovativnih metoda obrade pročišćene otpadne vode za zaštitu morskih i priobalnih površinskih voda je metoda aerobne granularne biomase (Aerobic Granular Sludge Technology - AGS Tehnologija).

A three-page article on AdSWiM project was published on December 2021 number of the Hrvatske vode Interdisciplinary journal in December 2021 thanks to the Croatian partners Izvor Ploče Doo and Vodovod i kanalizacija Split.

Activities in WP2.4: what has been done from July 2021

LinkedIn profile with 624 active members – experts and media!



Activities in WP2.4: what has been done from July to December 2021

Facebook with 3 profiles:

[Adswimproject](#) (220 followers)

[Adswim Univpm](#) (118 followers)

[Adwim IC-CNR](#) (126 followers)

Twitter: [AdswimProject](#) (155 followers)

Linkedin: [Adswimproject](#) (624 members)

Youtube: [Adswimproject](#)

Web: <https://www.italy-croatia.eu/web/adswim/admin-login>

E-mail: adswimcommunication@gmail.com



Activities in WP2.4: what has been done from July 2021

Final conference on zoom, December 14, 2021

The conference was opened by the local and regional authorities: Marin Miletić, Project Manager, Italy – Croatia Programme, Veneto Region, Giulia Manzan, Udine Council member, Municipality of Udine, and Sabina Susmel, Project coordinator, University of Udine. In the morning hours two technical WPs were presented the research outcomes, while in the afternoon WP5 (legal guidelines and models) and WP2 (communication activities) results were presented.

The screenshot shows a Zoom meeting interface. The main window displays a presentation slide for 'AdSWiM' (Managed use of treated urban wastewater for the quality of the Adriatic Sea). The slide features the 'interreg IAH - Croatia' logo and a large blue circle with the text 'AdSWiM' and 'Managed use of treated urban wastewater for the quality of the Adriatic Sea'. A woman, Sabina Susmel, is visible in the foreground, looking at the slide. The Zoom control bar at the bottom shows the time as 10:02 and the meeting ID as uiu-jmnt-hvw. On the right side, a list of participants is visible, including 'Tu', 'marinella d'antoni', 'Maria Cecilia Corsini', and 'Altri 25'.