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AQUARES NEWSLETTER

NEWSLETTER ABOUT THE PROJECT, CURRENT INFORMATION, PROGRESS AND
UPCOMING ACTIVITIES

SUPPORTING WATER EFFICIENCY THROUGH WATER REUSE

“AQUARES – Water reuse policies advancement for resource efficient European regions” is a project under the INTERREG Europe programme that aims to improve the implementation of regional development policies and programmes in the partnership regions, to increase resource efficiency, green growth, and environmental performance management in the water reuse sector. The project brings together 10 public organisations from 9 different European countries with the aim to achieve better water management of water resources through water reuse.

The fifth semester of the project was affected by the COVID-19 pandemic. Transferring the already planned actions into online version was the biggest challenge for AQUARES project partners. “Study visit” and “Site visit”, made by the Czech partner of the project – RRA PK, took place in online environment, where pre-recorded videos and live lectures of Mayors and administrators of places, where good practice find the place, were shown. Despite that, AQUARES project still follows its original workplan.

THE AQUARES PROJECT CONTENT

- WATER DAYS 2020
- WATERWASTE MANAGEMENT IN EUROPE
- AQUARES SITE & STUDY VISIT
- PARTICIPATION IN ONLINE EVENTS
- THE FIGHT AGAINST THE PANDEMIC
- EU & REGIONAL WATER REUSE INITIATIVES
- UPCOMING ACTIVITIES



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European Regional
Development Fund

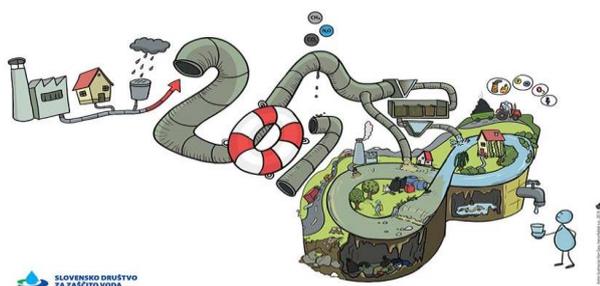
NEWS

Water Days 2020 | Rimske Toplice, Slovenia

Water Days Symposium organized by Slovenian Association for Water Protection (SDZV) every year gathers experts from international organizations, state agencies, research and health institutions, as well as from managers of water supply and sewage systems and wastewater treatment plants to join knowledge, experience, and good practices to take necessary steps to water resources protection.

At this year's Water Days Symposium, which took place between 17th and 18th September, 2020 in Rimske Toplice (physically for some speakers and in e-environment for participants) we took an in-depth look at water from the perspective of the following 4 goals: Clean Water and Sanitation, Affordable and Clean Energy, Industry, Innovation and Infrastructure, and Life Below Water. Innovative approaches to wastewater treatment and to ensuring energy self-sufficiency of wastewater treatment plants, the specificities of industrial wastewater treatment processes, and the efficiency of virus and microplastics removal at wastewater treatment plants was presented. Comprehensive water resources management at the state and local levels in the view of providing drinking water sources, and the impact of agricultural irrigation on water resources was discussed. The issue of the safety of drinking water supplies was also addressed. Special attention was given to good practices in agriculture to reduce the impact on water bodies, and an insight into how our activities affect water organisms.

For more information on the event click [here](#)



Wastewater management improves in Europe, but directives are not fully met yet

According to the technical magazine of environment, Retema, the European Commission published the Tenth report on the implementation status of the Directive on the treatment of urban wastewater (TARU Directive) last September 10th, the collection and treatment of wastewater in cities and municipalities in Europe have improved overall, although achievements differ between Member States.

The TARU Directive shows that compliance rates with EU regulations on wastewater collection and treatment are high and have risen in comparison with the previous reference period. This helps prevent environmental pollution. Although the trend continues to be positive, full compliance with the Directive has not yet been achieved. Financing and planning are still the main challenges facing the water services sector.



The report shows that 95% of wastewater is collected in the EU and 88% undergoes biological treatment. Despite being a positive trend, there is still work to be done: 1% of urban wastewater remains uncollected and more than 6% of it does not receive adequate enough treatment to meet secondary treatment standards. The current level of investment in many Member States is too low to comply with the Directive and to continue to do so in the long term, and several cities or municipalities in the EU still need to create or modernize their wastewater collection infrastructures, as well as build wastewater plants modern treatment.

A recently published OECD study clearly shows the European Union the picture of investment deficits. The Commission will work with the relevant Member States to take full advantage of the opportunities offered by the new multiannual financial framework and the Recovery Plan for Europe, including water treatment and sanitation the highest priorities.

AQUARES SITE & STUDY VISIT IN THE CZECH REPUBLIC

The site and study visit were originally planned to take place physically in the fourth semester (April 2020), but the COVID-19 pandemic stopped most of the events, not only in the Czech Republic. Many partners of the AQUARES project had restrictions on traveling and organizing meetings. The RRA PK partner from the Czech Republic agreed with the lead partner, Murcia, to organize a visit to the site online to achieve this activity. This was also recommended by the Secretariat for joining the Interreg Europe program.

SITE VISIT

The [site visit](#) was organized online by RRAPK on 22nd September 2020 via the ZOOM application.

The best practices shown during the site visit were based on the partners' interest in the final report A3.3 Site visits Exchange to align the required water reuse initiatives with appropriate technologies and business models developed by the AQUARES Murcia partnership project. SSW, Lodzkie, FLA, Trenbje and the Baltics showed particular interest.

RRA PK invited all AQUARES partners to participate with their stakeholders, because the meeting was available for anyone and from anywhere. With 44 participants, RRA PK noted that the impact of the online version was wider than the physical form.

The site visit presented technologies of water treatment, recovery and awareness in the Czech Republic and the best practices of Botanica K and Hydrogopark Pátek.

STUDY VISIT

The [study visit](#) was also organized also by RRA PK online on 25th September 2020, and was delivered in both English and Czech.

The best practices that were presented during the visit were chosen by RRA PK based on the best practices that the Pardubice region could demonstrate, aiming to transfer experience on water reuse implementation and monitoring issues in the Czech Republic.

The study visit supposed to be organized physically to give partners better understanding of the shown best practices. On the other hand, the online version compared to the physical version has better availability for participants, saving the time to travel, and is safer due to the pandemic situation.

The online approach proved to be a great added value to connect people, with 40 participants actively contributing.

Various best practices from Pardubice region were presented including – Green roof in Lanškroun city, Dry polder Žichlínek, Hanging garden in Polička city and Biotop in the Hlinsko city.

Visit our website or social media to watch the videos from the online meetings. It will pleasure for us to share the best practices from AQUARES project and from the Czech Republic.



Climate change adaptation: water reuse practices identified by AQUARES

AQUARES partners have indeed collected examples on water reuse schemes with agricultural, industrial, leisure and domestic applications, that are being applied or being proposed in the EU. They demonstrate that the regions that already use these alternative supply solutions, from the most applied methods for water reuse, to less widespread local technologies, are better coping with the risks of a warmer world.

In this light, the Lombardy Foundation for the Environment (FLA), as AQUARES partner, participated to the 8th Annual Conference of the Italian Society for Climate Sciences (SISC) on 21st-23rd October 2020.

The event called "ClimRisk2020: Time for Action! Raising the ambition of climate action in the age of global emergencies" gathered experts to present and discuss different aspects of climate change, its impacts and related policies.

By presenting its poster "Climate change adaptation: water reuse practices identified by AQUARES Interreg", FLA highlighted the vulnerability of Europe's freshwater resources and the dire need for adaptation and for increasing resilience to water stress. Since reused wastewater is a potential solution to alleviate the problem, as indicated by EU water policies, FLA explained how small-scale opportunities could significantly contribute to tackle water scarcity.

IEA Foundation takes part in the Webinar on Sustainable Water Management and launches the AQUARES Project

Last 18th September, a webinar has been celebrated by the regional newspaper "La Opinion" on SDG number 6, on sustainable water management, where different experts in water field have participated.

Experts figures such as Mrs Inmaculada Serrano Sánchez, CEO of Hidrogea, Mrs Teresa Navarro Caballero, secretary of the Institute of Water and Environment of the University of Murcia and Director of the Chair of Hydrology and Sustainability Emuasa-UM, and Mr Francisco Cabezas Calvo-Rubio, General Director of the Euro-Mediterranean Water Institute Foundation.



Source: [Regional Newspaper "LA OPINION"](#)

The experts analysed the availability and work related to the exploitation of water resources, on the occasion of the sixth SDG promoted by the United Nations, in a context as turbulent as that of the health crisis.

From the IEA Foundation, its General Director highlighted the study work and disclose about the water resources of this organization. The foundation does not approach these problems from a single perspective but "has always been concerned with covering the technological, legal, economic, environmental and social aspects of water", as Francisco Cabezas states.

He also expressed the evident and unfavorable impact that the pandemic has caused and will cause to projects and initiatives related to the water field, although he took the opportunity to point out the mature character of reuse and desalination practices in the Region of Murcia from a technological point of view and social, at the same time he announced upcoming research events to exchange experiences framed in the AQUARES project.

Watch the full Webinar on [YOUTUBE](#)

Climate change adaptation: water reuse practices identified by AQUARES Interreg

1. Water scarcity
Nowadays, water scarcity is affecting at least 11% of the European population and 17% of the EU territory. From its research between demand for and availability of resources, across both temporal and spatial scales. Currently, just 7.4% of the treated urban wastewater effluents and less than 0.5% of the treated industrial effluents are reused annually. The EU potential is estimated to be much higher.

2. Adaptation
The need to water security is one of the cornerstones of "climate change". In the face of "vulnerability", there is a clear need for adaptation and for increasing the "resilience". Water reuse can be part of the solution to the high framework Directive (2000/60/EC) includes water reuse among the supplementary measures to the MS measures to achieve good ecological status (quality and quantity) of surface and sub-surface waters.

3. The project
Brings together EU partners from 10 countries, to join forces and exchange local scale experiences. AIM: Identify water reuse strategies, assess the potential of water bodies and promote public dialogue to address conflicting interests. HOW: A series of activities, financially supported from ERDF, included in a regional Action Plan.

4. Water reuse practices
AQUARES partners have already published for the Environment (EU) can contribute to the guidelines for public authorities collecting examples of water reuse technologies in the EU, by presenting clear case studies.

Water reuse practice	Waste Water Treatment Plants (WWTPs)	Water treatment in an Alpine hut	Constructed Wetland - Nature-Based Solutions	Industrial post-treatment plant	Water reuse at the building level
Who & where	Milau - Nécess by MétéoCapitale S.p.A. & San Tassio by VM S.p.A.	Veneto - IMAE, Giosuè - Alpes in Foundation for Mountain Studies, CA 100 220-000	Orto Maggiore Water Park - Lombardy - Local Municipality	Turkey - ASA S.p.A., IME S.p.A., Sıvay Çekirge İhale S.p.A.	Milau - Nécess S.p.A.
Description	The WWTPs treat around 1.545 million m ³ per year and release 8 m ³ of treated wastewater.	Aquifers system receives grey water and black water at the origin.	Nature-based solution consisted of a set of constructed wetlands for the treatment of combined sewer overflow.	Post-treatment plant treats "wastewater" from WWTP of Çekirge and Reşimşah and recycles it to Sıvay over-flow.	Treatment of grey water (bathroom and kitchen) and "black" waters through biological-technical filtration process.
Application	Water is used for irrigation of more than 500 ha of agricultural land.	Waters are used for gardens, kitchen, washing in process, toilets, irrigation and heating.	Multiple purposes relate to water quality improvement, pollution retention, buffer for floods, biodiversity and recreation.	Waters are used for industrial purposes: cooling processes.	Domestic uses as toilet flushing, irrigation, domestic laundry and car washing.
Benefits	Improvements in ecosystems of the hydraulic networks.	Treatment of water and organic wastes avoiding discharge in the environment.		Reduced consumption local aquifer and discharges of WWTP to the sea.	Reduction in drinking water consumption.
More info					

6. Small scale adaptation
In the view of climate change effect on water quality, an increased rate of water reuse can reduce resource and users' vulnerability. The demand for potable water could be better satisfied if competition among uses is lessened: "reused water can become an alternative source for many applications. Also, the improvement of different adaptation strategies would avoid dealing with water scarcity, as demonstrated in the countries that already use these alternative supply solutions". These replicable technologies can be adapted to the local, regional and local scales to take account of geographical characteristics (for example, the distance between supply and demand).

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THE FIGHT AGAINST THE PANDEMIC

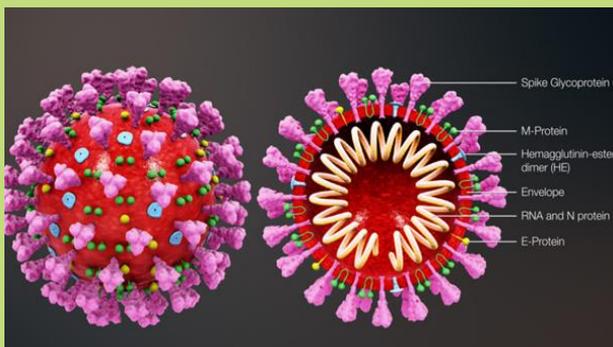
A method has been developed that detects and monitors coronavirus outbreaks in a neighborhood with PCR tests of its wastewater.

The system is similar to that used to confirm whether individual people are infected, through PCR (polymerase chain reaction) tests. This molecular biology technique that detects the fragment of the virus's own genetic material would be used to "diagnose" a source of contagion in a specific neighborhood, testing samples of its wastewater.

Research from around the world showed that those infected excrete the coronavirus. Studies carried out in Murcia (Spain) and in Delfh (Holland), for example, showed that RNA (ribonucleic acid) of the virus is present in wastewater.

Scientists claim that these genetic remains of Covid-19 have no capacity to infect the population. On the other hand, and although they are present in very low amounts, they help to detect the presence of the virus early. This would serve to launch an early warning of a new outbreak. Also, as a surveillance tool, to analyze its evolution.

Based on the evolution of local cases, AySA started the study, development and implementation of a methodology to detect this genetic material of the virus in the sewage system of Buenos Aires. Thus, it was that the specialists of the state company already verified the appearance of COVID-19 remains in samples of sewage effluents in the city.



METHODOLOGY

The methodology was implemented by a group of company professionals, led by engineer Alejandro Barrio, in charge of the Technical and Technological Development Directorate of AySA. It consists of the detection of Covid-19 in samples of sewage fluid from treatment plants and the sewage transport system using the RT-q-PCR method (quantitative PCR with reverse transcriptase).

The method consists of different stages. Samples are first taken from different parts of the wastewater and at the treatment plants. The sample is then concentrated to obtain a pellet or agglomerate of genetic material.

The next step is carried out in a biosafety level II cabinet, which allows working safely with materials contaminated by pathogens, such as viruses. There the RNA is extracted, using an extraction kit.

Then the purity of the RNA obtained and its relationship with proteins, polysaccharides and any type of substance that may cause interference is determined. Only afterwards can the PCR test be done. According to engineer Alejandro Barrio: "The greatest complexity of the development lies in the preparation of the sample because it is waste water, which is a very complex matrix, with many interferences that must be eliminated in order to detect the virus with the PCR equipment."

In this first stage, which was the development and fine-tuning of the technique, samples were taken in different neighborhoods and treatment plants in the City. "In the future, the health authority may define the areas it wants to study and monitor with this methodology," concludes Barrio. The company also anticipates that they also seek to incorporate molecular techniques for the comprehensive monitoring of water resources.

Meanwhile, from Aysa assure that there is no danger of the virus contaminating the drinking water of the City. On the one hand, because they say that the probability that the virus reaches the Río de la Plata is very low, and much less that it arrives alive to infect. On the other hand, they affirm that the purification processes with all its stages, including disinfection, ensure the potability of the water.

Additional information [here](#)

Local Water Partnership in Kutno County

Pilot Local Water Partnerships are being established all over Poland. On Friday, July 10, the first meeting of the ministerial project for Kutno County took place in Bedno. The aim of the partnership is to diagnose the state and principles of rational water management and drought prevention in the district.

The initiative to create Local Water Partnerships was launched by the Ministry of Agriculture and Rural Development and the Agricultural Advisory Centre in Brwinów in cooperation with the Regional Agricultural Advisory Centres. It concerns the cooperation of various entities managing water resources in agriculture and rural areas.

“The organizers want to activate all institutions that need water, who manage water, so that they can get to know each other and cooperate. The soil has been short of water for several years, we must take action to prevent drought. By the end of the year several meetings are to take place, in each county such partnerships are to be established. In Kutno county it is a pilot partnership. We have to answer the question of what we have to do to prevent droughts” - says Włodzimierz Lewandowski, Deputy Director of the Łódź Agricultural Advisory Centre in Bratoszewice.



Water Reuse for Sustainable Tourism

Lombardy region is committed to water reuse!

The active dialog between Lombardy Foundation for the Environment (FLA), partner of AQUARES Interreg, and the public administration, allowed to identify an interesting financing opportunity which has been extended to water reuse interventions.

The renewed call “BANDO TURISMO & ATTRATTIVITÀ II”, implements Axis III of Region Lombardy POR-FESR 2014-2020 and is addressed to tourist small and medium enterprises (hotels and other accommodation facilities, on open air too) which wants to realize or improve their structures.

5 over 30 of the projects' evaluation points are indeed dedicated to social and environmental sustainability objectives.



In this way, the participating SMEs will also be recognised for their commitment to energy efficiency, landscape planning, biodiversity conservation, products and services certifications but not only: the efficient management of water resources realized through water saving technologies and the solutions for the reuse of rainwater are now specifically awarded too! Sustainable tourism means safeguarding all natural resources, and water reuse contributes to the achievement of this objective.

The new "My Water" programme

More than 20 million euros for 20,000 household reservoirs

Up to PLN 5,000 (approx. EUR 1,200) in subsidies for household installations that retain rainwater or snowmelt, will be available from the new "My Water" programme.

The programme is an initiative of the Ministry of Climate and the National Fund for Environmental Protection and Water Management, which will invest over EUR 20 million in mitigating the effects of drought in Poland.

THE "MY WATER" PROGRAMME WILL RUN FROM 2020 – 2024

Support is provided for the purchase, installation and launching of installations allowing for the management of rainwater and snowmelt in the area of the property under the project, as a result of which the water will not be discharged to, for example, household sewage system, stormwater drainage system, drainage ditches discharging water outside the property, to adjacent areas, streets, squares, etc. The money received will be used for rainwater drainage pipes (collected from gutters, inlets to an above-ground or underground tank, garden pond, drainage system), underground or above-ground retention tank, garden pond, drainage system and elements for irrigation or other use of retained water.

"The program will finance up to 20,000 home retention installations. We estimate that household investments will result in the retention of 1 million cubic meters per year at the place of water fall, i.e. on private plots. This means that one million cubic metres of very valuable water will relieve the sewage system and reduce the risk of flooding as a result of heavy rain" - said climate minister Michał Kurtyka.



The "Green Rain Garden" created in Ogre as a successful solution for water drainage

One of the positive examples in the management of the city's green areas is the "Green Rain Garden" created in 2017 in Ogre, which was established at Ogre Secondary School No 1 "Zinību laipa" ("Footbridge of Knowledge").

This initiative is the work of Vineta Cirze, an educator of Ogre City Secondary School No 1, and her students, which was implemented within the framework of the project competition "The environment around us in Ogre region" organised by Ogre Municipality. Specialists of Ogre Municipality were also involved in the creation of the garden by providing consultative support.

The aim of this project was to create a rainwater collection solution that would avoid an unattractive swampy environment in the centre of Ogre and around the school, creating a well-kept and functional place instead that would also be attractive to visitors.

Within the project a trench was created with well-filtering materials for water dispersion and faster infiltration. In order to speed up their discharge into the nearest aquifers, 48 moisture-loving plants have been planted, which promote the evaporation of water through the leaves during their vegetation period.



For the local residents, especially students of Ogre Secondary School No. 1 and their parents, the "Green Rain Garden" means another orderly landscaped area within the City of Ogre and school surroundings, which creates students' comprehension of a neat and high-quality living environment, as well as of successful water drainage processes.

Optimal use of water

OOWV and DMK participate in EU research project

This project has received funding from the European Union's Horizon 2020 research and innovation programme

The Oldenburgisch-Ostfriesischer Wasserverband (OOWV) and the DMK Group have set themselves ambitious goals: the two partners are jointly looking for a way to reduce drinking water consumption. Their collaboration is taking place within the framework of "B-WaterSmart", a research project of the European Union (EU).

Together with EnviroChemie GmbH, a pilot plant is to be developed for this purpose and operated at the DMK Group's plant in Edeweucht. Water that is extracted from milk during certain manufacturing processes is to be treated here to produce water of drinking water quality and then reused. The project is managed by the Rheinisch-Westfälisches Institut für Wasserforschung gGmbH.

"We want to make alternative water resources usable for dairies, among others, as a supplement to drinking water use", OOWV project engineer Kerstin Krömer explains the approach of the research project. "Our experiences from past projects are of benefit to us in this respect. With the DMK Group we have an interested and committed partner from the region at our side," she says. The treated water will meet the highest quality standards and could be used like drinking water in the dairy's processes, emphasizes Kerstin Krömer.

The OOWV hopes that the project results will lead to a long-term reduction in the demand for drinking water in industries where drinking water quality is required for certain processes.

"We see great potential in the use of the treated water to reduce drinking water consumption and to conserve groundwater resources," explains DMK project engineer Oliver Horstmann, who is also environmental officer at the Edeweucht plant.

After completion of the three-year pilot phase, the OOWV would like to use the knowledge gained in Edeweucht to offer, as a next step, customers with industrial requirements reprocessed water and water from alternative resources.

36 organizations from eight countries with different approaches are participating in the "B-WaterSmart" research project. All of them are united by the goal of developing methods, tools and procedures to make alternative water sources usable. The aim is to improve the efficiency of water use in order to better meet the challenges of climate change, such as water scarcity.

The research therefore is based on specific problems in six European coastal cities and regions that have great ambitions to tackle their challenges and opportunities by implementing water-smart technology and management solutions. Water companies from Alicante in Spain, Bodø in Norway, Flanders in Belgium, Lisbon in Spain, East Frisia in Germany and Venice in Italy develop and demonstrate solutions as Living Labs, together with research partners and local technology providers.



THE PARTNERSHIP



(ES) Regional Government of Murcia, Ministry of Water, Agriculture, livestock and Fisheries, General Direction of Water



(EL) Ministry of Environment and Energy, Special Secretariat for Water



(PL) Lodzkie Region



(CZ) The Regional Development Agency of the Pardubice Region



(MT) Energy and Water Agency



(IT) Lombardy Foundation for the Environment



(DE) Water Board of Oldenburg and East Frisia



(ES) Euro-mediterranean Water Institute Foundation (FIEA)



(LV) Association "Baltic Coasts"



(SI) The Municipality of Trebnje

UPCOMING ACTIVITIES

INTERREGIONAL WORKSHOP

The Lead Partner, MURCIA, will hold an Interregional workshop during the sixth semester. The Workshop will focus on water reuse policy with the participation of public authorities.

The date or form of the workshop has not been announced yet.

STUDY VISITS

In the sixth semester, several site visits are expected to take place. If the travel and healthy restrictions are not withdrawn, all site visits will most likely be presented online.

We will inform you about form and date of both the above events in advance, through the Interreg Europe website and the social networks of the project AQUARES.

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