



DEMINE
Decreasing the Impact
of Abandoned Mines



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Report: Summary of the Networking activities

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1. INTRODUCTION

Since the LIFE DEMINE project started in 2017, the project consortium has participated in several networking activities in order to disseminate the environmental problem targeted and the main results obtained during its execution, as foreseen in the LIFE DEMINE *Communication and Dissemination plan*. Specifically, 12 scientific conferences of international relevance and 4 networking events between LIFE projects have been attended. In addition, the project consortium organized a symposium to explore the environmental impacts caused by abandoned mines on water bodies from a variety of perspectives, with the participation of 10 invited experts, including representatives of public administration, researchers and companies specialized in water treatment. All these activities are summarized in the section below and they are also included in the *Dissemination section* of the LIFE DEMINE project website. In addition, the project partners have been in touch with relevant public stakeholders in their regions to spread the LIFE DEMINE project, such Catalan Water Agency, the Agency for Environment of Saxony-Anhalt, the Natural Resources Wales (Government body in Wales that manages environmental issues) or the Coal Authority (in England).

2. SUMMARY OF THE NETWORKING ACTIVITIES

SCIENTIFIC AND TECHNICAL CONFERENCES	
Title	XIX Conference of the Iberian Association of Limnology.
Location	Coimbra (Portugal)
Date	24-25 June 2018
Participants	Meritxell Abril (UVIC)
Description	Poster communication: <ul style="list-style-type: none"> ▪ Abril, M. et al. <i>Decreasing the environmental impact of abandoned mines on freshwater ecosystems: The LIFE DEMINE project.</i>
Title	International MineXchange Conference to develop Wales based Centre of Excellence for Metal Mine Recovery
Location	Lampeter, Wales (UK)
Date	5-6 September 2018
Website	MineXChange Conference 2018
Participants	Duarte Tito (ELENTEC) and Tom Ainscough (Swansea University)
Description	Oral communications: <ul style="list-style-type: none"> ▪ Tito, Duarte. <i>Electro-coagulation: A review of performance in metal mine remediation.</i> ▪ Ainscough, Tom. <i>Metal Mine Water treatment via LIFE DEMINE.</i>
Title	1st Meeting of the Iberian Ecological Society. XIV AEET Meeting: an integrative science in the Anthropocene.
Location	Barcelona (Spain)
Date	4-7 February 2019
Participants	Lídia Vendrell-Puigmitjà (UVIC)
Description	Oral communications: <ul style="list-style-type: none"> ▪ Vendrell-Puigmitjà, L., Proia, L., Abril, M., Espinosa, C., Llenas, L. <i>Decreasing the impact of metal mining effluents from abandoned mines on freshwater ecosystems.</i>
Title	29th Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC) Europe
Location	Helsinki (Finland)
Date	26-29 May 2019
Website	29th SETAC meeting
Participants	Lorenzo Proia (UVIC)
Description	Oral communication: <ul style="list-style-type: none"> ▪ Proia, Lorenzo; Vendrell-Puigmitjà, L., Abril, M., Ponsa, S., Llenas, L. <i>Biofilm communities as indicators of ecological impacts caused by treated and untreated abandoned mine effluents.</i>
Title	Symposium for European Freshwater Sciences 11 (SEFS11)
Location	Zagreb (Croatia)
Date	30 June – 5 July 2019
Website	SEFS11
Participants	Lídia Vendrell-Puigmitjà (UVIC)
Description	Oral communication:



	<ul style="list-style-type: none"> Vendrell-Puigmitjà, L., Espinosa, C., Ricart, M., Proia, L., Abril, M., Llenas, L. Evaluating the impacts of treated and untreated hypersaline effluents from abandoned mines on freshwater ecosystems.
Title	Dresdner Grundwassertage 2019
Location	Dresden (Germany)
Date	3-4 June 2019
Website	Dresdner Grundwassertage 2019
Participants	Astrid Seeman and Thomas Sommer (DGRC)
Description	Poster communication: <ul style="list-style-type: none"> Seemann, A., Ulbricht, A., Sommer, T. LIFE DEMINE: Decreasing the impact of abandoned mines. Project Overview.
Title	International MineXchange Conference to develop Wales based Centre of Excellence for Metal Mine Recovery
Location	Aberystwyth, Wales (UK)
Date	28 -29 November 2019
Website	MineXchange Conference 2019
Participants	Darren Oatley (Swansea University) and Meritxell Abril (UVIC)
Description	Oral communications: <ul style="list-style-type: none"> Oatley, Darren. LIFE DEMINE: A combined electrocoagulation and membrane technology for treatment of metal mine effluents' Abril, Meritxell. Aquatic Biofilms as indicators of ecological quality in river downstream of metal mines
Title	30th Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC) Europe
Location	Dublin (Ireland) – On-line
Date	03-07 May 2020
Participants	Lídia Vendrell-Puigmitjà (UVIC)
Description	Poster communication: <ul style="list-style-type: none"> Vendrell-Puigmitjà, L. Proia, L., Espinosa, C., Llenas, L., Abril, M. Effects of metal mining effluents from abandoned mines on freshwater ecosystems: Frongoch mine as a case study.
Title	Foro Internacional de sostenibilidad ambiental de la Corporación Autónoma Regional de Cundinamarca (CAR)
Location	Bogotá (Colombia) – On-line
Date	15 October 2020
Participants	Lídia Vendrell-Puigmitjà (UVIC)
Description	Oral communication: <ul style="list-style-type: none"> Vendrell-Puigmitjà, L. Disminución del impacto ambiental de las minas abandonadas en los ecosistemas acuáticos: el proyecto LIFE DEMINE.
Title	XX Conference of the Iberian Association of Limnology.
Location	Murcia (Spain) – On-line
Date	26-29 October 2020
Website	XX AIL Meeting 2020
Participants	Lídia Vendrell-Puigmitjà (UVIC)
Description	Oral communication:

	<ul style="list-style-type: none"> Vendrell-Puigmitja, L., Abril, M., Proia, L., Gomà, J., Llenas, L. Effects of metal mining effluents from abandoned mines on freshwater ecosystems. Frongoch mine as a case study.
Title	12th Symposium for European Freshwater Sciences (SEFS).
Location	Dublin (Ireland) – On-line
Date	25-30 July 2021
Website	12th SEFS
Participants	Lídia Vendrell-Puigmitjà (UVIC)
Description	<p>Oral communication:</p> <ul style="list-style-type: none"> Vendrell-Puigmitjà, L., Llenas, L., Bertrams, L., Proia, L. & Abril, M. Response of freshwater biofilms exposed to treated and untreated metal mining effluent with exposure and recovery time.
Title	12th European Conference on Ecological Restoration SERE
Location	Alicante (Spain) - On-line
Date	7 – 10 September 2021
Website	12th SERE Conference
Participants	Meritxell Abril (UVIC)
Description	<p>Oral communication:</p> <ul style="list-style-type: none"> Abril, M; Vendrell-Puigmitjà, L; Oatley-Radcliffe, D; Colón, J.; Peña, N.; Duarte, T.; Bostock, R.; Bostock, J.; Sommer, T.; Seemann, A.; Alvarez, P.L., Llenas, L. LIFE DEMINE: An innovative technology to decrease the environmental impact caused by polluting effluents from abandoned mines in rivers.

NETWORKING EVENTS	
Title	1 st Networking Event between LIFE projects organized by LIFE NEWEST
Location	Castellon (Spain)
Date	19 June 2018
Participants	Meritxell Abril (UVIC)
Description	Networking event between different LIFE projects organized by the company SERVYECO, project coordinator of LIFE NEWEST project. LIFE NEWEST, LIFE CLEAN Up, LIFE DEMINE, LIFE Ecodigestion and LIFE Bactiwater projects, all members of the EU LIFE program, participated in this event. During the event, the different LIFE projects explained their objectives and results, the progress made until the date and, the future actions that they would carry out in the short and long term. After each presentation, all project participants interacted with each other to resolve doubts, share experiences and look for potential synergies.
Title	2 nd Networking Event between LIFE projects organized by LIFE NEWEST
Location	Valencia (Spain)
Date	12 April 2019
Participants	Meritxell Abril (UVIC)
Description	Networking event organized by the LIFE NEWEST project partnership in Valencia, at Global Omnium facilities. In this event, different LIFE projects in progress (LIFE Bactiwater, LIFE In BRIEF, LIFE CLEAN Up, LIFE TECMINE, LIFE LIBERNITRATE, LIFE Ecodigestion, LIFE PALUDICOLA, LIFE DEMINE) were presented. They explained their objectives and results, the progress made until the date and, the future actions that they would carry out, with the

	final aim of promoting synergies and collaboration with other related projects.
Title	LIFE DEMINE symposium “Abandoned mines and water bodies: current status, environmental impacts and treatment options”.
Location	Vic (Spain)
Date	13 November 2019
Website	LIFE DEMINE symposium
Participants	UVIC: Meritxell Abril, Laia Llenas, Lídia Vendrell-Puigmitjà. PRAS: Pablo Ruiz-Álvarez Cabrero, Jorge Loredo DGRC: Thomas Sommer ELENTEC: Duarte Tito SWANSEA: Mabrouk Zanain
Description	UVIC organized a one-day symposium to explore the environmental impacts caused by abandoned mines on water bodies from a variety of perspectives. The one-day symposium addressed the current environmental problem on freshwater ecosystems caused by abandoned mines throughout three different sessions: current status and public management of abandoned mines, environmental impacts on water bodies and treatment options for mining effluents. The conference counted with the participation of 10 invited experts, including representatives of public administration, researchers and companies specialized in water treatment. Representatives of each partner within the LIFE DEMINE consortium also participated. Each speaker gave a 15-minute presentation followed by a five-minute questions and answers. The symposium was attended by around 35 participants.
Title	3 rd Networking Event between LIFE projects organized by LIFE NEWEST
Location	Valencia (Spain) – On-line
Date	12 November 2020
Participants	Meritxell Abril (UVIC)
Description	Networking event organized by the LIFE NEWEST project partnership. In this event, different LIFE projects in progress (LIFE NEWEST, LIFE CLEAN Up, LIFE RENATURWAT, LIFE PALUDICOLA, LIFE DEMINE) were presented. They explained their objectives and results, the progress made until the date and, the future actions that they would carry out, with the final aim of promoting synergies and collaboration with other related projects.
Title	Networking event between LIFE projects organized by LIFE SAFE T WATER
Location	Valencia (Spain) – On-line
Date	23 June 2021
Participants	Meritxell Abril (UVIC)
Description	Networking event between LIFE projects organized by the LIFE SAFE T WATER project. During this virtual event, different LIFE projects in progress were presented: LIFE SAFE T WATER; LIFE WETLANDS4CLIMATE, LIFE RENATURWAT, LIFE Ecodigestion 2.0, LIFE INFUSION, LIFE DEMINE). After each presentation, all project participants interacted with each other to resolve doubts, share experiences and look for potential synergies.
Title	Meeting of Experts – Groundwater in Post Mining Areas
Location	Groundwater Center, Dresden, Germany (hybrid)
Date	28 July 2021
Participants	Tania Roth, Heidi Sonntag, Gonzalo Lagas, Dr. Anne Weber, Prof. Dr. Felix Bilek, Philip Marx (DGFZ e.V.)

Description	The Federal Republic-Federal State-Project (BLP) "Water Protection in Post-Mining Areas" invited to a joint exchange and mutual support. The BLP is an international project funded by the Federal Ministry for Economic Cooperation and Development (BMZ) and the state of Saxony. The DEMINE project's experience in dealing with and reducing wastewater from abandoned mines was a particularly valuable input. The DEMINE team also contributed with its results to the outcome of the BLP for the production of the guideline incl. toolbox for methods of water treatment.
Title	2 nd Networking event between LIFE projects organized by LIFE SAFE T WATER
Location	Valencia (Spain) – On-line
Date	26 may 2022
Participants	Julio López-Doval (UVIC)
Description	This Networking event between LIFE projects was organized by SERVYECO, coordinators of the LIFE SAFE T WATER project. During this virtual event, the following on-going LIFE projects were presented: LIFE SAFE T WATER; LIFE INFUSION, LIFE 3E, LIFE ZERO WASTE, LIFE CONQUER, LIFE DEMINE. The progress and results obtained by DEMINE project in metal reduction, especially in the German and Welsh pilot plants, were presented to the other colleagues. After each presentation, all project participants interacted with each other to resolve doubts, share experiences and look for potential synergies.
Title	Workshop on ecotoxicology assessment and mine technologies for reduction of environmental impact in mining activities
Location	BETA Tech Center – FUB - UVic
Date	19 September 2022
Participants	Lorenzo Poria and Julio López-Doval (UVIC), Guillermo Rueda Delgado (Cobre Panamá – First Quantum), Miguel Cañedo-Argüelles (IDAEA – CISC)
Description	This Workshop was an opportunity for showing METP technology as well as advice on the methods and protocols to assess ecological and toxicological impact in aquatic ecosystems. In addition, this workshop has been a good opportunity to demonstrate the suitability and adaptability of METP technologies to different types of mining exploitation and the capacity to reduce metal and salt pollution in freshwater ecosystems.

3. DISCUSSION ON THE SYNERGIES AND COLLABORATIONS OBTAINED IN THE NETWORKING ACTIVITIES

These meetings have been highly beneficial to find projects of interest and contact with those partners of interest. During the LIFE NEWEST project's meetings, we have found potential and interesting synergies with the LIFE TECMINE project (LIFE16 ENV/ES/000159), which is trying innovative techniques for mine restoration. In this regard, FUB and the LIFE TECMINE coordinator were exploring the potential of combining the LIFE DEMINE technology and the LIFE TECMINE restoration method to obtain an integral method to restore abandoned metal mines. In addition, with a view to find routes of implementation of the LIFE DEMINE technology and valorization of its outputs, ELENTEC has contacted European projects such as ¡VAMOS! (<http://vamos-project.eu/>) and CROCoDile (<https://h2020-crocodile.eu/>) which focus on the re-exploitation of closed mines and recovery of valuable metals from waste. These are possible routes to fully close the mining cycle. Specifically, VAMOS is a Horizon 2020 project which seeks to exploit difficult to access mineral reserves throughout Europe using remote controlled submersible equipment. Minerals are extracted in a sludge and the DEMINE technology is a complementary process that enables the sludge to be treated and maximum yield achieved with minimum environmental impact. A potential site for DEMINE technology has been identified from discussions with VAMOS. In addition, as fruit of these networking activity, two members of the DEMINE consortium, FUB and ELENTEC, are participating in the LIFE project RAWMINA a project where the experience and results generated in DEMINE will be very valuable. Due to the expertise and results obtained during the DEMINE project on environmental assessment of mine residues, ecotoxicological assessment of technologies for mining wastewater remediation and the development of technologies based on electrocoagulation and membrane, together with the networking activities in different scientific meetings and LIFE project events, ELENTEC and FUB were invited to write the proposal of this LIFE project that is now on going. Finally, due to the expertise demonstrated by FUB on ecotoxicological and environmental assessment of mine technologies during the DEMINE project, contact with non European Companies such as Cobre Panamá - First Quantum, in order to provide advice in technologies for mine wastewater treatment and guidelines for ecotoxicological assessment and environmental restoration of mine activities.