LIFE GREEN ADAPT Innovation Workshop: Identifying opportunities for replication and transfer of innovative nature-based solutions

LIFE GREEN ADAPT is a project co-funded by the EU LIFE Programme (LIFE20 CCA/ES/001795) that is working towards developing climate change-resilient waste infrastructure through the promotion of circular technologies. These technologies, designed to work in a multi-stage process to prevent landfill erosion and treat polluted landfill leachate, offer valuable solutions to address the need for the waste sector to adapt to climate change impacts and extreme weather events. They were also the focus of the 2nd Innovation Workshop of LIFE GREEN ADAPT, a session that highlighted key opportunities for widespread adoption, replication and transfer of these innovations.

2nd LIFE GREEN ADAPT Innovation Workshop

On 22nd July 2025, project partner Isle hosted the 2nd Innovation Workshop of LIFE GREEN ADAPT project. This session served as a mid-review of results gathered thus far from the performance of liquid stream technologies, namely **Floating Treatment Wetlands** (FTW), **Aerated Vertical-Flow Treatment Wetlands with Geopolymers** (GPs-AVTW), and **Electroactive Biofilm-based Treatment Wetlands** (EAB-TW). Furthermore, an introduction to the innovative project's bio-technosoils, as well as the vulnerability assessment tool developed by project partner FACTOR for climate change-resilient waste infrastructure, were delivered to Innovation Board members present at the workshop.

The workshop served as a vital nexus for collaboration, bringing together the Innovation Board members whose expert knowledge spans waste management, cutting-edge research, engineering and strategic investments. Their active engagement was instrumental, providing highly valuable insights and suggesting pathways for the widespread adoption, replication, and transfer potential of our project technologies. An interactive survey completed by the Innovation Board members during the workshop revealed high market adoption potential across all innovations, with liquid stream treatment technologies garnering the most interest, followed by bio-technosoils and the vulnerability assessment tool.

Bio-technosoils aim to stabilise landfill topography, reduce erosion, and serve as a medium for the growth of native vegetation, ultimately aiding in bolstering local biodiversity levels. The bio-technosoils developed within LIFE GREEN ADAPT have made great strides in capping the demonstration site and introducing native grasses while attenuating erosion and improving soil structure. During the workshop, discussions between innovators and field experts centred around the potential for using these bio-technosoils in methane oxidation layers and their role in reducing odour-producing substances and minimizing the accumulation of leachate by improving water absorption.

Meanwhile, the liquid stream treatment technologies showed the highest potential for market adoption according to the interactive survey shared with the Innovation Board

members. Given the robust nature of the results gathered thus far that show promising capabilities in reducing contaminant concentrations in leachate, further steps deemed critical for their successful adoption and replication included comprehensive life cycle and life cost assessments.

Finally, the **vulnerability assessment tool** for climate change-resilient waste infrastructure was demonstrated as being able to quantify and illustrate climate risk both before and after project implementation, building on the IPCC's definition of risk. From discussions held during the Innovation Workshop, a crucial next step for ensuring the tool's scalability was deemed to be obtaining approval for widespread use of the tool from relevant environmental authorities.

Cumulatively, partners were able to garner insightful perspectives from the Innovation Board representatives as they work towards the further technical development of their innovations up until project completion and beyond. Such insights will prove as powerful tools in navigating the road to commercialisation and securing successful uptake of these technologies, and we look forward to seeing the visions for these technologies continue to evolve and grow.

What's next?

Looking ahead, the momentum continues with one final, critical Innovation Workshop scheduled for October 2025 and organised by Isle. This face-to-face gathering will unite project innovators, Innovation Board experts and other relevant key stakeholders to rigorously validate our project technologies and forge a robust maintenance plan for blue-green infrastructure (BGI) solutions, ensuring their impact, scalability and transferability well beyond project's conclusion at the end of 2025.

Dr Blanca Antizar, Director at Isle, emphasized, "*The LIFE GREEN ADAPT project is at the forefront of tackling critical environmental challenges by demonstrating how innovative nature-based solutions, including bio-technosoils, can build climate change-resilient waste infrastructure. The innovative solutions that we are testing in this project offer a powerful dual benefit: not only do they combat landfill erosion exacerbated by extreme weather events, but they also provide vital solutions for treating polluted landfill leachate, safeguarding our precious water courses from contamination.* ***This holistic approach is essential for a sustainable future, and critically, these adaptable solutions present significant opportunities for transferability to other sectors facing similar environmental pressures, such as the mining industry, in managing their own legacy sites and water treatment needs***."

About LIFE GREEN ADAPT

The LIFE GREEN ADAPT project, co-funded by the EU LIFE Programme (LIFE20 CCA/ES/001795) aims to increase the resilience of EU waste infrastructures against climate change. This will be achieved by demonstrating the potential of blue-green infrastructures (BGI) and ecosystem-based approaches to manage flash flooding and run-off caused by heavy rainfall and prevent fires and explosions caused by droughts and unusual heatwaves.

Partners of the LIFE GREEN ADAPT Consortium include: AIMEN, LIMNOS, FACTOR, UPC, AU, XILOGA and ISLE.

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