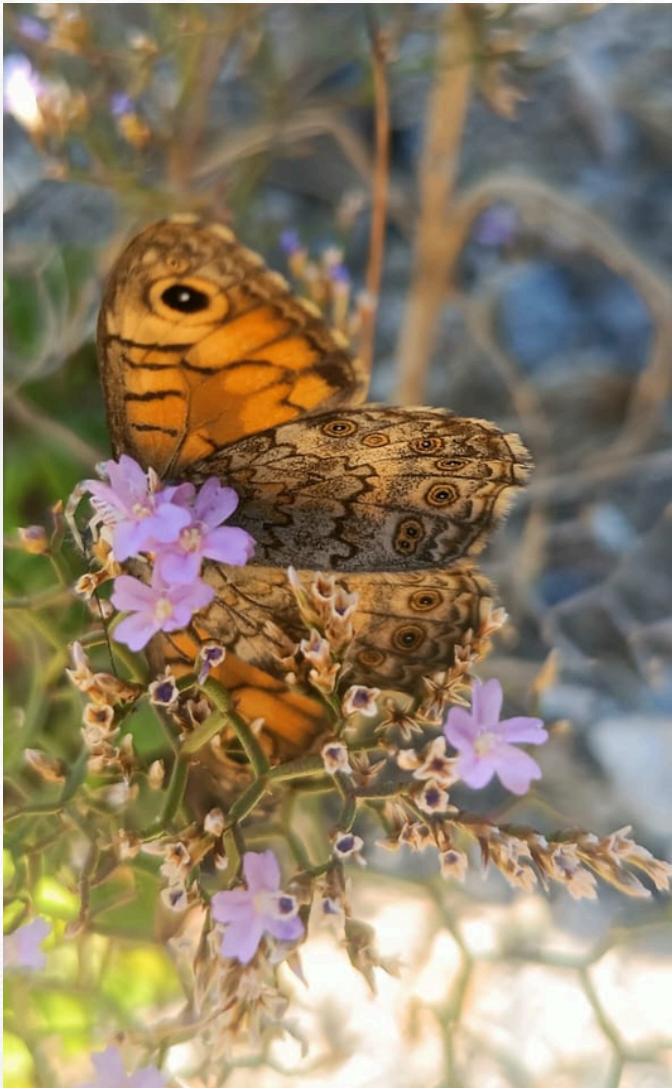




SALTY UPDATES

YEAR 1

Welcome to the first newsletter from SaltyBEATS a Biodiversa+ project (BiodivNBS). Here we want to give you the highlights from SaltyBEATS's first year. It is our aim to publish our news and keep you updated annually.



The first year of SaltyBEATS has been an intense and inspiring journey.

Soil salinity is an escalating global challenge, driven by climate change, sea-level rise, unsustainable irrigation practices, and increasing drought. It affects both coastal and inland areas, degrading soil quality, reducing agricultural productivity, and threatening biodiversity. As salinisation spreads, it puts growing pressure on food systems and rural livelihoods, particularly in already vulnerable regions. Addressing this issue requires innovative, nature-based approaches that can both restore ecosystem functions and support sustainable agricultural production. SaltyBEATS aims to revitalise marginal salt-affected lands by understanding the role of halophytes in naturally saline landscapes and using this knowledge to deliver practical solutions that restore biodiversity and improve ecosystem resilience.

Across six countries, our consortium has moved from planning to action, laying the foundations for a shared understanding of how halophyte-based Nature-based Solutions (NbS) can contribute to addressing biodiversity loss and land degradation in agriculture under increasing salinisation.

Field monitoring across six countries

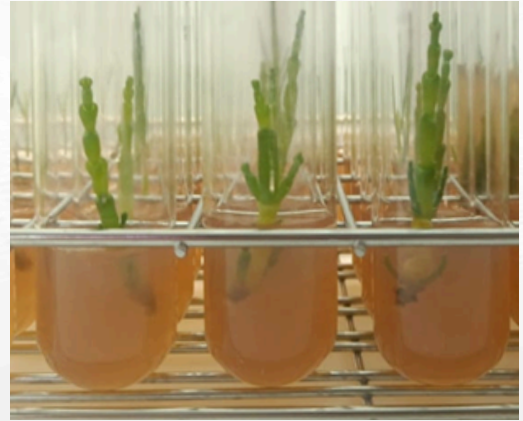
During this first year, all partner teams successfully launched field monitoring activities. We are currently monitoring 4 farms and 4 naturally saline areas. Our work will create a robust baseline for long-term biodiversity assessment and evaluation of saline NbS. These first steps in the field have already helped us converge on an important shared viewpoint on how halophyte-based systems hold significant potential to reconcile agricultural production with biodiversity conservation in saline environments.





Understanding how to conserve and propagate halophytes

Halophytes such as *Salicornia* and *Limonium* species offer promising opportunities for cultivation under saline conditions thanks to their natural salt tolerance and valuable medicinal properties. However, many of these species are at risk in their natural habitats, and their limited capacity for natural propagation makes conservation efforts essential. Within SaltyBEATS, we have been working on developing new protocols for the *in vitro* propagation and establishment of these endangered halophytes. These protocols represent a promising tool for conserving and valorising halophytic species for future applications in sustainable agriculture. Our first paper on this work is already out—check the end of this newsletter for more details.



Engaging with stakeholders



Stakeholder engagement has been central to SaltyBEATS from the outset. In Year 1, we organised a series of stakeholder workshops across Europe: in Texel Island and The Hague (The Netherlands), Alberese and Cavallino Treporti (Italy), and Murcia (Spain). These events brought together farmers, researchers, policymakers, industry representatives, and local communities to address the growing challenge of salinity in agriculture. The workshops focused on understanding stakeholder perceptions, local needs, and priorities related to saline nature-based solutions, as well as their implications for food production and biodiversity. The insights gathered will support the co-development of practical solutions—such as the adoption of salt-tolerant crops—and help inform strategies and policies aimed at strengthening the resilience of agricultural systems in salinity-affected regions.

In parallel, we carried out questionnaires to collect stakeholders' views on progressive salinisation, its perceived impacts on biodiversity, and priorities for action. These exchanges provided valuable insights into:

- local and sector-specific needs,
- perceptions of biodiversity loss linked to salinisation, and
- urgent actions required to respond to these challenges.

Results from this work will feed into upcoming scientific and policy outputs — stay tuned for our next publications.

Establishing the Stakeholder Board

Alongside our ongoing stakeholder engagement activities, and fully in line with the SaltyBEATS mission to place stakeholders at the centre of the project, we have established a SaltyBEATS Stakeholder Board. The Board brings together key stakeholders from a broad range of sectors, including ministries and public authorities, the scientific community, the agricultural sector, citizen science initiatives, and private companies. Its role is to annually review and evaluate the project's progress, providing strategic feedback on both scientific developments and practical relevance.





Supporting early-career researchers

This first year also strengthened SaltyBEATS' commitment to capacity building. Five Master's students joined the project, working on diverse topics ranging from the population dynamics and conservation of the endangered *Limonium etruscum* (pictured alongside) to the evaluation of ecosystem services in salt-affected landscapes. Their contributions are already enriching the project with new perspectives and approaches.



Conferences and outreach activities

The SaltyBEATS team members were actively engaged in several international and national events, contributing to scientific exchange and outreach across disciplines. These included the second Annual Meeting of SUSTAIN COST Action 22144 and OBSIDIAN Conference in Toruń (Poland, see picture below), the Third International Laayoune Forum on Biosaline and Arid Land Agriculture (LAFOPA Conference), the XLIII SICA Congress in Padua (Italy), Plant Biology Europe 2025 in Budapest (Hungary), TC/ESG 2025 in Johannesburg (South Africa), and the National Biodiversity Forum 2025 in Milan (Italy).



In addition, the Spanish team took part in media outreach activities, featuring in interviews that highlighted SaltyBEATS research and objectives. You can learn more through the following links:

- <https://www.laverdad.es/agro/cultivar-terrenos-imposibles-20250506005315-nt.html>
- <https://www.orm.es/programas/campoyvida/campo-y-vida-25-05-2025/>

Publications

The first year has been quite busy with field monitoring but we are pleased to highlight the following new scientific publication by our members.

Guardigli G. *et al.* 2025. Ultraviolet B radiation improves salt-induced responses in the facultative halophyte *Chenopodium quinoa*. *Plant Physiology*, DOI://doi.org/10.1093/plphys/kiaf569

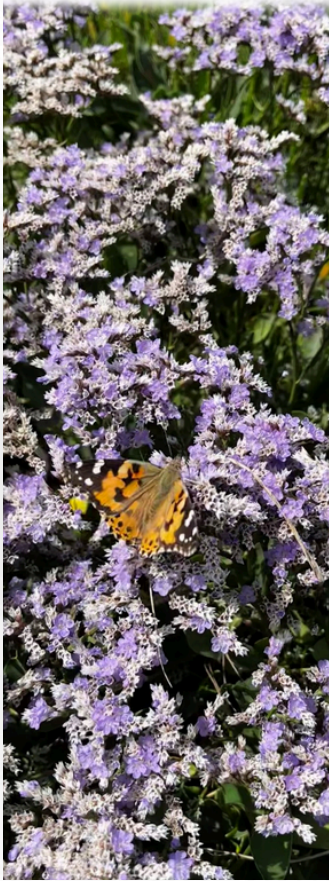
Zitouna N. *et al.* 2026. Genetic diversity and evolution of Endogenous Pararetroviruses across Solanaceae: How farming systems drive dynamic tomato EPRVS changes under salt stress. *Frontiers in Plant Science*. doi.org/10.3389/fpls.2026.1702837

Custódio L. *et al.* 2025. In vitro propagation of *Limonium algarvense* Erben: towards the conservation of a rare and endemic halophyte. *Plant cell, Tissues and Organ Culture*. doi.org/10.1007/s11240-025-03129-9





What comes next?



Alongside another full year of biodiversity monitoring in saline landscapes across all our field sites, we are also excited to share a number of upcoming meetings and events. We warmly invite you to join us and get involved.

First SaltyBEATS Annual Meeting, 5th SUSTAIN training School and the First Edition of the MSE International Hackathon.

Where: Manouba School of Engineering, University of Manouba, **Tunisia** 21-24 April 2026

Stakeholder workshops

In May we will join the COST Action SUSTAIN annual meeting in Viseu (Portugal). We will then co-organise a joint meeting and stakeholder workshop with the WETREAT Water4All project at the end of June in Faro (Portugal).

We will also continue our series of stakeholder workshops across countries, bringing together stakeholders working with halophytes and saline agriculture, climate experts, and students to explore innovative perspectives on saline environments.

BioBlitz on Wheels events

Two mini **BioBlitz** events will be organised in Grosseto (Italy) and Texel (the Netherlands) in collaboration with local Museums, Citizen Science Associations and National Parks. Also in this case follow our social media channels for updates on locations and dates.

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How to stay updated and join us?

Stay informed about upcoming events, locations, and opportunities to get involved by following SaltyBEATS online:

LinkedIn: <https://www.linkedin.com/company/saltybeats>

Facebook: <https://www.facebook.com/people/saltybeatsproject/61575028037076>

Website: www.saltybeats.com

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**Salty symphonies:
bringing back Biodiversity
in mArginal Saltlands**