TERRASAFE

Cultivating resilience, restoring the earth.

NEWSLETTER

Innovations for empowering communities in Europe and North Africa to combat desertification



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Newsletter #2

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Editorial

Thomas Timberlake,
TERRASAFE stakeholder engagement



Community members across southern Europe and northern Africa are strengthening our plans to tackle desertification.

We're now one year into the five-year TERRASAFE project, and the momentum is building.

So far in 2025, we've held a series of workshops that bring together farmers, land managers, NGOs, businesses, and community members to co-design the next steps of TERRASAFE. These gatherings have been central to our mission: empowering communities to combat desertification.

We held two workshops in each of our five pilot areas for testing measures to manage desertification. In four of these areas, Cyprus, Romania, Spain, and Tunisia, participants were introduced to agricultural innovations provided by our innovation partners and discussed how these might help combat desertification in their region, alongside more traditional practices.

Our new desertification mapping app helped them identify areas of high vulnerability in their local area and select agricultural and forest land for perhaps the most significant part of the project: testing the innovations.



Workshop participants in Cyprus consider local desertification.

In the fifth pilot area, Italy, the major challenge is depopulation rather than land degradation. Here, workshops followed a different path and focussed on social innovations. We shared successful initiatives and co-developed locally-relevant solutions to test in the Italian sites.

Across all five of the pilot areas, we have seen the value of early, inclusive engagement. Stakeholders are not only shaping the project but also building a shared sense of ownership.

You can read more about the workshops in this issue of the TERRASAFE newsletter (see page 7). You can also learn about our approach to community engagement that underpins these gatherings, and the project as a whole (page 9).

Other highlights in this issue include our recommendations for EU policy to bring desertification under tighter control (page 5), and our insights on how depopulation can drive desertification (page 11) - a significant issue in southern Europe.

Core to TERRASAFE's mission is to help people understand desertification and its management more widely. To this end, we've developed the Desertification Learning Hub (page 14) and held a webinar exploring innovations to tackling desertification that attracted participants from across the globe (page 4).

As we go to press in July 2025, we mark the next project milestone. Communities in our pilot areas are now selecting the innovations they want to test. We can't wait to see what they choose and will keep you posted on their progress.

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About TERRASAFE

TERRASAFE is a major 5-year project (running 2024-2029) investigating innovations for preventing and reversing desertification.

Our goal is to empower communities to tackle the growing threat of desertification, particularly accelerated by climate change.

We work closely with community members, including farmers, foresters, community groups and local authorities, in five vulnerable regions of Europe and north Africa. Each of these pilot areas faces its own unique challenges. Together we are exploring which innovations are best suited to their specific circumstances.

We will promote the wider adoption of TERRASAFE-certified nature-based, technological, and social innovations, and provide policy recommendations that support their uptake to transform the resilience of land and communities to desertification.

TERRASAFE is funded by the EU under Horizon Europe and UKRI (UK Research & Innovation).

Pilot areas

We work with communities in 5 countries to test innovations for combatting desertification.

- Italy: Land abandonment and depopulation
- Spain: Water scarcity
- Romania: Vegetation decline
- Tunisia: Soil salinisation
- Cyprus: Soil organic carbon decline



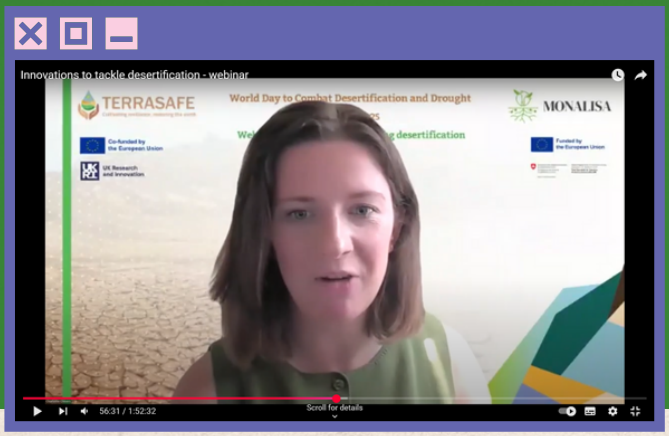
Events & Publications



Webinar displays a wealth of desertification innovations

On 17th June 2025, 180 participants from across the globe joined a 2-hour webinar to discover innovations for combatting desertification.

Marking the World Day to Combat Desertification and Drought, speakers included researchers from the webinar's co-hosts, TERRASAFE and MONALISA, who introduced their research projects to attendees. These projects have the shared goal of combatting land degradation and desertification.



The wide selection of social, technological and nature-based innovations presented by the speakers reflected the need for a range of measures to tackle desertification - given the huge variation in the nature, causes and contexts of the problem.

Three guest speakers, Benz Kotzen (University of Greenwich), Gustavo Viera Ruiz (Gesplan) and Leigh Winowiecki (CIFOR-ICRAF), presented on innovations including drones to distribute seeds, a device to collect water from fogs, and advancements in soil and land monitoring.

Watch the webinar here

European Geosciences Union (EGU) Assembly, 2025

TERRASAFE joined over 20,000 geoscientists at the European Geosciences Union (EGU) Assembly in Vienna during 27 April–2 May 2025.



Adriana Bruggeman on stage at EGU25.

Together with our sister project, MONALISA, we hosted our session: *Innovations to assess, prevent and combat land degradation and desertification, including organic farming solutions.*

Presentations and posters revealed a huge variety of possible measures. As well as those from TERRASAFE and MONALISA, they included landscape function analysis, UAV surveys, a machine-learning-based procedure for out-scaling restoration measures, and many more.

Adriana Bruggeman, TERRASAFE colleague and co-organiser of the session, commented: "Thank you very much to everyone who participated. It was a great opportunity to exchange knowledge and ideas."

Urgent policy action needed on desertification in Europe

A new policy brief from TERRASAFE (published March 2025) highlights the growing threat of desertification in Europe and calls for urgent, coordinated policy action to address the crisis.

Though often associated with other continents, desertification is rapidly escalating in Europe.

Currently, 23% of land in Europe is vulnerable to the issue—a figure expected to rise due to climate change and unsustainable land use. While the EU has taken steps to address desertification, the response remains fragmented, states the report, *The Increasing Threat of Desertification to Europe*.

Written by Hermann Kam and Melanie Muro (Institute for European Environmental Policy (IEEP)), the report says a lack of a centralised strategy and binding targets have led to insufficient progress.

"The rising threat of desertification, likely to be exacerbated by increasing climatic and anthropogenic drivers in the future, requires immediate and comprehensive action," the report states. "Policies which do tackle desertification in some form, and to a certain extent, are often sectoral and fragmented in nature."



Read the report

On the blog

"We want to shed more light on what policymakers can do to help bring desertification under control and reduce its impacts on society."



Hermann Kam

Hermann Kam, co-author of The Increasing Threat of Desertification to Europe, talks through the gaps in European desertification policy, and considers the opportunities for policymakers to address the problem in our blog: **https://terrasafe.eu/2025/03/31/why-desertification-in-the-eu-needs-urgent-policy-action/**

Boosting soil literacy in Europe

TERRASAFE researcher Charlotte Chivers joined a workshop hosted by the European Commission's Joint Research Centre (JRC) in March 2025 to discuss how to enhance soil literacy.

The workshop gave us a valuable opportunity to learn about other soil literacy-related activities and plans in Europe. These ranged from public events and targeted guidance to international collaborations.

TERRASAFE hopes to advance soil literacy through our work with communities in areas that are vulnerable to desertification. Land managers in these communities will boost their soil literacy by monitoring and characterising soil with affordable, easy-to-use methods.

Learn more: https://terrasafe.eu/2025/03/20/terrasafe-joins-jrcs-soil-literacy-workshop/



MBE for Lindsay Stringer



Lindsay Stringer, TERRASAFE project member, was awarded an MBE (Member of the Order of the British Empire). in June 2025 .

She was awarded the prestigious UK state accolade in recognition for her work on environmental development.

Lindsay has been instrumental in informing international policy through the United Nations Convention to Combat Desertification (UNCCD), improving much degraded land around the world, and helping to prepare better agricultural policy.

Congratulations Lindsay from all at TERRASAFE!

Project milestones



Community members shape TERRASAFE's plans at workshops

Between February and June 2025, community members and researchers gathered at workshops to shape TERRASAFE's efforts in combatting desertification.

Held across six locations in Cyprus, Italy, Romania, Spain, and Tunisia, the workshops enabled those directly affected by desertification to share their expertise on local environmental conditions with TERRASAFE researchers.



Community members in Tunisia consider TERRASAFE's plans.

Participants included farmers, foresters, community group members, researchers and local authority staff. Together with the attendees, TERRASAFE researchers discussed and refined plans for identifying and implementing the most effective measures to tackle desertification.

The events were an excellent opportunity for TERRASAFE to learn more about the local context of desertification in each region – information that is essential to ensuring the success of anti-desertification efforts.

...continued on next page



Discussing desertification in Romania.

For example, in Italy, participants highlighted the impact of rural depopulation as a key concern. In Spain, the devastating 2024 floods in Valencia brought attention to the links between extreme weather and desertification.

TERRASAFE's desertification mapping app was a key feature of the workshops and was met with great interest.

Attendees acknowledged the value of the app for large-scale mapping and identifying bigger trends.

But they also emphasised the importance of on-the-ground observations for understanding what is happening at the local level. For example, individual fields change land cover throughout the year, which makes it difficult to assess long-term trends solely through snapshot imagery.

Participants were also enthusiastic about TERRASAFE's five proposed solutions for combatting desertification, and raised important questions about their costs and practicality.

TERRASAFE extends huge thanks to all workshop participants and coordinators. Their contributions are invaluable in shaping the project's approach to desertification, benefiting not only their own communities but also others facing similar challenges worldwide.



Giovanni Quaranta explains TERRASAFE's plans to participants in Italy, where depopulation is a key concern. ***See page 11*** *for more on this pressing topic.*

Head to page 10 to learn more about why we engage communities, and how.





Participants at the Tunisian workshop gather for a group photo.

Selecting KPIs at TERRSAFE's 2025 plenary meeting



TERRASAFE team members discuss how to assess innovations.

How can we best measure the success of innovations tackling desertification across Europe and north Africa?

That's one of the key questions project members explored during TERRASAFE's 2025 plenary meeting held in May in Murcia, Spain.

The consortium is co-testing a range of nature-based and technological innovations in Cyprus, Italy, Romania, Spain and Tunisia. In Murcia, we focused on planning the next stages of this work – including a workshop dedicated to identifying meaningful KPIs for assessing how effective these innovations are in combatting desertification.

Cartagena excursion for team

Whilst in Murcia, the TERRASAFE team visited the Cartagena region. This gave us the opportunity to meet local farmers already dealing with the consequences of desertification.

We heard how traditional crops, including lemons, are being replaced with carob – a more drought-resilient crop and potential chocolate alternative.

Head to pages 11-12 to learn more about Cartagena.



Cartagena in Spain - where many farmers switch crop types due to desertification.

Desertification insights



To tackle desertification, you must listen to communities

Measures to tackle desertification risk failure - unless they put local knowledge, voices, and experiences at the heart of what they do, TERRASAFE members Thomas Timberlake and Lindsay Stringer wrote in a recent blog.

Published May 2025, the post explains how TERRASAFE works side-by-side with community members to build a desertification-resilient future.



Active listening at our Cypriot workshop with community members held earlier this year.

Across the globe, communities are witnessing their lands turn to dust. Climate change, poor land management, and economic pressures are combining to steadily degrade soils that once allowed nature and farmland to thrive.

But, while the causes of desertification are global and complex, the solutions must be local and grounded, explained the blog's authors from the University of York (UK).

"That's why, in the TERRASAFE project, we've made one thing very clear from the start: change can't happen without people," Timberlake and Stringer write. "The communities in these vulnerable regions are not just 'victims' of desertification, they are also part of its solution."

They add: "Imagine a new irrigation system is designed by outside experts, implemented in a rural area, and then abandoned within a year because no-one in the local community has the tools or training to maintain it.

"Or, worse, it's abandoned because it doesn't meet the community's real needs."

In contrast, TERRASAFE works "side-by-side with farmers, landowners, other researchers, policymakers, and others directly affected by desertification to identify not just the problems, but the best paths forward.

"These people bring critical insights and real-world experience that we could never reach from behind a desk or a lab bench."

Read the blog in full

https://terrasafe.eu/2025/05/02/building-desertification-resilient-communities-starts-with-listening/

Depopulation is driving desertification in southern Europe

Across southern Europe, people are moving away from the countryside in search of better opportunities.



In a recent blog from TERRASAFE (May 2025), project members Giovanni Quaranta and Rosanna Salvia explained how this rural depopulation accelerates desertification and, in turn, threatens community life, the environment and the economy.

The situation in Mediterranean Europe contrasts with many other parts of the world, where desertification is a cause of depopulation.

In countries including Cyprus, Italy, Portugal and Spain, it is not human pressures — such as deforestation and unsustainable farming — that accelerate degradation, but the absence of human stewardship itself.

The exodus of people from rural areas, particularly younger generations to urban centres in search of better opportunities, has led to the abandonment of traditional land-use practices that were crucial in maintaining ecological balance. As these populations dwindle, landscapes once sustained by human labour and ecological knowledge begin to deteriorate.



Italy is one of a number of Mediterranean countries where depopulation has degraded the land.

"Compared to other global drivers of desertification, depopulation plays a particularly significant role in southern Europe, where it often interacts with climate change and poor land-use policies to worsen the problem," explain the blog's authors from the University of Basilicata (Italy).

Depopulation-driven desertification not only degrades the land, but also the socio-economic fabric of community life, bringing "long-term implications for food security, cultural heritage, and climate resilience".

The blog warns that: "Depopulation does not merely empty a place. It transforms its very capacity for regeneration. Traditional ecological knowledge is lost, community structures disintegrate, and both public and private investments wane."

Read the blog in full

https://terrasafe.eu/2025/05/15/depopulation-as-a-driver-of-desertification/

Desertification images



Photo competition captures hope amidst degradation

In May 2025, TERRASAFE ran a photo competition for project members whilst on a team excursion to Cartagena, Spain, to meet local farmers.

The region is experiencing severe desertification because of water scarcity and climate change.

This has led to ongoing changes in land use and management, including a trend towards growing drought tolerant carob trees instead of almond trees and other crops traditionally grown in the area. In some areas, there is concern that some farms may not be able to produce food in as little as 20 years' time.

This series of photos provide a strong representation of desertification.

Many provide examples of hope, for example, where one farmer has started growing lavender and various grasses to prevent runoff, thus making rainwater more available to crops.

Our winning photo by Lindsay Stringer was chosen during a vote by the full consortium. Her photo of TERRASAFE partners in the field provides a strong example of our collegiate team and our shared vision of combatting desertification.



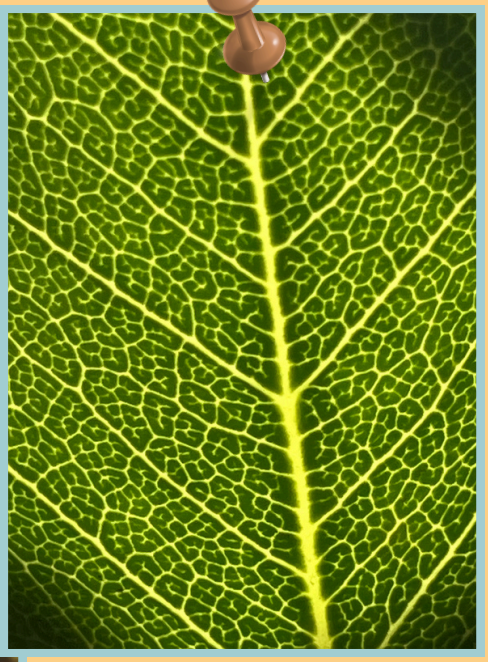
Winner! By Lindsay Stringer

More photo competition entries...















Desertification resources



Desertification Learning Hub

Looking to learn more about desertification?

Browse TERRASAFE's Desertification Learning Hub, launched earlier this year.

The team compiled this online library of desertification reports, videos, maps, educational material and more. It's here to help you get to grips with this critical and growing issue – whether you're looking for the basics on the topic, or for more technical information to support policy and land management.

Head to the Hub to learn something new today >>

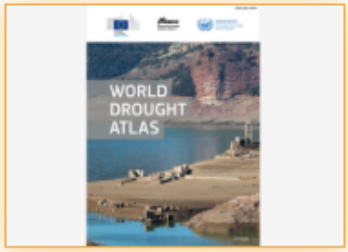
https://terrasafe.eu/desertification-learning-hub/



Protocol for design, implementation and maintenance of the NBS for drylands



Assessment Report on Land Degradation and Restoration



World Drought Atlas: Report



Science-policy brief: The global threat of drying lands: Regional and global aridity ...future ...ns

Science-policy brief: Sustainable land use systems – the path forward to collectively achieve Land Degradation Neutrality

Desertification Atlas

Just a handful of resources found on the Desertification Learning Hub.









Events

Upcoming conferences, workshops and other opportunities for you to learn and share knowledge on desertification and land degradation.

8-11 July 2025
TERRAenVISION 2025: Nature-based solutions to facilitate the transitions for living within the planetary boundaries

25 July 2025
Making the case for soil health monitoring - AI4SoilHealth webinar

8-12 September 2025
EUROSOIL 2025 The official meeting of the European Confederation of Soil Science Societies

15-17 September 2025
World Association for Soil and Water Conservation conference

21-23 October 2025
European Soil Observatory Stakeholder Forum

Visit our Events page to learn more about these opportunities:

https://terrasafe.eu/events/

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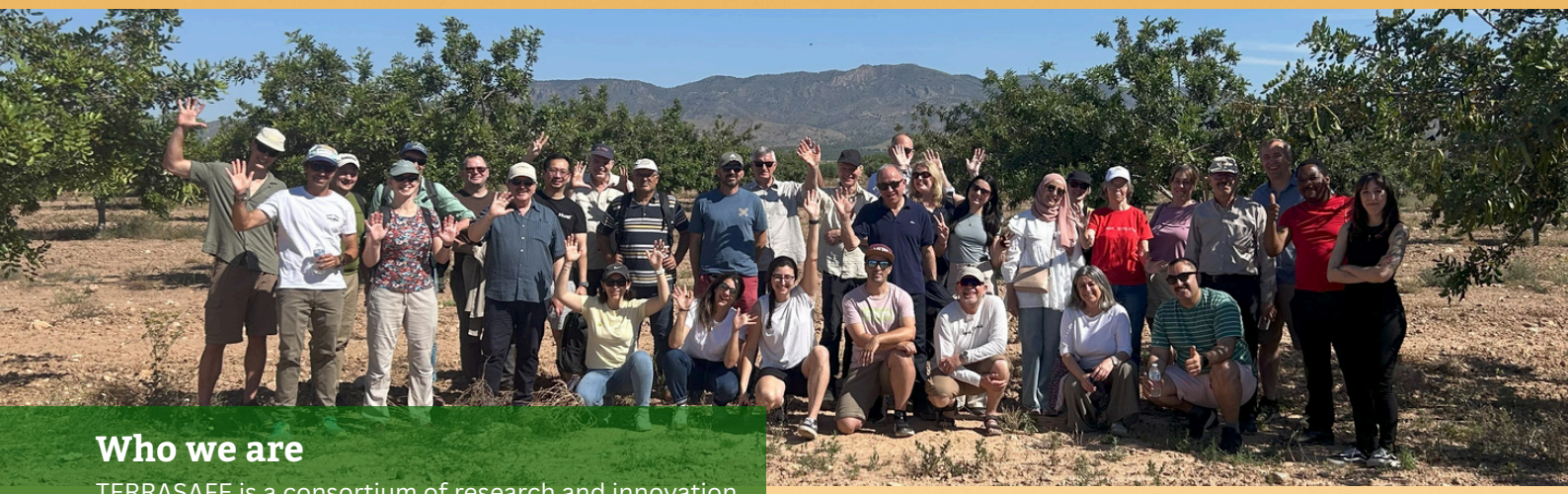
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Who we are

TERRASAFE is a consortium of research and innovation organisations, coordinated by the University of Aveiro.

Framework and Pilot Area Partners

universidade de aveiro

CEBAS

Università degli Studi della Basilicata

ICAS

University of York

CCRI Countryside and Community Research Institute

NIBIO Norsk Institutt for Bioøkonomi

The Cyprus Institute

University of Gloucestershire

Wageningen University & Research

Institute for European Environmental Policy

fondazione medes

Institut des Régions Arides

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