



# TERRASAFE

Cultivating resilience, restoring the earth.

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

# NEWSLETTER

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**#01  
DEC '24**



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## Newsletter #1

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### Welcome...

...to our first TERRASAFE newsletter!



Jane Mills & Charlotte Chivers  
TERRASAFE comms

This issue introduces our project's objectives and upcoming activities, which will contribute to tackling desertification in Europe and North Africa by co-developing and testing innovative solutions directly with local communities.

Since our launch in June 2024, the team has been actively laying the groundwork: we gathered in Aveiro, Portugal, for a plenary meeting, conducted initial workshops with stakeholders in our pilot areas, and established our communications platforms. We are pleased to invite you to explore our new project website and follow our updates on social media, including Facebook, LinkedIn, Instagram, and X (@terrasafeEU). Our public launch event, which brought together nearly 160 participants, is now available to watch on our YouTube channel.

In this newsletter, you'll get to know some of our task leaders, explore our pilot regions, learn about the innovative approaches we're testing, and gain insights into our upcoming activities and stakeholder workshops.



The TERRASAFE consortium



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## Introducing TERRASAFE

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Desertification refers to land degradation in dry areas of the world. It is caused by human activities and is exacerbated by climate change. When desertification occurs, the land's ability to grow plants, including food crops and trees, and provide other benefits is reduced. In some places, desertification can cause people to abandon land altogether. As a result, much of the world is vulnerable to desertification. Seeking ways of preventing and combatting desertification is, therefore, crucial.

TERRASAFE will empower local communities in southern Europe and North Africa to tackle desertification. The primary goal of the project is to co-create, test and enable the adoption of innovations that prevent desertification and/or restore degraded land. The project includes 5 pilot areas, each of which are highly vulnerable to desertification.



## Main planned outcomes

**Desertification Innovations Partnerships** in the 5 pilot areas that remain active beyond TERRASAFE

**Methodologies, tools and guidelines** tailored to support local communities to evaluate the potential of nature-based, technological and/or social innovations to prevent and combat their specific desertification threats

**Scientifically-sound and -robust certification** of the tested innovative solutions, in terms of environmental effectiveness and economic viability

**Policy recommendations** that support local communities in adopting innovative solutions that they deem necessary for a desertification-resilient future

**Business plans** for sustainable exploitation strategies of the certified solutions provided by our innovation partners

## Project timeline





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## Pilot areas

TERRASAFE will work across 5 pilot areas in southern Europe and North Africa, as shown on the map below. These pilot areas were each chosen to represent the full range of main types of desertification alongside a variety of land use types.



Italy:  
Land abandonment  
and depopulation



Spain:  
Water scarcity



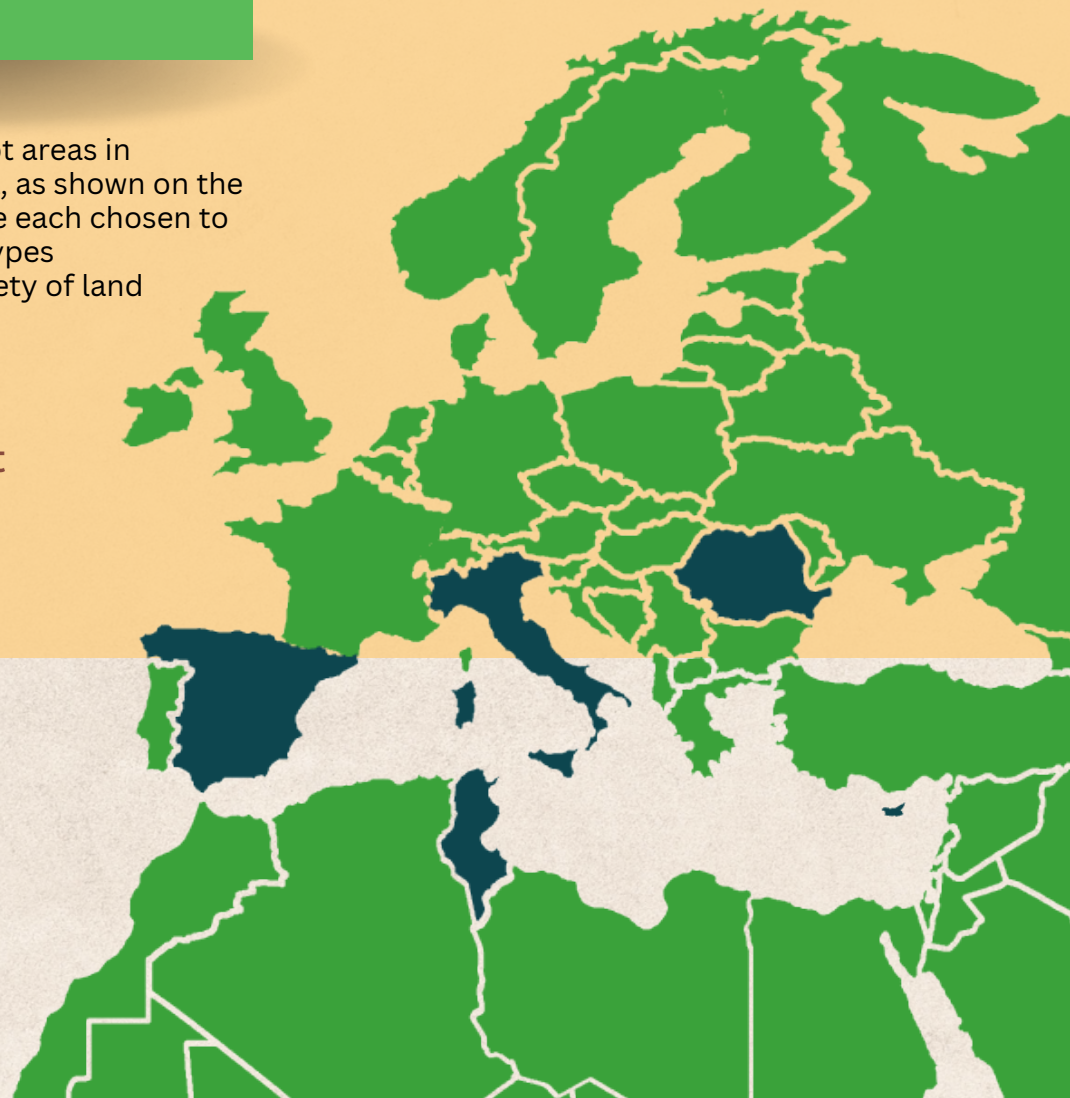
Romania:  
Vegetation  
decline



Tunisia:  
Soil salinisation



Cyprus:  
Soil organic carbon  
decline



We have developed  
detailed pages for each  
of our pilot areas on the  
TERRASAFE website  
- check them out!

[www.terrasafe.eu](http://www.terrasafe.eu)





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## Our approach

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### TERRASAFE work packages



## Project coordination

### Responsibilities:

- Successfully complete the project's scientific and technical objectives
- Complete the project within the agreed time schedule and budget
- Produce findings and Deliverables that meet defined quality standards
- Manage the Intellectual Property created by the project
- Ensure efficient and effective interaction/communication between the partners and with the Impact Advisory Board and the European Commission.



Project coordinator: Dr Jacob Keizer



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de aveiro

## Stakeholder engagement

### Responsibilities:

- Ensure stakeholder engagement has a process in place that ensures empowerment across planning, monitoring, evaluation, and learning through co-creation



Lead: Prof Lindsay Stringer



Co-lead: Dr Tom Timberlake



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## Our approach (continued)

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### Mapping and analysis of desertification status, drivers, and impacts

#### Responsibilities:

- Establish and coordinate a community of practice concerning the assessment of desertification status and vulnerability
- Develop a user-friendly online GIS App with a desertification geodatabase for pilot areas, incorporating existing maps
- Qualitatively map desertification status in pilot areas
- Conduct an integrated assessment of desertification's state, drivers, pressures, and impacts in pilot areas
- Collaboratively develop future land-use scenarios based on current and predicted climate conditions and findings regarding innovation effectiveness and economic viability
- Evaluate the integrated desertification assessment approach and online tools and create a manual for wider adoption.



Lead:

Dr Adriana Bruggeman



Co-lead:

Dr Luuk Fleskens



### Assessing and demonstrating innovations versus current and traditional/organic practices

#### Responsibilities:

- Collaborate with our innovation partners to co-create proposals for implementing strategies aimed at desertification-affected land and management systems, focusing on selected pilot areas chosen by our partnerships
- Co-select 3 innovations for testing in each pilot area.
- Identify and select suitable key performance indicators for accurately measuring the immediate, short- and mid-term impacts of these innovations in terms of environmental effectiveness and economic viability
- Develop a unified framework for assessing innovation impacts across pilot areas and adapt it to specific land cover/management systems and selected KPIs
- Implement, monitor, evaluate and demonstrate the selected innovations, quantifying their environmental and economic benefits.



Lead:

Dr Jannes Stolte



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Co-lead:

Dr Sofia Corticeiro



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## Our approach (continued)

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### Evaluating policy impacts for scaling-up recommendations

#### Responsibilities:

- Review existing knowledge on the effectiveness of various policy instruments for combating desertification, including their impacts and success factors.
- Evaluate EU, national, and regional policies, legislative proposals, and initiatives related to desertification.
- Co-design and assessment of policies promoting widespread uptake of innovative solutions against desertification in the pilot areas
- Elaborate recommendations for future national and EU policies to prevent and combat desertification
- Create a manual desertification-policy co-design and assessment



**Lead:**  
Prof Giovanni Quaranta



**Co-lead:**  
Dr Melanie Muro

### Dissemination, communication, and fostering collaboration

#### Responsibilities:

- Plan and implement an overall strategy of communication, awareness raising and dissemination to achieve maximum impact for the project
- Link TERRASAFE with existing desertification projects, initiatives and networks to promote an effective and efficient exchange of knowledge, incorporating a wide set of relevant stakeholders
- Develop an Exploitation Plan to promote long-term use and widespread upscaling of TERRASAFE certified innovations against desertification.
- Communicate with a wide range of audiences to raise general awareness about desertification



**Lead:** Dr Jane Mills



**Co-lead:** Dr Charlotte Chivers

**Find out more and watch videos from each of our project leads here:**

<https://terrasafe.eu/about/work-packages/>



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## Desertification Innovations



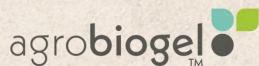
### Three types of innovation:



TERRASAFE plans to use a co-design approach in each pilot area to test innovations for combatting desertification. TERRASAFE includes 5 small-medium enterprise (SME) partners that have developed a range of distinct innovations with the potential to prevent/combat desertification. The SMEs will propose solutions targeted to the pilot area conditions, and communities will also be welcome to identify and consider adopting alternative innovations in collaboration with local enterprises. Each pilot-area partnerships will be invited to select up to three innovations for field testing in their localities.



**Agrodit** provides its users with real-time data direct from their soils, allowing them to respond to sub-optimal environmental and soil conditions before visual symptoms appear. Farmers or land owners/managers install Agrodit sensors at the start of each crop cycle to track moisture, salinity and temperature throughout the growing season. The sensors stay in place throughout the crop cycle, with users receiving alerts when soil or plant stress occurs.



**Agrobiogel's Retentis®** is a gel made from wood, which absorbs and stores water before slowly releasing it to plants during dry periods. This provides a unique and innovative solution to increase water holding capacity, organic matter and soil fertility. Retentis® is registered for conventional farming across Europe and approved for organic farming in Austria and Germany.



**Edafotec** designs and implements artificial soils, an innovative approach for increasing soil organic matter and recovering degraded soils. Here, a mix of organic and inorganic waste is incorporated back into the biogeochemical cycles of the soil to achieve healthy soil conditions. This artificial soil has a high water retention capacity, in addition to providing necessary nutrients for plant growth.



**Ecochar**, developed by IMFlorestal, consists of a mixture of biochar and compost. Ecochar is used for the rehabilitation of forest and agricultural lands. It is used in vineyards, olive groves, orchards, forests and other agricultural locations, as well as in small horticultural gardens. Ecochar only needs to be applied once, and results in increases in soil productivity, acting as a fertilizer as well as a soil restructuring agent.



**Isotech** envisages a solution which transforms green waste from parks, gardens and agriculture into high-quality, low-cost compost. The scheme, adaptable to the needs of specific rural areas, uses a circular economy model. The scheme is co-owned by local farmers who provide green waste and animal manure, while enjoying waste collection from their field, compost production and high-quality compost application to their land. Local authorities are also co-owners of the scheme.





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## Introducing our 'sister' project: MONA LISA

MONALISA is TERRASAFE's sister project, sister project, having been selected for funding under the same call topic of "innovations to prevent and combat desertification.

TERRASAFE and MONALISA have already identified several topics with elevated potential of significant synergies, including the joint organization of a EGU2025 session on desertification, as further detailed below.



MONITORING AND ASSESSING PREVENTION AND RESTORATION SOLUTIONS  
TO COMBAT DESERTIFICATION  
no. 101157867

#### MAIN GOAL:

- The main goal of MONALISA is to identify and promote innovative tailored solutions to combat **land degradation and desertification (LDD)**.



Total Budget: €7.3 mil.  
EU contribution: € 6.99 mil.



09/2024 - 08/2028  
Duration: 48 months



22 partners & 1 affil. entity  
9 Countries  
Coordinated by UNISS

#### APPROACH & OUTPUTS:

- **Co-design, co-implementation & co-assessment** processes.
- Learning & sharing via **Information Hub & Community of Knowledge**.
- User friendly multi-modular **Decision Support System**.

**6 case studies in 5 countries** aimed at advancing **nature-based and high-tech LDD solutions**, from innovative grazing technics to water harvesting.

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Project funded by:  
Ministry of Agriculture and Forestry of the Republic of France  
Ministry of Agriculture and Forestry of the Republic of France  
Ministry of Agriculture and Forestry of the Republic of France



Find out more about the MONALISA project at <https://monalisa4land.eu/>





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## Launch event

During September 2024, we held a public launch event, which was held online and attended by over 160 people. We introduced the project and provided an overview of our planned activities with local communities within our pilot areas. The innovations for combatting desertification offered by our small-medium enterprise partners were also introduced. The event was held online, with a **recording available via our YouTube channel.**



## Upcoming events

### Desertification Session at the European Geoscience Union Assembly this spring.

Are you involved in the assessment of desertification indicators and processes through satellite image analysis or field surveys? Or, are you engaged in the testing and analysis of innovations, management practices and social processes for preventing and combatting desertification?

If so, we would like to invite you to **join us at the European Geosciences Union Assembly in Vienna** (28 April – 2 May) in session SSS9.4: Innovations to assess, prevent and combat desertification.

The aim of the session is to bring together scientists from various disciplines who study different aspects of desertification. Researchers from Soil Sciences, Hydrology, Earth Observation, Agricultural, Ecosystems, Biological and Social Sciences are invited to this session, with the intention to share state of the art knowledge for combatting desertification. This session will also introduce the establishment of an international Community of Practice and Knowledge on desertification assessment and innovations for sustainable land management, which you are very welcome to join. The session is co-organized by the TERRASAFE and MONALISA Projects. The abstract submission deadline is 15 January 2025. For more information check:

<https://meetingorganizer.copernicus.org/EGU25/session/53530>



Croplands waiting for rain in Cyprus, November 2024



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## TERRASAFE at the 16th United Nations Convention to Combat Desertification: Conference of the Parties



On 6 December 2024, TERRASAFE participated in a session at the **United Nations Convention to Combat Desertification's 16th Conference of the Parties (COP)**, which took place in Riyadh, Saudi Arabia. Professor Lindsay Stringer and Dr Mohamed Ouessar attended to represent TERRASAFE.

Professor Stringer was involved in a session entitled “Innovative Approaches to Combat Land Degradation, Desertification, and Drought: Leveraging Technology and Collaboration.” During her presentation, she showcased our innovative, multi-actor approach to tackling desertification in Europe and North Africa. The presentation highlighted TERRASAFE’s aim to empower local communities to prevent and restore degraded areas, through Desertification Innovation Partnerships. These partnerships will bring together stakeholders to evaluate and test innovative solutions tailored to the unique needs of each pilot area, tackling challenges including soil salinisation, organic carbon decline, vegetation loss and water scarcity.



### What is a ‘COP’ summit?

A Conference of the Parties (COP) is a United Nations summit that brings key decision makers from across the world together to provide a forum for holding important discussions and assessing progress in tackling global issues - in this case, the convention to tackle desertification.



During the session, examples of potential TERRASAFE innovations were introduced. As explained on page 8 of this newsletter, these technologies, combined with traditional practices, may be co-selected for testing by pilot area partnerships, helping local communities to identify scalable solutions for resilience.

Key elements of TERRASAFE’s approach were emphasised, including its integration of top-down analysis with on-the-ground knowledge through spatial mapping and land-user surveys. The importance of aligning innovations with effective policy measures and sharing findings widely to ensure uptake and impact was also underlined.

The session focused on the necessity of bridging local and global efforts in combating land degradation, with TERRASAFE positioned as a model for collaborative, actor-oriented approaches. The team looks forward to strengthening links with other projects and contributing to policy and practical solutions that address desertification challenges at multiple scales.



## #MissionSoil week

On 14 November 2024, TERRASAFE participated in Soil Mission Week in Brussels, with Jacob Keizer, Charlotte Chivers, and Hermann Kam representing the project. The event provided a unique platform to connect with fellow EU Soil Mission initiatives, fostering collaboration and the exchange of ideas to advance sustainable soil health. We engaged in meetings held by all three Mission Soil clusters, which focus on communication and stakeholder engagement, data management (including insights from the SoilWise project), and soil monitoring indicators. These sessions underscored the importance of creating FAIR (Findable, Accessible, Interoperable, and Reusable) data systems and showcased the diverse approaches being taken by the Soil Mission projects.



Soil Mission cluster meeting

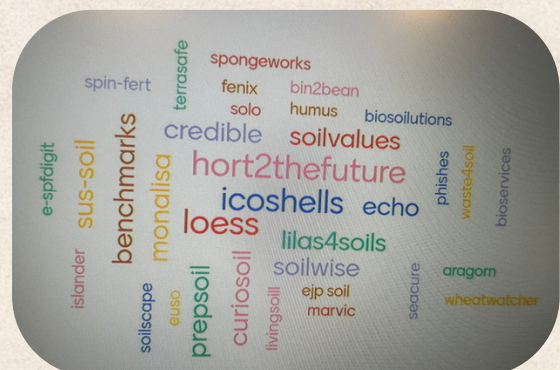


Jacob Keizer (second from left) and Charlotte Chivers (middle) with colleagues from our sister project, MONA LISA.

The TERRASAFE team also had the opportunity to meet with partners from the MONALISA project to discuss future collaborations. Collaborative possibilities with other initiatives, such as the TUDI project, were also explored.

Watch a recording of the wider Mission Soil event here:

<https://www.youtube.com/live/qNpvAsOZO58>



Word cloud of Soil Mission projects that attended the event



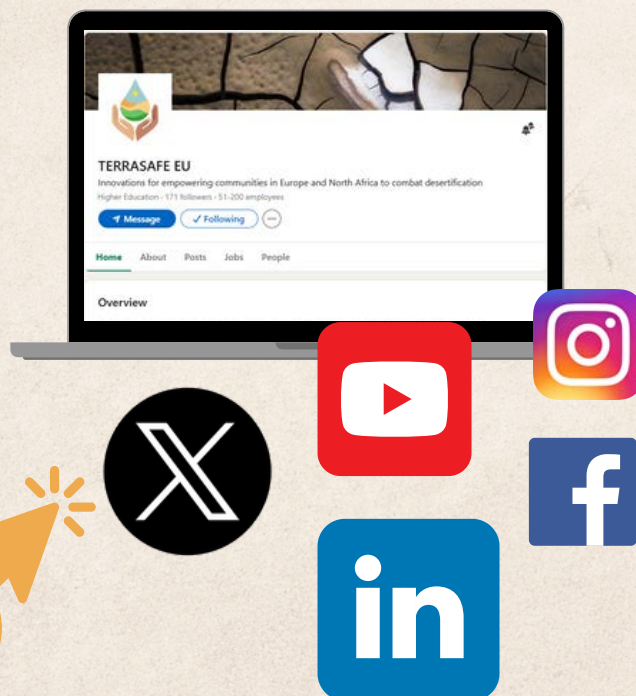
# Social media

We are active on various social media platforms, including LinkedIn, Instagram, Facebook, X, and YouTube.

Please connect with us to stay informed about TERRASAFE and wider desertification news!

@TerrasafeEU

Click on each icon to visit our profiles!



## Framework and Pilot Area Partners

## Innovation partners



Università degli Studi della Basilicata



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