TUdi Newsletter for famers, technicians, and other stakeholders interested in using its results

We are pleased to present this new edition of the TUdi project newsletter, dedicated to showcasing the project's results and how to use them. It is therefore aimed at farmers, technicians, cooperatives, companies, managers, and anyone else interested in using tools to diagnose and resolve soil degradation problems in agricultural areas and, if necessary, seeking specialized help.

In this newsletter you will find a summary of the project, and how to use the diagnostic and decision support tools, which will be called DSTs, short for “Decision Support Tools.” Support Tools”, and one for economic analysis, called SEST.

You will also find out how to locate the experts behind these tools if you need to.
If you are interested in learning more or participating in workshops, seminars and events, please feel free to distribute this newsletter and contact us.

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1. TUdi project summary and applied results

TUdi is an international project that has brought together teams from Europe, China, and New Zealand from 2021 to 2025 to address a global challenge: soil degradation in agricultural systems. Funded by the European Union and the Chinese government, TUdi has worked to develop practical tools for assessing and correcting the most significant soil degradation processes under local conditions. Its website, available in several languages including Spanish, is: https://tudi-project.org/.

These results can be summarized as follows:

- **Development of six free-to-use digital decision support tools (DSTs)** and one socio-economic analysis tool (SEST) to assess soil degradation processes, guide restoration practices and analyse their profitability.

- **Catalogue with 27 soil restoration strategies**, combining scientific evidence and practical knowledge to help identify the best way to restore soil.

- **Consolidation of a stable collaboration network** connecting farmers, cooperatives, technicians, researchers, companies and public and private managers to continue collaborating to improve the condition of agricultural soils.

- **Creation of a meta-database** with information from approximately 350 experiments spread across 40 locations between Europe and China, containing information on sustainable soil management practices.

Although formally ending in 2025, the project has a plan to disseminate its results in the following years so that its findings can be shared and used on farms and in the design of policies and business models in rural areas. To this end, **TUdi will organise seminars and practical workshops** in the coming months, where the developed tools (DSTs, SEST) and the catalogue of strategies will be presented, experiences will be shared, and training will be offered to facilitate their use to anyone interested. This is how the TUdi project contributes to restoring soil health, improving productivity, and strengthening agricultural sustainability.

2. Opportunities

2a. For farmers, cooperatives and agricultural businesses

We believe they can directly benefit from these TUdi results:

- **Soil health tools (DSTs)**: These tools can diagnose the condition of your soils in relation to erosion, fertilization, compaction, soil structure, carbon content, and biology. If problems are detected, they can identify how to improve the soil and monitor the effect of the implemented improvement plan.

- **Economic analysis (SEST)**: Allows for cost-benefit assessments of soil restoration strategies that may be proposed, providing a framework for understanding the economic implications.

- **Monitoring and notification**: The tools facilitate the tracking of improvements in soil health and the demonstration of compliance with certification requirements or the Common Agricultural Policy (CAP).

- **Profitability**: Adopting soil improvement practices can help improve or stabilize yields, reduce costs, and increase resilience to extreme weather events such as droughts or torrential rains.

- **Collaborative networks**: TUdi's collaborative network, including the use of DSTs , facilitates connecting with other farmers, technicians, cooperatives, companies and experts in soil and agronomy.

All these points can make a difference in finding solutions. For example, a cereal farmer using crop rotation could use the DST on fertilization to review their current practices. This tool allows them to:

- Enter crop data, previous crop data, and basic soil analysis.

- Calculate balanced NPK doses adapted to the actual needs of the crop.

- Evaluate indicators such as nutrient use efficiency and leaching risk.

Results: The farmer can prevent excess fertilizer use, thus reducing costs. Furthermore, it prevents nitrate losses, improving soil health and meeting the CAP's environmental requirements.

Another example. An olive grove cooperative in a high-risk erosion zone uses the **DST on soil erosion** to diagnose soil erosion risk in its members' olive groves. This will allow them:

- Identify the areas where erosion is most severe in order to prioritize prevention measures.
- Provide specific recommendations for erosion control at the olive grove level, along with an estimate of the costs involved in implementing them.
- Verify which olive groves have a tolerable level of erosion. This can help with various certifications or inspections.

Results: The cooperative's members maintain the productive potential of their olive groves (reducing hidden economic losses), those members who have an erosion problem find how to address it, the cooperative can opt for certification systems and clients who demand verification of sustainable practices.

2b. Opportunities for public and private managers

TUdi opens new avenues for industrial exploitation:

- **Digital agriculture services**: SMEs can integrate DSTs into agricultural management software.
- **Consulting and advisory services**: TUdi offers the option of hiring an advisory service (see https://tudi-services.agrisat.es) for those who find public tools and materials insufficient, those who want to go further in sustainability, or those who need to address a particularly complex problem. The tools provide customized recommendations for each client's specific situation.
- **Sensors and equipment market**: DSTs can drive the adoption of devices for field monitoring, helping to interpret monitoring results.
- **Green business models**: SEST can be used for a feasibility analysis of business ideas related to agriculture that incorporate environmental sustainability as an essential part.

2c. Opportunities for industry and SMEs

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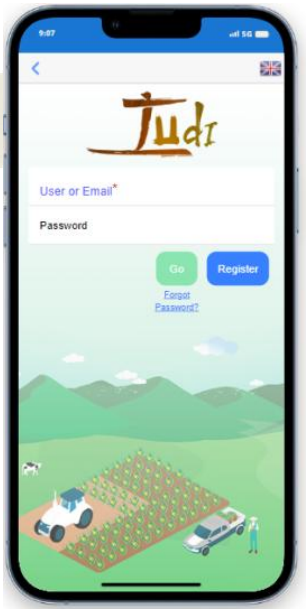

3. Decision support tools (DSTs) and socioeconomic analysis tools (SESTs)

3a. How to use free Decision support tools (DSTs)

The DSTs developed by TUdi are now available at https://tudi-soil.web.app/. When you download and use them, you'll see that they have been designed to achieve:

- **Accessibility**: They offer simple visual assessments and the possibility of integration with mobile applications.
- **Flexibility**: Applicable to both herbaceous and woody crops.
- **Localization**: Translations into multiple languages to overcome language barriers.
- **Scalability**: Adapted to small farms and large cooperatives.

Users can leverage these technologies by incorporating them into **agricultural advisory services and digital platforms**, thereby contributing to the adoption of sustainable practices and improved soil health. For integrated use within other applications, further development is required, in which case it is best to contact the TUdi team via email at tudi-support@agrisat.es or through the contact form on the TUdi- Services page https://tudi-services.agrisat.es/contact/

3b. Socioeconomic Analysis Tool (SEST)

SEST is available at https://tudisest.nbu.bg/login and allows you to perform detailed economic analyses to support strategic decision-making. Its main features include:

- **Cost-benefit analysis**: Evaluation of the profitability of soil restoration strategies.
- **Policy design**: Key information to guide CAP grants and governance strategies.
- **Market opportunities**: Explore business ideas related to agriculture that are linked to environmental sustainability.
- Users can use SEST to **complement technical analysis with economic** and market situation analysis, thereby strengthening the connection between economic profitability and sustainable land management.

3c. Consulting and Training

The **results of TUdi** not only translate into digital tools, but also into opportunities to offer **specialized consulting and training services**. The project partners form a team of specialists who can be contacted, if needed, to go beyond the freely available materials and tools.

This specialized consulting support, which can be contracted by contacting https://tudi-services.agrisat.es, for those who need (or prefer) includes personalized soil health diagnoses, design of restoration plans adapted to each context and economic analysis to guarantee the profitability of the strategies carried out by specialists.

In parallel, **specific training programs will be developed**, both in person and online, to train users in the use of the tools, the interpretation of results and the integration of sustainable practices in their operation.

3d. Creation of Capacity Building and Dissemination Materials

TUdi has a wide range of resources available to facilitate knowledge transfer and the adoption of sustainable practices:

- **Training videos and webinars**, which explain the use of the tools and restoration strategies.
- **Leaflets and brochures on soil management practices**, designed to be clear and applicable in the field.
- **Catalogues of restoration strategies**, based on scientific evidence and practical knowledge.
- **Workshops and events**, focused on training and the exchange of experiences.

These materials are available for use by schools, universities, agricultural extension services, cooperatives, and NGOs, contributing to capacity building and promoting the adoption of innovative solutions. All information and resources can be found on the project website: https://tudi-project.org .

4. What can you do to use TUdi's tools and facilitate their improval?

In 2026, TUdi enters a key phase for the **project's work to be utilised**. If you are interested in anything you have read in this newsletter, you could:

- **Try the DST tools and the SEST socioeconomic tool**. Use them and, if you wish, contact us with your feedback for improvement. You can reach us at one of these email addresses: tudi-support@agrisat.es, mllanos.lopez@agrisat.es or joseagomez@ias.csic.es

- **Use the training resources and materials**. On the project website: https://tudi-project.org you will find videos, brochures, catalogues and contacts to continue moving forward.

- **Explore partnerships for leveraging results**, collaborating on the integration and scaling of the tools and practices developed. To do so, you can contact us via one of these email addresses: tudi-support@agrisat.es , mllanos.lopez@agrisat.es or joseagomez@ias.csic.es

- In parallel, TUdi will continue to promote **collaboration with other projects and initiatives**, to further contribute to a more sustainable and beneficial use of land for rural areas.

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