

The WeLASER project reached the end of its first phase.

Opportunity

The WeLASER project emerged as an opportunity to develop a non-chemical weed management system under the EC H2020 programme. The idea was to apply lethal doses of energy to the weed meristems using a high-power laser source. It was expected to improve in-row weeding, soil properties, human and animal health, and protect beneficial soil organisms.

Solution and planning

In the first phase (2020-2023), a prototype was planned to be built to achieve a Technology Readiness Level (TRL) of 7. The technical part focused on the autonomous robot, the laser source, the perception system, the meristem targeting system, the IoT network and the link with the cloud. The strategic part focused on the Multi-Stakeholder Approach, communication and dissemination activities, including a Data Management Plan, the Exploitation Plan and ethical issues.



In the second phase (2 to 3 years), the consortium will seek funds to achieve a TRL9, which means it is ready for the market.

Practical conclusions

At the end of the 1st phase, the subsystems were individually tested and validated to achieve TRL 6/7, and the strategic indicators reached 74 practice abstracts, 11 journal publications, 21 conferences, 2 patent applications, 4 Field Days, 43 Summer School students, etc. However, some unexpected issues arose throughout the project development (delays due to COVID-19 and the economic crisis, system shipping to different countries for the field days that took longer than expected, difficulties in training the system for weeds in different pedoclimatic zones, etc.), preventing the overall system from being properly evaluated (expecting a TRL7) and requiring additional effort. Definitely, a second phase is mandatory to deploy the WELASER system in the market.

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