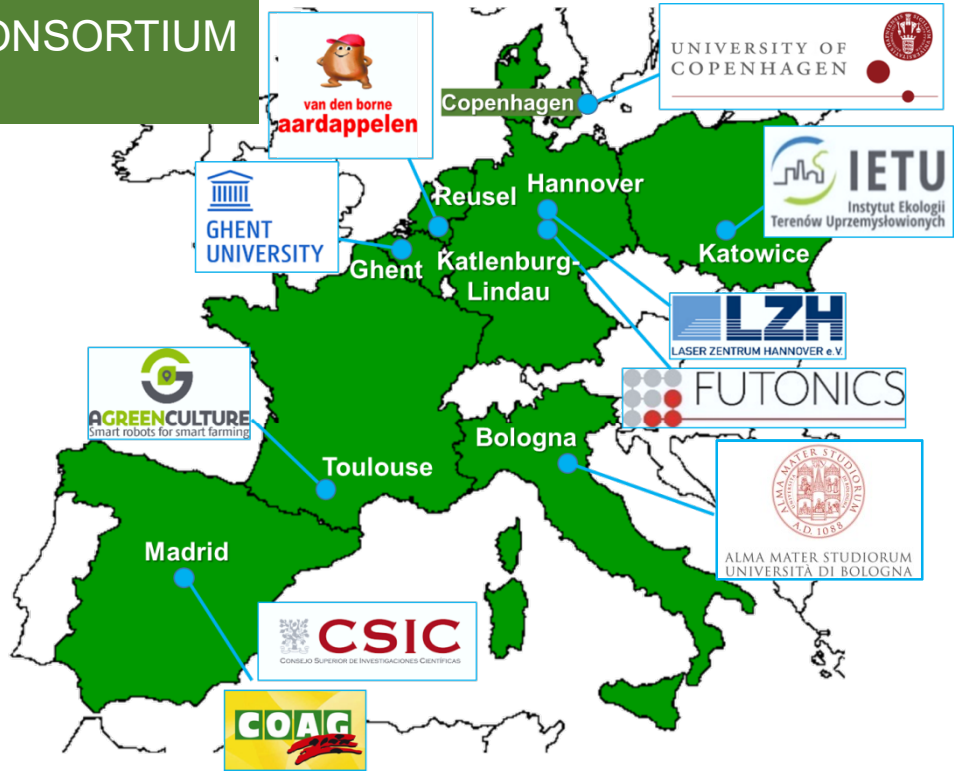
Consortium



Social Media & Networks

www.welaser-project.eu

YouTube

Facebook

Twitter

LinkedIn

Contact

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WeLASER

Eco-innovative weeding with laser

Sustainable Weed Management in Agriculture with Laser-Based Autonomous Tools

WeLASER aims to merge current technologies to build, assess and push into the market a precision weeding equipment based on high-power laser sources and autonomous mobile systems with the main objective of eliminating the use of herbicides while improving productivity and competitiveness.

Co-funded by the Horizon 2020 programme of the European Union

OBJECTIVES

To build a tailor-made, movable, high-power, thulium-doped fibre laser to apply lethal doses to weeds.

To develop an advanced AI detection system to provide the positions of the weed meristems.

To construct a tool to direct the laser source onto the weed meristems in real scenarios.

To evolve a proven mobile platform to carry the weeding system accurately throughout the working field.

To achieve a minimum impact of WeLASER precision weeding equipment on crops, environment and health.

To set up a smart central controller (based on AI, IoT and cloud computing) to control the weeding tool.

To ensure the viability of WeLASER through the implementation of a Multi-Actor Approach.

IMPACTS

New scientific and technical knowledge enhancing the EU research and innovation capacity.

Crop, soil, environmental and human health improvement by the elimination of pesticides.

Economic and social impact by creating new jobs and businesses, and enabling smarter methods for farmers.

Implementation of EU policies, strategies and Sustainable Development Goals in a number of actions related to climate, agriculture and economy.

Application of an integrated Multi-actor approach oriented towards policymakers and stakeholders throughout the project.

The communication and dissemination activities will target the industry, the academia, specific stake-holders, the end-users, the media and the public.

WeLASER exploitation plan will guide the further exploitation of the final product by a spin-off company.

SOLUTION

WeLASER equipment is broken down into four sections Si, each one formed by a number of systems. These sections are:

S1 **Weed-meristem percep-tion setup**: vision hardware, weed/crop discrimination system and weed meristem detection system.

S2 **Autonomous vehicle:** autonomous mobile platform and safety system.

S3 **Laser-based weeding tool**: high-power laser source and laser scanner.

S4 **Smart central controller**: Agri-DSS, planner, supervisor, IoT and cloud computing system.

The process consists of a sequence of actions from A1 to A6 cyclically repeated until the conclusion of the task.