

Sustainable Weed Management in Agriculture with Laser-Based Autonomous Tools



Pablo GONZALEZ-DE-SANTOS
Project coordinator (pablo.gonzalez@csic.es)

Web: <https://welaser-project.eu>
Twitter: <https://twitter.com/welaserproject>
YouTube: <https://www.youtube.com/channel/UCGtnXCI44WPgn15HCn5EamA>
Facebook: <https://www.facebook.com/Welaser-project-103771498170178/>
LinkedIn: <https://linkedin.com/company/welaser-project>

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What is the project about?

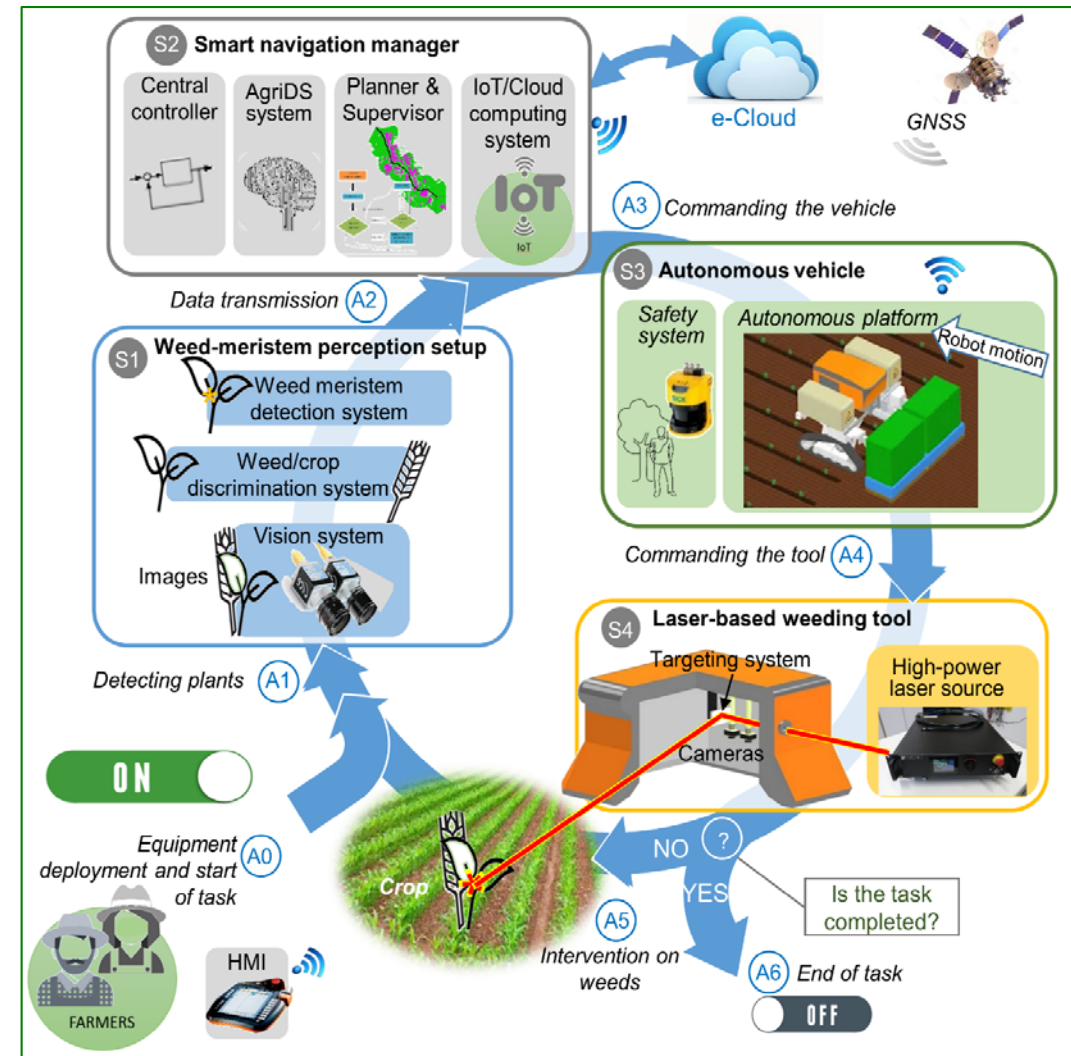
- ❑ Weeding is a problem in agricultural production, which is managed using herbicides
- ❑ EU is committed to decrease the use of herbicides and has funded several projects (FP7 and H2020)



- ❑ Why reducing herbicide use if we can eliminate it?

Main objectives

- ❑ WeLASER aims to merge current technologies to build, assess and push into the market a precision weeding system based on laser



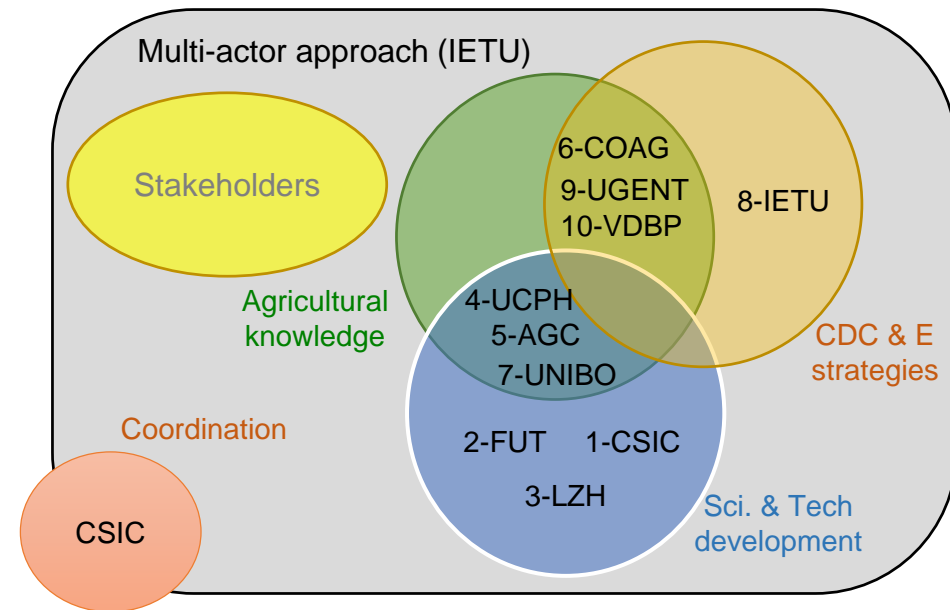
WeLASER system breakdown

• Consortium overview

- ❑ Sci, & Tech. developments
 - ❖ Laser tech., laser equipment, AI perception systems, robotics, ICT (IoT and cloud computing)
- ❑ Agricultural knowledge
 - ❖ Agronomists, Farmers, Farmer associations
- ❑ CD, Commercialization & Ethics strategies
 - ❖ Economy experts, Social science experts

• Other participants

- ❑ Stakeholder involvement
 - ❖ Specialists not represented in the consortium



Multi-actor approach Strategy



Consortium map



CD&E of results and capacity building

• WeLASER major contribution to the agricultural sector

- ❑ A weeding system based on laser technology more friendly to the environment

• CD & E promotion

❑ ACADEMIA

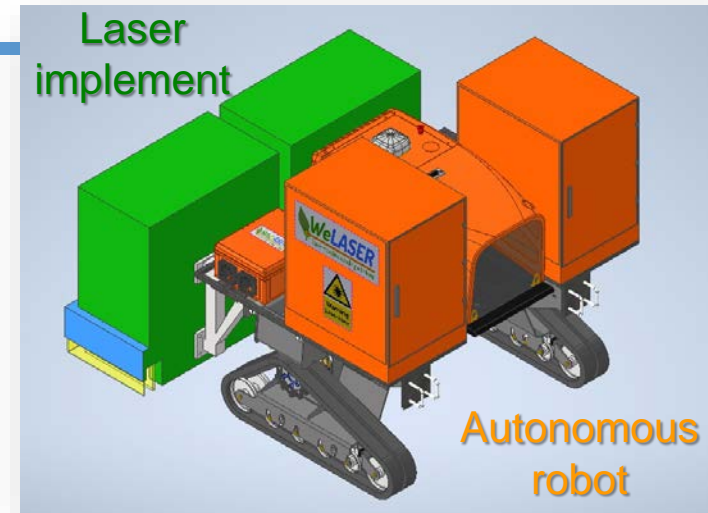
- ❖ Publications in journals and conferences; teaching courses,...

❑ USERS

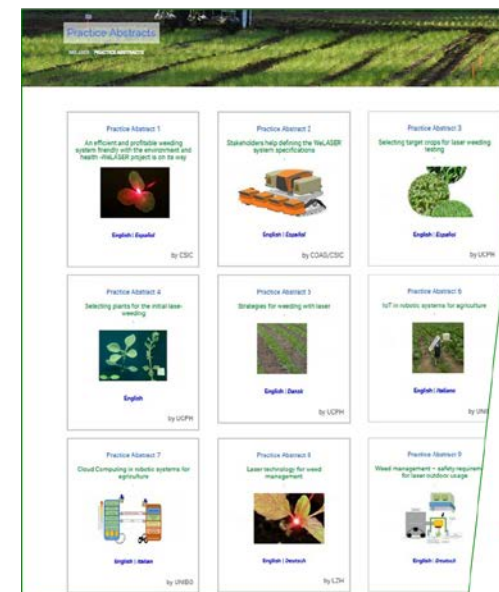
- ❖ Publications in magazines
- ❖ Multi-actor Approach strategy (5 events)
- ❖ Spin-off

❑ SOCIETY

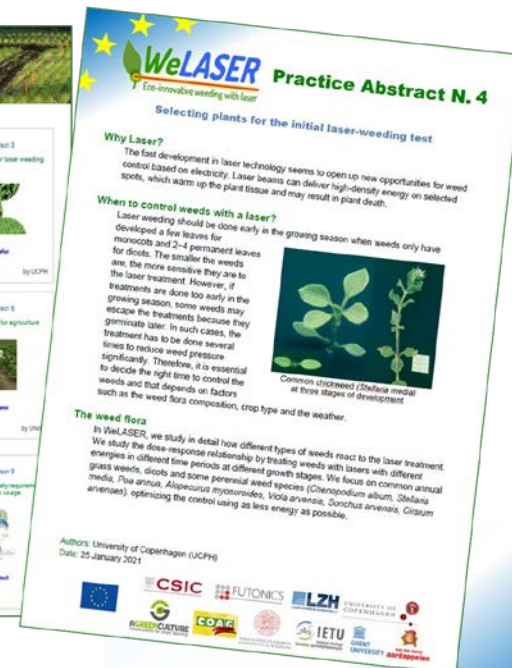
- ❖ The project website, Facebook, Twitter, LinkedIn and YouTube (See the links in the cover slide).
- ❖ Practice Abstracts (PA)
 - EIP-Agri website
 - Project website
- ❖ Newsletter (website)
- ❖ Farm & field demos (4 events)



WeLASER system structure



WeLASER website & PAs



- **WeLASER major contribution to the EU policy**

- ☐ **Horizon 2020 Advisory Groups:** Climate action ... and Food security ... ([info](#))
- ☐ **European Union cross-cutting issues:** Socio-economic science and humanities (SSH), Gender, and Responsible Research and Innovation (RRI) ([info](#))
- ☐ **European Union policies:** the specific topic of Agriculture ([info](#))
- ☐ **Sustainable Development Goals (SDGs):** 2-Zero hunger, 11-Sustainable cities and communities, 12-Responsible consumption and production, 13-Climate action, 15-Life on land. ([info](#))

- **Possible synergies with existing EU initiatives**

- ☐ **Assessing efficiency:**
 - ❖ [IWM PRAISE](#); [INNOSETA](#);
 - ❖ [NOVATERRA](#); [SPRINT](#); [IPM DECISION](#); [IPMWORKS](#) (in this cluster)
- ☐ **Assessing improvement in soil conditions:** [NEFERTITI](#)
- ☐ **Sharing data:** [ATLAS](#)
- ☐ **Using gained knowledge:** [DEMETER](#) (IoT); [GALIRIUM](#) (weed detection, autonomous robots)

- **What does WeLASER need from REA/EC?**

- ☐ **The foundation of a project spin-off** for exploiting the results would require some help from the REA/EC

