Sustainable Precision Agriculture: Research and Knowledge for Learning how to be an agri-Entrepreneur

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¿What is Precision Agriculture?

• Given that each field has variability...

• PA is to provide to each spot of a field just what is needed, automatically, using GNSS, sensors, electronics, ICTs → variable rate of inputs

“Precision Agriculture is an inevitable fact, as new information technologies will impact farming in Europe and worldwide”

European Parliament: Precision Agriculture: an opportunity for EU farmers, a potential support with the CAP 2014-2020
Educational need

• Education about new technologies not included deeply in Universities all around Europe.
• Some Universities have courses about PA, but in a fragmentary way.
• Agricultural sector is more traditional, BUT
• There is an ongoing revolution: digital agriculture is changing the paradigm
• There is a gap in the educational system
WHAT ARE WE TRYING TO DO?

Problems:
- Lack of innovation potentiality self-awareness of farm companies
- Lack of knowledge transfer of SPA
- Lack of SPA knowledge and entrepreneurial skills of agricultural science students
- Lack of SPA and entrepreneurial educational offer of Universities

Objectives
- Fostering the introduction of the new paradigm in Agriculture: sustainable precision agriculture
- Supporting the digitalization and High Tech Farming, providing new competencies as agro-electronics and agro-informatics.
A Comprehensive Ecosystem

1) **Involving** the whole agricultural ecosystem

2) **Designing** the future of the sector and providing the required skills

3) **Mobilizing** digital knowledge through academics, students and farmers
Project Structure

**4 Universities**
from Italy, Spain, Greece, Portugal

**4 Companies**
providing advanced services to companies/farms

**3 Farms**
already adopting PA technologies

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WP1
Training Need Assessment
Package Preparation

WP2
Precision Agriculture Technological And Market Future Trends

WP3
E-Learning Training Educational Programs

WP4 – Courses Implementation and Preparation of Final Results

WP5 – Business Model Competition and Intrapreneurship Experience

WP6 – Project Management

WP7 – Quality Assurance

WP8 – Project Evaluation

WP9 – Dissemination and Exploitation of Results
# Expected Impacts

## Universities and Students

- Identification of entrepreneurial skills and competences required by the farmers
- Elaboration of educational packages;
- Reinforcing the technological transfer and enlarging the networks

### Measuring the impact:
- Evaluation form for students
- Modules
- Peer-review with partners
- External evaluation on training

## Farm companies

- Free access to entrepreneurship and PA technologies educational resources (e-learning);
- Scouting trained students
- Creation of a strong partnership with Universities and other farms

### Measuring the impact:
- Evaluation form for entrepreneurs
- Modules
- Peer-review with partners
- External evaluation on training
Visibility And Dissemination

Main communication channels
Flyers, Project website, social media (Fb, Twitter, Linkedin), public events, meetings, written material, scientific articles, EIP-AGRI platform, ERIAFF EU Regions network, AIIA,.. National association of biosystem engineering.

Associate Partners
9 organizations (Universities, farms, service providing companies, research centers) have already given their effective support to the project

We will be happy if..
We will have created not just training materials, but also a new vision on agriculture education involving many European stakeholders
What are we doing at present?

• Study the sector (surveys):
  • Farmers
  • Agricultural students
  • Researchers in PA

• Study the technologies (bibliography & prospective)

• We want to know:
  • What should be taught? To students, to farmers...
  • Why PA is not being used broadly? Difficulties?
  • Why some advanced farmers are successful with PA?
Surveys

• Questionnaires have been developed for
  • University students
  • Selected farmers (already using some PA)
  • Selected researchers (on PA)

• Farmers: 30 (Greece, Italy, Portugal, Spain)
• Students: 100 Gr, 100 It, 144 Pt, 192 Sp
• Researchers: 16 (Gr, It, Pt, Sp)
Farmers
(some preliminary results)

Would you be willing to pay a cost for a MOOC?

- Not all likely: 12%
- Likely: 27%
- Very likely: 25%
- I do not know: 3%

When do you think is the best time to get training in PA?

- Before the implementation of the PA: 33%
- During the implementation of the PA: 27%
- After a short period of trial and error on my own: 37%
- Before and during the implementation of PA: 57%

To whom do you turn to for advice when you encounter a problem at the farm level?

- A private agronomist: 25%
- A public agronomist: 6%
- My peers (another farmer): 42%
- Others: 6%
Students
(some results)

Current skills and general importance of knowledge categories in order of descending gap size.

PA training needs rating - Mean Values

- Training for Technological expertise - skills
- Training for Legislative/ environmental expertise - skills
- Training for Local community leadership
- Training for Managerial skills

Current level of skills
General importance of skills
Business model

- Why PA is not adopted?
- Why some farmers are successful?

- Using Business Model Canvas:
  - To learn from enterprises
  - To help enterprises
  - To teach students - entrepreneurs

- Competition for students → final Price: practical stay at farm
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Gracias