

TALLHEDA - Shaping the Future of Digital Agriculture Education: A Questionnaire for Food Processing Companies and Distributors

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Funded by
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Project Overview

The TALLHEDA project aims to enhance digital agriculture (DA) education and research, especially in countries needing more support. This initiative plans to bring together Higher Education Institutions (HEIs) and various stakeholders to form a powerful alliance focused on DA. The main goal is to support students, researchers, and faculty members by providing them with access to educational materials, good practices, mentoring, opportunities for collaboration, and activities that boost learning and research. TALLHEDA seeks to prepare a new generation of highly skilled professionals in digital agriculture, ensuring they're ready to contribute to Europe's agricultural sector's digital transformation. The [TALLHEDA](#) Project is funded by the European Union (HORIZON-WIDERA-2023-ACCESS-03 programme). It is coordinated by the Agricultural University of Athens; it includes 10 partners from 3 European countries and runs for a period of 42 months.

Purpose of the Questionnaire

This questionnaire is designed to gather comprehensive insights into the current state and future needs of Digital Agriculture (DA) education within **Food Processing Companies and Distributors**. Our aim is to identify key areas requiring reform, enhancement, or support to ensure that DA education aligns with the latest advancements and industry demands. Through your valuable feedback, we seek to uncover challenges, opportunities for improvement, and potential areas for collaboration. The findings will inform strategic planning

and initiatives to foster a culture of excellence in DA education, benefiting students, educators, and the broader agricultural sector. Your participation is crucial in shaping the future of DA education and ensuring its relevance and impact in addressing global agricultural challenges.

Confidentiality & Data Usage

- I wish to participate in the TALLHEDA Questionnaire: "**Shaping the Future of Digital Agriculture Education: A Questionnaire for Food Processing Companies and Distributors**".
- I am aware of my rights; I have been given the contact details of the responsible persons and I consent to the processing of my personal data for the purpose and under the conditions explained in the attached file below.

Legal information

[legal-disclaimer-survey for food processing companies and distributors.pdf](#)

Estimated Completion Time

Thank you for taking the time to contribute to this important initiative. Completing this questionnaire is expected to take approximately 20 minutes. Your detailed responses are invaluable to us in understanding and shaping the future of Digital Agriculture education and research. We appreciate your willingness to share your insights and expertise.

II. Definitions

According to *EU Food IS*:

Food Processing Company refers to the entire process involved in converting raw materials into finished edible products for commercial distribution including all processing (i.e. pasteurization, dehydration, fermentation, pickling, cooking emulsification, liquefaction, macerating, slicing, dicing and mincing).

Food is any substance or product, whether processed, partially processed or unprocessed, intended to be, or reasonably expected to be ingested by humans.

The following definitions have been taken from [learning resources](#) of [AgriSkills – Entrepreneurial Skills for Digitalization of Rural Agriculture project](#) (Erasmus+).

Digital Agriculture (DA) refers to the use of digital technologies, including precision farming and smart farming technologies to improve efficiency, sustainability, and productivity in agriculture. Farmers can increase their production, save costs, support sustainability and data-

driven decision making. It includes advanced technologies, such as IoT (Internet of Things), drones, Artificial Intelligence (AI), cloud, big data and blockchain. Digital farming, smart farming, and precision farming are related but distinct concepts in agriculture.

Precision Farming: Precision Farming involves the systematic observation, measurement, and enhancement of crop yields and livestock management. By harnessing technologies like GPS, drones, remote sensing, and soil sampling, farmers can fine-tune their farming practices for optimal productivity. These methods encompass variable rate planting, precise nutrient application, yield and soil mapping. The primary aim of precision agriculture is optimization.

Example: Instead of using the traditional way for applying an equal amount of fertilisers over a field, a farmer can use GPS-guided equipment to apply fertilizer and pesticides to specific areas of a field only where they are needed, reducing waste, saving costs and conserving resources.

Smart Farming: Smart Farming involves farmers collecting, tracking, monitoring, and analyzing extensive data to inform decisions about planting, harvesting, and crop management. This approach benefits farms of all sizes and integrates precision farming with various advanced technologies like IoT, drones, AI, cloud computing, and machine learning. Smart farming aims to boost agriculture's sustainability and profitability, while also enhancing food quality and mitigating environmental impacts.

Example: A farmer can use smart farming techniques to get real-time data for monitor soil moisture levels, crop health and water usage. If the sensors detect that a certain area of the field is becoming too dry, the farmer could use a drone to irrigate only that area. If sensors detect illness in plants, the farmer can take care for single plant or for the entire field. The entire process is software-managed and sensor-monitored. In this way, a farmer can increase yields and the quality while saving labour and resources.

Internet of things (IoT): IoT refers to infrastructure, that is, devices located in the field equipped with sensors as well as networking and processing capabilities, data networks, servers and software, which allow for data exchange, processing/analysing over communication networks and/or Internet.

Example: With the recent implementations, IoT has already brought benefits, like an efficient use of water, optimisation of inputs, reduced waste, etc.

Drone: Drone is an unmanned aerial vehicle (UAV). Similar to sensor technology, drones represent hardware tools that can be used to gain a competitive advantage over competitors.

Example: Drones can increase accuracy, reduce the cost of on-the-ground crop surveys, increase efficiency and crop yields, and reduce CO2 Emissions.

Big Data: Big Data refers to the massive set of data that no conventional data management tool can handle.

Example: Big data is now being increasingly applied to agriculture as it enables real-time analysis of the data generated by IoT.

Artificial Intelligence (AI): AI consists of systems or machines that mimic human intelligence to perform tasks and can iteratively improve themselves based on the information they collect.

Example: While various agricultural data-analysis systems are created, AI allows them to go a step forward in improving predicting capabilities and data-based decision-making.

Blockchain: Blockchain is a system of recording information in a way that makes it difficult or impossible to change, hack, or cheat. A key difference between a typical database and a blockchain is how the data is structured. A blockchain collects information together in groups, known as blocks, that hold sets of information.

Example: Blockchain technologies can track and store all kinds of plant information, including the seed quality and how crops grow, and even create a record of a plant's journey once it leaves the farm. This data can increase the transparency of supply chains and reduce issues related to illegal and unethical production.

III. Current Situation in Applying Digital Agriculture (DA)

To what extent is your organization (food processing company, distributor) **familiar** with DA applications?

Please, rate on a scale from 1 to 5.

1 = Very Low

2 = Low

3 = Moderate

4 = High

5 = Very High

Do you **distribute** products from farms that apply DA?

- Yes
- No
- Not sure/ I don't know

If yes, what are these products?

Please, provide details:

To what extent are you using the fact that your suppliers use DA to **promote** your product?
Please, rate on a scale from 1 to 5.

1 = Very Low

2 = Low

3 = Moderate

4 = High

5 = Very High

To what extent do you use data coming from DA to improve processes in your company?
Please, rate on a scale from 1 to 5.

1 = Very Low

2 = Low

3 = Moderate

4 = High

5 = Very High

What is the biggest marketing **advantage** of an agrifood product coming from DA?

- Foods/food products easily trusted by consumers
- Environmentally friendly foods
- Sustainable foods
- Economical foods
- Traceable foods
- Increased nutritional value

What is the biggest marketing **disadvantage** of an agrifood product coming from DA?

- Consumers do not trust it
- It is more expensive
- Consumers are unaware of it
- There are few products to establish a market category

Do you believe that DA has a **potential impact** on improving your organization (food processing company, distributor)?

Please, rate on a scale from 1 to 5.

1 = Very Low

2 = Low

3 = Moderate

4 = High

5 = Very High

What do you consider as the **biggest impact** that DA might have for improving your organization?

To what extent do you believe that DA supports **food sustainability**?

Please, rate on a scale from 1 to 5.

1 = Very Low

2 = Low

3 = Moderate

4 = High

5 = Very High

To what extent do you believe that your **customers** care about the fact that your suppliers apply DA?

Please, rate on a scale from 1 to 5.

1 = Very Low

2 = Low

3 = Moderate

4 = High

5 = Very High

IV. Educational Gap and Needs in Digital Agriculture (DA)

Have you or has your staff ever been **trained** on the following DA technologies?

Topics	Not at all	Somewhat	Neutral	Quite a bit	Very much
Artificial Intelligence (AI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blockchain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital Twins	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drones/ Robots	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Big Data/ Data Analytics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet of Things (IoT)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please, specify:

Would you or your staff like **to be trained** on the following DA technologies?

Topics	Not at all	Somewhat	Neutral	Quite a bit	Very much
Artificial Intelligence (AI)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Blockchain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital Twins	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Drones/ Robots	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Big Data/ Data Analytics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet of Things (IoT)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please, specify:

How would you prefer to be trained on DA topics?

Ways	Not at all	Somewhat	Neutral	Quite a bit	Very much
Field demonstrations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On-line courses/e-learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Short-term seminars	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Practical courses/ workshops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online educational content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Newsgroups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please, specify:

Please, rate the **need** for training in DA within your business sector on a scale from 1 to 5.

- 1 = Very Low
- 2 = Low
- 3 = Moderate
- 4 = High
- 5 = Very High

V. General Information of the Respondents

Which country are you from?

- Belgium
- Greece
- Serbia
- Other

Please, specify:

What is your gender?

- Male
- Female

What is your age?

What is your educational level?

- Primary education
- Secondary education
- Higher education

Please, select:

- Bachelor's degree
- Master's degree
- Doctoral degree

What types are your business?

- Large
- SME
- Startup
- Other

Please, specify:

What is your position in your organization (food processing company, distributor)?

Please, provide details:

What is your expertise?

- Sales
- Communication

- Financial
- Other

Please, specify: