D5.2 QuantiFarm DIA – updated version

QuantiFarm.eu

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Author(s)/Organisation(s)	Tania Demirtzioglou (NP)
Contributor(s)	Dionysios Solomos (GAIA), Caroline Van Der Weerdt (TNO)
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Abstract:	QuantiFarm has developed a comprehensive capacity building program on Digital Agriculture Technology Solutions (DATSs), to strengthen the knowledge and capacities of farm advisors and rural consultants in delivering innovative advisory services in the field of digital farming. This document introduces the QuantiFarm Digital Innovation Academy (DIA), detailing a) its educational approach, principles and mechanisms, b) training methods and learning objectives, c) programme structure and specifications, d) educational resources and planned training activities, and e) strategies/projections for integrating the DIA into formal education and accredited professional competency frameworks. The current updated version provides an in-depth overview of curriculum structure, including modules specifications. It also provides a comprehensive presentation of the materials developed, presenting the organizational details and outcomes of the two EU-wide training workshops conducted to date, and explains the methodological approach for the upcoming national training sessions.

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QuantiFarm Consortium			
Participant Number	**Participant organisation name**	**Short name**	**Country**
1	GAIA EPICHEIREIN ANONYMI ETAIREIA PSIFIAKON YPIRESION (GAIA)	GAIA	GR
2	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK TNO	TNO	NL
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21	ASOCIATIA NATIONALA A INDUSTRIILORDE MORARIT SI PANIFICATIE DIN ROMANIA	ANAMOB	RO
22	UAB ART21	ART21	LT
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24	BENCO BALTIC DOO ZA SAVJETOVANJE IUSLUGE	BENCO	HR
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List of Abbreviations and Acronyms	
AKIS	Agricultural Knowledge and Innovation Systems
AUA	Agricultural University of Athens
DATS	Digital Agriculture Technology Solution
DIA	Digital Innovation Academy
DIH	Digital Innovation Hub
DoA	Description of Action
EU	European Union
EUFRAS	European Forum for Agricultural and Rural Advisory Services
ICT	Information and Communications Technology
SRUC	Scotland's Rural College
TC	Test Case
TTT	Train-the-Trainer
UK	United Kingdom
WP	Work Package

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Executive Summary

The overall objective of QuantiFarm is to advance the development and adoption of DATSs as key enablers for improving the sustainability performance (economic, environmental and social) and competitiveness of the agricultural sector. This is achieved through the establishment of an evaluation framework to assess the impact and effectiveness of DATSs in agriculture, alongside the creation of innovative tools and services for farmers, advisors and policy makers.

Central to this effort is the QuantiFarm Digital Innovation Academy (DIA), a comprehensive capacity building program designed to strengthen the capacities of farm advisors and rural consultants in the field of digital farming. The primary scope of the Academy is to empower advisors with the knowledge and (technical and soft) skills needed to deliver innovative, personalised advisory services regarding the selection, uptake and application of DATSs, based on the unique needs and specific characteristics of individual farms.

The DIA programme employs a hybrid Train-the-Trainer (TTT) and Direct End-User Training scheme, divided into two main pillars:

a) DIA didactics and training delivery methodology: Focused on equipping trainers with the tools and approaches to effectively plan, organize, and deliver national training sessions. This component is central to the TTT session(s).
b) Core themes of the QuantiFarm project: Covering behavioural determinants, DATSs categories and benefits, the QuantiFarm Toolkit, and appropriate advisory techniques. These topics are covered in both TTT and end-user courses.

In total, the DIA prescribes 4 mechanisms for upskilling farm advisors in the field of digital farming and DATSs, including:

- 2 EU-wide training workshops (1 TTT and 1 mixed)
- 10 national training sessions (end-user training)
- A digital education platform enabling asynchronous, self-paced learning
- Integration into formal HE/VET education, targeting future advisors.

This document presents the Digital Innovation Academy (DIA), outlining a) its educational approach, principles and mechanisms, b) training methods and learning objectives, c) programme structure and specifications, d) educational resources and planned training activities, and e) strategies/projections for integrating the DIA into formal education and accredited professional competency frameworks.

The current updated version provides an in-depth overview of curriculum structure, including modules specifications. It also provides a comprehensive presentation of the materials developed, presenting organizational details and outcomes of the two EU-wide training workshops conducted, and explains the methodological approach for the upcoming national training sessions.

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1. Introduction

1.1 Project Summary

The QuantiFarm project focuses on supporting the further development of Digital Agriculture Technology Solutions (DATSs) as a key factor for improving the sustainability performance (economic, environmental, and social) and competitiveness of the agricultural sector. To this end, QuantiFarm introduces a comprehensive Assessment Framework for independent qualitative and quantitative assessments of the multiple costs and benefits of digital agriculture technologies. Ensuring replicability and uptake of digital technologies by deploying innovative tools, services, recommendations and making them relevant and of practical use to farmers, advisors, and policy makers across Europe. QuantiFarm is building the project activities around 30 Test Cases (TCs) which span over 20 countries in 10 Biogeographical regions across Europe, capturing multiple geo-political and financial settings. More than 100 farms of different types, sizes, ownership, and operating conditions, committed to participate in the project, both directly but also through cooperatives and large umbrella organisations. The TCs actively engage farmers, advisors, Digital Innovation Hubs (DIHs), researchers/scientists, DATs providers, certification experts and policy makers. Moreover, the QuantiFarm Digital Innovation Academy (DIA) will be established as the main capacity building mechanism for advisors and other Agricultural Knowledge and Innovation Systems (AKIS) actors on the various types of digital technologies available, their costs, benefits and impact on sustainability and will offer training sessions for advisors. One of the DIA primary contributions will also be the provision of training with regards to the QuantiFarm Toolkit, a principal deliverable of the project, which consists of a set of tools available to all different professional groups involved, oriented to provide support in decision making and policy design. QuantiFarm comprises 32 partners, representing all relevant stakeholders, including 8 scientific organizations and 12 farmer representatives and advisors.

1.2 Document Scope

The deliverable D5.2 "QuantiFarm DIA – updated version" is the second deliverable of WP5. This document presents the QuantiFarm Digital Innovation Academy (DIA), outlining a) its educational approach, principles and mechanisms, b) training methods and learning objectives, c) programme structure and specifications, d) educational resources and planned training activities, and e) strategies/projections for integrating the DIA into formal education and accredited professional competency frameworks.

The current updated version provides an in-depth overview of the curriculum structure, including modules specifications. It also provides a comprehensive presentation of the materials developed, presents organizational details and outcomes of the two EU-wide training workshops conducted, and explains the methodological approach for the upcoming national training sessions.

1.3 Document Structure

This document is comprised of the following chapters:

- **Chapter 1** provides a brief introduction to the QuantiFarm project, the scope of this deliverable, as well as its content and structure.
- **Chapter 2** presents the scope of the Academy, detailing its educational approach and mechanisms for upskilling farm advisors in the field of digital farming and DATSs.
- **Chapter 3** provides a comprehensive overview of the DIA programme, outlining training subjects, programme details, curriculum structure, and modules specifications.
- **Chapter 4** presents the versatile range of educational resources developed to support training activities.

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- **Chapter 5** provides details on training activities, presenting the organisational details and outcomes from the two EU-wide training workshops conducted to date. It also outlines the plan for upcoming national training sessions as well strategies for integrating the DIA into formal education and professional competency programs, ensuring the Academy's wide outreach and long-term sustainability.
- **Chapter 6** summarises the main DIA developments and outlines the next steps in DIA implementation.

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2. QuantiFarm DIA: Educational Approach and Mechanisms

2.1 Background and approach

The last decade has seen an explosion of interest and investment in the use of digital technologies in agriculture and food production. These initiatives have come under the label of "precision agriculture", "smart farming" and more generally digital agriculture. Despite the many predicted benefits of the use of digital agriculture technology solutions and data, actual uptake and use by farmers in the EU has been slow and limited for several reasons. These include a lack of knowledge about such tools, insufficient clear and "hard" data on the costs and benefits of DATSs, their impact on sustainability when used under real life conditions, as well as impediments that can be defined as "softer" or social factors such as farmers' cultural and behavioural attitudes. There is a need for independent quantitative and qualitative assessments of the multiple costs and benefits and potential sustainability gains of DATSs, examining both their positive and negative potential impacts. It is also important to make these assessments of DATSs and their wider impacts replicable, comparable and of practical use. This is of particular importance for farmers, their advisors, and policy makers, as this is an essential stepping-stone to facilitate the uptake of DATSs in the sector and may facilitate the design of tailored and effective policy measures.

The QuantiFarm project facilitates the further deployment of digital technologies in agriculture and thus enhance the sustainability (economic, environmental, and social) performance and competitiveness of the sector, by a) establishing an Assessment Framework for assessing the impact and effectiveness of data-driven technology innovations in agriculture and b) developing innovative tools, services and recommendations for farmers, advisors, and policy makers. Using a multi-actor research approach, QuantiFarm will build on the Ploutos project core results on the use of data-driven technology innovations to improve the sustainability of the agri-food value chain, in coordination with the most appropriate behaviour and business model innovations that are necessary for maximising their impact. With the creation of the QuantiFarm Digital Innovation Academy (DIA), as a major addition to the well-established Digital Innovation Hubs (DIHs) and Advisory Services/AKIS across Europe, the innovations and best practices developed within the project and identified from the wider literature and other projects will be made available to the ecosystems across Europe and will ensure the sustainability of project results beyond its duration. Figure 1 presents the overall methodology of QuantiFarm.

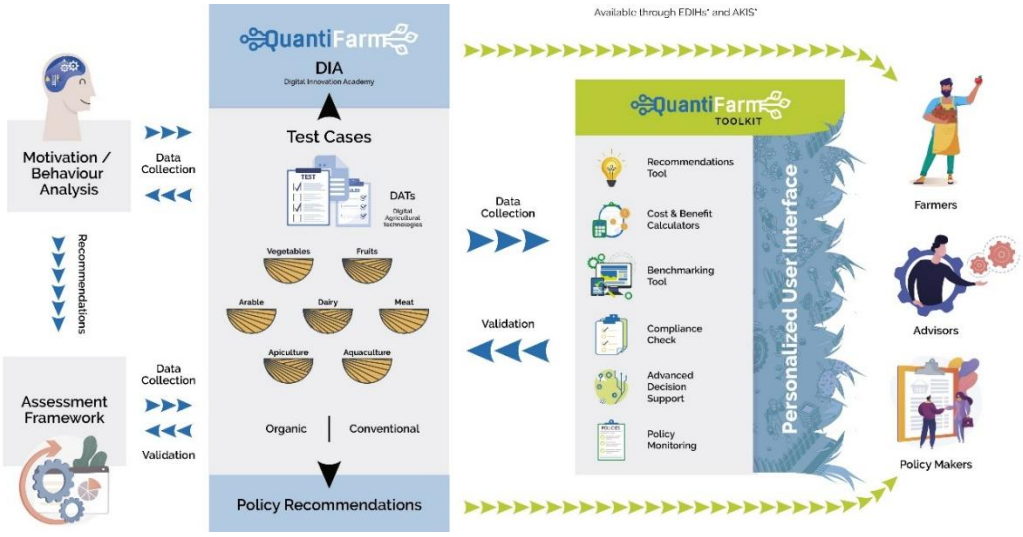

Figure 1. Overview of the overall QuantiFarm Concept and Methodology

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"WP5 - Policy Making and Capacity Building" focuses on developing comprehensive policy recommendations to foster the adoption of DATSs by farmers, towards promoting sustainability and enhancing the competitiveness of the European agri-food sector. As part of WP5, a **Digital Innovation Academy (DIA)** will be established to strengthen farm advisors' advisory capacities in the field of digital farming, equipping them with the tools and knowledge needed to provide decision-support services for farmers. This is considered a vital condition for the wide proliferation of digital farming.

2.2 Scope

The QuantiFarm DIA is a comprehensive capacity building program designed to strengthen the capacities of farm advisors and rural consultants in the field of digital farming. The scope of the Academy is to empower advisors with the knowledge and (technical and soft) skills needed to deliver innovative, personalised advisory services regarding the selection, uptake and application of DATSs, tailored to the unique needs and specific characteristics of individual farms.

The QuantiFarm DIA will deliver a set of capacity building activities to advisors and other AKIS actors, offering knowledge in 4 main areas: a) the different categories of DATSs, their application scope and potential benefits, costs and sustainability gains, b) how to use the QuantiFarm toolkit to support farmers in making decisions on DATSs selection based on their needs and individual characteristics, c) behavioral determinants for DATSs adoption and factors that determine the optimal performance of a DAT solution on a farm, and d) advisory techniques and guidelines for using DATSs in real-life production conditions and adopting appropriate business or operational interventions. In total, the DIA prescribes the delivery of 2 EU-wide training workshops and 10 national training sessions tailored for agricultural advisors at the EU and national level.

Finally, the Academy has been designed to have a long-standing effect on digital farming education, ensuring its operation beyond the life of the project, through:

a) Direct support from the DIHs participating in the project such as the "GreenSupplyChain" DIH in the Netherlands, alongside commitments from EUFRAS and Copa Cogeca, to continue the organisation of training seminars organisation based on the DIA approach.
b) Open access to the DIA resources via an open digital educational platform, which will also include the recorded training sessions.
c) Integration of DIA components into Higher Education (HE) and Vocational Education and Training (VET) programs of relevant agricultural specialities.
d) Embedding DIA resources into the accredited competency program for farm advisors and consultants, *"CECRA*", to support continuous, long-term professional development in the field of DATSs.

2.3 Mechanisms

The QuantiFarm DIA training plan and materials aim to create a flexible and efficient training process for all target groups. Through the 4 different mechanisms available, the DIA will try to clarify its short and long-term objectives to the advisors and by extension to the agricultural producers, present its qualities and capabilities to the audience and users and furthermore, to provide training by exploiting all the different means of education that are currently available.

By already conducting two European-level training workshops and then providing 10 national-level training sessions for agricultural advisors, the DIA will provide all stakeholders with basic knowledge about DATSs and how they can be a powerful tool for the implementation of precision and smart agriculture.

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Also, after the European and national training, all the training material created will be available on the project's digital training material repository. In this way, any interested party will be able to download and consult the training material at any time.

Finally, the last mechanism of the DIA concerns the supported advisory services to farmers. With the completion of all of the above, a first step will have been taken towards the wider adoption of DATSs by agricultural producers across Europe.

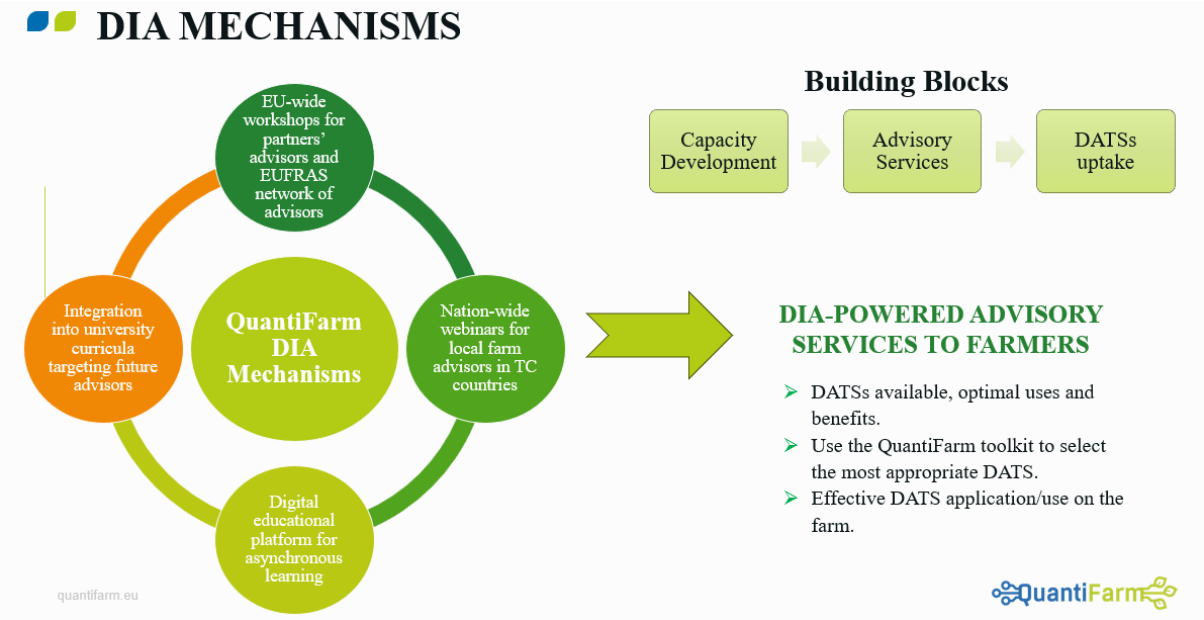

Figure 2: QuantiFarm DIA mechanisms and building blocks

2.3.1 European-wide training

As mentioned above, the 1st mechanism of the DIA was the organization of training workshops for agricultural advisors in Europe with participants from all relevant TCs. These workshops constitute a combination of classical training that has the purpose of directly transferring a specific competence/skill, along with a thematic seminar with an aim to elaborate a subject. A total of two (2) European-wide training workshops were held. To enhance synergies and maximize participation, the project collaborated with EUFRAS to co-organize the second one.

2.3.2 National training in participating countries

Nation-wide webinars offering training in the local language will take place in the same framework of disseminating QuantiFarm project and the DIA, but also to provide training to all interested groups. In addition to the European –wide events these training events will take place in the countries where the TCs are being led by advisors or DIHs, this time offering training in the local language. At these trainings a larger audience of agricultural advisors will be trained in order to then be able to offer advisory services to producers on the various DATSs. They will also be able to train and support producers who will then get to adopt a DATSs suitable for their crop. In addition, all training materials will be available for the advisors after the training sessions. A total of ten (10) webinars will be conducted nationally. Depending on the topic of each TC, the trainings will target the respective advisors of each sector (crops, livestock, aquaculture). The countries where the national trainings will take place are: TC1, 11 (Greece / GAIA & NP), TC2 (Portugal / Agromais & CONSULAI), TC26 (Ireland / Teagasc), TC15 (Cyprus / Filagro), TC14 (Serbia / Terra), TCs 6, 16, 19 (The Netherlands / Delphy), TC9 (Slovenia / KGZS).

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The possibility to replace the webinars with face-to-face workshops will be considered by each TC leader, in coordination with the Task 5.1 leader, if this is considered to better fit the needs and situation of the local community of farm advisors.

2.3.3 Digital training material repository

The 3rd mechanism of the DIA is a digital repository, where all the educational material that will be created will be published. All potential stakeholders will be able to have access to it and to take advantage of the results and data that have been obtained through the multi-year study that took place in the TCs as well as by further information collected. We believe that the use and existence of a digital repository where all educational material will be available is essential. Trainees will be able to review the material resulting in a better understanding of it.

2.3.4 Advisory services for farmers

Under the guidance of the DIA, the trained advisors will set up innovative advisory services in their countries, following the guidelines provided. They will engage the farmers and support them in selecting appropriate DATSs and applying them on their farms. Towards this end, in addition to direct meetings they will have with farmers, they will take advantage of the thirty (30) Demo events that will take place during the last year of the project.

2.4 Action Plan

The training of the selected groups consists of the three distinct phases:

- **Phase A** includes one face-to-face training workshop and one online training workshop with farm advisors at the European level.
- **Phase B** comprises ten (10) webinars or face-to-face workshops for farm advisors in selected TCs locations, delivered in national languages and tailored to specific sectors and crops.
- **Phase C** involves the actual provision of advisory services to farmers by the trained farm advisors.

Phase	Target group	Objective
Phase A	Advisors (EU Level) ➢ TCs' farm advisors ➢ External farm advisors	-Training on DIA didactics & training delivery methodology -Training on how to organise national training seminars -Training on DIA main subjects: a) Behavioural determinants, b) Different types of DATSs and their monetary and sustainability implications, c) effective application of DATSs, d) the QuantiFarm Toolkit, d) appropriate advisory techniques for DATSs.
Phase B	Advisors (National Level)	-Training on DIA main subjects: a) Behavioural determinants, b) Different types of DATSs and their monetary and sustainability implications, c) effective application of DATSs, d) the QuantiFarm Toolkit, d) appropriate advisory techniques for DATSs. - Demonstration of the examined DATS(s) -Presentation of strategies for supporting farmers in specific crop cultivations to enhance their operational efficiency, productivity, and sustainability performance through the adoption of DATSs.

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Phase	Target group	Objective
Phase C	Farmers	-Advisory support for the selection of the most appropriate DATSs based on farmer's crop profile and operational needs. -Training and ongoing support in the application of the digital tool adopted by the producer.

Table 1 The training of the selected groups in three phases

2.5 Target Groups

The target groups of QuantiFarm are the following:

Advisors and rural consultants on both EU and national Level

This target group is the core group of the trainings. The advisors will be trained initially at European level on different types of DATSs. They will be also trained on how to train advisors at national level in the use of DATSs. Advisors are the key ally of the farmers in the ever-increasing challenges they face. They are individuals that farmers can and do trust as they are very familiar with the needs of their farm. Furthermore, farm advisors support farmers in their technical, financial, organisational or social decisions. They help them to adapt their way of farming to the new digital age, helping them to choose the DATSs that are right for them. In this way they help them to improve their livelihoods and gain greater satisfaction from their profession.

Future Advisors

As QuantiFarm aims to achieve an impact in the long term, another important target group is the "future advisors". Relevant educational material have been created to be used by universities and vocational institutions that offer courses relevant to the subject of agricultural science, training students to become the future farm advisors.

Farmers and Agricultural Cooperatives/Farmers Groups

Subsequently, the trained advisors at the national level are expected to train and support producers in the selection and use of relevant and appropriate DATSs. As farmers comprise the main end-users of DATSs (together with the advisors and other actors), they need to be informed about the benefits of DATSs, which one is suitable for their crop and how much the service will cost. Furthermore, they should have the support of advisors in the proper use of digital technologies in the field. For the aforementioned reasons, the training and information received by the producers should be simple and easy to understand.

2.6 Educational Methods

The QuantiFarm DIA aims to create a flexible pathway for trainees, combining various forms of learning and training. In order to facilitate learning, a mix of training delivery methods and tools is employed. This includes face-to-face meetings and webinars, while the training material will also be available on the project's digital training material repository, so that it is accessible to all interested parties, facilitating asynchronous training.

Different forms of training are enlisted and combined, such as the traditional lecture which requires both the trainer's and the trainee's physical presence, as well as the capitalization of any digital means of communication available that offer the opportunity to modern ways of education to be implemented. To facilitate the learning process, a combination of methods and means of education is adopted. According to the above, this includes face-to-face meetings but also webinars.

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In the following paragraphs, all training methods to be used in the context of the DIA will be briefly analyzed and the reasons why it was considered necessary to carry out a combination of them will be explained.

2.6.1 Sychronous Training

2.6.1.1 Face-to-Face Education Scheme

While many things can be done virtually in the digital age, physical interaction remains one of the best ways to learn. Communicating and developing relationships through personal interaction is one of the key reasons face-to-face learning continues to be a preferred methodology. Learners gain from the depth of information and experience that is imparted to them by the trainer. Therefore, despite the increase in the use of technology, face-to-face training remains one of the most reliable methods regarding the training outcome, as it contains several aspects that cannot be replaced, such as discussion and peer-to-peer learning, trainer-participant interaction and engagement, adaptability and ability to have 1-on-1 help. Furthermore, richness of information and memorable experiences are deduced through behavior and body language, including one's mannerisms, gestures, tone, language, and volume of voice. Face-to-face communication allows the entire experience to not only be heard but also seen and felt.

As can be understood, those workshops would be able to acquire an interactive character, as the presence of the participants from all relevant TCs could enhance the creation of ideal conditions for an extended discussion, with the contribution and the view of all stakeholders. One of the main objectives here would be to let all concerns be expressed and all practical difficulties of implementation to be addressed. All of these matters should be discussed in the context of developing different theories for correcting possible deviations and expressing different concerns related to the combination of various DATSs functioning in the service of particular crops. All the above should take place in a context of exploiting face-to-face contact which offers flexibility in organizing and conducting extensive conversations in which people that have direct practical experience of the TCs in progress, but they are not familiar enough with digital communication media, to participate in the right for them way and express themselves for as long as they would like to.

2.6.1.2 Digital/Online Education Scheme (Webinars)

Webinars are a powerful tool in any training program, as they are of a low cost, easy to implement and can attract a large number of participants. In our case attracting more attendees from all over the country and increasing national coverage would be the main objective. In addition, they offer the ability to access all content and material after the event. Given this, attendees can review the presentation multiple times, helping them to digest all the necessary information and apply the content as needed. A webinar is also a tool to easily hold additional meetings, if deemed necessary due to providing clarifications or presenting results, without having to organize a face-to-face at high-cost event, which would not be easy for participants to attend.

Digital means of education have apparently been a whole new trend in recent years and consequently present their own advantages. Taking benefit of cutting-edge technology, digital means have the capacity to carry out educational events of several types on real-time. Their "easy to access" nature attracts more attendees than the traditional types of lectures and offer the opportunity to participants to avoid wasting resources. All data and material provided are also easily accessible, allowing the user to retrace all necessary information at any time on a mobile device. Digital media of education is an ever-evolving sector and functions in line with all technological developments that occur over time. Their contribution in recent years, where every remote learning methodology has been employed due to quarantine, has proved to be enormous.

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2.6.2 Asynchronous Training

The establishment and operation of a digital repository presents the advantage of offering easy and continuous access to the training material, enabling asynchronous training and offering the user the possibility to train on his/her own pace and time. The digital repository will be designed at a later stage and, depending on the findings of task 5.1 from the interaction with the three target groups, it will either be a part of the QuantiFarm Toolkit or the project website. The final selection will be based on the needs of the target groups and the size and format of the developed training material.

2.6.3 Facilitation techniques

As we mentioned above, trainings will be realised face-to-face and remotely. Therefore, in order to organise effective training, the methods used should ensure that the knowledge and skills of the participants are enhanced and/or built.

Training methods are the techniques that educator uses to implement trainings and transfer knowledge, skills and attitudes to training attendees. Therefore, to properly organize a training course, it is necessary to correctly identify the appropriate methods capable to ensure the participants' engagement in the learning process. When designing trainings, organisers must take into account not only the aims of the training, but also the knowledge background of the target users as well as the variables that determine a method as suitable for achieving the training objectives. In the following of this section the most popular training methods are listed and described:

- Lecture
- Case study
- Demonstrations
- Self-study

Lecture

The lecture is one of the most effective and concise methods for introducing new information and concepts to attendees of a training course. A lecture is the most basic part of a training session, and its main characteristic is that little or no interaction takes place between the trainer and the trainees. This little interaction that may take place is due to the several variations with which it may be applied. The main objective of lecturers is to improve knowledge on learners who generally already have basic or no information and knowledge at all on the field of the training. Through lectures, learners can increase their knowledge for a specific field and then relate what has been learnt to a conceptual framework. Lectures are useful for stimulating and motivating learners for further enquiry and for presenting a specialized body of external information.

The main reason why it is considered necessary in the case of QuantiFarm is that the trainees may lack knowledge about the topics to be presented during the training. This may be technical information about DATs or theoretical information about the methods by which they are required to transfer knowledge and organise national seminars.

Case Study

Case study is based on the concept of creating knowledge through observation and study of others' experiences in the form of a case. The possibility given to learners to reflect upon and analyze such experiences and to derive new ideas is the main benefit provided by this method. Case studies, both if presented in written and verbal forms, allow learners to make similitudes and to observe similar cases also from the experience of other people, benefiting from the lessons learnt and the knowledge generated by these case studies.

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The QuantiFarm DIA educational mechanisms includes case studies whether it concerns an online or an onsite session. The training to be carried out will not only cover the operational part of the digital decision making process but also the theory behind it. A case study constitutes a great practical exercise for trainees with an objective to put all relevant theory related to the decision-making process methodology of selecting the correct DATS in either case, into effect. Case studies can be presented to entire groups of learners, by providing directly with the results and experience derived, or to smaller groups of attendees, by giving each group a different topic to reflect on and discuss. Through this process each group should carefully decide every single step until it reaches a successful finalization. Then their views may be presented and consolidated in a collective session.

Demonstrations
This method is based on the opportunity provided to participants to observe from an external point of view the objects or processes that they wish to learn in their execution, with the aim of understanding the working modality; demonstrations can be based on real-life or on situations or models. This method is useful for simply conveying complex information, since the possibility of assisting and seeing someone else (an expert) using a complex object or managing a complex process makes learning considerably easier. Therefore, this method is useful both for improving skills and generating awareness around a specific topic. Several EC-funded projects like H2020 IoF2020 (https://www.iof2020.eu/), H2020 NEFERTITI (https://nefertiti-h2020.eu/) and H2020 AgriDemo-F2F (https://agridemo-h2020.eu/) identified demonstrations as one of the most important methods when dealing with innovations in the agri-food sector.

Similar to the case study purpose of use, the demonstrating method will be implemented in a systematic manner in the case of QuantiFarm, allowing trainees to connect theories of DATSs and training methods to actual practice. A detailed description of a decision-making process, for example, will make a multi-criteria analysis clearer to trainees. Since this particular teaching method is an interactive one, it will be used to gain the interest of the participants who will be able to express questions by interrupting the process, if necessary, as opposed to, for example, a classical lecture. The use of graphs and pictures can also make the process even more interesting.

Self-study
Self-study is an effective training method for increasing learners' skills and knowledge about a certain field of knowledge. With respect to the other methods, the self-study methodology achieves these results without the presence of a trainer leading the activity. However, for achieving effective results with a self-study method, an adequate presence of training material is necessary; on the contrary the time of the learning process may be longer than a training course guided by a trainer, since learners cannot rely on other experience and summaries ensured by the application of the other methodologies. This method is useful for creating awareness and improving knowledge.

The QuantiFarm project will create educational material that trainees will have access to at any time, and which will offer them the opportunity for self-improvement in the scientific field they will be working in. Guidance will also be provided through the relevant literature for those interested who aim at a lifelong learning of the subject.

2.6.4 Guidelines for trainers

It is essential before beginning the training, that the trainer learns about the trainees: who they are, their educational background and their expectations. Furthermore, trainers need to discover what the trainees can already do and what they know about different types of DATSs. The trainer should know exactly what areas the trainees need training in, and he/she will need to make it clear exactly what the trainees

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will be expected to learn. The QuantiFarm DIA has specific learning objectives which state what the trainee is expected to know, or be able to do, after completing the training procedure.

Also, it is important that all the training activities will follow the same agenda, with slight adaptations, where necessary. More specifically, the trainers shall:

- Use the provided training material (but adapt them to the trainees own native language).
- Choose the appropriate training and development methods and processes to effectively implement and execute the above plans.
- To be flexible in using the proposed methods and material, according to training curriculum for each training group.
- Make sure that the main objective of each course will be fully presented.
- Follow the announced agenda for each training.

General facilitation tips

- Emphasize the role of farm advisors in DATSs selection and uptake.
- Demonstrate the benefits for farm advisors in engaging in DATSs consulting.
- Relate learning content to the agricultural sector and crop addressed.
- Address the impact of the demonstrated DATSs on the farm level but also the wider context.
- Link content to actual farm management conditions and provide as many practical examples as possible
- Highlight the challenges, failures, or the negative side effects of a DATS.
- Engage participants in active knowledge sharing, allowing them to share their experiences.

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3. QuantiFarm DIA: Programme Specifications

By collecting useful information from the QuantiFarm project itself, as well as from other ongoing or past projects, a rich repository of information and lessons learnt in the field of digital farming is being created. Building on all this information, the QuantiFarm project aims to design a comprehensive curriculum focused on DATSs, addressing the prevailing mismatch in farm advisors' skillset as well as the gaps in current training provision.

Given QuantiFarm's broad scope, the curriculum will be structured into modules that can also function as standalone courses. These modules will address key project priorities and diverse training areas, including the categories and functionalities of DATSs, the optimal conditions for their effective deployment, and the behavioural factors influencing their adoption. The curriculum will distil relevant findings and insights generated across various project activities to deliver robust, actionable knowledge to participants.

The modular format offers flexibility, enabling the delivery of tailored courses to different target groups, each with specific interests and needs. By adapting each module to its unique context, the curriculum ensures accessibility and relevance for a wide audience.

3.1 Core training subjects

As already presented in the previous sections, in the context of the QuantiFarm DIA, a number of training modules will be designed in order to increase the advisors' capacities in relation to the use of DATSs and help them set up innovative decision support services for farmers. These modules will cover the training subjects:

a) DATSs types: Potential benefits, cost, and impact on sustainability.
b) How to use the QuantiFarm Toolkit and support farmers in making decisions on DATSs selection based on their needs.
c) Recommendations under which conditions DATSs can deliver optimal results for a farmer.
d) Guidelines for a) using DATSs in real-life production conditions, and b) adopting appropriate business or operational interventions.
e) Behavioural determinants for DATSs adoption and factors that determine the optimal performance of a DATS on a farm.

a) The diverse types of DATs

The QuantiFarm DIA will train advisors on the types of DATSs available and their potential benefits, costs, and sustainability implications. The content of this session covers in depth the requirements mentioned above. More specifically, it will include the following sections:

- DATSs: Basic Concepts.
- Advisors and agronomists: role, tasks, and obligations.
- Categorisation of DATSs and examples of solutions.
- Information on how they work, cost, for which crops they are suitable and for which biogeographical regions, countries, or climate conditions.
- Potential financial, environmental, and social benefits of DATSs.

Those who have successfully completed this module will be familiar with how different digital agricultural technologies work, their potential benefits, cost and impact on sustainability. They will also be able to initiate, train other agricultural advisors as well as farmers on various types of DATSs.

b) Using the QuantiFarm Toolkit to support decision-making

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One of the major topics of the training is the QuantiFarm Toolkit, a comprehensive set of tools designed to support farmers, advisors, and policy makers in making informed decisions regarding the selection and adoption of DATSs. Each tool within the toolkit targets specific user groups, addressing their unique decision-making and policy evaluation needs. The DIA will train advisors, who will, in turn, guide farmers on the practical use and benefits of the QuantiFarm Toolkit. The training will explain how the toolkit supports farmers, advisors, and policymakers, demonstrating the use of its tool/service. The course will focus on the following key areas:

- **Understanding the Toolkit**: Introducing the QuantiFarm Toolkit, including its uses, structure, core functionalities, and key components, such as the Cost-Benefit Analysis and Sustainability Assessment features.
- **Tool Demonstrations**: Presenting the tools within the toolkit and providing hands-on demonstrations of how these tools can be effectively used. By the end of the training the trainee should be able to make decisions related to different DATSs, by taking benefit of a personalized services offered. The focus will be on guiding farmers in selecting DATSs, ensuring a customized approach to each farm's specific conditions and needs, all while factoring in personal decision-making criteria.

c) Recommendations on optimal use of DATSs

A key principle when using DATSs is that not every DATS is suitable for all farms and that they do not deliver the same results under all climate and weather conditions. For example, a satellite-based DATS that resulted to a significant decrease in the use of inputs in Greece, might not have the same results in Poland, where the weather is different, and the clouds make the use of Sentinel 2 satellite data less useful. In the same way, a DATS supporting optimal irrigation will have a different impact on a year with extensive draught compared to a year with lots of rainfall. Finally, the DATSs need to be used in the way that they were designed, following the instructions of the DATSs providers. Not following the protocols will provide different results than expected. Knowledge of these issues is critical to achieve optimal results, avoid misunderstandings and earn the farmers (and advisors) trust in the DATSs. This training session will extend the initial information about the different types of DATSs and their potential benefits and provide recommendations on under what circumstances/how DATSs deliver the best results for a farmer.

d) Guidelines for the use of DATSs in real-life production conditions

This session will focus on providing the necessary guidelines and training to the advisors, to help them use all of the tools and learnings from the previous training to support farmers a) in using DATSs in real-life production conditions and b) in adopting potentially appropriate business or operational interventions that would be necessary for reaping the potential benefits of the DATSs. After the completion of the training session, the trainee will be able to support the farmers, offering specialized directions in selecting the most appropriate DATSs for their farm and applying them in real production conditions in a way that will maximise their impact.

e) Behavioural determinants for DATS adoption

QuantiFarm is intended to identify the behavioural determinants which inhibit the uptake of DATSs by European farmers, to examine the possible interventions that can be made to achieve a more effective rate of adoption as well as ensure the developing of farmers' skills on them. The available training material will present the theory around behavioural determinants, the main methods used to identify them, their evaluation as inhibitors to the adoption of DATSs and the usefulness of the conclusions reached.

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3.2 Programme overview

The QuantiFarm DIA is a comprehensive capacity development programme for farm advisors and rural consultants in the field of DATSs, employing both synchronous (workshops, webinars/seminars) and asynchronous (digital platform, recorded sessions) methods of training provision. The primary goal of the Academy is to raise farm advisors' awareness about DATSs and strengthen their capacity to deliver effective personalised advisory services to farmers in the field of digital farming.

The DIA programme is designed and delivered in two distinct formats: as a **Train-the-Trainer (TTT)** targeted at farm advisors from TCs responsible for organizing national training sessions, and as a **Direct, end-user training** for upskilling farm advisors in the technical and advisory aspects of DATSs.

The (complete) DIA programme is divided into two main pillars:

c) DIA didactics and training delivery methodology: Focused on equipping trainers with the tools and approaches to effectively plan, organize, and deliver national training sessions. This component is central to the TTT session(s).
d) Core focal points of the QuantiFarm project (see section 3.1). These topics are covered in both TTT and end-user courses.

The DIA programme corresponds to the 5th level of the European Qualification Framework (EQF)[1] and follows a modular structure to allow for flexibility in learning, targeted skill development, and the systematic progression of knowledge and competences, adhering to EU educational standards and best educational practices for farm advisors (CECRA, EIP-AGRI seminars). The complete (two-pillar) programme consists of 7 modules and spans 9.5 hours of curriculum delivery, seamlessly combining theoretical insights with practical activities to provide an impactful learning experience. Participants engage in hands-on exercises and complete multiple-choice assessments to validate their knowledge and skills acquisition. Upon successful completion, all participants receive an official certificate of attendance. Overall, the DIA offers a unique value proposition by addressing a critical gap in capacity building for farm advisors in the field of DATSs. Through specialized training, the DIA empowers advisors with the skills/knowledge to offer tailored advisory services to farmers regarding DATSs selection and application, which is considered vital for the widespread acceptance and uptake of DATSs among EU farmers.

DIA programme specifications	
Training approach	▪ Train the Trainer ▪ Direct, end-user training
Delivery mode	Face-to-face, online (synchronous learning)
Delivery Format	Workshop
Target group	Farm advisors, rural consultants, DIHs
Requirements	▪ Prior working experience as a farm advisor ▪ Proficiency in English. ▪ Higher Education or Vocational Training degree in agriculture or a related field (recommended).
Curriculum structure	7 sessions for TTT and 3 sessions for end-user training
Delivery time (duration)	9.5 hours

[1] *The EQF provides a common reference framework for qualifications in Europe, facilitating the recognition of learning outcomes acquired in both formal and non-formal settings. Indicating the EQF level helps participants understand the depth and complexity of the learning outcomes they are expected to achieve in a course, contributing to their overall understanding of the program's educational value. More specifically, the EQF level 5 entails the acquisition of comprehensive, specialised, factual, and theoretical knowledge and a range of cognitive and practical skills within a given field of study.*

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DIA programme specifications	
EQF reference level	EQF level 5
Learning outcomes	41 learning outcomes
Assessment	Multiple choice questionnaire
Certificate	Certificate of attendance

Table 2: DIA programme specifications

3.3 Curriculum structure

The DIA two-pillar curriculum is composed of 7 modules[2] (sessions). Four modules are dedicated to the methodological aspects pertaining to the planning, organisation, adaptation and delivery of DIA national training sessions, and DIA specific didactics (methodological part). The other three modules focus on the core themes of the QuantiFarm project, such as behavioural determinants, DATSs categories and benefits, the QuantiFarm Toolkit, and appropriate advisory techniques (technical part). As mentioned, the four modules dedicated to DIA didactics and training delivery methodologies are integral components of the TTT format. Each module is further divided into individual topics to cover the entire spectrum of theoretical knowledge and (practical) skills and competences required to develop advanced advisory techniques in the field of digital farming and DATSs.

DIA CURRICULUM STRUCTURE			
Module title	**Topics covered**	**Training approach**	**Duration**
M1: Methodological part of how to organise a national training	▪ Scope, intended objective and format of a national training session in the context of DIA. ▪ Questions and factors to consider before organising a training. ▪ Steps in the organisation of a training. ▪ Typical pitfalls and how to prevent them.	Train-the-Trainer	2 hours
M2: Didactical part of train the trainer	▪ TTT educational principles and features of a good training. ▪ Typical pitfalls in the moderation of a TTT and how to prevent them (e.g. assuring meta-level view and practical application). ▪ From goal to sequence and structure of a sequence. ▪ Dramaturgy of a training and training facilitation guidelines. ▪ Blueprint for a National Level Training - Understanding structure, dramaturgy and methods.	Train-the-Trainer	1.5 hours

[2] Within the QuantiFarm framework, a module is defined as a cohesive set of knowledge, skills, and competences designed to enable participants to perform interconnected tasks and achieve specific outcomes, which are observable, verifiable, and centred on a distinct thematic area.

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DIA CURRICULUM STRUCTURE			
Module title	**Topics covered**	**Training approach**	**Duration**
M3: Methodological part of adapting the training on the use of a DATS to the different sectors, national differences and environments	▪ Factors /Issues that call for methodological and/or didactical adaptation of the blueprint ▪ Adaptation of technical contents related to DATSs' presentation ▪ Means/Approaches to adapt a national training to a given setting	Train-the-Trainer	1.5 hours
M4: Training on various types of DATSs and their potential benefits, costs and sustainability impacts	▪ The role of farm advisors in DATSs uptake. ▪ Regulatory compliance obligations arising from farm-level DATSs usage. ▪ DATSs: Fundamental concepts and categorisation. ▪ DATSs presentation (per category): Application scope, technical specs, costs, financial benefits, sustainability impact.	Train-the-Trainer End-user training	1.5 hours
M5: Technical part on how to use the QuantiFarm toolkit	▪ Why we need the QuantiFarm Toolkit? ▪ QuantiFarm Toolkit: Theoretical foundations, scope, and uses. ▪ QuantiFarm Toolkit: Dashboard structure, tools and features.	Train-the-Trainer End-user training	1 hour
M6: Recommendations under which conditions/ in which way DATSs deliver best results for a farmer	▪ Behavioural determinants influencing DATSs adoption ▪ Strategies for effective communication with farmers regarding DATSs uptake. ▪ Architecture and logic of the QuantiFarm Recommendation tool based on behavioural determinants. ▪ Farmers' perspectives, patterns identified from DATSs use, best practices and lessons learned. ▪ DATSs' suitability assessment and application scope. ▪ Requirements and practical tips for effective DATSs application in the field.	Train-the-Trainer End-user training	1 hour
M7: Methodological part of guidelines and training to help advisors use all the above modules	▪ Overview of national training session plan. ▪ Design process of a national training session in the context of QuantiFarm DIA.	Train-the-Trainer	1 hour

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DIA CURRICULUM STRUCTURE			
Module title	**Topics covered**	**Training approach**	**Duration**
	▪ How to present DATSs during national training sessions. ▪ How to advise farmers on DATSs selection. ▪ How to advise farmers in using DATSs under real production conditions. ▪ Facilitation methods and learning tips.		

Table 3: DIA curriculum structure

Image 1: DIA Certificate of Attendance (template)

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3.4 Module specifications

QuantiFarm has adopted a structured framework for module descriptions, drawing upon the official CECRA template. This framework was used to define the specifications of each DIA module and outline the proposed delivery approach, ensuring a consistent and impactful training methodology within the context of QuantiFarm DIA training activities.

Key details specified in the module descriptions include an overview of the module, its duration, recommended background knowledge, topics covered, learning outcomes, training delivery format, types of learning materials, suggested readings, and instructor profiles. A dedicated description form has been created for each module, also serving as the foundation for the subsequent development of DIA learning materials.

Additionally, this structured approach provides flexibility for integrating the DIA modules into the CECRA competence framework, ensuring full alignment with program requirements while maintaining adaptability for future enhancements.

3.4.1 Module 1: Methodological part of how to organise a national training

Each country has its own unique characteristics that must be considered before embarking on the intricate task of organizing specialized training workshops. A thorough examination of the existing baseline situation is essential to identify the knowledge gaps and specific needs of potential trainees. Once this analysis and research are complete, the training materials should be meticulously tailored to address these identified requirements. Similarly, the selection of delivery methods and educational approaches should align with the unique attributes of the target audience, ensuring that the strategies adopted are the most suitable and effective for each particular context. This session focuses on the organizational aspects of conducting a TTT at a national level, in specific settings. What are the key steps and what specific issues require special attention? How will a training session have maximum impact? At the end of this session, participants will be aware of the crucial components of a TTT and will be empowered with a blueprint to be used as a guide for effectively planning and organising a national training workshop in line with QuantiFarm DIA requirements.

Module description	
Title:	Methodological part of how to organise a national training
Training approach	Train-the-Trainer
Delivery mode:	Face-to-face, online or blended (synchronous)
EQF level:	EQF level 5
Duration:	2 hours
Language:	English
Target group:	TC Leaders
Background knowledge:	Basic knowledge on how to organise a training course
Learning outcomes:	Knowledge ▪ Understand the intended scope and objectives of the national TTT sessions within the context of DIA. ▪ Know the main components and key elements of national TTT sessions. ▪ Familiarise with the different sections of the blueprint. Skills ▪ Execute the intended plan for organizing a national training session while avoiding typical pitfalls.

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Module description	
	▪ Use the blueprint as an operational guide to structure and plan a national training session. Competence ▪ Plan and organise a national TTT session within the framework of QuantiFarm DIA
Topics covered:	▪ Scope, intended objective and format of a national training session in the context of DIA. ▪ Questions and factors to consider before organising a training. ▪ Steps in the organisation of a training. ▪ Typical pitfalls and how to prevent them.
Training format:	▪ Lecture (15 min) ▪ Hands-on planning of a national training course based on a draft (75 min) ▪ Group discussion (30 min)
Type of assessment:	Case study (verbal presentation of national training outline), multiple choice questions
Educational materials:	▪ 10-15 presentation slides ▪ 1 blueprint of a national training ▪ Hands-on exercise “Planning a national training course based on QuantiFarm Blueprint”
Recommended readings:	▪ Tools and methods for the mentor development; Pablo Asensio (2017) ▪ Bolliger Ernst & Zellweger Tonino, AGRIDEA. 2007. Facilitation – the art of making your meetings and workshops purposeful and time-efficient. Mattenbach AG, Winterthur.
Instructor(s):	AGRIDEA

3.4.2 Module 2: Didactical part of train the trainer

The "Train the Trainer" educational model offers distinct advantages that make it particularly suitable in certain scenarios. One of its primary strengths lies in its ability to facilitate the efficient dissemination of information and the rapid development of skills, often in a shorter timeframe compared to traditional training methods. The Train the Trainer model provides a structured and effective strategy to equip trainees with the specialized knowledge and skills needed to independently organize and deliver training sessions. By doing so, it ensures the dissemination of knowledge is grounded in the fundamental principles of educational theory, creating a sustainable cycle of learning and teaching. In a QuantiFarm TTT, the participants need to both learn about the given content of DATSs, as well as about how to best disseminate these contents to their future participants (the farmers). This session therefore focuses on the didactical aspects of performing a TTT training. Based on the blueprint of a national TTT, participants will analyse and understand the didactical structure and choices of methods and will be provided with valuable tips and tricks for the moderation of their TTT sessions.

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Module description	
Title:	Didactical part of train the trainer
Training approach	Train-the-Trainer
Delivery mode:	Face-to-face, online or blended (synchronous)
EQF level:	EQF level 5
Duration:	1.5 hours
Language:	English
Target group:	TC Leaders
Background knowledge:	Basic knowledge on how to moderate a training course
Learning outcomes:	Knowledge ▪ Become acquainted with the structure and methods to be used in a national TTT (blueprint) Skills ▪ Understand the key didactical elements of a TTT and apply them to a given national training. ▪ Moderation skills for national training sessions. ▪ Handle challenging moments in TTT facilitation and avoid typical pitfalls. Competence ▪ Plan and organize a national training session within the framework of QuantiFarm DIA.
Topics covered:	▪ TTT educational principles and features of a good training. ▪ Typical pitfalls in the moderation of a TTT and how to prevent them (e.g. assuring meta-level view and practical application). ▪ From goal to sequence and structure of a sequence. ▪ Dramaturgy of a training and training facilitation guidelines. ▪ Blueprint for a National Level Training - Understanding structure, dramaturgy and methods.
Training format:	▪ Lecture (30 min) ▪ Independent exercise: From training to TTT – turning (a short part of) a “normal” training into a TTT. What would you change and why? (30 min) ▪ General exchange with other participants (25 min)
Type of assessment:	Case study (verbal presentation of national training outline), multiple choice questions
Educational materials:	▪ 10-15 presentation slides ▪ 1 blueprint for good practice in moderation ▪ Exercise “From training to TTT – Create your own TTT outline with the aid of the blueprint”
Recommended readings:	▪ Bolliger Ernst & Zellweger Tonino, AGRIDEA. 2007. Facilitation – the art of making your meetings and workshops purposeful and time-efficient. Mattenbach AG, Winterthur. ▪ Supporting Document for Quantifarm WP 5 by AGRIDEA (Hartmann O., Rombach M., Heuel M). 2024. ▪ Blueprint for TTT National Level Training on Technical Subject x by AGRIDEA (Hartmann O.). 2024.
Instructor(s):	AGRIDEA

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3.4.3 Module 3: Methodological part of adapting the training on the use of a DATS to the different sectors, national differences & environments

As is widely recognized, DATSs can be applied across various operations within the agri-food sector. Recent advancements in digital technologies have reached a level where they can deliver high-quality services to farmers, regardless of the type or scale of their farming activities, demonstrating increased scalability. These technologies cater to a wide range of farm types, which often differ significantly from one another, as well as to the diverse environments in which they must operate. Given that the project's Test Cases span a significant portion of the European continent, the national training programs for advisors must account for this variability. Advisors will need to develop a clear methodology to adapt each training course to the specific needs of different agricultural sectors and conditions, ensuring the relevance and effectiveness of the training across diverse contexts. The aim of this session is, therefore, to create awareness about the necessity and means to adapt a training in terms of content and/or methodology to a specific setting (overall environment/context of a TC, sector, country, cultural values and behaviours participants, own strengths, etc.). Participants will get insights to make a sound choice of adequate DATSs and contents. They will also reflect on and compare different methodologies and their optimal use and their usefulness in different settings. By the end of the session, participants should be able to adjust a basic TTT training blueprint to their specific setting.

Module description	
Title:	Methodological part of adapting the training on the use of a DATS to the different sectors, national differences & environments
Training approach	Train-the-Trainer
Delivery mode:	Face-to-face, online or blended (synchronous)
EQF level:	EQF level 5
Duration:	1.5 hours
Language:	English
Target group:	TC Leaders
Background knowledge:	Basic knowledge on how to organise and moderate a training course
Learning outcomes:	Knowledge ▪ Factors that influence the choice of methodology and/or the DATSs or contents thereof. ▪ Different methods and usefulness in different (cultural/social) settings. Skills ▪ Understand the need to adapt a national TTT training, depending on the choice of the DATSs, the environment, country, cultural and social factors and having an idea of how to go about it. Competence ▪ Adjust their national TTT training, competently to the DATSs that must be presented as well as the specific setting.
Topics covered:	▪ Factors /Issues that call for methodological and/or didactical adaptation of the blueprint ▪ Adaptation of technical contents related to DATSs' presentation ▪ Means/Approaches to adapt a national training to a given setting
Training format:	▪ Lecture (15 minutes) ▪ Reflection and input from the participants (30 minutes) ▪ Demonstration (15 minutes)

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Module description	
	▪ Q&A session / Group discussion (15 minutes) ▪ Assessment (15 minutes)
Type of assessment:	Multiple choice questions
Educational materials:	▪ 20-30 presentation slides ▪ 1-2 cases with reflection questions ▪ 10-15 multiple choice questions
Recommended readings:	▪ https://agridea.abacuscity.ch/de/A~1086~1/3~210300~Shop/Publikationen/Bildung-Beratung/Beratung/Moderation-%28Handbuch%29/Deutsch/Print-Papier ▪ Tools and methods for the mentor development; Pablo Asensio ▪ QuantiFarm D2.2 "Assessment Framework and Policy Monitoring" ▪ QuantiFarm D3.3 "Tools for DATSs Assessment and Policy Monitoring"
Instructor(s):	AGRIDEA

3.4.4 Module 4: Training on various types of DATSs and their potential benefits, costs and sustainability impacts

In this session, advisors will delve into the diverse spectrum of DATSs available today. Participants will gain a deep understanding of the various types of DATSs, their potential benefits, associated costs, and sustainability impact within the agricultural context. They will explore how to effectively scale these technologies, allowing for tailored implementation based on the unique characteristics and needs of different farms. By the end of this module, advisors will be well-equipped to understand their role in DATSs uptake and guide farmers in selecting, implementing, and adapting DATS to maximise their operational efficiency, crop yields, and overall sustainability, ensuring a customized fit for each farm's specific conditions and needs.

Module description	
Title:	Training on various types of DATSs and their potential benefits, costs and sustainability impacts
Training approach	Train-the-Trainer, End-user Training
Delivery mode:	Face-to-face, online or blended (synchronous)
EQF level:	EQF level 5
Duration:	1.5 hours
Language:	English
Target group:	Farm advisors, rural consultants, DIHs
Background knowledge:	n/a
Learning outcomes:	Knowledge ▪ Understand the role of a farm advisor in DATSs uptake. ▪ Become acquainted with a range of DATSs that can be effectively applied across diverse agri-food sectors, farm types and conditions. Skills ▪ Analyse the impact of regulations and policies DATSs uptake. ▪ Understand and present the benefits and costs for each DATS as well as their expected (potential) impact on social and environmental sustainability aspects.

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Module description	
	▪ Comprehend the underlying technologies of DATS. ▪ Identify the most suitable DATSs for specific agricultural contexts. <u>Competence</u> ▪ Train other farm advisors and agronomists on a) the different types of DATSs (application scope, technicalities, investment & operating costs, financial benefits, and anticipated sustainability gains) and b) the decision-making process for the selection of suitable DATSs.
Topics covered:	▪ The role of farm advisors in DATSs uptake. ▪ Regulatory compliance obligations arising from farm-level DATSs usage. ▪ DATSs: Fundamental concepts and categorisation. ▪ DATSs presentation (per category): Application scope, technical specs, costs, financial benefits, sustainability impact. ▪ Case studies with reflection: Delving into DATSs details
Training format:	▪ Lecture (45 minutes) ▪ Demonstration (15 minutes) ▪ Q&A session / Group discussion (15 minutes) ▪ Assessment (15 minutes)
Type of assessment:	Case studies, multiple choice questions
Educational materials:	▪ 1 presentation (ppt) file covering the above-mentioned topics (20-30 slides) ▪ 1-2 case studies with reflection questions ▪ 1-2 demonstration videos (or interviews with farmers) ▪ 10-15 multiple choice questions ▪ DATSs compendium ▪ DATSs manuals (external resources)
Recommended readings:	▪ https://fastplatform.eu/ ▪ FaST Navigator study identifies models necessary to provide accurate advice on the use of fertilisers to EU farmers - European Commission (europa.eu) ▪ https://fairshare-pnf.eu/ ▪ https://www.tools4cap.eu/wp-content/uploads/2024/04/Tools4CAP_Integration-of-farm-level-data-towards-CAP-monitoring-and-evaluation-D4.1.pdf ▪ https://www.sciencedirect.com/science/article/abs/pii/S0959652623044967 ▪ QuantiFarm D2.2 “Assessment Framework and Policy Monitoring” ▪ QuantiFarm D3.3 “Tools for DATSs Assessment and Policy Monitoring” ▪ Sustainable Agriculture: Advances in Technological Interventions by Ajoy Kumar Singh, Vishwa Bandhu Patel ▪ WBGx: e-Learning on Digital Agriculture
Instructor(s):	NEUROPUBLIC, FILAGRO

This project has received funding from the European Union’s Horizon Europe research and innovation program under grant agreement No 101059700

3.4.5 Module 5: Technical part on how to use the QuantiFarm toolkit

The QuantiFarm Toolkit provides a range of tools/applications for farmers, advisors, and policymakers to raise awareness on available DATSs (benefits, costs, sustainability impact) and support evidence-based decision making tailored to the specific characteristics, needs and priorities of farmers. The toolkit, accessible as a web-based service (https://quantifarmtoolkit.eu/), features 5 advisory tools namely the "QuantiFarm Recommendation Tool", "QuantiFarm Benchmarking Tool", "QuantiFarm Cost-Benefit Calculator", "QuantiFarm Advanced Decision Support Tool" and "QuantiFarm Policy Monitoring Tool". Each user category (farmer, advisor, policy maker) enjoys distinct access levels to the service dashboard. The service allows users to input individual data and properties' characteristics, obtaining customised assessments and personalised advisory services regarding DATSs. In this session, advisors will delve into the functionalities of the QuantiFarm Toolkit, gaining a comprehensive understanding of how to use its tools and advisory services effectively. The focus will be on guiding farmers in selecting DATSs, ensuring a customized approach to each farm's specific conditions and needs, all while factoring in personal decision-making criteria.

Module description	
Title:	Technical part on how to use the QuantiFarm toolkit
Training approach	Train-the-Trainer, End-user Training
Delivery mode:	Face-to-face, online or blended (synchronous)
EQF level:	EQF level 5
Duration:	1 hour
Language:	English
Target group:	Farm advisors, rural consultants, DIHs
Background knowledge:	n/a
Learning outcomes:	Knowledge ▪ Know the theoretical foundations and intended use(s) of the toolkit. Skills ▪ Navigate through the toolkit's online environment (dashboard). ▪ Familiarise with the functionalities of the toolkit. ▪ Use the different applications (tools) of the toolkit. ▪ Apply filters to address diverse agricultural contexts and DATSs application scenarios. ▪ Understand the ethical considerations related to the use of the toolkit such as data privacy and security. Competence ▪ Utilise the QuantiFarm toolkit to deliver personalized advisory services to farmers, guiding their decision making in selecting DATSs according to their specific characteristics and needs. ▪ Train other farm advisors on how to use the toolkit. ▪ Guide farmers in using the toolkit autonomously.
Topics covered:	▪ Why we need the QuantiFarm Toolkit? ▪ QuantiFarm Toolkit: Theoretical foundations, scope, and uses. ▪ QuantiFarm Toolkit: Dashboard structure and features.
Training format:	▪ Lecture (20 minutes) ▪ Demonstration (20 minutes) ▪ Q&A session / Group discussion (10 minutes) ▪ Assessment (10 minutes)

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Module description	
Type of assessment:	Multiple choice questions
Educational materials:	▪ 1 presentation (ppt) file covering the above-mentioned topics (20-30 slides) ▪ 1-2 use case scenarios with reflection questions ▪ 10-15 multiple choice questions ▪ Manual on how to use the QuantiFarm toolkit
Recommended readings:	▪ QuantiFarm D2.2 "Assessment Framework and Policy Monitoring" ▪ QuantiFarm D3.3 "Tools for DATSs Assessment and Policy Monitoring"
Instructor(s):	NEUROPUBLIC

3.4.6 Module 6: Recommendations under which conditions/ in which way DATSs deliver best results for a farmer

As part of its piloting activities, QuantiFarm will rigorously test and assess a range of DATSs across diverse conditions, farm types, and business models. Through systematic analysis, QuantiFarm seeks to identify the optimal solutions for each unique case, unravelling the conditions under which DATSs yield the most advantageous outcomes for farmers. This session is designed to empower advisors with key insights from TCs implementation, providing a nuanced understanding of the circumstances and factors through which DATSs can deliver best results for a given farm. Participants will also explore the key drivers and barriers influencing the adoption and non-adoption of digital solutions by farmers, alongside strategies to address behavioural factors throughout the decision-making journey. By the end of this session, advisors will be able to offer personalized support services to their customers regarding the selection and optimal use of DATSs for enhanced operational efficiency, productivity, and sustainability.

Module description	
Title:	Recommendations under which conditions/ in which way DATSs deliver best results for a farmer
Training approach	Train-the-Trainer, End-user Training
Delivery mode:	Face-to-face, online or blended (synchronous)
EQF level:	EQF level 5
Duration:	1 hour
Language:	English
Target group:	Farm advisors, rural consultants, DIHs
Background knowledge:	n/a
Learning outcomes:	Knowledge ▪ Know the conditions and factors that affect the adoption and non-adoption of digital solutions by farmers. ▪ Obtain an in-depth knowledge of the agricultural sectors, crops, geographical and climatic conditions where DATSs can be optimally applied and deliver the best results for farmers. ▪ Understand the pre-conditions and factors that contribute to (determine) the optimal performance of a DATS on a farm. Skills

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Module description	
	▪ Identify and recommend the most appropriate DATS for each case, based on farm-specific characteristics and individual farm requirements. ▪ Evaluate the economic viability of different business models associated with DATSs and provide advice on selecting business (pricing) models that align with farm-specific needs and requirements. <u>Competence</u> ▪ Offer personalized supporting services to farmers, guiding them on the effective application of DATSs in the field.
Topics covered:	▪ Behavioural determinants influencing DATSs adoption. ▪ Strategies for effective communication with farmers regarding DATSs uptake. ▪ Architecture and logic of the QuantiFarm Recommendation tool based on behavioural determinants. ▪ Farmers' perspectives, patterns identified from DATSs use, best practices and lessons learned. ▪ DATSs' suitability assessment and application scope. ▪ Requirements and practical tips for effective DATSs application in the field.
Training format:	▪ Lecture (35 minutes) ▪ Demonstration (10 minutes) ▪ Q&A session / Group discussion (15 minutes) ▪ Assessment (5 minutes)
Type of assessment:	Case study, multiple choice questions
Educational materials:	▪ 1 presentation (ppt) file covering the above-mentioned topics (20-30 slides) ▪ 1-2 case studies with reflection questions from QuantiFarm TCs ▪ Behavioural exercise ▪ 10-15 multiple choice questions
Recommended readings:	▪ QuantiFarm D1.2 "Behavioural Determinants for DATS Adoption" ▪ QuantiFarm D2.2 "Assessment Framework and Policy Monitoring" ▪ QuantiFarm D3.3 "Tools for DATSs Assessment and Policy Monitoring" ▪ QuantiFarm D4.1 "TC evaluation report for reporting period 1"
Instructor(s):	TNO, NEUROPUBLIC, CONSULAI

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3.4.7 Module 7: Methodological part of guidelines and training to help advisors use all the above modules

In this module, trainees will acquire practical insights into using the DIA educational resources and how to facilitate the learning process during the national training sessions. Strategies to maintain learners' engagement will be presented, including the selection of appropriate learning methods according to audience specificities as well as the incorporation of compelling elements such as use cases and video testimonials from farmers who have successfully embraced DATSs. Additionally, the module will provide trainees with design and planning guidelines for effective DATSs demonstrations to both farm advisors and farmers. It will also explore the particularities of advising farm advisors and farmers, offering strategies to address challenges related to communication, cultural differences, and resistance to change. The session will also feature an open discussion with guidelines on how to scale up the DIA methodological and technical components based on the specific needs, characteristics, and requests of training session participants.

Module description	
Title:	Methodological part of guidelines and training to help advisors use all the above modules
Training approach	Train-the-Trainer
Delivery mode:	Face-to-face, online or blended (synchronous)
EQF level:	EQF level 5
Duration:	1 hour
Language:	English
Target group:	TC Leaders, farm advisors, rural consultants, DIHs
Background knowledge:	n/a
Learning outcomes:	Knowledge ▪ Know the communication challenges inherent in advising farm advisors and farmers regarding digital technologies. Skills ▪ Effectively utilize DIA training and supporting resources. ▪ Provide guidance to farm advisors (trainees) on how to effectively present DATSs and the toolkit to farmers. Competence ▪ Deliver DIA modules during national training sessions, demonstrating competency in a) adapting training methodology to the specific needs and characteristics of the local audience, and b) facilitating engaging and informative learning experiences for participants.
Topics covered:	▪ Overview of national training session plan. ▪ Design process of a national training session in the context of QuantiFarm DIA. ▪ How to present DATSs during national training sessions. ▪ How to advise farmers on DATSs selection. ▪ How to advise farmers in using DATSs under real production conditions. ▪ Facilitation methods and learning tips.
Training format:	▪ Lecture (30 minutes) ▪ Group discussion (20 minutes)

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Module description	
	▪ Assessment (10 minutes)
Type of assessment:	Multiple choice questions
Educational materials:	▪ 1 presentation (ppt) file (20-30 slides) ▪ DATS information canvas ▪ 10-15 multiple choice questions
Recommended readings:	▪ https://trainingkit.farmdemo.eu/ ▪ Training manual: Good Agricultural Practices (GAP) Guidelines (link) ▪ YouTube video “Top 12 Facilitation Techniques and Tactics from An Expert Facilitator”
Instructor(s):	NEUROPUBLIC

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4. QuantiFarm DIA: Educational Resources

The DIA encompasses a wide range of educational resources to support training provision across both programme formats (TTT, end-user training) while accommodating diverse learning needs and preferences. These resources include a) presentations and visual aids, b) blueprints and hands-on exercises, c) step-by-step use case scenarios, d) handbooks and manuals, and e) multiple choice questions for assessment and reinforcement.

Presentations are a widely used and effective tool for delivering content and guiding lectures in training sessions. They enhance instructional quality, foster participant engagement, and promote a deeper understanding of the material. As a structured medium, presentations provide a clear outline of key lecture points while serving as a reference source during delivery. They are versatile tools capable of incorporating various visual aids, such as images, figures, charts, and statistical data, to simplify and clarify complex or technical information, making it more accessible and comprehensible for learners,
To support the delivery of QuantiFarm programme, the consortium created a comprehensive set of presentation resources. This collection includes 8 core presentation files, comprising a total of 205 slides. Each presentation is aligned with the main topics of the respective module, supporting the attainment of the intended learning outcomes. Indicative examples of the covered topics include the integrated DATSs adoption framework, the classification of DATSs, the QuantiFarm toolkit and its suite of services, as well as the results derived from DATSs assessment within QuantiFarm Test Cases. In addition to the core presentations, a dedicated introductory presentation was developed to provide an overview of the DIA programme. This resource introduces the context, scope, mechanisms and methodology of the Academy, serving as an initial entry point for the planned training activities. All presentations were meticulously designed to serve a dual purpose: as resources for instructor-led sessions and as self-guided materials. This is because all the DIA educational resources will be published and become available in a dedicated educational dashboard on the QuantiFarm website, supporting asynchronous, self-paced learning. To support this aspect, presentation files are accompanied by lecture notes and supporting documents, where relevant. Finally, to maintain a consistent and professional appearance, a custom-designed template was used for all presentations. This template ensures a unified visual identity and a well-organized content structure, contributing to a cohesive learning experience across all modules.

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Blueprints and hands-on learning resources were created to complement theoretical presentations, offering additional guidance and more importantly enhancing the practical component of training. Typically, hands-on resources (such as case studies) are used to bridge theoretical knowledge with actual application, fostering deeper understanding and practical, firsthand experience. These resources are instrumental in stimulating learners' higher level thinking skills such as analysing, reasoning, critical thinking, and problem solving for the practical application of theoretical concepts. These resources reflect real-life scenarios and are tailored to align with trainees' areas of responsibility, thus enabling them to translate theoretical concepts into actionable insights for specific situations and real-life scenarios. The benefits of hands-on learning are manifold, including improved knowledge retention, practical application of theory, increased motivation and engagement, and opportunities for feedback and reflection.

To support the delivery of the QuantiFarm programme, the following hands-on resources were developed:

- A detailed blueprint was designed as an operational guide and practical example for TC Leaders to plan and structure their national training sessions. This blueprint outlines the key components/elements of a national training session within the DIA, providing guidance on how to setup a training sequence, structure delivery plans and organise content, present topics and engage the audience. Additionally, it provides practical organisational and facilitation tips, as well as logistics management information. In the first EU-wide training session held in Lisbon, participants used the blueprint to prepare outlines of their envisioned national training sessions. Each TC Leader presented their proposal, followed by an engaging discussion where speakers provided clarification and practical advice.
- Case studies were developed as part of Module 4 to further explore selected digital solutions These case studies present the scope, benefits, opportunities and challenges associated with the adoption and usage of these solutions, whilst encouraging learners to analyse their applicability and replicability for the sectors and crops addressed in their TCs, considering factors such as data management, scalability, cost structures and farmers' societal reception in their locations.
- A behavioural exercise was created to enable the practical application of the "WE THRIVE" methodology, designed for farm advisors to understand the perceptions, motivations and barriers of farmers regarding the adoption of DATS. This exercise was based on a specific DATSs adoption scenario and included a series of targeted questions for each "WE THRIVE" methodology component (e.g., technology affinity, heritage, etc.) that can be used to capture responses from potential adopters.
- To assist farm advisors in effectively demonstrating the value propositions of DATSs during their interaction with farmers, an information canvas template was created and provided as a preparatory resource to trainees. This tool enables advisors to detail the main elements of a DATS, demonstrating its potential as a tailored solution for the given agricultural sector and crop. The canvas facilitates contextual analysis, helping advisors communicate the benefits of DATS adoption in a structured and compelling manner.

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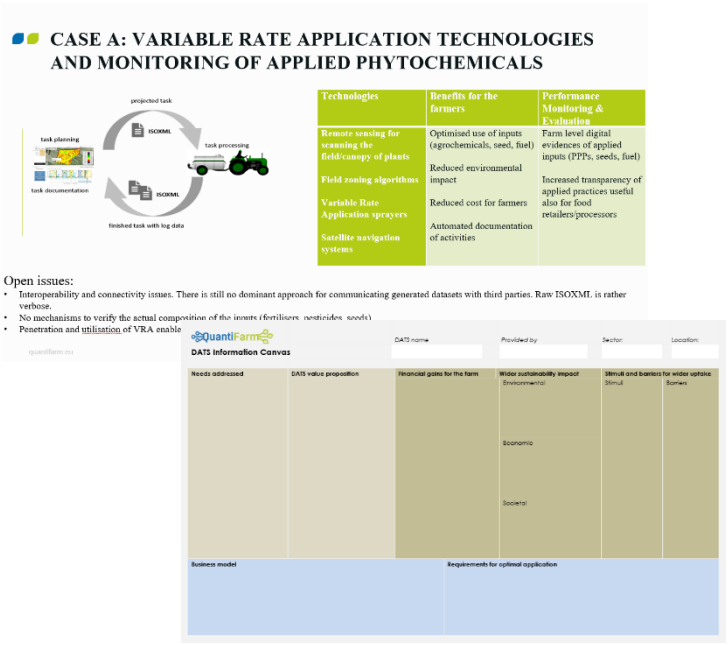
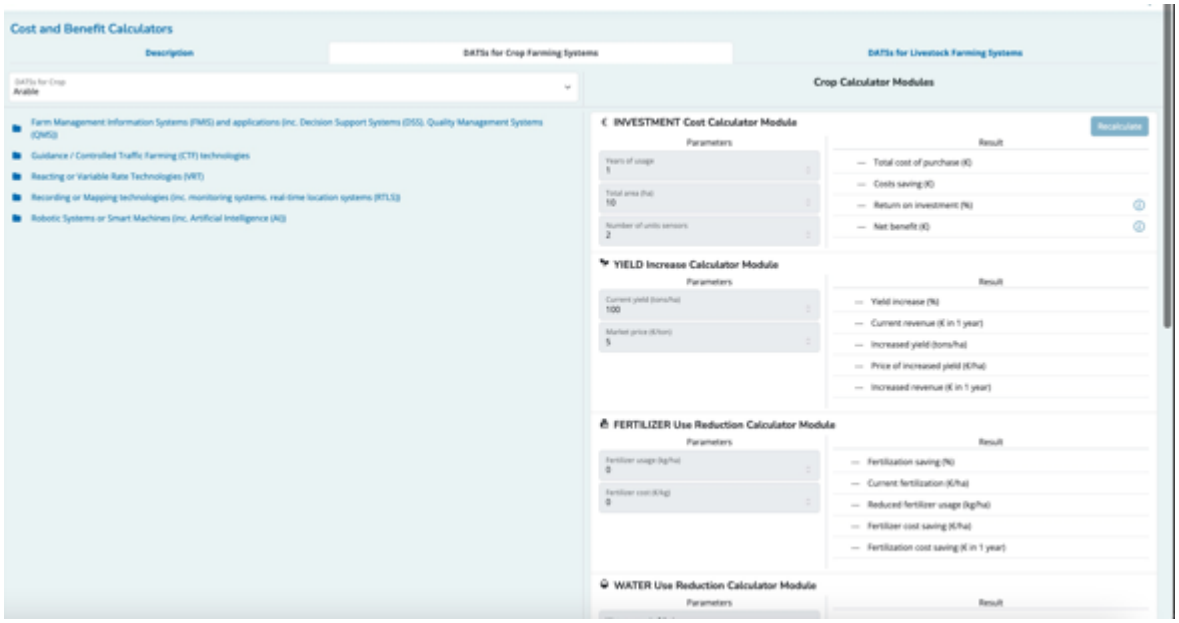


Step-by-step use case scenarios were developed to provide trainees with a practical, guided experience of the tools and services offered within the QuantiFarm toolkit. These scenarios simulate real-world quests within the toolkit environment, helping learners to comprehend how the tools function and work, accomplish specific usage tasks and achieve outcomes such as obtaining tailored recommendations for DATSs based on farm specific characteristics and selected operational criteria or calculating the financial implications of implementing a specific DATSs into when applied to a specific crop and farm profile. By walking trainees through these realistic scenarios, the DIA effectively demonstrates the practical benefits and capabilities of the toolkit while reinforcing the concepts covered in presentations and manuals.



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Handbooks and manuals serve as complementary resources designed to support the delivery of the DIA training programme. These materials provide detailed, step-be-step instructions for each QuantiFarm tool, including the Recommendation System, Cost Benefit Tool, Benchmarking Tool, Policy Monitoring Tool. Accessible online within the QuantiFarm toolkit, these manuals are indispensable for users to build a solid understanding of the tools' features and applications. Trainees are encouraged to thoroughly review these resources to build proficiency before guiding other farm advisors in the national training sessions or utilizing the services directly to support consulting or decision-making tasks. In addition to these manuals, the consortium has developed a comprehensive DATSs compendium. This is a reference guide, providing detailed information on the 38 commercially available DATSs applied and assessed in the QuantiFarm Project, offering insights into their features, technical specs, applications, and benefits. DATSs information within the compendium is based on both company product data (as provided by technological providers) and DATSs assessment results from QuantiFarm TCs, ensuring high degree of credibility. The initial version of the compendium was presented during the 1st EU-wide training workshop in Lisbon, capturing vast interest and positive comments.

The compendium contains information on the following categories.

A. DATS details: This section outlines the foundational attributes of each DATS, providing a clear understanding of its scope, target audience and application areas. Relevant fields include target users, agricultural sectors and crops supported, services offered and main features.
B. Technical specifications: A detailed breakdown of the technical characteristics, ensuring clarity on operational and implementation aspects such as parameters examined, hardware, data sources, modes of delivery (display), required ICT skills and training.
C. Expected benefits: This section highlights the monetary and sustainability benefits from using the DATS, drawing on company product data and supported by empirical data from the QuantiFarm TCs. Relevant fields are benefits from using the DATS, cost-benefit analysis results (based on TC results) and sustainability analysis results (based on TC results).
D. DATS application on the field: This section provides practical guidance on the optimal operation of the DATS on the field, as drawn from actual experience and use in QuantiFarm TCs. Relevant fields are a) requirements for optimal application and results, b) challenges in use, and c) practical tips on how to best use the DATS.
E. Cost: A transparent overview of the financial considerations associated with each DATS, including cost Structure (Business model), investment capital, and annual subscription cost.
F. Additional information and resources: This section compiles supplemental resources to further assist users in retrieving more information about the DATS they are interested in (link, contact details, online manual/brochure and video presentation.

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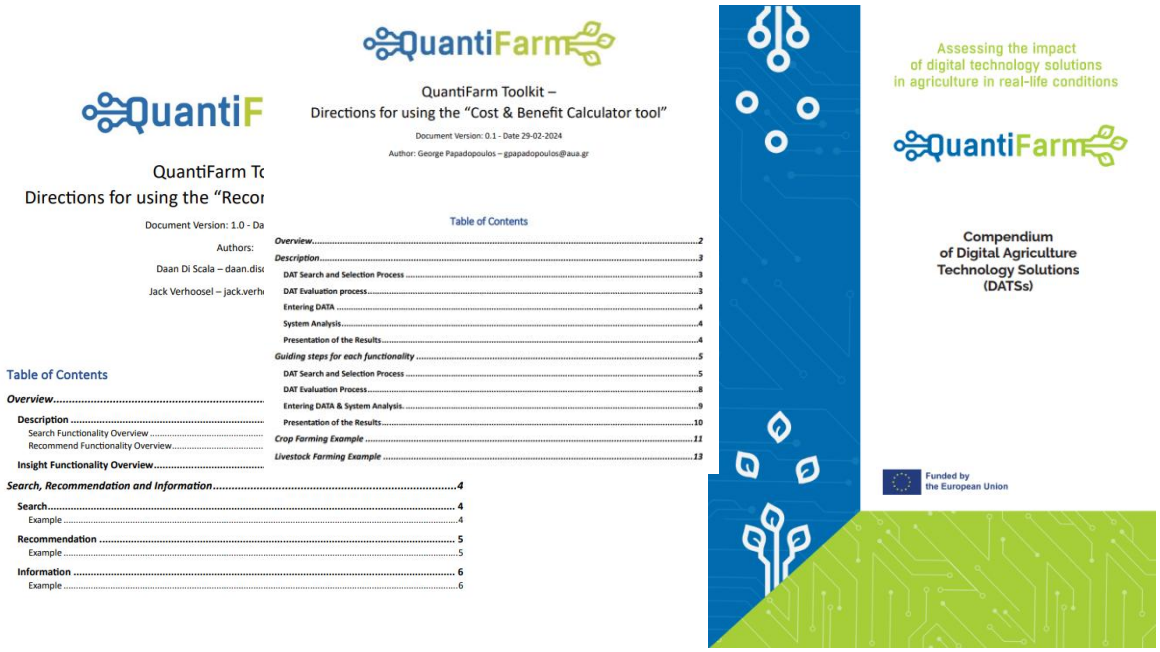

Assessment is an integral component of any structured training programme, serving to evaluate participants' understanding, retention of training material, and knowledge/skills acquisition in relation to the intended learning outcomes. It also helps to measure training effectiveness and pinpoint areas where trainees may require additional attention and development. Assessment can take many forms, including quizzes, tests, practical exercises, case studies or group projects. This diversity allows for flexibility in tailoring the evaluation methods to the nature of the training and the needs of the participants. For the DIA programme, two distinct assessment methods and corresponding materials were designed to suit its dual training formats:

a) Train-the-Trainer Format: Trainees are evaluated, and feedback is provided via a) case studies (blueprint of national training, behavioural exercise, DATSs case studies) that focus on applying theoretical knowledge to real-world scenarios and b) a multiple-choice questionnaire that evaluates theoretical comprehension and concept retention.
b) End-user Training Format: Assessment relies on a multiple-choice questionnaire, ensuring accessibility and straightforward evaluation of key concepts and practical applications.

For the national training sessions, TC Leaders (organizers) retain the flexibility to select the assessment method that best suits their training format, learning objectives, thematic coverage and audience profile.

In total, the DIA programme includes 36 multiple-choice questions, distributed across all training modules. These questions are provided in the form of a Google Form, which features automated score calculation to streamline the assessment process and provide immediate feedback to trainees.

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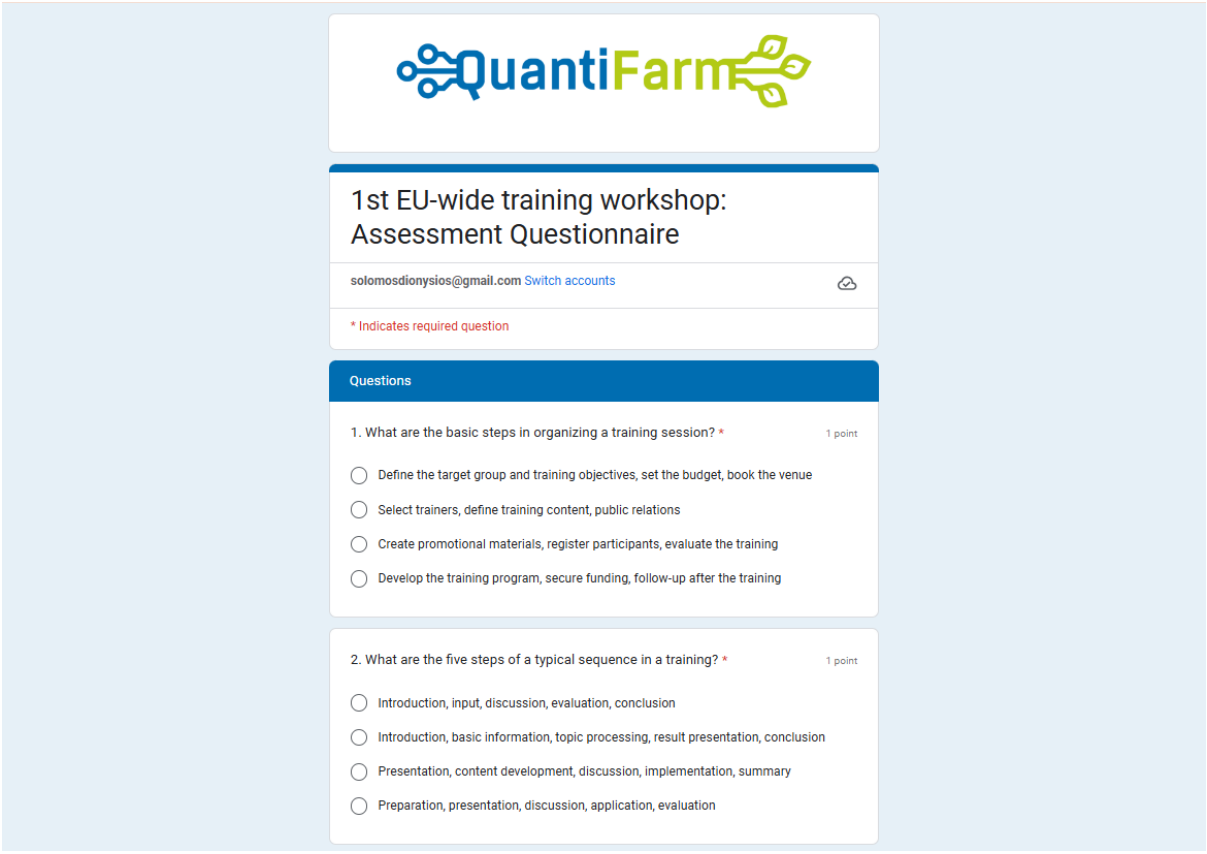

QuantiFarm

1st EU-wide training workshop: Assessment Questionnaire

solomosdionysios@gmail.com Switch accounts

* Indicates required question

Questions

1. What are the basic steps in organizing a training session? * 1 point

- Define the target group and training objectives, set the budget, book the venue
- Select trainers, define training content, public relations
- Create promotional materials, register participants, evaluate the training
- Develop the training program, secure funding, follow-up after the training

2. What are the five steps of a typical sequence in a training? * 1 point

- Introduction, input, discussion, evaluation, conclusion
- Introduction, basic information, topic processing, result presentation, conclusion
- Presentation, content development, discussion, implementation, summary
- Preparation, presentation, discussion, application, evaluation

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5. QuantiFarm DIA: Training Activities

5.1 First EU-wide training workshop

The first EU-wide training workshop of the QuantiFarm DIA took place in Lisbon, Portugal, on 27-28 June 2024. The workshop, hosted by Consulai, followed a Train-the-Trainer (TTT) format, as it was specifically addressed to the TCs and their farm advisors assigned to organise a national training session in their respective location as part of DIA activities. The workshop unfolded in two days and covered all 7 modules of the training curriculum.

Workshop details

- Organiser: QuantiFarm
- Delivery mode: Onsite
- Location: Lisbon, Portugal
- Date: 27-28 June 2024
- Duration: 1.5 days, 10 hours
- Language: English
- Target audience: TCs' farm advisors
- Thematic coverage: Both methodological and technical modules (7 modules)
- Participation: 31 participants from 9 EU countries | 10 Test Cases were represented
- Evaluation: Case studies, online multiple-choice questionnaire
- Feedback session: Evaluation form

List of TCs represented: TC1 (Greece / GAIA & NP), TC11 (Greece / GAIA & NP), TC2 (Portugal / Agromais & CONSULAI), TC26 (Ireland / Teagasc), TC15 (Cyprus / Filagro), TC14 (Serbia / Terra), TC6 (The Netherlands / Delphy), TC16 (The Netherlands / Delphy), TC19 (The Netherlands / Delphy), TC9 (Slovenia / KGZS).

Agenda

The agenda of the first EU-training workshop can be found in Annex A.

Learning objectives

- Understand the intended scope and objectives of the national training sessions within the DIA framework.
- Receive step-by-step guidelines for designing and organizing effective national training sessions.
- Frame the thematic coverage of their session, based on project's results and the generated knowledge.
- Deep dive into the project's main focal areas: Behavioural determinants, DATSs categories, QuantiFarm Toolkit.
- Organise training content and follow the DIA's didactical plan for the delivery of national training sessions.
- Adapt the DIA training methodology to the specific needs and characteristics of the targeted agricultural sector and the local audience.

Interactive sessions

- Outline of envisioned national training sessions, with the aid of the blueprint.
- Behavioural exercise on the practical application of the "WE THRIVE" methodology.
- Reflection on case studies for the application of 4 selected DATSs in own context/setting.

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- Group discussion on how to scale up the DIA's methodological and technical parts based on the needs, characteristics, and particularities of national training sessions.

Trainees' assessment: At the end of workshop on Day 2, participants completed a final assessment questionnaire, comprising 25 questions covering all modules, to assess their level of understanding and knowledge acquisition. The average score was 14 out of 25, with individual scores ranging from 8 to 18 correct answers.

Feedback provision: After the workshop concluded, participants received a feedback form via email to evaluate their experience. The aim was to gather feedback that can be used to improve TTT format/structure, and finetune materials ahead of their final release. The evaluation focused on the following aspects of the training programme: a) structure and delivery, b) learning materials, c) instructors and engagement, d) overall impact, and e) improvement areas. The key findings can be summarised as follows:

- The structure and pacing of the workshop received positive feedback, with participants commending the logical flow and sufficient time allocation.
- High ratings were given to the clarity of objectives and the appropriateness of delivery methods.
- Learning materials were considered relevant and helpful, effectively addressing the topics addressed and striking a good balance between theoretical and practical components.
- Most participants reported that the workshop significantly enhanced their knowledge and skills, with many expressing enhanced confidence in guiding farmers on the selection and application of DATSs.
- The overall experience was deemed **"**very satisfactory and impactful". Participants highlighted hands-on activities and group exercises as the most beneficial aspects of the training.
- To further enhance the effectiveness of the training programme, participants recommended: a) reordering sessions, starting with technical topics and concluding with training didactics to improve coherence, and b) providing more actionable methods and practical examples for engaging participants in national training sessions.

Certificates of attendance were provided to all workshop participants.

Image 2: Photo from the first EU-wide training workshop in Lisbon taken during a lecture session.

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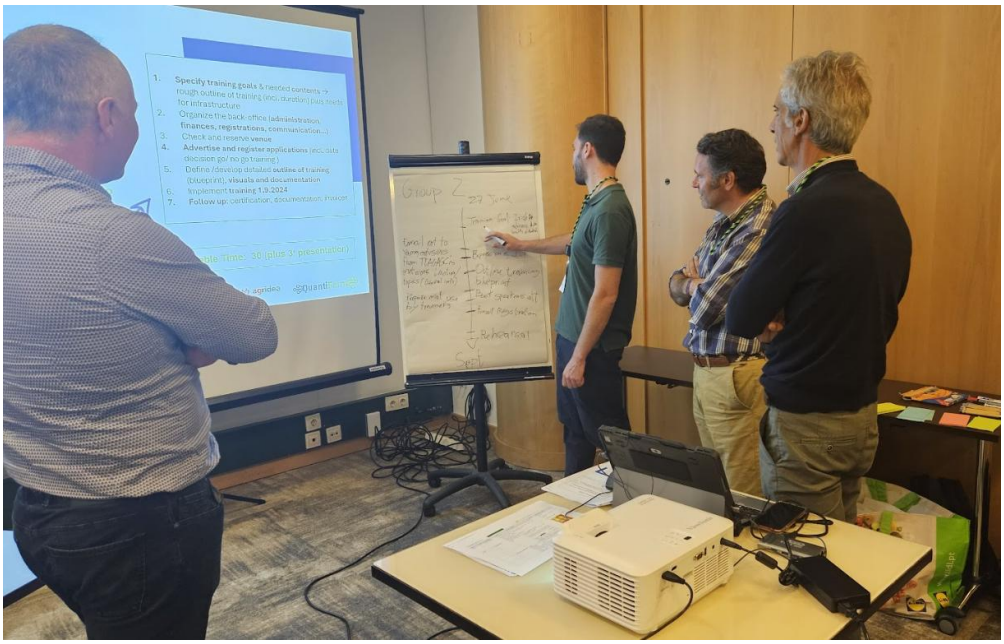

Image 3: Photo from the first EU-wide training workshop in Lisbon taken during a practical exercise.

5.2 Second EU-wide training workshop

The second EU-wide training workshop was originally planned as part of the international IASLB-SEASN-EUFRAS conference, scheduled for 10-13 September in Edinburgh, Scotland (UK). The focus of this year's conference was on sustainability and adaptation to net zero, featuring among others a series of workshops to explore and discuss key sectoral challenges.

Following arrangements with the local organizer, Scotland's Rural College (SRUC), the QuantiFarm DIA was officially included into the workshop series (as it was reflected in the initial agenda of the conference). The QuantiFarm workshop was designed as a three-hour end-user session, covering topics such as DATSs categories, behavioural determinants, the QuantiFarm toolkit, and requirements for effective field application of DATSs.

Approximately 20 days before the event, however, the workshop was cancelled by the organizers due to low registration numbers despite all arrangements being in place. Attempts to negotiate an alternative approach with the organizers were unsuccessful, as no feasible solution could be found to meet our organizational requirements and delivery needs.

As a result, efforts were redirected to organising an online training workshop in collaboration with the European Forum for Agricultural and Rural Advisory Services (EUFRAS). The second EU-wide training workshop was finally conducted online on 28 November 2024. Co-hosted by QuantiFarm and EUFRAS, the workshop served a dual function a) to further develop the knowledge background of TC Leaders and their farm advisors who attended the first workshop, addressing any questions that arose from a deeper review of the learning materials, and b) to strengthen the advisory skills of a critical mass of external farm advisors in the field of digital farming and DATSs. In that regard, the workshop adopted a hybrid format, combining elements of a Train-the-Trainer (TTT) session and an end-user training session, albeit with limited focus on training methodological aspects.

Workshop details

- Organisers: QuantiFarm & EUFRAS
- Delivery mode: Online
- Location: MS Teams

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- Date: Thursday 28 November 2024
- Duration: 3 hours
- Time: 10:00 – 13:00 CET
- Language: English
- Target audience: TCs, farm advisors and rural consultants
- Thematic coverage: Technical modules
- Participation: 97 attendees from 23 countries
- Assessment: Online multiple-choice questionnaire
- Feedback session: Evaluation form
- Recorded session: https://www.youtube.com/watch?v=Cjv4ZaZPcfg

Workshop description

Over the past decade, digital technologies have revolutionized agriculture and food production, becoming indispensable for enhancing operational efficiency, cutting costs, and boosting productivity. Digital Agriculture Technology Solutions (DATSs) leverage data to aid decision making and make farming more accurate and controlled, whether in crop cultivation or livestock management. Despite significant investments and anticipated benefits, however, the adoption rate among EU farmers has not met expectations. This slow uptake can be attributed to various factors, including limited awareness about these solutions among farmers but also farm advisors, the lack of concrete evidence regarding DATSs' costs and benefits and their sustainability impact, as well as sociocultural and behavioural factors that hinder adoption. In this context, QuantiFarm has developed a Digital Innovation Academy (DIA) to raise farm advisors' awareness about DATSs and strengthen their capacity to deliver effective advisory services to farmers in the field of digital farming.

Workshop objectives and value for participants

By participating in this workshop, farm advisors will:

- Gain a deep understanding of the factors and motivations influencing both the adoption and non-adoption of DATSs by farmers.
- Obtain comprehensive insights into the various categories of DATSs, their potential benefits, costs, and impact on sustainability within agriculture.
- Learn to use the QuantiFarm toolkit to provide personalized advisory services, helping farmers select and use DATSs tailored to their unique needs.
- Effectively support farmers in using DATSs in real-life production conditions and adopting appropriate business or operational models.

Workshop programme

Time	Topic	Speaker
09:50 – 10:00	Registration and connectivity test	All
10:00 – 10:15	Introduction to QuantiFarm Digital Innovation Academy (DIA)	Dionysios Solomos (GAIA)
10:15 – 11:00	Behavioural determinants affecting DATSs adoption and strategies for effective communication with farmers	Caroline van der Weerdt (TNO)
11:00 – 11:45	Digital Agricultural Technology Solutions (DATS): Types, benefits, costs and sustainability implications	George Papadopoulos (AUA)
11:45 – 12:30	How to use the QuantiFarm toolkit to facilitate decision-making regarding DATSs.	Nikos Kalatzis (NP)

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Time	Topic	Speaker
12:30 – 12:50	Q&A discussion	Tania Demirtzioglou (NP)
12:50 – 13:00	Online assessment (multiple choice questionnaire)	All

Workshop promotion

The online workshop was promoted through the following channels:

- A "Save the Date" announcement published on the EUFRAS official website (link).
- Direct invitation emails sent to EUFRAS country delegates and members.
- Inclusion of the workshop details into the EUFRAS newsletter.
- Promotion of the planned workshop during the EUFRAS General Assembly 2025.
- Social media marketing campaigns launched by QuantiFarm and individual partners (link).
- Direct invitation emails sent to QuantiFarm TCs and the partners' network of interested farm advisors and rural consultants.

Image 4: The online invitation for the EU-wide online training workshop on DATSs

Participation analytics

- The online training workshop exceeded initial expectations, attracting 97 participants from 23 countries, including Afghanistan, Ukraine, Portugal, Greece, Italy, Netherlands, Slovakia, Estonia, Serbia, North Macedonia, Italy, Spain, Latvia, Albania, Lithuania, Croatia, Slovenia, Portugal, Germany, Belgium, Hungary, Finland and Ireland.
- The attendees came from diverse professional backgrounds, with the majority being agronomists, agricultural/rural consultants, researchers and PhD candidates from domains that position them as current and future advisors. The cohort also included project managers, representatives from DIHs and cooperatives, IT staff and executives from ICT companies.
- For roughly half of participants, this was the first time attending a training session on digital farming. This highlights both the novelty of the QuantiFarm DIA and a significant gap in current professional training provision related to new agricultural technological solutions.

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- Participants brought a wide a range of experience in farm consulting, distributed as follows: 0–2 years: 40 participants (indicating many newcomers to the field), 3–5 years: 27 participants, 6–10 years: 16 participants, 11–15 years: 12 participants and 16+ years: 12 participants. This balanced distribution underlines the workshop's appeal to both early-career (young) and seasoned farm advisors, demonstrating the DIA's relevance across different stages of professional development.
- In terms of familiarity with digital farming, the largest group of participants reported either **slight** or **moderate familiarity** with the topic. This suggests that while most attendees have some exposure to the concept, they may lack in-depth understanding or practical experience with DATSs, which is considered vital for effectively advising farmers on DATS selection and use.

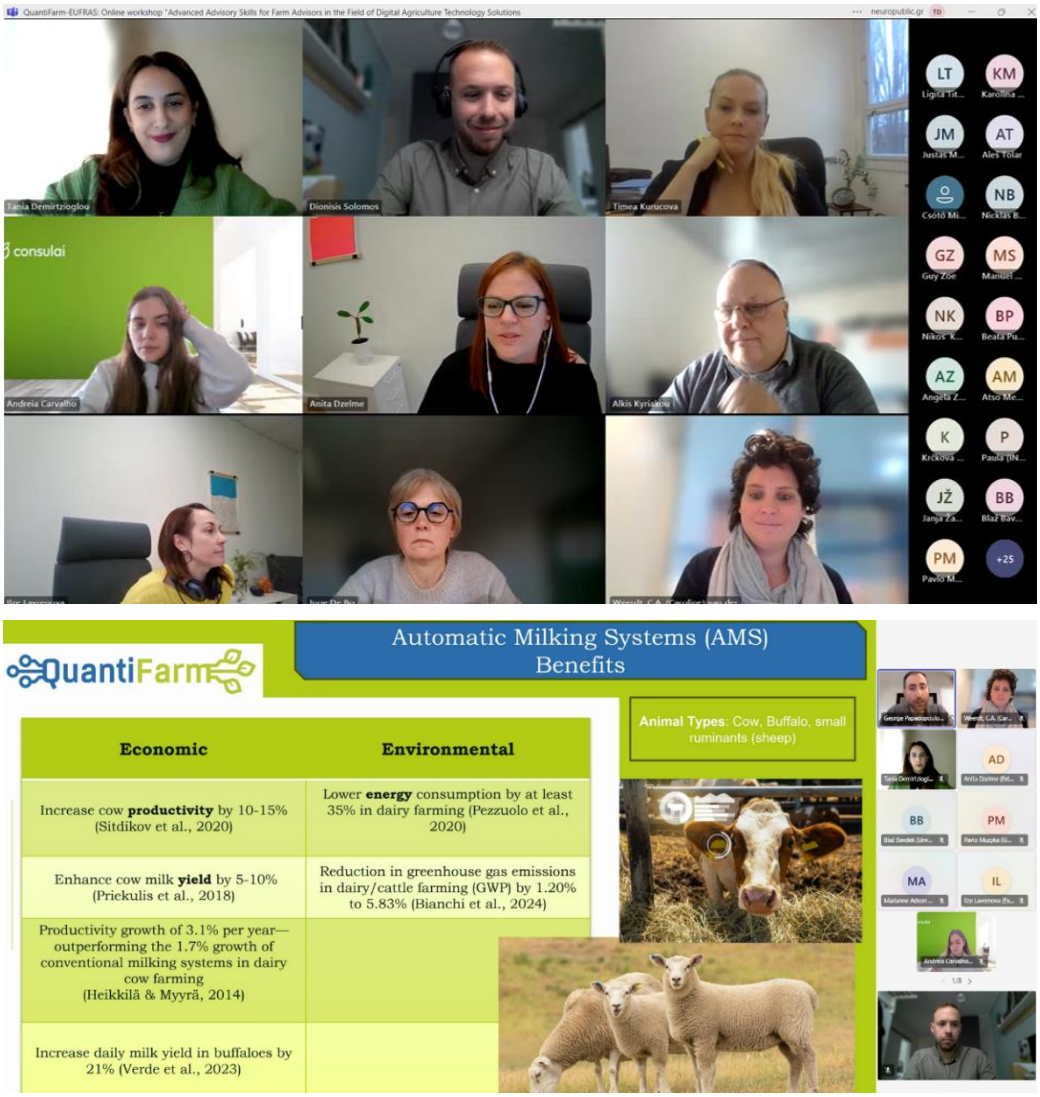

Image 5: Screenshots from the online training workshop

Trainees' assessment

After the workshop, participants were invited via email to complete a final assessment questionnaire, comprising 15 questions covering all the topics addressed during the three-hour training. This questionnaire was meant to help attendees assess their knowledge acquisition and pinpoint areas for further exploration and study. The average score was 11.33 out of 15 with individual scores ranging from 5 to 15 correct answers.

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5.3 National training sessions

Following the successful organization of the two EU-wide training workshops (1 TTT and 1 hybrid), TC Leaders and their farm advisors are well equipped to proceed with the organization of their respective national training sessions. The DIA prescribes the organization of 10 national training sessions, intended to train and strengthen the advisory capacities of a broader audience of agricultural advisors in TC locations. The purpose, with the national sessions, is to create a critical mass of qualified advisors who can effectively support farmers at the local level in the selection, adoption and application of DATSs.

These sessions will have a sectoral focus, addressing the agricultural sector and crop(s) most relevant to each TC. Discussions will concentrate on the QuantiFarm core themes, the examined DATS(s), and strategies for supporting farmers in these specific crop cultivations to enhance their operational efficiency, productivity, and sustainability performance through the adoption of DATS.

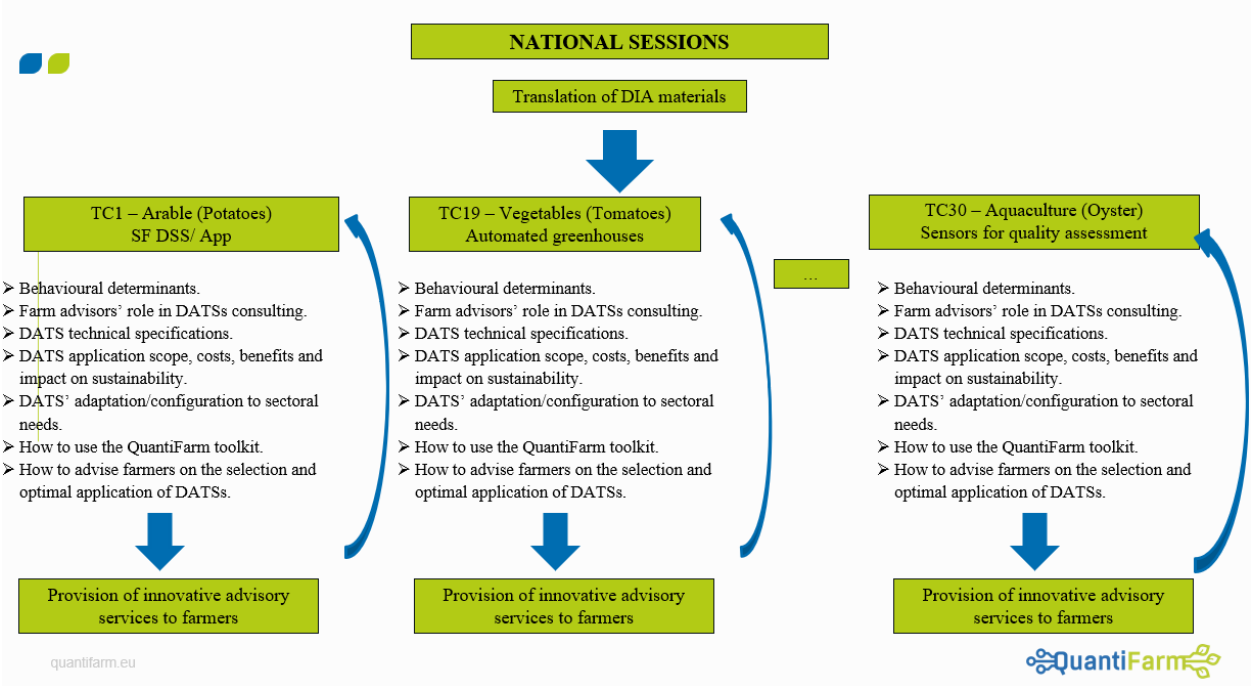

Figure 3: Overview of national training sessions' plan

The national training sessions will be held during the first half of 2025 (from January to June) and may be conducted either online or in person. Organizers are also given the flexibility to incorporate a national training session as part into a broader training or licensing event or to host a series of events, if this is deemed necessary to capture genuine interest, attract a relevant audience and create a meaningful impact. In all cases, the selection of the delivery mode should align with the structure of the local agricultural advisory market and the specific contextual conditions, and meet the following minimum requirements:

1) The QuantiFarm session should be included as a core component of the planned event and be prominently included in the agenda.
2) The agenda should clearly outline the QuantiFarm session's particular topics.
3) The planned QuantiFarm session should address the main focal points addressed by the DIA programme.

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Delivery details

- Timeline: January 2025 – June 2025
- Delivery mode: Remote or physical (up to each organizer)
- Focus: Crops specific topics relevant to each TC (sectoral) & QuantiFarm focal points
- Duration: 3-4 hours
- Language: National language
- Registration: Pre-registration form with a screening questionnaire to assess participants' level of knowledge in relation to DATSs and digital farming.
- Participation: 15-30 farm advisors (expected minimum attendance)

Indicative agenda for an online national training session

The following is a sample agenda for the national training session planned for TC11 in Greece, targeting the olive farming sector. This is only indicative, and TC Leaders retain the flexibility to adapt the agenda based on their local settings, specific delivery mode/format, training objectives and audience profile.

- Session 1: Introduction to QuantiFarm DIA and workshop objectives
- Session 2: Perspectives and challenges in olive farming for Greece
- Session 3: DATSs: Categories, application scope, cost-benefits and impact on sustainability
- Session 4: The role of farm advisors in DATSs' adoption and application
- Session 5: The innovative smart farming system 'gaiasense': Application in olive farming
- Session 6: Differentiated real-time application of agricultural inputs with the Augmenta system: Application in olives
- Session 7: The QuantiFarm toolkit: A user-friendly decision support service for farmers, advisors and policy makers on DATSs
- Session 8: Open discussion – Interactive session

Materials requirements

To ensure accessibility and effective learning, national training sessions should be delivered in local languages. Therefore, it is necessary for all TC Leaders to translate the DIA educational resources that will be used and presented in their session. In addition to the existing DIA materials, TC Leaders are encouraged to develop supplementary resources to support the delivery of their training workshops, if necessary. These might include:

- Input presentation for the sector/crop addressed in each TC (at the local / national level).
- Input presentation for the examined DATSs in each TC (1-2 selected solutions to further showcase).
- Demonstration video(s) OR testimonial(s) for the examined DATSs.

TC	TC Leader	Country	Crop	Delivery Mode	Date
TC1	NP	Greece	Potatoes	Online	March 2025
TC2	AGROMAIS	Portugal	Corn	Onsite	March 2025
TC6	DELPHY	Netherlands	Wheat, onions, potatoes	Onsite (series of events)	TBD
TC9	KGZS	Slovenia	Barley, corn, wheat	TBD	TBD

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TC	TC Leader	Country	Crop	Delivery Mode	Date
TC11	NP	Greece	Olives	Online	March 2025
TC14	TERRA	Serbia	Strawberries	TBD	TBD
TC15	FILAGRO	Cyprus	Olives	TBD	TBD
TC16	DELPHY	Netherlands	Apples	Onsite (series of events)	Jan – June 2025
TC19	DELPHY	Netherlands	Tomatoes	Onsite (series of events)	TBD
TC26	TEAGASC	Ireland	Livestock	Onsite	June 2025

Table 4: Projections for national training sessions (as of December 2024)

5.4 Online educational platform

To facilitate asynchronous learning and wide accessibility, all the materials developed under the QuantiFarm DIA will be made openly available and accessible on a dedicated platform. The QuantiFarm educational platform, to be featured in the project's official website, will be designed to function as a modular online course, offering flexible, self-paced learning opportunities to farm advisors and rural consultants who seek to enhance their knowledge and strengthen their advisory skills in the field of digital farming and DATSs.

The platform's structure will align with the DIA curriculum, encompassing both TTT and end-user training modules. It will consolidate the entire package of (versatile) educational resources developed by the project (see section 3.4). All the materials will be openly available, without access restrictions, allowing learners to download and study them at their own pace and according to their individual learning objectives. At the same time, all materials will be available to educational providers wishing to incorporate them into their own training offerings or design new courses based on DIA resources.

In addition to the core DIA resources, the educational platform will offer supplementary materials to enhance the learning experience. These will include practical information on how to navigate the platform, a welcome video, the recorded DIA training session(s), recommended readings, reflection questions, and self-tests. It will also include project deliverables covering key DIA themes, so that learners can gain access and benefit from the results and data obtained by the multi-year study that took place in QuantiFarm TCs, and other research findings compiled during the project.

Overall, this platform will essentially contribute to the long-term sustainability of the Academy, enabling wide access for relevant actors across Europe.

The platform is scheduled for launch in the first half of 2025. Preparatory steps have already begun, including the conceptualization, hosting setup, and definition of key design principles to ensure an intuitive and effective learning environment.

5.5 Integration into formal education

QuantiFarm will pursue the integration of the DIA into formal education, targeting both higher education (HE) and vocational education and training (VET) programs of relevant agricultural specialties. Expanding to formal education will increase the DIA's outreach to future farm advisors, while helping to address gaps that pertain to digital farming and DATSs in current education provision.

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The DIA's mixed training methodology - combining both TTT and end-user elements – enables seamless incorporation of its modular subject areas into existing programs, introducing new, specialized content tailored to industry needs. The initial idea is the main subject areas – behavioural determinants, DATSs categories, QuantiFarm toolkit, advisory techniques - to be organised as a distinct, stand-alone course. However, as the project evolves and feedback is provided by trainees, the content structure might be refined. This iterative process will determine the number of courses, their target audiences, duration, and the depth of subject matter, adapting to the varying expertise levels of trainees.

As a first step and pilot initiative, the Agricultural University of Athens (AUA) will use DIA educational resources as part of course delivery for a relevant program. The long-term objective is the DIA to be eventually integrated as a fully-fledged course or module session within a formal qualification. Following the pilot and potential refinements in teaching methodology and content, the DIA will be proposed to other HE and VET institutions in agriculture and related specialties to broaden its adoption and impact.

5.6 Integration into CECRA competency programme

The original plan, as outlined in the DoA and D5.1, was to design the DIA based on the principles and format of the CECRA competency program (www.cecra.net/en/home/) and its Train-the-Trainer approach. The aim was to eventually integrate the DIA into CECRA, which is one of the most prominent, accredited training programs for farm advisors and consultants in Europe, thereby increasing its potential impact and applicability.

CECRA seminars strictly follow the "Train the Trainer" model but also operate according to a particular advisory process. This advisory process is a target- and solution-oriented communicative relationship between client and advisor, actively shaped by both parties. In this process, the advisory service is bound to neutrality and geared exclusively to the client's success. The advisor must possess sound social, personal and communication competencies, as well as expert knowledge that is kept up to date via training, to successfully guide advisory processes. In addition to advising individual enterprises, this involves supporting cooperative ventures and cross-sector advisory projects, as well as organizing adult-education provision.

After consultation with CECRA representatives, it became apparent that CECRA primarily emphasizes soft skills, whereas a significant part of the DIA focuses on more technical subjects, as closely related to DATSs. This misalignment necessitated an alternative approach, with the consortium opting to design activities and learning materials drawing upon insights, lessons, and best practices from the EU-funded projects "FAIRshare" and "i2connect", which also employ a 'Train-theTrainer' approach.

This does not mean that integration efforts with CECRA have been abandoned. On the contrary, discussions are still ongoing with the technical committee and the DIA training methodology has been carefully articulated to align with the principles of the CECRA competence framework. All the DIA modules have been crafted based on the official CECRA template to ensure enhanced consistency and compatibility. Finally, the learning materials draw on insights, lessons, and best practices from EU-funded projects and other accredited training program, addressing both soft and technical skills, which are essential for delivering effective advisory services in the field of digital farming and DATSs.

5.7 DIA-powered advisory services for farmers

The overarching purpose of the Academy is to build a critical mass of farm advisors and rural consultants qualified to deliver innovative advisory services in the field of digital farming within their respective countries. The trained advisors will play a pivotal role in raising awareness about the merits/advantages of digitalization and the potential benefits of DATSs in specific contexts/crops,

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actively engaging and supporting farmers in the selection, uptake and practical application of DATSs tailored to their farm profiles and operational needs.

By leveraging their existing networks of producers and participating in initiatives such as the QuantiFarm Demo Events organized by each TC, these advisors will effectively inform producers about the available and relevant DATSs. Additionally, they will guide farmers in using the QuantiFarm Toolkit to identify the most appropriate DATS(s) for their specific circumstances. Beyond selection, advisors will offer targeted advisory services to ensure the efficient application and utilization of the chosen DATS on the farm, yielding the best possible results.

Thus, the advisor's role extends beyond simply informing farmers about digital solutions. It centers on providing expert guidance in identifying suitable DATSs and supporting their effective application, enabling farmers to fully harness the potential of these technologies for their operations.

5.8 Timeline of DIA activities

Training Event	Date
Definition of DIA methodological approach & plan	July 2022 – June 2023
Curriculum design	July 2023 – December 2023
Materials development	January 2024 – June 2024
1st EU-wide training workshop	27-28 June 2024
2nd EU-wide training workshop	28 November 2024
10 national training sessions	January 2025 – June 2025
Digital educational platform	March 2025
Integration into HE/VET programs	December 2025
Advisory services to farmers	November 2024 to December 2025

Table 5. Time schedule of training events

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6. Conclusions

The QuantiFarm DIA is a comprehensive capacity building program designed to strengthen the capacities of farm advisors and rural consultants in the field of digital farming. The scope of the Academy is to empower advisors with the knowledge and (technical and soft) skills needed to deliver innovative, personalised advisory services regarding the selection, uptake and application of DATSs, tailored to the unique needs and specific characteristics of individual farms.

The DIA employs a hybrid Train-the-Trainer and Direct End-User Training scheme, combining both synchronous and asynchronous methods of training provision. DIA prescribes 4 mechanisms for upskilling farm advisors in the field of digital farming and DATSs, including: a) two EU-wide training workshops (TTTs), b) ten national training sessions with a sectoral, crop-specific focus, c) a digital education platform enabling asynchronous, self-paced learning, and d) integration into formal education, targeting future advisors.

Since the last reporting period - as reflected in the previous version of the deliverable (namely D5.1) - significant progress was made in developing and implementing DIA activities, including:

- Refinement of the DIA educational approach and delivery methods.
- Determination of training activities.
- Finalisation of curriculum structure and module specifications.
- Development of educational resources.
- Development of supporting organisational resources for the planned training activities.
- Setting the framework and requirements for the national training sessions.

In addition, two EU-wide training workshops were organised, providing training to approximately 140 farm advisors and rural consultants from 23 countries. The first workshop, held in Lisbon on 27-28 June 2024, followed a Train-the-Trainer (TTT) format. It was specifically addressed to the TCs and their farm advisors tasked with the organisation of a national training session in their respective location as part of the DIA activities. The second EU-wide training workshop was conducted online on 28 November 2024. Co-hosted by QuantiFarm and EUFRAS, the workshop served a dual function a) to further develop the knowledge background of TC Leaders and their farm advisors who attended the first workshop, addressing any questions that arose from a deeper review of the learning materials, and b) to strengthen the advisory skills of a critical mass of external farm advisors in the field of digital farming and DATSs. Participation exceeded initial expectations, and the two workshops was highly engaging and productive. Participants gave positive feedback, highlighting that the DIA capacity building events and educational resources significantly improved their knowledge and advisory skills in the field of digital farming. Notably, many trainees expressed increased confidence in advising and guiding farmers on the selection and application of DATSs.

For the upcoming period, the DIA will continue advancing its objectives with the following actions:

- Finetuning educational resources based on trainees' feedback.
- Translating educational resources and creating new content for the national training sessions.
- Organising national training sessions in targeted TCs locations.
- Launching the digital educational platform.
- Showcasing the programme at networking events to increase visibility and attract genuine interest from target groups.
- Exploring the potential of co-organising training workshops with thematically relevant projects, initiatives and networks.

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- Adjusting modules and training content for integration into formal education, prioritising collaboration with the Agricultural University of Athens.
- Reinforcing efforts to integrate the DIA into the “CECRA” professional competency program.
- Promoting the DIA to European Digital Innovation Hubs (EDIHs) and supporting their training efforts.

Through these actions, the DIA aims to establish itself as a cornerstone for capacity building in digital farming and DATSs, empowering advisors to drive innovation and sustainable practices in agriculture.

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Annex A: Agenda of the first EU-wide training workshop

Day 1: Thursday 27 June 2024, 09:00-17:15 (local time)

Time	Session	Facilitator(s)
08:45-09:00	Registration	
09:00-09:20	**Opening Session: Presentation of QuantiFarm DIA**	Dionysios Solomos (GAIA)

09:20-11:20	**Session 1: Methodological part of how to organise a national training session in the field of DATSs**.
	• Presentation
	  ○ Scope, intended objectives and format of national training sessions in the frame of QuantiFarm DIA.
	  ○ Steps for organizing a national training session.
	  ○ Typical pitfalls and how to prevent them.
	• Hands-on exercise "Planning a national training course based on QuantiFarm Blueprint"
	• QA session / Open discussion
		Olivia Harmann and Markus Rombach (AGRIDEA)

11:20-11:30	Coffee Break	

11:30-13:00	**Session 2: Didactical part of "Train the Trainer"**
	• Presentation
	  ○ National training educational principles.
	  ○ Key considerations & components of a national Training program.
	  ○ Typical pitfalls into national training moderation.
	  ○ Tips on how to handle challenging moments when moderating a national training.
	• Hands-on exercise "Turning a typical training into a national training session"
	• QA session / Open discussion
		Olivia Harmann and Markus Rombach (AGRIDEA)

13:00-14:00	Lunch Break	

14:00-15:30	**Session 3: Methodological part of adaptation of a national session on the use of a DATS to different settings.**
	• Presentation
	  ○ Factors that influence the choice of training methodology and the selection of DATSs based on contextual conditions.
	  ○ Methods and approaches to adapting national sessions to a given setting.
	• Demonstration: Practical examples of adapting DIA to a given setting and DATS
	• QA session / Open discussion
		Olivia Harmann and Markus Rombach (AGRIDEA)

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Time	Session	Facilitator(s)
15:30-15:45	Coffee Break	

15:45-17:15	**Session 4: Training on various types of DATs and their potential benefits, costs, and sustainability impacts**
	• Presentation (45 minutes)
	  ○ The role of farm advisors in DATSs uptake by farmers (Filagro).
	  ○ Regulatory compliance obligations arising from farm-level DATSs usage (Filagro).
	  ○ DATSs: Fundamental concepts and categorization (NP).
	  ○ DATSs presentation (per category): Application scope, technical specs, costs, financial benefits, sustainability impact (NP).
	• Case studies with reflection: Delving into DATS details - Presentation of a selected DATS from each category (NP - 30 minutes)
	• QA session / Open discussion (15 minutes)
		Nikos Kalatzis (NP)
		
		Savvas Maliotis (Filagro)

17:15	End of the 1st day of the training workshop	

Day 2: Friday 28 June 2024, 09:00-12:45 (local time)

Time	Topic	Presenter(s)
08:45-09:00	Registration	

09:00-10:00	**Session 5: Technical part on how to use the QuantiFarm Toolkit**
	• Presentation (25 minutes)
	  ○ QuantiFarm Toolkit: Theoretical foundations, scope, and uses.
	  ○ QuantiFarm Toolkit: Dashboard structure and features.
	  ○ QuantiFarm Recommendation Tool.
	  ○ QuantiFarm Benchmarking Tool.
	  ○ QuantiFarm Cost-Benefit Calculator.
	  ○ QuantiFarm Advanced Decision Support Tool
	  ○ Ethical considerations
	• Use case scenario with step-by-step walkthrough (20 minutes)
	• QA session / Open discussion (15 minutes)
		Nikos Kalatzis (NP)

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Time	Topic	Presenter(s)

10:00-11:00	**Session 6: Recommendations under which conditions and in which way DATSs deliver best results for a farmer**
	• Part 1: Understanding DATSs adoption dynamics (20 minutes).
	  ○ Behavioural determinants influencing DATSs adoption (TNO).
	  ○ Strategies for effective communication with farmers regarding DATSs uptake (TNO).
	  ○ Architecture and logic of the QuantiFarm Recommendation tool (TNO).
	• Part 2: Practical insights into DATSs application (20 minutes).
	  ○ Requirements and practical tips for effective DATSs application in the field (NP).
	  ○ Farmers' perspectives, lessons learned, and patterns identified from DATS use within QuantiFarm Test Cases (Consulai).
	• Interactive exercise: Farmers' Behavioural Profiling (TNO – 10 minutes)
	• QA session / Open discussion (10 minutes)
		Caroline van der Weerdt (TNO)
		
		Nikos Kalatzis (NP)
		
		Diogo Moniz (Consulai)

11:00-11:15	Coffee Break	

11:15-12:15	**Session 7: Methodological part of guidelines and training to help advisors use all DIA modules**
	• Presentation (30 minutes)
	  ○ How to present DATSs to a farmers' audience
	  ○ How to advise farmers on DATSs selection
	  ○ Facilitation tips and supporting materials for making national training sessions more practical and engaging.
	• Group discussion on how to scale up DIA methodological and technical parts based on the needs, characteristics, and specific requests of training session participants (30 minutes).
		Dionysios Solomos (GAIA)
		
		Markus Rombach (AGRIDEA)

12:15-12:45	**Evaluation: Online multiple-choice questionnaire**	
12:45	End of the 2nd day of the training workshop	

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