



# FAIRshare

DIGITAL TOOLS FOR FARM ADVISORS



# **D6.1: Implementation of digital advisory tool adoption business cases**

**Authors: Johannes Weiss, Franz Hobmeier (NATURLAND)**

**Contributions from: Peter Parea (ZLTO), Evi Arachoviti,  
Philippa Gray (I4Agri), John Hyland (Teagasc), Benedicte  
Fusai (IDELE), Elena-Teodora Miron (LKO)**

# Technical References

Project Acronym	FAIRshare
Project Title	Farm Advisory digital innovation tools realised and shared
Project No.	H2020 818488
Project Coordinator	Teagasc
Contact	John Hyland (John.Hyland@teagasc.ie) and Tom Kelly (Tom.Kelly@teagasc.ie)

Deliverable No.	D6.1
Deliverable Name	Implementation of digital advisory tool adoption business cases
Dissemination level	Public
Work Package	WP6
Task	6.1 – Identify a business case and assign roles and find additional resources/ finance to realise better adoption of DATS with the aim to reach the Vision in each UC
Lead beneficiary	NATURLAND
Contributing beneficiaries	ZLTO, I4Agri, Teagasc, IDELE, LKO
Deliverable type	Report
Due date of deliverable	M27 – 31 January 2021 – extension to 28 February 2021
Actual submission date	28.02.2021

v	Date	Beneficiary	Author
1	28.02.21	Naturland	Johannes Weiß, Franz Hobmeier

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# 1. Introduction

FAIRshare is an EU 2020 Horizon project, which intends to promote and further develop the use of digital advisory tools in agricultural farming in Europe. As a preparation for this, a current situation analysis with an inventory of digital tools in the EU has to be carried out. In the work of WP1, an inventory was developed that collects a wide range of tools and presents them as an easily comprehensible overview. This database serves as an important basis for the further progress of the project. In order to improve the use of digital tools and to push them further, it is necessary to know the current barriers that have prevented their increased use so far. This results in certain challenges that the project, but also the entire sector, will have to face and find ways to overcome and solve these problems. A good overview of Hopes & Fears regarding the increased use of DATS in agriculture and advisory services can be found in D5.1, as well as in D3.3 and D3.4, for example.

A key point of the whole project are the user cases (UC), which directly adapt the use of digital tools to the needs of the practice and properly implement them. In the pilots (observation of DATS adoption), the advisors will choose a new approach. They all face a challenge in different topics, which they describe in a User Case. When they defined what they want to achieve, they choose DATS from the FAIRshare inventory (<https://fairshare-pnf.eu/>) in that context and use them as a key factor in the user case to improve, change or renew their advisory service. This development will be planned in a business case, action plan, roadmap and then the implementation will be monitored. Support and training are organised in parallel.

The work of the user case (9 PM) will be done in WP 4, 5 and 6:

- T4.2 30 user cases and a series of pilot tools
- T4.3 Learning from ongoing pilot adoptions of DATS
- T4.4 Use of an assessment tool about adoption
- T5.2 Review environmental factors influencing adoption of DATS
- T5.3 Strategic vision, approach-supporting adoption
- T5.4 Action plan à finance plan/acquisition
- T5.5 Roadmap
- T6.1 Business Case
- T6.2 Implementation
- T6.3 Cross Visits
- T6.4 Training, fostering adaption of DATS
- T6.5 Train trainers
- T6.6 Assessment of training and adoption support activities

Table 4 **Fehler! Verweisquelle konnte nicht gefunden werden.** on page 22 clearly shows the schedule of the individual tasks. Of course, the other WP in connection with the UC cannot be ignored. For example, WP 7 is in close exchange with the progress of the adaptation, implementation, and daily use of the UC in order to share the experience gathered with all those interested in this topic.

The first step in the work with the user cases is task 4.2 in which the selected UC are identified and described. In parallel, in task 6.1, a business case is planned for the correspondingly defined user case of the assigned partners, which will provide a starting point for the action plan and the business plan in task 5.4.

T6.1 describes 20 Business Cases (BC) involving pilots derived from the 20 assigned User Cases (UC).

The aim of task 6.1 is to identify a business case, assign roles and find additional resources to realise better adoption of DATS to reach the vision in each UC.

Task 6.1 identifies specific UC actions in business case format, which will be carried out in task 5.4 and 5.5 on action plans and road maps. For each UC national network, it will describe which stakeholders could realise these solutions and the resources required. It will identify important actions that cannot be financed by existing funding and help the UC assign the budget for these actions. It will identify how business case actions can be delivered and monitored in a standardised way.

In this report, there is the developed template, which can be used for each business case of the user cases.

## **2. Definition of a Business Case (BC)**

What do we expect under a Business Case? The term describes a wide variety of possibilities for taking a differentiated view of a project or plans. This is often confused with a business plan. However, this usually considers the value creation or reorientation of an entire company. In other words, a business case is far less extensive, but still important, compared to a business plan. In essence, a business plan is based on a business case and turns those sometimes theoretical costs and concepts into a practical strategy.

The BC describes the financial solution to an internal problem, the financing of which is to be set out and justified by elaborating the details in a BC (Maes, et al., 2014) (Raynus, 2012).

The special aim of the BC of each UC in the FAIRshare project is to clearly define the problem and to use uniform terminology for it. An

understandable and targeted description of the BC leads to the easier implementation of the planned measures, such as the preparation of a business plan, in the further course of the project and the individual UCs.

<b>Business Case vs. Business Plan</b>		
	<b>A Business Case....</b>	<b>A Business Plan...</b>
<b>Is organized around...</b>	A single action or single decision and its alternatives.	An organization or the whole enterprise. The plan may cover a single product or product line or the whole organization.
<b>Predicts...</b>	Cash flow results and important non-financial impacts that follow from the action.	Business performance of the organization, especially in the main categories of the income statement. May include projected pro-forma income statements or balance sheets for future years.
<b>Focuses on...</b>	Business objectives for the action. (What the action is meant to accomplish).	Business objectives for the organization.
<b>Is based on ...</b>	A cost model and a benefits rationale, designed for the case, and applied to one or more action scenarios.	The business model for the organization (showing where and how the company makes money, similar to income statement), as well as expected trends, competitor actions, etc.
<b>Measures...</b>	Financial metrics such as NPV, ROI, payback period, and TCO, based on projected cash flow. Also includes important non-financial impacts.	Business performance in terms such as sales, margins, profits, and business "health" by contributions to important balance sheet categories.
<b>In a non-profit or government organization...</b>	The scope of the case may include benefits and costs to the population served as well as the organization itself.	May focus on funding needs, budgetary requirements, and ability to operate within budget.

Figure 1: Difference between business case and business plan. (Raynus, 2012)

It can be determined that a business case is more a decision-making tool that explains the “why” of a general issue and to a certain extent the “what” (Einhorn, et al., 2020). Therefore, a business plan describes the approach to solving the problem with a more detailed description of the issue, and finally what resources and labour are needed to solve it in what way.

### 3. Template of a Business Case for FAIRshare User Cases

To make it easier for partners to describe the UC and BC, we decided to create a common template for the definitions of each UC. In the first step, we focused on the 20 assigned UCs of the partners. In preparations for the call for tenders for the additional UCs, it became clear that this had to be very well elaborated and specific in order to be able to acquire and

generate suitable and meaningful UCs. The high quality of these and the awareness of their importance for the respective organisation must be explained in advance to keep the risk of termination as low as possible in the further course. On the other hand, the call for tenders must also be defined as interesting and well-defined as possible in order to attract a sufficient number of interested parties in the end. For these reasons, this report focuses on the description of the 20 assigned UC and BC.

The BC-template aims to give a defined structure and it should run like a thread through each BC per UC. It describes the key facts of the detailed challenge described in the UC. Including all introductory considerations, the problem description, the goal description and the means each UC plans to use to reach the goal. Consideration of the possible risks, their probability of occurrence and the possible consequences or countermeasures are included as well.

### **3.1. Finding a business case model**

In the economy, there are several models of different approaches and visualisation possibilities of a business case. Both the canvas model and the COBIT 5 model (Figure 2 and Figure 3) are unsuitable for use in the context of user cases. Although the general topics are mostly identical in meaning and approach, the design of the individual points is very different. Furthermore, the business case in the FAIRshare internal UC is to be evaluated as a separate development. Due to these reasons and in order to be able to present the format of a BC to the partners in a comprehensible and clear way, the canvas model was adapted and modified into the so-called "House of BC" (Figure 4). This was to ensure that even project partners who are not yet very familiar with a BC can easily find their way within the template, can receive explanations and completed the template gradually.

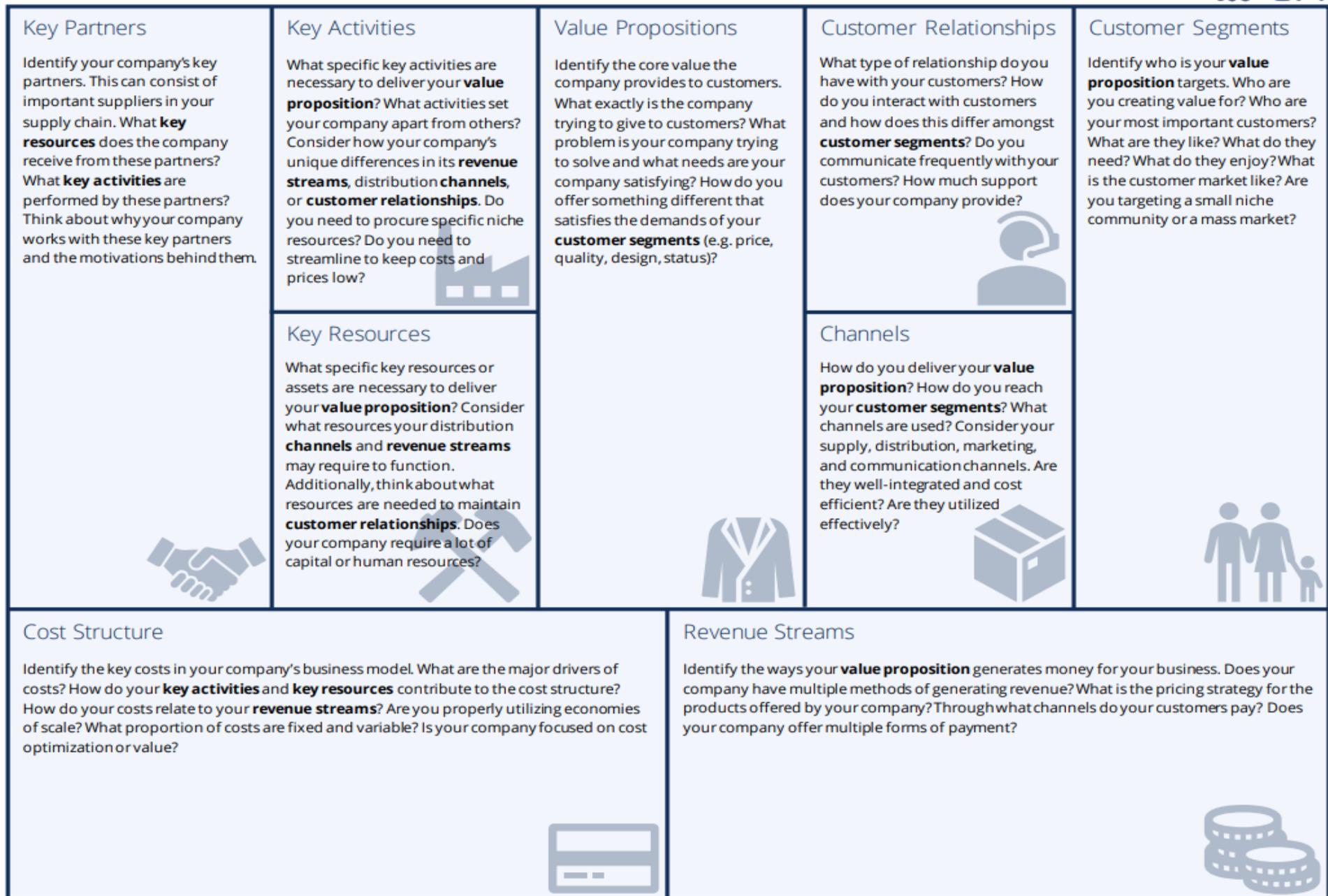


Figure 2: Business Case Model Canvas. (Anon., n.d.)

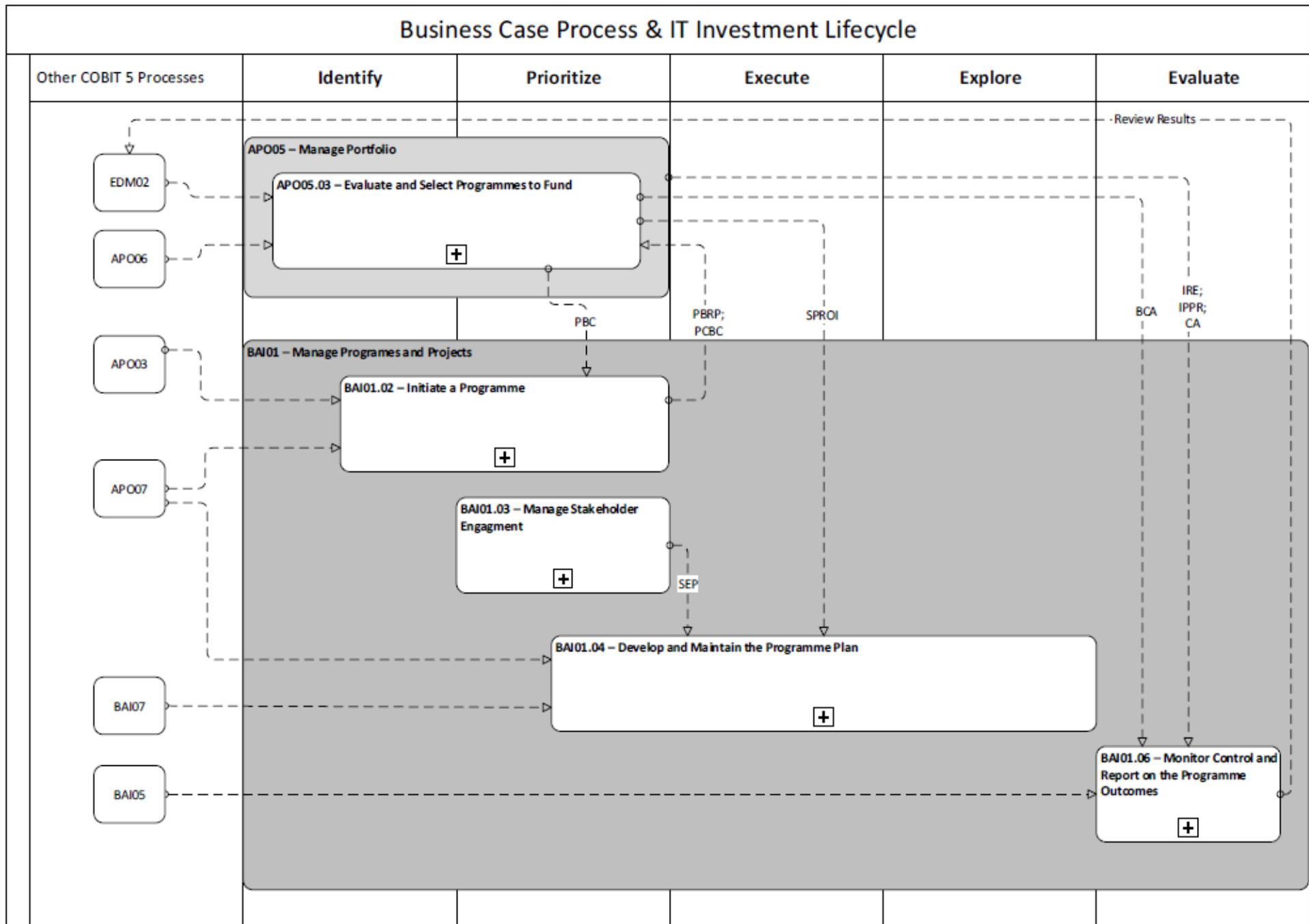


Figure 3: Business Case Process COBIT 5. (Pereira, et al., 2017)

### 3.2. Business case model: House of business case

Figure 4 clearly explains the value of the individual aspects recorded and their relationships to another. The challenge or problem, together with the target group, shows the “foundation” of the whole project. The ground floor with costs, resources and approach make the requirements in the investment of effort clear. Therefore, the “windows” reinforce the importance and impact of the clear definitions of these aspects.

After classifying and selecting one or more DATS that are suitable to solve the previously mentioned problem the activities can be planned. Various actions like cross visits and training will be described in more detail in Tasks 6.3 and 6.4. In addition, the specific business plan for each UC will be developed in Task 5.4. It is important to describe the added value and to define exactly what is expected to be gained from the implementation of the DATS. The controlling or value analysis is essential for the protection and success of the project. Setting up breaking points and objectives, checking compliance with them and measuring the overall performance are some of the tasks.

The lightning rod or in this case the “risk rod” is characteristic for the consideration of the possible dangers that can endanger the project and therefore necessary for its protection! It is important to compare the added value with the value of the current situation to measure the effectiveness of the whole case.

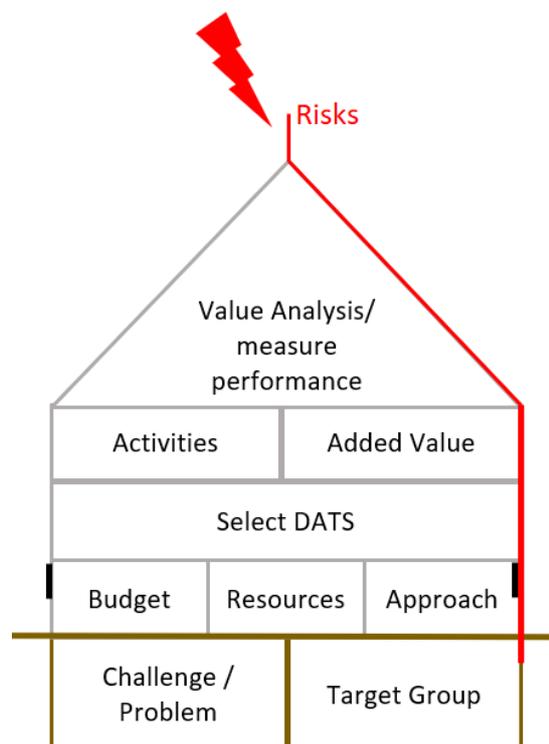


Figure 4: House of Business Case. own illustration

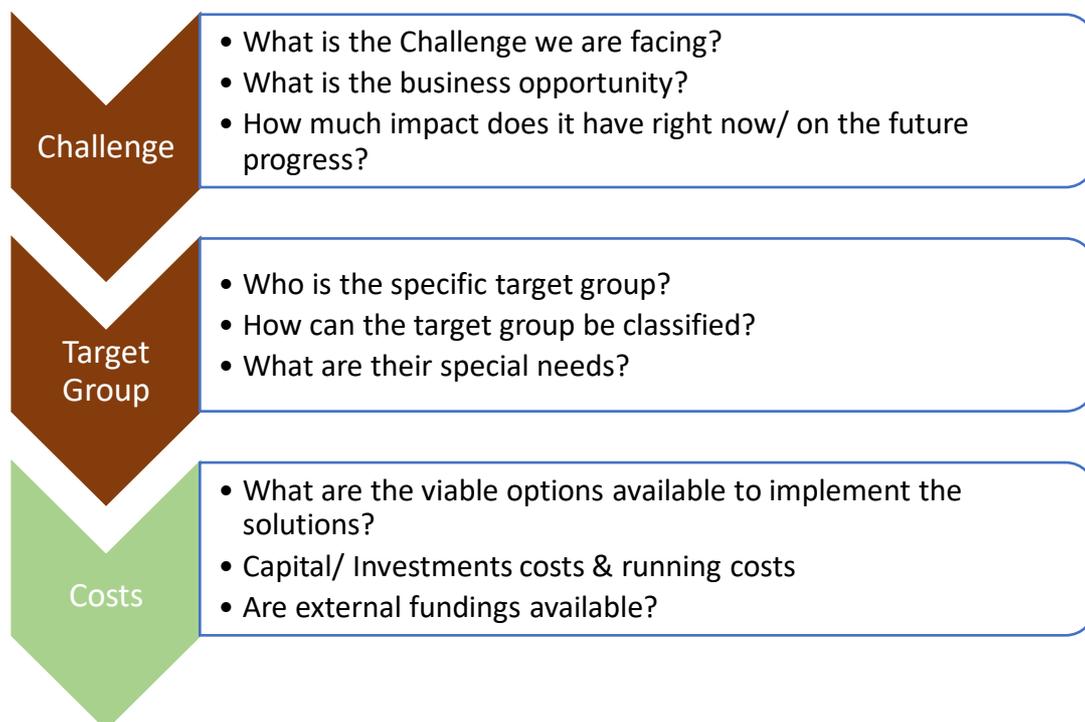
### 3.3. Business case template

The template aims to give partners a defined structure for each BC per UC. In addition, it should run like a thread through each BC. Including all introductory considerations, the problem description, the goal description and the means each UC plans to use to reach the goal. Consideration of the possible risks, their probability of occurrence and the possible consequences or countermeasures.

According to Thorp (2014), a business case must answer the following types of questions:

1. **Are we doing the right things?** – What is proposed?
2. **Are we doing them the right way?** – How will it be done?
3. **Are we getting them done well?** – Do we have competent and available technical and business resources and funds?
4. **Are we getting the benefits?** – How will the benefits be delivery? Do we have a clear understanding of the expected benefits? Do we have an effective value management process?

The BC template we propose covers all questions above. Thus, it enables the partners to get a 100% understanding of their own BC (Figure 5).



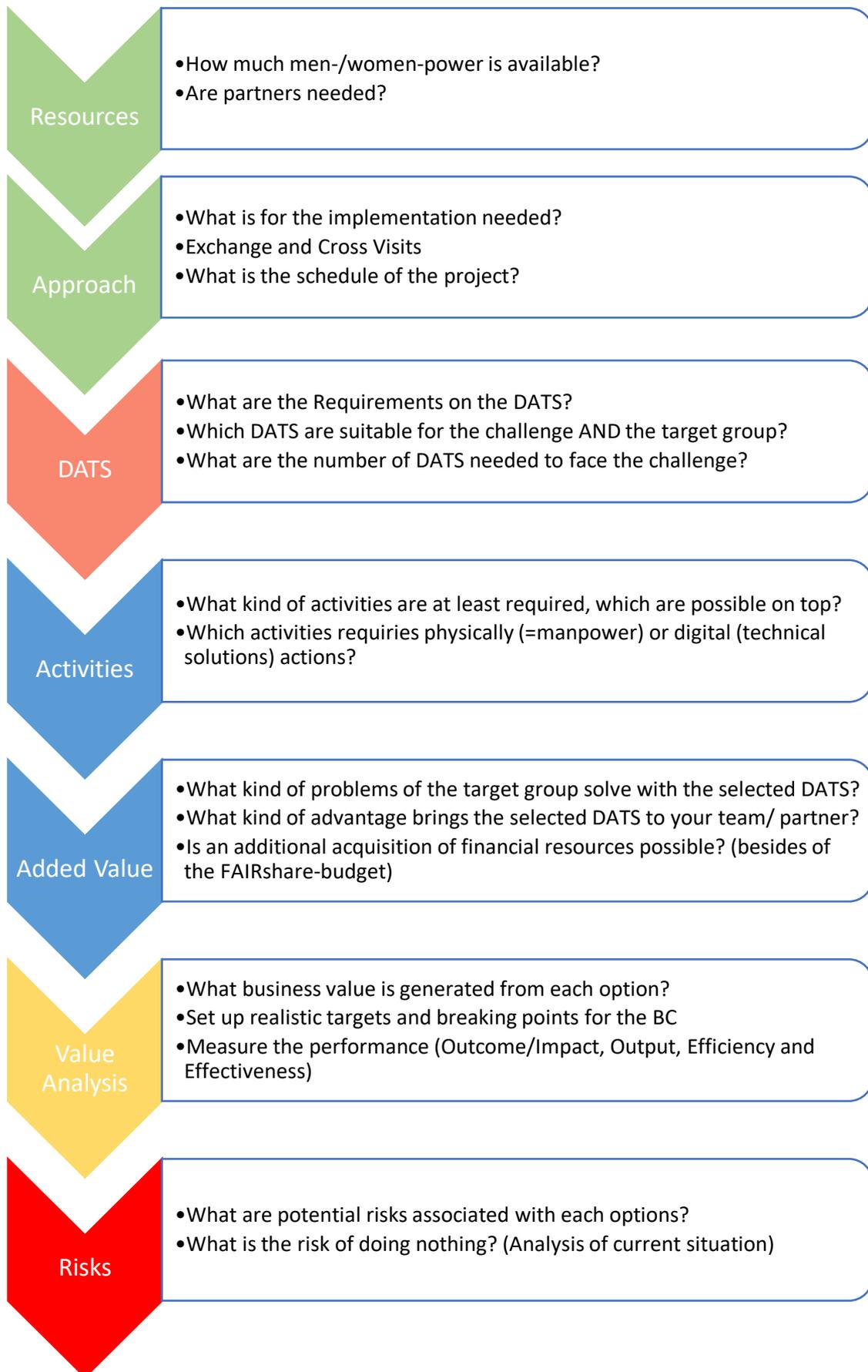


Figure 5: detailed point of the BC template

The template of BC was shared simultaneously with the description of each UC, so the partners have had the chance, to fill in both for their specific User Case within one document without the risk of confusion.

### **3.4. Progress of filling the BC by partners/activities**

The partners received the two templates of the BC and UC in a combined document that was already stored separately for each partner on the SharePoint. In addition, Naturland, I4Agri and ZLTO provided their completed descriptions as best-practice cases, which the partners could use as a guide while they were completing them. The fact that this was used became clear in several concrete requests about individual points in the examples. In December 2020, however, it appeared that there were some delays due to other various FAIRshare activities, such as the focus groups (T 3.4). The partners were reminded several times of the possibility of contacting the responsible persons from Naturland, I4Agri and ZLTO in order to discuss and solve specific questions. The following several requests by email or direct calls with the partners made it clear that the basic understanding of a user case was often not clearly defined or sufficiently comprehensible. The delay in completing the BC template has confirmed the assumption that the application of a BC for a detailed project is often misunderstood by the people in charge and difficult to apply (Einhorn, et al., 2020).

After several gaps were still recognisable in the descriptions by the deadline of January 13th, it became obvious that the budget question, in particular, was often not clear. It was communicated to the partners that the BC cannot define the exact cost of a UC. It should rather give people an impulse to think about the assigned UC and to describe its scope. The budget of each UC is clearly defined in advance. Table 1 gives a quick but clear overview of the allocated budget per UC.

Furthermore, an additional Q&A round was set up as additional support to clarify all open questions in the plenary of the partners. For this purpose, all partners could submit questions in advance, which were then clarified together on 28 January. The program of the Q&A round was as follows:

1. Explanation of context of the UC in the project, next steps with the UC
2. Finance of the BC
  - Available PMs, personnel costs, and other costs – how to use them
  - Extra budget
  - Answering all questions, which were provided before

- Further explanation of BC
  - best practice example of Naturland
- Open question Tour de Table for all participants

The online video conference was well attended with more than 20 participants and all relevant questions of the partners could be clarified. The slides of the event are attached (see Annex). The focus of the questions was on the one hand on the definition and further process of the UC and on the other hand on the structure of the budget. It was already clear in advance that these two points were the most frequently discussed.

Specific questions concerning the individual UCs have clarified in direct phone calls afterwards so that the completeness of most of the descriptions was achieved by the end of January.

Several partners filled in missing points in the descriptions, so that the results for Deliverables 4.2 & 6.1 look encouraging (Figure 6). During the entire period, a dashboard was created on which the partners could see the progress of their completed template. The results were regularly updated by Naturland.

Use Case	TEAGAS	SEAS	IPN1	IPN2	CAFS1	CAFS2	MofA1	MofA2	INAGR	EPC	ZLTO	INTIA	I4AGR	CAJAM	CONS	IDELE	NAK	NATUR	APCA	RCOA	LKO	LAAS	
Organisation/ title of the User Case	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4	
Identification of the needs/ challenges advisors face	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Learning history or Future in the context of history	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
General assessment of adoption	4		4	4	4	4	4	4	4	4	4	4	4	4	4	3	4	4	3		4	4	
Factors influencing the current status of DAT in the UC	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Vision	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Action plan for adoption	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Business case																							
Challenge/Problem (SAME)	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Target Group	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Budget + external finance (incl FAIRshare budget)	4		3	3	3	3	3	3	4	4	4	4	4	4	4	3	4	4	4	4		4	4
Resources	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Approach	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Selecting DATS	4		4	3	4	4	4	4	3	4	4	4	4	4	4	3	4	4	4	4		4	4
Activities	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3		4	4	
Added Value	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Value Analysis/ How to measure performance	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Risks	4		3	4	4	4	3	3	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Cross Visits	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4
Training, fostering adaption of DATS	4		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		4	4

Figure 6: Dashboard of UCBC descriptions. Status: 10th of February 2021. Johannes Weiß (Naturland)

legend	
empty	1
1 <sup>st</sup> idea	2
half	3
complete	4
regional hub leaders	

Table 1: overview of UC budget. Jim Codd (CIRCA)

Participant/Third Party no and short name (Drop down list & Note 6)	Per User Case	Explanation of cost per user case	
<b>Country</b>			
<b>Number of user Cases</b>			1
<b>% indirect costs</b>	<b>25,00%</b>		<b>25%</b>
<b>Grant Rate</b>	<b>100,00%</b>		<b>100%</b>
<b>Personnel Cost Per PM</b>	<b>€5.500,00</b>		<b>€5.500,00</b>
<b>1 Person months (PM)</b>	<b>9,00</b>		<b>9,00</b>
WP04 Person Months	2,00		2,00
WP05 Person Months	2,00		2,00
WP06 Person Months	5,00		5,00
<b>2 Personnel Cost</b>	<b>€49.500,00</b>		<b>€49.500,00</b>
<b>4 Other Direct Costs</b>	<b>€22.500,00</b>		<b>€22.500,00</b>
4-1 Travel and Subsistence	€2.400,00	€1,200 for TRAVEL: Assuming 20km per person * 20 people * 6 workshops * €0.50 per km. €1,200 for LUNCHES: €10 per person * 20 people * 6 workshops.	2.400,00
4-3 Other Goods and Services	<b>€20.100,00</b>	€9,000 for CROSS VISITS: 6 visits at €1,500 each. €5,000 for TRANSLATIONS: 5 translations at €1,000 each. €6,100 for USER TRAINING INITIATIVES: (1 user case * 10 advisers @ 250 each * 2 days) + (1 user case * 1 trainer * €550 each * 2 days).	20.100,00
<b>5 Total Direct Costs (2 + 3 + 4)</b>	<b>€72.000,00</b>		<b>€72.000,00</b>
<b>6 Indirect Costs ((5-4) * 25%)</b>	<b>€18.000,00</b>		<b>€18.000,00</b>
<b>7 Total Costs (5 + 6)</b>	<b>€90.000,00</b>		<b>€90.000,00</b>
<b>8 Max EC contribution (7 * Grant Rate)</b>	<b>€90.000,00</b>		<b>€90.000,00</b>
<b>9 Requested EC contribution</b>	<b>€90.000,00</b>		<b>€90.000,00</b>

## 4. Overview of the returned business cases

### 4.1. Challenges described from partners in the returned BCs

A wide range of topics was covered by the delivered UCs and BCs. The partners did a comprehensive job in fulfilling the templates with the challenges they are facing and the first ideas of how they can overcome these barriers and with which kind of digital tool. It is not important where the exact tools to solve the problem have not been identified yet as the appropriate choice can still be made at a later date. However, the chosen tool should be included in the generally accessible FAIRshare inventory.

As presented in Figure 7, the sectors specify of the UCs are classified in order to get a better overview of the main topics of the 20 assigned UCs but note that multiple topics were possible.

All descriptions were returned by the 3<sup>rd</sup> of February 2021.

#### Distribution of topics in the Business Cases

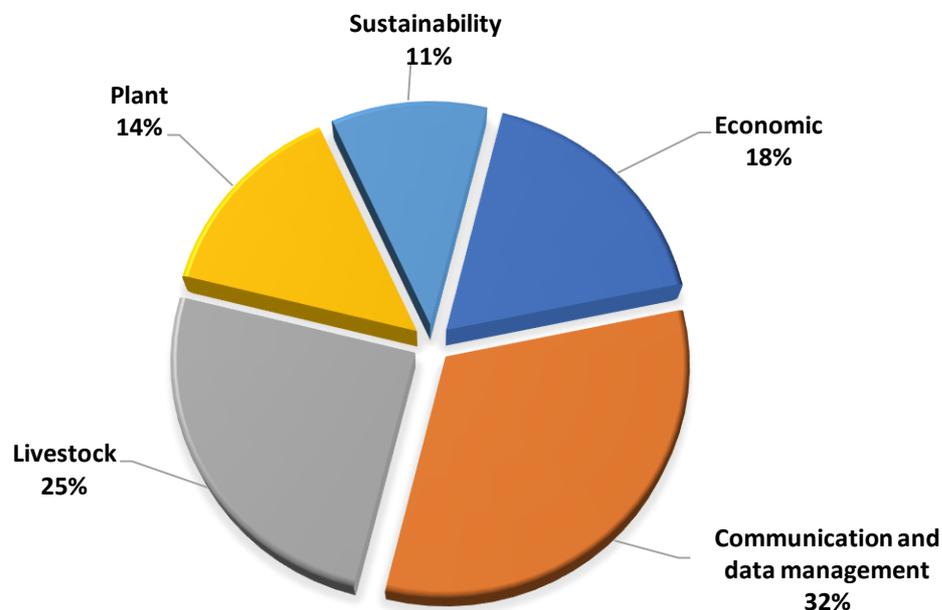


Figure 7: Distribution of topics in the BC (multiple topics per BC possible)

Figure 7 is more a breakdown of the themes, rather than a detailed analysis. A detailed overview is provided in Table 2 and 3, in which all BCs are combined.

As can be seen in the illustration, the topic of communication and data management is the most frequently mentioned problem area which the partners want to deal with and solve within the framework of the UC. The focus areas of economics, crop production and animal husbandry are mentioned more or less equally often. Improving sustainability has also been identified three times as the main topic.

As of all BCs are going to tackle a need for a group of advisors. The accompanying higher work efficiency for the advisors was not categorized. The selected DATS should be as attractive to use for the advisors and the farmers so that the added value in higher work efficiency stands for itself. Every DATS used in the UCs includes a certain part of communication regarding adoption, adaption, training and further activities.

Table 2: overview of provided BC of the partners – part 1

	TEAGASC	CAFS 1	CAFS 2	IPN 2	IPN 1	MOFA 2	MOFA 1	INAGRO	EPC	ZLTO
Organisation/ title of the User Case	Teagasc – Better access to digital services and information for Advisors and Farmers. Advisors/client Dashboard	Digitalisation of the conventional agricultural advisory service model	ISM + tool?!	DATS FOR IMPROVEMENT OF HEALTH AND WELFARE OF DAIRY COWS IN SOUTH-EAST EUROPE-SEE	IPN – Farm Profitability and Gross Margin Calculation	Questions and answers - Farmer's information center	PhytoView - Pest Monitoring System in horticulture	INAGRO helps advisers tackling ration challenges on dairy farm	Overcoming the challenge of farm sensor data interpretation for the optimization of poultry production	Use Case Data Driven Decisions, Join efforts for a better dataset and decision support
Challenge/Problem (SAME)	there are more than 40 DATS existing, but are not visible to farmers and advisors, farmers and advisors need to be able to review data performance	not enough finance for developing digital advisory tools - strong need for communication between farmers, advisors and within each other with using digital tools	strategic planning workshops are hard to set up for advisors, ISM+ tool would help them, setting up trainings and workshops for farmer to do strategic planning and development of the farm	missing tools to objectively and systematically assess the level of animal health and welfare on dairy farms	information in laptops and reports cannot present a good overview of existing knowledge,	inadequate means of farmers inquiries, non-structured knowledge basis, transparency of inquiries solving, lack of quality assurance, difficult analysis and distribution of knowledge and information	slow pest monitoring process, no digitalised data processing, basic and poor reporting, inability to gain broader picture, man power required for maintaining system and trainings	improving the service towards dairy farmers on ration; challenge of exchanging about ration practices without ability of face-to-face meetings	interpretation of data of key production processes -> data based support system, automatized dashboards allow monitoring poultry production, health and welfare status	Help farmers to take decisions that improve performance on farms, bring together relevant data, select main challenges and define improvement targets/KPIs, produce the graphs that support and evaluate the actions taken, work together with advisors from Vion slaughterhouse.
Target Group	advisors and farmers	farmers and advisors	advisors	farmers and advisors	farmers and advisors	advisors and farmers	farmers and advisors+	dairy ration & management advisors	poultry farmers with multiple poultry houses	20 advisors, 400 users
Budget + external finance (incl FAIRshare budget)	100.000	90.000	90.000	90.000	46.800	85.800	90.000	55.000	49.500	15.000
Resources	missing	done	done	done	missing	done	done	done	done	20 advisors in ZLTO
Approach	link all existing DATS to a single dashboard	information exchange, trainings, implementation, dissemination	innovative approach in advising, where farmers actually prepare their own business plan for their farm with the help of advisors	training of advisors, publishing articles, encourage research studies, implementation	Connecting the most appropriate GM calculation DAT among all existing DATS	Distribution of inquiries to specialist groups, answers are published officially and groups of answers and questions become part of the advisors service.	collect background information, train end users, address the gaps in implementation, assurance will be assessed, evaluation, creating custom report	refers to UC action plan	define data sources, data dashboards, data benchmarking, farm advice	Improve the advice given to farmers with a further improved dataset that comes from the collaboration with Vion. Test the effect of the advice and overviews.
Selecting DATS	will be selected	will be selected	ISM+	will be selected	will be developed	No DATS with similar set of integrated resources are recognised	will be developed	missing	will be selected	overview of offer in dutch advisory support tools
Activities	regular meetings and workshops, training and rollout, feedback loops	overview of existing channels, select tool, entering relevant information, defining procedures, trainings	establishing contacts to stakeholder, purchase of licenses, tool modification, training of advisors, workshops for farmers, dissemination	workshop, selection and training of trainers, introducing advisors to select DAT, planning meetings, dissemination	meetings, workshops, training and rollout, feedback loops	workshops, trainings, research, building network and knowledge base	organising workshops, assessment of DATS, adjustment and improvement of early warning system, collecting feedback of testing phase	refers to UC action plan	gather information, development of dashboard, validation on farm, deployment, evaluation, dissemination	Strategic collaboration with VION Operational planning Test advice for farmers, supplying VION Evaluation, practical adaptations/workarounds 2nd group of farmers
Added Value	Better engagement and use of DATS in decision making	less work for advisors and farmers, all information available on less media as possible, establish a trusted, verified and safety system for trainings	improve the economic results of farms, easier decision making, influence maintenance of farming	adoption of competences to improve animal health and welfare, increasing the objectivity of monitoring risk status, use of DAT will ensure greater popularity and effectiveness of advisory	DAT for analysis of FFs performance. Better engagement and use of DATS in decision making.	knowledge base of questions and answers, transparent correspondence, quality of assurance	DAT is developed and implemented by the advisors, the room for improvements and new functionalities can be exploited by the user themselves	DAT solves partly the problem of consulting on ration without the ability to meet farmers on the farm by facilitating remote consulting	definition and benchmarking of productivity, welfare and health indicators; promoting poultry farming	real improvement of farm results
Value Analysis/ How to measure performance	group meetings, Farmers satisfaction, users number, advisors output, data capture; survey at the beginning and end of project	number of downloads if DAT is an app, especially younger generation is a key success factor	analysis before and after the interactive strategic planning workshops	improvement of animal health and welfare, increase productivity, average indicators of sustainability of dairy farms	annual farm profitability analysis, Assessment of Farm Advisors	Statistics related to queries categories, knowledge base visits, Statistics of answered questions	number of advisors adopting and using DAT, number of new functionalities, reports	surveys to advisors and farmers, measure the level of adoption, self-evaluation process	increased use of automation and control, better use of DATS in data-driven decision making, engagement of multiple stakeholders	better results for farmer, advantages of collaboration with vion, better relation between farmer and advisor
Risks	likelihood: low-moderate	likelihood: 25-90%	likelihood: 50-70%	missing likelihood	likelihood: medium	missing likelihood	missing likelihood	likelihood: low	likelihood: low to medium	likelihood: low to medium

Table 3: overview of provided BC of the partners – part 2

	INTIA	I4AGRI	CAJAMAR	CONSULAI	IDELE	NAK	NATURLAND	APCA ROA	LKO	LAAS
Organisation/ title of the User Case	Overcoming the challenge for advisors of sharing and keeping knowledge and expertise using DATS	Overcoming the challenge of on farm meeting restrictions for farm advisors by using DATS	Digitalizing the advisory activity for greenhouse-grown vegetables in South East of Spain	to gather different data sources with useful and timely information for decision making in the Alqueva Region.	IDELE user case: enlarging the decision tool use, COUPROD, to improve livestock farmers competitiveness.	Standard production value calculator	Bundling and optimization of communication channels in advising farmers	Enrich the services of the platform Mes Parcelles	Advisory services for the digital farm	Lithuanian Agricultural Advisory Service
Challenge/Problem (SAME)	provide an easy way for advisors to upload and record all the recommendations of their advices or the results of some detected issues	provide remote consultation services for advisors	challenge is 'to help advisors in the decision making on fertigation and to facilitate digital on-farm registration of the recommendations'. Finally, the target group will be advisors in general, as we are going to integrate also in the user case companies not integrated in COEXPHAL.	develop dynamic dashboards, monitoring productivity and sustainability	technical and economic support on competitiveness of livestock activities and breeders; establishment of a database allows capitalization of field observations an consolidation of approach of advice	learn to use SPV calculator, great demand for the use of DATS	bundling the communication channels	Integrate new services to the Mes Parcelles platform in order to deploy new services and meet the expectations of farmers and advisors	the challenge advisors face is providing better quality services in direct interaction with farmers (provide a digital real-time monitoring service and cut costs and provide more time for advisors by automatic repetitive tasks)	develop mobile app to e.GEBA programme
Target Group	20 advisors	veterinarians who provide advisory services on biosecurity to the sheep sector	Advisors working at cooperatives integrated in COEXPHAL	Farmers (120.000ha), advisors, IT providers, National Authorities, Policy makers	advisors and farm breeders gathered on different production (dairy, sheep, goat)	advisors, farmers, food processors	farmers and advisors	Farmers, Advisors, Partners, Policy makers	Target group 1: Austrian farmers ; Target group 2: Austrian livestock farmers and livestock advisors	advisors, specialists and farmers
Budget + external finance (incl FAIRshare budget)	25.100	no concretisation of amount	56.750	49.500	43.000	3.500 / 3.500.000	49.500	50.000	9 PM	49.500
Resources	PM listed, external work mentioned	done	done	done	half done	done	done	engineer & trainers	external partners will be necessary	done
Approach	development and adaption, within one year, exchange with other rural advisory services	collaboration will be established, implementation, evaluation	improvement, testing and adaption	define main indicators, improve data collection, produce dashboards, decision tool, (in addition reinforce the issue of efficiency of the use of inputs)	refers to UC action plan	Problem raising, description, visiting an IT specialist, IT development, testing with consultants, education in trainings, practical use	adaption, implementation, exchange, dissemination	identificaoion of services, translations, IT development, appropriation plan	select and train advisors, collaborate with advisors, adapt DATS extend deployment, test AI-Chatbot, organise 3 cross visits	improve the quality of cooperation between advisors and farmers: provide data on time, in app integrated the farmer's farm data management
Selecting DATS	will be selected, or new tool internal developed	Online Agricultural Show	Campogest, VegSyst-DSS	will be selected	COUPROD	By telephone interview with advisors	Appack	Mes Parcelles platform	will be selected	e.GEBA - mobile app
Activities	making new tool more attractive and easy to use for advisors, advisors trained, information entered, digitalization available for everybody	digital uploading of advisory resources, monitoring and keeping them up to date, workshops, trainings in communication	Improvements, adaption, evaluation	gather information, development of dashboards, validation, dissemination	refers to UC action plan	Presented in the context of training and learn to use the application	overview existing tools and information channels, informations include and register, training, procedures must be defined, special efforts regarding the older generation of users	missing	testing chatbot, designing answer paths, training of farmers in the usage of DATS	information, developing, implementation, dissemination
Added Value	work more efficiently, more information gathered, knowledge sharing, closer exchange of experiences	consulting without ability to meet on farms, remote consulting and opportunities to new knowledge exchange, new business opportunities for advisors to share knowledge and co-create solutions	facilitate and improve the work of advisors.	benchmarking and sustainability of farmers	new services extend the COUPROD use	The goal is for this app to calculate even more sectors and be more user-friendly and fast.	efficiency work, availability of information, new possibilities of getting in touch	improve farm management; Improve on-farm data collection; Optimizing the use of farm data	find relevant information quicker, personalized advice, better understanding of users needs better preserve the health of animals	fast an operative information of productive, sustainable and profitable decision making
Value Analysis/ How to measure performance	advisors give feedback to developers, recording interactions to know the level of participation	surveys to farmers and advisors, measure level of adoption, accessing the performance	direct contact to advisors who uses the tool; number of access to platform will be recorded	Better engagement and use of DATS in decision making by farmers and their advisors; Engage all stakeholders; Contribute to improve sustainable practices	regular statistic monitoring and evaluation survey	SPV app activities of advisors and farmers would be easy to measure trough users if they use the mobile application	download statistics, surveys for farmers and advisors	Number of farmers and advisors using these new services	focus groups in forehand, user discussion groups, two rounds of surveys for farmers and advisors	achieve better engagement in decision making, evaluation
Risks	likelihood: unwillingness to share data (advisors)	likelihood: low	likelihood: low to medium	likelihood: low to medium	likelihood: low to high	likelihood: 50-100%	likelihood: 10-90%	likelihood: 10-50%	likelihood: low to medium	likelihood: low to medium

## 4.2. Budget

The overall budget for the assigned UCs is an amount of 90,000€. Of that amount, 49,500€ is available for personnel costs. The calculation of the available hours is determined in EU projects with the so-called person-months (PM). It should be noted that this can slightly be different from partner to partner. In the example in Table 1, one PM is declared as 5,500€. However, the total amount of 49,500€ for personnel costs is fixed. External development costs of digital tools, such as mobile app development, cannot be covered by this budget. This means that external funding is not possible from the assigned budget of 90,000€. However, if partners can organise other funding possibilities, the use of these funds is of course possible for external work in the UC.

During the process of fulfilling the template, partners had several questions about external or licencing costs that may arise with using some specific digital tools. Generally, it can be stated that all costs must be justified as it is envisioned that some user cases will need to spend money on hardware, licencing and consulting. Task 5.4 should take up these questions to clarify them in the further process.

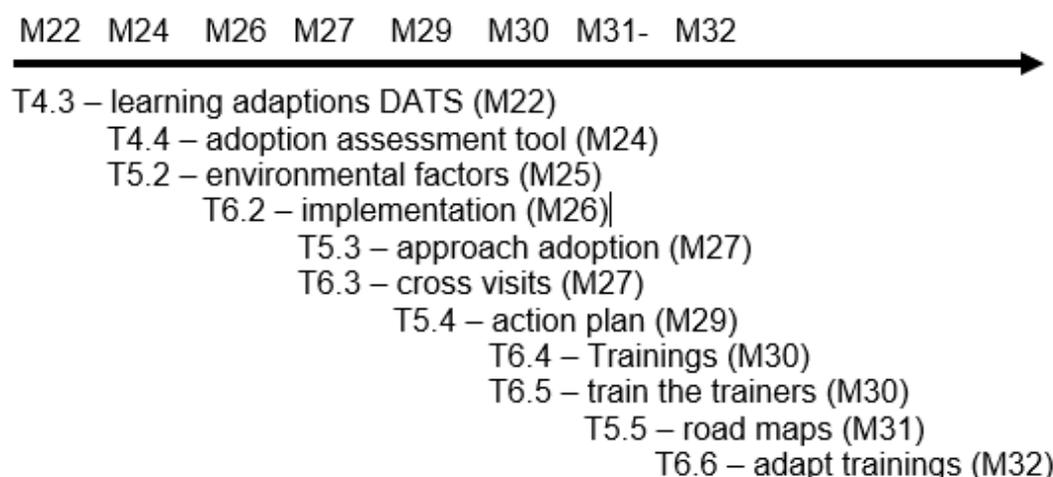
## 5. Further process

As outlined in Table 4: Timing and interlinking of WP 4,5 & 6, the individual tasks are developed in conjunction with each other and begun in a close time frame. Because of the timeline, the following tasks are due to start soon or have been started in part.

Task 4.3 already begun in 2020 and deals with the experiences and problems that came up during the adaptation of the DATS to the individual questions of the UCs. In the form of interviews and surveys, the individual activities and necessary adjustments are questioned, and relevant information for future activities is highlighted. The following Task 4.4 will develop an assessment tool to support the advisors in their work with the farmers with the help of digital tools, but also to clarify the potential of appropriate relevant tools. The assessment tool, which is designed as a web-based tool, should be available to the partners in their own language and accordingly be available in their daily work (even in the fields where an internet connection may not be available) to promote the digital tools in practical use. Based on this, T5.2 will take a closer look at the environmental factors of the adoption of DATS in the different regions and user cases. In a workshop, the UC leaders will develop a common understanding in order to define the factors more precisely. The early experiences of WP 1, 2 and 3 with the identified issues concerning the use

and implementation of DATS will contribute creating a basis for the roadmaps to be developed in WP 5 for each user case. Task 4.3 and 5.2 leads into a template of adoption, which is clearly shown in Figure 10. Building on Task 6.1, T6.2 is coming next, of which the biggest task is the implementation of the actions from the BC of each UC. In addition, the HITs (high impact digital technologies) classified in T3.5 and their adoption will be reviewed. If necessary, specific HITs will be reviewed with relevant stakeholders and adapted to the needs of the target group. T5.3 is important for the identification of a strategic approach and roadmap towards the adoption of the DATS. A multi-actor workshop will help the UC-leaders to clarify these things for their own purposes and challenges of their UC. The strategy of the advisory service will be finalised with the help of the uptake factors in the reports and preparation of the training modules. It is important to mention, that the whole process of implementation and especially the adaption is ongoing!

*Table 4: Timing and interlinking of WP 4,5 & 6*



Another key action of the UCs are the cross visits. These are important for the exchange of experience in adaptation, implementation and enforcement and thus promote understanding across national borders throughout Europe. Resources can be saved and shared. The aim is for the partners to visit or organise at least three other UCs with similar topics. Therefore, Task 6.3 will develop planning and methodology to facilitate the planning and implementation of cross visits.

In the context of the actions, the creation and concretisation of the action and business plans in T5.4 are important. At this point, the action plan from T4.4 is taken up and, based on it, a common template for the planned actions of a UC will be created, which is supposed to help the UCs in the further process. In the second step, this action plan is then set

up as a complete business plan. For this purpose, the respective responsible partners will conduct workshops to jointly develop, optimise and complete the templates.

The adoption of the used digital tools in the whole project and each user case is probably the biggest challenge of the project and the partners. In task 6.4, the existing modules are all linked together, adapted to specific requirements or new training methods are developed. For example, the key target audiences must be identified in order to adapt the methodology to them. Also, different resources and approaches such as training videos, teaching exercises and module specifications should be identified and documented in cooperation with T1.3 and T1.4. The general training to promote the adoption of digital tools also require appropriate preparation and guidance of the trainers who will lead and conduct these training. This is prepared in T 6.5 "Train the trainers". The trainers should promote the use of digital tools and explain them in a practicable way so that in particular the needs and challenges of the gaps identified in WP4, WP5 and task 6.3 can be answered. This will be ensured through workshops, training schedule and training programmes for each UC.

To visualise the jointly developed business plans and the action plans of the individual UCs included in them, Task 5.5 will develop roadmaps, which will be pictured in detail and clearly understandable in a graphic. After a common approach has been defined, roadmaps can be planned and subsequently visualised.

Overall, T6.6 is to evaluate and assess the collected experiences of T6.3, 6.4 and 6.5. For this purpose, criteria for user satisfaction, the effectiveness of the training activities and the subsequent evaluation of performance should be elaborated together.

As can be seen, there is a strong interaction between the individual actions and tasks, especially between WP 4, 5 and 6. Figure 7 represents an attempt to visualise the strong interconnection. In order to complete the thematic complex of UC, WP 4,5, and 6 have to work together as a team, which is already well achieved.



## Annex

### **Annex I: Overview of the business cases, provided by partners**

#### **Teagasc business case**

##### **1. Challenge/Problem**

###### The Problem

The problem addressed by this proposal is that digital advisory services are largely office-bound. This is leading to more advisors' time spent in the office and less time on clients' farms doing visits and discussion groups. This trend could lead to the lowering of clients' expectations regarding advisors technical knowledge/awareness and damaging advisors' confidence and the currency of their skills and knowledge.

###### The Challenge

The challenge is to optimise the value of a farm visit / discussion group meeting by having real-time access to the toolbox of apps, digital decision support tools and the large amount of data and advisory material developed by Teagasc.

###### The business opportunity

The opportunity is to free the advisors from the office and reconnect them to their clients and their clients' farms. This will help to make better use of advisors time and strengthen the traditional bonds with clients that develop through contact with farmers and their families on their farms. In addition, getting advisors out on farm and equipping them with an interface to increase the uptake of digital tools will add value to farm visits and discussion group meetings.

###### Impact on future progress.

The proposed approach will have a substantial positive impact on Knowledge Transfer through:

1. Improving accessibility to the decision support tools on farm

2. Greater uptake of apps / decision support tools by farmers and advisors
3. Reduced follow-up work
4. Increased access to real time data on a farm visit
5. Greater capacity to demonstrate tools to farmers
6. More efficient working practices e.g. mapping of farms for ASSAP investigations
7. Aiding delivery of demonstration group meetings and farm walks
8. Reduced paperwork
9. Device portability
10. Time saving
11. Encouraging innovation around future app development

## 2. Target Group

The target group is enterprise advisors and their clients. The advisors and farmers will be classified by their enterprise or programme area (ASSAP, environmental advisors). The specific needs of the advisors will be technical support and training on DATS and hardware to help them to scope out and understand how the technology would help them to deliver their work. Advisors will also need training on the use of the technology to ensure that it adds value to their visits / discussion groups.

## 3. Budget and external finance (including the FAIRshare budget)

Budget for tablets	Units	€
Purchase of equipment:		
Tablets	20	20,000
Portable projectors	20	8,000
Rugged cases	20	1,800

Stylus	20	1,200
In-car charger	20	1,700
<u>Carry case</u>	20	<u>2,000</u>
TOTAL		€34,700
Consultancy		€28,000
Travel to EU to view DATS	22	€22,000
Licences		€5,000
<b>TOTAL €</b>		<b>€89,700</b>

Source of finance: FairShare

#### 4. Resources

Staff - Teagasc ICT and specialist staff. 100 days

Servers – Existing server network

Admin support– Use existing Admin support network

Governance –Steering Group including Head of Advisory Services, Assistant Director KT, Regional Managers and Staff Officers of the two regions, ICT Service Delivery Manager, ICT Applications Architect and representatives of clients and advisors.

Advisors – involved in design, user testing and training 20 x 15 days = 300 days

Clients - survey 50 farmers x 0.25 days = 12.5days

#### 5. Approach

The ‘Digital Multi-tool’ concept is based on creating more opportunities for advisors to engage with clients on their farms while encouraging the uptake of digital technologies by farmers. The aim is to overcome barriers to the digital transmission of knowledge by facilitating the delivery of services that require the use of DATS and access, in real time, to a wide range of data sources (Teagasc, DAFM, ICBF, NMP Online, mapping sources).

The proposed approach requires the combination of a tablet with good connectivity to Teagasc systems, software packages and data sources (CRM, NMP Online, eProfit Monitor, Pasture Base, Ration Reckoner etc.) as well as external data sources (DAFM, ICBF, Agrinet etc.).

In addition, a searchable advisory information archive of documents, videos and images would be created and maintained to provide instant access to materials for sharing with the clients as a means of communicating information relevant to the work in hand. This archive would help capitalise on the large volumes of materials that are generated across Teagasc and by other agencies (DAFM, Bord Bia, ICBF etc.).

The timeline and milestones for the delivery of this proposal are as follows:

- Working group establish to develop the ‘digital multi-tool’ specification - Feb/Mar-2021
- Engagement with stakeholders (advisors and clients) and modification of specification as necessary - April-2021
- Selection of relevant DATS for use with the multi-tool - May/June-2021
- Trial of the ‘Digital Multi-tool’ with six IT-competent advisors – Jan-Oct 2022
- Evaluate trial and modify ‘Digital Multi-tool’ as necessary – Nov/Dec 2022
- Pilot ‘Digital Multi-tool’ and monitor/evaluate performance - Jan-Oct 2023
  
- Review performance and adapt/refine concept - Nov-Dec 2023
- Organise a workshop to present the findings of the project and consider roll-out of the technology across the KT Directorate (Dec 2023)

## 6. Selecting DATS

DATS from the inventory that are associated with communications with farmers that could link in with this project include:

1. *AGROasesor* has created advanced GIS tools for personalized advice for the sustainable management of extensive and horticultural crops. The platform helps farmers, farm managers and advisory services to achieve a more efficient and sustainable use of crops by making available all the technical knowledge available through an

innovative web-GIS platform. While Teagasc has its own tools for mapping, AGROasesor has the potential to provide guidance on the potential of these tools, what interface is used at farm level, what issues arise with using these tools and will be useful for capacity building for the staff involved.

2. *Klaxoon* - A range of collaborative products to make events more participatory for remote groups. This DAT is of interest because it generates a report at the end of each meeting, which could be useful for discussion groups, or one to one meetings. In the context of COVID, these products have the potential to be useful for virtual events and group meetings.

3. *Teagasc Story Board Animations (Teagasc)* – Use of whiteboard animations on the tablets (using the mobile projector) to deliver KT to farmers. We would explore the possibility of expanding the choice of topics in animation and using the white board to facilitate discussion groups

4. Individual advice with Skype for business or Advisors using Microsoft Teams (*ZLTO*) – this tool could be used in this project to bring specialist support on farm either for a one to one farmer visit or discussion group meeting where a remote specialist could be available to the group / individual

5. *Mentimeter* offers the potential to build interactive presentations including word clouds and quiz. The audience interacts anonymously with a smart device. This could be useful for running group meetings remotely or for blended training modules e.g. sustainability courses.

6. *Batfarm* software simulates the effect of BAT (Best Available Techniques) in particular farms, allowing the comparison of different BAT scenarios to help in the selection of the most appropriate environmental strategies in each case. This could be adapted for Irish conditions

7. *RISE* is an indicator-based method for assessing the economic, social and environmental sustainability performance of agricultural production at the farm level.

Both *Batfarm* and *RISE* could be useful tools to appraise the sustainability of a farm during a farm visit and provide the farmer with recommendations for improving farm sustainability.

In addition the DATS listed below, which are almost all listed in the inventory would be used. Some of the mapping Apps may need to be licenced for use on the project.

#### Teagasc DATS:

CRM, NMP Online, eProfit Monitor, Cost Control Planner, Pasture Base, Ration Reckoner, NMP Online, Carbon Navigator, Batfarm Software, Fertiliser and Slurry Spreader Calibration Software, Farm Buildings Cost Calculator, CostCheck: The Mastitis Cost Calculator

#### Non-Teagasc DATS:

Agfood.ie, Herd Plus, mapping apps (ArcGIS, GoogleMyMaps, Trimble Ag Software: Advisor Prime)

## 7. Activities

The first activity will be to engage with advisors, clients and ICT experts in a co-development approach to scope and direct the development of the 'Digital Multi-tool' approach to increasing the frequency, efficacy and efficiency of on-farm engagement by advisors with clients.

The Project Steering Group will set the scope and broad specifications of the 'Digital Multi-tool' and guide the Project Working group towards its development and delivery over a two-year period. All stages of development will require the engagement of human and digital resources.

Activities on farm to include:

1. Demonstration of apps to farmers
2. Use of the tablet white board to facilitate discussions
3. Use of apps and other decision support tools to assist in the delivery of knowledge transfer to groups of farmers or individual farmers on a farm visit. These will include
  1. Mapping apps

2. Grass measuring
3. Physical and financial benchmarking
4. Farm yard planning
5. Breeding management e.g. sire advice

Key milestones will be:

- Establishment of Steering Group and Working Group
- Refining of vision for the tool and selection hardware and of DATS to be incorporated into the 'Digital Multi-tool' by Working Group via a co-development process with key stakeholders.
- Purchase equipment – tablets and ancillary equipment.
- Piloting and trialing of 'Digital Multi-tool' with IT-competent advisors (digital natives).
  
- Evaluation and tweaking of the Trial 'Digital Multi-tool'.
- Final evaluation and co-development engagement to arrive at final 'Digital Multi-tool' version.

## 8. Added Value

There is potential for very substantial added value from the adoption of the "Digital Multi Tool" concept.

- Increased KT effectiveness of the farm visit and discussion group meetings
- Better communications with clients
- Access to real time information on farm visits
- Better access to decision support tools for advisory work
- Aid to demonstration of digital tools and apps at group meetings as well as on farm walks
  
- Greater uptake of the use of the apps and decision support tools
- Reduced printing and paper
- Reduced follow-up work
- Increased portability and ruggedness of the devices being used
- Advisors could complete far more work on clients' farms and reduce the likelihood of errors due to deferring the completion of work until back in the office.

- Completing forms and having them signed by the client electronically during farm visits or at other location outside the office will reduce opportunities for errors or forms not being completed. The completion and saving of forms to clients folders will streamline recording of interactions and make tracking of activities much easier.
- Easier recording of data on farm e.g. eProfit Monitor, Pasturebase, fertilizer records etc. The device could also interface with farmers' own devices to capture useful data e.g. GPS systems on machines, data recorders on milking robots etc.

## 9. Value Analysis/ How to measure performance

Success will be measured by:

1. The number of advisors that are using the decision support tools for farm visits / discussion group meetings on a regular basis
2. Farmer satisfaction
3. The number of clients using the apps / decision support tool regularly
4. Efficiency gains in terms of advisor output
5. Increased rates of data capture

Performance will be measured by a quantitative and qualitative survey at the beginning and the end of the project.

Follow up surveys of clients could be done to gauge their satisfaction with the approach while advisors' evaluations would be an integral part of the assessment of the performance of the new approach.

A set of KPIs would be established to measure impact on efficiency, efficacy and uptake of the new approach.

## 10. Risks

<b>Risk</b>	<b>Impact</b>	<b>Likelihood</b>
Inadequate ICT support	High	Low
Unsuitable hardware	High	Low
Poor connectivity	High	Moderate

Poor Digital Skills	Moderate	Moderate
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## SEASN – IPN 1 business case

### 1. Challenge/Problem

IPN and FAS had a long term history in providing advisors and farmers across a wide range of FFs. Results hidden in laptops and printed reports and cannot present a good overview of the farm to the advisor. As much of the data is generated live and constantly updated in different systems, farmers and advisors need to be able to review performance data on the go on one screen through a dedicated DAT.

### 2. Target Group

Advisors from FAS, Farmers (FFs), and small enterprises.

All Advisors and clients

### 3. Budget and external finance (including the FAIRshare budget) - TBD

Budget for: (examples:)	PMs <sup>1</sup>	Euro x €1000
Adaption	3	8,1
User testing	2,5	6,75
Training of trainers	1	2,7
External consultancy	-	
Tendering, Licenses and translation	0	5,0
Promotion	2,5	6,75
Travel & workshop costs		2,4
Cross visits		9,0
Trainings		6,1
<b>Total for UC</b>	<b>9</b>	<b>46,8</b>
Available budget for UC due to higher cost of PMs and indirect costs		90,0

Source of finance: FAIRshare budget

### 4. Resources - TBD

Who/what	PMs	Activity/ task	explanation
Person:			

Services:			
Hardware/training rooms etc			
Etc			

## 5. Approach

Connecting the most appropriate GM calculation DAT among all existing DATS to be a standard for FAS work with FFs and build is incrementally in the coming years. This DAT should be farmer/ client specific and informed by the DATS that are relevant to them and that the advisor uses to communicate to the farmer.

## 6. Selecting DATS

DAT will be selected as a most appropriate and user-friendly. Preferably familiar to IPN staff.

## 7. Activities

To engage with advisors, clients and ICT experts in a multi-actor approach to scope and direct the development and implementation of the Vision, Strategy and Action plan in a clear roadmap that integrates with the overall strategic goals of IPN and FAS/PSSS and can be implanted in the business plans at regional, programme and organizational level.

Meetings Steering group monthly

Workshops every 12 months

Training and rollout – through face to face and online

Cross visits – organized as f2f meetings or on-line collaborative meetings, with regional and other partners and actors in rural area.

Feedback always on feedback loop from farmers and advisors

## 8. Added Value

DAT for analysis of FFs performance. Better engagement and use of DATS in decision making.

## 9. Value Analysis/ How to measure performance

Multi annual farm profitability analysis. Better Analysis of costs and yields.  
Additional benefit in Assessment of Farm Advisors

#### 10. Risks

Risk	impact	likelihood
Too much at one time (workload)	high	Too much at one time (workload)
Solution too expensive for one organisation	low	Solution too expensive for one organisation
Failure to have live updates from systems	medium	Failure to have live updates from systems
Owner approval to use data in this way	low	Owner approval to use data in this way

## SEASN – IPN 2 business case

### 1. Challenge/Problem

To date, agricultural advisors haven't had the tools to objectively and systematically assess the level of animal health and welfare on dairy farms in Southeast Europe – SEASN Region.

This fact made it even more difficult and impossible to effectively advise on improving animal health, and in particular on improving animal welfare. It is very demanding and risky to draw the farmer's attention to the fact that his/her animals have a low level of welfare, that they are smudgy, that he doesn't raise or care them well (and the like), and to effectively advise them on ways to improve. Farmers often feel offended if they are told that hygiene, posture, care and the like need to be improved.

By applying objective analysis of deficiencies that reduce health and welfare using DATS, the farmer will accept more easily what the DATs shows. Farmers won't be angry at the DAT and he won't feel criticized and insulted by it, just as he would feel criticized and insulted by the subjective assessment of deficiencies on the farm, which the advisor would tell him only on the basis of his observation.

### 2. Target Group

In the focus:

Ag. Advisors, farmers

Others:

Scientists and researchers in agriculture, veterinarians, agronomy and veterinary students, agrarian policy creators, ICT sector, food industry and consumers that are becoming more concerned about the animal welfare, within SEE/SEASN region.

### 3. Budget and external finance (including the FAIRshare budget)

Budget for: (examples:)	PMs <sup>1</sup>	Euro x €1000
Adaption	3	8,1
User testing	2,5	6,75
Training of trainers	1	2,7

External consultancy	-	
Tendering, Licenses and translation	0	5,0
Promotion	2,5	6,75
Travel & workshop costs		2,4
Cross visits		9,0
Trainings		6,1
<b>Total for UC</b>	<b>9</b>	<b>46,8</b>
Available budget for UC due to higher cost of PMs and indirect costs		90,0

Source of finance: FAIRshare budget

#### 4. Resources

Who/what	PMs	Activity/ task	explanation
Person: Representatives from ISAA / IPN	9	Planning, training, organization of trainings for advisors and farmers, promotion;	
Services:		Translation Licencing*, training given by external experts for stuff	
Hardware/training rooms etc		Tablets for application of the DATS	
etc			

#### 5. Approach

We will improve the unsatisfactory average health status and low level of welfare of dairy cows in Southeast Europe with an innovative approach in 5 steps:

1. Training of advisors in Serbia to use the innovative DATS

2. Publishing articles (and promotion through media) regarding the importance of health and welfare of dairy cows in order to educate farmers
3. This FAIRshare UC will encourage research regarding the health and welfare status of dairy cows in the SEE region
4. In accordance with the results of the implementation of this UC, we will publish recommendations for adequate state support measures to improve the health and welfare of dairy cows in the SEE (SEASN region). The effect of these measures will be monitored by the proposed objective indicators that will be enabled by the application of DAT.

## 6. Selecting DATS

Select user friendly and effective DATS tool from FAIRshare inventorium of DATs

Systematic classification, evaluation, advice

## 7. Activities

1. An interdisciplinary online SEASN HUB workshop will be held in order to evaluate the problem. The participants in this workshop will be advisors, farmers and veterinarians. At the workshop, the problem of health and welfare of dairy cows on family farms in Southeast Europe and realistic solutions will be presented from the perspective of farmers, advisors and veterinarians.
2. Selection and training of trainers for the initial application of the selected DAT application in Serbia
3. Introducing SEASN HUB advisors to selected DAT, in order to its possible application in Southeast Europe
4. Monthly meetings of the ISAA/IPN UC/BC team to plan and monitor the progress of the implementation of this UC/BC
5. Organisation of 3 cross visits (Ireland, Germany and Austria, proposed)
6. Intensive dissemination in professional press and on social media within the SEASN HUB

7. Final Conference of ISAA FAIRshare UC/BC in cooperation with SEASN HUB

## 8. Added Value

Advisors specialists for animal husbandry, and especially subspecialists for dairy production will adopt additional competencies for sufficient advising in order to improve animal health and welfare in Southeast Europe. Through the obtained expertise on the usage of innovative DATs they will increase the objectivity of monitoring of risk status of the farm. This objectivisation will result in the decreased psycho-social risks of relation between farmer and advisor with subjective evaluation of animal health and welfare on a family farm within SEASN region.

In addition, the usage of innovative tool /DAT will ensure the greater popularity and effectiveness of advisory. The farmers will use and apply advices on a larger scale.

An innovative and efficient functioning of AKIS System in SEASN Hub in a way of a more interpersonal cooperation of agriculture specialists and veterinarians will be initiated.

## 9. Value Analysis/ How to measure performance

Key efficiency indicators of application of DAT under UC are following:

1. Improvement of animal health and welfare on selected farms;
2. Increase in productivity/milk yield on pilot farms;
3. Average values/indicators of sustainability of family dairy farms within SEASN HUB will approach to the advanced producers in Europe;
4. Using the innovative digital tool will contribute to increase of reputation and greater professional level of advisor specialists and subspecialists

## 10. Risks

Risk	impact	likelihood
Low interest of farmers	high	

Organizational problems of FAIRshare IPN-UC due to the complex realization of UC	low	
Low interest level of advisors, COVID pandemic – limitation of contact	medium	
AKIS context in the beginning phase of development	low	

## SEASN – CAFS 1 business case

### 1. Challenge/Problem

CAFS is the biggest NGO organisation in agriculture in Slovenia with advisory service with public role. As a part of public service the budget of existing is mostly depend on budget of Ministry of Agriculture. So, from that source there was not enough finance for developing the advisory tools, especially for digitalisation. The COVID-19 epidemic showed the strong need for communication between farmers and advisors, between advisors and between farmers with using digital communication tools and also expert digital tools. On individual and group levels.

### 2. Target Group

As target group of this UC can be defined both sides of the rural advisory, farmers, and advisors. The impulse for using a DAT for bundled and enhanced communication must come from the advisory service to keep structure and strategy lean and clean. On the other hand clear and safety platform must be developed also for official prof, certificates other procedures, connecting mostly with CAP, different trainings, e-learning.

### 3. Budget and external finance (including the FAIRshare budget)

The costs of establishing, implementation and training, including the personal costs, should be covered by the existing FAIRshare budget. Technical running costs are as low as possible. Of course, there will be some fix costs for technical support, server capacity or something else. Overall, the application should last for many years.

If external funding will be needed, several organisations can be identified which would benefit from the use and dissemination of the DAT. Especially for the distribution of information to users, but also for the acquisition of interested actors, the DAT represents an interesting alternative for potentially targeted organisations. However, the risk and the necessary advance payment to make this possible would have to be quantified. CAFS already had conversation with some of them and noticed their interest.

Budget for: (examples:)	PMs	Euro x €1000
CAF team (managing, developing, promotion)	4	40

Digital equipment compatibility	-	25
User testing	1	10
External consultancy, experts	1	10
Tendering, Licenses and translation	0,5	5

#### 4. Resources

The resources within the CAFS advisory team are not as big as the problem requires. Manpower is constantly required for editorial work, messages, maintaining and supervising. Therefore, the persons currently involved must also be able to perform the new structuring and distribution of tasks. If available, external assistance is partly possible. The fact of low input of manpower requires effective planning during the whole project time. At least three employees must be involved, strategy and ideas must be developed in a kick-off meeting including the management, regular meetings with the management (e.g. every three months) and reporting (monthly) to the management must be made. Technical solutions can support human work or even automate work.

Who/what	PMs	Activity/ task	explanation
CAFS team	5,5	managing, planning, developing, training, promotion, tendering, licenses and translation, user testing, maintaining sources	Supervising, training, solve IT problems, connection, publishing tender(s), maintaining support, licens etc.  Collaboration with external expert(s)
External experts	1	Expert work on design platform	designing

#### 5. Approach

The successful implementation should be planned carefully. Because of the structure of farms and farmers we cannot force them too intensively. A similar situation is with older advisors. Mostly they are not accessible for new things. A

visible additional value for all target groups is very important for successful implementation.

Information exchange with other rural advisory services is very important (also during the project long), to know if they are facing the same challenges and participations are possible or not for example. Giving enough and tailored information, having trainings during the UC, possible cross visits and dissemination are strongly influenced by the available technical means. Such technical means are developed continuously, therefore, a high degree of adaptability is required.

## 6. Selecting DATS

The problem can be solved by selecting one or more DATS. Ideally, should be a DAT that combines all requirements. Key factors are the direct individual communication of advisors with farmers and their flexible exchange with each other and safety and verifying environment for official trainings. It is also extremely important to have the most up to date information facility possible. The various information flows must be open and possible in all directions (top-down, bottom-up, advisor-farmer, farmer-advisor).

The DATS will be chosen on base of the needs of advisors in regional Agricultural Institutes founded by CAFS (8 institutes)

## 7. Activities

At least the described communication must be transferred to the tool, internal communication compulsory, for external use (farmer-advisor) the DAT must be more attractive than existing tools. An overview of the currently different information channels has already been created and classified. Once the appropriate tool has been selected, all relevant information must be entered and registered. Afterwards, advisors must be trained and procedures for different processes must be defined. If the basic requirements have all been fulfilled, the procedure can be extended to the farmers and others advisors. Sufficient information and offers of assistance would be optimal. Particularly concerning the older generation, special efforts must be made to involve these people and to make the advantages of digitalization accessible to them. The digital tools should be designed for small farms also and accessible for them.

## 8. Added Value

The chosen DAT must give the value of less work for both parts of the target group. This point should be obvious so that the worktime saved stands as a value itself.

But the added value should not only be the efficiency of work. It would be a great assistance for farmers if all the relevant information they need to run their farm or comply with the guidelines from their growers' association were available on as less media as possible, ideally on a smartphone, of course, as it is usually at hand.

New ways of getting in touch with colleagues also generate new possibilities and markets for the farmers. Good communication and added value strengthen the relationship between advisor and farmer. Furthermore, quitting of contracts between farmers and their advisor or growers association are more unlikely, if they have a better and closer exchange.

Also the very important add value is that CAFS will establish a trusted, verified and safety system supported by digital tools for trainings the farmers for CAP requirements, for giving expert advice, for training the advisors, publishing different certificate (f.e. CECRA certificate), e-learning etc.

## 9. Value Analysis/ How to measure performance

The activities of farmers and advisors would be easy to measure if they selected DATS is a mobile application too. Because the advisory service in Slovenia is public service and farmers are members of CAFS by the law, the usage of applications would be free for them. They can easily be animated to use the DAT or if they do not want to use it, ask them about the reasons not using it. Digital tools effect for better promotion of CAFS as a NGO among the members and should be use also for promotion, marketing etc. of farms in terms of direct selling local products. Especially for the younger generation, the use of DATS during the advisory services is a key success factor to attract them and make the advisory interesting and helpful.

## 10. Risks

The risks concerning the UC are classified into two groups; at first, we look at the upcoming risks of putting the DATS into practice, at second the option of doing nothing is to be treated.

DATS implementation

Risk	impact	likelihood
------	--------	------------

The DAT is not accepted by the advisors or farmers and will not be used	high	50%
Maintenance of the DAT can cause more work( f.e. administrative work)	medium	25%
Incompatibility between the applications and platform	medium	30%
Availability of data bases (because of licence)	small	20%
Technical barriers	medium	25%
Practical use of DATS (connections, other infrastructure)	high	55%

#### Doing nothing

<b>Risk</b>	<b>impact</b>	<b>likelihood</b>
Advisors have a lot of work in spreading the information on too many different ways	high	90%
Farmers do not find the right information in time	high	75%
Other companies (commercial orientated) are using the gap for their business	high	75%

## SEASN – CAFS 2 business case

### 1. Challenge/Problem

A good business plan is a tool for the farmer to find his way to the best possible economic result. Strategic planning begins with the assessment of which strategy is most suitable for an individual farmer. From this point on, it is much easier to make a comprehensive assessment of current and future business developments on the farm. It has been a challenge for some time for the advisory service to set up a program of workshops with farmers, where farmers would get answers to all the questions in the context of strategic planning. In Slovenia, a small number of agricultural advisers already have access to ISM+ strategic planning tool. Despite the fact that the tool was recognized as very effective, it is not in use, as Slovenian version does not work properly and in addition, the advisory service is not the administrator of the Slovenian version of the tool, but only the user. The ISM+ tool is open for many more upgrades in terms of connection and supplementation with digital tools, which would improve the planning of farm operations with additional concrete calculations (for example: Lean Dairy Farm, Farm Manager, ...).

### 2. Target Group

Advisors of three expert groups, namely in the field of agricultural economics, rural development and entrepreneurship & social entrepreneurship. The target group would also be other advisors, regardless of the field of work, who would show an affinity for the use of the ISM+ tool and other strategic planning tools (especially younger advisors).

### 3. Budget and external finance (including the FAIRshare budget)

Budget for: (examples:)	PMs	Euro x €1000
Adaption (tendering, licenses, translation)	3	30
User testing	1	10
External consultancy	1	10
Adjustements	1	10
Training + conducting workshops	2	20
Promotion	1	10

Source of finance: The costs of adaption, user testing, adjustments and trainings, including the personal costs, should be covered by the existing

FAIRshare budget. It is not foreseen that there would be any need for external sources of funding.

#### 4. Resources

Who/what	PMs	Activity/ task	explanation
Person: representatives of Chamber of Agriculture (CAFS)	4	Planning, training, licences and translation, organization of trainings for advisors and farmers	

#### 5. Approach

A more innovative approach in advising, where farmers actually prepare their own business plan for their farm with the help (professional guidance) of advisors through workshops (or individual advising on the farm).

#### 6. Selecting DATS

The ISM+ digital tool was chosen as the basic tool for strategic planning. Complementary tools for even more specific farm management planning would be added to this tool as part of the workshops.

#### 7. Activities

- establishing contacts with key stakeholders;
- purchase of licenses;
- tool modification, adjustment;
- testing;
  
- training of advisors;
- conducting workshops with farmers;
- dissemination.

#### 8. Added Value

To improve the economic results of farms;

To make it easier for young farmers to decide on the most appropriate direction of production and thus to influence on the maintenance of farming (reduction of abandonment of farming).

## 9. Value Analysis/ How to measure performance

The results will be available through cooperation between farmers and advisers; advisers will be informed by farmers about the progress of the farm (analysis before and after the interactive strategic planning workshops).

## 10. Risks

Risk	impact	likelihood
key stakeholders will not be willing to collaborate as expected	high	50 %
key advisors will be overloaded with other tasks and won't have time to learn how to use new digital tools or to conduct workshops	high	70 %

## SEASN – MofA 1 business case

### 1. Challenge/Problem

- Slow, tedious and costly plant pests and disease monitoring process.
- Data not digitalized, lack of data structure, lack of efficient data correlation
- Manual data processing
- Basic and poor reporting
- Inability to gain broader picture
- Significant human and organisational resources required in order to maintain system efficiency
- No historic data

### 2. Target Group

A group of 40 advisors, most of them specialists in plant protection (more efficient data collection, data processing, data integration and reporting)

Farmers, fruit, grape and olive growers (precise predictions and timely alerts, better protection against pests and diseases, less usage of raw materials, lower labour costs, machinery cost and significantly reduced contribution to environmental pollution, biodiversity preservation)

### 3. Budget

Budget for:	PMs	Euro
6 internal workshop for advisors	5	12.600 €
2 trainer's trainings for power users	3	12.300€
6 Cross Visits	2	13.000 €
Translation	-	5.000 €
Data collection and data processing	12	24.600 €
Dissemination activities	2	6.800 €
Promotion materials	-	9.200 €
Consumables and supplies	-	6.500 €

Source of finance: FAIRshare budget

### 4. Resources

Who/what	PMs	Activity/ task	explanation
Up to 40 expert advisors in plant protection	14	Training, data collection, fostering adoption of DATs	Learning from ongoing adoptions of DATs
6 senior expert advisors	4	Action and business plan, roadmap, train the end users	Train the trainers in using of DATs, addressing the gaps
2 senior expert advisors	3	Assessment of training and adoption support activities, cross visits	Added value with the value of the current situation to measure the effectiveness of DATs
2 IT experts (in-house)	3	Adoption of DATs at UC level	Support activities and added value metrics of expanded use of DATs
Training facilities (in- and outdoor)		Training sessions, data collection	Assessment and adoptions of DATs

## 5. Approach

For the adoption of the DATs like custom made application tailored to specific needs of the advisors specialists in plant protection it's necessary to collect the background information from the user side, to train the end users (advisors), and to address the gaps in implementation phase using the approach learning-by-doing. Quality assurance will be assessed through dedicated advisors who monitor data collection, record the intensity of pests and disease occurrence, using special data and photo documentation, and initiating and preparing reports.

Employment of DATs mobile application with GIS reporting system and additional web based reports needs to be assessed and evaluated. Additional complement data about phenophases is added in application functionalities, and will be further assessed, as well as the possibilities for creating a custom reports through Open Source GIS reporting system.

## 6. Selecting DATS

No DATs with similar functionalities are recognized. The context of specific human and infrastructural factors was taken into account, and the fact that this DATs is functional, developed and implemented in-house, and used by numerous of advisors suits needs of the advisors and specific business practices employed. Furthermore, integration with complementary systems are the next steps in enhance adoption and use of DATs among advisors specialized in plant protection and related fields. Finally, fruit, grape and olive growers as the end

beneficiaries should get better recommendation on past and disease occurrence and pest management.

## 7. Activities

Organizing workshop and trainings for advisors in data collection and other functionalities in using of existing DATs for past management.

Addressing and collecting the gaps and missing functionality identified by the users (advisors)

Assessment of DATs helping the advisors to identify the issues affecting adoption, and to enhance adoption and use of DATs.

Adjustment and improvement of early warning system for economically important pests and diseases

Collecting feedback from advisors when testing phase of phenophases recording, data integration with agro-meteorological stations, as well as extending reporting to make full use of data integration.

## 8. Added Value

The quality of fruit, grape and olive products and their market value are influenced mostly by the changed environmental and weather conditions, since the most of the production is on open fields. In parallel to this, population of pests and diseases can cause a lot of damage which can result in decrease of the quality of the products and even with total loss.

The importance of information and recommendation on pasts and disease occurrence in the right moment, in certain location, for concrete plant is one of the prioritised activities provided by the advisors. DATs specially developed to meet this challenge and to help the advisors to develop sustainable past monitoring and management system can contribute to reduce the production risk for fruit, grape and olive growers, and increase the efficiency of advisory work.

The additional value is that DATs is developed and implemented by the advisors, and the room for improvements and new functionalities can be exploit by the user themselves.

## 9. Value Analysis/ How to measure performance

- number of advisors adopting and using DATs in daily activities
- number of new functionalities recognized and shared
- number of improved reports prepared and delivered
- cost-effective early warning system for economically important pests and diseases in place

## 10. Risks

Risk	impact	likelihood
Team capacity	high	
Advisors reaction in using DATs	medium	
Adoption of DATs to advisors needs	low	
Sharing the DATs within and between advisory organisations and networks	medium	

## SEASN – MofA 2 business case

### 1. Challenge/Problem

- Inadequate means of addressing farmer’s inquiries using conventional methods.
- Numerous inquiries on daily basis
- Non-structured knowledge base not suitable for further analysis,
  
- Lack of transparency in inquiry solving. The lack of transparency is especially critical in answering inquiries that have substantial financial and business decision making consequences.
- Lack of quality assurance,
- Lack of quality distribution of inquiries,
- Difficult analysis and distribution of collected knowledge/information
- Significant human and organisational resources required in order to maintain system efficiency.

### 2. Target Group

Every advisor (more than 200 experts), vast majority of farmers have direct and indirect benefits of using Q&A, particularly through link to the up to date knowledge base and user friendly interface to submit questions.

A group of up to 30 advisors, experts in various areas, (more efficient data collection, data processing, data integration and reporting)

Farmers, various type of production, livestock, plant protection, organic and all kinds of production are continuously facing the challenges related either the lack of knowledge or basic information in their domains, particularly when starting a new business or exploring the new areas.

### 3. Budget

Budget for:	PMs	Euro
6 internal workshops for advisors	7	12.000 €
3 trainer’s trainings for power users	5	15.300€
6 Crossvisits	5	15.900 €
Translation	-	4.800 €

Data collection and data processing, for the advisory activities guidelines	6	14.400 €
Dissemination activities	1	7.200 €
Promotion materials	-	9.900 €
Consumables and supplies	-	6.300 €

Source of finance: FAIRshare budget

#### 4. Resources

Who/what	PMs	Activity/ task	explanation
Up to 40 expert advisors in plant and livestock production and related agribusiness areas  Up to 20 experts for answers, up to 10 experts for supervision and up to 10 experts for verification of the Q&A input and output	8	Training, fostering adoption of DATs	Learning from ongoing adoptions of DATs, according to activities of preparation, data processing and analysis, as well as dissemination upon the Q&A use
5 senior expert advisors	5	Action and business plan, roadmap, advanced training	Train the trainers in using of DATs, addressing the gaps
2 senior expert advisors	5	Assessment of training and adoption support activities, cross visits	Added value with the value of the current situation to measure the effectiveness of DATs
2 IT experts (in-house)	5	Adoption of DATs at UC level	Support activities and added value metrics of expanded use of DATs
Defining categories suitable to the queries made	1	Categories definition	Support Q&A system of queries and answers
Training facilities (in- and outdoor)		Training sessions, data collection	Assessment and adoptions of DATs

#### 5. Approach

There is a need for the most appropriate use of the existing resources and DATs, custom made application that need to provide the tailor-made specific solutions. It is based upon the utilization of web-based user interface.

Quality Assurance is provided through appropriate roles (specialist, controller, supervisor), so reviewing the supervisors' or controllers' reports upon the request on the topics and areas of expertise, ensures various kinds of topics, knowledge, research and innovation areas, as well as practical and tailor-made solutions for various challenges. The most important is the fact that, according to the Q&A data analysis, advisors' management and advisors themselves may ensure the most accurate definition of structure and information priorities according to farmers' needs.

User's field categorisation of inquiries based on predefined set of categories defining covers different fields of agriculture.

Build specialist, controller and supervisor groups based on competencies and organizational ladder.

In order to ensure transparency and up to date communications, each mail notification relates to various subject and inquiry status alterations.

Distribution of inquiries to specialist groups is based on defined categories, and re-categorisation if needed.

Transparent question solving (all activities recorded, full correspondence always available and verifiable).

The final and key points are the facts that answers are published officially and groups of answers and questions become part of the advisors service.

There is a group of FAQ and others groups of questions/answers, as the most important for the UC validation.

## 6. Selecting DATS

This is the way to ensure and connect a growing number of general-purpose DATs with unnecessary functionalities available, so decisions are strongly supported by custom made application that fully suits needs of advisors and MofA, as well as specific business practices and needs.

No DATs with similar set of integrated resources (knowledge, topics, data, solutions, questions and answers) and functionalities are recognized.

Considering the specific situation, limited resources (human, tech, financial etc.), there is a growing need to provide the most suitable tool that support the Ministry, advisory experts and cooperation of each stakeholder organizations,

environments and experiences, so utilization of such a DATs provides not only reduction of numerous teams and resources, by providing the answer from the relevant sources and expertise from the experts, evaluation and control from control and validation system incorporated, in-house developed and implemented knowledge base.

## 7. Activities

Organization of the set of workshops, trainings, research on the available data and building the network and the knowledge base. This set of activities consists:

- description of Q&A processes – inquiries and queries receiving, processing, preparation, supervision, verification and publication of answers,
- continuous validation
- trainings for advisors
- promotion activities for farmers
  
- detection of challenges and disadvantages
- defining missing functionality
- further development of advisors' activities and knowledge, skills and communication to farmers,
- new experiences, knowledge and insights evaluation and validation

## 8. Added Value

In order to provide the added value and satisfy needs of advisors, administration, as well as farmers, so there are following added values recognized:

- knowledge base of questions and answers
- transparent correspondence
- quality of assurance

The quality of agricultural production is strongly influenced by the set of various influences, so ensuring the knowledge and the most appropriate answers to the growing number of questions, becomes a must in all kinds of situation. The system that ensures the information, guideline, answer or any kind of support, expertise is always important and expected, primarily among the farmers' population, but such a communication represents critically important role for the advisors and institutions and organizations.

## 9. Value Analysis/ How to measure performance

- Statistics related to queries categories in relation to farmers' needs,
- knowledge base visits (Google Analytics).
- Statistics of answered questions.

## 10. Risks

<b>Risk</b>	<b>impact</b>	<b>likelihood</b>
Team capacity	high	
Advisors reaction in using DATs	medium	
Adoption of DATs to advisors needs	low	
Sharing the DATs within and between advisory organisations and networks	medium	

## Inagro business case

### 1. Challenge/Problem

Inagro farm advisors face challenges in improving their service towards dairy farmers on ration.

Nowadays these advisors have the challenge of exchanging about ration practices without the ability of face-to-face meetings and on farm consultation.

### 2. Target Group

We are targeting the dairy ration and management advisors.

### 3. Budget and external finance (including the FAIRshare budget)

	PMs	Euro x €1000
Adaption	7	40
User testing	1	5
External consultancy	1	10
Tendering, Licenses and translation		
Promotion		

Source of finance:

### 4. Resources

Who/what	PMs	Activity/task	explanation
Person: specialist staff		DAT maintenance	
Services: ICT...		Train the trainer and farmer	
Hardware/training rooms	7000€		
Travel and subsistence	3000€		

### 5. Approach

See 1.5 Action plan for adoption

### 6. Selecting DATS

Abc...

## 7. Activities

See 1.5 Action plan for adoption

## 8. Added Value

The DAT solves partly the problem of consulting on ration without the ability to meet farmers on their farms by facilitating remote consulting.

## 9. Value Analysis/ How to measure performance

We will send follow up surveys to the advisors and the farmer clients to assess the impact the DAT has had on their ration management.

We will measure the level of adoption of the DAT amongst farm advisors and their clients.

Assessing the performance against our targets, will take place in a self-evaluation process.

## 10. Risks

Risk	impact	likelihood
Poor internet signal on farms preventing DAT use	high	Low
Lack of digital experience and skills hindering DAT use	medium	Low
Farmers may not see clear benefits of DAT	medium	Low
Farmers reluctant to change from face to face to remote consulting	medium	Low

## EPC business case

### 1. Challenge/Problem

Farm automation has led to increased farm sizes and more intense poultry production. In order to keep the overview in their farm, poultry farmers can make use of sensor data to monitor key production processes. The challenge therefore is the correct interpretation of these data by means of a data-based decision support system that translates farm data into valuable information. Automated dashboards, based on Porphyrio® and PeHeStat software, allow the monitoring of poultry production, health and welfare status of the flocks in real-time and allow data-driven decision making.

### 2. Target Group

The target group are mainly poultry farmers with multiple poultry houses on multiple farm locations. Better understanding of the generated data will help in the further adoption of sensors and control strategies in the poultry sector.

Advisors, such as feed consultants, veterinarians etc. will also benefit from this. A better understanding of the farm data will result in better advices to improve farm processes.

Technology providers will be encouraged to share data with the selected DAT. More data will result in better monitoring of the flock.

### 3. Budget and external finance (including the FAIRshare budget)

The costs should not be exceedingly high. Most costs will come from men hours to adjust software configurations to optimize the tool. There are no development costs involved for this tool in this stage. Technical support may be needed for the development of the app for the farmers. Overall, the tool and app should be up and running within a year. Maintenance costs should consist only of manpower to solve issues.

Budget for: (examples:)	PMs	Euro x €1000
<b>Research &amp; Development</b>	2	11
<b>Validation</b>	2	11
<b>Deployment &amp; Evaluation</b>	4	22
<b>Dissemination</b>	1	5,5
<b>Total</b>	9	49,5

Source of finance: FAIRshare budget

#### 4. Resources

The work on the development of the tool is done by an external third parties PeHeStat and Porphyrio®. EPC will use resources in the search of data input sources, health KPI definitions, on-farm tool validation, training of local farmers and advisors, gathering feedback from commercial poultry farmers and poultry advisors, and by further disseminating the tool and results in local activities. Time will be made for sessions with the advisors to train them in using the tool. Once fully operational it won't need much work to maintain the tool, only if some changes/additions need to be made extra manpower will be needed for updating the training protocols.

Who/what	PMs	Activity/ task	explanation
<b>Person:</b>	2PM	WP 4	DAT selection in User Case
	2PM	WP 5	Planning of User Case
	5PM	WP 6	Support, monitor and train User Case
	-----	-----	Allocation of Experts from EPC
	9 PM	Total	
	€49.500		
<b>Services:</b>	€14.000		€9.000 for cross visits €5.000 for translations
<b>Hardware/training rooms etc</b>	€6.100		€6.100 for user training initiatives
<b>Travel and Subsistence</b>	€2.400		Travel and subsistence for EPC experts
<b>Indirect Costs</b>	€18.000		

#### 5. Approach

- Define data sources in poultry farms, improve data collection, produce dashboards, calculate KPI's.
- The dashboard and KPI's will serve as a decision tool for poultry farmers to make data-driven decisions

- Data benchmarking across farms will evaluate farm performance and management targets
- Better understanding of farm data will result in better farm advice.

## 6. Selecting DATS

Data inputs will be selected in the beginning of the trial, as the availability of data will constrain the dashboard.

## 7. Activities

- Gather information (sensor data, KPI's...)
- Development of dashboard (PeHeStat)
- Validation on one farm (EPC)
- Deployment on several commercial farms
- Final evaluation of the dashboard
- Dissemination activities through EPC communication

## 8. Added Value

- The definition of productivity, welfare and health indicators will contribute to improve the sustainability of poultry farming.
- Benchmarking of production, welfare and health indicators will help farmers and advisors to define new management goals.
- Promote poultry farming as a modern sector of intensive livestock production with sustainable methods and best practices.

## 9. Value Analysis/ How to measure performance

- Increased use of automation and control in poultry farming.
- Better use of DATS in data-driven decision making by farmers and advisors.
- Engagement of multiple stakeholders (feed, veterinarians, hatcheries, breeders, technology providers, installers...) in the poultry sector.

## 10. Risks

Risk	impact	likelihood
Farmer's approval to use their data	High	Low

Accessibility of data inputs (manual vs. automatic)	High	Medium
Lack of analytical skills; complexity of dashboard	Medium	Low
Involved license costs hinder DAT adoption	Low	Medium
Commercial DAT providers protect their IP	Low	Low
Delay with some activities – COVID19	Medium	Medium

## ZLTO business case

### 1. Challenge/Problem

Help farmers to take decisions that improve performance 3-4 chosen challenges in their farm: bring together relevant data, select the main challenges and define improvement targets/KPIs, produce the graphs that support and evaluate the actions taken. Perform this work together with advisors from Vion slaughterhouse.

### 2. Target Group

20 advisors, 400 users

### 3. Budget and external finance (including the FAIRshare budget)

Action	PMs	costs	info
Strategic collaboration with VION (slaughterhouse with advisors)	1		Costs covered by zlto
Operational planning	1		
Test advice for farmers, supplying VION	3	10k	
Evaluation, practical adaptations/workarounds	2		
2 <sup>nd</sup> group of farmers	2	5k	
Evaluation and adaption of tools	1		

### 4. Resources

20 advisors in ZLTO

Additions/ optimizations of the opticow programme

### 5. Approach

Improve the advice given to farmers with a further improved dataset that comes from the collaboration with Vion. Test the effect of the advice and overviews.

### 6. Selecting DATS

We make an overview of offer in dutch advisory support tools

## 7. Activities

- Strategic collaboration with VION (slaughterhouse with advisors)
- Operational planning
  
- Test advice for farmers, supplying VION
- Evaluation, practical adaptations/ workarounds
- 2nd group of farmers
- Evaluation and adaptation of tools

## 8. Added Value

to make a real improvement of farm results.

## 9. Value Analysis/ how to measure performance

The farmer has better result (farmer's statement)

Vion describes advantages of collaboration on (interview key person)

ZLTO has better relation to its members and Vion (interview key person)

## 10. Risks

Risk	impact	likelihood
Policy changes in ZLTO stop development of Opticow	high	high
Vion does not want to collaborate sufficiently	medium	low

## **INTIA business case**

### **1. Challenge/Problem**

The challenge consists of finding the way to **keep and share** all the valuable knowledge created in our firm by advisors. Advisors create a huge amount of information, knowledge and advices, overall advisors with a long background of working years.

The business opportunity is providing an easy way for advisors to upload and record all the recommendations of their advices or the results of some detected issues, so that other advisors with similar problems can consult remotely previous experiences. The increased use of mobile devices made it possible. This tool would have a significant impact on advisory services. Another challenge for advisors is to reach the largest number of farmers.

The idea of the tool would be a mobile application which can be consulted in real time. Another option, could be a simple spreadsheet that could be developed as a web tool in a finally version. Regarding an issue or a plot, any advisor will be able to consult in real time all the information concerning this problem and overall, the way their colleagues solved this specific problem previously.

### **2. Target Group**

As target group of this UC are advisors. The impulse for using a DAT for sharing knowledge must come from the advisory service. 20 advisors divided between livestock and agricultural sectors

#### **1.1.7.3 Budget and external finance (including the FAIRshare budget)**

Most costs will come from the development or the practical adaptation of existing DATS.

The costs would be in the translation, developing, customizing and training of DATS to ensure that these DATS cover the needs of advisors. Running costs would be in monitoring the upkeep of the DATS and updating them.

Planning of other costs:

- 5000€: 1 workshop
- 9.000€: join in 6 Cross Visits
- 5.000€: do 5 Translations for adaption of DATS

- 6.100€: organise 1x train the trainer, 1x 10 advisers (2 days)

The Person-months for these tasks will be divided between the next actions:

Actions (WP4,5,6)	PMs	costs	info
Workshops among advisors/ Build a peer-to-peer learning among advisory services	1		Cost assumed by INTIA
Set up plan for sharing information	0.4		Cost assumed by INTIA
Evaluation of tools	1		Cost assumed by INTIA
Practical adaptation of tools/ workarounds or development of a new one	10		Cost of translations/Cost assumed by INTIA
Start of the adoption	0.8		Training advisors
Enable advisors to use the DAT	1		Training advisors
Use of the tool by all advisors	1		

### 1.1.7.4 Resources

The resources for the development of a new tool will be done by INTIA's own employees.

In case INTIA had to adapt an existing DAT the resources would be external. It is crucial to make sessions with advisors and external assistance (trainers) to train advisors in using the tool.

The rest of the required work will be done by members of INTIA.

Once fully operational it won't need much work to maintain the tool, only if some changes/additions need to be made extra manpower will be needed.

### **1.1.7.5 Approach**

First, the tool has to be developed or adapted and eventually, it has to be adopted by advisors. It is vital that advisors should be involved in all the process. The whole project should take one year.

Information exchange with other rural advisory services is very important, to know if they are facing the same challenges, so we will organise 3 cross visits to countries with a similar tool and issues.

### **1.1.7.6 Selecting DATS**

The selected DATS must be easy to use for the advisors. If the tool doesn't exist in the market, INTIA employees will develop a new tool wich fit with all the needs of advisors. The tool must be flexible to add new functionalities if new needs arise.

If the tool is easy to use it will trigger advisors to share more data.

### **1.1.7.7 Activities**

The first activity will consist of developing a new tool or adapting the existing ones, making them more attractive and easy to use for advisors. For this part all the inputs from advisors should be taken into account. In the second activity advisors must learn how to use the tool with the help of a trainer. And finally, once the tool has been selected or developed, all relevant information must be entered and registered. Particularly concerning the older generation, special efforts must be made to involve these people and to make the advantages of digitalization accessible to them.

### **1.1.7.8 Added Value**

With the new completed tool, work will be done more efficiently. More information will be gathered by advisors, so it will enable advisors to share their expertise and knowledge to other advisor with similar issues, thereby saving time and enhancing the assistance to farmers. Good communication adds value strengthening the relationship among advisors with a closer exchange of experiences

### **1.1.7.9 Value Analysis/ Controlling**

Advisors will be in contact with the developers of the tool, so they will give feedback about the use of the tool and what needs to be improved.

Once the tool has been developed or adapted, interactions with the tool will be recorded to know the level of participation of each advisor in this process. With this measure, we could detect advisors who don't want to use it, and we could ask them about the reasons for not using it.

#### **1.1.7.10 Risks**

The main risks could be:

- The tool is not accepted by advisors if they don't have digital skills
- Advisors not willing to share their knowledge with others, fear losing their prestige position
- Little information given by advisors
- The entrance of information in the tool can generate more work and will need to take time for this.

## I4Agri business case

### 1. Challenge/Problem

The challenge advisors and vets are facing, is providing consultation services to their farmers during travel restrictions or limitations, e.g., during COVID lockdown or bad weather, that makes on farm consultation not possible. Remote knowledge exchange to farmers, both one to one and group communication on best practices and animal husbandry, has been identified as a crucial need for the advisors to tackle.

In the area of advising farmers on the best actions to reduce CO2 emissions and better capture and sequester carbon, advisors and agronomists are facing another challenge too: to compare between different carbon assessment digital tools and to provide advice on which carbon assessment tool is best suited to individual farm business needs. This again is further complicated by the need to provide advice remotely to their farmers during travel restrictions or limitations, e.g., during COVID lockdown or bad weather, that makes on farm consultation not possible.

The *business opportunity* is providing a remote consultation service for advisors so that they can consult their farmers without needing to travel to their farms. The ability to consult remotely would have a significant impact on advisory services.

On undertaking carbon assessments, the *business opportunity* is providing a remote comparative assessment decision support system for carbon assessment DATS and their suitability to individual farming businesses which is suitable for remote use. This will enable advisors and agronomists to remotely undertake carbon assessments and should increase farmer uptake and willingness and ease to use the DATS.

### 2. Target Group

We are targeting veterinarians who provide advisory services on biosecurity to the sheep sector. They need to be able to provide educational material on biosecurity management techniques. They also need to be able to communicate directly to their clients and share knowledge and best practices from peer-to-peer learning.

We are also targeting advisors and agronomists who provide advisory services on carbon assessment and management to farmers. They need to be able to provide tailored services to individual business structures, which requires

choosing the assessment tools most appropriate to business needs. A decision support tool will enable them to use digital carbon tools remotely, to assess, benchmark, measure, monitor changes in CO<sub>2</sub> emissions, carbon flux and carbon stocks in agricultural systems.

### 3. Budget and external finance (including the FAIRshare budget)

The costs would be in the development and extension of the platform by the digital partners to ensure the DATS meets all the needs of the advisors.

Costs would also be in the adaption of the existing soil assessment decision support tool into a decision support tool for carbon assessment which can be used remotely by advisors and agronomists, ensuring that the DATS meets all the needs of the advisors.

Running costs would be in monitoring the upkeep of the DATS and updating the digital platform and digital decision support tool hosted within the platform.

Budget for: (examples:)		Euro x €1000
Operational planning		5
Adaption	Of OnlineAgshow platform  Of soil decision support system to carbon decision support system	24
Adaption	To remote use	9.4
First advisor testing workshop	5 advisors (1 day)	2.2
First farmer testing workshop	5 farmers (1 day)	2.2
Second adviser testing workshop	10 advisors (1 day)	5.4
Second farmer testing workshop	10 farmers (1 day)	5.4
Travel to 6 workshops to promote use of DAT	(national)	2.4
Join in 6 Cross Visits		12
Evaluation		9

Organise 1x train the trainer, 1x 15 advisers (2 days)		8
Translations	5	5
TOTAL		90

Source of finance: FairShare

#### 4. Resources

IfA will put 14 person months to the implementation of the UC/BC.

Advisors will need to attend training sessions to be able to operate the DATS themselves.

The decision support tool DATS to meet the advisor needs can be adapted using resources and expertise from within IFA.

Who/what	PMs	Activity/task	explanation
Platform adaption:	2	DATS maintenance	I4agri staff will adapt and maintain the DATS
Decision support tool adaption for carbon & remote use	5	DATS adaptation	I4agri staff will adapt and maintain the DATS
Services:	5	Train the trainer and farmer	We will teach the advisors and farmers how to use the DATS
Advisor networking and DAT promotion	2		

#### 5. Approach

Firstly, the collaboration with livestock vets will be established. They will try the DATs on a small number of farms (5). The implementation on the 5 farms will then be evaluated and the advisors will then implement the DATS on 15 farms.

We will organise 3 cross visits to countries with a similar sheep system that would benefit from this DATS. Possible suitable countries include France, Netherlands, Germany, Ireland and Switzerland.

The current decision support tool for soil assessment and services will be adapted into a decision support tool for selecting appropriate carbon assessment DATS. The project will try out the decision support tool DATs with a small number of advisers (5) on a small number of farms (5). The implementation on the 5 farms will then be evaluated and the advisers will then implement the DATS on 10 farms.

We will organise 3 cross visits to countries developing or using similar carbon assessment DATS and decision support tools for carbon that would benefit from these DAT. Possible suitable countries include Ireland, France, Germany, Denmark and Switzerland.

Overall, the process will take 24 months.

See also 1.6 Action plan for adoption

## 6. Selecting DATS

The DATS must provide a platform for uploading and providing access on advisory materials. The DATS must also facilitate two-way conversations between advisers and farmers. The Online Agricultural Show would be a suitable DAT to meet the requirements for veterinarians advising on sheep biosecurity, responding successfully to the needs of:

- Providing accurate and real time information
- Knowledge exchange
- Improve advice efficiency
- Improve farmers involvement
- Empower the farmer

Furthermore, they will provide a platform for the comparative assessment of different carbon assessment tools.

Functionality will provide:

- Ability to compare different carbon assessment DATS
- Ability to select carbon DATS appropriate to farm enterprise and information needs

- Provide remote use of Carbon assessment DATS when on farm meeting is not possible
- Improve advice efficiency
  
- Improve farmers involvement
- Empower the farmer
- Expand market entry opportunities for farm carbon sequestration
- Enable farmers to better meet the challenges of climate change

## 7. Activities

The activities that must be done by the veterinary sheep advisors are the digital uploading of advisory resources to the DATs, as well as monitoring and keeping the digital resources up to date (*digital action*). I4agri will also monitor the upkeep of the DATS and ensure the digital software is up to date. Veterinary advisors and their farmer clients will also attend workshops run by I4agri to learn how to effectively use the DATS (*physical/virtual*). Farmers will be trained how to communicate to their advisor through the DATS and how to add their own resources/data.

## 8. Added Value

The DATS solves the problem of consulting without the ability to meet farmers on their farms by facilitating remote consulting.

What is more, the DATS solves the problem of comparing different carbon assessment tools and being better able to select tools appropriate to individual business structures and information needs along with the provision of advice without the ability to meet farmers on their farms by facilitating remote consulting.

The advantage goes beyond remote consulting and provides advisors with opportunities for new knowledge exchange schemes that they can offer to their clients. This provides new business opportunities for advisors to bring together multiple parties on a virtual platform, to share knowledge and co-create solutions in an interactive/innovation approach with farmers.

## 9. Value Analysis/ How to measure performance

We will send follow up surveys to the advisors and their farmer clients to access the impact the DATS has had on their consulting business and farms.

We will measure the level of adoption of the DATS amongst farm advisors and their clients.

Assessing the performance against our targets, will take place in a self-evaluation process.

## 10. Risks

Risk	impact	likelihood
Poor internet signal on farms preventing DATS use	high	Low
Lack of digital experience and skills hindering DATS use	medium	Low
Farmers may not see clear benefits of DATS	medium	Low
Farmers reluctant to change from face to face to remote consulting	medium	Low
Carbon assessment is not prioritized by Gov	medium	V low
Carbon sequestration markets slow to emerge	medium	low
Alternative decision support tool for carbon assessment comes to market	high	low

## Cajamar business case

### 1. Challenge/Problem

To help advisors in the decision making on fertigation of greenhouse-grown vegetable crops and to facilitate digital on-farm registration of the recommendations.

### 2. Target Group

Advisors working at cooperatives integrated in COEXPHAL (although the final tools will be available for other advisors).

### 3. Budget and external finance (including the FAIRshare budget)

Budget for:	PMs	Euro x €1000
Management	3	11.90
Adaption	8	31.75
Dissemination	4	13.10

Source of finance:

### 4. Resources

Who/what	PMs	Activity/ task	Explanation
Person:	15 PM €56,751	WP 4, 5, 6	Personnel from CAJAMAR (12 PM) and COEXPHAL (3 PM)
Services:	€8,825	WP 6	€8,825 for cross visits
Hardware/training rooms etc	€6,100	WP 6	User training initiatives
Travel and subsistence	€2,400	WP 6	

### 5. Approach

Advisors currently using the App for the digital registration of the recommendations will propose possible improvements. The new versions will be tested by an increasing number of advisors, who will provide feedback.

A DSS for fertigation will be adapted to give recommendations for the different nutrients.

## 6. Selecting DATS

Campest, VegSyst-DSS

## 7. Activities

Definition of improvements in the App

Adaption of the App

Adaption of the DSS and integration in Cajamar's digital platform

Evaluation of the adaptations

## 8. Added Value

To facilitate and improve the work of advisors.

## 9. Value Analysis/ How to measure performance

During the progressive improvement of the digital on-farm registration tool there will be direct contact with the advisors, which will allow us to know if the tool satisfies their expectations.

The access to the DSS integrated in the digital platform will be recorded to know who is using the tool and which frequency with.

## 10. Risks

Risk	impact	likelihood
Insufficient collaboration of Hispatec	high	low
Advisors are reluctant to use the App	high	medium
Advisors do not suggest enough modifications to the App	high	medium

## Consulai business case

### 1. Challenge/Problem

. Develop dynamic dashboards based on the AGRO Business Intelligence tool from Microsoft, monitoring productivity and sustainability indicators of farmers in the Alqueva irrigation Region.

### 2. Target Group

. Farmers (120.000ha), advisors, IT providers, National Authorities, Policy makers

### 3. Budget and external finance (including the FAIRshare budget)

Budget for: (examples:)	PMs	Euro x €1000
Development	4	22
Validation	3	16,5
Promotion	2	11

Source of finance:

### 4. Resources

Who/what	PMs	Activity/ task	explanation
Person:	9PM 49.500€	WP4, 5, 6	Allocation of Experts from CONSULAI
Services:	20.100€		€9,000 for CROSS VISITS  €5,000 for TRANSLATIONS
training rooms etc	6.100€		€6,100 for USER TRAINING INITIATIVES
Travel and Subsistence	2.400€		Travel and Subsistence
Indirect Costs	18.000€		

### 5. Approach

. Define main indicators for main crops, improve data collection, produce dashboards – decision tool – to help farmers, and benchmark indicators across Alqueva Region, and Develop a broader dissemination.

In addition, it could also reinforce the issue of the efficiency of the use of agricultural inputs & services and their impact, and improve the relationship with CAP reform and the Green Deal.

## 6. Selecting DATS

. DATS will be selected based on the main indicators identified. Data from these DATS will be integrated into the AgroBI dashboards.

## 7. Activities

Gather information (crops, indicators, ...)

Development of dashboards (AgroBI)

Validation

Dissemination activities - **MobITAlqueva**

## 8. Added Value

. The definition of productivity and sustainability indicators interconnect them (Region benchmarking) and contribute to the sustainability of the Alqueva Region without compromising its agricultural potential.

Help farmers to benchmark their productivity and sustainable indicators

Promote Alqueva Region, as a Region of intensive agriculture with sustainable methods and best practices.

## 9. Value Analysis/ How to measure performance

Better engagement and use of DATS in decision making by farmers and their advisors.

Engage all stakeholders of Alqueva irrigation Region

Contribute to improve sustainable practices in the Region

10. Risks

Risk	impact	likelihood
Farmer's approval to use their data	high	Low
Data from service providers accessible	high	Medium
Delay with some activities – COVID 19	medium	Medium

## Idle business case

### 1. Challenge/Problem

The COUPROD implementation was based on the current needs of providers of technical and economic support on competitiveness of livestock activities and breeders. Therefore, this tool aims to become a common and complementary gateway to other technical support tools in livestock activities. The establishment of a database allows the capitalization of field observations and the consolidation of the approach of advice and search for room for improvement.

In 2020, a new step is faced with the implementation of COUPROD-Web, an interface able to help costs of production farmer's auto evaluation. Barely half of accompaniment is done in collective actions with group of farmers engaged in results comparison. It gives the opportunity to observe the advisor implication in the training and in the farm group animation. New services can be provided in answer to their request to explore factors such as feed cost implementation, labor cost evaluation, mechanic cost explanation and management. The idea is to co create with them new tools and graph needed in collective meetings.

### 2. Target Group

We will organize several target groups, grouping advisors and breeders gathered on different production (dairy, beef, sheep and goat production). At the end, composite group will conclude on the global coherence.

### 3. Budget and external finance (including the FAIRshare budget)

Budget for:	PMs	Euro x €1000
Users targeting (advisors and farmers)	0.5	3.0
Co creation (advisors and farmers)	0.5	3.0
Implementation of new services	1	6.0
Advisors training	1	6.0
User testing	1	6.0
Tendering, Licenses and translation	1	6.0
Translation	1	5.0
Cross visit (preparation and management)	1	6.0
Promotion	0.3	2.0

#### 4. Resources

Who/what	PMs	Activity/ task	explanation
Person:	4.8	DAT Maintenance and project coordination	
Services:			
Hardware/training rooms etc			3.0 K€
Travel			3.0 K€

#### 5. Approach

See 1.5 Action plan for adoption

#### 6. Selecting DATS

COUPROD

#### 7. Activities

See 1.5 Action plan for adoption

#### 8. Added Value

New services will be able to extend the COUPROD use to new advisors and to new assistances.

#### 9. Value Analysis/ How to measure performance

Beyond the regular statistic monitoring on COUPROD uses, an evaluation survey will be organized to estimate the assistances improvement and the level of satisfaction of advisors and farmers.

#### 10. Risks

Risks	impact	likelihood
Lack of digital experience and skills hindering DAT use	high	low
Farmers may not see clear benefits of DAT	medium	medium
Lack of data inter operability	high	high

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## NAK business case

### 1. Challenge/Problem

The authorities' slowness and bureaucracy. In the Ministry of Agriculture and the National Treasury Authority, allowing access to use the background database is lengthy and cumbersome due to bureaucracy. During the training, the advisors/consultants will learn easily about the SPV calculator as they are openminded. There is a great demand for the use of several agricultural sectors, although its use will take a few months. It will take more time for farmers to routinely use the new, expanded application. As it saves them money and time, it will hopefully spread quickly among them.

### 2. Target Group

Advisors, rural development consultants, and farmers, young farmers, food processors, foresters (in field: Field crop producers, Growing of vegetables and ornamental plants producers, Fodder-, lawn-, seed-, fallow-, Plantation of mushrooms, Animal husbandry producers, etc.)

### 3. Budget and external finance (including the FAIRshare budget)

Source of finance:

Budget for: (examples:)	PMs	Euro x €1000
Adaption	1	1000
User testing	1	1000
External consultancy	0,5	500
Tendering, Licenses and translation	0,5	500
Promotion	0,5	500

### 4. Resources

Who/what	PMs	Activity/ task	explanation
Person:	NAK expert	coordination	
Services:	NAK/IT developer	develop	
Hardware/training rooms etc	NAK National Consultancy Center	In the basic training of advisors, as part of the knowledge of IT systems module, the use of the SPV calculator will be taught to consultants.	

## 5. Approach

. Problem raising, description, visiting an IT specialist, IT development, testing with consultants, education in trainings, practical use.

## 6. Selecting DATS

. By telephone interview with advisors (due to the pandemic).

## 7. Activities

. Presented in the context of training and learn to use the application.

## 8. Added Value

. Standard Production Value (hereinafter: SPV) expresses the output of the Sectors. The production value includes sales, farm use, farm consumption and income from changes in stocks for both the main product and the by-products, does not include the value of organic manure in animal husbandry, includes aid linked to any product, area or livestock. So, in short, it can be used to determine the total level of profitability of agricultural production for the farmer.

For SPV, the data used to compile the standard values cover a production period of 12 months.

For products where the production period is shorter than 12 consecutive months (eg pigs for slaughter), it should be extended to 12 months. When the production period (for livestock and meat production) is longer than one year (eg beef cattle), the SPV coefficient should be taken into account for a performance of 12 months.

Therefore, in general, in the case of animal husbandry, it is not the current number or number of space (for the animal) that should be given, but the annual average number.

SPV values should be determined per hectare in crop production (per 100 m<sup>2</sup> for mushrooms) and per year for livestock in animal husbandry (100 animals per poultry, per family in apiary).

The calculator on the NAK website can be used to calculate the SPV for the support of the new Rural Development Program for the period 2014-2020.

The need for its development came from the consultants (see the development details below.) The goal is for this app to calculate even more sectors and be more user-friendly and fast.

Currently, SPV can be calculated for 5 sectors, the goal is to increase to 14 + 1 in the future.

#### 9. Value Analysis/ How to measure performance

. Farmers can use the SPV with the help of advisors or alone for tenders.

The SPV app activities of advisors and farmers would be easy to measure through users if they use the mobile application, which can be used from the NAK's portal easily.

#### 10. Risks

Risk	impact	likelihood
Authorities, bureaucracy	high	50-50%
Euro-forint exchange rate change	low	100%, BUT is built in the developing project, we account for this effect; treated
Updated application is not working in time (in the daily work of advisors and/or user farmers)	high	50-50%

## Naturland business case

### 1. Challenge/Problem

Naturland advisory services faces the challenge of bundling their communication channels in one system that has quite impact on the way of communication between advisor and farmer, but also internal. Now the advisors have to work on different channels and keep the overview of which issue is treated on which channel. The situation for the farmers is quite similar. The increased use of mobile devices made it possible for them to communicate whilst working on the farm or even on the tractor, but otherwise, the challenge is also not to be overwhelmed of so many different ways to get information.

### 2. Target Group

As target group of this UC can be defined both sides of the rural advisory, farmers, and advisors. The impulse for using a DAT for bundled and enhanced communication must come from the advisory service to keep structure and strategy lean and clean. Farmers' needs and organisational matters are too diverse for them to be the driving force in this process. A consolidation of internal communication would also be very helpful, but not necessarily - it would be rather a "nice to have". The focus here is clearly on the farmers' side.

### 3. Budget and external finance (including the FAIRshare budget)

The costs of adaption, implementation, and training, including the personal costs, should be covered by the existing FAIRshare budget. Technical running costs are as low as possible. Of course, there will be some fix costs for technical support, server capacity or something else. Overall, the application should last for many years.

Budget for: (examples:)	PMs	Euro x €1000
Adaption	0,5	2,75
Implementation	2	11
User testing	1,5	8,25
Adjustments	2	11
Evaluation	2	11
Promotion	1	5,5

If external funding is needed, several organisations can be identified which would benefit from the use and dissemination of the DAT. Especially for the distribution of information to users, but also for the acquisition of interested

actors, the DAT represents an interesting alternative for potentially targeted organisations. So, with that kind of opportunity any other costs could be financed. The required financial resources for the technical maintaining can be covered internal. However, the risk and the necessary advance payment to make this possible would have to be quantified.

#### 4. Resources

The resources within the Naturland advisory team are not as big as the problem requires. Manpower is constantly required for editorial work, messages, maintaining and supervising. Therefore, the persons currently involved must also be able to perform the new structuring and distribution of tasks. If available, external assistance is partly possible. The fact of low input of manpower requires effective planning during the whole project time. At least two employees must be involved, strategy and ideas must be developed in a kick-off meeting including the management, regular meetings with the management (e.g. every three months) and reporting (monthly) to the management must be made. Technical solutions can support human work or even automate work.

Who/what	PMs	Activity/ task
overview	1	vision, name problem, supervising, ...
Adoption	2	Adopt the tool to needs
Implementation	2	Get the tool going
Training	1	Train the users
Maintaining input	2	Keep it running
Technical support	1	Implementing and maintaining

#### 5. Approach

The successful implementation should not take longer than 6 months, because a new way of communication is hard to implement if already existing channels are well established. A visible additional value for all target groups also seems very important for a successful implementation.

Information exchange with other rural advisory services is very important, to know if they are facing the same challenges and participations are possible or not. This kind of challenge is subject to strong fluctuations, as the information and its dissemination are strongly influenced by the available technical means. Such technical means are developed continuously, therefore, a high degree of adaptability is required.

#### 6. Selecting DATS

The problem can be solved by selecting one or more DATS. Ideally, there is a DAT that combines all requirements. A key factor is the direct individual communication of advisors with farmers and their flexible exchange with each other. It is also extremely important to have the most up to date information facility possible, so that important information reaches the farmers directly and online. The various information flows must be open and possible in all directions (top-down, bottom-up, advisor-farmer, farmer-advisor).

Scanning the FAIRshare inventory, the tool “Appack” seems to be a good option that meets the requirements.

## 7. Activities

At least the described communication must be transferred to the tool, internal communication compulsory, for external use (farmer-advisor) the DAT must be more attractive than existing tools. An overview of the currently different information channels has already been created and classified. Once the appropriate tool has been selected, all relevant information must be entered and registered. Afterwards, advisory colleagues must be trained and procedures for processes must be defined. If the basic requirements have all been fulfilled, the procedure can be extended to the farmers. Sufficient information and offers of assistance would be optimal. Particularly concerning the older generation, special efforts must be made to involve these people and to make the advantages of digitalization accessible to them.

## 8. Added Value

The chosen DAT must give the value of less work for both parts of the target group. This point should be obvious so that saved worktime stands as a value itself.

But the added value should not only be the efficiency of work. It would be a great assistance for farmers if all the relevant information they need to run their farm or comply with the guidelines from their growers' association were available on as less media as possible, ideally on a smartphone, of course, as it is usually at hand.

New ways of getting in touch with colleagues also generate new possibilities and markets for the farmers. Good communication and added value strengthen the relationship between advisor and farmer. Furthermore, quitting of contracts between farmers and their advisor or growers association are more unlikely, if they have a better and closer exchange.

## 9. Value Analysis/ How to measure performance

The activities of farmers and advisors would be easy to measure if they selected DATS is a mobile application, which can be downloaded from the Google Play or Apple Store. There are recordings of the number of Downloads available. The majority of the potential users will be all members of the growers association, "Naturland e.V.". Therefore, they are already paying an annual membership fee which includes the advisory services. This results that the farmers are not willing to pay extra money for the DAT. They can easily be animated to use the DAT or if they do not want to use it, ask them about the reasons not using it. Surveys for advisors and farmers will be set up to measure the performance. Especially for the younger generation, the use of DATS during the advisory services is a key success factor to attract them and make the advisory interesting and helpful.

## 10. Risks

The risks concerning the BC are classified into two groups; at first, we look at the upcoming risks of putting the DATS into practice, at second the option of doing nothing is to be treated.

### DATS implementation

Risk	impact	likelihood
The DAT is not accepted, either in the advisory group or in the farmers' group and will not be used	high	60%
Too much or too less information given from the advisors	medium	35%
Maintenance of the DAT can cause more work/costs	medium	25%
Technical issues prevent a greater use	high	10%
Farmers expect a faster response from their advisors, as they can deliver	low	50%

### Doing nothing

Risk	impact	likelihood
Advisors have a lot of work in spreading the information on too many different ways	high	90%
Farmers do not find the right information in time	high	75%
Other companies (commercial orientated) are using the gap for their business	high	75%

Disregard for the younger generation	medium	50%
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## APCA business case

### 1. Challenge/Problem

Integrate new services (OAD Decitrait, Mes Sat'images) to the Mes Parcelles platform in order to deploy new services and meet the expectations of farmers and advisors

### 2. Target Group

Farmers, Advisors, Partners, Policy makers

### 3. Budget and external finance (including the FAIRshare budget)

Budget for:	PMs	Euro x €1000
Engineering		25
Development		12.5
Training		12.5

Source of finance:

### 4. Resources

Who/what	PMs	Activity/ task	explanation
Engineer		<ul style="list-style-type: none"> <li>• Assistance to mastery</li> <li>• Subject mastery</li> </ul>	
Trainers		Train the trainers	

### 5. Approach

After identification of services (Mes Sat'Images and DST Decitrait), expression of end-user needs, translation into specifications and specification (technical aspect), IT development (integration of services on the Mes Parcelles platform) and appropriation plan.

### 6. Selecting DATS

The Mes Parcelles platform is the chosen DATS in which we wish to integrate the Mes Sat'images and Decitrait DATS

7. **Activities**

8. **Added Value**

Provide more services to improve farm management

Improve on-farm data collection

Optimizing the use of farm data

9. **Value Analysis/ How to measure performance**

Number of farmers and advisors using these new services

10. **Risks**

Risk	impact	likelihood
Low interest in new services	medium	50%
interoperability of data	low	25%
Long-term partner engagement	low	10%

## LKO business case

### 1. Challenge/Problem

The challenge advisors face is providing better quality services in direct interaction with farmers – like air quality in livestock buildings as well as automating repetitive initial customer interactions in order to free advisors for more complex work.

The **business opportunity** is to

- a) provide a digital real-time monitoring service for livestock buildings aiding animal and human health and enable farmer to adopt digital solutions
- b) cut costs and provide more time for advisors by automating non-complex, repetitive tasks.

### 2. Target Group

Depending on the identified challenge, we envisage two different target groups within our use case:

Target group challenge 1: Austrian farmers who search for topical information via the website.

Target group challenge 2: Austrian livestock farmers and livestock advisors.

### 3. Budget and external finance (including the FAIRshare budget)

The costs would be in the translation, customizing and training of the DATS to ensure that these meet the needs of advisors and farmers. Running costs would be in monitoring the upkeep of the DATS and updating the digital platform.

Planning of other costs:

- 2.400€: travel to 6 workshops (national)
- 9.000€: join in 6 Cross Visits
- 5.000€: do 5 Translations
- 6.100€: organise 1x train the trainer, 1x 10 advisers (2 days)

### 4. Resources

LKO will put nine person months in the implementation of the UC/BC. Advisors will attend training sessions, enabling them to operate the DATS themselves. External partners, like developers, will be necessary to implement translations and customizations, into the DATS in accordance to users' needs.

Who/what	PMs	Activity/task	explanation
DATS developer		DATS customizing	The digital partners will customize the DATS
Services		Train the trainer and farmer	We will teach the advisors and farmers how to use the DATS

## 5. Approach

The approach taken by the LKO User Case is tailored to the needs of each challenge.

Step	Challenge	Activity	Target group
1	2	Select and train advisors in the proper use of the chosen DATS as well as the DATS evaluation process and forms.	2 advisors
2	2	Collaborate with advisors to identify and select farmers for deployment of DATS.	4 farmers
3	2	Deploy selected DATS on farms and evaluate their performance. Collect requirements for Challenge 1	2 advisors, 4 farmers
4*	2	Adapt DATS, if necessary, to better-fit user needs.	
5	2	Extend the deployment of the selected DATS to 10 farms.	2 advisors, 10 farmers
6	1	Deploy an AI-chatbot focused on the topics identified in the evaluation of the Challenge 2 and Challenge 3 pilots.	2 advisors
7	1	Test AI-chatbot with advisors and farmers, evaluate user satisfaction and adapt to better-fit user needs.	10 advisors, 10 farmers
8	1 and 2	Organise 3 cross visits in other countries which address similar topics in their advisory activity. Each cross visit will focus on one of the Challenges dealt with in the LKO User Case.	

Overall, the process will take 24 months. The Action Plan in 1.6 provides additional details on the adoption of DATS.

## 6. Selecting DATS

The DATS for Challenge 2 must provide a platform for keeping the necessary information on compliance with air quality standards and the concentration of different noxious substances. In addition, the DAT must provide functionalities which aid:

- Providing accurate and real time information
- Knowledge exchange
- Improve advice efficiency
- Improve farmers involvement
- Empower the farmer.

DATS for Challenge 1 must have a no-programming interface for defining answer automation paths of the chatbot. They must provide interfaces to social media apps like Facebook, e-mail programs – preferably Microsoft products, as well as to messaging apps like SMS or WhatsApp.

## 7. Activities

The activities are done by different groups of people due to the integrated character of the UC/BC.

With the AI-driven chatbot DAT the software expert must collaborate with the two experts (in livestock management) to determine the automated response paths. Potential end users (farmers and advisors) will test the chatbot pilot. Subsequently IT-administrators and subject-matter experts will receive in designing the automated answer paths for the chatbot. LKO will monitor and update the digital resources available for the chatbot.

The activities in the clean air in livestock buildings DATS will be done by livestock advisors who upload advisory resources to the DAT, and who will as well monitor and keep the digital resources up to date. Advisors will train farmers in the usage of the DAT as well as how to collect their own resources and data.

## 8. Added Value

The AI-driven chatbot DAT enables farmers to find relevant information/ the relevant expert online quicker and without needing to visit an advisory services

office. Beyond maintaining customer satisfaction and a high level of personalized advice, the DAT facilitates a better understanding of users' needs for first contact interaction/information. Future services can be designed in a more customer-centric way.

The clean air DAT for livestock buildings enables farmers to better preserve the health of animals by correctly sizing the ventilations openings (in long pan and in ridge) and to choose the correct materials for cladding, according to the type and number of animals housed and the environment of the building.

### 9. Value Analysis/ How to measure performance

The value added as well as the performance of the DATS deployed in the pilot will be evaluated in user discussion groups and surveys for both farmers and advisors.

Before starting the pilot implementation, we will conduct focus groups with the advisors addressing their needs and expectations vis-à-vis the DATS. These will serve as a baseline for future assessments.

After the initial test phase of the pilot farmers and advisors will receive a survey to assess their satisfaction levels, but also to understand changes needed in the implementation and training process as well as the DATS themselves.

6 months after the initial implementation farmers and advisors will received another round of surveys to assess the level of DATS adoption.

### 10. Risks

Risk	impact	likelihood
Poor internet signal on farms preventing DATS use	High	Medium (especially in mountainous areas)
Lack of digital experience and skills hindering DATS use	Medium	Medium
Farmers may not see clear benefits of DATS	Medium	Low
Farmers reluctant to change from manual recordings to automated ones (Challenge 2)	Medium	Low
Necessary changes of DATS for successful adoption in Austria not possible (e.g. due to technical reasons)	High	Medium

AI-driven Chatbot solutions not mature enough (technical) to provide satisfactory user interactions	Medium	Low
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## LAAS business case

### 1. Challenge/Problem

Develop mobile app to e.GEBA programme, but farmers can't use it because of wrong mobile phone (not smart phone). Also app requires internet connection and it can be problem in some rural areas.

### 2. Target Group

Advisors, specialists and farmers.

### 3. Budget and external finance (including the FAIRshare budget)

Budget for: (examples:)	PMs*	Euro x €1000
Adoption/adaption	6.5	22
User testing	1.6	5.5
External consultancy	3.2	11
Tendering, Licenses and translation	1.6	5.5
Promotion	1.6	5.5

\* Calculated using the formula:  $PMs = 49500 \text{ Euro} / \text{LAAS PM rate} * \text{basic division}$

Source of finance:

### 4. Resource

Who/what	PMs	Activity/ task	Explanation
Person:	7	Gathering information, providing a description of the process.  Programming works	Setting the DATS structure, data interface. Preparation of tool descriptions for programming.  LAAS IT specialist will do the programming work. The team will testing developed

	7.5		tool.
Services:			
Hardware/training rooms etc			
Etc			

## 5. Approach

Developed mobile app improves the quality of cooperation between the advisors and the farmers. This is achieved through these program functionalities:

- The farmers can easier provide data on time;
- In app integrated the farmer's farm data management sector (all documents it is in one place), ensure an opportunity for the advisors to provide necessary information at this moment to farmer.

## 6. Selecting DATS

LAAS IT specialist will create mobile app, which will be integrated and associated with e.GEBA programme. The DAT improve these activities:

- The farmers can analyze accurate and real time information about his farm (for example: cost of cultivated plants in eur/ha, applied plant protection products, quantities of fertilizers in kg, l., t/ha, etc.) at any time and in any place;
- Knowledge exchange (between the farmers and advisors);
- Improve advice efficiency (timely counseling).

## 7. Activities

1. Information collection (*working group*)
2. Action plan (*to develop and implement the idea*)
3. Implementation (including all development and testing works)
4. Dissemination

## 8. Added Value

Mobile app will help in a simpler way to get fast and operative information for making productive, sustainable and profitable decisions for farmers in farm management problems. This DAT creation is orientated on improving cooperation between farmers and advisers. Farmers do not need to visit an advisory service office for consultancy, or search needed information in computer (home). All actions can be easily made using mobile (in any time and place). According to COVID-19 situation, it is very important, that all activities can be done remote and in the safe way.

### 9. Value Analysis/ How to measure performance

Using mobile app, there is a possibility to achieve better engagement in decision making by farmers and their advisers. In DAT implementation stage will actively participate all participants: advisers, IT specialist, and farmers. Two cross-visits will be organized in order to identify changes needed in the DATS, in the implementation and training process. After DATS creation satisfaction level will be evaluated.

### 10. Risks

<b>Risk</b>	<b>impact</b>	<b>likelihood</b>
Delay with some activities – COVID 19	hight	medium
Hight workload	medium	medium
Delayed integration of information from / into different databases	hight	medium
Farmers can't use the app because of wrong mobile phone (not smart phone).	hight	low
Mobile app requires internet connection and it can be problem in some rural areas.	hight	low

## Annex II: Presentation of the Q&A session on the 28<sup>th</sup> of January 2021

### Speakers:

Peter Parea (ZLTO), Evi Arachoviti (I4Agri), Franz Hobmeier (Naturland)



**Welcome!**

**FAIRSHARE Q&A session**

**28-1-2021**

Agenda:

- Explanation: context of UC, next steps/timetable
- Finance of the BC:
  - Available PMs; other costs, how to use them
  - Extra budget
- Answering all questions known so far
- Further explanation of Business Case, example Naturland BC
- Open question Tour de Table

**New and last Deadline: 03<sup>rd</sup> February 2021: complete description**

30 Ucs: 20 with partners;  
+10 after open call  
+10 smaller Ucs, address  
questions on HITs & trainings

WP4: select  
WP5: plan  
WP6: Support, monitor, train

## Context

- Use Case is an **advisors' challenge** that is solved, **adopting** (=using) and **adapting** (= translate, not develop) one or more **DATS** (available or added to the inventory)
- Process started last summer (integrating UC BC, etc)
- Deliverable: descriptions **end of February 2021** (postponed)  
so: **Deadline: 03<sup>rd</sup> February 2021: complete description**
- The work is not finished, but it starts **now**



## Questions/Answers so far, financial

How to describe costs:

- PMs: 49500 Euro / your PM-rate \* basic division
- Look at budget for **Trainings**, think how to contribute to organisation
- Look at budget for **Cross Visits**, think how to contribute to organisation
- No details needed! We come with central proposals later

Adaption

- Where do you need translations in project?
- You may use translation budget for (language) **adaption** of DATS

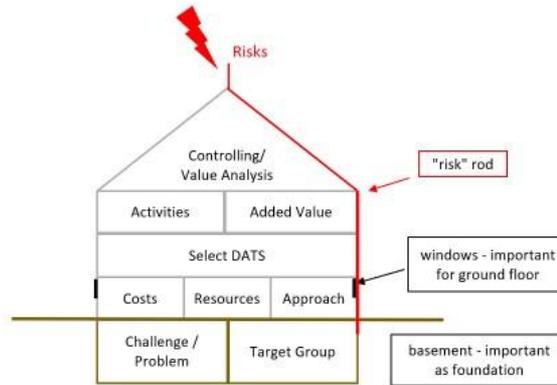
**No change of PM budget to development of DATS (subcontracting)**

Basic div:  
WP4: 2PM;  
WP5: 2PM;  
WP6: 5PM  
TOT: 9PM

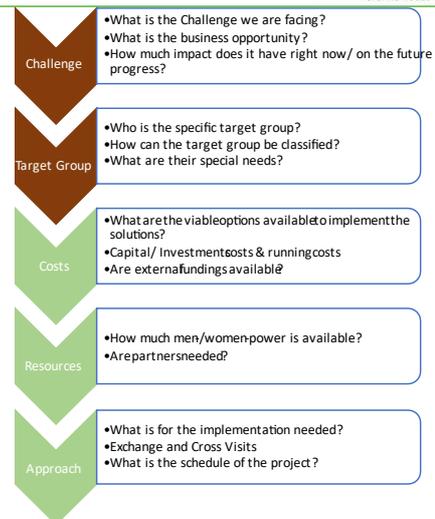
## Business Case

- General overview
- Case of Naturland

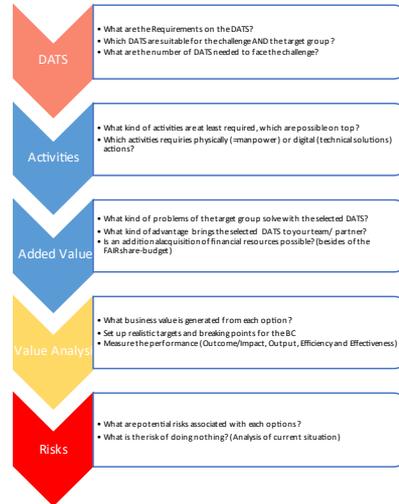
## Business Case: House



## Business Case: Flow Chart



## Business Case: Flow Chart



Questions/Answers

Tour de Table



## Wrap Up

### FAIRSHARE Q&A 28-1-2021

- Context of UC, next steps/timetable
- Finance of the BC:
- Explanation of Business Case
- Open question Tour de Table

**New and last Deadline:**  
**03<sup>rd</sup> February 2021:**  
**complete description**

## Thank you!



Zuidelijke Land en Tuinbouworganisatie  
Peter Pree

[peter.pree@zlto.nl](mailto:peter.pree@zlto.nl)

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