D7.2 - Report on use cases advances

agricore

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Executive Summary

AGRICORE is a research project funded by the European Commission as a result of the RUR-04-2018 call, part of the H2020 programme. AGRICORE proposes an innovative way to apply agent-based modelling to improve the capacity of policymakers to evaluate the impact of agricultural-related measurements under and outside the framework of the Common Agricultural Policy (CAP). The resulting AGRICORE tool will be tested in three use cases, each of them having a special focus on a specific type of impact assessment (IA): environmental IA, ecosystem services IA and socio-economic IA.

The design, preparation, execution and analysis of the three use cases are addressed as part of "WP7 - Use Case Demonstrations". Concretely, Task 7.1 - Use case planning definition, monitoring and agent involvement - is in charge of defining planning and schedule, through which it is intended to prevent possible problems of data availability (or lack thereof) or linked agents throughout the execution of the use case. As part of this task, D7.1 was presented in M25, including a first version of that plan together with a monitoring methodology and risk assessments.

This deliverable presents a detailed progress report on the different use cases considered in the AGRICORE project based on the proposed plan in D7.1. For each use case, a brief description of the measure under study is given in Section 2 and a general update of the use case status regarding the Gantt chart and common risk assessment is presented in Section 3. The following section is divided into 3 sub-sections, one for each use case. In them, the progress with respect to participatory research, dissemination, paper preparation and any other activities is explained. On the other hand, the situation with respect to stakeholders is updated, specifying whether the contacts foreseen in deliverable 7.1 have materialised and whether new contacts have been established. In addition, the situation with respect to the associated individual risks.

Finally, the main novelty addressed in this deliverable is the inclusion of the Italian test case, which was introduced in D7.3. This is not a typical use case, as its main objective is to evaluate the performance of the current ABM module, so minor participatory research activities have been carried out. Its geographical scope is the Emilia-Romagna region, and it studies the structural, productive, environmental and economic impact of progressive taxation of greenhouse gas (GHG) emissions related to milk production.

Abbreviations

Abbreviation	Full name
NUTS	Nomenclature of Territorial Units for Statistics
CAP	Common Agricultural Policy
UCs	Use Cases
ABM	Agent-Based model
PMP	Positive Mathematical Programming
FADN	Farm Accountancy Data Network
EAB	External Advisory Board
GHG	Greenhouse gas
KPI	Key performance indicator
IAM	Impact assessment module
ARMA	Agency for Restructuring and Modernisation of Agriculture
GUS	Central Statistical Office of Poland
D&C	Dissemination and Comunication
RDP	Rural Development Programme
IFAPA	Institute of Agriculture and Fisheries
OPRACOL	Association of olive oil and table olive producers
POLSUS	Polish Pig Breeders and Producers Association
GDPR	General Data Protection Regulation
AAC	Agricultural Advisory Center
IRWIR	Institute of Rural and Agricultural Development
PAS	Polish Academy of Science
IUNG	Institute of Soil Science and Plant Cultivation
ZPWiDR	Management Associations of Agricultural Entrepreneurs Owners and Lesse
NRN	National Rural Network
KOBiZE	National Centre for Emissions Management
AAC	Agricultural Advisory Center

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1 Introduction

The AGRICORE project proposes a unique tool for boosting the existing capacity to simulate the impact of policies dealing with agriculture by utilising the most recent developments in agent-based modelling techniques. Each farm is represented by an agent, which is an autonomous decision-making entity that analyses its own context autonomously and takes decisions based on its expectations and current conditions. Case studies may be created using the AGRICORE tool at several geographic scales, from the local (NUTS2) to the European (NUTS0) levels.

The general goal of WP7 is the creation, planning, implementation, and analysis of three use cases as a way of testing and verifying the created technologies in practical applications. To this end, six tasks have been designed. This deliverable is framed in Task 7.1- Use case planning definition, monitoring and agent involvement. This task aims to plan and schedule the execution of the different use cases of the project. The development of such a plan in the early stages of the project will make it possible to avoid potential problems related to the availability (or lack of) data or actors involved during the execution of the use cases. In fact, the already established collaboration with stakeholders (EAB, clustering activities, platform dissemination activities) will be extended. In particular, key stakeholders from policy-making, linked researchers and the agricultural sector that will be involved in the implementation of the use cases are identified and contacted as part of this task. Furthermore, through this task, it is intended to perform continuous monitoring of the different stages related to the proposed use cases to ensure their correct execution. This monitoring will include, in addition to the general risk assessment and mitigation actions carried out in the project, specific actions to ensure the correct execution of the use cases. Task 7.1 extends until the end of the project, and this deliverable is the second of two deliverables. In the former, D7.1, initial planning and schedule of the use cases were proposed.

In addition to the aforementioned UCs, a fourth one based in Italy has been designed. The aim is to evaluate the structural, productive, environmental and economic impact of progressive taxation of greenhouse gas (GHG) emissions related to milk production considering the current CAP payment system. As in the other three use cases, the idea is to use the ABM tool for the analysis, and, in this case, a Positive Mathematical Programming (PMP) approach will be followed. The integration between ABM and PMP makes it possible to simulate farmers' strategies considering the interaction between them, the territorial specificity and the heterogeneity of farms in the presence of little information on production costs. It also makes it possible to add a social and cultural perspective to the economic factors. The model has been calibrated with 2020 FADN data for the Emilia-Romagna region (Italy). However, it is necessary to highlight that this additional UC is presented in D7.3. In any case, this is not a usual UC because its main role in the project is to test the performance of the ABM module's current approach, so minor participatory research activities have been conducted.

1.1 Context of the document

In the framework of WP7, this deliverable is the third one and the second one in T7.1. Indeed, it is a continuation of D7.1, which contains the initial planning and schedule of the three use cases, and this deliverable consists of a report on the advances of three use cases based on that initial plan. Regarding other related deliverables, D7.3 is also published in M48. Although both are very similar, in that deliverable, the KPIs of interest were selected according to the scope of each use case and the available KPIs of the IAMs.

The activities reported in D7.2 have been highly influenced by the status of the project and other external circumstances. Regarding the former, monitoring tasks have been necessary to supervise the correct development of the planned activities. Moreover, PR activities have been carried out, firstly, by conducting the survey campaigns and analysing the gathered data, and

secondly, by contacting stakeholders and engaging them in new collaborations, especially with policymakers. Concerning the external circumstances, given the Covid-19 situation in different countries and the evolution of PR activities, different mitigation actions had to be deployed due to the risks detected.

In this deliverable, the common plan and schedule have been updated as a consequence of the aforementioned factors. This update includes the assessment of the risks and explaining the mitigation/prevention actions carried out in each use case. In addition, the main stakeholders in this period, including new contacts, are listed. On the other hand, it includes a description of the participatory research activities and other ones, like dissemination actions, seminars and preparation of scientific publications. Reporting what has happened so far is essential to adjust or modify what is not working. It is necessary to follow up to see the fit between reality and plan and to continue with the development of the project in a successful way.

1.2 Objectives

The main objective of this deliverable is to describe the progress on the participatory research actions planned in deliverables 1.8 and 7.1. Furthermore, this implies some specific objectives that are described below:

- To know if the project is being executed on time or if there are delays.
- To define if any risk detected in D7.1 has occurred or not, and if any other risk has appeared or has a probability of appearing during the next months of the project.
- To describe the activities that have finally been carried out in the execution of the three use cases.
- To list the stakeholders that have finally participated in the project, if they are those which were foreseen in previous deliverables or not, how they have collaborated and the contact methods used.

1.3 Structure

The structure of this deliverable follows a similar structure to D7.1. It is organised from sections with more generic content to sections with more specific content for each use case. This ascending specificity structure will allow the reader to understand the three use cases' advances.

The deliverable starts with an introduction, which includes the objectives, the structure of the document, and the influence of the deliverable. The document continues with Section 2, which includes a brief description of the three use cases. Section 3 presents the updated version of the Gantt chart and the common risk assessment table. Based on them, the reports on use case advances are individually presented for each use case in Section 4. Finally, the document ends with the conclusions of this deliverable.

1.4 Influence of the deliverable

This document describes the advances of the three use cases included in the AGRICORE project. Deliverable 7.2 belongs to Task 7.1 of the AGRICORE WP7 – Use case planning definition, monitoring and agent involvement. Following the activities foreseen for the realisation of the AGRICORE project, the present deliverable is connected with other deliverables. On the one side, there is a clear connection with deliverable 1.8 – Use case participatory research actions - of WP1. The actions presented in that deliverable were the first versions of the actions that have been

carried out, mainly the survey campaigns and other participatory research actions, and on which the progress of the use cases will be reported. On the other hand, there is also a relation between this deliverable and deliverable 7.1 - Identification and filling of information gaps through participatory research actions – of WP7. Indeed, this deliverable is a continuation of D7.1 because it described the planning and schedule of the three use cases, in particular participatory research actions, and their execution.

In addition to the influence of other deliverables on the development of this, it is important to mention that this deliverable forms the basis of deliverable 7.4 – Results on participatory research activities – of WP7. Thanks to the actions described in D7.2, the data collection could be carried out successfully. The analysis of those data will be the main output presented in D7.4, so this information will be omitted in this deliverable.

2 Brief description of the use cases

In deliverable 1.8, the three use cases were explained in detail. Moreover, in WP7, complete descriptions were included in D7.1 (the predecessor deliverable in T7.1) and D7.3 (also published in M48). Thus, for these reasons, only a brief description of the use cases have presented in this section. It aims at contextualising the use cases regarding the CAP measures of interest and their main objective.

2.1 UC1: Environmental impact assessment in the olive farming sector in Andalusia

The Andalusian Use Case will focus on the ex-post (2014-2017) analysis, done thanks to the data collected through participatory research, and the ex-ante (2018-2020) analysis, which will be carried out after the design of the AGRICORE tool in order to evaluate the policy impact and design alternative policies that achieve the purposes of the analysed CAP measure. These two analyses will be carried out in respect of the impact of Regional Measure 11 (M11 – the Organic Farming support measure [1] [2]). This measure focuses on supporting the cultivation of organic olive groves. Andalusia is used as the main focus, as it is one of the most representative regions of the olive sector both nationally and internationally, representing 14% of the cultivation areas in the world, in order to predict the widespread of olive organic farming. The conditions and requirements for accessing this measure have already been described in previous deliverables (D7.1).

2.2 UC2: Impact assessment on ecosystem services in Polish agriculture

The AGRICORE Polish Use Case studies the 10.1 measure (M10.1 - Agri-environment-climate commitments)[3][4][5] influence on Poland, especially focusing on the enhancement of the ecosystem services and on the environmental and climate impacts. The ex-post analysis is planned for the period between 2014 to 2017, and the ex-ante impact analysis will be done for the period 2018-2020. To perform such analyses, the data from the Central Statistical Office of Poland (GUS, due to its Polish nomenclature), the Agency for Restructuring and Modernisation of Agriculture (ARMA), Polish FADN (this data source is not guaranteed, as will be explained in Section 4.2.1) and some secondary data from relevant and prestigious publications will be used. The available data will be supplemented with the information available at the national and regional levels and on the base of findings from participatory research actions, especially surveys conducted among farmers. At the pilot stage of the survey preparation, direct contacts were made with a set of farmers and agricultural advisors from various regions of Poland, especially those with whom earlier contacts and cooperation in the frame of previous projects and other activities existed. These stakeholders were consulted about the relevance of the proposed structure of the questionnaire and the content of the proposed questions, and the readability of the entire survey for the average farmer. In the pilot study, it was also important to adapt the structure and the content of the questionnaire according to the detected issues to make it acceptable for the participants.

2.3 UC3: Socio-economic impact assessment in Greek agriculture

The Greek Use case studies the socioeconomic impact assessment of Sub-Measure 6.1 “Start-up aid for young farmers” of the Greek Rural Development Programme for the period 2014-2020

[6] [7]. The ex-post analysis for the impact assessment of the sub-measure covers the period 2014-2017 and is mainly based on the data gathered through participatory research, while the ex-ante assessment covers the period 2018-2020. The "Start-up aid for Young Farmers" sub-measure aims to enhance the competitiveness of Greek agriculture and subsequently of the Greek agricultural holdings through age renewal and to create "farmers – entrepreneurs" who, by the end of their participation in the sub-measure, they will have acquired appropriate skills so as to continue their installation in agriculture as heads of sustainable agricultural holdings. The main context of the sub-measure is the provision of financial aid, in the form of a grant up to 22.000 Euros, differentiated according to the young farmer's type of activity or residence. The exact conditions and eligibility requirements for participation in the sub-measure have been described in detail in Deliverable 7.1.

3 Updated common plan and schedule

3.1 Updated Gantt Chart

This section shows the detailed and updated planning and schedule of WP7 tasks. Figure 1 shows the updated Gantt chart presented in D7.1, where the sub-tasks of the different WP7 tasks, together with their execution period. The tasks coloured in green are those that have been completed, while the tasks that are coloured in orange are in progress. As explained in D7.1, given the acceptance of the project extension by six months due to the Covid-19 pandemic, tasks from 7.1 to 7.3 were extended, and tasks from 7.4 to 7.6 were postponed by six months.

In general terms, the progress of Work Package 7 with respect to the initial Gantt chart has been very positive, as there has been no restructuring to add/remove sub-tasks or change the timing of those already defined, nor have there been any significant delays. At M48, the same tasks that were active in the Gantt chart definition are still active, i.e. task 7.1, task 7.2 and task 7.3, but most of the work on them has been completed as of preparation of this deliverable because these tasks finalise in M48. Regarding T7.1 - Use case planning definition, monitoring and agent involvement, omitting cross-cutting tasks that last for the whole project, most of them about monitoring, the rest of the sub-tasks were finalised. The first one is T7.1.1.3, recording all available resources prior to the start of the survey campaigns in order to optimise data collection and solve possible problems that may arise. In addition, regarding T7.1.1.4 and T7.1.1.5, the collected data have been processed, extracting information of interest, and they have been provided to the partners in charge of generating the synthetic population and developing the modules of the tool. In the cross-cutting sub-tasks, significant progress has been made, such as relevant contact and engaged collaboration with policymakers (T7.1.1.5, T7.1.1.6 and T7.1.3.1) and efficient monitoring and coordination of the WP (T7.1.2.3, T7.1.2.4 and T7.1.2.5).

The other two active tasks, T7.2 and T7.3, finish with the submission of their corresponding deliverables, D7.3 and D7.4. Firstly, the outcomes of T7.2.4 and T7.2.5 were included in D7.3, where the KPIs of each use case were selected based on the available ones, which depend on the outputs of the ABM and impact assessment modules, and their feasibility to measure the impact of the agricultural policies. Concerning T7.2.6, contact with stakeholders, especially policymakers, was already made, as is described in D7.3, and it will be renewed to design enhanced impact assessment mechanisms. Secondly, T7.3 is concluded, as the target answered questionnaires have already been achieved in the three use cases (T7.3.4), and the collected data have been analysed (T7.3.6), whose outcomes are presented in D7.4 (M48).

Finally, the remaining tasks to be started, T7.4, T7.5 and T7.6, are crucial to the project's results. Therefore, as part of the WP7 coordination, the use case leaders will meet with the technical module leaders before starting the testing phase. The aim will be to build test scenarios based on their requirements, to find out if further input can be provided for the development of the modules and to define a timeline for the execution of the test cases. The execution of these tasks will require exhaustive monitoring to avoid delays.

Task	Description
T7.1	**Use case planning definition, monitoring and agent involvement**
T7.1.1	**Use case planning definition**
T7.1.1.1	Analyse the assessed measure (objectives, target population, subsidies, procedures…)
T7.1.1.2	Study the current status of the farming sector related to the assessed measure according to the information obtained from T7.1.1.1
T7.1.1.3	List the resources available for the execution of the Participatory Research
T7.1.1.4	Check the availability of data to initialise the modules of the AGRICORE suite for the Andalusian use case (T7.5.3), including those obtained from the Participatory Research execution
T7.1.1.5	Provide the necessary data for the creation of testing environments (T6.5) for the Andalusian use case
T7.1.1.6	Contact some stakeholders (academic institutions, technical services from the Commission) in order to test the ABM and give feedback
T7.1.2	**Monitoring the use case development**
T7.1.2.1	Prepare a common risk assessment table with possible mitigation actions
T7.1.2.2	Prepare an internal risk assessment table with possible mitigation tasks
T7.1.2.3	Hold periodic internal TFM to evaluate the progress made and analyse possible risks from T7.1.2.1 and T7.1.2.2
T7.1.2.4	Update the list of possible common and particular risks and propose new mitigation actions
T7.1.2.5	Set internal milestones to meet the deadlines
T7.1.3	**Involvement of the use case's agents**
T7.1.3.1	Make contact with relevant stakeholders (local policymakers, agrarian associations, academic institutions, technical services) and secure their collaboration in the use case
T7.1.3.2	Include the contacted stakeholders' collaborations in the planning and schedule for the execution of the use case
T7.2	**Policy impact assessment scope**
T7.2.1	Analyse the impact assessment mechanisms used by policymakers regarding the assessed measure
T7.2.2	Identify the KPIs that are considered in the used impact assessment mechanisms
T7.2.3	Study the evolution of the values of those KPIs in recent years in order to determine their tendencies
T7.2.4	Determine the influence of the measure actions and the agromanagement decisions on the used KPIs up to the date of the execution of the Participatory Research
T7.2.5	Verify if the outputs of the IAMs reflect the KPIs. If not, propose alternative solutions, such as estimations
T7.2.6	Make contact with relevant stakeholders (mainly policymakers and technicians) to improve the current impact assessment mechanisms according to their requirements
T7.3	**Execution of Participatory Research**
T7.3.1	Define a plan that guarantees to obtain the Participatory Research objectives
T7.3.2	Pilot conduction of the survey in order to receive feedback from stakeholders (technicians) and farmers and detect some problems
T7.3.3	Adapt the execution plan and Participatory Research activities according to the detected problems
T7.3.4	Conduction of the survey/interviews
T7.3.5	Make contact with relevant stakeholders (agrarian associations, cooperatives…) to compile their requirements for T7.5
T7.3.6	Compile information and analyse it to provide it to the partners for the development of the modules
T7.4	**AGRICORE testing platform evaluation**
T7.4.1	Set up the dummy testing environment and check that there are no problems
T7.4.2	Prepare the cloud computing resources required for the execution of the use cases
T7.4.3	Prepare a user manual or presentation of the functioning of the AGRICORE platform
T7.4.4	Prepare a guide with common errors and how set up the AGRICORE platform
T7.4.5	Training on the AGRICORE interface to the researchers involved in the execution of the use case and receive their feedback
T7.4.6	Configuration of network connections and required permissions for data interchange
T7.5	**Building of use cases**
T7.5.1	Define the general features of the Andalusian Use Case
T7.5.2	Determine the model inputs that must be setup for simulate the model
T7.5.3	Identify the data sources to initialise the inputs by using the semantic services provided by the interface
T7.5.4	Design some ex-ante simulation scenarios considering the requirements of the stakeholders and the relations of T7.2.4 to improve the results of the impact assessment
T7.5.5	Define the ex-post (T7.1.1.6) and ex-ante (T7.5.4) simulation contexts considering the inputs of T7.5.2 (policy parameters, climate conditions, impact of plagues and diseases…)
T7.5.6	Elaborate a methodology to carry out the impact assessment based on the used mechanisms of T7.2.1
T7.6	**Ex-ante and ex-post impact assessment**
T7.6.1	Carry out the ex-post and ex-ante simulations
T7.6.2	Perform the impact assessments according to the methodology of T7.5.6
T7.6.3	Evaluate the results with the policymakers and stakeholder testers

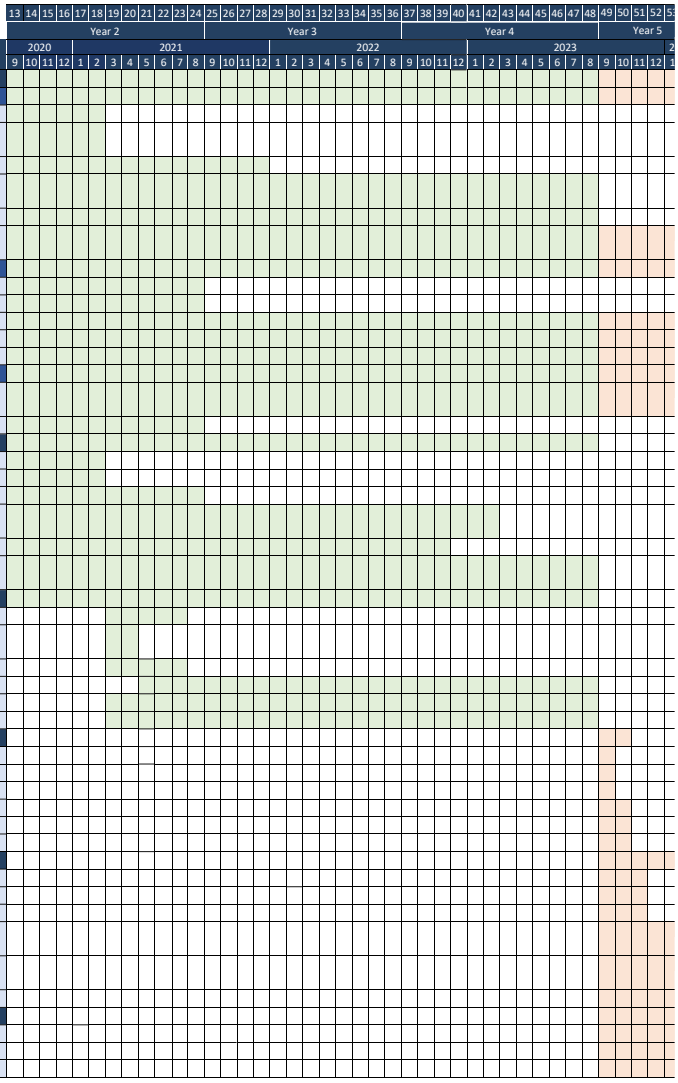

Figure 1. Updated Gantt Chart of WP7 tasks.

3.2 Updated Common Risk table

As an essential part of the monitoring of the use cases, the table of common risks assessment has been updated (see Table 1). The current state of the project and external circumstances, such as the Covid-19 pandemic and the war in Ukraine, make it necessary to reassess the risks included in the initial plan. A priori, no new risks have been detected in this period or for the future, which is a consequence of sound initial planning. However, the probability levels have been updated due to the factors mentioned above, and the mitigation/prevention actions taken have been explained. The same has been done for the individual risks of each use case, as will be covered in the corresponding sections.

Regarding the updated risks, two have downgraded their probability of occurrence. First, risks nº1 and nº3 now have a low probability (L) because society has returned to the pre-pandemic situation with the possibility of physical meetings. Secondly, risk nº6 also has a low probability (L). Indeed, the achievement of the target number of surveys was materialised within the established period several months in advance, so now it is not a risk.

Nonetheless, in this period, several risks occurred, but they had a minimal impact on the project execution. Risk nº2 - Lack of data to initialise the ABM simulation - was detected mainly due to the resolution of the available databases, and the ABM module was designed considering those constraints. Yet, this risk was not a consequence of the work done in WP7. Concerning risk nº3, difficulties in contacting stakeholders were encountered, especially in the first months of the Covid-19 pandemic, but it was mitigated with virtual meetings. Finally, risk nº5 - Not obtaining the expected data from the Participatory Research actions - was also detected. This risk materialised in different ways in each use case but was mostly due to the fact that most respondents did not answer some questions or their answers were not consistent with other data provided. For example, this was the case in the Andalusian use case with the exploitation costs. To mitigate it, an alternative questionnaire was conducted for agricultural technicians from cooperatives.

Table 1. Common risk assessment and mitigation actions (L stands for low probability/impact, M for medium probability/impact and H for high probability/impact)

Risk number	Risk	Prob.	Imp.	Mitigation action	Occurrence
1	Delays in the execution of the tasks due to the Covid-19 situation.	L	M	· Adapt the planning (dates and procedures) of the tasks and their development to the current and foreseeable Covid-19 situation.	No
2	Lack of data to initialise the ABM simulations.	L	H	· Checking the availability of the necessary data to initialise the ABM inputs after collecting the available data source · Checking the availability of the necessary data to initialise the ABM inputs after designing Participatory Research activities to fill in the detected information gaps.	Yes
3	Difficulties in managing face-to-face interactions with relevant stakeholders due to the Covid-19 situation.	L	M	· Preparing and planning these interactions by telematic channels in order to carry them out when it was possible.	Yes
4	Not considering the particularities of the use cases in the ABM implementation.	L	H	· Compiling the requirements (features of the beneficiaries, KPIs...) obtained from analysed Measures. · Contacting relevant stakeholders, especially policymakers, to track possible updates in requirements. · Monitoring the inclusion of the provided requirements in the different modules.	No
5	Not obtaining the expected data from the Participatory Research actions.	M	M	· Defining an alternative Participatory Research action to the one already proposed that allows the collection of the desired data or, failing that, a representative sample of those data. · Monitoring the development of the planned Participatory Research activities. · Proposing alternative ways to obtain this information, such as estimations.	Yes

6	Difficulties in reaching the target number of answered questionnaires.	L	H	· Conducting the surveys by directly contacting farmers that belong to the target population and facilitating responding to the questionnaires (time, place, personal interviews…) · Adapting the questionnaires to the issues encountered. · Looking for additional respondents.	No

4 Report on use cases advances

This section gathers a complete update of each use case from the initial publication of planning and schedule in D7.1. This update includes an explanation of the activities carried out, with special attention to participatory research activities, the advances in stakeholders' engagement and a progress assessment based on the initial planning with the update of the risk assessment. Regarding the stakeholders' engagement, it should be highlighted that only the new contacts and follow-ups have been included in order to improve the legibility of the document.

4.1 UC1: Environmental impact assessment in the olive farming sector in Andalusia

4.1.1 Details of all activities carried out

Apart from the participatory research activities carried out, a paper on the Andalusian use case has been worked on in a transversal way to the project. That paper is based on the data obtained through the survey campaigns addressed to organic and conventional olive farmers. The scientific paper includes both an exhaustive description of the design of the survey campaigns (design of the questions, the definition of the target population, contact with the respondents, etc.) and the analysis of the results by means of figures. The purpose of this paper is to determine the influence of some factors on the acceptance of organic olive farming in Andalusia, offering a general map of its current situation and a comparison with conventional olive farmers. This scientific publication is published together with D7.4.

In addition, the use case has collaborated with WP8 by promoting dissemination and communication (D&C) activities. The most relevant dissemination activities carried out are the Agricore project presentation in the Fruit Attraction 2022, the Agrifood Summit 2022 and the VI Congress of Agri-Food Cooperatives. There, the status of the AGRCIORE tool was presented, together with functionalities and aspects of interest for the target audience in each case. In parallel, CAAND has provided AXIA with information and photos of the events to create publications in the social networks of the project.

On the other hand, it has been working on deliverable 7.3 within the framework of task 7.2 – Policy impact assessment scope. In that deliverable, apart from an updated description of the three use cases, the outcomes of tasks 7.2.4, 7.2.5 and 7.2.6 were included. Regarding the first one of those tasks, a large list of KPIs was described for the Andalusian Use Case in D7.3, which were linked to the ex-ante and ex-post analysis and focused on the impact assessment. The particularity of M11 is that it does not have a list of KPIs to be tracked and measure its impact. Instead, a report based on a set of evaluation questions assesses the impact of the whole RDP. For this reason, all the KPIs included in the evaluation matrix of the report with relation to aspects influenced by Measure 11 were selected. Regarding task 7.2.5, based on the related KPIs, similar ones presented in D5.4 were selected. Nonetheless, since the measurements of KPIs depend on the simulation outputs to a large extent and the ABM module is being developed in parallel, it was not possible to provide a definitive list of KPIs. For this reason, it was established a set of KPIs, which were considered interesting for the impact assessment of the use case and will be tried to calculate with the available data, but the final list could not be known until the later stages of the development of the AGRICORE suite. Finally, regarding task 7.2.6, new contacts interested in the validation of the tool were made during that period, obtaining the following list:

- Regional Ministry of Agriculture, Fisheries, Water and Rural Development (policymakers).
- Research institutions such as the Institute of Agriculture and Fisheries (IFAPA) (researchers).
- Organic certification bodies (field technicians).

- University of Seville (researchers).
- Agricultural associations (ECOVALIA, OPRACOL, OLIPE) (farmers).

4.1.1.1 Details of execution of participatory research

In D.1.8, some information gaps were identified for the Andalusian Use Case. To fill these gaps, surveys were designed, including the definition of the sample population and the execution of the survey campaigns. However, before conducting the survey campaigns, a pilot survey campaign was launched to detect some deficiencies in the first design. As a result, the surveys were revised considering the feedback received with the pilot survey, and some modifications were made. All this was the status of the WP7 when deliverable 7.1 was published in M25, where all these tasks were described in detail.

Based on the revised and modified questionnaires, the survey campaign started in September 2021. Firstly, organic olive growers were surveyed by OPRACOL, the agent in charge of the survey campaign. Once the target number of answered surveys of organic olive farming was assured (around 200), the surveys of conventional olive growers were started by OPRACOL and the agricultural cooperatives contacted. Both campaigns lasted approximately 10 months, collecting 189 surveys from organic olive farming and 106 from conventional olive farming. The surveys were carried out by technicians with extensive knowledge of the surveyed farms, deployed in the previously selected areas, according to the type of olive grove. Indeed, before starting the survey campaigns, a meeting was held with technicians in order to explain them each question of the questionnaires and solve doubts, ensuring that all of them were the same standpoint of the questionnaires.

The conduct of the survey campaign entailed extensive parallel monitoring. This was materialised by continuous contact (bi-weekly or monthly) between OPRACOL and CAAND in order to detect possible delays or problems in the survey campaign. In turn, OPRACOL provided the completed paper surveys to CAAND in order to monitor the number of surveys and to detect possible deviations in the survey population. For this purpose, the number of surveys of male and female olive farmers was counted to ensure no gender discrimination and to comply with the distribution observed in the real population. In addition, to ensure that the surveyed farmer agreed with the terms and conditions of the survey, as well as the purpose for which the data s/he provided would be used, a disclaimer common to all three use cases was prepared. In the Andalusian use case, the following procedure was followed to collect the consent of the respondents. Firstly, the respondent was informed of a brief description of the project, its objectives and the purpose of the data collected. The respondent was then invited to read the disclaimer containing this information, as well as guaranteeing the anonymity of the data and the purposes of data collection. In addition, s/he was informed that s/he could ask any questions regarding the terms and conditions. Finally, once this had been read, if the respondent agreed, the survey was carried out, thus accepting their consent to it.

On the other hand, when 80% of the surveys were completed (approximately 5 months after starting the survey campaign), the data analysis phase was carried out. This phase was necessary to get a general idea of the answers given and to analyse them in advance and in an efficient way, obtaining preliminary results, such as the general situation of the farms and the main characteristics of the farmers surveyed. However, given the in-person conduction of the survey campaigns, firstly, they had to be digitalised by introducing all answers in an Excel file one by one. This process was very time-consuming but crucial to the data analysis. After that, the data were processed in order to homogenise the format of the answers, detect outliers and remove empty cells. This process detected that some questions had been misinterpreted by respondents, as they were either not answered or had been answered incorrectly, reducing the number of useful responses for analysis. An example of this is the questions on risk aversion, where useful responses were few and no clear relationship with other parameters, such as age and gender of

the respondent, could be determined. Similarly, questions asking for numerical quantities, such as prices and costs, were not known/remembered by the farmers.

The data analysis was divided into two phases. Firstly, the data from organic olive farmers and conventional olive farmers were represented with different types of charts, obtaining a descriptive analysis of the data. Secondly, some relationships of interests between some variables were selected, and they were illustrated graphically; for instance, the relation between gender and ownership of the farm. In the case of organic farming, the resulting graphs have been included in the scientific publication mentioned in the previous section, allowing for detecting interesting features of organic olive farmers and comparing them with conventional ones. Further details of this analysis are presented in D7.4.

4.1.2 Details of contact of main stakeholders

The stakeholder figure is a key part of the Agricore project. In D7.1, a table was presented in which the main stakeholders that would be part of the project were listed. All of them would play an important role in the implementation of the project, from the collection of information to the use of it. The main stakeholders linked to de Andalusian use case were: the Regional Ministry of Agriculture, Fisheries, Water and Rural Development, as a policymaker, the Research institutions such as the Institute of Agriculture and Fisheries (IFAPA) and the University of Seville, as a research centre, and some field technicians from organic certification bodies and farmers from Agricultural associations.

During this time, new contacts and follow-ups with the stakeholders already contacted have been made, resulting in new collaborations and links with the project. Below, an updated table of the main stakeholders involved in the project is presented, together with the process used to contact them and the collaboration engaged. In April 2022, a meeting between CAAND and the SCA La Purísima Concepción Guarromán took place. Later, on 22nd November 2022, it took place a meeting between CAAND and the Regional Ministry of Agriculture, Fisheries, Water and Rural Development. The representatives of this stakeholder were Armando Martínez Vilela (General Coordinator of the Secretariat for Agriculture, Livestock, Fisheries, Water and Sustainable Development of Andalusia), as a relevant policymaker, and Pilar Garrido as a report advisor. This meeting took place in the counselling. In addition, a meeting with stakeholders interested in testing the tool will be organised at a later date. This meeting, probably held online, will bring together policymakers, farmers and any other stakeholders from the different use cases.

Table 2. Stakeholders' table of the Andalusian Use Case.

Organisation	Type	Contact	Contact status	Collaboration
OPRACOL	Farmer organisation	Technician (Carmen López)	Already made	Organisation of the technicians responsible for carrying out the surveys
SCA La Purísima Concepción Guarromán	Farmer organisation	President/representative (Juan Pedro Campello García)	Already made	Organisation of the technicians responsible for carrying out the surveys
Regional Ministry of Agriculture, Fisheries, Water and Rural Development	Policymaker	General Coordinator of the Secretariat for Agriculture, Livestock, Fisheries, Water and Sustainable Development of Andalusia (Armando Martínez Vilela)	Already made	Personal interview to learn about the AGRICORE tool and its possible use in a pilot test.

Regional Ministry of Agriculture, Fisheries, Water and Rural Development	Policymaker /Report advisor	Report Advisor (Pilar Garrido)	Already made	Personal interview to learn about the AGRICORE tool and its possible use in a pilot test.

4.1.3 Details of the use case progress assessment

4.1.3.1 Details of monitoring Plan

As mentioned before, the monitoring phase was carried out during the 10 months of the survey campaign. The technicians responsible for the surveys conducted monthly reviews in order to monitor the execution of the survey campaign correctly. There were also carried out controls by telephone, as the easiest way to be in permanent contact with the stakeholders. These two monitoring channels favoured the continuous sending of documentation generated in the surveys and ready for the preliminary analysis.

4.1.3.2 Details of specific risk evaluation

This section presents an update to the Andalusian Use Case risk table. It does not include any new risks, but the probability of occurrence of the risks predicted in previous deliverables has changed in some cases, as a consequence of the status of the project and the current situation regarding the Covid-19 pandemic. Regarding the undetected risks, no evidence of occurrence related to risks 3, 5, 6, 8 and 9 have been identified. Of these, the only one with a medium probability of occurrence was risk 6, which has been downgraded to low because the foreseen collaborations have been engaged with the contacted stakeholders.

Table 3. Andalusian risk assessment and mitigation actions (L stands for low probability/impact, M for medium probability/impact and H for high probability/impact).

Risk number	Risk	Prob.	Imp.	Mitigation action taken	Occurrence
1	Not considering the dependency between the different tasks of the Andalusian use case in terms of time and results.	M	H	· It has been elaborated a detailed plan and schedule of the use case development, including monitoring the tasks in progress.	No
2	Unavailability of resources (means of contact to conduct the survey, stakeholder's collaboration) that were considered in the planning of the execution of Participatory Research.	L	H	· Not designing the Participatory Research activities on the basis of the same resources (diversification of resources).	Yes
3	Not finding stakeholders (academic institutions, technical services from the Commission…) willing to participate in the testing of the platform.	L	M	· Design some standard simulation scenarios and carry out the impact assessment according to the existing mechanisms.	No
4	Occurrence of unexpected issues during the Andalusian use case development that causes not following the planning.	L	M	· Elaborating two risk assessments, one for the general execution of the use cases and another one specific for the Andalusian use case and defining the corresponding actions.	No

				· Updating the risk evaluations and the list of mitigation actions periodically.	
5	Not being aligned with the developments of other WPs that affect the execution of the Andalusian use case.	L	M	· Holding bi-weekly meetings with the entire Consortium and task force meetings with the leaders of the other use cases to ensure this alignment.	No
6	Not having the necessary stakeholders' collaborations in the tasks	L	M	· Agreeing in advance with them on the collaboration(s) they will carry out in the use case. · Preparing alternatives to the expected collaborations if some stakeholders do not meet with what was agreed on (diversification).	No
7	The impact assessment of the Andalusian use case simulations could not be carried out with the outputs of the IAMs.	M	H	· Checking the compatibility between the necessary KPIs of the impact assessment mechanisms in the Andalusian use case and the outputs of the IAMs. · Studying some methods to estimate KPIs' values that are not direct outputs of the IAMs, if that was the case.	No
8	Obtaining wrongly answered or incompletely filled questionnaires.	L	M	· Continuous review of the more recent answered questionnaires in order to classify as valid or not. · Gathering extra questionnaires to ensure having a representative sample.	Yes
9	Obtaining contradictory or confusing information after the analysis of the questionnaire responses.	L	H	· Contacting stakeholders (policymakers, agricultural associations and technicians) that could help to filter outliers and discard those results considered unrealistic.	No
10	Difficulties in installing the AGRICORE platform and understanding its functioning.	L	M	· Preparing user manuals that contain a list of the hardware requirements, including links to help with the installation of third-party software, and an explanation of all the elements of the platform and the available functionalities, illustrated with simple examples.	No
11	Obtaining impact assessment results is not aligned with the real ones.	M	H	· Carrying out dummy simulations where the impact assessment results provided by the ABM match the real ones. · Comparing results from actual and dummy simulations to debug errors in the simulation setup.	No

4.1.3.3 Details of specific mitigation action

Regarding the risk assessment of the Andalusian Use Case, only two risks were detected, and some mitigation actions were carried out. Considering the second risk, it was a problem with the stakeholder in charge of conducting the survey campaign. In principle, ECOVALIA was going to conduct the survey campaign by phone due to the current Covid-19 situation at that moment. However, the phone survey was very resource-demanding, especially on time, and the stakeholder could not carry out the survey campaign. Thus, it conducted the pilot survey campaign, and an alternative conduction approach was determined with the collaboration of

other stakeholders, such as OPRACOL and agricultural cooperatives. Finally, the eighth risk was solved with an extensive data analysis which made it possible to identify invalid answers. Nonetheless, this risk was previously mitigated with the selected approach to conducting the survey campaigns because the technicians could answer any questions from farmers and help them with the completion of the surveys.

4.2 UC2: Impact assessment on ecosystem services in Polish agriculture

4.2.1 Details of all activities carried out

Apart from the participatory research activities carried out, work has been done on two scientific articles that comprehensively show the Polish use case in the project. In those papers, we aim to collect all the project execution. All of the activities taken in order to achieve the different objectives of the project are included. There also are presented the findings in the form of graphs, and crucial conclusions and recommendations also appear. All this content can be found in D7.4.

In the context of the Polish Use Case and in relevance to the participatory research, IAPAS and UTP/PBS research team participated in several relevant dissemination and communication actions. In relevance to the participatory research, a series of presentations have been organised for farmers and the scientific community in order to highlight the importance of the research in its ontological and pragmatic aspects and explain the AGRICORE project's objectives. These activities are gathered in Table 4.

Table 4. List of activities carried out.

Item	The name of an event	Dates	Place	Target audience
1	National Field Days in Poland	19 June 2021	Minikowo, Poland	Farmers, Manufacturers of Means Production for Agriculture, Processors of Food
2	Physical meeting with the Management Associations of Agricultural Entrepreneurs Owners and Lesse being representative of Polish agricultural entrepreneurs	1 July 2021	Markowice, Poland	Farmers and representatives of organisations of Polish farmers
3	The World Entrepreneurship Day for the community of High Schools in Bydgoszcz	8 November 2021	Bydgoszcz, Poland	Community of the Technical University in Bydgoszcz: students, research workers and cooperated partners
4	*13th International Conference on Agrophysics*	16 November 2021	Lublin, Poland	The community of the Institute of Agrophysics (IAPAS) and cooperated partners
5	Interdisciplinary Seminar held by Bydgoszcz University of Science and Technology, Poland	26 January 2022	Bydgoszcz, Poland	
6	*XXVI Workshop of Agricultural Economists*	13-15 June 2022	Krasnobród, Poland	Domestic scientific community dealing with agro-environmental-climatic problems
7	The conference entitled Industry 4.0 versus Management and Manufacturing Engineering	19-21 June 2022	Zakopane, Poland	Polish scientific and business communities represented by the Polish Society of Innovation Management and Polish Association for Manufacturing Management

Finally, another activity that will be mentioned in the following section is included here, although it is related to participatory research. This is the EU-FADN data request. At the end of the last year, the Department of Accounting for Agricultural Holdings (affairs of Polish FADN) confirmed the impossibility of providing the Polish FADN microdata due to confidentiality issues. For this reason, the Polish Use Case leaders and IDE, as the coordinator of the project, decided to request those data from the European FADN, although this process could be prolonged for several months. This is a bureaucratic process that comprises completing three forms about the data requested, their foreseen use and purpose and cybersecurity issues, among others. Moreover, the number of requested variables is limited, so a prior study of the necessary variables and most representative crops in Poland had to be made. Adding that their selection in the form is one by one, the preparation of the EU-FADN last until February 2023. However, the request was delayed a couple of months due to some security issues that were fixed in order to guarantee a feasible provision of the data requested.

4.2.1.1 Details of execution of participatory research

In D.1.8, some information gaps for the Polish Use Case were detected, and the survey to fill those gaps was presented. Due to Covid specific scenario, the survey campaign was revised, and the surveys were modified in accordance with the conclusions described in D7.1.

Afterwards, the questionnaires were filled in to collect information of interest for the project. Questions covering the information gaps detected in D1.8 included, as follows: previous experiences of farmers resulting from participation in M10 action, size of parcels, the minimum size of plots, revenues obtained from agriculture guaranteeing farmer's family maintenance, location of farms in relation to Natura 2000 areas, ecosystem components existing on the farm being friendly for M10 action participation, the profitability of participation in M10 action, and social/cultural impact being barriers/chances to access M10 action.

According to assumed tasks and objectives in other deliverables, the participatory research was focused on analysing the attitude of Polish stakeholders to the implementation of the system of subsidies in the frame of environmental and climate commitments (2014-2020) and to indicate factors that could influence positively realisation of the future agri-environmental actions in Poland.

The survey campaign was finally conducted on 319 farmers across the whole country and took place between 2021 and 2022. The surveys were carried out in the first phase in an electronic way through contacts with a large group of Polish agricultural organisations, including the Agricultural Advisory Centre in Brwinów, the Polish Pig Breeders and Producers Association „POLSUS" Northern District based in Bydgoszcz, and the Association of Employers – Land Leases and Association "Polish Club FARMER OF THE YEAR", to obtain a representative database of the email addresses of the stakeholders. The first stage of the survey distribution did not fulfil the assumed minimal return level; therefore, several activities were undertaken to gain new potential respondents. Invitations to fill in the survey were sent in the middle of October 2021, and resent two times, at the beginning of December 2021, and February 2022. The progress in the received responses was: 63 by 9th November 2021, 115 by 14th December 2021 and 260 by 11th March 2022. Since the number of responses was still below the expected value (300 responses), it was decided to take additional measures: coordinators of Polish partners in LIFT H2020 (Krupin and Jendrzejewski, 2018) were contacted to obtain the email addresses of the farmers, who were surveyed in this project. Additionally, it was decided to survey farmers directly during the AGROTECH agricultural fair in Kielce (18-20 March 2022). Several dozen responses were then gathered. Finally, 319 filled-in questionnaires have been obtained, which means that the assumed minimum of returns was reached. Figure 2 presents the number of surveys conducted in NUTS 2 regions in Poland. Surveys were conducted by workers from IAPAS and PBS teams.

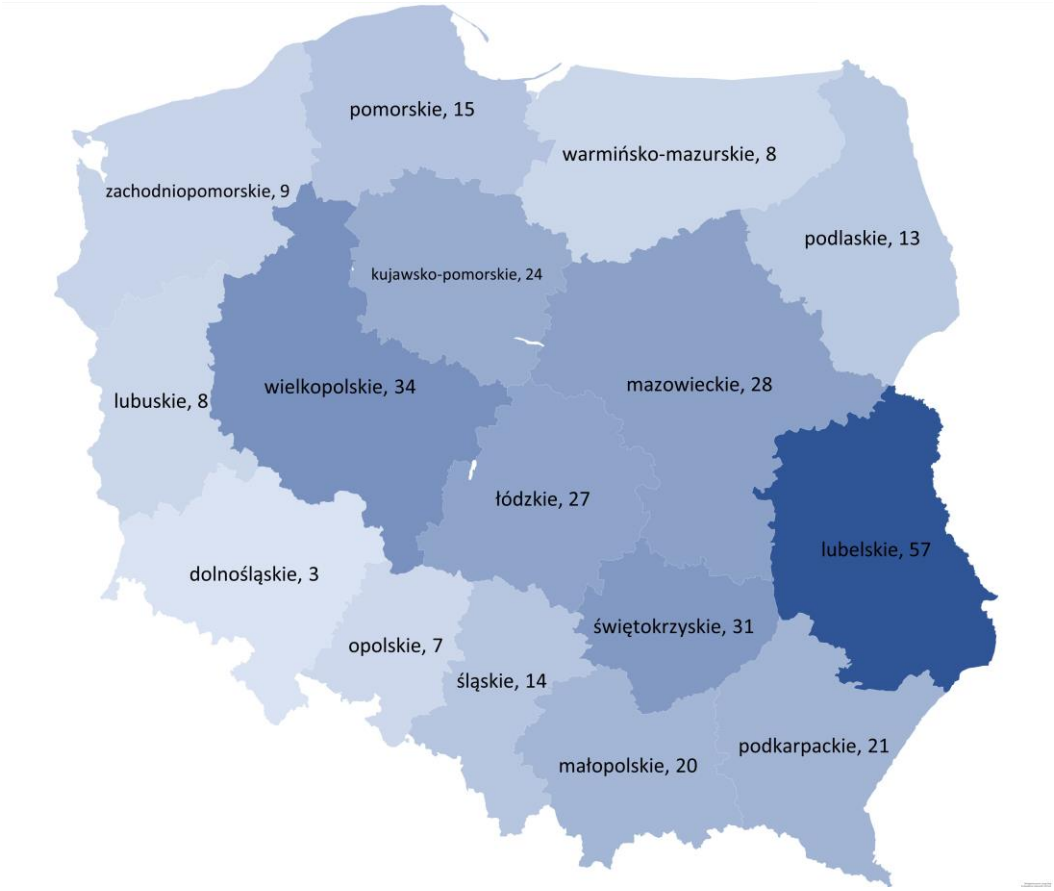

Figure 2. Map of the questionnaires conducted in each NUTS2 region in Poland.

Surveys were carried out in a remote way (electronically). In the content of email messages sent to the farmers to distribute the survey and within the content of the electronic questionnaire, respondents were informed about a brief description of the project, its objectives and the purpose of the collected data. They were also informed that the survey was completely anonymous and that the information collected would be used for the purposes indicated in the Grant Agreement of the project. The content of the questionnaire also included the agreement of respondents to take part in the survey. The questionnaire was constructed in such a way that the respondents could not send it back without filling in all the answers, which guaranteed correct returns of the questionnaires.

Finally, after about 6 months of the survey campaign, the results of the surveys were analysed. These results have been carefully processed and represented in tables and graphs for their accurate interpretation. Further details and conclusions obtained from this analysis are presented in D7.4. Moreover, the results of the survey conducted electronically in the years 2020-2022 in the frame of the AGRICORE Horizon project are presented in the aforementioned publications. Preliminary results of the analysis reflect a generally positive reception of the farmers' participation in the M10 programme (96.6% of the respondents), highlighting that 3.4% of negative answers are proportionally distributed among the different voivodeships. This highly positive evaluation of the M10 participation was confronted with the changes in the workload and income during its realisation (Figure 3). Despite the positive evaluation, more than half of the respondents (53.9%) noticed the increased workload, but also, a high share (40.4%) did not observe any change compared to the period before the programme initiation. Undoubtedly, a positive assessment of the M10 effects was connected with farmers' income improvement (73%). This confirms the possibility of reconciling the profitability of agricultural activity and the wellness of the holding owners with the objectives of environmental protection.

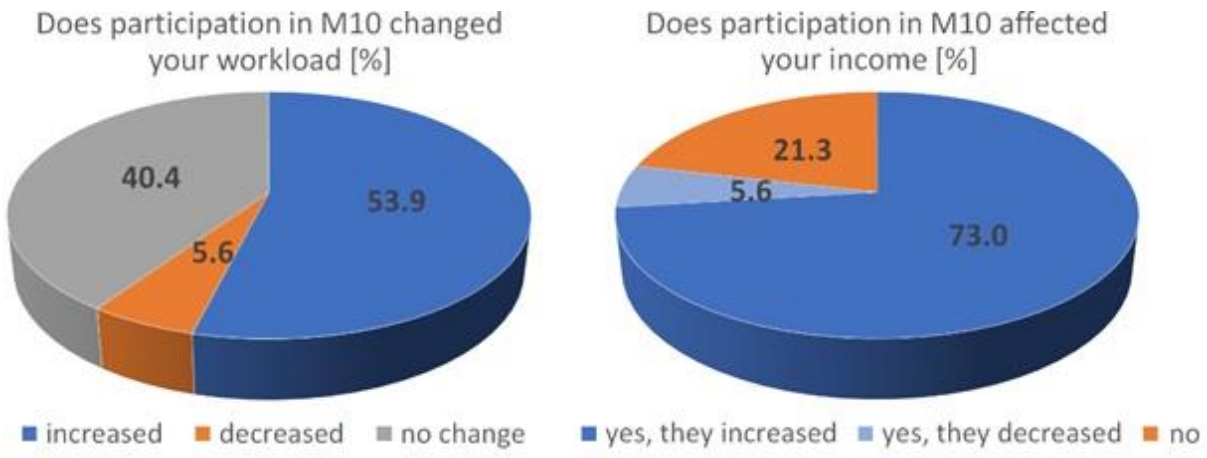

Figure 3. The respondents' assessment of the impact of the M10 on the workload (left) and the farm's income (right panel).

4.2.2 Details of contact of main stakeholders

Based on suggestions of reviewers verifying the progress of the activities of WP7 during the Reporting Period 1, after September 2021, an intensification of the stakeholder's contacts was undertaken to engage them in Participatory Research. Up to that point, representatives of IAPAS delivered information to the representatives of the Polish Ministry of Agriculture and Rural Areas Development: General Director Monika Rzepecka; Chief Specialist of the Section of Water Management and Climate in the Department of Climate and Environment, Małgorzata Ślusarczyk; Senior specialist at the Department of Strategy and Analysis, Zofia Giersz; and Head of Rural Development Plan Unit of Ministry of Agriculture and Rural Areas Development, Anna Klisowska, about the AGRICORE project and the current status of the work done in the Working Packages. During this meeting, IAPAS representatives were informed that the Ministry could not be involved directly by providing the data or signing a letter of support, or helping to gain access to the data that is at the disposal of the agencies subordinate to the Ministry because they are not a member of the Consortium and are not involved in the implementation of the project. Additionally, the agencies such as FADN Poland, KOBiZE, Agency for Restructuring and Modernisation of Agriculture (ARMA), and National Chemical-Agricultural Station have their own independent rules regarding sharing of the data, GDPR rules, etc., and the Ministry cannot interfere with them. During this meeting, the information that, in 2022, an amendment to the act on direct payments appeared (https://dziennikustaw.gov.pl/DU/2021/904), which was provided by the Ministry's representatives. Article 2 of this Act states that there is a possibility of the free sharing of spatial data by the Agency of Restructuring and Modernisation of Agriculture ARMA. The Ministry expressed interest in obtaining the final version of the AGRICORE tool, which could be tested in solving some problems of creating agricultural policies on a national level.

Furthermore, the contact with the Agricultural Advisory Center, Head of the Section for Innovation and Agriculture, Mr Janusz Dąbrowski was established by representatives of IAPAS via email. This contact was established to test the preliminary versions of the electronic questionnaire prepared by IAPAS and UTP and to obtain information on how and what should be modified/supplemented to improve the clarity of the survey. The Agricultural Advisory Center (AAC) in Brwinów coordinates the work of several thousand agricultural advisors in Poland and maintains close relations with producers, and it was strongly interested in the results of the AGRICORE project. From the AAC in Brwinów, IAPAS obtained access to a database of the addresses of 3,000 agricultural advisors from all over Poland, which was then used to conduct the survey. The cooperation is still continued because the Center expressed interest in

participating in a workshop concerning the AGRICORE project results to discuss and interpret them. PBS representatives established contacts with the Association of Employers – Land Leases (ZPWiDR), represented by Office Director Łukasz Gapa, The Pig Breeders and Producers Association „POLSUS" Northern District based in Bydgoszcz represented by the Head of the Northern District Tomasz Kmuk, and the Association "Polish Club Farmer of the Year" represented by the Chairman of the Competition Jury, Teresa Kucharska. The main aim of these contacts was to improve the questions within the questionnaire, which would ensure better communication with respondents – farmers, and to obtain support for the Polish Use Case study. Exchange of messages by email, phone calls, and direct meetings with managers of farms cooperating in above mentioned Associations allowed us to describe the AGRICORE project goals and define how it could impact the situation of farmers in Poland. The meeting resulted in the initial agreement for the facilitation of Polish Use Case research activities needs and the concession of participation in the planned survey. This ensured a better spread of the AGRICORE Polish Use Case survey among the Association of Employers – Land Leases, The Pig Breeders and Producers Association „POLSUS" and Association "Polish Club Farmer of the Year" and a better attitude of the community of the Associations towards the AGRICORE project. Obtained findings from Participatory Research could be useful for setting improved eco-services and environment indicators in the frame of agri-climate-environment policies and may lead to their higher effectiveness by activating more beneficiaries. The participation of farmers will, in turn, lead to more environmentally friendly and profitable agriculture. The contact with the Associations will be continued. Contact with Piotr Gradziuk representing the IRWIR PAS, Institute of Rural and Agricultural Development has been established by email and phone and afterwards, during a direct meeting in Lublin by the IAPAS representatives to discuss the AGRICORE project issues and especially to evaluate, analyse and modify Participatory Research course.

In addition, several dissemination and communication activities were carried out, obtaining fruitful contacts with stakeholders. On the **8th of November 2021**, the Technical University in Bydgoszcz (UTP/PBS) representatives delivered a lecture as part of the *World Entrepreneurship Day* for the community of High Schools in Bydgoszcz. The lecture's topic was "The importance of agricultural policy and rural development aimed at environmental protection and climate change in the light of challenges of managing organisations in the 21st century". This event, of which the Faculty of Management and the Faculty of Agriculture and Biotechnology of PBS was core partner, was a great opportunity for disseminating the idea of the AGRICORE project. The PBS representative presented the main goal of the AGRICORE and the development of the AGRICORE tool for more effective shaping of the agricultural and rural areas' development and environmental policies. This tool allows for assessing the behaviour and decisions of entrepreneurs and farm owners more effectively than ever before. This will allow to ensure the integration of economic, social, and environmental-climate goals and contribute to sustainable development within the Green Economy. On **16th November 2021**, the IAPAS representative gave a lecture, "Biophysical modules in the agent-based policy models", during the *13th International Conference on Agrophysics*, Lublin, Poland, which was co-organised by the Institute of Agrophysics (IAPAS) to spread ideas of AGRICORE project among researchers and policymakers. On **26th January 2022**, the PBS representative presented the principal assumptions and ideas of the AGRICORE Project during the Interdisciplinary Seminar held by Bydgoszcz University of Science and Technology, Poland. The request addressed to the Director of the Department of Direct Payments of the Ministry of Agriculture and Rural Development, Mrs Joanna Czapla, was sent on **27th May 2022** to enable the AGRICORE Polish partners to access the organisational regulations of the Direct Payments Department of the Ministry, in order to define the competence and functionality of the agricultural policy for the purposes of the implementation of deliverables, especially D7 commitments, so-called "Generic Profiles of Policymakers". A positive response was received on **30th May 2022**, with the attached electronic document (in pdf format) containing the INTERNAL ORGANIZATION RULES of the Department of Direct Payments dated 11th February 2022 and signed electronically by Mrs Aneta Ziemba,

director of the Office of the Director General of the Minister of Agriculture and Rural Development. The aim was to support discussions based on detailed assumptions of the policies to modify the Participatory Research effectively. Moreover, the ideas of the AGRICORE project were spread among researchers and students during the *XXVI Workshop of Agricultural Economists*, which took place in Krasnobrod between **13 and 15 June 2022**. Especially a fruitful discussion ensued throughout the confrontation of the AGRICORE with the LIFT project findings, the projects being to some extent compatible. Especially valuable experiences obtained from the LIFT project concerned ecosystem services delivery aspects. On the second day of this workshop, the **14th of June 2022**, the IAPAS representatives delivered a lecture titled "Methods of assessing the impact of agriculture on the environment and climate in the AGRICORE project", while the PBS representatives presented ideas of the AGRICORE project by giving a lecture titled: "Economic and social determinants of the effectiveness of agro-climate and environmental policy in the light of the development of ecological services for agriculture in Poland". During the conference entitled *Industry 4.0 versus Management and Manufacturing Engineering* under the auspices of the Polish Society of Innovation Management and Polish Association for Manufacturing Management, which took place between **19 and 21 June 2022** in Zakopane, Poland, the PBS representative delivered a lecture entitled "AGRICORE - an innovative tool for supporting the development of agricultural policy based on agent-based design". The aim was to disseminate the research results of the AGRICORE project and to conduct discussions within the participatory research of the WP7 package. The scientific discussion included the application of large spatial data sets, and big data convergence, e.g. useful to measure a number of wild species of birds on a given location within the M10 action of the CAP. Also, the innovative methods useful in ecologic agriculture were presented and discussed, e.g. cold plasma as a potential activator of plant bio stimulators. Representatives of the IAPAS established contact with Prof. dr hab. Wiesław Oleszek, the Director of the Institute of Soil Science and Plant Cultivation (IUNG) in Poland. The aim was to describe and present the AGRICORE project assumptions and actions. The IUNG expressed their willingness to be actively involved in the AGRICORE project. The cooperation with IUNG will be continued because the Institute hires agricultural and environmental experts who can contribute to and improve the AGRICORE methods.

In the last months, some contacts with mentioned above farmers' representative organisations by email and phone were undertaken to set some arrangements for participation in the Seminar to be held in Bydgoszcz on 6th October 2023 entitled: "Research results in the AGRICORE project in the light of improving the agri-environment-climate policy". Moreover, in September 2022, it was taken place a direct meeting in Warsaw with Dr. Eng. Joanna Pawłowska-Tyszko, Head of the Department of Accounting for Agricultural Holdings (affairs of Polish FADN) to support the Polish Use Case study performance about the availability of the data necessary to aim PR and Agricore objectives. She confirmed to us that they could not provide us with the FADN micro-data because such information is not available due to the confidentiality and anonymity of Polish farmers' data, requiring personal agreements with each of them. As a result, the EU-FADN data request was conducted.

Table 5 gathers the new contacts with stakeholders and engaged collaborations, which is an extension of the table presented in D7.1.

Table 5. Contacted stakeholders to collaborate in the Polish Use Case.

Organisation	Type of stakeholder	Contact	Contact status and approach	Collaboration
Association of Employers – Land Leases (ZPWiDR)	Farmers Association	OFFICE DIRECTOR Łukasz Gapa	Already made. Contact by email and phone.	Arrangements on participation in Seminar to be held in Bydgoszcz on 6th October 2023 entitled: "Research results in the AGRICORE project in the light of improving the agri-environment-climate policy"
Association "Polish Club FARMER OF THE YEAR"	Farmers Association	Chairman of the Competition Jury, Teresa Kucharska	Already made. Contact by email and phone.	Arrangements on participation in Seminar to be held in Bydgoszcz on 6th October 2023 entitled: "Research results in the AGRICORE project in the light of improving the agri-environment-climate policy"
Polish Pig Breeders and Producers Association „POLSUS" Northern District based in Bydgoszcz	Farmers Association	Head of the Northern District: Tomasz Kmuk	Already made. Contact by email and phone.	Arrangements on participation in Seminar to be held in Bydgoszcz on 6th October 2023 entitled: "Research results in the AGRICORE project in the light of improving the agri-environment-climate policy"
The Department of Accounting for Agricultural Holdings (affairs of Polish FADN), Institute of Agricultural and Food Economics, National Research Institute	Policymaker	Dr. eng. Joanna Pawłowska-Tyszko, Head of the Department of Accounting for Agricultural Holdings (affairs of Polish FADN)	Already made. Contact in persons	Supporting Polish Use Case study performance by getting microdata from POLISH FADN for Participatory Research

4.2.3 Details of the use case progress assessment

4.2.3.1 Details of monitoring Plan

The monitoring phase was carried out during the 6 months of the survey campaign. The IAPAS and PBS team workers responsible for the action conducted systematic reviews in order to correctly monitor the execution of the survey campaign. There were also carried out controls by telephones and emails to responsible persons from selected farmers' organisations, as the easiest way to be in permanent contact with the stakeholders. These two monitoring channels favoured the continuous sending of documentation generated in the surveys and simultaneously ready for the preliminary analysis. In addition, thanks to the electronic format of the questionnaires, IAPAS

team members could directly monitor the evolution of the survey campaign, assessing the effect of disseminating the questionnaires with the actions described above.

4.2.3.2 Details of specific risk evaluation

In this section, an update to the Polish Use Case risk table is presented. One new risk was detected in addition to the five previously described, which is connected with difficulties in obtaining the Polish FADN data and the lack of support by the National Agencies in conducting the Polish Use Case and the interpretation of its results. Despite previously established contacts with the Agricultural Advisory Center in Brwinów and the Ministry of Agriculture, these agencies did not respond to our request to support us with the data needed for the Use Case conductance. Due to the action undertaken by PBS/IAPAS, the probability of occurrence of the risks predicted in previous deliverables has decreased in risks nº1, nº2 and nº3, while no evidence of occurrence related to risk 5 has been observed.

Table 6. Polish risk assessment and mitigation actions.

Risk number	Risk	Prob.	Imp.	Mitigation action	Occurrence
1	Difficulties in contacting agencies and farmers to conduct questionnaires due to Covid-19 restrictions.	L	M	An intensive campaign to encourage respondents to participate in the online questionnaire.	Yes
2	Some national agencies are not interested in supporting questionnaire distribution.	L	M	Intervention at the highest government agents (ministries of agriculture/environment)	Yes
3	Data availability problems for Polish use case study (soil data)	L	H	Contacting with other National Research Institutes (especially IUNG), which possess the needed data Looking for alternative sources of soil data (SoilGrids)	Yes
4	Data obtained from participatory research will not be representative of the whole territory of Poland	L	M	Conducting extra survey campaign to ensure having a representative sample.	Yes
5	Received data from the questionnaire not easily interpretable	L	L	Looking for ways to improve data quality and interpretation methods	No
6	FADN data availability problems for Polish use case study	H	H	Contact with European FADN was established by the project coordinator to obtain the needed data	Yes

4.2.3.3 Details of specific mitigation action

To deal with Risk 1 connected with the Covid-19 pandemic situation in Poland, the decision was made to carry out the survey campaign fully telematically. The Agricultural Advisory Center in Brwinów was contacted to get support with the questionnaire distribution and encouragement of the farmers to fill it in. The IAPAS obtained from this agency access to a database of the addresses of 3,000 agricultural advisors from all over Poland, which was then used to conduct the survey. Such a large sample was expected to be enough representative of the Polish farm population. In the first period of the questionnaire distribution, an intensive campaign was performed with the help of the AAC in Brwinów to encourage respondents to participate in the online questionnaire.

To deal with Risk 2, to intensify the stakeholder's contacts and engage them in Participatory Research, representatives of IAPAS contacted the Polish Ministry of Agriculture and Rural Areas Development to promote the AGRICORE aims among the national level stakeholders and to help

in contacting them. Two online meetings were organised with the representatives of the Polish Ministry of Agriculture and Rural Areas Development: General Director Monika Rzepecka; Chief Specialist of the Section of Water Management and Climate in the Department of Climate and Environment, Małgorzata Ślusarczyk; Senior specialist at the Department of Strategy and Analysis, Zofia Giersz; and Head of Rural Development Plan Unit of Ministry of Agriculture and Rural Areas Development, Anna Klisowska, during which the AGRICORE project and the current status of the work done in the Working Packages were presented. During this meeting, IAPAS representatives were informed that the Ministry could not be involved directly by providing the data or signing a letter of support, or helping to gain access to the data that is at the disposal of the agencies subordinate to the Ministry because they are not a member of the Consortium and are not involved in the implementation of the project. The Ministry expressed interest in obtaining the final version of the AGRICORE tool, which could be tested in solving some problems of creating agricultural policies on a national level.

Regarding Risk 3, two mitigation actions were undertaken. First of all, to obtain very detailed soil maps with the soil properties, IAPAS contacted Grzegorz Siebielec from the Institute of Soil Science and Plant Cultivation (IUNG) National Research Institute, who is a soil data manager in this institution. Since the data with the required spatial resolution for the scale of the whole Poland territory occurred to be extremely expensive, the second mitigation action was undertaken to ensure access to the freely available SoilGrid data. Obtained data are sufficient to ensure the realisation of the Polish Use Case study.

Concerning Risk 4, the complete process to achieve the target number of answered surveys is described as follows. The first stage of the survey distribution did not fulfil the assumed minimal return level of 300 questionnaires, which was assumed to give representativeness for the whole territory of Poland. Therefore, to mitigate this risk, several activities were undertaken to gain new potential respondents. Invitations to fill in the survey were sent in the middle of October 2021, and resent two times, at the beginning of December 2021, and February 2022. The progress in the received responses was: 63 by 9th November 2021, 115 by 14th December 2021 and 260 by 11th March 2022. Since the number of responses was still below the expected value (300 responses), it was decided to take additional measures: coordinators of Polish partners in LIFT H2020 (Krupin and Jendrzejewski, 2018) were contacted to obtain the email addresses of the farmers, who were surveyed in this project. Additionally, it was decided to survey farmers directly during the AGROTECH agricultural fair in Kielce (18-20 March 2022). In the end, these measures allowed us to obtain 319 responses, which fulfilled the assumed representativeness criteria (gender, age and spatial distribution).

Finally, only one new risk was detected for the Polish Use Case, and the mitigation action was carried out. The representative of PBS contacted the Polish FADN representatives to establish a direct meeting, which took place in September 2022. During a meeting with Dr. Eng. Joanna Pawłowska-Tyszko, Head of the Department of Accounting for Agricultural Holdings (affairs of Polish FADN) in Warsaw, a negative response was given once again because the Polish FADN could not provide micro-data due to confidentiality and anonymity of Polish farmers' sensitive information. We were also informed that the data could be released if the responsible for the AGRICORE project will sign the personal agreements separately with each of the farmers, whose data are to be possessed (more than several hundred thousand agreements in the scale of the whole country). As the Polish FADN micro-data cannot be obtained this way, the AGRICORE project coordinator was asked to establish contact with European FADN to obtain needed data directly from them.

4.3 UC3: Socio-economic impact assessment in Greek agriculture

4.3.1 Details of all activities carried out

In the context of the Greek Use Case and in relevance to the participatory research, AUTH research team participated in several relevant dissemination, publication, communication and clustering activities. As detailed in the following table, two stakeholder meetings have been implemented so far with key stakeholders (policymakers and young farmer's representatives). Moreover, five scientific papers have been presented to international scientific seminars, and two of them have been forwarded for publication. In relevance to the participatory research, a series of presentations have been organised for farmers and the scientific community in order to highlight the importance of the research and communicate the AGRICORE project's activities. Finally, several clustering activities have been put forward in order to seek synergies with relevant Horizon projects.

Table 7. List of activities carried out in the Greek Use Case.

Item	Activity / Event	Description	Date	Place	Target audience
1	Suprema Workshop	Presentation of AGRICORE	26/06/2020	Online	Stakeholders, researchers
2	179th EAAE Seminar "Food Policy modelling as an effective and expeditious response to today´s urgent issues"	Poster presentation of AGRICORE project activities	09/10/2021	Chania, Crete, Greece (MAICH)	Scientific Community, researchers, policymakers,
3	Stakeholder Meeting	Presentation of the Greek use case and gathering of feedback	09/10/2021	Chania, Crete, Greece (MAICH)	Policymakers
4	Publication	Staboulis, C.; Natos, D.; Gkatsikos, A.; Tsakiridou, E.; Mattas, K.; Bojar, W.; Baranowski, P.; Krzyszczak, J.; Rivero, O.P.; Roldán, Á.O. Assessing the Role of the Young Farmer Scheme in the Export Orientation of Greek Agriculture. Sustainability 2022, 14, 3287. https://doi.org/10.3390/su14063287	16/03/2022	Online	Scientific Community, researchers, policymakers
5	Publication	Gkatsikos, A.; Natos, D.; Staboulis, C.; Mattas, K.; Tsagris, M.; Polymeros, A. An Impact Assessment of the Young Farmers Scheme Policy on Regional Growth in Greece. Sustainability 2022, 14, 2882. https://doi.org/10.3390/su14052882	16/03/2022	Online	Scientific Community, researchers, policymakers
6	Clustering Activity-Workshop	Clustering activity workshop organised by Horizon cluster project PestNu	07/07/2022	Thessaloniki, Greece	Scientific Community, researchers
7	Presentation	A general presentation of the AGRICORE project's objectives, technologies and expected outcomes, as well as the relevant use cases accordingly adapted for a broader audience.	09/09/2022	ELGO-DEMETER Kastoria, Greece	Farmers

8	XVI EAAE Virtual Congress	Mattas K., Tsagris M. and Tzouvelekas V. Using Synthetic Populations To Produce Representative And Anonymous Distributions Of Farm Characteristics Of The Real Farmers' Population Of Interest From Different Data Sources.	20-23/07/2021	Online	Scientific Community, researchers
9	179th EAAE Seminar: "Agro-Food Policy Modelling as an Effective and Expeditious Response to Today's Urgent Issues"	Assessing the role of Measure 6.1 start-up aid for young farmers in export orientation: Evidence from the Greek agricultural sector	09-10/09/2021	Crete, Greece	Scientific Community, researchers
10	179th EAAE Seminar: "Agro-Food Policy Modelling as an Effective and Expeditious Response to Today's Urgent Issues"	Is CAP's Young Farmers Scheme an effective policy tool for regional growth?	09-10/09/2021	Crete, Greece	Scientific Community, researchers
11	179th EAAE Seminar: "Agro-Food Policy Modelling as an Effective and Expeditious Response to Today's Urgent Issues"	Young farmers scheme in Greece: Geographic inequality and policy implications	09-10/09/2021	Crete, Greece	Scientific Community, researchers
12	182nd EAAE Seminar: Sustainability via biodiverse agri-food value chains	CAP start-up aid for young farmers does reflect EU's biodiversity policies?	14-15/09/2022	Crete, Greece	Scientific Community, researchers
13	182nd EAAE Seminar: Sustainability via biodiverse agri-food value chains	Young Farmers Schemes: An exploratory study of farmers' attitudes, beliefs and perceptions	14-15/09/2022	Crete, Greece	Scientific Community, researchers
14	Stakeholder meeting	Presentation of the Greek use case and gathering of feedback	22/10/2022	Thessaloniki, Greece	Stakeholders
15	Presentation	Presentation of the AGRICORE project and the AGRICORE tool on policy design and formulation	08/02/2023	Thessaloniki, Greece	Scientific Community, Post-graduate students

4.3.1.1 Details of execution of participatory research

As described in detail in Deliverables 7.1 and 7.3, the Greek Use Case employed a combined approach regarding the activities of participatory research. Initially, access was requested to the non-public data provided by the beneficiaries of Sub-measure 6.1 in their applications so as a

comprehensive picture of the real population of the beneficiaries to be clear to us. Moreover, as described in Deliverable 1.8, the identified gaps were pinpointed for the Greek Use Case, and a questionnaire survey aiming to directly identify the attitudes and perceptions of the young farmers was constructed. The questionnaire was distributed to beneficiaries and non-beneficiaries of the measure. Like the other two use cases, the questionnaire facilitated the collection of data that were not included in the available databases, which, for the Greek Use Case, were included in the thematic: young farmer's motivation; beliefs about young farmers' start-up aid (sub-measure 6.1); beliefs about the farming sector in general; and beliefs concerning young farmer's future in agriculture.

The questionnaire was pre-tested on a limited sample of young farmers using a convenience sample of respondents. The pilot survey tested the questionnaire's comprehensibility, clarity of questions, technical performance, and usefulness of instructions. Moreover, the average time for the questionnaire's completion was assessed. The execution of the pilot survey and the subsequent in-depth interviews with stakeholders resulted in the finalisation of the form of the participatory research after targeted modifications and adaptations were performed.

During the participatory research for the Greek Use Case, specific emphasis was given to the synthesis of the sample. A percentage of 81% of the sample includes young farmers who are beneficiaries of Sub-Measure 6.1, selected over the total population of 13.905 beneficiaries in Greece, whose distribution is shown in Figure 4. The rest of the sample (19%) originates from the population of non-beneficiaries. This strategy (difference in proportion) is justified on the basis that the young farmers who are beneficiaries of Sub-measure 6.1 are the main recipients of the relevant policies' effects, and consequently, their opinions matter more than the non-beneficiaries opinions. Furthermore, the sample of the beneficiaries was related to the size of the real population of beneficiaries among the thirteen Greek regions according to the NUTS 2 classification. The non-beneficiaries are allocated in the sample in accordance with the allocation of the beneficiaries since there are no detailed data for the spatial allocation of their population.

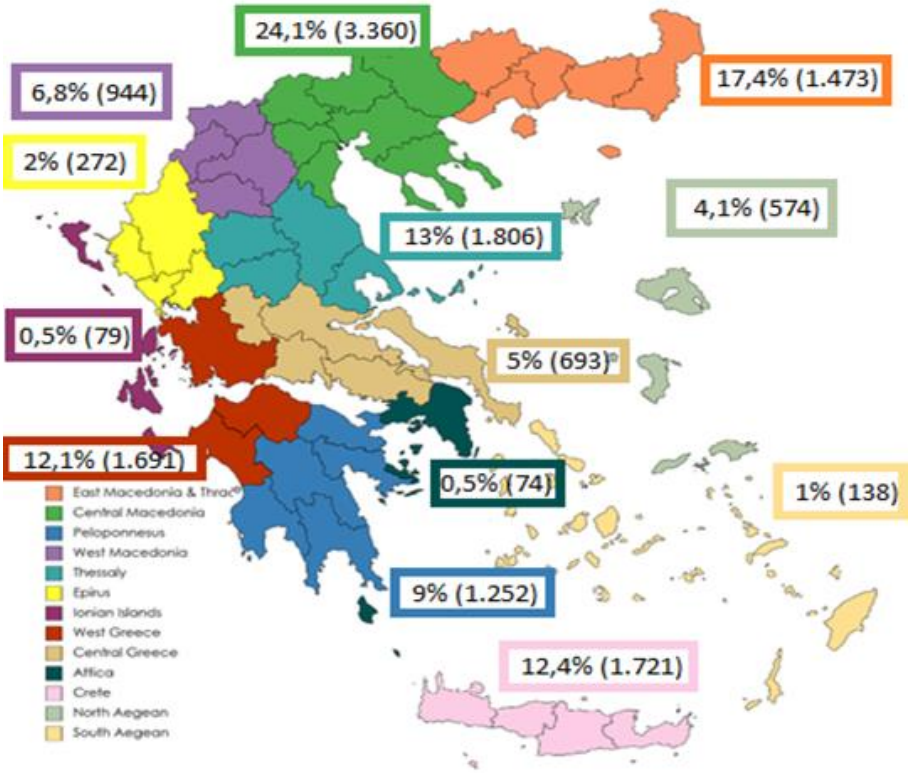

Figure 4. Map of the questionnaires conducted in each NUTS2 region in Greece.

Spatial allocation of beneficiaries' population among the 13 Greek regions (NUTS II).

Starting from 1st December 2021, the quantitative survey kicked off and lasted until the end of May. The questionnaires were addressed to a total number of 445 farmers, of which 433 were evaluated as reliable (12 questionnaires were excluded from the analysis due to missing or inconsistent answers issues). 352 of the respondents were young farmers who were beneficiaries of Sub-Measure 6.1, whereas 81 of them were farmers who were not interested in participating or farmers who were interested in participating in Sub-measure 6.1 but somehow did not proceed even if they were eligible for it. The evolution of the completed questionnaire surveys is described in the following lines: 51 by December 2021, 171 by the middle of January 2022, 224 by March 2022 (collected exclusively from beneficiaries of Sub-measure 6.1) and 433 by the end of May of the same year. All the questionnaire surveys with farmers were conducted in person. Following the two previous use cases, the respondent was informed of a brief description of the project, its objectives and the purpose of the data collected. The respondent was then invited to read the disclaimer containing this information, as well as guaranteeing the anonymity of the data and the purposes of data collection. In addition, s/he was informed that s/he could ask any questions regarding the terms and conditions. Finally, once this had been read, if the respondent agreed, the survey was carried out, thus accepting their consent to it. Recruitment was purposive, and participants engaged in the survey voluntarily, with no specific reward after personal invitation.

4.3.2 Details of contact of main stakeholders

For the overall execution of the project's planned research activities, the role of stakeholders is quite significant. Especially for the execution of the participatory research, their engagement is crucial not only due to their offered help for the facilitation of the conduction of the participatory research but also due to their provision of valuable data for policy evaluation. In particular, since the Greek Use Case is coping with the socio-economic assessment of an EU Common Agricultural Policy measure applied nationally, the sub-measure 6.1 "Start-up aid for young farmers" of the Greek Rural Development Programme 2014-2020 enhanced emphasis had been added to the inclusion to the relevant list of stakeholders, policymakers at the national and regional level as well as relevant experts from the civil and the private sector.

In detail, the total number of stakeholders relevant to the Greek Use Case is nine. Namely: the Greek Ministry of Rural Development and Food (Policymaker), the Special Service for the Implementation of the Rural Development Program of the Greek Government (Policymaker), the Panhellenic Union of Young Farmers (Farmers), the Payment and Control Agency for Guidance and Guarantee Community Aid (Policymaker), the Greek National Rural Network (Policymaker), ELGO - DEMETER - Hellenic Agricultural Organization- Demeter (Consultancy and advisory agency), the East Macedonia Regional Unit Administration (Policymaker) and a representative from a private consulting company specialised in agricultural advisory services (Consultancy and advisory services).

The majority of stakeholders fall into the category of policymakers either at the national or regional level. Their inclusion highlights the importance of their contribution due to their i) provision of expert opinion that will facilitate policy evaluation, ii) provision of crucial data regarding the implementation and the progression of sub-measure 6.1, and iii) utilisation of the valuable outcomes of the project (like policy recommendations and knowledge) for the design of the future national CAP strategic plans. Since a complete list of contacted stakeholders was cited in Deliverable 7.1, forthcoming, there is a list of the updated contacted stakeholders for the Greek Use Case that completes the list with stakeholders relevant to the application of Sub-measure 6.1 in Greece. The following organisations were identified as stakeholders at previous deliverables, but contact names were pending or not yet finalised. Therefore, with the inclusion of contact

names, the list of the relevant stakeholders for the Greek Use Case can be characterised as completed.

Table 8. Contacted stakeholders to collaborate in the Greek Use Case.

Organisation	Type	Contact	Contact status	Collaboration
Payment and Control Agency for Guidance and Guarantee Community Aid (OPEKEPE)	Policymaker	President, Mr. Evangelos Simandrakos	Already made, Personal	Provision of financial data for the beneficiaries of Measure 6.1
Panhellenic Union of Young Farmers	Farmers	President, Mr. Nikolaos Pavlonasios	Already made, Personal contact	Facilitation of Greek Use Case research activities needs and the concession of participation in the survey
Greek National Rural Network (NRN)	Policymaker	Ms Paraskevi Lioliou, Regional Supervisor of NRN, Region of West Macedonia	Already made, Personal contact	Facilitation of Greek Use Case research activities

4.3.3 Details of the use case progress assessment

4.3.3.1 Details of monitoring Plan

During the period where the participatory research of the Greek Use Case was conducted, from December 2021 to May 2022, all relevant survey activities were closely monitored by AUTH team so as to ensure the correct execution of the survey campaign. Early on, before the conduction of the participatory research, as laid down in Deliverable 7.1, the Greek Use Case identified three specific risks that potentially could have hindered the execution of the survey.

Taking into consideration those three risks, presented in the forthcoming table as risks nº 1, 2, and 3 (see Table 9), each completed questionnaire was evaluated and assessed whether to be characterised as valid or not. Technically, this procedure was performed every day, after the conduction of the participatory research activities and the completion of the questionnaires by the researchers – team members – of AUTH. Moreover, communication with the relevant stakeholders was continuous and established with all available means (telephone, email, etc.).

Following the monitoring procedure described above and in view of risk nº 1, a few questionnaires were characterised as not valid. Those questionnaires were disregarded from the sample and not considered valid for preliminary analysis. Moreover, considering risk nº 3, all contacted stakeholders were willing to facilitate the research, and no relevant obstacles were pinpointed.

4.3.3.2 Details of specific risk evaluation

The following table presents an update to the Greek Use Case risk table. Overall, due to the current status of the project as well as Greek Use Case research activities and the evolvement of the Covid-19 pandemic, the probability of occurrence of certain risks predicted in previous stages of the project has been downgraded.

Table 9. Greek Use case risk assessment and mitigation actions.

Risk number	Risk	Probability	Impact	Planned mitigation action	Occurrence
1	Obtaining wrongly answered or incompletely filled questionnaires.	M	M	Gathering extra questionnaires to ensure having a representative sample.	Yes
2	Obtaining contradictory or confusing information after the analysis of the questionnaire responses.	L	M	Contacting stakeholders (policymakers, agricultural associations, and technicians) that could help to filter outliers and discard those results considered unrealistic.	No
3	Unavailability of resources (means of contact to conduct the survey, stakeholders collaboration) that were considered in the planning of the execution of Participatory Research.	L	H	Rearranging the Participatory Research activities on the basis of available resources.	No

4.3.3.3 Details of specific mitigation action

Of the risks identified as possible for the conduction of the Greek Use Case participatory research, only one of them was pinpointed. In particular, concerning risk nº 1, a quantitative target for the participatory research of the Greek Use case was set at the gathering of 400 questionnaires. At the initial stages of the participatory research, very few examples of wrongly answered or incomplete questionnaires were pinpointed by the AUTH team. Therefore, a decision to extend the target of the 400 completed questionnaires was taken so as to ensure the successful conduction of the research. Therefore, following the mitigation action planned for the identified risk nº4, the participatory research gathered an extra number of 45 completed questionnaires to a total of 445, from which 433 were characterised as valid.

5 Conclusions

In the AGRICORE project, the effects of the agricultural policy are simulated using agent-based modelling techniques. The AGRICORE model may evaluate the effects of policies on numerous elements of agriculture, the environment, and rural integration by modelling each farm as an independent decision-making unit. The project contains particular modules that analyse how policies affect climatic, environmental, and ecosystem services. Deliverable 7.1 included a thorough strategy and timeline for the execution of the many use cases taken into consideration during the project. Task 7.1 - Use case planning definition, monitoring and agent involvement, is continued in this deliverable 7.2 in an effort to prevent potential issues with data availability (or lack thereof) or linked agents throughout the execution of the use case.

In conclusion, the deliverable presents a progress report on the different use cases. For this purpose, the same scheme as in other deliverables is followed. It starts with a common part of the three use cases, describing the status of the project in terms of schedule and the situation regarding the expected risks and then a similar scheme is followed for each use case, adding the explanation of the activities carried out and interactions with stakeholders. Overall, WP7 has made excellent progress in comparison to the initial Gantt chart because there have been no substantial delays or restructuring to add or remove sub-tasks or adjust the schedule of those that have already been established. Regarding the risks, those that occurred were mitigated, and only a couple of new ones have been detected, highlighting the valuable planning and schedule. Moreover, a new use case in the Emilia-Romagna region (Italy) has also been incorporated as a test case to evaluate the performance of the ABM module.

Regarding individual reports of the use cases, it is possible to conclude that correct monitoring has been carried out and many activities have been performed. Among these latter, it is necessary to highlight the conduction of the survey campaigns and the analysis of the gathered data. In addition, several meetings with stakeholders and dissemination actions have been performed in the three use cases. Finally, the individual risk management in each use case is assessed positively because the planned mitigation actions carried out have been executed on time with the expected results. Therefore, in general terms, we can conclude that all three use cases have made significant progress since the release of D7.1.

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For preparing this report, the following deliverables have been taken into consideration:

Deliverable Number	Deliverable Title	Lead beneficiary	Type	Dissemination Level	Due date
1.8	Use Case Participatory Research Actions	CAAND	Report	Public	M18
7.1	Use case planning and set of involved stakeholders	CAAND	Report	Public	M25
7.3	Updated description of the AGRICORE use cases	CAAND	Report	Public	M48
7.4	Results on participatory research activities	CAAND	Report	Public	M48