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AgriDataValue

Smart Farm and Agri-environmental Big Data Value

Deliverable D5.1
Data Privacy, Ethical, GDPR & Regulatory Compliance V1

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Abstract	AgriDataValue is a comprehensive research project aimed at leveraging advanced technologies to revolutionize the agricultural sector. The project will be developed and will operate in a highly regulated environment, with pilot data collected from drones, satellites and EO data sources to be exchanged across use cases. Therefore, various ethics, legal, and regulatory frameworks have been taken into consideration, conducting a comprehensive continuous assessment covering data protection, ethical, social, and legal issues (PIA+) of the AgriDataValue framework. Consequently, a process that supports building GDPR compliance, demonstrating accountability, and transparency of the AgriDataValue framework has been adopted. The PIA+ will be an iterative process across all phases of the project and will involve steps to identify the key ethical, legal, social, and privacy related themes of the AgriDataValue platform, to map the data flows amongst the AgriDataValue technologies, users and the services with which they interface, to identify key risks associated with these data flows, to run two day-long interactive workshops, and to engage with all partners to suggest possible technical or operational solutions, mitigation measures with special attention given to privacy, social impact security, lawful basis and aspects of surveillance.

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05	SIEMENS SRL	SIEM	RO
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07	ALMAVIVA – THE ITALIAN INNOVATION COMPANY SPA	ALMA	IT
08	INTERNATIONAL DATA SPACES EV	IDSA	DE
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10	SINGULARLOGIC S.A.	SLG	EL
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15	FUNDACION PARA LAS TECNOLOGIAS AUXILIARES DE LA AGRICULTURA	TEC	ES
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19	SOCIEDAD ARAGONESA DE GESTION AGROAMBIENTAL SL	SARGA	ES
20	AGROTIKOS KTINOTROFIKOS SYNETAIRISMOS KATOUNAS TO VIOLOGIKO AGROKTIMA	TBA	EL
21	SOCIETA ITALIANA DI VITICOLTURA EDENOLOGIA	SIVE	IT
22	NILEAS – SYNETAIRISMOS PISTOPOIIMENON AGROTIKON PROIONTON DIMOU NESTOROS MESSINIAS	NILEAS	EL
23	CONSEIL DES VINS DE SAINT-EMILION	CVSE	FR
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25	RI.NOVA SOCIETA COOPERATIVA	RI.NO	IT
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27	NATIONAL PAYING AGENCY	NPA	LT
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Definitions, Acronyms and Abbreviations

ADS	Agri-Environment Data Space
AI	Artificial Intelligence
ALLEA	All European Academies
BDVA	Big Data Value Association
CA	Consortium Agreement
DMP	Data Management Plan
DoA	The Description of Action
DPO	Data Protection Officer
EC-GA	European Commission Grant Agreement
EO	Earth Observation
EU	European Union
FAIR	Findable, Accessible, Interoperable, and Reusable
GDPR	EU General Data Protection Regulation no. 2016/679
IDSA	International Data Spaces Association
LMAA	Lean Multi-Actor Approach
ML	Machine Learning
POPD	Protection of personal data
TL	Task Leader
TM	Technical Manager
WP	Work Package
WPL	Work Package Lead

Executive Summary

This document aims to provide detailed information regarding the AgriDataValue project commitment to follow all the relevant rules in line with the highest standards and applicable EU, international and national law, guidelines, and principles regarding data privacy, ethical, social, GDPR, legal and regulatory compliance issues. AgriDataValue has been conceptualised to be operated in a highly regulated environment. With pilot data collected from drones, satellites and EO data sources to be exchanged across use-cases, various ethics, legal and regulatory frameworks will need to be taken into consideration. This deliverable, namely D5.1: "Data Privacy, Ethical, GDPR & Regulatory Compliance V1'', contains information and details relevant to the compliance of the project activities with the previously mentioned isseus. There will be an updated version of the deliverable, ''D5.2 Data Privacy, Ethical, GDPR & Regulatory Compliance V2'', in M32.

The document presents the procedures and criteria that will be used to Identify/recruit research participants to be engaged in the project activities, including pilot activities. In addition, this document gives a detailed description of the GDPR compliance and a general monitoring methodology on ensuring compliance not only for the purposes of this deliverable but for the lifetime of the project. Furthermore, the present deliverable contains information and details relevant to compliance of project activities with ethical requirements and more precisely it provides details concerning the protection of personal data in research activities. In addition, with a focus on the research activities Involving animals within the project, information and details relevant to the compliance of the project with ethical requirements will be given. Finaly, this document contains information and details relevant to the compliance of the AgriDataValue with ethical requirements, with a focus on issues related to environmental protection, along with personnel and citizens safety.

1. Introduction

AgriDataValue main objectives are to strengthen the capacities for smart farming and enhance the environmental and economic performance of the agricultural sector. AgriDataValue will introduce an innovative, open source, intelligent and multi-technology, fully distributed Agri-Environment Data Space (ADS). To achieve technological maturity, fast and massive acceptance, AgriDataValue adopts and adapts a multidimensional approach that combines state of the art big data and data-spaces' technologies (BDVA/ IDSA/ GAIA-X) with agricultural knowledge, monetization, new business models and agri-environment policies, leverages on existing platforms, edge computing and network/ services, and introduces novel concepts, methods, tools, pilot facilities and engagement campaigns to go beyond today's state of the art, perform breakthrough research and create sustainable innovation in upscaling (real-time) agricultural sensor data, already evident within the project lifetime.

AgriDataValue will conduct scientific research and will work toward the development of the required technological innovations. The project consortium partners recognize the importance and significance of conducting ethical research with respect to engaging with citizens, farmers, experts, and policy makers. Research within the project will always follow the democratic values of the EU member states and the UK.

The overall implementation of the AgriDataValue project is fully compliant with the "do no significant harm" principle as per Article 17 of Regulation (EU) No 2020/852 since it is designed in a way that it is not harming any of the 6 environmental objectives of the EU Taxonomy Regulation (climate change mitigation, climate change adaptation, sustainable use and protection of water and marine resources, transition to a circular economy, pollution prevention and control, and protection and restoration of biodiversity and ecosystems). The AgriDataValue consortium is committed to take all necessary measures to ensure that all project activities comply with the GDPR/European Chart of Fundamental rights and all data protection-relevant EU regulations, soft law, standardization, and policy initiatives. AgriDataValue consortium is well aware of the importance of personal data privacy preservation, as well as of the regulation and legislation in the EU.

The AgriDataValue will be validated via 24 Use cases in 23 pilots carried out across 9 countries, representing more than 181,000ha with 25 types of crops that span from southwest to northeast Europe, outdoor and greenhouse crops, organic and non-organic production, and more than 2,000 animals of 5 types (Beef Cattles, Dairy Cows, sows, piglets, fattening pigs). In addition, more than 4,200 farmers will provide insights and more than 89,000 will be directly informed. The AgriDataValue consortium is committed to take all necessary measures to ensure that all project activities comply with the relevant EU regulations and comply with the Horizon Europe ethical standards (REGULATION (EU) 2021/695, Article 19)

This Deliverable responds to task 5.1 and is in line with task 7.5 guidelines covering data protection, privacy, ethical, social, and legal issues (PIA+) of the Agri framework. This document also includes information and feedback that was collected during an interactive workshop that took place on June 14th, 2023, where the consortium partners:

1. identified the key ethical, legal, social and privacy related themes of the ADS platform, and
2. mapped the data flows amongst the AgriDataValue technologies, users and the services with which they interface.

During that workshop, all (7) Use Case Clusters were discussed among the participants. This discussion focused on the potential/need of personal data collection, as well as to verify a mapping of the use cases data flow on the

high-level architecture view of the AgriDataValue. In addition, it was investigated if there is any data collected by third party tools already used by the pilot partners and where this data is stored.

1.1. Intended audience

The document will be delivered to the European Commission and will be communicated to all project partners of the AgriDataValue project regarding the project data Privacy, Ethical, GDPR, Legal & Regulatory Compliance (PIA+) issues. The general indications for the project deployment have been defined in the European Commission Grant Agreement (EC-GA), the Description of Action (DoA), and the Consortium Agreement (CA).

The present deliverable D5.1: Data Privacy, Ethical, GDPR & Regulatory Compliance V1 is the first of two (2) deliverables provided within the WP.5 Steady validation and adaptation to strengthen LMAA ecosystem capacities. This document does not replace any of these established agreements.

1.2. Document overview

This document is divided into 20 chapters:

Chapter 2 includes general information on Ethics that are applicable in the AgriDataValue project

Chapters 3-4 include information on human participants in the project and how research participants can be identified and/or recruited.

Chapters 5-6 include information about informed consent procedures in the project and sample templates for such forms

Chapters 7-14 include information about data privacy and protection within the AgriDataValue project such the projet's DPO, processes for data minimisation, anonymisation/pseudonymization, security measures, and precautions for data transfers between EU and other countries.

Chapters 15-19 include information specific to aspects such as AI and animals within the project, data in the project's pilots and use cases, environmental impact of the project, as well as health and safety procedures that need to be applied.

Chapter 20 includes the conclusions of the deliverable.

2. Ethics in AgriDataValue

The Consortium of AgriDataValue understands that research has ethical implications. In this deliverable, we demonstrate the commitment to respect the EU ethical standards and rules. The ethical standards and guidelines will be rigorously applied, regardless of the country in which the research takes place. All partners will have equal responsibility for meeting ethical and legal requirements in the context of the work they undertake in the project.

AgriDataValue aims on delivering an end-to-end data-aware, federated platform of platforms in the agri-environment domain, in order to optimize the complete "Data Path": data collection, storage, transfer, processing and querying, with a primary purpose for its operations being fully environmentally sustainable. The overall implementation of AgriDataValue project is fully compliant with the "do no significant harm" principle as per Article 17 of Regulation (EU) No 2020/852, since it is designed in a way that it is not harming any of the 6 environmental objectives of the EU Taxonomy Regulation.

Ethics also extends to how individuals behave and interact in their relationships. For research funded by the EU, ethics assumes a pivotal and integrated role throughout the entire research journey. It is imperative to conduct a thorough ethical assessment to tackle any potential issues or challenges that may arise during the research process. AgriDataValue will comply with EU, international and national law on ethical principles in all project activities including activities involving humans. In addition, AgriDataValue) commits to and respects basic EU values such as respect for human dignity, freedom, democracy, equality, the rule of law and human rights, including the rights of minorities, in accordance with Article 14 – Model Grant Agreement (MGA)

AgriDataValue will follow and comply with the guiding principles of regulation (EU) 2021/695, which establishes Horizon Europe. The consortium confirms that all project activities will align with the European Code of Conduct for Research Integrity issued by All European Academies (ALLEA). AgriDataValue will comply to the Charter of Fundamental Rights of the European Union and the European Convention of Human Rights, as well as to all relevant laws, regulations, and ethical principles to achieve and maintain the highest standards of research integrity.

Actions carried within the project will be conducted in accordance with Article 19 – Regulation (EU) 2021/695 and Particular attention will be paid to the principle of proportionality, to the right to privacy, the right to the protection of personal data, the right to the physical and mental integrity of a person, the right to non-discrimination and to the need to ensure protection of the environment and high levels of human health protection.

Though the project pilots will involve volunteers (section 3), it will only collect and process their opinion and feedback on the AgriDataValue platform efficiency. The AgriDataValue project activities will evaluate informed consent to guarantee voluntary participation in research as it is one of the most important procedures to address privacy issues in research.

AgriDataValue will comply fully with the General Data Protection Regulation (GDPR)/European Chart of Fundamental rights and all data protection relevant EU regulations. Furthermore, the project will be aligned with all Legal & Regulatory Compliance (PIA+).

Animals will be involved within the AgriDataValue research activities. The project will collect data using environmental sensors and collars that do not affect the animal life or wellbeing (section 16)

Finally, AI modeling will be incorporated within the AgriDataValue research activities without any use in humans, human life or any dual use potential (section 0). In Addition, the use of AI technology by the project will be done based on sustainable practices (section 0)

2.1. Relevant laws, regulations, and frameworks

The overall implementation of AgriDataValue project is fully compliant with the "do no significant harm" principle as per Article 17 of Regulation (EU) No 2020/852, since it is designed in a way that it is not harming any of the 6 environmental objectives of the EU Taxonomy Regulation. Moreover, the AgriDataValue consortium is committed to take all necessary measures to ensure that all project activities comply with the GDPR/European Chart of Fundamental rights and all data protection relevant EU regulations, soft-law, standardization, and policy initiatives.

AgriDataValue consortium includes NETCOMPANY-INTRASOFT as Legal and Ethical compliance monitoring company, which has significant legal and ethical competence and other large companies (ATOS, SIEMENS, ALMAVINA, SIXENSE) with dedicated departments whose task will be to ensure the respect for fundamental rights (privacy and personal data protection in particular) and ethical principles. AgriDataValue consortium is well aware of the importance of personal data privacy preservation, as well as of the regulation and legislation in EU.

The following list mentions the main background documents that will be taken continuously into consideration during the deployment of the different research activities:

- Article 19 – Regulation (EU) 2021/695 establishing Horizon Europe
- Article 14 – Model Grant Agreement (MGA)
- Nuremberg Code (1947)
- World Medical Association (WMA)declaration of Helsinki (1964)
- Convention for the Protection of Human Rights and Dignity of the Human Being (Oviedo, 4 April 1997) (Oviedo Bioethics Convention)
- Charter of Fundamental Rights of the EU (2000/c 364/01)
- General Data Protection Regulation (GDPR) (Regulation (EU) 2016/6795)
- European Charter for Researchers (2000)
- European Code of Conduct for Research Integrity (ALLEA 2017)
- Ethics in Social Science and Humanities (European Commission, DG Research and Innovation, 2018)
- Horizon Europe regulations
- Guide for Research Ethics Committee Members (Steering Committee on Bioethics, 2010)

3. Human participants in AgriDataValue

AgriDataValue activities involve human participants for the evaluation of the technologies to be established and human participants are expected to take part in surveys, workshops as well as the projects use cases. Even though the project pilots will involve volunteers, it will only collect and process their opinion and feedback on the AgriDataValue platform efficiency and will process it via a fully anonymized process. In any case, all humans (i.e., personnel, researchers, citizens) participating in the AgriDataValue project will be informed in detail and in writing on the project activities and benefits of the project on agricultural and climate change protection. In total AgriDataValue considers that the number of volunteers in project pilots is sufficient for demonstrating the project functionality. The invitation to participate will be sent out by phone, e-mail or other communication channels available within the project partners. Participants in the surveys and scenario exercises will be selected on the basis of their profession function/role. Participation in AgriDataValue project is voluntary and anyone has the right to refuse to participate and to withdraw his/her participation. The research activities that may involve human participants are described in the present document. Furthermore, the AgriDataValue ethical guiding principles and strategy have been made clear in the Grant Agreement.

3.1. Project Use cases and pilots

The AgriDataValue consortium is committed to take all necessary measures to ensure that all project activities comply with the relevant EU regulations and comply with the Horizon Europe ethical standards (REGULATION (EU) 2021/695, Article 19). The AgriDataValue technological tools, mechanisms and Lean Multi-Actor Approach (LMAA) analyzed in the previous sections will be fully tested and validated during the AgriDataValue project lifetime through 24 Use Cases (UC) in 23 pilots in 9 countries, representing more than 181,000ha with 25 types of crops that span from southwest to northeast Europe, outdoor and greenhouse crops, organic and non-organic production, and more than 2,000 animals of 5 types. In addition, more than 4,200 farmers will provide insights and more than 89,000 will be directly informed.

The use cases, according to deliverable D1.1, have been grouped in seven (7) clusters, addressing similar domains in different regions, crops, cultural, societal, and farming contexts. The UCs will be further updated as the project progress and end users needs are further captured and analyzed. Moreover, the pilots will be refined in Deliverable D3.1. In case of any inconsistency, the information included in D1.1 and D3.1 will considered valid.

The AgriDataValue use cases:

Use Case Cluster 1	**Sector: Arable Crops**
Countries	Poland, Netherlands, Latvia, Greece, Belgium, Romania
Crops	Grain (wheat, hard wheat, corn, rye, oats, sugar beet), tuber (potato, onions), forage (clovers, corn)
Partners	Inagro, ZSA, Delphy, TBA, UL, BIORO

Use Case 1 purpose: Use case 1 will focus on Arable Crops. The objectives of the Use Case 1 pilots are to optimize the quality and quantity of the crop production and increase environmental sustainability. Reduce the wasted irrigation water, fertilizers, pesticides, and consumed energy. The pilots will involve different technologies and data platforms such as IoT sensors, edge cloud, drones/satellite visual/multispectral images and AI models. The demonstration will take place in Poland, Netherlands, Latvia, Greece, and Belgium.

Use Case Cluster 2	Sector: Vegetables
Countries	Poland, Latvia, Spain, Belgium
Crops	Alliaceae (leek), Apiaceae (celeriac, fennel, carrots), Pulse (beans, peas), lettuce, tomato, cucumber
Partners	Inagro, TEC, UL

Use Case 2 purpose: Use case 2 will focus on the vegetables. The objectives of the Use Case 2 pilots are Precision irrigation/ fertilization, harvest /diseases prediction for vegetables/arable crop increased production. Involve IoT sensors, edge cloud, radiation/chlorophyll/pH metering, multiple data platforms with geotagged photos alone with drones/satellite multispectral imagery. The demonstration will take place in Poland, Latvia, Spain and Belgium.

Use Case Cluster 3	Sector: Trees/Vineyards
Countries	Netherlands, Spain, Greece, France, Italy, Romania
Crops	Apples, Pear, non-citrus fruit trees, Kiwi, (Biological) Olives, (Biological) Grapes/Vineyards
Partners	SARGA, RiNO, Nileas, CVSE, DELPHY

Use Case 3 purpose: Protect the health and quality of fruit trees and vineyards crop. Increase quality and quantity, avoid diseases with less pesticides, foresee and mitigate frost. Involve IoT weather/soil sensors, edge cloud, diverse geotagged photos' datasets, drones/satellite multispectral imagery, field observations (phenology stages and pest presence) datasets, field geographical information (cadastral registry and CAP) datasets. The demonstration will take place in the Netherlands, Spain, Greece, France, Italy, and Romania.

Use Case Cluster 4	Sector: Livestock
Countries	Belgium, Latvia, Greece
Animals	Cattle (Beef Cattles, Dairy Cows), Pigs (Sows, piglets, fattening pigs)
Partners	EV ILVO, ZSA, TBA

Use Case 4 purpose:

Use edge cloud and real-time IoT sensor data (e.g., neck collar, feeders, emission sensors) together with GPS location data to monitor the cattle/pig health, activity, feeding and calving, proactively control milk and meat quality, reduce the greenhouse gas emissions and nitrogen deposition. The demonstration will take place in Belgium, Latvia, and Greece

Use Case Cluster 5	Sector: Cross Sector
Countries	Greece
Crops/Animals	Cattle, Pigs, Forage (clovers, corn), Olive production, Winery production
Partners	TBA, Inagro, SIXEN, ALMA

Use Case 5 purpose: Validate cross domain use cases (fruit, vineyards, livestock, milk, oil, biogas, manure, energy) and address both supply and demand sides of the supply chain, including interoperability and traceability of platforms, electricity production and waste management. The demonstration will take place in Greece.

Use Case Cluster 6	Sector: CAP realization
Countries	N/A
Crops/Animals	N/A
Partners	SIMA, ALMA, SINER, SYN, NPA, APPAG, APIA

Use Case 6 purpose: Assess and manage the risk through modern ML, aiming to reduce the use of pesticides, fertilisers, and antibiotics. Bring forward modern crop monitoring technologies (e.g. automatic pixel classification of satellite images, automatic processing of data received from in-situ sensors). Benchmark eco-scheme monitoring tools to support the new CAP towards fair income, land use protection and environmental care.

Use Case Cluster 7	Sector: Climate monitoring
Countries	N/A
Crops/Animals	N/A
Partners	SIXEN

Use Case 7 purpose: define a number of Climate related use cases that mainly target Climate Monitoring and their influence in various activities of the project.

AgriDataValue Pilots

The AgriDataValue pilots will demonstrate how the project creates real impact in the agricultural domain and contributes to climate change reduction. The pilots, summarized in table Table 1 below, will also be used to collect sensor data and feedback from the involved end-users, monitor and adapt the pilots over project lifetime.

AgriDataValue Pilots will be conducted in the following 9 Countries (EU member states): Poland, the Netherlands, Latvia, Greece, Spain, Belgium, Italy, France, and Romania.

Table 1: Pilot summary

#	Crops/Animals	Farmers Involved		Country	Partners Involved
		Directly	Indirectly		
P1	Wheat, Com, Rye, Oats	1000	>6000	Poland	UL
P2	Potato, Onions, Sugar Beet	15	>1200	Netherlands	Delphy
P3	Wheat and hard wheat	1	>2000	Latvia	ZSA
P4	Forage (clovers, corn)	15	>5000	Greece	TBA
P5	Potatoes, Celeriac, Leek, Maize, Winter wheat	2	>1000	Belgium	Inagro
P6	Greenhouse Tomato & cucumber	2	>500	Spain	TEC
P7	Belgian Endives	5	>500	Belgium	Inagro
P8	Leek	10	>1000	Belgium	EV ILVO
P9	Potatoes	2	>800	Belgium	EV ILVO
P10	Arable crops and vegetables	8	>500	Belgium	Inagro
P11	Apple and Pear trees	2	>1000	Netherlands	Delphy
P12	Non-Citrus Fruit Trees	50	>2	Spain	SARGA
P13	Vineyards	2	>12000	Greece	TBA
P14	Vineyards	900	>5000	France	CVSE
P15	Vineyards	20	>500	Italy	RI.NO
P16	Olive Trees	20	>800	Greece	NILEAS
P18	Cereals	1	>10000	Romania	BIORO
P19	Dairy Cows	-	>200	Belgium	EV ILVO
P20	Beef Cattle	1	>24000	Latvia	ZSA
P21	Beef Cattle	2	>12000	Greece	TBA
P22	Pigs	0	>1000	Belgium	EV ILVO
P23	Biogas electricity generation	10	>20000	Greece	TBA

4. Identify/Recruit research participants

This section describes the procedures and criteria used to identify/recruit research participants in the AgriDataValue project. All humans involved in the project will be EU adult citizens, equally representing different professions, nationality, and gender. The Partners of the project will identify, select, and recruit the research participants according to the relevant activities of their responsibility. AgriDataValue is committed to respecting the EU ethical standards and rules. Ethics principles, laws, and regulations will be followed fully, as described in section 2.

4.1. Data Protection and Privacy

The AgriDataValue project commits to following all relevant data protection laws and formal regulations. The project will comply and implement the GDPR regarding data protection and privacy to all relevant project activities. The consortium is committed to take all necessary measures to ensure that all project activities, as well as the recruitment of research participants, comply with the standards defined by the EU GDPR/European Chart of Fundamental rights and all data protection- relevant EU regulations, soft law, standardization and policy initiatives, as previously mentioned.

AgriDataValue will be developed and will operate in a highly regulated environment. Task 5.1 along with Task 7.5 both led by INTRA will provide all consortium members with guidelines that summarize the findings in ethics, legislation and data protection, point out areas of relevance and include actionable recommendation for the development process. As this field is particularly volatile, developments will be monitored in order to keep the Consortium Members up to date about relevant developments. In addition, Deliverable D3.1 – Smart Farming pilots & Data Management Plan (DMP) V1 in M06 will provide the project DMP and open data, along with procedures to be used at pilot sites.

The present document will deal with issues of personal data processing and the security measures that will be implemented in AgriDataValue while AgriDataValue ethics will be coordinated by the project's Data Protection Officer (DPO) ***Despoina Anastasopoulos*** from INTRA, who will ensure the compliance of the project with ethics codes and legislations.

4.2. Gender Balance

Gender balance is taken seriously by the AgriDataValue. Even though "*the integration of the gender dimension (sex and gender analysis) in research and innovation content is not a mandatory requirement*" in the specific call, AgriDataValue will still ensure equality in project activities from three perspectives:

(1) Gender empowerment and human development. As the UN Women agency reported, AI and ICTs have a huge potentiality for the achievement of Sustainable Development Goals (SDGs), specifically SDG 5 "Achieve gender equality and empower all women and girls". AgriDataValue will enforce sustainable development from data sources to inform policy interventions on economic, social, and environmental pillars essential to highlight the role of gender dimension in business and society.

(2) Gender in leadership position. AgriDataValue will overcome any socio-cultural barriers that discourage or prevent females from progressing and moving into senior leadership positions.

(3) Gender in design the project's Pilots/Living Labs. AgriDataValue will select the farmers/volunteers sets to include an appropriate representation of all genders and will consider the gender component in every assessment.

4.3. Research integrity and good research practices

AgriDataValue places significant emphasis on research integrity. All partners of the project will follow the ethical principles and applicable EU, international and national law, including the EU Charter of Fundamental Rights and the European Convention for the Protection of Human Rights and Fundamental Freedoms and its Supplementary Protocols. The project will align with the European Code of Conduct for Research Integrity published by All European Academies (ALLEA) and adhere to the ETHICS (— ARTICLE 14) of the AgriDataValue GA. Good research practices will be followed throughout the research activities of the project including ensuring, where possible, openness, reproducibility and traceability and refraining from research integrity violations.

4.4. Understanding procedures

Details on the procedures will be provided to all participants by the AgriDataValue members. Participation in the project is voluntary and the participant has the right to refuse and withdraw their participation, or data at any time without any consequences. The consortium members will inform the potential participants regarding the methods and implications of the research, the nature of the participation and any benefits, risks, or discomfort that might ensue, in a language and in terms that participant can fully understand and will obtain their informed consent in advance.

4.5. Participants freedom

For each investigation activity, details on the used procedures and criteria will be readily made available to the participants. It is at the participant's discretion as to whether s/he wishes to participate in the investigation activity or not. They will have a chance to judge whether it is worthwhile taking the time and making the effort to share information with the project. Participants will be asked to give their informed consent to participate as part of negotiating the terms of the relationship with the research team.

5. Informed consent procedures

AgriDataValue activities involve human participants for the evaluation of the technologies to be established and human participants are expected to take part in surveys, workshops as well as crop/livestock use cases. The project pilots will involve volunteers, it will only collect and process their opinion and feedback on the AgriDataValue platform efficiency and will process it via a fully anonymized process. All humans (i.e., personnel, researchers, citizens) participating in the AgriDataValue project will be informed in detail and in writing on the project activities and benefits of the project on agricultural and climate change protection. An individual agreement will be given to the participants. The AgriDataValue consortium is committed to respecting individual rights and freedom in every stage of the research in compliance with the national, international, and EU regulations and the EU GDPR.

The informed consent procedure consists of the Information Sheet (section 6.1) and the Consent Form (section 6.2). Before the activity takes place, these documents will be provided in written by the partners to the potential participants. Once the subjects or their legally authorized representatives sign the forms, they will be given a copy, while the original will be kept in the subject's research record by the Partner responsible for organizing the Project activity involving humans. Each Partner involved will be responsible for collecting and securely storing the consent forms. The responsible Partner will safeguard the Consent forms in a secure location until they are either destroyed or needed by the Ethics Committee (EC) or Research Ethics Board (REA).

5.1. Voluntary and appropriately informed participation

The humans involved in the AgriDataValue project will be adults voluntarily participating. Furthermore, participants equally represent different educational levels, professions, nationality, and gender. They will be fully informed about the potential risks and benefits involved, and efforts will be made to prevent unrealistic expectations. Participants will provide their consent to take part in the specific project research activities, willingly and without any coercion. The partners of the project will also ensure that informed consent is obtained and privacy, as well as data confidentiality is maintained. Throughout the entire process, the partners will be accessible to participants, offering any essential information they may require.

6. Informed consent forms templates & information sheets

In this chapter, you will find templates and information sheets intended for partners who will involve humans in research activities. These templates include informed consent/assent forms and information sheets covering topics such as voluntary participation and data protection. They will be presented in a language and format that the participants can easily understand, including contact details for the Data Protection Officer (DPO) for host institutions required to appoint one under the General Data Protection Regulation 2016/679.

The provided templates and information sheet are essential tools to inform research participants about the project and to obtain their consent. Consortium partners involved in research activities that require interaction with human participants must utilize these templates to inform the individuals involved about the project and the specific activities they will be participating in and to obtain their consent for participation.

6.1. The AgriDataValue project information sheet

The following document is a template of the Information Sheet that will be given to individuals prior to their involvement in the project. The Information sheet will be adapted according to the specific project activities.

Information Sheet

About the Project

AgriDataValue aims to establish itself as the "*Game Changer*" in Smart Farming digital transformation and agri-environmental monitoring, and strengthen the smart-farming capacities, competitiveness and fair income by introducing an innovative, open source, intelligent and multi-technology, fully distributed Agri-Environment Data Space (ADS). AgriDataValue adopts and adapts a multidimensional approach that combines state of the art big data and data-spaces' technologies with agricultural knowledge, monetization, new business models and agri-environment policies, leverages on existing platforms, edge computing and network/ services, and introduces novel concepts, methods, tools, pilot facilities and engagement campaigns to go beyond today's state of the art, perform breakthrough research and create sustainable innovation in upscaling (real-time) agricultural sensor data, already evident within the project lifetime. AgriDataValue will develop an efficient, massively distributed, open-source, privacy-preserving, federated AI-based platform, aiming at capturing and managing agri-environment data, from a variety of heterogeneous data sources, enabling trustworthy secure and GDPR compliant interoperability and data sharing across end-users, industries and organizations.

To this extent, it has been established a Consortium among several companies and institutions among which we as …… [please insert your organization name] are responsible for *pilots/training /evaluation activities* [strike out as needed].

Start date of the project/activity (ies)

End date of the project/activity (ies)

Purpose of the pilot

The AgriDataVAlue pilots aim to test and validate the AgriDataValue tools in the following pilots:

- Use Case 1:
- Use Case 2:
- Use Case 3:
- Use Case 4:
- Use Case 5:

Voluntary Participation

Your participation is entirely voluntary and free of charge, as well as your consent to participate in the AgriDataValue Project as described above. It is your choice to participate or not. You might change your mind later and stop participating even if you agreed earlier at any time without any negative consequence. The duration of the participation will be …… months.

Risks

No risks are involved for the participants because the data collection is completely anonymous.

By granting your consent to participate in the activities indicated above, you commit yourself to follow all the security procedures that will be deemed necessary to protect your individual safety.

Benefits

There will not be a direct benefit for you, but your participation is an opportunity to learn skills and get useful experiences.

Reimbursement
You will not receive any incentives to take part in the research.

Data Protection
We will process your personal data for the purposes of the AgriDataValue Project. Only information that is necessary to address the central purpose of the research will be recorded, and the data will be anonymised at the point of collection. Your name or any information that could identify you or relate to your identity will not be linked with the research materials. The personal data will be securely stored and retained for the lifetime of the Project and safely deleted afterward.
Your personal data will be treated as strictly confidential and handled in accordance with the provisions of the Charter of Fundamental Rights of the EU (2000/c364/01), Convention No. 108 of the Council of Europe for the Protection of Individuals and Regulation (EU) 2016/679 ("**GDPR**"). You can find more details in the attached Privacy Notice.
If you have any questions about the activities or the Project itself, any problems, unexpected physical or psychological discomforts, any injuries, or think that something unusual or unexpected is happening I am free to contact:

_____	_____	_____
Name of participant	Signature	Date
_____	_____	_____
Name of pilot DPO	Signature	Date

Thank you for taking part in the AgriDataValue pilot.

Annex I

Privacy Notice

Introduction
Company "…." is established in Company's Address, (hereinafter "Company", "we" or "Us") and it is committed to ensure the security and privacy of your Personal Data. As a Data Controller, the Company takes its responsibility regarding the security and privacy of Personal Data very seriously and is going to be transparent about the type of data it collects and how it is being handled.
Pursuant to article 5 of the General Data Protection Regulation (EU) 2016/679 ("GDPR"), the Processing of the Personal Data carried out by the Consortium for the implementation and execution of the Project will be based on the principles of lawfulness, fairness, transparency, purpose limitation, data minimization, accuracy, storage limitation, integrity, and accountability.
To this extent, please read the following Privacy Policy (hereinafter the "Privacy Policy") that explains the reason for the processing of your Personal Data, the way we collect, handle and ensure the protection of all Personal Data provided, how that information is used and what rights you have in relation to your Personal Data.
Any term indicated in capital letter shall have the meaning attributed to it within the GDPR, or otherwise provided hereto.

Contact Details

If you would like to exercise your rights under GDPR, or if you have comments, questions, or concerns, or if you would like to submit a complaint regarding the collection and use of your Personal Data, please feel free to contact our project DPO, Despoina Anastasopoulos from Netcompany-Intrasoft, at the following email address despoina.anastasopoulos@netcompany-intrasoft.com

Data Controller
The Data Controller of your Personal Data will be the Company.

Personal Data Processing and Lawful Basis
The Company will process the Personal Data that you will voluntarily and directly provide and/or disclose in connection with the invitation to participate in the Smart Agriculture use cases of the AgriDataValue project.
We may ask you to provide us with your Personal Data such as first name, last name, address, and e-mail. We may also publish video or photographs of your image in case of pilot activities in which you participated. The Company will also process your Personal Data that you will voluntarily provide to us to post a comment or to send a message to the Company itself.
Without prejudice to the above, we collect your Personal Data only with your Consent and only if it is necessary for the Project.
We also may process your Personal Data if it is necessary for compliance with a legal obligation to which the Data Controller is subject.
The lawful basis pursuant to which the Coordinator will process your Personal Data shall be your free and informed consent to the data processing itself given at the moment of the execution and entry into force of the Invitation Letter, with reference to the processing of your name and surname, contact details, job title and, experiences.
Your Personal Data will not be used for any automated decision-making including profiling.

Purpose of Personal Data Processing
We will process your Personal Data exclusively within the purposes of the research for the AgriDataValue project. In particular, we will process your Personal Data to be able to get in contact and inform you by email or phone about the upcoming meetings or pilot activities for AgriDataValue use cases.
Any other further processing of your Personal Data will be excluded without your previous consent.

Recipients of Personal Data and Personal Data Transfer
Access to your Personal Data is provided to the Company that is responsible for carrying out this Processing operation and to authorised staff according to the 'need to know' principle. Such staff abide by statutory, and when required, additional confidentiality agreements.
However, we may disclose your information in order to comply with the law, a judicial proceeding, court order, subpoena, or other legal process or where we believe it is necessary to investigate, prevent or take action regarding illegal activities, suspected fraud, situations involving potential threats to the safety of any person or as evidence in litigation in which we are involved.

Retention period
The Company only keeps your Personal Data for the time necessary to fulfill the purpose of the AgriDataValue project and will be destroyed when no longer needed for that purpose. This does not affect your right to request that we delete your personal data before the end of its retention period. We may archive personal data (which means storing it in inactive files) for a certain period prior to its final deletion, as part of our ordinary business continuity procedures.

How we protect and safeguard your Personal Data

All processing is carried out in compliance with article 32 of the GDPR, with the adoption of appropriate security measures. Technical measures include appropriate actions to address security, risk of data loss, alteration of data, or unauthorised access, taking into consideration the risk of the processing and of the nature of the Personal Data. Organisational measures include restricting access to the Personal Data solely to authorised persons or third parties where legitimated by the Data Controller for the purposes of processing operation.

Which your rights are and how you can exercise them

The Company would like to make sure you are fully aware of all of your data protection rights. Every user is entitled to the following:

The right to be informed. You have the right to be provided with clear, transparent, and easily understandable information about how we use your information and your rights. This is why we are providing you with the information in this Privacy Notice.

The right of access. You have the right to obtain access to your Personal Data subject matter of the Data Processing. This will enable you, for example, to check that we are using your Personal Data in accordance with the relevant data protection law. If you wish to access the information we hold about you in this way, please get in touch (please see section Contact Details). The right to rectification. You are entitled to have your Personal Data corrected if it is inaccurate or incomplete. You can request that we rectify any errors in the information that we hold by contacting us (please see section Contact Details).

The right to erasure. This is also known as 'the right to be forgotten and, in simple terms, enables you to request the deletion or removal of certain of the Personal Data that we hold about you by contacting us (please see the section Contact Details). Please remember that it is possible that pursuant to any applicable law you may not have all your Personal Data erased.

The right to restrict processing. You have rights to 'block' or 'suppress' certain further use of your Personal Data. When processing is restricted, we can still store your Personal Data, but will not use it further.

The right to data portability. You have the right to obtain your personal information in an accessible and transferrable format so that you can re-use it for your own purposes across different service providers. This is not a general right however and there are exceptions. To learn more please get in touch (please see the section Contact Details). The right to withdraw consent. If you have given your consent to anything we do with your Personal Data (i.e. we rely on consent as a legal basis for processing your information), you have the right to withdraw that consent at any time. You can do this by contacting us (please see section Contact Details). Withdrawing consent will not however make unlawful our use of your information while consent had been apparent.

The right to object to processing. You have the right to object to certain types of processing. You can for example object to the publication of pictures taken of you within the context of pilot activities.

Where you wish to exercise your rights in the context of one or several specific processing operations, please provide their description in your request.Your requests will be handled within a maximum of 30 (thirty) working days.

Changes

Where appropriate, we will notify you of any changes to this privacy policy, for example by email or push notification.

Entry into force

The present Privacy Policy entered into force on the Xth of Z 202Y.

Last update X/Z/202Y.

6.2. The ADV project consent Template

The following Informed Consent template document will be adapted according to the activities to be performed.

Informed Consent Template

I …… agree to voluntarily participate in the following pilot(s)

Please tick the appropriate boxes

Pilot Activities	YES	NO
Crop-based farming:	☐	☐
Livestock farming:	☐	☐
Vegetable/Fruit farming:	☐	☐

Which will take place in

Pilot Location	YES	NO
Poland	☐	☐
France	☐	☐
Netherlands	☐	☐
Latvia	☐	☐
Greece	☐	☐
Belgium	☐	☐
Spain	☐	☐
Italy	☐	☐
Romania	☐	☐

I declare & confirm that	YES	NO
Taking Part		
I have read and understood the project information sheet dated …/…./……., as well as what activities the pilot use cases involve.	☐	☐
I have been provided with the relevant Privacy Notice, as well as a copy of the Information Sheet.	☐	☐
I have been given the opportunity to ask questions about the project and all my questions have been answered to my satisfaction.	☐	☐
I agree to take part in the project. Taking part in the project may include being interviewed and recorded (audio or video).	☐	☐

I understand that my participation is voluntary. I can withdraw from the pilot at any time and I do not have to give any reasons for why I no longer want to take part. In case of withdrawal, I will not be penalised for withdrawing nor will I be questioned on why I have withdrawn.	☐	☐
Use of the information I provide for this project only		
I understand that my personal details such as phone number and address will not be revealed to people outside the project without my consent.	☐	☐
I understand that my personal details such as phone number and address will be deleted after the project ends. I understand that my personal details will be deleted before the project end upon my request.	☐	☐
I understand that my personal data will be processed in accordance with GDPR and any other applicable laws.	☐	☐
Use of the information I provide beyond this project		
I agree for the data I provide to be archived at the data repository selected by AGRIDATAVALUE in an anonymized form	☐	☐
I understand and agree that other authenticated researchers may have access to these data only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
I understand and agree that other authenticated researchers may use my words in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	☐	☐
Consent Certification		
I agree to voluntarily participate in the pilot activities of the AgriDataValue project as a tester/ operator [strike out as needed].	☐	☐

_____	_____	_____
Name of participant	Signature	Date
_____	_____	_____
Name of Pilot DPO	Signature	Date

7. Data within the AgriDataValue project

The AgriDataValue project will be organized with high degree of transparency. The consortium is committed to follow all the relevant rules, in line with the highest ethical standards and the applicable EU, international and national law on ethical principles (Article 14 – Ethics of the Grant Agreement). Furthermore, the consortium pays particular attention to the protection and privacy of personal data and in accordance with the EU's 2016 General Data Protection Regulation (GDPR 2016/679). AgriDataValue ethics will be coordinated by the project's Data Protection Officer (DPO), Despoina Anastasopoulos from INTRA (see section 8). The project will involve volunteers only collecting and processing their opinion and feedback on the AgriDataValue platform efficiency and will process it via a fully anonymized process. Human participants are expected to take part in surveys, workshops as well as crop/livestock use cases; yet, no personal or sensitive data as defined in the GDPR, i.e. "personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation", will be collected, stored or processed, and no data will be shared between EU and non-EU countries.

7.1. Research data management

AgriDataValue Use Cases will generate datasets, which will be shared based on AgriDataValue Data Management Plan (DMP), developed, and reported in the context of Task 3.1 led by EV ILVO and in-line with EU privacy and data protection regulations, through the Open Research Data Pilot (ORD Pilot) and following the principles of:

Findability: To facilitate findability, AgriDataValue will a) publish the datasets in trustworthy repositories (e.g., 4TU.Research Data, EOSC, Zenodo), b) use standardized naming conventions (e.g., comply with ISO/IEC 11179-5:2005), c) use identifiers, which are persistent, non-proprietary, open and interoperable (e.g. leveraging existing sustainable initiatives such as ORCID for contributor identifiers and DataCite for data identifiers) and d) include datasets' annotation and rich metadata, describing the data, and making sure they are findable through disciplinary discovery portals (local and international).

Accessibility: After anonymization, AgriDataValue dataset will become and remain accessible using a) open, permanent, non-proprietary repositories and non-proprietary indexing (also facilitating findability), and common formats will be used. Also, AgriDataValue will consider authentication and authorization in specific accessing procedures where datasets are confidential or private. Even in the case of private data, metadata and owner contact information will be available.

Interoperability: To facilitate interoperability AgriDataValue data and metadata will follow a) ***Standards compliant format*** (e.g., Dublin Core Metadata Initiative, DCMI) to address the interoperability requirement with other data sources in the linked data environment, b) ***Standards vocabulary*** (e.g. DCMI uses natural language definitions that can be instantly converted into open machine-readable formats such as XML and JSON) and c) Design ***standards based digital data models and ontologies*** (e.g. WMO Codes Registry or GRIB Discipline Collection ontology).

Reusability: AgriDataValue open datasets will have ***clear and accessible usage licenses***, to inform the permitted kind of reuse, including provenance information. These licenses will permit any interested 3rd party to further re-use the data under specific terms of conditions. The *Creative Commons (CC)* licensing scheme will be used to make it possible for others to mine, exploit and reproduce the data. *Business friendly licenses* (i.e., EPL 2.0, LGPL v3) will be also considered for the AgriDataValue open-source software components.

Curation and storage/preservation costs: A Data Manager Officer will be identified for each pilot for overseeing data gathering and quality management and creating/executing the DMP of each pilot site. Provisions for data curation and preservation will be accordingly made in the project's exploitation plan. In principle, the preservation and curation of the data beyond the end of the project will be ensured through: a) utilization of ***permanent repositories*** such as the European Open Science Cloud, b) ***Detailed documentation*** provided at project (i.e. project methodology), file (i.e. how the dataset files interrelate) and component (i.e. used variables) level, c) ***formal versioning methodology***, including file naming conventions, file version control, file structure and directory tree structure.

8. Data Protection Officer (DPO)

AgriDataValue ethics will be coordinated by the Data Protection Officer (DPO), who will (a) ensure the compliance of the project with ethics codes and legislations, and (b) align project research results with the most advanced outcomes of the international scientific community on ethics, engineering, and emerging technologies. The project policy implementation will be extremely vigilant in handling data and strictly collect and use only the one necessary to carry out the project activities considering all the processes and actions. In the case of indirectly collecting personal data (e.g., as a part of pilots/Living Labs), they will be anonymized before used.

The AgriDataValue Data Protection Officer (DPO) is ***Despoina Anastasopoulos*** from INTRA. Anastasopoulos will also lead the *Privacy, Ethical, Legal & Regulatory Compliance* monitoring tasks (T5.1, T7.5). AgriDataValue DPO will be compliant with the GDPR (EU 2016/679, EU 2016/680). Anastasopoulos has more than 10 years of experience as a recognized data privacy and data protection expert within an international IT oriented environment in both private and public sector, but also for regulatory and public institutions. AgriDataValue DPO will be responsible for ensuring that an appropriate data management plan is developed and used to protect the privacy of data. More specifically, he will ensure that the following rules as described in the AgriDataValue project Grant Agreement are followed:

- Personal Data is properly anonymized/pseudo-anonymized and processed legally and fairly
- It must be collected for explicit and legitimate purposes and used accordingly
- It must be adequate, relevant, and not excessive in relation to the purposes for which it is collected and/or further processed
- It must be accurate and updated where necessary
- Each pilot will assign an Ethical & Ecosystem Chair (Pilot Data Controller), who must ensure that data subjects can rectify, remove, or block incorrect data about themselves
- Data that identifies individuals (personal data) must not be kept any longer than strictly necessary and always in an encrypted format
- Data controllers must protect personal data against accidental or unlawful destruction, loss, alteration, and disclosure, particularly when processing involves data transmission over networks. They shall implement the appropriate security measures

The AgriDataValue project's initiatives involve assessing and applying aspects concerning data protection and privacy, as well as evaluating informed consent. This evaluation aims to ensure that research participants willingly participate, as it is a crucial measure for addressing privacy concerns in research.

The following tables present information regarding the DPO for host institutions required to appoint a DPO under the GDPR 2016/679. **In cases where this information was not available by the time of submission, we will update the table in the next version of the deliverable**.

Partner Name: SYNELIXIS SOLUTIONS S.A. (SYN)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	Yes
Contact Information of DPO	Name: Theodore Zahariadis Email: zahariad@synelixis.com

Partner Name: ATOS IT SOLUTIONS AND SERVICES (ATOS)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	Yes
Contact Information of DPO	Name: Raquel Lazcano Email: raquel.lazcano@eviden.com

Partner Name: SIXENSE ENGINEERING (SIXEN)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	Yes
Contact Information of DPO	Name: Mario Alsayah Email: mario.alsayah@resallience.com

Partner Name: NETCOMPANY-INTRASOFT (NTRA)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: Law office Pistiolis Triantafyllos & Associates E-mail: privacy@netcompany-intrasoft.com Contact Person: Nikolaos Zelios

Partner Name: SIEMENS (SIEM)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	Yes
Contact Information of DPO	Name: Nechifor, Cosmin-Septimiu Email: septimiu.nechifor@siemens.com

Partner Name: SINERGISE (SINER)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	N/A
Contact Information of DPO	Name: Email:

Partner Name: ALMAVIVA (ALMA)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: Antonella Pacchiarotti Email: DPO.GruppoAlmaviva@almaviva.it

Partner Name: INTERNATIONAL DATA SPACES (IDSA)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: Anil Turkmayali Email: anil.turkmayali@internationaldataspaces.org

Partner Name: SOFTWARE IMAGINATION & VISION (SIMAVI)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: Radu Soare Email: radu.soare@simavi.ro

Partner Name: SINGULARLOGIC (SLG)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: Stamatia Rizou Email: srizou@singularlogic.eu

Partner Name: EIGEN VERMOGEN VAN HET INSTITUUT VOOR LANDBOUW (EV ILVO)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: Elien Dewitte Email: elien.dewitte@ilvo.vlaanderen.be

Partner Name: ETHNIKO KAI KAPODISTRIAKO PANEPISTIMIO ATHINON (NKUA)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	Yes
Contact Information of DPO	Name: Nadia Liapi Email: dpo@uoa.gr

Partner Name: INAGRO (Inagro)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: Anja Lemmens Email: anja.lemmens@inagro.onmicrosoft.com

Partner Name: UNIWERSYTET LODZKI (UL)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: dr. Edyta Bielak-Jomaa Email: iod@uni.lodz.pl

Partner Name: FUNDACION PARA LAS TECNOLOGIAS AUXILIARES DE LA AGRICULTURA (TEC)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	N/A
Contact Information of DPO	Name: Email:

Partner Name: DELPHY BV (Delphy)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	NO
Contact Information of DPO	Name: Email:

Partner Name: INSTITUTO TECNOLOGICO DE ARAGON (ITAIN)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: Isabel Marco Lacoma Email: dpo@itainnova.es

Partner Name: ZEMNIEKU SAEIMA (ZSA)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	NO
Contact Information of DPO	Name: Email:

Partner Name: SOCIEDAD ARAGONESA DE GESTION AGROAMBIENTAL SL (SARGA)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: Jose Sirvent Email: strategicprojects@sarga.es

Partner Name: AGROTIKOS KTINOTROFIKOS SYNETAIRISMOS KATOUNAS TO VIOLOGIKO AGROKTIMA (TBA)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	Yes
Contact Information of DPO	Name: Ioannis Katris Email: Katris_Biologiko@gmail.com

Partner Name: SOCIETA ITALIANA DI VITICOLTURA ED ENOLOGIA (SIVE)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	N/A
Contact Information of DPO	Name: Email:

Partner Name: NILEAS - SYNETAIRISMOS PISTOPOIIMENON AGROTIKON PROIONTON DIMOU NESTOROS MESSINIAS (NILEAS)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	NO
Contact Information of DPO	Name: Email:

Partner Name: CONSEIL DES VINS DE SAINT-EMILION (CVSE)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	NO
Contact Information of DPO	Name: Email:

Partner Name: ASOCIATIA OPERATORILOR DIN AGRICULTURA ECOLOGICA BIO ROMANIA (BIORO)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	NO
Contact Information of DPO	Name: Email:

Partner Name:) RI.NOVA SOCIETA COOPERATIVA (RI.NO)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: Claudia Guidi Email: cguidi@rinova.eu

Partner Name: AGRO DIGITAL SOLUTIONS (AgroDS)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	N/A
Contact Information of DPO	Name: Email:

Partner Name: NATIONAL PAYING AGENCY (NPA)

Do you have a Data Protection Officer (DPO)? (Yes/No)	YES
Contact Information of DPO	Name: Greta Lelekauskaite Email: great.lelekauskaite@nma.lt

Partner Name: AGENZIA PROVINCIALE PER I PAGAMENTI DELLA PROVINCIA AUTONOMA DI TRENTO (APPAG)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	N/A
Contact Information of DPO	Name: Email:

Partner Name: AGENTIA DE PLATI SI INTERVENTIE PENTRU AGRICULTURA (APIA)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	N/A
Contact Information of DPO	Name: Email:

Partner Name: QUEEN MARY UNIVERSITY OF LONDON (QMUL)	
Do you have a Data Protection Officer (DPO)? (Yes/No)	N/A
Contact Information of DPO	Name: Email:

9. Data Minimization

The following chapter provides explanations of how the data that will be processed are relevant and limited to the purposes of the AgriDataValue research project and research activities. The AgriDataValue project partners will follow the data minimization principle.

9.1. Data minimization principle

The consortium of AgriDataValue will comply to the GDPR (EU 2016/679 [1], EU 2016/680 [2]) [3]. Based on these principles governing data security and personal data processing, the handling of data must be done lawfully, with fairness and transparency. Only necessary and proportionate data should be used to achieve the intended task or purpose for which they were gathered. The AgriDataValue partners also pledge to process the data in a way that guarantees its security, as detailed in the current deliverable.

According to GDPR - CHAPTER II / Article 5 [3] the ''principles relating to processing of personal data'', states that Personal Data should be:

- processed lawfully, fairly and in a transparent manner in relation to the data subject ('lawfulness, fairness and transparency')
- adequate, relevant, and limited to what is necessary in relation to the purposes for which they are processed ('data minimisation')

9.2. Data minimization within AgriDataValue

The AgriDataValue Partners will collect only the essential data to facilitate and ensure the successful implementation of the project's pilot activities. Additionally, only the absolutely necessary data will be gathered for the purpose of efficient communication with the pilot participants. Periodically, the partners will review the collected data to assess its continued necessity and promptly delete any data that are no longer required, such as when a participant terminates their activities or withdraws their participation. The data collection process will be conducted with formal consent from the participants, which will be confirmed through signed consent forms.

In rare instances, such as with steering committee members or workshop participants, the data collected will be limited to business contact information, including names, affiliations, and email addresses. This data will be strictly utilized for communication purposes among the partners. The following table provides information on whether each consortium partner processes personal data for the AgriDataValue research activities.

Table 2: Personal Data to be collected by each AgriDataValue Partner

European Partners
Partner Name: **ZSA**
ZSA might need to collect personal data from livestock farmer indirectly; data from livestock farm owned by farmer
Partner Name: **Inagro**
Inagro might need to collect personal data from farmers indirectly; data from fields owned by farmers
Partner Name: **EV ILVO**

EV ILVO might need to collect personal data indirectly; tagging might take place during pre-processing
Partner name: **CVSE**
CVSE might need to collect personal data from winegrowers; some data can be owned by farmers
Partner name: **DELPHY**
DELPHY might need to collect personal data from farmers indirectly; data from fields owned by farmers
Partner name: **BIORO**
BIORO might need to collect personal data from the farm (data production)

9.3. Data collection surveys

In order to evaluate the technologies to be established human participants are expected to take part in surveys, workshops as well as crop/livestock use cases. The AgriDataValue project pilots will involve volunteers to collect and process their opinion and feedback on the AgriDataValue platform efficiency. The collected data will be processed fully anonymized. Participants will give their consent to be part of the research by responding to the questions asked, as described previously in the present deliverable. AgriDataValue will not use surveys to collect any sensitive personal data and no data transmitted between project partners that might lead someone to identify an individual (e.g., location information will be removed). Information regarding the purpose of the research and methods used will be provided to the participants such that participants will be aware of what is expected from them in the study and how their responses will be used. The participants will be informed before the research is undertaken about their right to withdraw from the research, without giving a reason, at any time during the data gathering, or to refuse answering specific questions.

10. Anonymization/Pseudonymization

To ensure that data subjects cannot be identified in any documents (reports, publications) or datasets within the project, only anonymized and aggregated data will be made public. The responsible partner (the partner that is gathering the data) will follow all required anonymization procedures to make sure that the data subject is no longer identifiable. Consequently, during the process of anonymization, data identifiers need to be removed, generalized, aggregated, or distorted and a small cell analysis should be carried out by the responsible partner. At this point, it would be important to underline that anonymization is different than pseudonymization (GDPR treats it as a distinct category, see Recital 26). Anonymization is the process of encrypting removing personally identifiable information from data sets so that the people whom the data relate to remain permanently anonymous, and thus un-identifiable; whereas pseudonymization, as defined in the GDPR (which incentivizes its use in Recital 29,e.g.)., means "the processing of personal data in such a manner that the personal data can no longer be attributed to a specific data subject without the use of additional information, provided that such additional information is kept separately and is subject to technical and organisational measures to ensure that the personal data are not attributed to an identified or identifiable natural person" (GDPR, Art. 4(5)).Below we add a table containing a list of good practices for anonymization of quantitative and qualitative data, using the tour guide on data management of the Consortium of European Social Science Data Archives (CESSDA[1]) as source.

Table 3: Good practices for data anonymization

Type of data	Good practices
Quantitative data	• *Removing or aggregate variables or reduce the precision or detailed textual meaning of a variable.* • *Aggregate or reduce the precision of a variable such as age or place of residence. As a general rule, report the lowest level of geo-referencing that will not potentially breach respondent confidentiality.* • *Generalise the meaning of a detailed text variable by replacing potentially disclosive free-text responses with more general text.* • *Restrict the upper or lower ranges of a continuous variable to hide outliers if the values for certain individuals are unusual or atypical within the wider group researched.*
Qualitative data	• *Use pseudonyms or generic descriptors to edit identifying information, rather than blanking-out that information;* • *Plan anonymisation at the time of transcription or initial write-up, (longitudinal studies may be an exception if relationships between waves of interviews need special attention for harmonised editing).*

[1] https://www.cessda.eu/Research-Infrastructure/Training/Expert-Tour-Guide-on-Data-Management/5.-Protect/Anonymisation

	• *Use pseudonyms or replacements that are consistent within the research team and throughout the project. For example, using the same pseudonyms in publications and follow-up research;* • *Use 'search and replace' techniques carefully so that unintended changes are not made, and misspelt words are not missed;* • *Identify replacements in text clearly, for example with [brackets] or using XML tags such as <seg>word to be anonymised</seg>;* • *Create an anonymisation log (also known as a de-anonymisation key) of all replacements, aggregations or removals made and store such a log securely and separately from the anonymised data files.*

11. Safeguard Rights/Freedoms of Data Subjects

In AgriDataValue, technical and organizational measures will be implemented to safeguard the rights and freedoms of the data subjects and research participants. The GDPR regulation, that the AgriDataValue consortium is committed to follow, requires all data controllers and processors to implement appropriate technical and organisational measures to safeguard rights and freedoms of data research participants, as well as to ensure a level of data security that is commensurate to the risks faced by the data subjects in the event of unauthorised access to, or disclosure, accidental deletion or destruction of, their data (art.32 GDPR).

The principle of transparency will be followed by the AgriDataValue consortium, and as stated before, their participation of human participants will be voluntary, and they will be informed accordingly. Their confidentiality and anonymity will be respected throughout the project. The project's Data Protection Officer (DPO) identity and contact details, as well as the partner responsible for the data collection will be communicated to the participants. Furthermore, in order to prevent unauthorised access to personal data, security measures will be implemented as described in section 0 of the present document.

12. Security measures to prevent unauthorized access to personal data

The previous section outlined the technical and organizational measures to protect the rights and freedoms of study participants and safeguard their data. In this section, we will focus on the security measures that the AgriDataValue consortium partners will adopt to prevent unauthorized access to personal data. It is important to note that no personal data will be collected or processed during the AgriDataValue project activities.

However, researchers are required to use trustworthy devices and conduct their research tasks on trusted networks during the project's research activities. They must also adhere to data protection policies and institutional guidelines. The implemented measures will involve access controls through secure logins, the installation of current security software on devices, and regular data backups.

In addition, the project will implement adequate 2institutional-level network security, which includes security systems, firewalls, and secure storage facilities. Personal data will not be stored on cloud storage unless it is encrypted. Any paper-based personal information and data will be securely locked in designated areas to prevent unauthorized access. It is highly recommended that all passwords used should be encrypted, not written down, and changed regularly.

The security measures that will be applied by the AgriDataValue project to prevent unauthorised access to personal data are:

- Data anonymization/pseudonymization at the source
- Use trustworthy devices (install the latest versions of Operating System, Firewall and up to date antivirus software). Moreover, secure storage devices (encrypted disks) will be used.
- Strong authentication/authorization process to get access to the data. A strong Password Policy will be followed. The users will be forced to select long passwords including letters, numbers and special characters, and change passwords frequently.
- Users will be educated to avoid using terms that can be guessed in a brute force attack, while they will be informed on routine password updating. Any password will be encrypted, never written, and changed regularly. Two factor authentication (2FA) will also be considered.
- Access to systems and databases with data will be monitored to detect anomalous activity such as multiple login attempts, login at unusual hours, or login by users to systems or data they don’t usually access.
- End point security. Historically, most security breaches were a result of penetrating the network perimeter. Today, many attacks circumvent network defences by directly targeting endpoints, such as employee workstations, servers, cloud instances. Installing antivirus on every endpoint is the most basic security measure.
- Only persons that have been authorised by their organization and have submitted an official request to the Pilot Data Controller and the Project Data Protection Officer will have access to the data.

13. Personal Data transferred outside EU and personal data transferred from a non-EU country to the EU

The AgriDataValue is a joint project between EU countries and the United Kingdom (non-EU country). Research activities will be conducted in EU countries and through the conduct of these activities following the specific call requirements, all Ethic requirements will be respected fully and unconditionally.

The consortium of the AgriDataValue project clearly states that during the project's lifespan, ***no personal or sensitive data will be shared or transferred from EU to non-EU countries or international organization***.

In the unforeseen case, that any personal data is required to be transferred outside EU, the chapter V of the General Data Protection Regulation 2016/679 entitled ''*Transfers of personal data to third countries or international organisations*'' will be applied in order to ensure that the level of protection of natural persons is guaranteed. In more details, the article 44 of chapter V of GDPR will be applied which describes the principles for 'any transfer of personal data which are undergoing processing or are intended for processing after transfer to a third country or to an international organisation'. The AgriDataValue pilots will be conducted in EU countries (Greece, Spain, France, Romania, Italy, Belgium, Poland, the Netherlands, and Latvia). All AgriDataValue activities and experiments will concentrate on crop, livestock, and vegetables/fruits monitoring in accordance with the project scope.

As described in chapter 9.3 of the present deliverable, surveys will be used to collect data and opinions of people regarding non sensitive issues**.** No sensitive personal data will be collected, and no data transmitted between project partners that might lead someone to identify an individual (e.g., location information will be removed).

During the research activities of the project, the partners of AgriDataValue commit to comply with the Ethics EU regulations and legislations.

The AgriDataValue consortium confirms that no personal or sensitive data will be shared or transferred from UK (non-EU country) to the EU (or another third state) in a readable (not encrypted, non-anonymized/ pseudonymized format).

During the workshop held in June 2023, pilot participants were enquired as to whether the third-party tools/platforms that they are currently using for their daily operations are collecting/storing data outside of the EU. Below, the list of third-party tools/platforms that are being used in all Use Case Clusters and the links to their respective privacy policies:

Use Case Cluser 1 - Arable Crops	
AgriDataValue partners involved: Inagro, ZSA, Delphy, TBA, UL, BioRO	
Third party tool:	**Privacy policy link:**
Fieldclimate	https://metos.at/en/privacy-policy/
Watchitgrow	https://watchitgrow.be/nl/uw-data
BIORO: TBD	

Use Case Cluser 2 - Vegetables	
AgriDataValue partners involved: Inagro, TEC, UL	
Third party tool:	**Privacy policy link:**
Fieldclimate	https://metos.at/en/privacy-policy/
Watchitgrow	https://watchitgrow.be/nl/uw-data

Use Case Cluser 3 - Trees/Vineyards	
AgriDataValue partners involved: SARGA, RiNO, Nileas, CVSE	
Third party tool:	**Privacy policy link:**
Platform - iFarming - Agricoltura di precisione	https://www.ifarming.it/privacy-policy/?lang=en

Use Case Cluser 4 - Livestock	
AgriDataValue partners involved: EV ILVO, ZSA, TBA	
Third party tool:	**Privacy policy link:**
C-lock dashboard	https://www.c-lockinc.com/privacy-policy

Use Case Cluser 5 - Cross sector	
AgriDataValue partners involved: TBA, Inagro, SIXEN, ALMA	
Third party tool:	**Privacy policy link:**
N/A	N/A

Use Case Cluser 6 - CAP realization	
AgriDataValue partners involved: SIMA, ALMA, SINER, SYN, NPA, APPAG, APIA	
Third party tool:	**Privacy policy link:**
N/A	N/A

Use Case Cluser 7 - Climate monitoring	
AgriDataValue partners involved: SIXEN	
Third party tool:	**Privacy policy link:**
N/A	N/A

14. Respective national legal framework

The AgriDataValue project and all the partners will comply with the Horizon Europe ethical standards and guidelines, the consortium is committed to take all necessary measures to ensure that all project activities comply with the GDPR/European Chart of Fundamental rights and all data protection relevant EU regulations, soft law, standardization and policy initiatives, soft law, standardization, and policy initiatives. Throughout the present document the AgriDataValue partners provided sufficient confirmation of compliance to relevant laws and regulations. In addition, the consortium will comply with the laws of the country in which the research is conducting regarding national data-protection and processing laws, as well as legislation regarding the rights of data subjects. A declaration of compliance with respective national legal framework(s) will be submitted in this section.

Among AgriDataValue Consortium partners, one (1) beneficiary is from a non-EU country:

Partner Name: **UNIVERSITY COLLEGE LONDON (ULC)**	non-EU country: **United Kingdom**
The UK GDPR is effectively the General Data Protection Regulation (Regulation (EU) 2016/679) ('GDPR')	

15. Artificial intelligence (AI) and compliance with AI Regulations

AgriDataValue will adopt the Guideline of the EU High-Level Expert Group on AI (AI HLEG) to design and implement trustworthy AI/ML ecosystems. AgriDataValue ethics will be coordinated by the Data Protection Officer (DPO), who will (a) ensure the compliance of the project with ethics codes and legislations, and (b) align project research results with the most advanced outcomes of the international scientific community on ethics, engineering, and emerging technologies. The project policy implementation will be extremely vigilant in handling data and strictly collect and use only the one necessary to carry out the project activities considering all the processes and actions. In the case of indirectly collecting personal data (e.g., as a part of pilots/Living Labs), they will be anonymised before used.

AgriDataValue project will ensure the trustworthiness and reliability of its AI systems based on the approach:

- **Development/use of "White Glass" Models wherever applicable:** In cases where "White Glass" explainable models (e.g., decision trees, models derived from FDML) yield acceptable performance, they will be preferred over "black-box" models like multi-layer deep neural networks.
- **Explaining "black-box" models in cases where they must be used:** In cases where the use of "black-box" models is deemed necessary (e.g., due to their performance when large volumes of data are available), the project will employ XAI techniques to interpret the models and boost their trustworthiness.
- **Dealing with AI trustworthiness towards AgriDataValue' tools adoption**: AI trustworthiness will be considered and analysed during the development of the project use cases, with the active engagement of farmers, agronomists, citizens, and administrations/public organizations. One of the main goals of this process will be to find the proper balance between model explainability, trustworthiness and performance.
- **Compliance with mandatory regulations (e.g., GDPR) and the European Parliament & Council Proposal for an AI Regulation:** The AI systems of the project will comply with the mandates of mandatory regulations like GDPR and with emerging AI regulations at the European level. Special emphasis will be paid in studying and ensuring the social robustness of the AgriDataValue AI systems. In ensuring the trustworthiness of the AI systems, the project will leverage the partners' background results in AI technologies, and their participation in some prominent EC-funded projects (e.g., H2020 STAR, AI4PublicPolicy).

16. Animals within the AgriDataValue project

The AgriDataValue technological tools, mechanisms, and Lean Multi-Actor Approach (LMAA) analyzed in the previous sections will be fully tested and validated during the AgriDataValue project lifetime through 24 Use Cases (UC) in 23 pilots in 9 countries (Greece, Spain, France, Romania, Italy, Belgium, Poland, the Netherlands, and Latvia).

The AgriDataValue activities which involve animals will take place in Belgium, Latvia, and Greece, within the use case cluster 4 as described in section 3.1. In total, 4 AgriDataValue pilots will be conducted involving more than 2,000 animals of 5 types (Beef Cattles, Dairy Cows, Pig Sows, piglets, and fattening pigs). All activities undertaken in EU countries will comply with the Horizon Europe ethical standards.

Use Case Cluster 4	**Sector: Livestock**
Countries	Belgium, Latvia, Greece
Animals	Cattle (Beef Cattles, Dairy Cows), Pigs (Sows, piglets, fattening pigs)
Partners	EV ILVO, ZSA, TBA, SARGA

16.1. AgriDataValue procedures to ensure animal welfare

Throughout the demonstration activities in AgriDataValue project, animals will be involved. With respect to livestock animals, the project will only perform not interfering and non-invasive Experiments, ensuring animal welfare. In details, the project will use digital tools, such as IoT sensors and environmental monitoring devices to oversee and optimize the livestock for maximum efficiency. The following table shows the pilots, the country that the pilot will be conducted and the leading member of the consortium.

Table 4: The AgriDataValue pilots involving animals

Animal Type	***Country***	***Partners involved***
Dairy Cows	Belgium	EV ILVO
Beef Cattle	Latvia	ZSA
Beef Cattle	Greece	TBA
Pigs	Belgium	EV ILVO

16.2. AgriDataValue activities involving animals

For the research purposes involving animals within the AgriDataValue project, IoT devices and appropriate sensors will be installed at the pilot sites. Training related to their use, functionality, data recording and interpretation will also be delivered to the people involved in the animals' experiment by Experts.

The pilot activities are described in WP3 and WP4.

16.2.1. Introduction to the scope and nature of the experiments

The following tables present information regarding the country in which the pilots will take place, the AgriDataValue partners that will be involved, as well as an estimation of the total number of the animals that will be involved. In addition, a description of the nature of the experiments and the harm that will be caused to the animals, will be provided.

Pilot Demonstration country: Belgium	**Location: Melle**
AgriDataValue partners involved: EV ILVO	
Animal Type: Dairy Cows	**Number of involved Animals: 164**
The nature of the experiments: Feeding trials, animal welfare assessments, emission monitoring **The harm that might be caused to the animals: No harm**	

Pilot Demonstration country: Latvia	**Location: Kurzeme**
AgriDataValue partners involved: ZSA	
Animal Type: Beef Cattle	**Number of involved Animals: >100**
The nature of the experiments: Improve health and welfare of the livestock **The harm that might be caused to the animals: No harm**	

Pilot Demonstration country: Greece	**Location: Agrinio**
AgriDataValue partners involved: TBA	
Animal Type: Beef Cattle	**Number of involved Animals: 320**
The nature of the experiments: Calving monitoring **The harm that might be caused to the animals: No harm**	

Pilot Demonstration country: Belgium	**Location: Melle**
AgriDataValue partners involved: EV ILVO	
Animal Type: Pigs	**Number of involved Animals: 1450**
The nature of the experiments: Feeding trials and emission monitoring **The harm that might be caused to the animals: No harm**	

17. Assessment of participant's risk

The following section an assessment of the potential risks to both research participants and project staff. Additionally, comprehensive details on the steps taken to mitigate these risks will be provided. The members of the AgriDataValue consortium strictly adhere to the highest ethical standards and comply with relevant EU and international laws governing ethical principles.

17.1. Personal Data

Even though the project involves volunteers for the pilots, only completely anonymized data will be gathered and processed. This data will specifically aim to gather their opinions and feedback regarding the evaluation of the AgriDataValue technologies to be implemented. All individuals, including personnel, researchers, citizens, and farmers, who participate in the AgriDataValue project, will be extensively informed about the project's activities and advantages. Their written consent will be obtained before they take part in the project.

To fully ensure privacy, each participant will be Anonymized from the very beginning of his/her direct or indirect involvement in the project, while the number of volunteers in project pilots will be sufficient for demonstrating the project functionality and ensuring that anonymization will not be possible to lead someone to identify an individual. In the unlikely case that any personal or sensitive information needs to be stored, it will be maintained in an encrypted form.

In conclusion, human participants in AgriDataValue are expected to take part in surveys, workshops as well as crop/livestock use cases; yet, no personal or sensitive data will be collected, stored, or processed, and no data will be shared between EU and non-EU countries.

17.2. AgriDataValue pilot activities

The AgriDataValue pilot activities within the project involve human participants for the evaluation of the AgriDataValue technologies and as stated previously, will be conducted in EU member states. The research activities, throughout the project, do not entail any risks for the researchers and participants. These activities will be in strict compliance with the biosecurity protocols as regulated by the relevant national EU member states.

17.3. Research 'in the field'

Throughout the project, the pilots will be conducted in the nine (9) EU countries in an open field environment, involving activities such as installing IoT devices and sensors, and routine maintenance. This constitutes research 'in the field' situation and up until the end of these activities, certain procedures will be followed to help keep researchers safe. These should include:

- using mobile phones to stay connected with the research base
- carrying authorized identification
- reporting any health & safety incidents.
- no lone working (does not work alone)

17.4. Drones – UAV

In the usage of *drones/UAVs,* it should be clear that safety is a top priority for the AgriDataValue consortium and that their utilization is not associated with any activity that could cause any harm (e.g., spraying), as drones/UAVs wherever they are utilized will be equipped only with remote sensing equipment (i.e., optical, and multispectral video cameras).

Moreover, their flight will be controlled by trained/licensed pilots to avoid any harm to the environment or humans in proximity. Furthermore, in case authorization is needed for flying the drone in a specific location, copies will be kept on file and provided to the Agency upon request.

18. Analysis of potential Environmental impact

AgriDataValue aims on delivering an end-to-end data-aware, federated platform of platforms in the agrienvironment domain, in order to optimize the complete “Data Path”: data collection, storage, transfer, processing and querying, with a primary purpose for its operations being fully environmentally sustainable. This section of the deliverable provides details on the potential environmental impact and harm that might be caused by project research activities. Furthermore, the precaution measures that will be taken by the consortium of the AgriDataValue project to mitigate any risks are also described.

18.1. EU Green Taxonomy Regulation

The EU Green taxonomy for sustainable activities (i.e., "green taxonomy") is a classification scheme developed in the framework of the European Green Deal to make clear which investments are environmentally sustainable [4]. The taxonomy's main goals are to stop "greenwashing," play a significant role in aiding the EU in increasing sustainable investment, assist investors in making greener decisions, and carry out the European Green Deal.. The EU taxonomy would provide companies, investors, and policymakers with appropriate definitions for which economic activities can be considered environmentally sustainable. In this way, it should create security for investors, protect private investors from greenwashing, help companies to become more climate-friendly, mitigate market fragmentation and help shift investments where they are most needed. The EU taxonomy came into force in July 2020. It is designed to support the transformation of the EU economy to meet its European Green Deal objectives, including the 2050 climate-neutrality target. As a classification tool, it seeks to provide clarity for companies, capital markets, and policy makers on which economic activities are sustainable. As a screening tool, it seeks to support investment flows into those activities.

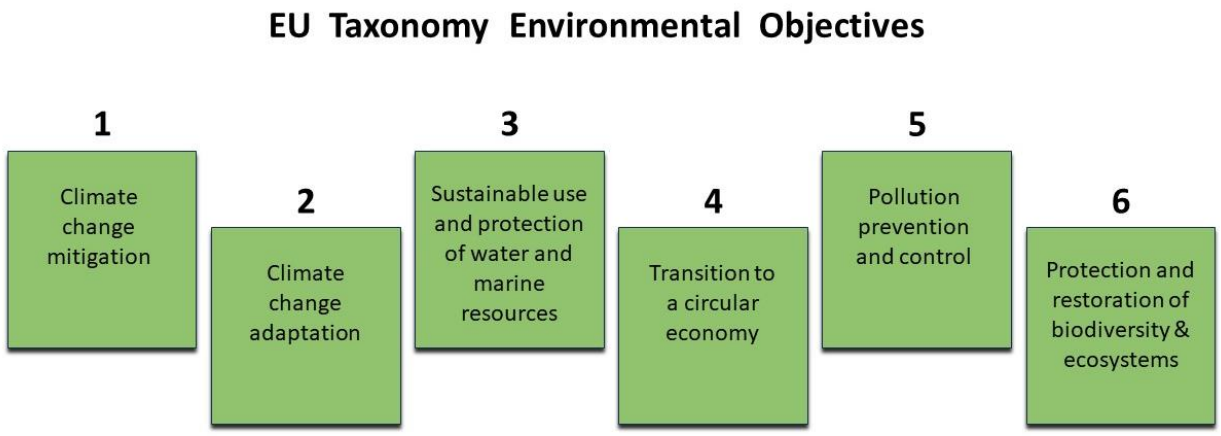

Figure 1: The six (6) environmental objectives of the EU Taxonomy

The six (6) environmental objectives of the EU Taxonomy are [5]:

1. Climate change mitigation,
2. Climate change adaptation,
3. Sustainable use and protection of water and marine resources,
4. Transition to a circular economy,

5. Pollution prevention and control
6. Protection and restoration of biodiversity & ecosystems.

The Technical Screening Criteria (TSC) are a set of precise requirements and thresholds that determine whether an economic activity can be classified as significantly contributing to a specific sustainability objective. These criteria are detailed in secondary legislation known as Delegated Acts (DAs). The Delegated Acts provide additional specifications and guidelines, allowing for a more comprehensive and transparent assessment of whether an activity qualifies as sustainable in alignment with the desired sustainability objectives.

18.1.1. The 'Do No Significant Harm (DNSH) Principle

To be considered sustainable according to the EU Taxonomy, an activity must align with at least one of the six objectives. Additionally, it must not result in significant harm to any of the other Taxonomy objectives. For each activity, the TSC lay out thresholds to define compliance with do no significant harm. The overall implementation of AgriDataValue project is fully compliant with the "do no significant harm" principle as per Article 17 of Regulation (EU) No 2020/852, since it is designed in a way that it is not harming any of the 6 environmental objectives of the EU Taxonomy Regulation.

18.1.2. Enabling & Transitional Activities

The EU Taxonomy includes two classification categories for activities that significantly contribute to one or more environmental objectives: enabling activities and transitional activities. These categories were introduced to broaden the scope of sustainable contributions and promote overall sustainability.

Enabling activities facilitate other activities in making significant positive contributions to the Taxonomy's six objectives. However, they must not cause a 'lock-in' of assets that would hinder long-term environmental goals. Additionally, enabling activities must demonstrate substantial positive environmental impact throughout their lifecycle.

Transitional activities, on the other hand, must actively support climate change mitigation and align with the goals of the Paris Agreement in limiting global warming. To qualify as transitional activities, they need to meet specific criteria:

a) There are no technologically or economically feasible low-carbon alternatives;
b) Green House Gas emission levels correspond to the best performance in the sector or industry
c) The activity does not lead to carbon lock-in or hamper the development and deployment of low-carbon alternatives.

18.1.3. New Taxonomy Reporting Requirements

Apart from its main role as a classification tool, the E U Taxonomy serves other purposes as well. One such function involves mandating certain entities to disclose information about how their activities align with the Taxonomy. This disclosure requirement involves amending the guidelines in the EU's Non-Financial Reporting Directive (NFRD) and the Sustainable Finance Disclosure Regulation (SFDR).

18.1.4. IoT devices and sensors

IoT devices and appropriate sensors will be installed at the pilot sites during AgriDataValue's research activities. The devices will be used for purposes such as, environmental conditions monitoring, soil conditions monitoring,

smart farming irrigation and smart farming evaluation. g. Furthermore, the hardware will be used in monitoring of livestock wellbeing, and remote sensing solutions. These devices and sensors that will be installed in demonstration sites will not cause any harm to the environment.

18.1.5. Drones/UAVs

During the pilot activities of the AgriDataVAlue project, drones/UAVs will be used. It should be clear that their utilization is not associated with any activity that could cause any harm to the environment in any way (e.g., spraying), as drones/UAVs wherever they are utilized will be equipped only with remote sensing equipment.

18.1.6. Artificial Intelligence (AI)

The AI/ML technologies are algorithms that are applied on the data. Artificial Intelligence/Machine Learning (AI/ML) modelling will be directly applied to crops and livestock. The use of AI technology by the project will be done based on sustainable practices (i.e., green data center, moving AI functions to the edge, working with minimal data). Most importantly, the project's AI tool will generate CO2 emissions in an one-off fashion, while the resulting federated ML models will lead to continuous/long-standing sustainability benefits. Moreover, although most advanced deep learning models require several hours of training (i.e., higher electricity consumption), AgriDataValue tools' socio-economic benefits will be significantly higher than the required recourses consumption. The Artificial Intelligence/Machine Learning technologies that will be applied throughout the AgriDataValue project, refer solely to the data produced by the IoT, Drones/UAVs, satellite images and recordings from researchers. Thus, under no circumstance it affects the EU pillars of sustainability and environmental protection.

18.2. Potential AgriDataValue environmentally risks

Throughout the research activities of AgriDataValue, the only potential environmental risk that has identified, could be the increased electrical energy consumption and CO2 generation due to utilization of AI. It must be said that the likelihood is small, and the potential impact is small.

The development and utilization of AI technologies will contribute to reduce the overall energy consumption and C02 generation in the long term. Thus, the energy and CO2 generation, regarding the AI training, is much less than the significantly greater future benefit. As a result, the use of AI technology overall will be environmentally friendly.

Finally, AgriDataValue will make sure that only energy neutral or energy positive or energy neutral data centre policies will be used, while green datacentre facilities and policies will be followed wherever possible to reduce the AI training CO2 generation.

19. Health and Safety procedures

19.1. Safety when using Drones – UAV

As described previously in sections 17.4 and 18.1.5. of the present document regarding the usage of drones/UAVs, it should be clear that safety is a top priority for the AgriDataValue consortium. Wherever used, their flight will be controlled by trained/licenced pilots to avoid any harm to the environment or humans in proximity. The consortium confirms that if authorization is needed for flying the drone in a specific location, the authorization will be obtained.

19.2. Health and Safety guidelines and legislation

The AgriDataValue consortium confirms the compliance with the relevant local/national guidelines/ legislation are followed for staff involved in this project. The AgriDataValue partners declare that they will not expose its employees to health and safety risks. All European members of the consortium are aware of and comply with the following international, EU and national legislation for health and safety at work:

- The Universal Declaration of Human Rights, proclaimed by the United Nations General Assembly in Paris on 10 December 1948
- The Directive 89/391 - OSH "Framework Directive" of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work - "Framework Directive
- The EC Communication (COM [2004] 62) on the practical implementation of 89/391 EEC (framework directive), 89/654 EEC (workplaces), 89/655 EEC (work equipment), 89/656 EEC (personal protective equipment), 90/269 EEC (manual handling of loads) and 90/270 EEC (display screen equipment)]
- The Directive 2009/104/EC – use of work equipment
- The Directive 92/58/EEC - safety and/or health signs
- The Directive 89/656/EEC - use of personal protective equipment
- The Directive 89/654/EEC - workplace requirements
- The Regulation (EU) 2016/425 on personal protective equipment
- The Directive 90/269/EEC - manual handling of loads
- The Directive 90/270/EEC - display screen equipment
- The Directive 92/85/EEC - pregnant workers
- The Directive 2006/54/EC - equal opportunities
- The Directive 2002/14/EC - informing and consulting employees
- The Directive 2000/78/EC - equal treatment
- The national Code of Laws for Health & Safety at Work, ratified by article one of law 3850/2010

20. Conclusions

The deliverable presented the procedures and precautions that will be followed by all consortium partners that will include humans in research activities. It also presents the project partners' commitment to comply with necessary ethics requirements when research activities include humans' engagements. The procedures and the criteria to be followed when it comes to the selection of human participants were also described. In order to assist the consortium members, the informed consent procedures that will be implemented for the research participants were presented, accompanied by sample templates of these informed consent/assent forms and information sheets which cover voluntary participation and data protection issues.

The document has also presented the compliance of AgriDataValue with the ethics framework in place for data protection in research. Specifically, attention was given to the data collection and processing, adhering to principles such as the data minimization principle. Also, measures that need to be adopted for safeguarding the rights and freedoms of the data subjects and research participants were references, along with measures that will be employed to prevent unauthorized access to personal data. Additional content was included for the anonymization/pseudonymization principles that will be followed, as well as clarifications about data transfers from EU countries to non-EU countries and vice versa.

Finally, this deliverable provided information on the compliance of the ADV project with ethics regarding animals' participation in research as well as with ethics regarding environmental protection and safety.

21. References

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