



Building a European framework

for the secure and trusted data space for agriculture

Deliverable n°6.1
DATA MANAGEMENT PLAN (DMP)

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¹ R: Document, report; DEM: Demonstrator, pilot, prototype, plan designs; DEC: Websites, patents filing, press & media actions, videos, etc.; DATA: Data sets, microdata, etc; DMP: Data management plan; ETHICS: Deliverables related to ethics issues; SECURITY: Deliverables related to security issues; OTHER: Software, technical diagram, algorithms, models, etc.

² PU – Public, fully open, e.g. web (Deliverables flagged as public will be automatically published in CORDIS project's page); SEN – Sensitive, limited under the conditions of the Grant Agreement; Classified R-UE/EU-R – EU RESTRICTED under the Commission Decision No2015/444; Classified C-UE/EU-C - EU CONFIDENTIAL under the Commission Decision No2015/444; Classified S-UE/EU-S – EU SECRET under the Commission Decision No2015/444

AgriDataSpace Consortium

	Participant organisation name	Short name	Country
1	AGDATAHUB	ADH	FR
2	FOODSCALE HUB GREECE ASSOCIATION FOR ENTREPRENEURSHIP AND INNOVATION ASTIKI MI KERDOSKOPIKI ETAIREIA	FSH	EL
3	INSTYTUT CHEMII BIOORGANICZNEJ POLSKIEJ AKADEMII NAUK	PSNC	PL
4	UNIVERSIDAD DE LLEIDA	UdL	ES
5	EIGEN VERMOGEN VAN HET INSTITUUT VOOR LANDBOUW- EN VISSERIJONDERZOEK	EV ILVO	BE
6	FONDAZIONE BRUNO KESSLER	FBK	IT
7	VDI/VDE INNOVATION + TECHNIK GMBH	VDI/VDE-IT	DE
8	STIFTUNG FACHHOCHSCHULE OSNABRUCK	HSOS	DE
9	STICHTING WAGENINGEN RESEARCH	WR	NL
10	1001 LAKES OY	1001 Lakes	FI
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12	COMITE EUROPEEN DES GROUPEMENTS DE CONSTRUCTEURS DU MACHINISME AGRICOLE	CEMA	BE
13	FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV	Fraunhofer	DE
14	AGRICULTURAL INDUSTRY ELECTRONICS FOUNDATION AEF	AEF	DE
15	FEDERATION NATIONALE DES SYNDICATS D'EXPLOITANTS AGRICOLES	FNSEA	FR

Glossary of terms and abbreviations used

List of Abbreviations and Acronyms	
ADS	AgriDataSpace
AI	Artificial Intelligence
AKIS	Agriculture Knowledge and Innovation Systems
CoC	Code of Conduct
CSA	Coordination and Support Action
DCP	Dissemination and Communication Plan
DSI	Data Sharing Initiative
DSSC	Data Space Support Centre
EU	European Union
FMIS	Farm Management Information Systems
GA	Grant Agreement
GDPR	General Data Protection Regulation
ICT	Information and communications technology
ISO	International Organisation for Standardisation
KPI	Key Performance Indicator
NGO	Non-Governmental Organisation
SMEs	Small and medium-sized enterprises
SO	Specific Objectives
WP	Work Package

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1 Introduction

AgriDataSpace project aims to pave the way for a European data space for agriculture that facilitates data sharing, processing, and analysis in a secured, trusted, transparent and responsible manner to create new opportunities for monitoring and optimising natural resource use stimulating data-driven innovations.

This deliverable D6.1 is the AgriDataSpace Data Management Plan. It outlines the process of the data management, and the describes the data which will be reused, processed, collected, or generated within the AgriDataSpace project.

This Data Management Plan comprises all data that will be collected or reused in this project like numerical information which convey value, or other data consistently organized as datasets, on which various management strategies may be applied. This document, further, anticipates management of the data beyond the life of this project.

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2 Data Summary

2.1 Purpose of the data collection

The project aims to reach the high targets set in the Farm to Fork strategy of the European Green Deal and to accelerate the pace of the digital transformation.

The data collected and generated for the project will be used to meet the project target objectives. An inventory of existing data sharing solutions will be done based on research literature and a stakeholder consultation process. The assessment of the different aspects of these data sharing solutions will be realised through distinct tasks. The project stakeholders will be solicited for the review and validation of the different dataspace building blocks (technical, governance, business model, legal, etc.). To finish, the project will design a roadmap for the deployment and maintenance of the future dataspace for agriculture based on the previous work produced in the project. More specifically data is needed to:

- Map the current landscape and take stock of on-going data sharing initiatives and design approaches, including experience with the European Code of Conduct (CoC).
- Analyze and assess current governance models. Develop a multi-stakeholder governance scheme at various levels (company, regional and national).
- Analyze and assess current business models. Explore potential business models for various stakeholder relations, addressing economic and environmental performance.
- Explore the evolving legislative framework and derive its implications for the design approaches of the data space. Account for its shortcomings providing solutions and technical enablers for ethical tensions related to data sovereignty.
- Develop a conceptual reference architecture for a common data space framework and a reference technology canvas for navigating through heterogeneous repositories ensuring backward compatibility.
- Engage stakeholders in various activities for evaluation and validation to reach broad consensus and support for the development of the data space for agriculture.
- Develop a roadmap that compiles all requirements and needed actions into a pathway towards implementation of the EU data space for agriculture.

2.2 Data categories

This document profiles the steps and actions regarding the development of an extensive Data Management Plan (DMP), in the context of the Coordination and Support Action (CSA) data space for agriculture project. This deliverable defines the strategy for all partners involved in the project, internal or external and which all project Stakeholders must implement and follow within AgriDataSpace project. It is paramount that the project complies with the rules for Open Access policy. This document is based on the EC Guidelines on Data Management in Horizon Europe.

The CSA nature of the AgriDataSpace project define different expectations than a Research and Innovation project. No research protocols will be led during the project that would generate high volume datasets. The project aims to find consensus in the agricultural sector on the design of the future dataspace for agriculture. A stakeholder consultation process will be implemented along the project to collect inputs and feedback from the European agricultural actors. Surveys, interviews, and workshops will be conducted to interact with the project stakeholders, and the answers will be stored in files (.xlsx, .docx, .pptx, .csv) in dedicated SharePoint folders.

This Data Management Plan sets out different types of data to be generated or processed within the AgriDataSpace project: identification and description of datasets; data access; data storage and protection. It is foreseen that the following types of data will be generated or reused: a) documents (documents, interviews, surveys, reports, briefs, guidelines, publications) in .pdf, .pptx, .txt, .jpg, .png and similar formats; b) videos in MP4 format; c) pictures, d) spreadsheets, e) web and social media contents. The project will comply with GDPR concerning processing of personal data, consent, breach notification, right to access and right to be forgotten. ADS will secure the highest ethical standards and legal restrictions regarding personal data. This DMP sets forth the guidelines of the procedures for the data collection, operation, and storage. Personal data will be processed according to the provisions of the GDPR. No processing of special categories of personal data as defined in Article 9 of GDPR³ are anticipated to be collected.

2.3 Data reuse

The project is based on the reuse of work completed in previous research projects (EU-funded projects Horizon 2020 and Horizon Europe) and data sharing initiatives. Particular emphasis will be placed on reusing information outside the EU-funded project ecosystem, and explore initiatives developed by the agricultural sector. The collection of this information will be done through research literature. The type of data collected will be very diverse to cover the different aspects of a dataspace (technical frameworks, ontologies, governance models, etc.).

2.4 Types and formats of data generated by the project

General activities of the AgriDataSpace consortium are expected to generate data in various forms as well as sizes. The following data types are expected to be generated:

- a) documents, measurements, interviews, surveys, reports, briefs, guidelines, publications in: .pdf, .pptx, .doc, .docx, .jpg, .jpeg, .png and similar formats
- b) spreadsheets in: .xls/.xlsx csv,
- c) pictures in: .jpg, .jpeg, .png

³ <https://gdpr-info.eu/art-9-gdpr/>

- d) videos in MP4, WEBP formats
- e) web and social media contents

This list is not final and through the course of the project it will presumably extend.

Regarding the expected outputs, as set in the AgriDataSpace Grant Agreement, in the course of the project the following deliverables are to be delivered as summarized in the table below:

Deliverable Number	Deliverable name	Data Type	Data Format
D1.1	Up-to-date online inventory	Report	Report, web contents
D1.2	Systematic assessment of the experiences with the code of conduct	Report	Report
D2.1	Multi-stakeholder governance schemes and business models for agricultural data spaces	Report	Report
D2.2	Design principles and guidelines for agricultural data spaces based on legislation and ethical principles	Report	Report
D3.1	Definition of requirements for Agriculture Data Space building blocks	Report	Report
D3.2	Reference Architecture	Report	Report
D3.3	Technology Canvas	Report	Report
D4.1	Roadmap for Deployment of the data space for agriculture	Report	Report
D4.2	Roadmap for Operating the data space for agriculture	Report	Report
D5.1	Dissemination & communication plan & reports.	Report, audio visual materials, web contents, prints, etc.	Report
D5.2	Sustainability Plan	Report	Report
D6.1	Data Management Plan	Report	Report
D6.2	Summary report of collaboration and the operational joint activities carried out with (inter)national networks	Report	Report
D6.3	Final report	Report	Report

2.5 Origin of the data

The origin of the data will be very diverse. Part of the data will come from Horizon 2020 and Horizon Europe projects. Also, the organizations onboard with the Data Space Support Center (DSSC) produced materials regarding dataspace that can be reused (frameworks, architecture, etc.). Existing standards and ontologies from data sharing and the agricultural sector will be assessed and used as a basis for the design of the agriculture dataspace.

2.6 Data Management procedures

The data collected and generated for the project will be used to meet the target objectives. An inventory of existing data sharing solutions will be done based on research literature and a stakeholder consultation process. The assessment of the different aspects of these data sharing solutions will be realised through distinct tasks. The project stakeholders will be solicited for the review and validation of the different dataspace building blocks (technical, governance, business model, legal, etc.). To finish, the project will design a roadmap for the deployment and maintenance of the future dataspace for agriculture based on the previous work produced in the project.

The project will generate raw data collected through surveys, interviews and workshops and analysed data from their studies.

The data produced by the AgriDataSpace project will be stored in files, such as Excel, Word PowerPoint, PDF, JPEG, and will represents a low volume of data.

Existing data from Horizon 2020 and Horizon Europe projects will be re-used as well as data produced in the framework of the DSSC. Also, existing standards and ontologies from data sharing and the agricultural sector will be assessed and used. These data will be studied and assembled to propose documents such as frameworks, building blocks, guidelines for the deployment of the future dataspace for agriculture.

These documents will be useful for future European projects with the purpose of deploying the future dataspace for agriculture.

3 A FAIR approach

As a CSA, the AgriDataSpace project does not intend to run research programs that generate a large amount of data. In addition, the data collected through the project are closely related to personal data. The FAIR principles 'findable, accessible, interoperable and reusable' are not relevant for the data collected in project. However, there is a willingness in sharing openly the documents produced by the project: mapping of data sharing initiatives, frameworks, building blocks, roadmaps. Using the FAIR approach is an efficient way to ensure the dissemination of the project results.

3.1 Making data findable

The data collected during the project through the stakeholder consultation process will be stored by each WP leaders in files formats and centralized in the common secured SharePoint. A naming convention will be defined to identify the files. The convention will allow to easily generate standards names including the number of the work package and dates if relevant. Versioning documents is important for collaborative work, and it is a part of the good practices implemented in the project organisation. All final deliverables are clearly identified in the description of the project.

Three categories of data will be produced during the project:

- a) Stakeholders' personal data that will not be shared outside the project Consortium.
- b) Raw data collected through surveys, interviews and workshops. These data are sensitive data, closely related to the business or the activities of organisations and it will be difficult to anonymise with confidence. To guarantee the privacy of the stakeholder's involvement in the project, the raw data will not be openly shared. Access condition of anonymized data will be defined to ensure the transparency and impartiality in the assessment of the data sharing initiatives.
- c) Anonymized aggregated data that will be openly shared as part of the project deliverables. The reports will be accessible on the Zenodo platform with an associated DOI.

As a CSA, the AgriDataSpace project does not intend to run research programs that generate a large amount of data. A clear organisation of data collected through surveys, interviews and workshops will be enough to give an easy access to the information.

The use of metadata is essential to ensure the understanding of the data generated in the project. The data collection will follow clear guidelines.

- A Holistic Analysis Framework has been designed to collect and represent existing data sharing initiatives of the agricultural sector. The framework has been created based on ADS partners inputs and the following documents:
 - o "The Design Principles for Data Spaces" by Open DEI project⁴
 - o "State of Data Spaces" study conducted for Ministry of Transport and Communication of Finland⁵

⁴ <https://design-principles-for-data-spaces.org/>

- DSSC Starter Kit, Glossary and Data Space Radar
 - The interviews and workshops conducted to collect inputs from the project stakeholders are following clear guidelines defined for each task.
 - The Data Space Support Center (DSSC) provides tools to describe and design a data space. The data produced by the AgriDataSpace project will be aligned with the DSSC guidelines, especially regarding the use of the vocabulary and the definition of the data space building blocks.

3.2 Making documents openly accessible

Encouraging a transparent and open data culture, also paving the way for the Open Data Directive implementation, AgriDataSpace will share the generated knowledge with the European Open Science Cloud and make them publicly available through open access repositories such as Zenodo. The repository access used for the dissemination of the documents and data is an online service with no need for a specific software or method to access the data.

The deliverables produced in the project will be openly available by default with no restriction on use. The information will be available in report format and will present the results of various surveys through analysed data.

⁵<https://www.opendei.eu/case-studies/state-of-data-spaces-by-finland-ministry-of-transport-and-communications-october-2021/>

A dedicated community has been formed in Zenodo Open Access Repository (<https://zenodo.org/communities/agridataspace>), which will be identified through platforms as ROAR, OpenDOAR, OpenAIRE and OAD. The community is curated by FSH as the WP5 Leader,

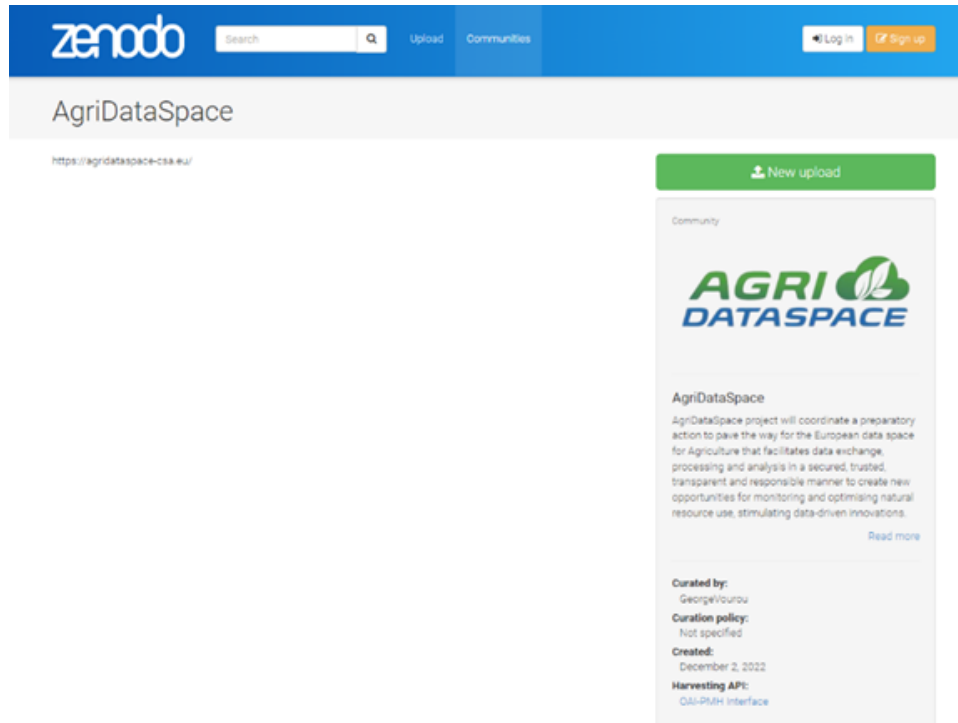


Figure 1: AgriDataSpace in Zenodo

Because it is impossible to guarantee a sufficient level of anonymisation to protect personal data, the raw data collected through the stakeholder consultation process will not be only shared. Indeed, the data qualified as personal data will be hidden from the result to ensure compliance with GDPR and preserve participants privacy. The detail of the project privacy⁶ and cookie⁷ policies are described on the project webpage.

3.3 Making data (spaces) interoperable

The purpose of the data collection is to describe the current landscape of agricultural data sharing initiatives at the European level and to gather feedback from project stakeholders. These external inputs will help in the design of the future European data space for agriculture by achieving agreement among agricultural actors.

The data collected is not intended to be machine readable or to feed any data exchange network. There is no need to achieve data interoperability in this project. The information

⁶ <https://agridataspace-csa.eu/privacy-policy/>

⁷ <https://agridataspace-csa.eu/agridataspace-cookies-policy/>

gathered will be used to make recommendations for the deployment and maintenance of the future agricultural data space.

The CSA data space for agriculture is one of the sectorial approaches among many others. In parallel, CSAs dedicated to other sectors, such as the Green Deal, energy, or health, are designing data spaces based on their specific needs. The DSSC supervises the sectoral CSAs to ensure the synchronisation between them. The end goal is to create interoperability between the sectoral data spaces.

The AgriDataSpace project is taking into account existing vocabularies used in the agricultural sector, such as the AgroPortal⁸ or ISOBUS⁹ standards, but is also focusing on using common data space vocabularies defined by DSSC to ensure interoperability with other data spaces. The backbone of terms used regarding data space definition is given by the legal texts Data Governance Act and Data Act provided by the European Commission.

3.4 Increase re-use of data space frameworks

3.4.1 Data licence

As stated in the Grant Agreement immediate open access to the publications deposited via repository will be under the latest version of the Creative Commons Attribution International Public Licence (CC BY) or an equivalent licence with the possibility to exclude commercial uses and derivative works (e.g., CC BY-NC, CC BY-ND) for longer documents.

With the abundance of licences available it is paramount to opt for the ones that would best fit in the requirements set by the project. The latest versions of licences are listed in the official portal for European data licencing assistant¹⁰.

Following the recommendations by Europe Commission the AgriDataSpace project will probably be guided by the rules of the licence CC-BY 4.08 by the Creative of Commons.

This licence will enable interested parties to use, reproduce and reorganize the data. However, the data will be available for the use under the obligation to assign proper credit to the author, designate any alterations of the respective document and while maintaining intact the copyright and licence notices.

3.4.2 Allocation of resources

The AgriDataSpace project will make the most use of the services and tools free of cost. Therefore,

project partners foresee no costs will incur.

- The publicly available data stored on Zenodo (free of charge)
- Creative Commons copyright licensing (free of charge)

⁸ <https://agroportal.lirmm.com/>

⁹ <https://www.aef-online.org/about-us/isobus.html#/AEFinshort>

¹⁰ <https://data.europa.eu/en/training/licensing-assistant>

- Project Teams site (free of charge)
- Project web site and platform (free of charge)

Provided that some of the data needs to be stored in the repository unforeseen at this moment and some costs for the data storage still incur, project Executive Committee will bring the final decision whether the data should be stored in the respective repository which needs to be paid and whether the incurred costs will be eligible for reimbursement or not.

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4 Data security

4.1 Document data management system

The data of the Agridataspace project is stored in Microsoft SharePoint, in an Office 365 tenant subscribed by the company Agdatahub. The data can be accessed via the Microsoft SharePoint and Microsoft Teams applications.

4.2 Location of the data

All data is stored in a Microsoft datacenter in France.

4.3 Access control strategy

Access to Agridataspace project data is only allowed for 2 types of users:

- Users who are members of the Agdatahub organisation and are authorised to access the SharePoint project. A multi-factor authentication is required for these users to access the project Sharepoint. Among these users, 2 types of profiles can be distinguished:
 - Administrators: they manage access to the Sharepoint and have all access rights to documents.
 - Users: they have read and write access rights to documents.
- Guest users: these are members of the project who work for another organisation than Agdatahub. Authentication by login/password is required for these users to access the Sharepoint project. These users have read and write access to documents.

The transfer of data collected from the stakeholders will be shared between the Consortium members only, with the participant agreement. The data are not exchanged individually but shared in a secure SharePoint workspace. Sharing links to documents in this Sharepoint is only allowed for members, so it is not possible to share a link to an external person.

Parts of the information from the data sharing initiatives' survey will also be used for the related project Data4Food2030¹¹. This project funded by the Horizon Europe programme works on a pathway towards a fair, inclusive and innovative data economy for sustainable food systems, by understanding and monitoring the system to create new insights and opportunities. Before completing the survey, a clear statement informs the participant of the re-use of the information within the Data4Food2030 project.

4.4 Auditability

Unified audit logging is enabled for SharePoint and Teams. Unified auditing provides access to logs of events (such as posting, creating, editing, uploading, downloading and deleting) and sharing actions such as invitation and access requests, as well as synchronisation activity.

¹¹ <https://data4food2030.eu/>

4.5 Data resilience

The principles of resilience are detailed in the Microsoft SharePoint documentation¹².

¹²<https://learn.microsoft.com/fr-fr/compliance/assurance/assurance-sharepoint-onedrive-data-resiliency>

5 Ethics

The EU code of conduct on agricultural data-sharing constitutes a document that looks at general principles for sharing agricultural data within the agri-food chain. The consortium will follow this non-binding code that sheds greater light on contractual relations and provide guidance on the use of agricultural data (COPA & COGECA, 2020).

When processing personal data, the consortium will comply with the GDPR principles. This means that at the outset, when the data cannot be anonymized fully, in the development of the project, Article 5(1) of the GDPR, enshrining the principles of personal data protection, will be considered.

Involvement of stakeholders, end users and the linked feedback and participatory processes are very important within this project. This includes aspects where ethical and gender issues must be checked (e.g., the selection of stakeholders, their consent for participation in the experiments, data privacy and protection). In line with the ethics self-assessment, actions will be executed for involvement of humans and for the protection of personal data.

The consortium will comply with the General Data Protection Regulation (GDPR) (UE) 2016/67.

The GDPR has been analyzed and reviewed in order to align the project objectives accordingly.

All partners should have their internal procedures updated and are compliant with current legislation. Informed Consent procedure

5.1 Informed Consent Procedure

The processing of personal data is generally prohibited or restricted unless explicitly permitted by the law. The legal bases for processing personal data are described in the GDPR article 6. One of these legal bases is the use of freely given and informed consent. Due to the nature of Horizon Europe ethical guidelines, it is generally recommended as a necessity that participants from whom data is collected, informed consent procedures are used.

Informed consent is described in Article 7 of GDPR and specified in recital 32 of the GDPR.

Consent must be freely given, specific, informed and unambiguous. By freely given, this means consent can also be freely rescinded.

Stakeholders who are directly involved in the project will provide research data with the project consortium under the necessity to perform project activities as a contractual obligation. This is since consent from these stakeholders, particularly the case studies cannot freely give consent as they already have a legal basis for engaging in the project. Nevertheless, the data of all stakeholders shall be handled with confidentiality and care by all partners in the consortium and only for the purposes of necessity. Consent forms may be used where necessary and the consent form procedure that will be drafted will indicate this more clearly.

To obtain informed and freely given consent, the data subjects sharing their data must be informed of the identity of the person collecting the data. The data subject shall also be informed how the data is processed as part of the consent form. It is necessary to inform the user which categories of data can be collected, to which purposes this data is collected, how long it will be retained for, and where the data will be used. If necessary, a separate consent

form procedure will be created for images that are taken as well as the usage of these images (personal data identifying the users) to disseminate the project.

The data retention period is the duration of the project (18 months), plus 1 year.

5.2 Stakeholder Committee

Once the stakeholders have been identified, the data collection can be described per stakeholder group. For data of vulnerable groups, consent is needed to process their data. If consent is the legal basis on which we will acquire data, this condition will be met.

5.3 Data consent retraction procedure

The consent forms shall include information on which e-mail to contact to access, rectify, delete and/or retract their data. In the case of consent being rescinded the processing of the user's data is to stop immediately. The retraction of consent should be completed as easy as consent was acquired. The data management officer team should confirm that data processing has stopped. If a box is ticked to obtain consent, then a box can be unticked for processing to stop. In the case of data being deleted, the data management officer of the project should write to the user and ask for confirmation of how their data was originally acquired. If during this project it is likely that multiple partners may have access to the data of the user, the controller may wish to check with other partners to see if they hold data on the user wishing to have their data deleted (or verified or rectified). In the case of data deletion, the data of the user must be deleted within 30 days.



AgriDataSpace Partners

