AGROMIX

Deliverable 38, 1.8 Data Management Plan

Version 1

Versions

Version 1 – Julia Stew – 10/04/2021

Project Details:

Programme: **H2020 – SFS – 2018 – 2020 - SUSTAINABLE FOOD SECURITY**

Call topic: **Sustainable Food Security**

Project Title: **AGROforestry and MIXed farming systems - Participatory research to drive the transition to a resilient and efficient land use in Europe**

Project Acronym: **AGROMIX**

Proposal Number: **862993**

Lead Partner: **Coventry University, Centre for Agroecology, Water and Resilience**

Authors:

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Deliverable Details:

WP: 8

Deliverable Title: D1.1 Data Management Plan

Lead beneficiary: CU

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1   AGROMIX Executive Summary

The AGROMIX project aims to deliver participatory research to drive the transition to a resilient and efficient land use in Europe. It focuses on practical agroecological solutions for farm and land management and related value chains. AGROMIX makes use of a network of 83 sites with Mixed Farming (MF), AgroForestry (AF) or value chain stakeholder networks, which are used to measure, design, model, test and improve these systems. A nested approach will be used to conduct 12 co-design pilots across Europe. In addition, 6 replicated long-term trial sites are used for detailed analysis (crops and livestock). AGROMIX has six specific objectives: 1) Unlock the full potential of synergies in MF/AF systems. 2) Develop and promote value chains and infrastructure for MF/AF produce. 3) Develop the MIX-A toolkit to co-design and manage MF/AF systems in practice. 4) Identify and model transition scenarios. 5) Develop policy recommendations and action plans for a successful transition. 6) Maximise the impact and legacy of the project for building low-carbon climate-resilient farming systems. AGROMIX uses a transdisciplinary mulita actor research approach with 10 universities, 7 research institutes and 11 multi-actor partners. It will use Reflexive Interactive Design methodology to include stakeholders in participatory co-design and implementation of MF/AF systems. The research starts with a work package (WP1) on context, co-creating a resilience framework. WP2 on systems design and synergies is at the heart of project. WP3 on indicators and scenarios will refine the greenhouse gas inventories for MF/AF systems and model transition scenarios. WP4 develops and tests the MIX-application/serious game. Further WPs are on economics and value chains, and on policy co-development, action plans and dissemination delivering impact and exploitation through practical innovations on farms, in value chains, at different policy levels and through communication and knowledge hubs across Europe.

2   Introduction to the Data Management Plan of AGROMIX

The Data Management Plan (DMP) for AGROMIX lays out how the project will secure and manage data and in compliance with data management policies of the FAIR (Findable, Accessible, Interoperable Reusable) data management principles and the General Data Protection Regulation (GDPR). The DMP has guidelines, for the consortium members and those managing and using the data.

The DMP is a 'living document' that will be updated once final decisions on experimental design have been taken, following a participatory research approach with farmers and related communities.

A DMP describes the data management life cycle for the data to be collected, processed and/or generated by AGROMIX. To make the research data findable, accessible, interoperable and reusable (FAIR) the plan includes information on the handling of research data during and after the end of the project. It explains what data will be collected, processed and/or generated and which methodology and standards are applied. It explains how the data will be shared and made open access (as part of the Open Research Data Pilot (ORDP) and how data will be curated and preserved after the end of the project.

In this document, a detailed data summary is provided for each work package, task and

experiments conducted in each task. This is followed by sections on the FAIR data management principles and implications of the project, data security and ethical aspects as well as the GDPR principles' integration into the project.

3   Data Summary –

The following data summary shows the type of data created in the project. The activities are shown per workpackage and task. The task leader and activity leaders within the task are also shown. The data summary gives the data used or generated by activity. The subject of the data.

Data generated/ collected	Standards	Exploitation	Conducted by	Curation and preservation	How will the costs be covered
European data sets such as those provided by LUCAS, EUROSTAT and ESA, National spatially distributed data.	EU data standards Electronic data files (e.g. txt/xlsx)	Analyses, modelling and publications	WP1	Digital Storage (UEX, EMU, AGRO, CRAN, TEAGASC)	Included in project budget
Database of key stakeholders	EU data standards, EU ethics standards	Used strategically to disseminate project results via newsletters, factsheets, reports etc.	WP2, WP4	Restricted access	Included in project budget
Data on pilot systems	EU data standards, EU ethics standards	Used for understanding of pilots and re-design process	WP2, WP4	Restricted access	Included in project budget
Data on current use of mixed farming and agroforestry practices	EU data standards, EU ethics standards	Used to progress academic understanding and for stakeholders	WP2,WP4	Open access	Included in project budget
Story of pilots, pilot narratives	EU data standards, EU ethics standards	Used for farmer centred dissemination	WP2, WP4	Open access	Included in project budget
Database for brokering network	EU data standards	Used for farmer centred dissemination	WP2, WP4, WP7	Restricted access	Included in project budget

Data generated/collected	Standards	Exploitation	Conducted by	Curation and preservation	How will the cost be covered
Personal data from stakeholder engagement	EU ethics guidelines	Confidential	WP2, WP4, WP5, WP6	Restricted access file server	By partners, not project funded
Crop yield levels and quality data	EU data standards, EU ethics standards	Data will be publicly available to improve practices	WP3	Open access	No additional costs
Pasture productivity and measurement of competition indices	EU data standards, EU ethics standards	Data will be publicly available to improve practices	WP3	Open access	No additional costs
Blood samples	Chemical and biochemical reference data	Statistical analyses and publication	WP3	Digital storage (AFBI, UNIPI, UEX, ORC, AGRO, INRA responsibility)	Included in project budget
Productive and animal products quality data	Electronic data files (e.g. txt, xls)	Statistical analyses and publication	WP3	Digital storage (AFBI, UNIPI, UEX, ORC, AGRO, INRA responsibility)	Included in project budget
General health status (livestock)	Veterinary examination	Statistical analyses and publication	WP3	Digital storage (AFBI, UNIPI, UEX, ORC, AGRO, INRA responsibility)	Included in project budget
Monitoring of livestock behavior	EU data standards, EU ethics standards	Statistical analyses and publication	WP3	Digital storage (AFBI, UNIPI, UEX, ORC, AGRO, INRA responsibility)	Included in project budget
Data on aboveground biodiversity	EU data standards, EU ethics standards	Statistical analyses and publication	WP3	Digital storage (CU, AFBI, UNIPI, UEX, ORC, AGRO, INRA, UKL responsibility)	Included in project budget
Metagenomics sequencing	EU data standards, EU ethics standards, AFBI standards	Statistical analyses and publication	WP3	Digital storage (AFBI responsibility)	Included in project budget

Data generated/collected	Standards	Exploitation	Conducted by	Curation and preservation	How will the cost be covered
Data generated in processing trials	Electronic data files (e.g. txt/xlsx)	Statistical analyses and publication	WP3	Digital storage (AFBI, UNIPI, UEX, ORC, AGRO, TDPA, UKL, INRA responsibility)	Included in project budget
Data on farmer and other stakeholders needs about innovation on climate-smart mixed farming and agroforestry systems	EU standards, EU Ethics standards, Electronic data files (e.g. txt/xlsx)	Statistical analyses and publications	WP4	Digital Storage CU, WR, SSSA, UEX, CRAN, MVarc, EVILVO, AGRO, ZHAW, VENAG, IfaS, OSA, NRDS, WERVEL, ACTA	Included in project budget
Data on farmer evaluation of new app prototype to facilitate farming system redesign	EU standards, EU Ethics standards, Electronic data files (e.g. txt/xlsx)	Statistical analyses, publications and farming systems re-design	WP4	WR, SSSA, REVOLVE, UEX, CRAN, MVarc, EVILVO, ZHAW, TDPA, VENAG, Ifas, OSA, NRDS, WERVEL, CEEweb, ACTA, INRAE	Included in project budget
Input-output data and crop growth and yield and livestock related data from trials	Life Cycle Assessment standards, EU ethics guidelines	Partly commercial	WP4, WP5	Restricted access file server	By partners, not project funded
Survey of farmers' opinion	EU data standards	Used to inform scientists throughout AGROMIX and wider stakeholders.	WP5	Open access	Included in project budget
Other experimental data (e.g. soil and compost analysis)	EU data standards, EU ethics standards	Data will be publicly available to improve practices	WP5	Open access	No additional costs

Data generated/collected	Standards	Exploitation	Conducted by	Curation and preservation	How will the cost be covered
Farm accountancy data network (FADN) information.	EU data standards, EU ethics standards	Analyses, modelling and publication	WP5	Restricted access file server	By partners, Not project funded
Secondary data used and analysed	EU data standards	Inventory of policy contexts, instruments and operational means for assessment and evaluation of mixed farming and agroforestry systems	WP6	All partners (mainly CU, AEEU, CEEweb)	Included in the project
Modelling data based on secondary data	EU data standards	In-depth analysis of policy and sector mechanisms (EU, East-EU, FR, DE, CH, UK)	WP6	All partners (mainly CU, AEEU, CEEweb)	Included in the project
Personal data from stakeholder engagement; stakeholders' feedback regarding policy co-development, video recordings	EU data standards, EU ethics standards	Policy recommendations, EU-level policy development, mixed farming and agroforestry white paper, AGROMIX summit	WP6	All partners (mainly CU, AEEU, CEEweb)	Included in the project
Crop and disease development and crop yield chemical analysis	Published or international standard methods	Publicly available via publications, conference announcements and other dissemination activities	WP7	Open access publication	Part of dissemination budget

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4   FAIR data

4.1   Making data findable, including provisions for metadata

AGROMIX participates in the Open Research Data Pilot and aims to make data open whenever possible, but as closed as necessary when taking into consideration personal data and privacy. Where it affects personal confidentiality and privacy, data will not be shared publicly.

For each dataset described in the data summary an extended meta-data entry form (MDEF) will be created. This data form will hold metadata on the experiments and the dataset collected or held. It will be kept concise and described with precise language to make the data findable. The meta-data entry forms will be updated through the project life cycle. The data will be held in a simple spreadsheet format readable by a relational database software and will be identifiable with standard identification mechanisms.

We will follow standard academic data conventions, including scientific (Latin) naming conventions, SI units (The International System of Units) and Harvard reference standards. Search keywords are provided that optimise possibilities for re-use and we are using clear version numbers and dates for all information and documents generated.

The metadata created will include WP, Task, Experiments, Lead and participating partners and other participant as well as experimental data. Once the data are generated, they will be made publicly available through uploading them to a data repository and made identifiable through a PID (Persistent Identifier for Data) for each dataset and the associated metadata.

The data collected in the MDEF will include the PID, origin of the data, description of the data, purpose of the experiment, duration and location, and the size and scale (number of raw and processed/calculated parameters) and number of values for each parameter including missing values.

Deliverables and reports

- o   PID (Deliverable and file name)
- o   Report title
- o   Authors Lead Authors and contributing authors
- o   Date of publication
- o   Version
- o   Publisher (The AGROMIX consortium)
- o   Keywords
- o   Grant agreement number
- o   Project acronym

Images and video files

- o   Title
- o   Size
- o   Date of creation
- o   Date of modification
- o   Copyright if not done through work in the AGROMIX consortium
- o   Owner email
- o   Metadata from the image file (image size pixels, equipment type, lens and camera settings, GPS data)

Final versions of documents and deliverables are published on the project website. Previous and working document versions are stored on the Coventry University SharePoint site to which all partners have secure data access.

4.2   Making data openly accessible

Data, apart from that which includes sensitive data, general personal data affected by GDPR, or raising any ethical concerns (unless consented), will be shared. The project's data will be deposited in the secure repository of Coventry University's SharePoint platform. This is in accordance with the GDPR-compliant regulations of the host and in accordance with the Coventry University's regulations on data management.

The project coordinator, Coventry University will use its repository called 'PURE' to provide the access point for the university open-access research repository. Once an output is deposited, Coventry University Library Research & Scholarly Publications (RSP) team will further validate it. The record will be checked to ensure that the deposit in 'PURE' is in line with the policy of the publisher and that the full text version and the information regarding the output is correct. 'PURE' is hosted on secure servers, fulfilling EU regulations on data protection. The university's repository system does not require any specific software and provides open access according to national and EU regulation.

For ease of access, during the project, a SharePoint folder for consortium members only, will include the metadata and a direct link to all those datasets during the research on SharePoint. After publication, on open access servers and repositories, metadata will still be located on a dedicated page of the AGROMIX SharePoint site, which will remain active for a minimum of 5 years after the completion of the project.

In accordance with the Grant Agreement all research related data (excluding personal and sensitive data) will be stored for at least five years after the end of the research project (in case there is a high interest in the datasets or due to different national legislation, data may be stored for a longer period, which will be transparently discussed and approved within the consortium and with relevant parties). Data that are used for publication will be stored for at least five years after publication.

4.3   Making data interoperable

AGROMIX will strive to manage data in an interoperable manner, allowing data exchange and reuse between researchers, institutions, organisations and countries. This means AGROMIX is adhering to general standards for formats as much as possible, compliant with available (open) software applications, and in particular facilitating re-combinations with different datasets from different origins. The data and metadata standards and methodologies within AGROMIX aim to make the project data interoperable. Standard vocabularies for all data types present in the project will allow inter-disciplinary and trans-disciplinary interoperability. For example, in field trials, controlled vocabularies are common with set definitions and referenced in standard textbooks on experimental design.

In the unlikely case that uncommon or project-unique specific ontologies or vocabularies have to be used, we will provide mapping to more commonly use standard vocabularies for all uncommon data types to allow maximum interoperability. Any assumptions made, and the mapping steps to more commonly used vocabularies will be documented in a readme file and

stored on SharePoint.

Data produced through AGROMIX participatory research activities (e.g. semi or unstructured (narrative) interviews, focus groups, participant information or observation accounts, photographs, videos, drawings) will use standard formats (e.g. TXT, DOC, XLSX JPEG, RAW, AVI formats) and be compliant with available (open), software applications, facilitating the recombination with various datasets from different origins. As with the field trials and control experimental data, during instances where the use of uncommon vocabularies is unavoidable, or where it is necessary to generate project specific ontologies, mappings will be provided to more commonly used vocabularies/ontologies and stored on SharePoint.

4.4   Increase data reuse (through clarifying licences)

Whenever suitable, data will be Open Access licensed data (after the consideration of personal data, intellectual property rights and any additional legal and ethical requirements. Based on Open Access regulation, we aim to allow data to be reused by third parties, but with restrictions if IPR or other rights demanding such restrictions. Data licensing will be based on guidance provided by Coventry University. Copyright of the data are based on EU H2020 guidelines and the principles of the Digital Curation Centre (DCC), an internationally-recognised centre of expertise in digital curation with a focus on building capability and skills for research data management.

Access to the research data will be dependent on any agreed 'embargo period' based on national and EU regulations. The 'embargo period' is applied to allow time for work to be published or seek patents, were applicable. This time will be as short as possible until the work is accepted for publication or patent, bearing in mind that research data should be made available as soon as possible.

Data will be stored based on the contractual terms, until which it can be reusable (all research related data will be stored for at least for five years after the end of the research project). Due to the combined natural and social science, nature of the data there is no time limit for its re-usability.

In the case of sharing data or restricting certain data with third parties outside of the consortium, a data sharing agreement will be set up that will detail anonymising or aggregating data, participant consent for data sharing, copyright permissions, and agreement on any embargo periods. Data will be used in standard forms allowing reuse, as well as allowing search ability. Data quality assurance processes will be undertaken, including applied standards and methodologies as documented in DCC guidance.

4.5   Allocation of resources

Any costs for making AGROMIX generated data FAIR and ensuring the EU Grant funding for the H2020 project covers Open Access for publications. The management of the DMP is the responsibility of Workpackage 8 and the project coordinator and WP8 Leader Sara Burbi ab9735@coventry.ac.uk together with the project manager Julia Stew aa2276@coventry.ac.uk. Here it is the responsibility of the workpackage leaders to coordinate the specific data collection in accordance with this data management plan. Financing for data storage on SharePoint and making data available after the life of the project is covered by the project in-direct costs for each partner and for the lead partner Coventry University. The costs for ongoing maintenance of the repositories will be met by Coventry University.

The DMP applies to all AGROMIX research of all consortium partners (universities, multi-actors,

SME partners) and individually each researcher or research team employed or subcontracted will be responsible for managing their data adequately. Where AGROMIX researchers plan to publish with co-authors outside of AGROMIX (e.g. with the sister H2020 project MIXED and STARGATE or with partners outside of H2020), they will make them aware of the AGROMIX DMP requirements and data collection procedures and make sure that primary research data are stored to the same standard as required for H2020 projects. Responsibility for this will be with the first author. The minimum requirement is to store the final data set that was used for publication. With the AGROMIX project, the project co-ordinator project manager and the executive board will take overall responsibility for data management within the project.

5   Data security

Here we describe what provisions are in place for data security within the AGROMIX project. This includes data recovery as well as secure storage and transfer of data. At Coventry University, data is safely stored in certified repositories (Coventry University SharePoint) for long-term preservation and curation.

5.1   Data to be stored

The aim is to ensure that data sets and records provide sufficient information to external parties to establish the scientific integrity of the information and that the scientific outcomes are reliably based on the evidence collected by researchers. The following data will be stored:

Data used in publications

o *Sample copies of records used to collect information (questionnaires, fieldwork notes, samples of diaries, audiotapes, complete questionnaires, photographs, videos, drawings etc.)*

o *Analysed research data (such as datasets held in databases, spreadsheets, midterm reports, provisional findings)*

o *Supporting documents (date of the collected information, source of the information, location, notebooks, etc.)*

Data required by involved partners/funding agencies

o *Records of procedures (protocol documents, application for regulatory approvals and approvals granted, risk assessments etc.). Records relating to the financial management of the project (PDF invoices, any other supporting account records etc.)*

Data that might be used in future research

o *This includes interim reports, final reports and drafts for manuscripts in academic or applied farmer-facing literature.*

Subject to adherence to any restrictions, arising from the need for compliance with GDPR and ethical consent procedures (e.g. respondent anonymity), the following types of data will be stored:

o *Original data e.g. video and audio recordings, hard copy surveys, paper or digital experimental records*

- *Raw data, e.g. unprocessed digital data, site measurement data, plant and soil samples, in-vitro and in-vivo animal data (various), digital audio, photographic or video recordings*
- *Processed data sets used in publications, including information used to understand the processing, in particular coding steps, data cleaning logs, missing values, metadata for each data set*
- *Where applicable, Intermediate data sets to guarantee transparency and scientific integrity of data processing*
- *Data sharing agreements*

5.2 Data storage

Original data and paper records will be kept in lockable cabinets or offices with controlled access, when not under the direct supervision of a member of the research team. Access to electronic data and records is controlled by passwords and, where appropriate, access to individual files folder or databases will be password protected. Only authorised individuals will know passwords. Access controls will be reviewed regularly and updated as individuals join, leave or change roles within the project. Computers and software will not be left logged in and unattended. Digital data will normally be stored in the format in which they were generated.

The project-specific shared repository SharePoint is hosted by Coventry University. Access is limited to authorised individuals with passwords. SharePoint uses of a folder structure based on the functions and activities of projects to store records. This makes it easier to share information with other authorised personnel. Back-ups are implemented locally and checking procedures are established to ensure that the system works effectively. Small media devices such as USB sticks or CDs are not considered suitable as the long-term primary storage location for personal data or confidential information and will be encrypted if used to transport respondent identifiable data or data that would cause significant harm or distress to somebody if released.

5.3 Accessibility

Privacy and confidentiality of data are guaranteed at all times, in line with legal requirements, Coventry University policy and best practice. Normally, data in progress are only available to the researchers involved in a project. Access by third parties will be negotiated with the project leader unless otherwise specified. If ethical questions or concerns about the integrity of research data or data management are raised, access to data has to be granted in line with legal requirements, Coventry University policy and guidance as well as host institutions policy, and, where applicable, European Commission policy. Established guidelines for academic good practice, as for example provided by academic associations or research councils, will be consulted where appropriate.

6 Ethical aspects

The ethical aspects previously described in the Grant Agreement of AGROMIX are referenced here again to make the DMP a stand-alone document. The following text already contains the feedback/approval from the ethics review.

6.1   Overview

Ethical and security issues in AGROMIX are dealt with under Coventry University's Principles and Standards of Conduct on the Governance of Research and the University Policy on the 'Security of Electronic and Non-electronic Information V2014-005'.

The University uses the term 'information security' - interchangeably with data - for the policies, processes and controls that apply to the availability, integrity, confidentiality and legal compliance relating to information collected, stored, processed and destroyed by the University, its subsidiaries and its agents in the pursuance of its business. It addresses the protection of information and information systems from unauthorised access, use, disclosure, modification or destruction whether within the UK or abroad.

Current English Law (such as the Data Protection Act 1998) applies and must be observed. The Law applies equally to electronic and non-electronic information; the intention is to ensure that personal data is managed in a way that is fair to the 'data subject' and that their interests are properly protected. Personal data is information that relates to a living individual – the data subject –, which can be used to identify them either directly or indirectly in combination with other data. This information can include names, addresses, dates of birth, information about physical or physiological attributes and any other sensitive, personal information about that person such as qualifications, income, medical information, political opinions and sexual life. Photographs and images of all kinds in which a data subject can be identified are also regarded as personal data for the purposes of the Law.

No disclosure or exposure of personal data to third parties may take place without the written consent of the data subject. Personal data may only be used for the purpose for which it was originally collected. At the point of collection, the data subject must be informed in writing of the reason for the collection, the use the data will be put to and how long it will be kept for. Any changes to these conditions must receive the written approval of the data subject.

Personal data must not be stored on any internal or external server unless the arrangement has been specifically approved as a 'safe arrangement' by the University. To this end, an ISO27001 accredited storage service is available. All personal data must be stored and kept within the bounds of the European Union.

6.2   Humans

The informed consent procedures that will be implemented for the participation of humans will be submitted as a deliverable before recruitment commences (D9.1). Templates of the informed consent forms and information sheets covering the voluntary participation and data protection issues (in language and terms intelligible to the participants) will be submitted as a deliverable before the relevant recruitment.

Several tasks within the AGROMIX project will involve the recruitment of human research participants. In each case, we will ensure that the appropriate best practices are adopted in relation to recruiting research participants and that there are clear and demonstrable rationales for recruitment. In each case the procedures and criteria that will be used to identify/recruit research participants, along with a clear justification for these strategies will be recorded and collated.

In the case of developing a comprehensive database of key stakeholders interested in contentious inputs in mixed farming and agroforestry systems, rationale behind the recruitment strategy will be to draw on and develop the pre-established networks of AGROMIX partners to

ensure that we are able to disseminate the project's results to as broad an audience as possible. As such, we will recruit a very broad range of stakeholders, including: policy makers at the EU, national and devolved nation level (e.g. federal states, autonomous regions); producers and organisations; plant breeders; manufacturers and retailers; animal, plant and soil scientists, main retailers of agricultural and forestry products; consumer organisations; main food industries handling agricultural and forestry products; environmental and animal welfare NGOs. Stakeholders will be recruited primarily through personal contact using our existing networks and interest groups.

In the case of the quantitative survey research the rationale behind the recruitment strategy will be to provide a statistically representative sample of the population. With this goal in mind, we will stratify the sample to be nationally representative in terms of age, gender and place of residence.

Informed consent will be secured from all human participants when participating in any primary data collection activities within the AGROMIX project (for example, surveys, focus groups). All participants will take part in the research voluntarily and can decide at any moment to discontinue their participation. The AGROMIX WP leaders will finalise and approve an information sheet for all potential local and regional participants in the project, providing a clear written account of the goals of the research, the methods employed and use made of its results as well as its relevance to the respondent and the implications of participation. This document will be translated into all languages that will be associated with primary data collection. The information sheet will explain any potential risks that might be involved (for example being identified as part of a particular group, or providing personal information) and how confidentiality will be ensured throughout the collection, analysis and dissemination of data. The information sheet will also provide information on how and who to contact regarding any further questions about the project. The information will be explained in person at the start of each new data collection activity, after which the participants will be asked to sign an informed consent form indicating their consent to participate in the research. Permission will be sought to digitally record data certain data collection activities explaining that all possible steps will be taken to ensure confidentiality and anonymity of participants at the level of the individual (unless participants request otherwise). The researchers will ensure that participants are aware of the archiving process, the accessibility of the data and ask their consent to their information being stored in this way. AGROMIX will follow Coventry University's data protection rules, which are in line with EU laws on data protection (further information on data protection is available in Coventry University's data protection statement https://ethics.coventry.ac.uk/support/cu-disclosure-protocol.aspx). AGROMIX will adopt the templates provided by Coventry University for informed consent and the provision of sufficient information for each participant.

Informed consent procedures
As described above, informed consent will be secured from all human participants and an information sheet will explain any potential risks that might be involved (for example being identified as part of a particular group or providing personal information by chance) and how confidentiality will be ensured throughout the collection, analysis and dissemination of data. The information sheet will also provide information on how and who to contact regarding any further questions about the project. The information will be explained in person at the start of each new data collection activity, after which the participants will be asked to sign an informed consent form indicating their consent to participate in the research. All participants are

informed that they can withdraw their consent for whatever reason they wish, by an agreed deadline (or at any point, if they are identifiable). Permission will be sought to digitally record data collection activities (audio, visual, creative drawn image-based capture, or to record them in writing), explaining that all possible steps will be taken to ensure confidentiality and anonymity of participants at the level of the individual (unless participants specifically request otherwise).

Templates of informed consent and information sheet
Templates of the informed consent forms and information sheet will be kept on file. Copies of both templates are included in the Annex.

Data management – ethical approval
Copies of the ethical approvals for the individual research activities together with approval for the collection of personal data and data handling will be stored on the SharePoint portal and the project manager will be informed by email once uploaded.

6.3   Protection of Personal Data

A statement from the designated Data Protection Officer of the institutions involved in the project and sub-contractors (of the survey for beneficiary 24 HIOA) that all personal data collection and processing will be carried out according to EU and national legislation, including compliance with the General Data Protection Regulation (Regulation EU 2016/697) will be kept on file and submitted to the Agency (The European Commission's Research Executive Agency) upon request. Justification for collecting and/or processing of any sensitive personal data, together with the nature of such data will be submitted as a deliverable (D9.2). Detailed information on the procedures for data collection, storage, protection, retention, destruction, and confirmation that they comply with national and EU legislation will also be submitted as part of deliverable D9.2 If personal data are transferred from/to a non-EU country or international organisation, confirmation that this complies with national and EU legislation, together with the necessary authorisations, will be kept on file and submitted to the Agency upon request.

In terms of data transfer, social scientific research data generated through the project (specifically relating to questionnaire survey data and focus group research) will be co-produced and the results will be shared between the EU and non-EU partners who are involved in this task.

Whilst personal data will be collected during the AGROMIX project this data will be handled in accordance with current data protection laws and in compliance with the General Data Protection Regulation (Regulation EU 2016/697). All research undertaken at Coventry University (CU) undergoes a rigorous ethical assessment, including an assessment of the level of risk a particular activity could carry; a consideration of whether the research adheres to GDPR regulations; and a rigorous health and safety assessment. CU's ethical processes allow for the iterative development of ethics applications, with independent reviewers. The CU system also saves all authorisations/interactions enabling records to be inspected if needed and operates within national and European legislation.

All those engaged with data collection will be required to read and comply with national and international standards. Relevant to this project are standards and reference documents including:

o   The Social Research Association

- o Ethics for Researchers: Facilitating Research Excellence in FP7

- o European Textbook on Ethics in Research

Partners will be responsible for ensuring that all those engaged in data collection and processing have read at least one of the above documents. As part of the requirements for the CU ethics application procedure, all data collection methods and instruments need to be submitted (this includes survey design and interview schedules) so that they can be checked for ethical compliance. The ethics application must also detail the languages in which data collection will be conducted and adhere to strict standards of translation. A risk assessment will also accompany all medium to high-risk ethics applications.

Data collected will only be used for this project and its stated aims and objectives. Those responsible for data collection will ensure that data is respected, de-identified and kept safely on an encrypted machine. Researchers will also treat all participants and their data with respect e.g. in terms of consent, freedom to withdraw, confidentiality, feedback. Details of the project and its ethical policy will be forwarded the Institutional Data Protection Officer at Coventry University for authorisation. All data will be kept in secure password protected environments (filing cabinets and databases); will be anonymous and used solely for the purposes of this research. Where data is being collected in electronic format, AGROMIX will ensure that precautions will be made to ensure confidentiality, anonymity, privacy and security.

AGROMIX will comply with the Commission's policies in the area of open access data. In particular, AGROMIX will comply with the EC Directive on the reuse of public sector information (Directive 2003/98/EC, known as the 'PSI Directive', http://eur-lex.europa.eu/eli/dir/2003/98/oj), as revised by Directive 2013/37/EU, http://data.europa.eu/eli/dir/2013/37/oj. The 8 principles of Open Government Data that will be adhered to are https://opengovdata.org, https://public.resource.org/8_principles.html.

- o Complete: All public data will be made available. Public data is data that is not subject to valid privacy, security or privilege limitations.

- o Primary: Data will be as collected at the source, with the highest possible level of granularity, not in aggregate or modified forms.

- o Timely: Data will be made available as quickly as necessary to preserve the value of the data, (e.g. traffic-related data).

- o Accessible: Data will be available to the widest range of users for the widest range of purposes.

- o Machine processable: Data will be reasonably structured to allow automated processing.

- o Non-discriminatory: Data will be available to anyone, with no requirement of registration.

- o Non-proprietary: Data will be available in a format over which no entity will have exclusive control.

- o License-free: Data will not be subject to any copyright, patent, trademark or trade secret regulation, while reasonable privacy, security and privilege restrictions may be allowed.

6.4   Animals

Experimental trials were defined according to the guidelines provided by each partner's institution's ethical committee and following the EU Directive 2010/63/EU. All the following listed activities fall within the scope of the Directive 2010/63/EU, as they are experimental

agricultural practices 5. (a). Regarding 5.(f) the experimental agricultural practices are not likely to cause pain, suffering, distress or lasting harm equivalent to, or higher than, that caused by the introduction of a needle in accordance with good veterinary practice.

For the experiments, the approved authorisations (both in national and English languages) of the ethical committee will be kept on file and submitted to the Agency upon request. For each of the experimental trials in WP3, information concerning the planning of animals to be used in each experiment (according to the principles of replacement, reduction and refinement) as well as general information on the nature of the trials and specific information about the procedures adopted to ensure the best possible levels of animal welfare will be provided by the researchers responsible for the trial. This information will be collated and submitted as a deliverable (D 9.3). Copies of training certificates/personal licenses of the staff involved in animal experiments will be kept on file and submitted to the Agency upon request.

6.5   Third Countries

The applicants confirm that the research conducted outside the EU (Norway, Switzerland, Turkey and the UK) can be legally carried out in at least one EU Member State.

Details of any materials (including data), which will be imported to/exported from the EU, will be submitted as a deliverable (D9.4). Copies of import/export authorisations, as required by national and EU legislation will be kept on file and submitted to the Agency upon request.

6.6   Environmental protection and safety

All activities within the AGROMIX project will adhere to strict standards for ensuring environmental protection and safety. A report outlining how the ethical requirements for environmental protection and safety were/will be fulfilled in relation to specific project tasks will be produced in Month 6 (D9.5). Copies of authorisations for any relevant facilities (e.g., security classification of laboratory) will be kept on file and submitted to the Agency upon request.

7   Data Management and the GDPR

As of May 2018, the General Data Protection Regulation came into effect. The main principles (Article 5 of the GDPR) are integrated to the AGROMIX DMP as follows.

7.1   Personal data must be processed fairly and transparently

"Personal data shall be processed lawfully, fairly and in a transparent manner in relation to the data subject". On this, we follow Coventry University strict policy on GDPR and Data Protection that details how personal data collection should be consented, what forms and documents are to be used, what information is to be provided for the data subject and how the data will be secured and managed. The request will also inform individuals of their rights to have data updated or removed, and the project's policies on how these rights are managed. We will only store relevant data, whereas unused and redundant data will be purged. Besides, we will anonymise personal data to an extent as much as possible. Nonetheless, there may be cases where we ask for further consents to use the data for open research purposes (including for instance relevant research outcome presentation and publications in journals as well as depositing a data set in an open repository). For such consent, a specific and detailed consent form will be provided.

The consortium will be very transparent in the collection of personal data, therefore when collecting data an information leaflet and consent form, which will include relevant information on data use, the data collection methods and processes, the purpose of the research and the method of dissemination as well as principles of open access. The data subjects will also be informed of the possibility to withdraw their data as well as their rights on requesting information on the types of data stored about them.

7.2   Personal data can only be collected for specified, explicit and legitimate purposes

"Personal data shall be collected for specified, explicit and legitimate purposes and not further processed in a manner that is incompatible with those purposes". AGROMIX will not collect any (personal) data that is not within the scope of our project.

7.3   Personal data must be adequate, relevant and limited to what is necessary for processing

"Personal data shall be adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed". Only the project's research relevant data will be collected. Nevertheless, it may occur that during the data collection, additional personal information is shared that was not intended to be collected by the project. In such case, either data will be purged, or if somehow relevant to the research, anonymised and after adequate consent further processed.

7.4   Personal data must be accurate and kept up to date

"Personal data shall be accurate and, where necessary, kept up to date". All data collected will be checked with the data subject and if needed, updated accordingly. However, in case the datasets are difficult to keep up to date, anonymisation and relevant processing of data may be opted for. In addition, datasets will be processed as accurately as possible indicating parameters that help with accurate data (e.g. marking the relevant year in datasets).

7.5   Personal data must be kept in a form such that the data subject can be identified only as long as it is necessary for processing

"Personal data shall be kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the personal data are processed". Therefore, all personal data that are no longer in use for specific research purpose will be purged as soon as they are not needed. Accordingly, all personal data will be made anonymous once data are processed, while it will be ensured during anonymisation that no individual can be identified. At the end of the project, the anonymised data set will be stored in an open repository. If data cannot be made anonymous, it will be pseudonymised as much as possible and stored according to project and institutional guidance archiving rules and data policy.

7.6   Personal data must be processed in a manner that ensures its security

"Personal data shall be processed in a manner that ensures appropriate security of the personal data, including protection against unauthorised or unlawful processing and against accidental loss, destruction or damage, using appropriate technical or organisational measures". All personal data are handled based on relevant security protocols. Accordingly, personal data are only stored at the safe SharePoint server hosted by Coventry University and are accessible to

consortium partners complying with GDPR and additional data protection. Access is managed by the project manager and university IT experts and only provided to authorised personnel and the beneficiaries and partners in the AGROMIX consortium. It is possible to limit or withdraw access immediately if needed. People with access to this SharePoint site have all agreed to the project's data management and sharing policy that details how personal data shall be managed, used and secured. Additional people cannot have access to these data and such data cannot be shared with them without further authorisation. At the SharePoint site, only those personal data are used and shared, which *a priori* were consented by the data subject. Such data are forbidden to be downloaded or stored in a non-secure place. Personal data cannot be shared apart from via the SharePoint server.

7.7   The controller's responsibility

"The controller is responsible for, and must be able to demonstrate, compliance with the Data Protection Principles and for securing the same assurances from any 3rd parties". At project level, the project manager and the executive board is responsible for the data management within the project.

8   Annex AGROMIX Ethics Informed Consent Form templates

AGROMIX Ethics Informed Consent Form templates

Name of Researcher: [*Insert name*]

Name of Institution: [*Insert name*]

Name of Sponsor: European Commission, Horizon 2020
                                 Grant agreement no [862993]

This Informed Consent Form has two parts:

- **Part I: Information Sheet** (to share information about the study with you)

- **Part II: Certificate of Consent** (for signatures if you choose to participate)

You will be given a copy of the full Informed Consent Form.

Part I: Information Sheet:

1. Introduction AGROMIX

My name is […] and I am currently conduction a research project "AGROforestry and MIXed farming systems - Participatory research to drive the transition to a resilient and efficient land use in Europe (AGROMIX)" funded by the European Commission. I am inviting you to read this consent form. You may talk about this project to anybody you feel comfortable with, and please take some time to reflect on whether you would like to participate or not. If there is anything you do not understand in this information sheet, feel free to ask any questions at any time.

2. Research aims

This research project is part of the AGROMIX project and aims to [*insert information about the specific research project*]

3. Type of research

The research will involve an interview with you. The interview will be recorded so that I can carefully listen to your experiences after the interview and help me compare it with other people's experiences.

4. Participant selection

You are invited to this research due to your experiences as a member of the [*local community…*] and take part in [*activities*].

5. Voluntary participation

Your participation in this research is voluntary. You can choose to participate or not.

6. Procedures

The entire interview will be recorded. The information recorded is confidential, and no one else outside the researches will have access to the information documented during your interview. The recording will be kept safe on a secure server. All audio records of interviews and any other data (i.e. notes during the interview) will be destroyed five years after the closure of the project.

7. Duration

The interview *[or focus group*].will last approximately [*duration*].

8. Risks

The research and the interviews might potentially include sensitive and personal issues (i.e. political opinions, cultural values). Personal data shall be processed fairly and lawfully. Personal data shall be obtained only for [add a specified and lawful purpose], and shall not be further processed in any manner incompatible with that purpose or those purposes. There is a risk also that for any reason you might feel uncomfortable talking about some of the topics. You do not have to answer any question or take part in the interview if talking about something makes you feel uncomfortable.

9. Benefits and reimbursement

You will benefit from the results in the sense that the outcomes will provide insights into how to drive the transition to a resilient and efficient land use in Europe. The participatory research will focus on agroecological solutions for farm and land management and related value chains, thereby strengthening the connectivity between farmers, policy-makers, academics, businesses and civil society. There will be no [*or add a specified sum e.g. 20 Euro*], reimbursement for your contribution.

10. Confidentiality and legal duty of disclosure

All data collected through the interviews will remain confidential. You will be assigned a random number and the data provided by you will be stored only with regard to this number to guarantee your anonymity. Nobody will be named at the analysis of data, although direct quotes from the interviews are likely to be used in academic and policy articles.

11. Data storage

Data will be kept on the server of the institution by whom the researcher is employed *[Insert name of University*] and a safe storage on the 'SharePoint' site. This is safe, password protected, online accessible platform used by the AGROMIX research consortium and hosted at Coventry University. Data will also be made available in accordance with the H2020 Open Access to Research Data Open Research Data Pilot.

12. Sharing the results

The research is expected to be published in both academic journals and other public fora. The data for example will be used in policy notes, academic conferences, workshops, and communication material.

13. Who to contact

If you have, any questions about this project feel free to ask me now or later. You can contact me at [*University and address + email address for researcher*]. If your questions are not answered adequately or if you want to talk to somebody other than me, feel free to contact the project coordinator of AGROMIX.

Researcher
[University and address + email address for researcher]

AGROMIX project coordinator
Dr. Sara Burbi, Centre for Agroecology, Water and Resilience (CAWR)
Coventry University, Ryton Gardens Campus, CV8 3LG, UK
sara.burbi@coventry.ac.uk

Part II: Certificate of Consent

AGROMIX

Please tick

1   I confirm that I have read and understood the participant information
    sheet for the above study and have had the opportunity to ask
    questions.

2   I understand that my participation is voluntary and that I am free to
    withdraw at any time without giving a reason. I understand that I am
    free not to answer any question, for any reason.

3   I understand that all the information I provide will be treated in
    confidence.

4   I understand that I also have the right to change my mind about
    participating in the study for a short period (10 days) after the study
    has concluded. Or at any time in case, I am identifiable.

5   I agree to be filmed/recorded [*delete as appropriate*] and for
    anonymised quotes to be used as part of the research project.

6   I agree to take part in the research project.

Name of participant: ………………………………………

Signature of participant: ………………………………………

Date:

Name of researcher: ……………………………………….

Signature of researcher: ……………………………………….

Date: