



Deliverable 1.2

Data Management Plan



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Table of contents

TABLE OF CONTENTS.....	2
LIST OF ABBREVIATIONS.....	4
LIST OF TABLES	4
EXECUTIVE SUMMARY	5
1. INTRODUCTION.....	5
2. DATA SUMMARY	6
2.1. PURPOSE OF DATA COLLECTION/GENERATION AND RELATION TO THE OBJECTIVES OF THE PROJECT	6
2.2. TYPES AND FORMATS OF THE DATA GENERATED/COLLECTED	7
2.3. ORIGIN OF DATA.....	7
2.4. SIZE OF DATA.....	8
2.5. DATA UTILITY	8
3. FAIR DATA	9
3.1. MAKING DATA FINDABLE, INCLUDING PROVISIONS FOR METADATA.....	9
3.1.1. Discoverability of data (metadata provision)	9
3.1.2. Identifiability of data and standard identification mechanism	9
3.1.3. Naming conventions	9
3.1.4. Search keyword approach.....	10
3.1.5. Clear versioning approach.....	10
3.1.6. Standards for metadata creation	10
3.2. MAKING DATA OPENLY ACCESSIBLE	11
3.2.1. Data to be made openly available	11
3.2.2. Method for making the data available.....	11
3.2.3. Methods or tools needed to access the data	12
3.2.4. Locations for deposition of data and associated metadata.....	12
3.2.5. Access provision in case of restrictions.....	12
3.3. MAKING DATA INTEROPERABLE.....	12
3.4. INCREASE DATA RE-USE (THROUGH CLARIFYING LICENSES)	13
3.4.1. Data Licencing.....	13
3.4.2. Timescales for data availability and data re-use by third parties.....	13
3.4.3. Data quality assurance.....	13
4. OTHER RESEARCH OUTPUTS	14
5. ALLOCATION OF RESOURCES.....	14
5.1. COSTS FOR MAKING DATA FAIR	14
5.2. DATA MANAGEMENT RESPONSIBILITIES	14
5.3. COSTS AND POTENTIAL VALUE OF LONG-TERM PRESERVATION	15

6.	DATA SECURITY	15
6.1.	DATA STORAGE AND BACKUP	15
6.2.	DATA TRANSFER AND SHARING	16
7.	ETHICAL ASPECTS.....	16
8.	OTHER.....	17
9.	CONCLUSION	17

List of Abbreviations

Acronym	Definition
#	Number
CNPD	Comissão Nacional de Proteção de Dados (in English: <i>National Data Protection Commission</i>)
CoP	Community of Practice
D#	Deliverable
DDI	Data Documentation Initiative
DMP	Data Management Plan
DPO	Data Protection Officer
DSTI	Direção de Sistemas e Tecnologias de Informação (in English: <i>Systems and Information Technologies Department</i>)
EC	European Commission
EDRRIP	Ethics, Diversity and Responsible Innovation panel
EU	European Union
FAIR	Findable, Accessible, Interoperable and Reusable
GA	Grant Agreement
GDPR	General Data Protection Regulation
IP	Intellectual Property
IPR	Intellectual Property Rights
KPI	Key Performance Indicator
M#	Month
NA	Non-Academic
OA	Open Access
R&I	Research and Innovation
RIO	Research and Innovation Office
UCP	Universidade Católica Portuguesa
WC	Widening Country
WP	Work Package
YYYYMMDD	Year, Month, Day

List of Tables

Table 1. Structure for the files names9

Executive Summary

LETSGROW aims to foster collaboration between academic and non-academic (NA) sectors, ensuring knowledge and resource exchange through three pillars: training, mobility of talents and policy development. LETSGROW will promote interoperable R&I careers, adopting a knowledge-driven strategy rooted in cutting-edge research and innovations towards a sustainable food system capable to address food security, climate change, and sustainability challenges. LETSGROW’s combined impact of targeted training, cross-sector mobilities, and supportive policy development will promote competitiveness of the R&I talents and the consortium, which gathers 11 Partners (7 from 5 Widening countries, WC), including 4 NA entities.

This Data Management Plan (DMP) describes the data management life cycle for all the data to be collected, processed, and/or generated during implementation of LETSGROW. This is a living document, that describes the methodology and standards to be followed. It will be updated by UCP acting as DMP manager in collaboration with the partners’ Data Protection Officers (DPOs) and will align with the recommendations of the Ethics, Diversity and Responsible Innovation panel (EDRRIP) that will also be consulted prior to the submission of the DMP. Also, compliance with the European rules of General Data Protection Regulation (GDPR) will be secured whenever relevant. All data created during the project, including templates and metadata, will be accessible online *via* a secure internet-based hyperlink to all registered project partners (and agreed licensed partners) to ensure full exploitation.

1. Introduction

This Data Management Plan (DMP) outlines the different types of data that the project will generate, gather, handle, and oversee. It also discusses the methods and conditions under which this data will be shared, along with the strategies for its curation and preservation, following the FAIR principles for data management, while adopting the philosophy of being “as open as possible, but as closed as necessary.”

This document is a working/living text that will be revised periodically and updated throughout the project’s duration, resulting in the submission of two other deliverables – D1.3 (Data Management Plan – mid-term, M24) and D1.4 (Data Management Plan – final, M48). The updates can/will include personnel changes, new research data types, recognition of innovation opportunities/patent filing choices and/or modifications to national/institutional/funder guidelines.

LETSGROW DMP will comply with the EU Open Science Policy, which encompasses:

- early and open sharing of research, including pre-registration, registered reports, submission of data in shared repositories, pre-prints, and open collaboration among scientists and other knowledge producers/users;
- providing immediate and unrestricted Open Access (OA) to scientific publications, research data, models, algorithms, software, protocols, notebooks, workflows, and all other research outputs;
- ensuring that research outputs are capable of being verified and reproduced;
- managing research outputs (publications, data, etc.) responsibly in accordance with the FAIR principles; and

- promoting public engagement in research and innovation, enhancing citizen science, and increasing public trust in science.

Sensitive personal information will be handled strictly in line with the EU General Data Protection Regulation (GDPR). The implementation of these policies will be supported by internal services within the project partners (e.g., at UCP the Libraries will provide internal support to data management issues) and in alignment with the Open Science policies established by the partners national evaluators and funders for scientific research activities.

This document – the DMP – describes the entire data lifecycle for all data collected, processed, or generated during the project, adhering to the EU Open Science Policy. As a dynamic document, the DMP will be regularly updated throughout the project’s duration. The initial version will be publicly accessible via a trusted online repository such as Zenodo, DMPonline, OpenAIRE¹ or other compliant repositories, as well as on the LETSGROW website.

2. Data Summary

LETSGROW’s data management will comply with article 16 and Annex 5 of the Horizon Europe Grant Agreement (GA) and related soft law instruments governing scientific research, such as the European Code of Conduct for Research Integrity², the Guidelines to rules on Open Access to Scientific Publications & Open Access to Research Data in Horizon Europe³, and the Guidelines on Data Management in Horizon Europe⁴.

2.1. Purpose of data collection/generation and relation to the objectives of the project

LETSGROW will address EU policy priorities and societal needs through R&I. First, the *ERA – European Competence Framework for Researchers (ResearchComp)* via a training program covering the framework key competences areas (Section 1.2.2 of the GA). The *training material* will be available in *open access* and disseminated by the partners’ during and post-project. This will enable a continuous reskilling and upskilling of talents across the participating WC and nWC, with spillovers to the T4EU alliance and other EU institutions. In addition, the good practice guide for cross-sector collaboration and mobility and the policy recommendations are expected to drive institutional reforms in LETSGROW’s WC research institutions that address the current challenges in cross-sector collaboration and sustainable careers. Second, the EU Green Deal⁵ and Common Agricultural Policy⁶ via the creation of knowledge and solutions for the sustainable use of natural resources, the use of clean technologies in the sector towards the reduction of the environmental and climate footprint of the EU food system, to promote the soil resilience (Section 1.2.3 of the GA).

¹ <https://zenodo.org/>; https://dmponline.dcc.ac.uk/public_plans; <https://www.openaire.eu/>

² https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/guidance/european-code-of-conduct-for-research-integrity_horizon_en.pdf

³ https://research-and-innovation.ec.europa.eu/strategy/strategy-research-and-innovation/our-digital-future/open-science/open-access_en

⁴ <https://ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e518d4dda7&appId=PPGMS>

⁵ https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en

⁶ https://agriculture.ec.europa.eu/common-agricultural-policy_en

The ecosystem needs report and the strengthened ability of academic institutions to collaborate with business sector are expected to continue beyond the project (e.g., through new public-private partnerships, creation of spin-offs to exploit LETSGROW innovations – Section 2.2 of the GA). This will contribute to strengthen the connection between research and societal needs, leading to impactful innovation in agri-food.

Besides all the stated above, LETSGROW will also promote a wider dissemination of data management and open science topics and good practices by providing training sessions to the partners communities (academic and NA staff) and whenever possible to external parties (e.g. other projects and institutions) focused on: Ethics and research data use, Data Stewardship, Software licensing and open access publication and Education to Open Science.

2.2. Types and formats of the data generated/collected

Within LETSGROW the following types of data will be collected:

- Quantitative/qualitative research data (e.g. surveys, focus groups, stakeholder meetings and interviews, mobilities),
- Case data (data about the involved institutions, the process, etc.),
- Meta data (both for quantitative/qualitative data),
- External data (open data, member state data, aggregated data, etc.), and
- Personal data: (name, address, email, telephone, affiliation, gender, etc.).

As much as possible, standardised, interchangeable, or open formats will be used to ensure the long-term usability/archiving of data and also its compliance with the FAIR principles, including:

- Text data: plain text (.txt), OpenDocument Text (.odt);
- Tabular data: comma-separated tables (.csv or .txt), Extensible Markup Language (.xml), OpenDocument Spreadsheet (.ods); OpenDocument Database (.odb);
- Image files: TIFF (.tiff or .tif), JPEG (.jpg or .jpeg), Portable Network Graphics (.png).

Widely adopted and accessible formats, such as Microsoft (MS) Word (.docx), Excel (.xlsx), or PowerPoint (.ppt), will also be used.

The experimental data within LETSGROW scientific mobilities will include data stemming from several techniques associated to regular laboratory characterization techniques and these data will be in standard formats widely used in the field.

2.3. Origin of data

A significant portion of the data generated will originate from experiments conducted during the LETSGROW mobilities and training sessions and Talent mobilities outlined in Annex I of the GA. Researchers involved in LETSGROW from all partner institutions will primarily carry out their investigations at each other's facilities. Additionally, further data may be collected by analyzing existing articles, datasets, and databases relevant to the research. New information will also be acquired through training surveys, analytical studies, or experimental research. When appropriate, previously generated data—whether from LETSGROW partners or their collaborators—or information stored in public databases may be reused. In such cases, the Data Management Plan (DMP) will be updated as necessary to incorporate

the inclusion and reuse of these data sources. Moreover, data from WP4 - Enhancing Cross-Sector Collaboration & R&I Talent Development - will be gathered through surveys and/or interviews.

Details on key performance indicators (KPIs) relevant to LETSGROW's specific objectives and the Communication and Dissemination strategy will be collected through internal platforms, Google Analytics, and online surveys conducted *via* platforms like EUSurvey⁷ or MS Forms, as appropriate. Other metrics of impact will be obtained using Altmetrics.

Information regarding applications for the positions established by LETSGROW will be sourced from the institution's application portals. Secondary data outputs will be automatically retrieved from internal databases held by administrative departments, as well as from external international databases such as PubMed and Scopus.

2.4. Size of data

Globally, the total storage capacity required for the expected collection of experimental data, along with other data forms (like tabular data, surveys, etc.) and secondary outputs (such as reports, deliverables, articles, presentations, and training materials), is estimated to be low (in Gigabytes, GB).

2.5. Data utility

The data collected during the LETSGROW project will primarily fulfill the immediate needs of the academic and NA staff from the participating institutions. Subsequently, it will contribute to the project's goals and KPIs. Ultimately, this information will benefit the broader research community, both academic and NA, along with various stakeholders interested in the agri-food sector, such as accelerators, incubators, business parks, investors, funding organizations, government entities, and the general public.

Information related to applications for roles within the project will be used exclusively for internal purposes, particularly for evaluating candidates and preparing the respective project deliverables.

Other data gathered by LETSGROW will be relevant to the stakeholders identified in Work Package (WP) 5, specifically in Task 5.3 ("Stakeholders"), who will also be part of the Community of Practice (CoP) developed in WP 4 as part of Task 4.3 ("LETSGROW Community of Practice"). These stakeholders will encompass academic and NA sector representatives, individuals involved in the projects and initiatives listed in Task 4.2, personnel from the HR and employment sector, players in the research and innovation ecosystem, municipal authorities, and public government representatives.

Additionally, the insights produced through LETSGROW will bolster the contributions of the consortium members to the EC Open Science initiative by fostering enhanced indicators of reproducibility and transparency. This will encompass a rise in the proportion of publications that include Open Data and code sharing, registration of protocols, and explicit disclosures of ethical considerations, including conflicts of interest and funding sources. In the long run, this will establish a foundation for better research and innovation quality and capacity, as well as a more effective dissemination of research outcomes between sectors (academic and NA), society, ultimately promoting a more robust, knowledge-driven economy and society.

⁷ <https://ec.europa.eu/eusurvey/home/welcome>

3. FAIR Data

3.1. Making data findable, including provisions for metadata

3.1.1. Discoverability of data (metadata provision)

Each dataset will be characterized by its associated metadata, which will follow either specific standards pertinent to the field or technique, or, in the absence of such standards, a more general format will be utilized (e.g., delimited text files like CSV, TSV, XLSX, XML, PDF, and JSON). As relevant, a README file in plain text format (.txt) will accompany every dataset, offering information on data and dataset identification, methodologies utilized, equipment specifics (including brand, model, and country of origin), operational conditions, date and time of data collection, required software to access the files, licensing details, and other relevant information. If the dataset contains tabular data, the README will also include explanations for the headings in the table.

3.1.2. Identifiability of data and standard identification mechanism

The data, along with its corresponding metadata, will be kept in dependable data repositories, where datasets will receive a DOI upon submission – using unique and persistent identifiers will enable precise recognition of the stored datasets. The specific criteria for metadata will be established by the researchers at the partner institutions, considering the relevant discipline/field.

Field-specific metadata standards created by LETSGROW will be found on online platforms such as the Digital Curation Centre⁸ or the Research Data Alliance⁹. In other cases, broader metadata standards may be utilized, including Dublin Core¹⁰, which is often used for describing digital items, or the Data Documentation Initiative (DDI)¹¹ – a globally recognized standard for detailing data gathered from surveys and various observational methods in the social, behavioural, economic, and health sciences.

3.1.3. Naming conventions

Naming of data and metadata will follow field-specific naming conventions. This may include conventions for naming experimental reagents, models, techniques, and/or measures.

Regarding the naming of the data files and the structure of the datasets, they will follow the structure described in Table 1. Considering that the experimental data attained within the project will be, in general, associated to the planned talent mobilities described in the GA the file name will also include the mobility assigned number.

Table 1. Structure for the files names

Type of data	Naming structure
Experimental	[YYYYMMDD]_[Researcher's initials]_[Mobility assigned number]_[Experiment]_[Type of measurement]_[Version number]

⁸ <https://www.dcc.ac.uk/>

⁹ <http://rd-alliance.github.io/metadata-directory/>

¹⁰ <http://dublincore.org/>

¹¹ <https://www.ddialliance.org/>

Oral Communication/ Poster	[YYYYMMDD]_[Meeting name]_[Communication title]_[Type of communication]_[Researcher’s initials]_[Version number]
Paper	[Year]_[First author last name]_[Journal]
Protocols	[Year]_[P# - Protocol number]_[Protocol title]_[Version number]
Training materials	[YYYYMMDD]_[Training name]_[Lecture number]_[Lecture title]_[Version number]
Outreach	[YYYYMMDD]_[Type of activity]_[Activity title]_[Version number]
Meeting minutes	[YYYYMMDD]_[Type of meeting]_[Minutes]
Reports	[YYYYMMDD]_[Title of report]_[Version number]
Mobility reports	[YYYYMMDD]_[Title of mobility]_[Researcher’s initials]_[Version number]
Deliverables	[Deliverable number]_[Deliverable title]_[Version number]
Milestones	[Milestone number]_[Milestone title]_[Version number]

YYYYMMDD – year, month, day

3.1.4. Search keyword approach

Search keywords will be provided in English and/or follow the naming conventions relevant to the field. The data owners (partner institution researchers) will manually choose the search keywords, following repository and/or journal guidelines to ensure their suitability. The keywords will consist of terms that are commonly recognized and endorsed within the agri-food research community, designed to enhance discoverability for those interested in re-using the dataset.

3.1.5. Clear versioning approach

Whenever various iterations of a data file are produced, they will be distinctly labelled by appending a ‘v’ followed by a number (1.0, 2.0, 3.0, etc.) at the end of the filename. The numbering represents the version number and follows an incremental pattern (e.g., v1.0, v2.0, v3.0, etc.). Version control tools (such as Subversion, TortoiseSVN, Git, Mercurial) will be utilized when suitable. The README file that accompanies the dataset will always include a summary of the changes made.

3.1.6. Standards for metadata creation

Whenever discipline standards for metadata creation are available, they will be applied. In case they are not, more general metadata standards can be used, such as the Dublin Core - widely used standard in digital libraries and online repositories –; ISO/IEC 11179, which provides guidelines for metadata registries and ensures consistent data semantics across different databases; or the DDI. These and other general standards can be consulted at <https://openscience.eu/article/infrastructure/decoding-metadata>. The final selection/decision on which standard for metadata to be used will be of the partners institution researchers.

3.2. Making data openly accessible

Open Science principles are a priority in LETSGROW, from knowledge production to its application, to maximize project reach and achieve transformative results and legacy. Promoting knowledge exchange, data, tools, procedures, and best practices in the project lifecycle and following reproducible research principles is a cornerstone to facilitating the exploitation of results and ensuring easy access, transparency, and communication of outcomes following FAIR principles. As such, open access is the default option, publishing data “as open as possible”, respecting Intellectual Property Rights (IPR) and data confidentiality considerations.

3.2.1. Data to be made openly available

Datasets, along with their associated metadata, will be publicly accessible as soon as possible after protecting IPR or after publishing results in a scientific journal to enable peer validation. Other forms of research outputs, including protocols and presentations, will be shared as soon as they are created or given.

All peer-reviewed scientific articles that result from the LETSGROW project will be published on an open access (OA) basis, with a selection of these publications available at the highest standard of Gold OA. Regardless, all articles will be archived in the partners' institutional repositories (e.g., UCP's Institutional Repository – Veritati¹² – which is part of RCAAP¹³, a platform that collects, aggregates, and indexes OA scientific content from Portuguese institutional repositories).

The training materials will be made available by an open access repository hosted on the website. It will contain training materials, such as online courses, video tutorials, and guidelines, especially focused on R&I talent development. The repository will also be featured in the Summer Schools to expand the outreach.

3.2.2. Method for making the data available

LETSGROW within its activities and goals will make data available by several procedures/methods, including:

- Engaging value agrifood sector actors in a multi-actor platform – the CoP: actors at different points of the sector's value chain are welcome to join the project and codevelop missions, goals, and strategies, to identify critical factors and steering mechanisms to promoting interoperable careers adoption, training that promotes more attractive careers and improves employability, improving career development practices that benefit both the employee and the employer, mobility programmes across sectors that promote knowledge transfer, infrastructure sharing and value creation. The exploitation plans (WP5) will engage CoP members to use knowledge transfer best practices;

- Co-design, co-development, and integration of interdisciplinary R&I needs and procedures: WP2 and 3 will deliver a comprehensive framework using reflection procedures and strategies to focus the R&I talent training practices to drive a cooperative identification of needs from different knowledge areas and catalyse the interpretation of project results from different perspectives (socioeconomics, environmental sciences, food sciences, sustainability);

- Innovative approaches for sharing knowledge, infrastructure and results: Deliverables will be presented to the CoP periodically and published *via* the LETSGROW website. The consortium commits to

¹² <https://repositorio.ucp.pt/home>

¹³ <https://www.rcaap.pt/>

Horizon Europe Open Access mandates, embracing Open Access routes for research outcomes. Publication of scientific results will target open access journals using open licenses (e.g., Creative Commons) and use self-archiving (e.g., OpenAire, Zenodo, institutional repositories). The LETSGROW data management interface, (WP1) will provide convenient, multi-format access to open datasets through a RESTful API and offer the opportunity to co-creating data visualizations and infographics to users from a wide range of audiences (academia, practitioners, policy, media or the public);

- Collaborative learning around research workflows: peer-to-peer learning initiatives in at least seven countries across Europe, will facilitate transfer of knowledge and best practices derived from LETSGROW activities (WP3 and 4), outreach and communication and dissemination activities (WP5).

3.2.3. Methods or tools needed to access the data

Datasets will be supplied in open formats whenever feasible, or in commonly accepted formats to guarantee accessibility and reusability for the research community. Each dataset will include a README file that details the software needed to access the files. If an internally developed custom software application is created to utilize the data, its source code will be released as open source.

3.2.4. Locations for deposition of data and associated metadata

The exchange and repository of data will be separated in different platforms to safeguard the long-term protection and availability of the data. For both activities the most suitable platform (e.g., federated and secure data ecosystem such as GAIA-X¹⁴ or Zenodo¹⁵ - catch-all repository, maintained by CERN) will allow findability and accessibility where possible (in line with the Ethical, Legal and Social Aspects (ELSA) research and GDPR).

A global registry, such as re3data¹⁶ or FAIRsharing¹⁷, will be used to identify the most suitable repository for each dataset. In these cases, LETSGROW members will seek for certified repositories, as advised by the OpenAIRE guidelines¹⁸.

3.2.5. Access provision in case of restrictions

No further access limitations are expected once the data is submitted and freely available. If there are situations where access needs to be limited, the contact information for the data owner will be shared, and users seeking data will need to register.

3.3. Making data interoperable

To ensure data interoperability, (meta)data will conform to recognized standards within the discipline and/or commonly accepted practices in the research community, utilizing open formats whenever possible to enhance interoperability.

¹⁴ <https://gaia-x.eu/>

¹⁵ <https://zenodo.org>

¹⁶ <https://www.re3data.org>

¹⁷ <https://fairsharing.org/>

¹⁸ <https://www.openaire.eu/find-trustworthy-data-repository>

Each dataset will include a README file in plain text (.txt), which will outline data and dataset identification, the equipment utilized, methodologies, software needed to access the files, licensing information, and any other relevant details.

All files will be composed in English, and the International System of Units or other relevant conventions will be applied to further promote data sharing and reuse.

3.4. Increase data re-use (through clarifying licenses)

3.4.1. Data Licencing

Upon deposit in the selected repository, the datasets/publications generated within the LETSGROW project, a license will be assigned to them to facilitate and guarantee the re-use of data. Licensing schemes (e.g., Creative Commons, Open Data Commons) will be adopted for generated research data and publications, considering value chain actors and end-users' data management needs and observing restrictions on data sharing due to Intellectual Property (IP) and ethical considerations.

3.4.2. Timescales for data availability and data re-use by third parties

During the LETSGROW implementation phase, the research team(s) - talents and mentors - will have access to data and its associated metadata, as well as secondary outputs like lab notebooks and experimental protocols. After the project ends, or when a collaborator's contract concludes, these documents will be handed over to the data owner, specifically the scientific mentors at each institution, and will continue to be available for internal use.

Experimental data, together with its metadata, will be submitted to a research data repository (e.g., Zenodo, figshare¹⁹, Open Science Framework²⁰) as soon as practicable, following the protection of IPR through means such as patent applications, or after the results are published in scientific journals to facilitate peer review. Scientific papers will be published under an open access model and archived in the institutional repositories of the LETSGROW partners. The *training material* will be available in *open access* and disseminated by the partners' during and post-project. This will enable a continuous reskilling and upskilling of talents across the WC and EU.

The management of IPR will fall under the responsibility of i) the Steering Committee (as outlined in the Grant and Consortium Agreements), which will direct the overarching strategy and ensure compliance with EC guidelines; and ii) the Exploitation, Dissemination and Communication Manager, who will be tasked with ensuring effective implementation (WP5).

Project management documentation, which includes confidential deliverables, reports, meeting notes, and any data collected during public events organized by the project, will be restricted to internal access only and will not be shared with external parties, except for the Commission as required by the GA. Sensitive personal information will be treated with confidentiality. The timeline for releasing other datasets will be determined by the policies of LETSGROW partner institutions and the discretion of the research funding organization.

3.4.3. Data quality assurance

¹⁹ <https://figshare.com/>

²⁰ <https://osf.io/>

For data produced in laboratories, in addition to standard maintenance, instruments and equipment: i) undergo regular calibration and verification checks, which help prevent and identify any potential data quality issues; ii) keep a registration log for tracking any problems that may affect data quality; iii) utilize licensed software; iv) have operating computers that receive daily updates to ensure the instruments function correctly and, consequently, maintain data quality.

The collection and validation of data will be carried out exclusively by qualified researchers or R&I support staff (Talents), under the supervision of the support teams (Mentors). Ultimately, the accountability for the quality of data and metadata lies with the data owners (Mentors). Additionally, specialized technical support units within partner institutions (such as Scientific Platforms or the Systems and Information Technologies Department) can act also as quality assurance.

4. Other research outputs

Other forms of research outputs, including protocols and presentations, will be shared as soon as they are created or given in the institutional repositories and/or the website.

The training materials will be made available by an open access repository hosted on the website. It will contain training materials, such as online courses, video tutorials, and guidelines, especially focused on R&I talent development. The repository will also be featured in the Summer Schools to expand the outreach.

5. Allocation of resources

5.1. Costs for making data FAIR

The success of LETSGROW is founded around the strategy 'be good and tell it'. All due measures will be place for the establishment of FAIR practices for all data management ensuring full access to all non-IP-related data during and after the project ends. UCP (Coordinator) is fully committed to FAIR policies and shall manage their implementation (see Section 1.2.6-5 of the GA).

A budget has been reserved for this purpose, but UCP and other academic partners already have free OA publication rights to major journals (e.g., Springer and Elsevier).

5.2. Data management responsibilities

Whenever possible, the institutions involved in the project will designate a DPO to implement and provide guidelines for the relevant institutional data management policy; the project Coordinator will assist the other partners as needed. This policy will direct best practices related to all facets of data management. The DPO will assist in managing data and ensure adherence to legal requirements, including Regulation (EU) 2016/679 issued by the European Parliament and Council on April 27, 2016 (GDPR).

The mentors of each participating institution in the mobility program will serve as the data owners and be responsible for the day-to-day management of research activities. Each individual researcher or R&I support staff (Talent) will take charge of data collection, processing, analysis, and the creation of metadata, which includes detailed README files to accompany the data. All researchers and R&I support staff involved (both Talents and Mentors) will guarantee data quality with the assistance of proficient

internal technical teams. The ongoing oversight of non-research data will remain under the purview of the internal support unit managers of the institutions for organization-wide data and the Project Manager for data specific to the project.

The Systems and Information Technologies Department (DSTI, or its equivalent) of the partners will be responsible for ensuring data security and performing backups using the internal network and storage systems.

5.3. Costs and potential value of long-term preservation

Storing data for an extended period can lead to expenses that depend on the volume of data and the chosen storage solution. The partners and the funder will jointly decide on how long to retain the data, while ensuring adherence to applicable legal standards. However, depositing data in repositories like Zenodo is cost-free and ensures that all content can be transferred to other appropriate repositories when necessary.

6. Data security

6.1. Data storage and backup

UCP provides MS Office 365 to all researchers and collaborators, which features OneDrive for cloud storage and Teams for collaboration, sharing, and video conferencing. This versatile tool can serve as a storage solution for LETSGROW project documents. The Coordinator, along with the Project Manager, will manage access, folder organization, backups, and more. User access is controlled by the DSTI, and regular backups are implemented. Physical backups with external hard drives can be an option, if necessary, although cloud-based backups will be prioritized due to their better accessibility and data security.

All data generated within LETSGROW will be regularly backed up to prevent data loss from equipment malfunctions. The internal network and connected computers are protected by a perimeter firewall and a licensed antivirus program, which are centrally updated by the DSTI. Security measures will be enforced on all laptops and computers linked to the project. Each device will be secured with a password and utilize licensed software kept up to date to maintain current security protocols.

Sensitive personal data, such as information gathered during event registrations or job applications, will be stored on the secure server of the responsible project partner, with access restricted to authorized personnel (such as the Events Management team or Human Resources and selection jury, when applicable) and in compliance with the European Union's GDPR. This data will be permanently erased after ten years or upon the user's request.

Laboratory notebooks will always be kept at the premises of the project partner institutions under the custody of the researcher (talent or mentor). After a collaborator's contract concludes, the notebooks will be securely stored by the institution's mentors following each institution's internal guidelines.

6.2. Data transfer and sharing

Internal data transfers will take place either through MS OneDrive or by utilizing an external hard drive that belongs and is securely stored by the mobility mentor(s) and is exclusively designated for LETSGROW mobilities. For larger files or folders, secure European service providers may also be utilized (for instance, FileSender FCCN offered by FCT, Fundação para a Ciência e a Tecnologia, Portugal).

During the implementation phase, raw data will only be shared within LETSGROW research groups or chosen collaborators for purposes of data processing, analysis, and internal validation. No data will be shared with third-party services, including external cloud providers. For data that is deemed appropriate for sharing, external discipline-specific data repositories will be chosen based on their relevance to the area as well as their storage and security features. For example, the general-purpose open-access repository Zenodo securely handles data and metadata through cloud infrastructure managed by CERN's data centre. Personal sensitive data will remain confidential. Project outcomes, like publications and presentations, will be made available on the institutional repositories of the partners or on selected repositories, including Zenodo.

7. Ethical Aspects

All tasks conducted within the LETSGROW initiative will be in complete accordance with both general EU laws and specific legal and ethical standards established in Portugal. This assurance extends to all training and mobility events, irrespective of their location. Personal data will be managed in compliance with national and European regulations concerning the protection of individuals, especially the GDPR, as well as other pertinent legal, regulatory, and ethical requirements.

As a standard practice, any materials that could potentially identify participants (such as informed consent forms) will be stored separately from the actual data (including findings from surveys and interviews, meeting notes, etc.), with only authorized research staff allowed to perform handling tasks. The data collected from surveys will solely be shared and disseminated in an anonymous and/or aggregated format. Publications will exclusively feature aggregated results and will not include information that could identify individual participants.

UCP's DPO can be reached via email at compliance.rgpd@ucp.pt for any inquiries and will oversee adherence to all legal, regulatory, and ethical standards connected to personal data management. An informed consent document will be developed for participants to sign upon registration for LETSGROW events, addressing the capture of images, audio, or other personal data intended for public release, invoicing, etc. The form's content will be customized to fit the specific context and partner institution, resembling the example shared below:

"By submitting this form, I declare that I have read and accept the Conditions of Confidentiality and Processing of Personal Data mentioned below, as well as Universidade Católica Portuguesa's (UCP) Privacy Policy (https://www.ucp.pt/privacy-policy?set_language=en).

1. The personal data collected in this form will be processed and stored electronically, being treated with confidentiality and intended exclusively for the purposes of [...].

2. Universidade Católica Portuguesa, through the Research and Innovation Office (RIO), is responsible for treating your personal data. If you need to contact RIO, you can do so through the following means: E-mail: rio@ucp.pt.

3. Universidade Católica Portuguesa has appointed a Data Protection Officer. If you need to get in touch with them, you can do so through the following means: telephone (+351) 217 214 000 or E-mail: compliance.rgpd@ucp.pt.
4. The data requested in this form will be saved up to one year after the end of the LETSGROW project, and will subsequently be deleted by appropriate means.
5. As the data subject, you may, at any time, exercise the following rights, provided the legal conditions for each are met: the right of access, the right to rectification, the right to erasure, the right to restrict processing, the right to data portability, and the right to object to processing. For more information about these rights, you may consult the information on the link: <https://www.ucp.pt/en-us/data-subject-rights>
6. If necessary, you can also lodge a complaint with the National Data Protection Commission (CNPD).
7. Please note that during the event, as a public event, images may be captured in support of photography or video, which may be used by UCP|RIO in their materials and media communications.

Optional only if payment is involved:

The collected data will be used for registration, event database, invoice and certification. Providing such data is mandatory for event participation.

8. Other

UCP has created its own institutional guidelines regarding GDPR, particularly focusing on its Privacy Policy²¹, in line with the stipulations outlined in Regulation (EU) 2016/679 of the European Parliament and of the Council dated 27 April 2016, as well as the Rights of Data Subjects²². There are confidential internal protocols that address various facets of data management, intellectual property management, and regulations for scientific platforms, which all collaborators consent to when they join the institute.

UCP has appointed a Data Protection Officer responsible for overseeing all matters related to sensitive personal information, compliance with GDPR standards, and research data. The DPO is responsible for drafting documents that regulate university policies related to different aspects of data protection and management, and is available for inquiries (email contact: compliance.rgpd@ucp.pt).

9. Conclusion

This document outlines the procedures for data management that will be utilized throughout the LETSGROW project. The primary objective of this DMP is to define the crucial elements of the data management policy that all team members must adhere to when dealing with the various types of data connected to the project. This plan is designed to ensure that the project's metadata and public outcomes comply with the FAIR principles, which are intended to enhance the findability, accessibility, interoperability, and reusability of the data. The current iteration of the LETSGROW DMP provides an initial

²¹ <https://www.ucp.pt/privacy-policy>

²² <https://www.ucp.pt/rights-data-subjects>

overview of the datasets that will be used, gathered, and generated during the project. It also highlights the principal exploitation opportunities for these datasets and underscores the important ethical principles that will guide their management. Furthermore, the plan specifies how data will be shared within the LETSGROW project and details the strategies for data storage, thus offering a comprehensive outline of the complete data management lifecycle.

This DMP is considered a living document and will receive updates in D1.3 and D1.4, specifically at M24 and M48, to ensure it remains pertinent, effective, and aligned with the evolving needs and demands of the LETSGROW project. By adopting a living document approach, team members can adjust their data management practices to effectively address any new challenges or opportunities in research and data management.