DeliSoil

Delivering soil improvers from circular food production processes to boost soil health

Delivering Soil improvers through improved recycling and processing solutions for food industry residues streams
DATA MANAGEMENT PLAN I

30/11/2023 Version 1.0

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V1.0	● Initial version.

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EXECUTIVE SUMMARY

A Data Management Plan (DMP) will be developed to ensure that scientific research data and other research outputs will be easily findable, accessible, interoperable to specific quality standards, as well as useable beyond the original purpose for which they were collected. The DMP will investigate i) how research data will be collected, processed or generated within the project; ii) what methodology and standards will be adopted; iii) whether and how this data will be shared and/or made open; iv) how data will be curated and preserved during and after the project; v) security measures to prevent unauthorized access and vi) Ethics or Legal Issues. Since the DMP is a live document, it will be updated regularly.

DeliSoil will follow the principles of open science as fully as possible, via cooperative work and systematic sharing of knowledge and tools as early and widely as possible, in accordance with the ethical principles of research, the publishers' terms and conditions, and legislation (incl. Finland's National Declaration for Open Science & Research, 2020–2025, to which Luke is a signatory). We will focus on establishing and maintaining a link with the EU Soil Observatory (EUSO) through sharing of data, information, project factsheets, best practice, networking. Links with previous and ongoing projects will contribute data, networks and methods to support the Soil Mission goals.

DeliSoil will manage its research data and other research outputs according to FAIR (findable, accessible, interoperable, reusable) principles with support from Luke's Data Manager throughout their life cycle. The data will be made OA via the trustworthy international repositories, like e.g., Zenodo and partners' own repositories (e.g., CERTH) or national repositories. A Zenodo community will be established to collect the outputs of the project and the community curators will be named later in the project. Data will be open after publication of respective results. The following Creative Commons licences will be used: CC BY 4.0 (attribution) for open data – lets others distribute, remix, adapt, and build upon the data, even commercially, if they credit the original creator; CC0 (no rights reserved) for metadata – allows others to freely build upon, enhance and reuse the data for any purpose, without restriction under copyright or database law.

CONTENTS

1. DATA SUMMARY

The project re-uses, collects and generates many types of data. There is a summary of generated and collected data types in Table 1 describing the storage location and purpose of the data generation.

Work Package (WP) 1 produces mapping, quality and processing method data on different food industry processing residue streams. WP 2 explores soil health data on impacts of different soil improvers including detailed metagenome shotgun sequencing data on microbiome. WP 3 deals with data on legal and financial issues. WP 4 concentrates on environmental impacts, risk assessment and LCA data. WP 5 produces societal data, stakeholder contacts and training material. Detailed description of expected data generated and collected in each work package is available in Appendix.

DeliSoil data can be utilized in similar research fields, especially supporting EU Mission Soil tasks, and applied in business operations in context of circular bioeconomy.

Table 1. Summary of generated and collected data in DeliSoil

Data Type	Storage	Contents
Text documents	PC/ partner servers, Teams collaboration space	Deliverables, meeting minutes, documentation
Presentations	PC/ partner servers, Teams collaboration space	Dissemination material, presentations at conferences, training material
Videos	PC/ partner servers	Dissemination material, training material
Metadata	PC/ partner severs	Documentation
Generated data	PC/ partner servers	Analytical data
Re-used datasets	Zenodo, EUSO and other repositories	Reference datasets from literature and other sources

2. FAIR DATA

DeliSoil generated and collected data will be open access and 'FAIR', that is Findable, Accessible, Interoperable and Re-usable, unless there are justified reasons for opting-out, which will then be given in the Data Management Plan (DMP) e.g., for IPR or privacy/data protection concerns. A Zenodo community will be established to collect the outputs of the project and the community curators will be named later in the project.

2.1. MAKING DATA FINDABLE, INCLUDING PROVISIONS FOR METADATA

DeliSoil generated and collected data, that do not need IP protection, will be deposited in open online data repositories, making the data findable. For the data storage we have chosen Zenodo (https://zenodo.org/), but when other data will be generated, these will be stored in specific repositories that facilitate the finding, accessing, re-using and interoperating of data sets, for example: EU Soil Observatory (EUSO).

For everyday management of the project, DeliSoil uses Teams. To easily navigate datasets, each dataset is assigned a particular name, which in Teams serves as a persistent identifier (PI) and has following sequence consisting of three different parts separated with a "." (dot) character:

ProjectName.DatasetName.Version, where:

1. The ProjectName is DeliSoil, in order to clearly identify for all datasets the origin;
2. The DatasetName represents the full name of the dataset;
3. The Version of the dataset represents in which phase of the project the dataset was released.

DeliSoil Teams folder is open to all members of DeliSoil partner teams. The materials and documents are organized under respective WP and task.

For Zenodo and other trusted repositories, data and metadata will be catalogued with following elements: title, author(s), publication date, description, access right, licence, funding.

As a PI, data will have Digital Object Identifier (DOI) maintained by the International DOI Foundation (IDF), which can be generated by all above listed repositories. (Meta)data will have a globally unique (assigned to one single specific digital object) and eternally (if the DO is deleted, the PI should remain and point to so-called tombstone information, including basic metadata about the DO's properties) persistent identifier.

DeliSoil partners are responsible for recording and uploading all datasets resulting from the project, not needing IP protection, in chosen repositories. In addition, partners are responsible for uploading required metadata, including an URL link to the dataset, in a Dataset log kept by the DEC partner ERINN in Teams. ERINN will further upload the dataset information in the EU Funding and Tender Opportunities Portal. Luke as the coordinator will supervise this process.

Rich metadata will be provided to allow discovery, including descriptive information about metadata context, quality and condition, or characteristics of the data in respect to each WP.

General level metadata in Zenodo and in other trusted repositories to allow discovery will be created. Metadata created for data in different WPs will be supplemented later when the methods and material are decided. Detailed data set level disciplinary based metadata will be created when applicable.

Both structural and reference metadata will be generated during the experiment. Each of these metadata will be generated according to the need of each WP. Regarding structural metadata, it will include mainly titles, subtitles, dimensions names or variable names to identify statistical data, as well as code lists (i.e., for territorial coding of tailored soil improvers). Regarding reference metadata, they will mainly deal with description of statistical concepts and methodologies used for the collection and generation of the data.

Keywords in Zenodo and other trusted repositories will be provided in the metadata to optimize the possibility for discovery and then potential re-use. These will include task-specific keywords and when possible keywords from the list of terms drawn from vocabularies and ontologies from respective scientific fields.

Zenodo metadata can be harvested and indexed. Other metadata will also be offered in such a way that it can be harvested and indexed, adhering to appropriate metadata standards and using semantic terms to allow data users to find, aggregate, and analyse submitted data.

2.2. MAKING DATA ACCESSIBLE

To encourage re-use and further application of project results, data will be made accessible via open access platforms for verification and re-use, unless the data owner can justify why data cannot be made openly accessible. Where it is determined that a data should be kept confidential, the reasons for doing so will be included in an updated version of the DMP.

Prior written notice of any planned dissemination of datasets shall be given to the other Parties following the protocol on disseminating own (including jointly owned) results described in Consortium Agreement (article 8.4.2) and in the Project Dissemination, Exploitation and Communication plan.

REPOSITORY

Data will be deposited in a trusted repository Zenodo (a CERN Data Centre-backed research data repository for the long-tail of science), and for long term data preservation and sharing, specific soil data will be submitted to EUSO.

At this stage of DeliSoil (M6), no additional arrangements with the identified repositories where the data will be deposited had to be made.

Because the chosen repositories adhere to international data reporting standards, all deposited data will have an assigned identifier, resolved as a digital object.

DATA

All data will be made openly available, except for limited period of time to ensure novelty of publication, or longer in cases of concern related to commercial and patenting issues. At this project stage, there is no legal or contractual obligation for specific beneficiaries to keep their data closed. DeliSoil data protection will be managed with the help of the Luke's data protection experts (tietosuoja@luke.fi), who will advise the Consortium on the management of results. i.e., assist in identifying results, including data that could be the subject matter of protection, use or dissemination, based on publications and activity reports issued by activity leaders.

Embargo for data will be dictated by the time length necessary to publish the scientific publication, and will vary from case to case, depending on the complexity of tasks/ methodology and scientific scope. In case the data will be protected by the patent, the scientific publication will not be published, including respective data, before the patent is granted. This will also vary from case to case, depending on the extensiveness of patent database searches and countries intended for the patent.

Otherwise, the data will be accessible through a free and standardized access protocol with a computer and an internet, *i.e*., clicking on a specific link, as DeliSoil will use http(s) or ftp. This allows data retrieval without specialised or proprietary tools or communication methods.

For highly sensitive data, it will not be possible to provide secure access through a fully mechanised protocol, therefore, DeliSoil will provide an email, official telephone number of a contact person who can discuss access to the data, during and after the end of the project. This contact protocol will be clear and explicit in the metadata.

The identity of the person uploading DeliSoil data will be ascertained by requesting the users to create a user account for Zenodo repository. This will allow to authenticate the owner (or contributor) of each dataset, and to potentially set user-specific rights.

Zenodo metadata are publicly accessible and licensed under public domain. No authorization is ever necessary to retrieve it. The protocol of Zenodo allows for an authentication and authorization procedure, where necessary. The data in Teams will be accessible only to the members involved in the research project.

At this project stage, DeliSoil does not have a data access committee (e.g., to evaluate/approve access requests to personal/sensitive data) but rely on the protocols developed within the Plan for the Dissemination, Exploitation and Communication (PDEC) (M6).

METADATA

Metadata will be made openly available and licenced under a public domain dedication CC0, as per the Grant Agreement. It will contain information to enable the user to access the data.

The data will remain available and findable in public repository as long as the public repositories are viable, which also guarantees the long-term availability of metadata. The lifetime of Zenodo is the lifetime of the host laboratory CERN, which currently has an experimental programme defined for the next 20 years at least. Zenodo metadata are accessible, even when the data are no longer available.

Documentation (or reference) about any software needed to access or read the data will be included in the public repository. If the software needed to access are already open source, they will be included in the public repository, otherwise the open source code will be included in the public repository after the scientific publication.

2.3. MAKING DATA INTEROPERABLE

DeliSoil will follow community-endorsed interoperability best practices and use common standard formats for data and metadata. Standards (see under 2.1) will ensure that produced data can be analysed together with other data types.

As datasets are identified and collected, updates on standards for (meta)data creation will be outlined in following DMP versions. In case other files will be obtained they will be converted to more commonly used ontologies.

To provide a "common understanding" of digital objects by means of a language for knowledge representation to be used to represent these objects, DeliSoil will use a language with a formal specification, *i.e.*, those which the syntax and grammar are defined in a precise way, and whose knowledge representation language specifications are shared and accessible, so

others can read the specifications and learn the language. Ideally, the language will be useful in more than one scenario.

To describe data and metadata, the vocabularies that provide the terms or concepts that are adequate to represent their content will be used. These vocabularies will adhere to FAIR guidelines as well. The controlled vocabulary to describe datasets will be documented and resolvable using globally unique and PIs, and this will be documented to be easily findable and accessible by anyone who uses the dataset.

Data will include qualified cross-references to other data if the generated dataset builds on a previously generated dataset, or the previous dataset is necessary to complete the new data, or if complementary information is stored in a different dataset (*e.g.*, other data from DeliSoil project, or datasets from previous research), and metadata will follow DataCite's metadata standard. All datasets will be properly cited by their globally unique and persistent identifiers, and included in the article's reference list, allowing identification and access of any dataset in a publication.

2.4. INCREASE DATA RE-USE

Data will be deemed useful for reuse, since the context under which the data was generated will be richly described in form of the supplementary data, such as readme files, experimental protocols, explanatory procedures, measured variables and additional details that might appear irrelevant. These supplementary data will accompany respective scientific publications. Specific datasets will be shared via domain-specific public repositories.

For visibility and valorisation of data, DOIs to appropriate records will be linked to the affiliations'' publication repository, laboratories' webpage, researcher profile pages, as well as on researchers ORCID IDs.

The aim is to guarantee open access as widely as possible, taking into account the limits of the GDPR as well as possible secret information protection and/or exploitation interests. In general, the open data will be made available for re-use under CC BY -license and metadata under CC0.

For the most part, it is expected that there are no limits or licensing requirements to the data sharing or re-use by third parties, in particular after the end of the project. In other cases, we will endeavour to use the most open solution possible and a creative common (CC) license that is suitable for data sharing. Methods or software tools needed to access and use data include the standard Microsoft package etc.

Data will be accompanied with details on data provenance, such as data origin/history, who to cite and/or how to acknowledge the authors, data workflow/ methodology.

Data will be subjected to quality assurance processes. Data normalization protocols including measurement standards, data collection templates and formats, safe digital storage will be used. Appropriate experimental design, data recording and data validation (controls, randomization/blinding, sampling/replicates, experimental versus hypothesis driven-protocol) will ensure internal validity.

3. OTHER RESEARCH OUTPUTS

Other research outputs that may be generated or re-used throughout DeliSoil, either digital (*e.g.*, software, workflows, protocols, models, etc.) or physical are foreseen in all scientific

WPs. Their management will be addressed specifically in time of their delivery in line with the Grant Agreement and FAIR principles.

4. ALLOCATION OF RESOURCES

The DMP will include arrangements around responsibilities and costs for curation and preservation. Partners will mostly make use of free data repositories (e.g., Zenodo) or use organisation subscriptions to domain-specific data repositories.

Each partner will cover costs related to their data from own project funding, and partners' main contacts/ principal investigator in collaboration with respective WP leader are responsible for data management in DeliSoil.

Responsible teams for data management and quality assurance depend on each dataset. All data will be handled only by qualified researchers under strict confidentiality agreements, assuring that data access, data protection and privacy standards will comply with national and European regulations.

Teams will be used for project communication and discussing data management whenever needed. The data management issues will be discussed at all meetings involving research activities.

In all processing of personal data, we will comply with the principles set out in the EU General Data Protection Regulation (GDPR).

Public repositories will secure long term data and metadata preservation.

5. DATA SECURITY

Standard provisions offered by the public repositories (for long term preservation) where data will be stored will be in place, including data recovery as well as secure storage/archiving and transfer of sensitive data. The same will be in place for data stored at partners' affiliations. Other information (data, images, project documentation etc.) will be stored electronically on secure servers located in locked, air-conditioned server rooms at each partner institute (stored for at least 10 years) and on an offsite, long-term storage server.

Data will be collected according to standard operating procedures in formats that are open, non-proprietary and in common use by the scientific community. Stored data will be backed up daily and will only be accessible by authorized personnel.

6. ETHICS

Ethical dimensions of DeliSoil will involve human participants for empirical research for social and human science research (WP5), which will involve personal data collection and processing (e.g., socio-demographics such as age, gender or nationality but also people's attitudes and perceptions) with the aim of evaluating the various stakeholders. The data collected in any DeliSoil studies involving stakeholders will adhere to GDPR standards. The research will not involve collection of sensitive personal data such as ethnicity, religion or political ideology. DeliSoil will involve collection and processing of personal data. For this, participation in all activities will be voluntary and the purpose of the study and use of the data will be clearly explained to all participants and signed informed consent for data sharing and

long-term preservation will be obtained. Specific and detailed description of the planned activities, the purposes and methods of data processing and all the other content legally required by national law will be provided. The processing of personal data will be carried out only for the specific purposes of the DeliSoil activities, and data collected will not be disseminated in any way or disclosed to third parties that are not formally involved in the research activities. For the purpose of data processing, both with and without the use of electronic means, the most rigorous security measures will be adopted to ensure the integrity, confidentiality and control of data submitted.

The administrator of personal data will be the delegated project partners responsible for individual subtasks, who will be appointed by the Personal Data Officer of the DeliSoil project in the given institution. The processing of personal data will take place in accordance with Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation). It will be possible to contact the DeliSoil Personal Data Officer, supported by the Luke Data Protection Officer, in all matters relating to the processing of personal data and the exercise of rights related to data processing by contacting the indicated e-mail address of the project partner responsible for a given subtask. Providing personal data will be voluntary, but necessary to participate in the project's activities (e.g. participation in Regional Working Groups in WP5). The participant will be able to resign from participation in the project activities at any time and delete personal data by contacting the DeliSoil Personal Data Officer of the project partner who stores this data.

7. OTHER ISSUES

The DeliSoil consortium is committed to ethical research and to the principles described in the Charter of Fundamental Rights of the EU, the European Convention on Human Rights, and its supplementary Charter of Fundamental Rights of the European Union in Practice, as well as in pioneering documents (incl. Nuremberg Code, Declaration of Helsinki), and will carry out its activities according to standard procedures as advised by the EC. More specifically, DeliSoil will be subject to the European Code of Conduct for Research Integrity, as well as ethical standards in force by its academic and practice partners.

Natural Resources Institute Finland (Luke) has signed the national Declaration for open science and research 2020-2025 in Finland, which means that they are committed to: 1. endorsing the strategic goals for open science and research defined by the research community, 2. supporting and encouraging the everyday work to attain the objectives and goals of the policies and 3. actively participating in the national open science and research coordination activities. The other consortium partners will be encouraged to contribute to the same commitment from their corresponding field of action.

Other national/funder/sectorial/departmental procedures for data management will be specified in time of the delivery of data that will be specifically related to these procedures, if any.

Project Coordinator

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More Information

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APPENDIX DELISOIL DATA INFO TABLES OF WORK PACKAGES 1-5

WP1 Food Industry processing residue streams / Data description	New/re-used data	File format [+archived format if different]	Size of the data	Where is the data stored during the project?	Repository: where will the data be stored/opened after the project?	Data accessibility	Organization
Tool for the collection of data in the selected EU regions to establish the current scenario for food processing waste valorization (T.1.1) – direct survey and database search	Existing data, previous generated, previous projects, new data	xls	50 MB	Partner servers, project teams	partner server, project teams, Zenodo	Open after publication	LUKE, UVIC, CINSA, ENEA, UHOH, UCPH, ULE
Compilation of characteristics of the selected EU regions (T1.1) - direct survey and database search	New data,	pdf, doc	5 MB	Partner servers, project teams	partner server, project teams, Zenodo	Open after publication	LUKE, UVIC, CINSA, ENEA, UHOH, UCPH, ULE
Statistical tool for analyzing data collected in the selected EU regions and mapping the main actors involved (T.1.1.) – Data processing	New data, data processing	xls, SAS	20 MB	Partner servers, project teams	partner server, project teams, Zenodo	Open after publication of associated results	LUKE, UVIC

Laboratory analyses to monitor the performance of the proposed technologies and to perform energy and mass balances (T.1.2) – Raw data generated at lab and their processing	New data	Physical, xls, pdf, doc	80 MB	Partner servers, project teams	partner server, project teams, Zenodo	Open after publication of associated results	CINSA, LUKE, UVIC, UHOH, UCPH, ULE
Laboratory analyses to characterize the produced soil improvers (T.1.2) - Raw data generated at lab and their processing.	New data	Physical, xls, pdf, doc	80 MB	Partner servers, project teams	partner server, project teams, Zenodo	Open after publication of associated results	CINSA, LUKE, UVIC, UHOH, UCPH, ULE, ENEA
Data compilation for technologies performance and products characteristics (T1.3) – Data processing	New data	pdf, doc	15 MB	Partner servers, project teams	partner server, project teams, Zenodo	Open after publication of associated results	CINSA, LUKE
Laboratory analysis to assess the ability of the environmental technologies to inactivate relevant biological hazards for intrinsic indicator microorganisms (analysis and monitoring of tailored soil improvers) (T 1.3) - Raw data generated at lab and their processing	New data	Physical, xls, pdf, doc	10 MB	Partner servers, project teams	partner server, project teams, Zenodo	Open after publication of respective results	ULE, LUKE, ENEA, UVIC, CINSA, UHOH
Laboratory analysis through whole metagenome shotgun	New data	fastq, csv	500 GB	Partner servers, project teams	partner server, project teams, Zenodo, NCBI	Closed data/Delay for publishing	ENEA, ULE

Data description	New/re-used data	File format [+archived format if different]	Size of the data	Where is the data stored during the project?	Repository: where will the data be stored/opened after the project?	Data accessibility	Organization
sequencing to determine the possible occurrence of other hazards, such as antimicrobial resistance genes, multiple bacterial pathogens and viral contaminants, in an untargeted manner in tailored soil improvers (T 1.3) - Raw data generated at lab and their processing							
Laboratory tests to assess the stability and biogenic activity of the products (T 1.3) - Raw data generated at lab and their processing	New data	Physical, xls, pdf, doc	10 MB	Partner servers, project teams	partner server, project teams, Zenodo	Closed data/ Delay for publishing	CINSA, LUKE, UVIC, UHOH, UCPH, ULE, ENEA
Data compilation for safety and stability of products (T.1.3) – Data processing	New data	pdf, doc	15 MB	Partner servers, project teams	partner server, project teams, Zenodo	Open after the publication of associated results	ULE, ENEA, LUKE

WP2 Soil health improvement Data description	New/re-used data	File format [+archived format if different]	Size of the data	Where is the data stored during the project?	Repository: where will the data be stored/opened after the project?	Data accessibility	Organization

Data mining to determine the effect of soil improvers on soil health. 1. Collect datasets from pertinent EU project and related long-term field experiments; 2. Identify driving factors that govern soil health. (Task 2.1.1)	1. Re-used data: EU data collection: Effect of soil improvers; EU project and related long-term field experiments (e.g., LEX4BIO, SIMBA, BIOFECTOR, SOLACE, EJP SOIL). 2. New data of soil health identified driving factors	xls, doc	200 MB	Partner servers, Project Teams	Project Teams, Zenodo	Open after publication	**CINSA**, Luke, ENEA, UHOH, UCPH
Systematic review of available literature and data analysis will guarantee the preliminary evaluation of the effect of soil improvers on soil health. (Task 2.1.2)	Existing literature data used for the systematic review	pdf, xls, doc	500 MB	Partner servers, Project Teams	Project Teams, Zenodo	Open after publication	**CINSA**, ENEA, Luke
Pot experiments Tailored soil improvers from country food value chains, obtained in T1.2, will be tested locally in pot experiments to identify the most effective for soil health and fertility.	New data	pdf, xls, doc	300 MB	Partners server, project teams	Project Teams, Zenodo	Open after publication	**ENEA**, UCPH, UHOH, ULE, CINSA, Luke, UVIC

Task 2.2.1							
Plot-scale field trials The 6-10 best performing tailored soil improvers formulations (T2.1.1) will be investigated in plot field trials carried out regionally with local actors Task 2.2.2	New data	Fastq, .csv, xls	500 GB	Partners server, project teams	Project Teams, Zenodo, NCBI	Open after publication	**ENEA**, UCPH, UHOH, ULE, CINSA, Luke, UVIC
Building on long-term previous field trials (tested via LEX4BIO's long-term field trials) Task 2.2.3	New data	Fastq, .csv, xls	500 GB	Partners server, project teams	Project Teams, Zenodo, NCBI	Open after publication	**ENEA**, UCPH, UHOH, ULE, CINSA, Luke, UVIC
Tailored soil improvers with microbial-based products Tailored soil improvers will then be tested in combination with microbial-based inoculants derived from EU related projects or microbial-based products available on the market, to promote performance enhancement.	New data	Fastq, .csv, xls, doc	500 GB	Partners server, project teams	Project Teams, Zenodo, NCBI	Open after publication	**ENEA**, UCPH, UHOH, ULE, CINSA, Luke, UVIC

Task 2.2.4							
Best practices for testing and integrating selected soil improvers in Living Labs and lighthouses Task 2.3	New data	doc, pdf	20MB	Partners server, project teams	Project Teams, Zenodo	Open after publication	UHOH, LUKE, CINSA, ENEA, UCPH, UHOH, UVIC

WP3 Enablers for the conversion of food by-products and waste to soil improvers and fertilising products Data description	New/re-used data	File format [+archived format if different]	Size of the data	Where is the data stored during the project?	Repository: where will the data be stored/opened after the project?	Data accessibility	Organization
Catalogue of technologies for converting food waste to soil improvers: barriers, enablers and needs for further research T3.1, D3.1. Qualitative data was collected from 1) public deliverables of other EU projects 2) publicly available webinars 3) scientific	Re-used data	.doc	1 MB for master document; if including all files stored then 200 MB	Partner home server (all files); Project teams server (master document)	Project Teams	Open after publication of deliverable	Proman

| publications and 4) liasioning with technology owners and other EU projects | | | | | | | |
| Other to be updated in the course of the project | | | | | | | |

WP4 Environmental risks and sustainability Data description	New/re-used data	File format [+archived format if different]	Size of the data	Where is the data stored during the project?	Repository: where will the data be stored/opened after the project?	Data accessibility	Organization
Literature survey in task 4.1.1 (Environment). Articles from databases are studied and review report (D 4.1) is published.	Existing literature used for review	pdf, xls, doc	200 MB	Partner home servers, Project Teams	Project Teams, Zenodo	Open after publication	CINSA
Literature survey 4.2.1 (Risks). Articles from databases are studied and review report (D4.3) is published.	Existing literature used for review	pdf, xls, doc	200 MB	Partner home servers, Project Teams	Project Teams, Zenodo	Open after publication	CINSA
Rainfall simulator study results for nutrient and metal leaching estimation from organic fertiliser	New data	xls, SAS	10 MB	Luke server, project teams	Luke server, project teams, Jukuri (Luke	Open after publication of respective results	Luke

products. Data consists of soil, fertiliser and water analysis. (Task 4.2.1)					publication database), Zenodo		
Incubation studies to estimate GHG and NH3 losses from the selected organic fertilisers and soil improvers are conducted to get data for evaluation of their losses for ecosystem models and LCA. (Task 4.2.1)	New data	xls, doc	200 MB	FIBL server, project teams	FIBL server, project teams, Zenodo	Open after publication of respective results	FIBL
Laboratory analysis of heavy metals to estimate their contents in organic fertilizer products and fertilized soils. Data consists of soil, soil improver and organic fertilizer analysis (Task 4.2.2)	New data	xls	10 MB	partner server, project teams	partner server, project teams, Zenodo	Open after publication of respective results	UHOH
Laboratory analysis of microplastics to estimate their contents in organic fertilizer products and fertilized soils. Data consists of soil, soil improver and organic fertilizer analysis (Task 4.2.2)	New data	xls	10 MB	partner server, project teams	partner server, project teams, Zenodo	Open after publication of respective results	CINSA
Laboratory analysis of selected organic pollutants to estimate their contents in organic fertilizer products	New data	xls	10 MB	partner server, project teams	partner server, project teams, Zenodo	Open after publication of respective results	CINSA

and fertilized soils. Data consists of soil, soil improver and organic fertilizer analysis (Task 4.2.2)							
Laboratory analysis of seed germination to estimate the effects of organic fertilizer products. Data consists of seed germination assays (Task 4.2.2)	New data	xls	10 MB	partner server, project teams	partner server, project teams, Zenodo	Open after publication of respective results	ENEA
Laboratory analysis of phyto- and genotoxicity to estimate their contents in selected soils after organic fertilizer applications. Data consists of soil analysis (Task 4.2.3)	New data	xls	10 GB	partner server, project teams	partner server, project teams, Zenodo	Open after publication of respective results	ENEA, CINSA
Modelling N and P losses with dynamic models to estimate the effect of soil improver and organic fertilizers in crop production. (Task 4.1.3)	New and existing data used for modelling. Model results are new data.	xls, model files	200 MB	Luke server, project teams	Luke server, project teams, Zenodo	Open after publication of respective results	Luke
Risk assessment data includes risk profile to human health, identification of potential risks and integration of data from Task 1.3 and T 2.2. (Task 4.3)	New data from other WPs and existing data is used.	xls., doc	200 MB	partner servers, project teams	partner server, project teams, Zenodo	Open after publication of respective results	Ruoka, ENEA, ULE, CINSA, Luke

Data description	New/re-used data	File format [+archived format if different]	Size of the data	Where is the data stored during the project?	Repository: where will the data be stored/opened after the project?	Data accessibility	Organization
LCA model results, two product chains are modelled in their effects. (Task 4.4)	New and existing data used for LCA modelling. LCA results are new data.	xls. doc, model files	200 MB	UCPH server, project teams	UCPH server, project teams, Zenodo	Open after publication of respective results	UCPH

WP5 Living labs, multi-actors and socioeconomics **Data description**	**New/re-used data**	**File format [+archived format if different]**	**Size of the data**	**Where is the data stored during the project?**	**Repository: where will the data be stored/opened after the project?**	**Data accessibility**	**Organization**
Stakeholder importance analysis questionnaire - direct survey and database search. (T5.1)	Existing data, new data	pdf, doc, xls	100 MB	Partner servers, project teams	Partner server, project Teams	Open after publication of respective results	MEERI, LUKE
Stakeholder database (stakeholder mapping of target areas) and atlas of soil-oriented LLs. (T5.1)	Existing data, new data	pdf, doc, xls	500 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	MEERI, LUKE
Analysis of stakeholders' practices, behaviours and opinions to identify their interests, challenges and expectations - survey	Existing data, new data	pdf, doc, xls	100 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	MEERI, LUKE

analysis and literature review. (T5.1)							
Analysis of Agricultural Knowledge and Innovation System - description of the whole knowledge exchange system. (T5.1)	Existing data	pdf, doc	50 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	MEERI, LUKE
Identification of LLs actors and sites. (T5.2)	Existing data, new data	pdf, doc, xls	50 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	PJI, LUKE
Experimental test of innovative products for carbon-farming practices by value chain network of public and private sectors, with DeliSoil partners. (T5.2)	Existing data, new data	pdf, doc, xls	200 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	PJI, LUKE
Identification of the possible further network expansion at national, EU and legal levels via analysis of group's participants in individual regions - joint questionnaire for meeting in different regions. (T5.3)	New data	pdf, doc	100 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	MEERI, LUKE
Reports on Regional Working Groups establishment and activities; co-creation workshops prepared according to stakeholders' needs -	Existing data, new data	pdf, doc, ppt	50 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	MEERI, LUKE

reports and presentations. (T5.3)							
Analysis of the educational content dedicated to the CE implementation in food sector, identification of the missing gap in formal and informal education, propose scope of education content and tools that should be used. (T5.4)	Existing data, new data	pdf, doc, xls	100 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	CINSA, MEERI
Feedback questionnaire and evaluate Pilot Education Campaign participants. (T5.4)	New data	pdf, doc, xls	50 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	CINSA, MEERI
SWOT and PESTLE analysis, including evaluation of drivers and barriers to market uptake of recycled food processing residue streams. (T5.5)	Existing data	pdf, doc, xls	50 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	MEERI, Proman
Portfolio of measures and actions to support development of food-waste-based products and their uptake by EU agriculture sector, involving specific stakeholders to support implementation of proposed solutions and efficiently overcome	Existing data	pdf, doc, xls	100 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	MEERI, Proman

potential challenges and trade-offs in project regions. (T5.5)							
Assessments of the potential acceptability of organic fertilisers and soil improvers for organic farming and identification of the role of different actors in implementation of use and integrate in monitoring framework. (T5.6)	Existing data	pdf, doc, xls	100 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	LUKE, FiBL
Revision of the existing indicators for CE implementation in soil research and categorisation of indicators. (T5.6)	Existing data	pdf, doc, xls	100 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	LUKE, FiBL
Regulatory measures and policy recommendations to overcome the identified challenges / barriers of food processing residue streams usage and accelerate take-up of eco-innovative technologies and products dedicated to soil improvement. (T5.6)	Existing data	pdf, doc, xls	100 MB	Partner servers, project teams	Partner server, project Teams	Open after publication	LUKE, FiBL