



FOX – Innovative down-scaled food processing in a box

Data Management Plan

**D10.1
DIL**



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• Project Coordinator	• German Institute of Food Technologies (DIL)
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•	
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Table of Contents

<i>Introduction</i>	3
Open Research Data Pilot (ORD pilot)	3
Compliance with FOX Grant Agreement	4
<i>General Definition of the Data Management Plan</i>	4
<i>Frequently Asked Questions</i>	5
<i>Selection of repository</i>	6
<i>The Data Management Plan</i>	7
Data Summary	7
Specification of FOX datasets	8
FAIR data	9
Implementing the Data Management Plan & Outlook	10
<i>ANNEX Overview expected datasets</i>	12



Introduction

As nearly all participants of the FOX project are quite unexperienced with data management requirements of the European Commission (EC) this introduction part will give some general information about the Open Science approach of the EC. Main part of the text are taken over by official EC documents.

According to the political agenda of Commissioner Carlos Moedas (European Commissioner for Research, Science & Innovation) **Open Science** is an overall concept for transparent and comprehensible research. Next to this, Open Science is on high priority of the ECs' agenda to improve the impact of taxpayers money for research on best exploitation of research data, on validation, reproduction and re-use of data, and on advancement of research. We distinguish between:

- **Open Access to publications:** free of charge online access to scientific publications
- **Open Research Data:** free use and availability of all kind of digital data (e.g. raw data, metadata, etc) from research projects. Research data should be FAIR - findable, accessible, interoperable and reusable, to ensure it is soundly managed.

Data should be stored in online data bases, so called **repositories**.

This deliverable deals with Open Research Data and refers to digital available data from the FOX project. This could be facts and numbers which are gathered and recorded as basis for calculations, discussions, scientific publications or other data like:

- statistics as results from experiments and measurements in the lab or in pilot plants,
- observations during/in interviews, surveys, questionnaires,
- associated meta data.
- List of stakeholders having mutual interest in FOX results.

Open Research Data Pilot (ORD pilot)

To facilitate Open Science in the European Research Area, the EC "is running a flexible pilot under Horizon 2020 called the **Open Research Data Pilot (ORD pilot)**¹. The ORD pilot aims to improve and maximise access to and re-use of research data generated by Horizon 2020 projects and takes into account the need to balance openness and protection of scientific information, commercialisation and Intellectual Property Rights (IPR), privacy concerns, security as well as data management and preservation questions"². **FOX as project decided to participate in the ORD pilot.** A Data Management Plan (DMP) is required for all projects participating in this ORD pilot.

The ORD pilot **applies primarily to the data needed to validate results presented in scientific publications.** FOX partners are encouraged to provide open-access to other data on a voluntary basis if it is not sensitive or subject to protection, but this is not a requirement under the ORD Pilot.

¹ EU Open Data Portal, <https://data.europa.eu/euodp/en/data/dataset/open-research-data-the-uptake-of-the-pilot-in-the-first-calls-of-horizon-2020>

² H2020 Programme, Guidelines on FAIR Data Management in Horizon 2020. Version 3.0, 26 July 2016, https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf

Compliance with FOX Grant Agreement

Participants in the Open Research Data Pilot must comply with the legal requirements as outlined in Article 29.3 of the FOX Grant Agreement:

Article 29.3 Open access to research data

Regarding the digital research data generated in the action ('data'), the beneficiaries must:

(a) deposit in a research data repository and take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate — free of charge for any user — the following:

(i) the data, including associated metadata, needed to validate the results presented in scientific publications, as soon as possible;

(ii) not applicable;

(iii) other data, including associated metadata, as specified and within the deadlines laid down in the 'data management plan' (see Annex 1);

(b) provide information — via the repository — about tools and instruments at the disposal of the beneficiaries and necessary for validating the results (and — where possible — provide the tools and instruments themselves).

This does not change the obligation to protect results in Article 27, the confidentiality obligations in Article 36, the security obligations in Article 37 or the obligations to protect personal data in Article 39, all of which still apply.

As an exception, the beneficiaries do not have to ensure open access to specific parts of their research data under Point (a)(i) and (iii), if the achievement of the action's main objective (as described in Annex 1) would be jeopardised by making those specific parts of the research data openly accessible. In this case, the data management plan must contain the reasons for not giving access

General Definition of the Data Management Plan

"Data Management Plans (DMPs) are a key element of good data management. A DMP describes the data management life cycle for the data to be collected, processed and/or generated by a Horizon 2020 project. As part of making research data findable, accessible, interoperable and re-usable (FAIR), a DMP should include information on:

- the handling of research data during and after the end of the project
- what data will be collected, processed and/or generated
- which methodology and standards will be applied
- whether data will be shared/made open access and
- how data will be curated and preserved (including after the end of the project)."³

The European Commission has designed a template for a Data Management Plan (DMP) that should be applied by any Horizon 2020 project that produces, collects or processes research data. This deliverable bases on the EC template and is adopted to the overall FOX approach. It mainly contains questions to be

³ H2020 Programme, Guidelines on FAIR Data Management in Horizon 2020. Version 3.0, 26 July 2016, https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf

answered by FOX partners how we process which data. The template is inspired by FAIR as a general concept. FAIR means research data should be findable, accessible, interoperable and re-usable.

According to the requirements of the European Commission for Horizon 2020 project this DMP should be a living document that is updated periodically. Although the final version of this deliverable is due in Month 6, the DMP will be updated for the periodic evaluation in Month 18 and 36 as well as for the final report in Month 54. Updated versions of the DMP should consider any significant changes in the project, e.g. changes in the consortium, new data sets generated, decisions for new patents etc.).

Frequently Asked Questions

In this chapter we will gather all kind of questions that comes up with regard to data management in FOX. Some initial FAQs..

What is meant by ‘data’?

A data itself is just a figure, letter, code or word. Without a context any data is useless. Hence when we speak about data in this context we actually mean ‘dataset’. A dataset is a set of files containing research data and related documentation to give context to this research data and be sufficient to make the data re-useable.

What should a dataset include?

A dataset should comprise all files and documentation necessary to verify and/or reproduce the research. This includes:

- All data files (raw data, processed data, code etc.) used in the data collection, processing and analysis. Files that are irrelevant to verification and/or reproduction or that are too large for archiving can be excluded.
- Sufficient documentation to understand the production, provenance, processing, interpretation and relationships between the data files.

A dataset is often an excel file but can also be a word document, PDF or another format.

Which of my data do I have to “manage”?

Those data needed to validate results presented in scientific publications have to be mentioned in the DMP. Other data e.g. used for any other kind of publications or data that is not published at all, can but does not have to be mentioned in the DMP.

I do not have any data at the moment (in Month 6)!

The DMP is a living document. The first version of the DMP will list data expected in the FOX project. This means you should think about which data you are going to produce. For Month 18, 36 and 54 we will update the DMP.

Who is paying my efforts to deliver data to the DMP?

Data management efforts are eligible cost within FOX. Hence, the time (person months) you spent for data identification, processing, curation and storage are eligible personnel cost occurred in your work package. If additional repository costs occurred they might be eligible as well – check this with the coordinator.

Where to store the dataset?

Data should be stored in online data bases, so called repositories. The repository has to be open accessible. There are existing plenty of repositories to be used for the storage of scientific data as discussed below. We need to elaborate on this and we will suggest the best option to the FOX consortium.

If you belong to a large institution or company you might already have an own repository or library that you have to use to store your relevant data. Often, scientific journals also work with repositories, like Figshare (Springer, Wiley) or Mendeley data (Elsevier). You can or have to use these when you publish in their journals.

Due to the participation of FOX in the Open Research Data Pilot you might store your data(set) twice.

Other questions might come up later and the FAQs will be updated if necessary.

Selection of repository

Where to upload the open data of the FOX project? We need a repository that is open accessible and that allows the up and download of data.

The following list is a results of a desk research:

1. The website **re3data.org** gives an overview of existing research data repositories. Under the subject “Agricultural and food process engineering” 6 repositories are listed whereas in 3 cases data upload is not possible (closed database) respectively data upload is restricted in the remaining 3 repositories:

- CEpepDB: Peptide Database, Peptide Database of Central Food Technological Research Institute, <http://www.cftri.com/pepdb/> (closed)
- FAOSTAT, <http://www.fao.org/faostat/en/#home> (closed)
- IFPRI Dataverse, <https://dataverse.harvard.edu/dataverse/IFPRI> (restricted)
- EarthStat, <http://www.earthstat.org/> (closed)
- Agri-Environmental Research Data Repository Dataverse, <https://dataverse.scholarsportal.info/dataverse/ugardr> (restricted)
- Grey County Open Data, <https://maps.grey.ca/pages/open-data> (restricted)

None of this repository is of relevance for the FOX project.

Under keyword “food” 73 results have been found whereas data upload is only possible in 4 cases (29 closed databases, 38 restricted databases):

- Plant Organelles Database 3 (PODB3), <http://podb.nibb.ac.jp/Organelle/>
- California West Nile Virus Website, <http://westnile.ca.gov/>
- GISAID EpiFlu database, <https://www.gisaid.org/>
- Protein Data Bank in Europe, <https://www.ebi.ac.uk/pdbe/>

Under keyword “consumer” 12 results have been found whereas data upload is only possible in 1 case (4 closed databases, 8 restricted databases):

- TheDataWeb, <http://www.thedataweb.org/> - page is still under construction

However, none of them is of relevance for topics of FOX.

2. **OpenDOAR⁴** is a global directory of Open Access repositories and their policies. Like in the previous search in re3data.org thematic repository for FOX subjects (food, consumer) could be found. Under keyword “food” or “consumer” a couple of repositories of universities could be found as well as repository ‘foodbase’. The latter is an open access to publications (unpublished reports and working

⁴ <http://v2.sherpa.ac.uk/opensoar/>

papers) of the Food Standard Agency of UK. In all cases it is only possible to get access to data, not to upload and deposit data.

3. **ZENODO** is a 'catch-all repository' recommended by OpenAire. It is a general purpose repository that enables researchers, scientists, projects and institutions to share, preserve and showcase multidisciplinary research results (data, software and publications) that are not part of the existing institutional or subject-based repositories of the research communities. It is founded in the trustworthy CERN data centre.⁵

This repository seems most promising at the moment. OpenAire⁶ is an initiative of the European Commission. It provides different open science services and is initiated by a network of National Open Access Desks⁷ (NOADs).

4. **Food Cloud** recently started as European project (Start 10/2019) and is intended to support data management of food relevant data. Project objective is to set up a repository for this kind of data. The FOX coordinator is in contact with the Food Cloud coordinator (Paul Finglas, Quadrum Institut, Norwich, UK) to further exchange on information. However, this repository is under development and can most likely not be used within the FOX project lifetime. Food Cloud only works with already defined pilots. It might be however a good source for exchange on standards and best practice.

The Food Cloud website will be available beginning of 2020 (www.fns-cloud.eu).

Currently the most appealing option would be the repository ZENODO.

The Data Management Plan

None of the involved partners in FOX have up to now experience with data management. Although it might be an issue already especially for the universities and large industries in the project, practical knowledge is hardly existing on FOX working level.

Data Summary

Data collection and generation in FOX is necessary to meet the project objectives: developing small-scale food processing prototypes, to foresight the potential for this prototypes in current food systems and to understand options for new business models, to engage and understand consumer aspects in this regard, to assess different sustainable aspects including health aspects and to identify and approach stakeholders who are interested in the FOX approach.

To reach this goal we expect new datasets in

- the technical WPs 1-4 dealing with technical assessment of prototypes, chemical/physical/microbial analysis of food processed by the four different prototypes.
- In WP 6 dealing with consumer studies, consumer preferences and expectations
- In WP 7 dealing with assessment of environmental impact of FOX technologies, social and economic impact of these technologies on farm level or at local industries, as well as datasets assessing the health impact

⁵ <http://catalogue.openaire.eu/service/openaire.zenodo>

⁶ <https://www.openaire.eu/>

⁷ <https://www.openaire.eu/contact-noads>

- WPs 5, 8 and 9 will also create data sets however not numerical but mainly data regarding stakeholder involvement (contacts, affiliation)

Next to the generation of new data, for some FOX tasks we might re-use existing data, e.g. gathered from publications or external databases.

Specification of FOX datasets

A scheme was developed in an Excel sheet to capture an overview of expected datasets in FOX. This initial survey among all project partners respectively Work Package and Task Leaders was meant to sensitize for the topic and get first impression of datasets expected in FOX. The current list (Annex) is not exhausting and will be further developed, updated and complemented during the course of the project.

The following specification per dataset have been asked for in the Excel sheet (some fields offered the opportunity to enter free text, other fields offered a drop-down list of potential answers):

Identification of Dataset (all fields with free text option)

- Dataset No. (not added yet in pre-version of FOX dataset)
- Task Leader / main partner of data
- (related) Task No.
- Dataset name (Name of Task)
- Data subset (Description)

Description of Dataset (all by drop-down list)

Type of data

- Microbial
- Physical
- Chemical
- Biological
- Sensorial
- Descriptive
- Quantitative
- Qualitative
- Methodologies
- Epidemiological
- Meteorological
- Other

New/Existing data

- new
- existing
- New & existing

Method of data capture

- Experimental measurements
- External publications, papers
- External databases

- Consumer survey
- Expert interviews, questionnaires
- Various
- Other

Format of data capture

- Excel
- Word
- PDF
- Other

Expected Size

- < 2 MB
- > 2 MB
- unknown so far

Quality control procedures

- Certified methods (ISO, DIN, etc.)
- Scientifically describes method
- Established in-house method
- Internal review
- In-house software
- commercial available software
- None
- Other

Ethical issues? Y/N

- Yes
- No
- both

Type of access (open/ restricted)

- Open
- Restricted: data needed for publications
- Restricted: patent planned
- Restricted: sensitive human data (GDPR)
- Restricted: other sensitive data (IPR)
- Restricted: other

Data Utility- who outside of the project consortium might use the data? (fields with free text option)

FAIR data

Managing the data shall follow the principle of FAIR data:

- Making data **findable**, including provisions for metadata
- Making data openly **accessible**
- Making data **interoperable**
- Increase data **re-use** (through clarifying licences)

Further issues as data security, ethical issues and cost related issues need to be discussed within the consortium.

All these points need to be addresses and detailed answers are needed as addressed by the template provided by European Commission⁸

Implementing the Data Management Plan & Outlook

The overvall management of the data is under supervision of coordinator DIL. The Steering Committee will jointly decide which data sets will be made open available and where. So far a decision on that has not been taken.

Open access to datasets describing impact of different food processing parameters on food characteristics as numeric datasets are hardly available. Furthermore, harmonized standards are not present to make these datasets comparable and/or re-usable. An inventory in ZENODOO showed that now Excel-based datasets are available (open or restriceted access) dealing with food and proccessing technologies like pulsed-electrid fields, ultrasound, ohmic heating, high pressure or extrusion. Hence it would be worth to discuss the added-value to make these data avaialable as well the how (standards).

The following approach will be discussed and agreed by the Steering Committee:

- Based on the inventory of expected results, which FOX dataset should be make available by open access?
- Which standards do we define to describe a food processed related dataset?
- Which standards are available for other datasets especially in the area of life cycle assessment (WP7) and other kind of assessment, for consumer studies (WP6)?
- Where to store the dataset finally, is ZENODOO the archive we want?

Further aspects and agreement on the implementation of FAIR data principles for selected FOX data sets will be reported in the periodic reporting. The overall issues FAIR principles that are not yet but will be addressed in FOX are listed in Table1.

TABLE 1: Overall issues to be addressed to meet FAIR principles in FOX data management.

DMP component	Issues to be addressed
2.1. Making data findable, including provisions for metadata	• Outline the discoverability of data (metadata provision) • Outline the identifiability of data and refer to standard identification mechanism. Do you make use of persistent and unique identifiers such as Digital Object Identifiers? • Outline naming conventions used • Outline the approach towards search keyword • Outline the approach for clear versioning • Specify standards for metadata creation (if any). If there are no standards in your discipline describe what type of metadata will be created and how
2.2 Making data openly accessible	• Specify which data will be made openly available? If some data is kept closed provide rationale for doing so • Specify how the data will be made available

⁸ https://ec.europa.eu/research/participants/docs/h2020-funding-guide/cross-cutting-issues/open-access-data-management/data-management_en.htm#A1-template

	- Specify what methods or software tools are needed to access the data? Is documentation about the software needed to access the data included? Is it possible to include the relevant software (e.g. in open source code)? - Specify where the data and associated metadata, documentation and code are deposited - Specify how access will be provided in case there are any restrictions
2.3. Making data interoperable	- Assess the interoperability of your data. Specify what data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability. - Specify whether you will be using standard vocabulary for all data types present in your data set, to allow inter-disciplinary interoperability? If not, will you provide mapping to more commonly used ontologies?
2.4. Increase data re-use (through clarifying licences)	- Specify how the data will be licenced to permit the widest reuse possible - Specify when the data will be made available for re-use. If applicable, specify why and for what period a data embargo is needed - Specify whether the data produced and/or used in the project is useable by third parties, in particular after the end of the project? If the re-use of some data is restricted, explain why - Describe data quality assurance processes - Specify the length of time for which the data will remain re-usable
3. Allocation of resources	- Estimate the costs for making your data FAIR. Describe how you intend to cover these costs - Clearly identify responsibilities for data management in your project - Describe costs and potential value of long term preservation
4. Data security	Address data recovery as well as secure storage and transfer of sensitive data
5. Ethical aspects	To be covered in the context of the ethics review, ethics section of DoA and ethics deliverables. Include references and related technical aspects if not covered by the former
6. Other	Refer to other national/funder/sectorial/departmental procedures for data management that you are using (if any)

HISTORY OF CHANGES		
Version	Publication date	Change
1.0	x.x.2020	Initial version

ANNEX Overview expected datasets

Dataset No.	Task Leader / main partner of data	Task No.	Dataset name (Name of Task)	Data subset	Type of data	New/Existing data	Method of data capture	Format of data capture	Expected size	Quality control procedures	Data Utility- who outside of the project consortium might use the data?	Ethical issues?	Type of access (open/restricted)
	FALKENSTEIN	1.1.	Concept development and downscaling strategy	Investigation of downscaling possibilities for spiral filter press unit and pulsed electric field unit. Gathering data concerning already existing mobile food processing units available on the market and their process design. Collecting data regarding technical characteristics of other machines, needed for the process line. Investigating what sort of mobile unit (container, truck, trailer, etc.) would be the most suitable solution considering fruit extraction and preservation technologies being used.	Other	New & existing	Other	Other	> 2 MB	None	Companies working in area of fruit and vegetable processing as well as companies working in food industry process design	No	Open
	KOB	1.2	feasibility and storage	it is not sure, but maybe, to calculate the kinetik of juice prodction in cooperation with WP2	Quantitative	new	Experimental measurements	Excel	unknow so far	Scientifically describes method	Scientific community, companies working on the development of fast screening methods	No	Restricted: data needed for publications
	DIL	1.2.	Development of small-scale juice production unit	Investigation of other electrode materials (graphite, platinum, nickel, etc.) suitable for PEF application with aim of minimizing electrolysis reactions. Testing electrode materials in model and real food matrices. The optimization of the treatment chamber and assembly of the whole small-scale Pulsed Electric Field (PEF) unit. Examining mechanical and electrical functionality of the small-scale PEF unit as well as correct operation of the PEF control system.	Other	new	Other	Other	> 2 MB	None	Companies working in area of fruit and vegetable processing as well as companies working in food industry process design	No	Open
	KOB	1.3	feasibility, storage quality, validity	1. quality parameters, for example, sugar, acid, colors, phenol, aroma, and so on. 2. effectiveness of different packaging on quality parameters. 3. validity through the evaluation of quality parameters	Quantitative	new	Experimental measurements	Excel	unknow so far	Scientifically describes method	Scientific community, companies working on the development of fast screening methods	No	Restricted: data needed for publications

Dataset No.	Task Leader / main partner of data	Task No.	Dataset name (Name of Task)	Data subset	Type of data	New/Existing data	Method of data capture	Format of data capture	Expected size	Quality control procedures	Data Utility- who outside of the project consortium might use the data?	Ethical issues?	Type of access (open/restricted)
	KOB	1.3.		Investigation of functionality and practicality of the small-scale PEF unit, firstly with model food system and then after optimization with selected fruits. Proven functional prototype should be tested for feasibility and practicability at the farm in Bodensee region in Germany. Product safety, shelf-life study and quality parameters should be investigated.	Other	new	Other	Excel	< 2 MB	None	Scientific community, companies working in area of fruit and vegetable processing	No	Open
	WULS-SGGW	2.1		Effectiveness of the pre-treatment depending on type of pre-treatment and raw material: Parameters: mechanical parameters and/or electrical properties and/or microscopic images	Quantitative	new	Experimental measurements	Excel	< 2 MB	Scientifically describes method	Scientific community, companies working on the development of fast screening methods	No	Restricted: data needed for publications
	WULS-SGGW	2.1		Results of the drying performed using different method and enhanced by selected pre-treatments: - kinetics determination (drying curves, water - quality assessment (water activity and moisture content, colour, rehydration properties, hygroscopic properties, mechanical and acoustic properties related to texture, chemical properties, including bioactive compounds and antioxidants, and sensory properties)	Quantitative	new	Experimental measurements	Excel	unknown so far	Scientifically describes method	Scientific community, companies working on drying of food	No	Restricted: data needed for publications
	DIL/CEDRUS	T2.2	Development of mobile, modular processing units: pre-treatment and drying	Project documentation and data from Task 2.1	Descriptive	New & existing	Various	Other	unknown so far	Internal review	unknown	No	Restricted: data needed for publications
	VUPP	2.3.		Quality assessment of fruit (water activity, colour, rehydrations properties, hygroscopic properties, mechanical and acoustic properties, chemical properties like bioactive compounds concentration, antioxidant activity, sensorial analysis) dried in developed unit	Quantitative	new	Experimental measurements	Excel	unknown so far	Scientifically describes method	Scientific community, companies working on the development of fast screening methods	No	Restricted: data needed for publications
	CTCPA/AINIA	3.1	Characterization of the fresh-cut fruits and vegetables selected for the project	Main deterioration parameter and breathing rate of the fresh-cut fruits and vegetables selected for the project	Chemical	New & existing	Experimental measurements	Word	< 2 MB	Established in-house method	Scientific community, companies working on fresh-cut products	No	Restricted: data needed for publications

Dataset No.	Task Leader / main partner of data	Task No.	Dataset name (Name of Task)	Data subset	Type of data	New/Existing data	Method of data capture	Format of data capture	Expected size	Quality control procedures	Data Utility- who outside of the project consortium might use the data?	Ethical issues?	Type of access (open/restricted)
	CTCPA/AINIA	3.1	Definition of the pre-treatment for obtaining fresh-cut fruits and vegetables	Sustainable pre-treatments available to be performed in a mobile system for the 13 fresh-cut fruits and vegetables selected for the project	Descriptive	New & existing	External publications, papers	PDF	> 2 MB	Established in-house method	Scientific community, companies working on fresh-cut products processing	No	Restricted: data needed for publications
	CTCPA/AINIA	3.1	Definition of post-treatments for improving the shelf life of fresh-cut fruits and vegetables	Innovative post-treatments available to be performed in a mobile system for increasing the shelf life of fresh-cut fruits and vegetables	Chemical	new	Various	Word	< 2 MB	Established in-house method	Scientific community, companies working on fresh-cut products processing	No	Restricted: data needed for publications
	CTCPA/KOB	3.1.	storage quality and shelf-life	under different storage conditions (MAP, CA, Cold storage and so on) and different packaging materials, the following parameters will be analysed: 1. ethylene production and respiration of sliced/cut vegetable and fruit during ripening, 2. quality parameters, sugar, acid, vitamin C, aroma and so on. 3. permeability of different packaging materials, 4. Evaluation of quality	Quantitative	new	Experimental measurements	Excel	unknown so far	Scientifically describes method	Scientific community, companies working on the development of fast screening methods	No	Restricted: data needed for publications
	AINIA/KOB	3.2.	storage quality and shelf-life	under different storage conditions (MAP, CA, Cold storage and so on) and different packaging materials, the following parameters will be analysed: 1. ethylene production and respiration of sliced/cut vegetable and fruit during ripening, 2. quality parameters, sugar, acid, vitamin C, aroma and so on. 3. permeability of different packaging materials, 4. Evaluation of quality	Quantitative	new	Experimental measurements	Excel	unknown so far	Scientifically describes method	Scientific community, companies working on the development of fast screening methods	No	Restricted: data needed for publications
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	AINIA/KOB	3.4.	storage quality and shelf-life	under different storage conditions (MAP, CA, Cold storage and so on) and different packaging materials, the following parameters will be analysed: 1. ethylene production and respiration of sliced/cut vegetable and fruit during ripening, 2. quality parameters, sugar, acid, vitamin C, aroma and so on. 3. permeability of different packaging materials, 4. Evaluation of quality	Quantitative	new	Experimental measurements	Excel	unknown so far	Scientifically describes method	Scientific community, companies working on the development of fast screening methods	No	Restricted: data needed for publications
	AINIA	3.2	Development of a sustainable and convenient flexible packaging for fresh-cut fruits and vegetable mixtures	Bibliographic information about bioplastics, permeation properties and microperforating technology for polymeric films	Descriptive	existing	External publications, papers	PDF	> 2 MB	Internal review	Scientific community, companies working on food packaging	No	Restricted: data needed for publications
	AINIA	3.2	Development of a sustainable and convenient flexible packaging for fresh-cut fruits and vegetable mixtures	Characterization of flexible microperforated packaging bioplastics materials	Physical	new	Experimental measurements	Word	< 2 MB	Certified methods (ISO, DIN, etc.)	Scientific community, companies working on food packaging	No	Restricted: data needed for publications
	AINIA	3.2	Development of a sustainable and convenient flexible packaging for fresh-cut fruits and vegetable mixtures	Samples of bioplastics flexible packaging for fresh-cut fruits and vegetable mixtures	Descriptive	new	Other	Word	< 2 MB	Internal review	Scientific community, companies working on food packaging	No	Restricted: data needed for publications
	AINIA	3.2	Development of a sustainable and convenient rigid packaging for fresh-cut fruits and vegetable mixtures	Characterization of rigid polymeric packaging systems with a microperforated lid	Physical	new	Experimental measurements	Word	< 2 MB	Certified methods (ISO, DIN, etc.)	Scientific community, companies working on food packaging	No	Restricted: data needed for publications
	AINIA	3.2	Development of a sustainable and convenient rigid packaging for fresh-cut fruits and vegetable mixtures	Samples of sustainable and convenient rigid packaging for fresh-cut fruits and vegetable mixtures	Descriptive	new	Other	Word	< 2 MB	Internal review	Scientific community, companies working on food packaging	No	Restricted: data needed for publications

Dataset No.	Task Leader / main partner of data	Task No.	Dataset name (Name of Task)	Data subset	Type of data	New/Existing data	Method of data capture	Format of data capture	Expected size	Quality control procedures	Data Utility- who outside of the project consortium might use the data?	Ethical issues?	Type of access (open/restricted)
	AINIA	3.2	Development of a sustainable, thermal isolating material for a secondary packaging	Bibliographic information about recycled cork properties	Descriptive	existing	External publications, papers	PDF	> 2 MB	Internal review	Scientific community, companies working on food packaging	No	Restricted: data needed for publications
	AINIA	3.2	Development of a sustainable, thermal isolating material for a secondary packaging	Characterization of sustainable, thermal isolating material for a secondary packaging	Physical	new	Experimental measurements	Word	< 2 MB	Certified methods (ISO, DIN, etc.)	Scientific community, companies working on food packaging	No	Restricted: data needed for publications
	AINIA	3.2	Development of a sustainable, thermal isolating material for a secondary packaging	Samples of a sustainable, thermal isolating material for a secondary packaging	Descriptive	new	Other	Word	< 2 MB	Internal review	Scientific community, companies working on food packaging	No	Restricted: data needed for publications
	AINIA	3.3	Design of the mobile system for processing and packaging the fresh-cut fruits and vegetables products	List of suppliers and pilot plant equipments for fresh-cut processing and for packaging	Descriptive	existing	Other	PDF	> 2 MB	Internal review	Scientific community, companies working on fresh-cut products	No	Open
	AINIA	3.3	Design of the mobile system for processing and packaging the fresh-cut fruits and vegetables products	Plans and working conditions for the mobile system	Descriptive	new	Various	Word	< 2 MB	Internal review	Scientific community, companies working on fresh-cut products	No	Restricted: data needed for publications
	AINIA	3.4	Evaluation of the processes and packaging systems developed	Results from the evaluation of the processes and packaging systems developed	Chemical	new	Experimental measurements	Word	< 2 MB	Certified methods (ISO, DIN, etc.)	Scientific community, companies working on fresh-cut products	Yes	Restricted: sensitive human data (GDPR)
	AINIA	3.4	Evaluation of the processes and packaging systems developed	Workshops for the demonstration of the processes and packaging systems developed	Descriptive	new	Various	Word	> 2 MB	Internal review	Scientific community, companies working on fresh-cut products	No	Restricted: data needed for publications
	WR	4.1.											
	WR	4.2.											
	WR	4.3.											
	WR	4.4.											
	Foodtech	4.5	processing pathways for processing of plant based side streams	different processing pathways will be discussed depending on raw material and end product. Data set on technology and site streams	Descriptive	New & existing	Experimental measurements	Excel	unknown so far	Other	unknown	No	Restricted: other
	Foodtech	4.5	food safety, quality and Shelf life	data on shelflife, quality of the end product and quality, depending on the end product different analytical and microbiological test will be done.	Qualitative	New & existing	Experimental measurements	Excel	unknown so far	Scientifically describes method	unknown	no	Restricted: data needed for publications

Dataset No.	Task Leader / main partner of data	Task No.	Dataset name (Name of Task)	Data subset	Type of data	New/Existing data	Method of data capture	Format of data capture	Expected size	Quality control procedures	Data Utility- who outside of the project consortium might use the data?	Ethical issues?	Type of access (open/restricted)
	Fraunhofer	5.1	Trends	50 Trends influencing Europe's food sector	Qualitative	New & existing	Various	PDF	< 2 MB	Other	food related audience	No	Open
	Fraunhofer	5.1	Framework Scenario Workshop	Contact details of stakeholders	Descriptive	New & existing	Various	Excel	< 2 MB	Internal review	other initiatives dealing with the same topic	Yes	Restricted: sensitive human data (GDPR)
	Fraunhofer	5.1	Framework Scenario Workshop	Documentation	Qualitative	new	Expert interviews, questionnaires	Other	> 2 MB	Established in-house method	food related audience	No	Open
	Fraunhofer	5.2	Food Circle Scenario Workshops	Contact details of stakeholders	Descriptive	New & existing	Various	Excel	< 2 MB	Internal review	other initiatives dealing with the same topic	Yes	Restricted: sensitive human data (GDPR)
	Fraunhofer	5.2	Food Circle Scenario Workshops	Documentation	Qualitative	new	Expert interviews, questionnaires	Other	> 2 MB	Established in-house method	food related audience	No	Open
	Fraunhofer	5.4	Focus Groups robustness check	Contact details of stakeholders	Descriptive	New & existing	Various	Excel	< 2 MB	Internal review	other initiatives dealing with the same topic	Yes	Restricted: sensitive human data (GDPR)
	Fraunhofer	5.4	Focus Groups robustness check	Documentation	Qualitative	new	Expert interviews, questionnaires	Other	> 2 MB	Established in-house method	food related audience	No	Restricted: other
	AU	6.1.											
	EUFIC	6.2.											
	EUFIC	6.3.											
	AU	6.4.											
	KU Leuven	7.1.											
	KU Leuven	7.2.											
	NUTRIS	7.3.											
	DIL	8.1.	Small Scale Food Processors Interest Goutp	List of stakeholders	Descriptive	new	Expert interviews, questionnaires	Excel	< 2 MB	internal review	other projects dealing with innovation in the food sector	No	Restricted: other

Dataset No.	Task Leader / main partner of data	Task No.	Dataset name (Name of Task)	Data subset	Type of data	New/Existing data	Method of data capture	Format of data capture	Expected size	Quality control procedures	Data Utility- who outside of the project consortium might use the data?	Ethical issues?	Type of access (open/restricted)
	KU Leuven	8.2.											
	WR	8.3.											
	DIL	8.4.											
	EUFIC	8.5.											
	EUFIC	9.1.	Communication and Dissemination Plan	Online dissemination spreadsheet	Descriptive	new	Various	Excel	> 2 MB	Internal review	Everyone with the link to the online spreadsheet	No	Restricted: data needed for publications
	EUFIC	9.2.	Development of project identity and website	Contact details of newsletter subscribers	Descriptive	new	Various	Excel	> 2 MB	commercial available software	EUFIC staff with Mailchimp log in details	No	Restricted: sensitive human data (GDPR)
	EUFIC	9.2.	Development of project identity and website	Contact details of European Interest Group SSFP	Descriptive	new	Various	Excel	> 2 MB	commercial available software	EUFIC staff with Mailchimp log in details	No	Restricted: sensitive human data (GDPR)
	EUFIC	9.2.	Development of project identity and website	Pictures on the website	Descriptive	New & existing	Various	Other	> 2 MB	commercial available software	General public - the project website will be online until 3 years after the project ends	No	Restricted: sensitive human data (GDPR)
	EUFIC	9.3.1	Communication to general public/consumers	Pictures on Twitter	Descriptive	New & existing	Various	Other	> 2 MB	commercial available software	General public	No	Restricted: sensitive human data (GDPR)
	EUFIC	9.3.1	Communication to general public/consumers	Pictures and ideas on Twitter	Descriptive	New & existing	Various	Other	> 2 MB	commercial available software	General public	No	Restricted: sensitive human data (GDPR)
	WR	9.4.											
	EUFIC	9.5.	Organisation of an open multistakeholder conference	Contact details of attendees	Descriptive	new	Various	Excel	> 2 MB	Established in-house method	EUFIC staff with access to the companies server (until Nov 2026)	No	Restricted: sensitive human data (GDPR)