Circular and Bio-Based Solutions for the Ultimate Prevention of Plastics in Rivers Integrated with Elimination And Monitoring Technologies

Deliverable D7.3
Data Management Plan

Deliverable Information

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Disclaimer

Executive summary

The Data Management Plan (DMP) of the UPSTREAM project outlines how data emerging from the project will be handled during the lifetime of the project and after it is completed.

Horizon Europe seeks to ensure beneficiaries make their research data findable, accessible, interoperable, and reusable (FAIR), to ensure it is soundly managed. Good research data management is not a goal in itself, but rather the key conduit leading to knowledge discovery and innovation, and to subsequent data and knowledge integration and reuse.

Task 7.3, *Data Management Plan*, (duration M1-M48) is led by INEUVO with all partners participating. INEUVO is the lead in the development and population of the DMP. The plan maps out the data that will be generated, processed and held during the project by each partner. DMPs are a key element of good data management within collaborative research projects.

The DMP describes the data management life cycle for the data to be collected, processed and/or generated within the project. As part of making research data 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).

Deliverable Keywords: UPSTREAM, data management, security, database, findable, accessible, interoperable, reusable, open access, GDPR.

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Table of Abbreviations

Abbreviation	Definition
AITIIP	Fundacion Aitiip
CA	Consortium Agreement
CAP	CAP Holding SpA
CDM	Communication and Dissemination Manager
DMP	Data Management Plan
DoA	Description of Action
EC	European Commission
ECO	Ecociudad Zaragoza Sociedad Anonima
EDEN	Eden Tech
EU	European Union
GA	Grant Agreement
INEUVO	Ineuvo Limited
L	Litter
LEITAT	Acondicionamiento Tarrasense Associacion
LEQ	Le Quere
MMC	Mixed microbial culture
MP	Microplastic
MS	Microsoft
NIC	Kemijski Institut
NOVAID	Nova ID FCT- Associacao Para a Inovacao e Desenvolvimento da FCT
NVMT	Novamont SpA
P	Plastic
PDM	Partner Data Manager
TECNO	Nuevas Tecnologias Para el Desarrollo de Packaging y Productos Agroalimentarios con Componente Plastica SL
UKRI	UK Research and Innovation
UNSPMF	University of Novi Sad Faculty of Sciences
UoA	Panepistimio Aigaiou (University of the Aegean)
VITO	Vlaamse Instelling Voor Technologisch Onderzoek N.V.
VRE	Van Remmen UV Techniek BV
W30	Wasser 3.0 GmbH
WP	Work package
WPL	Work package leader
WWTP	Wastewater treatment plant
ZIN	Asociacion Cluster Para el USO Eficiente Del Agua- Zinnae

1. Introduction

1.1. About this document

This document (D7.3), based on the EC guidelines, provides a template for the DMP that will be regularly updated and reviewed as a living document throughout the lifetime of the project. The DMP will be continuously reviewed and updated at least annually during the General Assembly meetings.

This document, along with the DMP appendix, seeks to capture and describe what data is collected, processed or generated and following what methodology and standards. Also to be described are whether and how this data is shared and/or made open, whether and how it will be exploited or made accessible for verification and re-use and how it will be curated and preserved.

The UPSTREAM project plans to collect, generate and manage data from and in the following countries:

- Belgium
- France
- Germany
- Greece
- Italy
- Netherlands
- Portugal
- Republic of Serbia
- Spain
- Slovenia
- UK

The required information to populate the DMP will be collected from partners using an accompanying Excel spreadsheet template and updated, at a minimum, in time with the periodic evaluations/assessments of the UPSTREAM project.

Types of data that are managed by the DMP are likely to include, but not limited to:

- Qualitative research data
- Quantitative research data
- Digital Imaging and Video data
- Data about research participants, their experiences and perceptions
- Scientific data and documentation

All non-confidential scientific data that will be produced shall be deposited in open data repositories, following the FAIR (Findability, Accessibility, Interoperability and Reusability) guiding principles for data management and stewardship, such that it is possible for third parties to access, mine, reproduce and disseminate them free of charge. All scientific publications related to the project will be published under "Gold" or "Green" open access and Creative Commons Attribution (CC BY) license standards, and the related research data will be uploaded to public databases that can provide persistent identifiers.

This document also elaborates on data reuse and the relations to ethics and data security strategies for licensing the final scientific outputs.

1.2. Key principles

The design, implementation and update of the DMP within UPSTREAM are coordinated by WP7 and are structured around the following key points:

1) This DMP has been prepared by taking into account the template of the Horizon Europe Programme ("Data management plan template v1.0"[1]). The elaboration of the DMP will allow the UPSTREAM consortium members, including associated partners, subcontractors and third parties offering in-kind contributions to the action, to address all issues related with ethics and data protection. This document is an official deliverable (D7.3), due in Month 6, but it will be a living document throughout the project. This initial version will evolve depending on significant changes arising and the periodic reviews at reporting stages of the project.

2) The UPSTREAM partners will comply with the requirements of Regulation (EU) 2016/679 and of the Council of 27 April 2016 on the protection of natural persons regarding the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (General Data Protection Regulation).

3) Concerning the types of data, storage, confidentiality, ownership, management of intellectual property and access: Procedures that will be implemented for data collection, storage, access, sharing policies, protection, retention and destruction will be in line with the EU standards as described in the Grant Agreement (GA) (GAP-101112877), particularly Article 13, Confidentiality and security; Article 14, Ethics and values; Article 24 Agreement on background; Article 25, Access Rights to Background; Article 15, Data protection; Article 16, Intellectual property rights (IPR) – Background and results – access rights and rights of use; Article 19, General information obligations; Article 20, Record-keeping and "Annex I – Description of Work" of the Grant Agreement. The following guidelines are thus to be implemented:

- This DMP details what data the project will generate and manage, whether and how it will be exploited or made accessible for verification and re-use, and how it will be curated and preserved.

- As part of the signed Consortium Agreement, ownership of key background and expected foreground knowledge (IPR, data, etc.) of all involved parties has been defined.

- The consortium will deposit all applicable data in a data repository, setup and maintained by AITIIP (Project Coordinator and host of the UPSTREAM MS Teams and SharePoint sites) and NIC (host of the project website and dashboard). AITIIP will take measures to make it possible for third parties to access, mine, exploit, reproduce and disseminate — free of charge — the following categories of data:

    o The data, including associated metadata, needed to validate the results presented in scientific publications

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[1] https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/temp-form/report/data-management-plan_he_en.docx

- o Data collected during the project, after anonymization and including associated metadata, as specified in the DMP
- o Data generated during the project, including associated metadata, as specified in the Consortium Agreement and in the DMP
- o Public project reports and public deliverables
- o All dissemination-related material

▪ All data will be made available in XML format and/or in text/CSV (comma separated) format.

▪ Data in databases will be accompanied by an open schema and fully documented specifications to allow full and unrestricted accessibility.

▪ The UPSTREAM consortium will conform to the DMP template and will make every effort through the project's dissemination activities to make this content findable, accessible, intelligible, and reusable (FAIR) by all interested stakeholders (especially by other EU related projects).

▪ A searchable index and an information classification system of all relevant datasets will be developed, applicable to all cases and data types, while at the same time respecting all relevant IPR and copyright requirements pertaining to these datasets.

▪ Reviewed and updated versions of the DMP will be made available once a year throughout the duration of the project to fine-tune it according to the data generated and to the data uses that will be identified by the consortium.

1.3. Related Policies and Context

The present DMP complies with and has been developed according to the following EU policies regarding Research Data and Data Protection:

▪ The *General Data Protection Regulation ("GDPR")*
▪ The *Open Access Mandate ("OAM")*

1.3.1. General Data Protection Regulation (GDPR)

The **General Data Protection Regulation (GDPR)** (Regulation (EU) 2016/679) is a regulation by which the European Parliament, the European Council and the European Commission intend to strengthen and unify data protection for all individuals within the European Union (EU). It also addresses the export of personal data outside the EU. The primary objectives of the GDPR are to give citizens and residents back control of their personal data and to simplify the regulatory environment for international business by unifying the regulation within the EU. GDPR replaced the data protection directive (officially Directive 95/46/EC) from 1995. The regulation was adopted on 27/4/2016. It has been applied from 25/5/2018.

1.3.2. Open Access Mandate

According to article 29.2 of the Model Grant Agreement, all projects receiving Horizon Europe funding are required to make sure that any peer-reviewed journal article they publish is openly accessible, free of charge. All Horizon Europe projects must provide Open Access (OA) to all peer-reviewed scientific publications that stem from project activities, immediately or otherwise within 6 months of publication where publisher embargoes apply. Non-compliance can lead to a grant reduction and potential sanctions.

Related information can be found in:

- http://ec.europa.eu/research/openscience/index.cfm?pg=openaccess
- https://www.openaire.eu/intro-researchers
- https://www.openaire.eu/Horizon Europeopenaccess/

2. Data summary

The UPSTREAM project will mainly generate new data, albeit based on previous experiments and knowhow of the project partners. This is a result of the project activities mostly involving either new technologies or significantly scaled-up systems that will be developed and implemented within the project. In the case of benchmarking with existing technologies, the data will still be generated within the project to ensure consistency of the experimental conditions and replicability.

The tasks related to the techno-economic and life cycle assessments will re-use data from literature and database sources when the specific required values are either not generated in the project, or are generated at a later time than when needed for the assessments (with the assessments then updated as the project generated data becomes available).

The data (databases, datasets, etc.) that are required for UPSTREAM will be used to:

- Understand participants experiences and perceptions
- Fulfil data requirements and reporting for surveying, monitoring and assessment of litter (L), plastic (P) and microplastics (MPs)
- Use satellite imaging and drone data for L and P detection
- Use fluorescent staining and microscopic and spectrophotometric rapid screening, detection and monitoring
- Test and evaluate biodegradable polymers and bioplastic alternatives to prevent L, P and MPs
- Test and evaluate mixed microbial cultures (MMCs) with organic wastes for biodegradable polymers production and their use as alternative biobased packaging materials
- Test and evaluate L, P and MP prevention and remediation technology using Membranes, Daphnia waterfleas, Microfluidics, Advanced Oxidation, Agglomeration and collection platforms
- Test and evaluate characterisation, fractionation, pretreatment, transformation of recovered chemicals into recycled isolated materials or their bioconversion into biodegradable polymers
- Set up/optimise/demonstrate the new biotechnological processes and large scale pilot plants
- Test and evaluate new product formulations, materials and processes at large demonstration scale
- Evaluate the safety, functionality, and technical properties of bio-based ingredients, chemicals and prototypes
- Develop predictive models and deep learning algorithms
- Test and evaluate PHA, biopolymer and bioplastics formulations and processing conditions to produce prototypes of new sustainable materials.

- Test and evaluate the biopolymers to meet the requirements established by TEC and NVMT for mechanical properties to select the preliminary formulations
- Test and evaluate technology for the elimination and removal of MPs from WWTPs and rivers at demonstration scale
- Develop, test and evaluate digital value chain modelling interfaces
- Establish cross-platform dashboard management for multi-user engagement and holistic impact assessment
- Address the current regulatory requirements (i.e. REACH) or set up new regulatory standards
- Demonstrate the circularity and sustainability of the innovative products, processes and technologies
- Increase the awareness of consumers, citizens, industry, government and policymakers on sustainable by design and bio-based products and innovative solutions to prevent, eliminate and recover L, P and MP through dissemination plans
- Speed up market uptake and replication activities and the implementation at industrial level of the sustainable, circular business models, bio-based products, processes and technologies

A categorization of this data is as follows:

A. Type of data based on its content:

- Materials / Scientific Data
- Participant Data
- Evaluation Data

B. Type of data, based on its data collection /sources:

- Workshop Data
- Panel / Questionnaire Data
- Laboratory Data
- Proprietary Data
- Trial Data
- Simulation Data
- Communication Data

Related processes are:

- Data collection and storage
- Data manipulation and management
- Data analysis

Table 1 below summarizes the matrix that will be used to collect information regularly during the lifetime of the project on the types of available datasets, categories, its sources and related processes with respect to all the UPSTREAM partners.

Table 1 Data availability with respect to UPSTREAM partners

Type of Data	AITIIP	LEITAT	VITO	NIC	NOVAID	UNSPMF	UoA	W30	VRE	TECNO	EDEN	LEQ	NVMT	ZIN	ECO	CAP	INEUVO	UoB	UKCEH	TOC	DWS	SVT
Workshop Data																						
Panel Data																						
Laboratory Data																						
Proprietary Data																						
Trial Data																						
Simulation Data																						
Communication Data																						

3. FAIR data

The following section outlines key elements to consider in respect to the data collected as part of UPSTREAM and when completing the DMP template.

In general terms, UPSTREAM research data should be "F.A.I.R." that is

- Findable
- Accessible
- Interoperable
- Re-usable

These principles precede implementation choices and do not necessarily suggest any specific technology, standard or implementation-solution. The European Commission recognizes that there are good reasons to keep some or even all research data generated in a project closed.

The DMP explains which data can be shared and under what terms and conditions, clearly separating legal and contractual reasons from voluntary restrictions. In a multi-beneficiary project like UPSTREAM, it is also possible for specific beneficiaries to keep their data closed, if relevant provisions are made in the consortium agreement and are in line with the reasons for opting out.

3.1. Making data findable, including provisions for metadata

Metadata is structured information which supports discovery, re-use and long-term storage of the data. There are three main types of metadata: descriptive, administrative, and structural.

- **Descriptive metadata** enables discovery, identification, and selection of resources. It can include elements such as title, author, and subjects.
- **Administrative metadata** facilities the management of resources. It can include elements such as technical, preservation, rights, and use.
- **Structural metadata**, generally used in machine processing, describes relationships among various parts of a resource, such as chapters in a book.

The following points give a preliminary assessment of the metadata expected within the project and will be discussed in detail with the partners as the project progresses. Should updates be necessary, this document will be updated and a new version published.

- Datasets are to be in English.

- The following format is proposed for the naming of the files/documents:
  Date(yyyymmdd)_UPSTREAM_Partner_Filename_Versionnumber
  (e.g. 20230730_UPSTREAM_INEUVO_ D7.1 Management tools _V1.docx)

- The metadata will contain the following information along with the datasets:
  - Keywords to ease the discovery and potential re-use of the data
  - Creator of the data (project partner and the responsible person)
  - Data collection period

o Methods of data collection (e.g. source)
o Additional information on the abbreviations used
o Confidentiality information and dissemination rules of the metadata

3.2. Making data accessible

3.2.1. Repository

UPSTREAM will deposit its scientific results in an institutional repository that will be selected among the following:

- https://www.openaire.eu/participate/deposit-publications-data
- https://zenodo.org/
- https://www.eudat.eu/
- https://www.emodnet.ec.europa.eu/

To ensure the safety of the data, AITIIP will use its local file servers and periodically create backups. All other relevant documentation created during the project will be archived and preserved in the UPSTREAM SharePoint repository.

3.2.2. Data

The only data which will not be made openly accessible will be data which contains personally identifiable information (e.g. individual evaluation forms), data that supports deliverables that are kept confidential which will produce foreground knowledge that will result in intellectual property rights protection such as patent filing, protected know-how, protected algorithms and data identified as being commercially sensitive. All data sharing will follow the provisions set out in the project Consortium Agreement.

Data will be published using standard file formats (txt, pdf, csv, etc.). All data will be accessible using standard tools. Software required to access the data should be made available, but it is not seen as being a requirement. Should it be needed, the required open source to access and analyze the data will be provided.

3.3. Making data interoperable

The data produced within UPSTREAM are made interoperable by converting them to non-proprietary open formats or proprietary widely used formats, compliant with available software applications and facilitating the circulation and critical analyses among the partnership. In addition, harmonisation of the presentation data (when disclosed in accordance with the project GA and CA) obtained by EU funded projects will be completed in order to maximise their impact.

Data formats: Data will be structured using widely accepted formats and schemas, such as JSON and XML and metadata will be defined to provide context and meaning to the data, ensuring that different systems and users will comprehend. Data vocabularies and version control will support interoperability by ensuring data quality and consistency. The vocabulary and the format will be set up in accordance with the EU standards to facilitate the harmonisation and exploitation of the information derived by EU funded projects will be adopted for all the relevant data obtained with UPSTREAM by all of the partners.

The vocabulary will be common for the same type of data in accordance with the international regulation on Units/ Methods/ Regulations and harmonised among the partnership using the accepted formats agreed upon by all of the partners. These vocabularies and formats will be established at the next Steering Committee Meeting.

Data exchange: To enable transparent data sharing, UPSTREAM will work on embracing open and standardized APIs and data exchange protocols like RESTful APIs. These developments will be prioritized at the interface between data exchanging WPs and the interface between UPSTREAM and external stakeholders and other data users.

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

The exploitation of the data, methodologies and patents will be regulated according to, shared, and ratified among the partnership Consortium Agreement (CA) and included IPR rules. Also, the data disclosure to Third Parties will be regulated by a standard Non-Disclosure Agreement (NDA), which will also be agreed upon by the partnership.

The timetable on the data availability will be established according to the project GA, CA and NDA, all agreed upon and signed by the partnership. Also, the strategy of exploitation of the data after the end of the project is agreed among the whole UPSTREAM partnership, even if proposed by a specific committee.

The embargo and the timetable on the data availability will be established according to the GA, CA and NDA agreed and signed by the partnership. The drafts of NDAs and Material Transfer Agreements (MTA) will be discussed during the first Steering Committee Meeting (Barcelona, March 2024) and are expected to be ready shortly after this meeting.

AITIIP is in charge of the Quality Assurance Procedures and INEUVO is supporting to define the procedures further, providing all data on samples, methodologies, and technologies, as requested.

4. Other research outputs

The other expected research outputs (other than data sets) include digital videos, news articles and newsletter to disseminate the project outputs, such as the technology demonstrations. All dissemination materials will be shared through the project's communication channels (mailing list, social media, etc.) as well as being made available on the project website. For each additional type of output, a data management strategy will be defined and agreed upon by the partners.

5. Allocation of resources

No costs to share the data on the UPSTREAM MS Teams shared site are foreseen, while eventual costs related to data dissemination and publication are foreseen and eligible according to the GA. The costs of dissemination will be related to the type and number of their disclosure in agreement with the GA, CA, IPR and NDA.

The long-term preservation of the data will be performed in agreement with guidelines established by the long-term exploitation board lead by INEUVO/AITIIP and secured in a suitable data repository.

5.1. Allocation of responsibilities

The relevant people and groups involved in data management for UPSTREAM are:

- The Project Coordinator (Ana Maria Lopez Sabiron, AITIIP)
- Scientific & Technical Manager (Narinder Bains, INEUVO)
- Research staff designing research, collecting, processing and analysing data
- Laboratory or technical staff generating metadata and documentation
- A database administrator (to be determined following the next Steering Committee Meeting)
- External contractors involved in data collection, data entry, transcribing, processing or analysis
- Support staff managing and administering research and research funding, providing ethical reviews and assessing Intellectual Property Rights
- Institutional IT services staff providing data storage, security and backup services (AITIIP, NIC, INEUVO, partner IT depts.)
- External data centres or web archives that facilitate data sharing

Each partner will designate a person ("*Partner Data Manager*", PDM), who will be responsible for any process or communication related to project data. The partners will designate the PDMs shortly after the 1st Steering Committee meeting.

The PDM is responsible on behalf of the corresponding partner for all data generated, collected, uploaded, processed, downloaded and stored in the partner's resources, or handled by that partner's personnel. Their responsibility extends to ensuring the following:

- That the datasets are accurate, consistent and complete
- That the datasets are adequately documented
- That the datasets are properly anonymized and their handling procedures are consistent with the GDPR and its related data management policies
- Communication with the Technical Coordinator for all issues related to project data and the DMP

6. Data Security

Data should be stored in a secure repository (MS Teams) where only authenticated users can access the data on the site and subsites. Only the site administrators can allow access to the data (AITIIP). Ideally access would be permitted as either reader or writer depending on access needs. In addition, the partners will be protected on institutional computers or other cloud storage with appropriate authentication requirements.

MS Teams hosted in Microsoft 365 service is protected in Microsoft data centres, which cover Azure and Office 365 services, comply with the broadest set if international standards and specific location of the industry, such as ENISA IAF, ISO/IEC 27001, 27018, FedRAMP, SOC 1 and SOC 2, HIPAA, National Security Scheme / ENS or the AEPD, including 24-hour physical surveillance and strict access controls. Aitiip, as host of the data storage system, complies with and follows all the guidelines related to the General Data Protection Regulation (GDPR). Office 365 - MS Teams aligns with industry standards such as Clause 14 of ISO / IEC27001-2013 and related security standards, guides and principles. This solution is based on

combined layers of assurance consisting of newly enforced security features, best applied practices that are governed by policy, and the design itself validated by industry standard testing processes.

Data storage, in the context of data security, must be done in such a way to ensure the privacy and integrity of data and prevent unauthorised access, changes to data, disclosure or destruction of data. The following guidelines apply:

- Transmitting (uploading or downloading) sensitive or personal data between locations or within research teams must always be done using data encryption, e.g. using secure FTP or other secure data transfer protocol, to ensure data privacy and prevent unauthorized access of data (e.g. eavesdropping).

- Access to data repositories should be password protected and access logs should be maintained.

- Archived data of personal or sensitive nature should be stored encrypted, with strong encryption.

- Before the UPSTREAM project is completed, the partners will decide which data will have to be destroyed and which data will be maintained (and for how long).

- To ensure data integrity, avoid loss of data and maintain storage consistency, regular data backups should be performed on a daily, weekly and monthly basis, either incremental or full. Data backups should be accompanied with appropriate and corresponding data recovery procedures.

7. Ethical Aspects

Most of the data that will be produced and generated by UPSTREAM consortium members do not involve any ethical or security issues as they will revolve around technical developments related to L, P, and MP remediation and prevention. The beneficiaries do not expect any ethical or legal issues impacting data sharing as the project does not deal with personal data. This statement will be reassessed in the next DMP versions. If questionnaires for external parties will be created, informed consent for data sharing and long-term preservation will be included.

8. Relevant Risks

Data generation, curation, management and sharing entails serious challenges and risks that should be assessed as a priority and addressed in a way that it does not affect the potential impact. The Project Coordinator and Work Package Leaders (WPLs) will be responsible for identifying and assessing the risk related with the data production, both quantity and quality, by considering the critical risks and risk management strategy defined in the grant preparation phase. These include:

- Insufficient provision of data for testing and validation in later activities. This risk involves all scientific data-producing WPs and to mitigate this, a data request follow up will be carried out, trying to serve for tracking the due time and the responsible in terms of each stakeholder.

- Failure of equipment that will implement individual tasks resulting in inadequate and/or low-quality data. WPs 1 - 3 are involved in this risk, and mitigation is foreseen by following routine

service and repair of faults. In addition, transferring a part of the research to subcontracts will also be considered.

9. Other Issues

At this time, it is not foreseen that the project will make use of other national, funder, sectorial, or departmental procedures for data management.

10.   Further support in completing the DMP

The Research Data Alliance provides a [Metadata Standards Directory](#) that can be searched for discipline-specific standards and associated tools.

The [EUDAT B2SHARE](#) tool includes a built-in license wizard that facilitates the selection of an adequate license for research data.

Useful listings of repositories include:

[Registry of Research Data Repositories](#)

Some repositories like [Zenodo](#), an OpenAIRE and CERN collaboration), allow researchers to deposit both publications and data, while providing tools to link them.

Other useful tools include [DMP online](#) and platforms for making individual scientific observations available such as [ScienceMatters](#).

- Horizon Europe Data Management: http://ec.europa.eu/research/participants/docs/Horizon Europe-funding-guide/cross-cutting-issues/open-access-data-management/data-management_en.htm

- Horizon Europe Open Access: http://ec.europa.eu/research/participants/docs/Horizon Europe-funding-guide/cross-cutting-issues/open-access-data-management/open-access_en.htm

11.   Implementation of the DMP

The deliverable presents the document templates for the DMP (see appendices) that are based on the EC Guidelines on Data Management in Horizon Europe/H2020. Overall, the implementation procedures of the DMP will be compliant with the rules for Open Access policy and the recommendations of the ORDP for the life cycle of the data to be collected, processed, and distributed. The data templates will be circulated and approved by the consortium members before their first release. The templates are expected to be sent to UPSTREAM partners by the end of June 2024 (M10) and will be received in M12. A living document will be continuously available, listing all the datasets that will be provided by UPSTREAM partners. Summary reports and descriptive statistics will be included in the updated DMP on an annual basis.

12. APPENDIX: FAIR data management template (available as an Excel spreadsheet)

This template should be completed by each Partner Data Manager (PDM) in conjunction with their local team and saved to the UPSTREAM collaboration platform Confluence. It will be updated by each PDM and compiled by INEUVO as a minimum every 12 months and in the context of the periodic evaluation/assessment of the project.

It is not required to provide detailed answers to all the questions in the first version of the DMP that needs to be submitted by month 6 of the project. Rather, the DMP will be a **living document,** in which information can be made available on a finer level of granularity through updates as the implementation of the project progresses and when significant changes occur.

UPSTREAM: Data Management Plan	
Version No. 1	
Partner Number and Short Name:	
Partner Data Manager:	
Form Completed and Submitted By:	**Date:**
Reviewed at INEUVO by:	**Date:**
Data Summary	**Partner Report**
State the purpose of the data collection/generation	
Explain the relation to the objectives of the project	
Specify the types and formats of data generated/collected	
Specify if existing data is being re-used (if any)	
Specify the origin of the data	
State the expected size of the data (if known)	
Outline the data utility: to whom will it be useful	

FAIR DATA			Partner Report

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?

What naming conventions will be 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?

Making Data Openly Accessible

Specify which data will be made openly available? If some data is kept closed provide rationale for doing so.

How will data be made available?

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)?

Where will the data and associated metadata, documentation and code be deposited?

How will access be provided in case there are any restrictions?

Making Data Interoperable

Are the data produced in the project interoperable, that is allowing data exchange and re-use between researchers, institutions, organisations, countries, etc. (i.e. adhering to standards for formats, as much as possible compliant with available (open) software applications, and in particular facilitating re-combinations with different datasets from different origins)?

What data and metadata vocabularies, standards or methodologies you will follow to facilitate interoperability?

Will you 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?

Increase Data Re-Use (through clarifying licences)

How will the data be licenced to permit the widest reuse possible?

When with the data will be made available for re-use?
If an embargo is sought to give time to publish or seek patents, specify why and how long this will apply, bearing in mind that research data should be made available as soon as possible.

Will the data produced and/or used in the project be 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 in place

Specify the length of time for which the data will remain re-usable

Allocation of Resources

What are the costs for making data FAIR in our project?

How will these be covered? Note that costs related to open access to research data are eligible as part of the Horizon 2020 grant (if compliant with the Grant Agreement conditions).

Who will be responsible for data management in your partner organisations?

Are the resources for long term preservation discussed (costs and potential value, who decides and how what data will be kept and for how long)?

Data Security

What provisions are in place for data security (including data recovery as well as secure storage and transfer of sensitive data)?

Is the data safely stored in certified repositories for long term preservation and curation?

Ethical Aspects

Are there any ethical or legal issues that can have an impact on data sharing? These can also be discussed in the context of the ethics review. If relevant, include references to ethics deliverables and ethics chapter in the Description of the Action (DoA).

Is informed consent for data sharing and long-term preservation included in questionnaires dealing with personal data?

Other

Will you make use of other national/funder/sectorial/departmental procedures for data management? If yes, which ones?