



MINAGRIS

Data Management Plan

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As this data management plan will be a living document, versions and their changes will be kept updated in the table below.

Version	Date	Change
V0.2	15-11-2021	Initial draft version for feedback of all WP leaders
V0.3	30-11-2021	Updated version with the feedback of all WP leaders. This version will be updated again with the inputs from all partners and the decision taken for the monitoring plan

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List of abbreviations:

- DMP, Data Management Plan
- MNP, Micro- and nano- plastics
- MesoP
- MP, Microplastics
- NP, nanoplastics
- WP, Work package
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1. Introduction

Plastic use in agriculture has tremendously increased in the past decades resulting in soil pollution with plastic residues forming, besides macroplastics, micro (MP) and nanoplastics (NP). MINAGRIS aims to contribute to healthy soils in Europe by providing a deeper understanding and tools to assess the impact of MP and NP in agricultural soil health and productivity. To create an overview on the actual situation across Europe, MINAGRIS will assess the use of different plastic polymers in agricultural systems in 11 case study across Europe and identify the resulting types and concentrations of MPs and NPs. Concentrations of other stressors in soils such as pesticides and veterinary drugs, known to interact with MPs in soil, will be additionally assessed. MINAGRIS will provide validated analytical tools that allow the quantification and identification of MPs and NPs in soils. Based on the results of the case study sites, controlled experiments will be conducted to analyse the impact of MPs and NPs on physico-chemical soil properties, soil biodiversity, plant productivity, and ecosystem services, as well as their potential transfer to other parts of the environment and plants. Furthermore, synergistic effects with other stressors are assessed. Quantification of the impacts of MNP on soil biodiversity and agricultural productivity, their transport and degradation in the environment, their impacts on socio-economic components, and synergies between all of them will make it possible to identify, in a multifactorial vision, the benefits and risks associated with the use of plastics in agriculture. Based on the results, MINAGRIS will quantify the economic, environmental, and social consequences of unsustainable soil management at the field and farm level in different biogeographical regions and, through a Multi-Actor Approach (MAA), develop a practical toolbox for and with farmers for the rapid assessment of soil exposure, at the same time raising relevant stakeholders' and end-users' awareness of the issue. To address these goals, a wide range of data will be collected and produced across 9 Work Packages (WP). The data collected from literature, databases, and other projects outputs will be made available for research within MINAGRIS, to complement the MINAGRIS dataset mostly. The data generated within the MINAGRIS project will be used for research during the course of the project. To meet certain objectives of the project, it will be required to allow pseudonymised single measurement data (*eg.* new data obtained from farms). This data will be shared with the wider research community with the utmost caution, respecting the ethical and legal framework.

Main Objectives of MINAGRIS: The MINAGRIS project will assess the impact of plastic debris in agricultural soils on biodiversity, plant productivity and ecosystem services and their transport and degradation in the environment. We will provide tools and recommendations for sustainable use of plastic in agriculture at the farm and field levels for ensuring safe and economically viable food systems in Europe.

Objective WP1: Management of the overall project activities

Objective WP2: Coordinate stakeholder activities and establish a harmonized monitoring plan to be conducted at the CSS

Objective WP3: Provide deep insights in the amount and type of plastics found in soil and the source of these plastics.

Objective WP4: Assess the effects of MNP (alone and in combination with other soil stressors) on the function and diversity of the soil biota.

Objective WP5: Assess the effects of MNP and Meso-plastics alone and combined with other stressors on soil physicochemical properties, crop growth and agricultural productivity

Objective WP6: Assess the environmental fate of MNP, bioplastics and other stressors in terrestrial environments, with a focus on degradation mechanisms, microbial processes, environmental transport and effects on non-terrestrial targets.

Objective WP7: Link and evaluate environmental and socio-economic consequences of plastic use to ESS and synergies and trade-offs to overall sustainability.

Objective WP8: Define and implement MINAGRIS's Dissemination and Exploitation strategy, ensuring the project's results are distributed and utilized as broadly as possible, taking advantage of tailored dissemination channels and messages.

Objective WP9: address all ethic issues arising from MINAGRIS activities

The MINAGRIS Data Management Plan (DMP) helps to determine how the data can be managed efficiently, effectively and securely. In addition, planning for good data management from the start reduces the risk of data loss, data breach, or other threats that could render the data illegible or unusable. This DMP is a living document and will be updated according to the needs and developments of the project (new data sets, new data tools, etc.) or due to external developments with regards to data management, data storage and privacy regulations. New versions will be created at least as part of the mid-term review and at the end of the project.

This document describes the Data Management Plan (DMP) of the MINAGRIS project and is based on the H2020 FAIR Data Management template¹. The purpose of the DMP is to describe the data management for all data collected, produced, or processed for research. The DMP describes:

- Data types that will be collected, processed and produced
- Data handling during and after the project
- Data storage during and after the project
- Data sharing
- Data protection

2. Data summary

The overall aim of MINAGRIS is to contribute to healthy soils in Europe by providing a deeper understanding and tools to assess the impact of MP and NP in agricultural soils on biodiversity, plant productivity and ecosystem services and their disaggregation fate in the environment and provide recommendations for sustainable use of plastic in agriculture at the farm and field levels for ensuring safe and economically viable food systems in Europe.

Therefore, we start with data mining on plastic use and data preparation in tasks T3.1. Next, agricultural practices, most importantly plastic use, and soil samples will be collected in 11 Case Study Sites (CSS) across Europe with a survey (T3.2) and a field sampling (T3.4). These data will function as an input for WP4, WP5 and WP6 to design relevant controlled experiments from the lab to the field. The results of the initial survey (T3.2) will also provide data for the inventory (T3.1) and for a complementary survey that will lead to the quantification of the impacts on ecosystem services (T7.1). Results and conclusions from all work packages will be compiled in a farm-level decision support tool (T7.3) and in a scientific synthesis for policymakers (T7.4). Access to use these data is vital to address the objectives stated in the Grant Agreement of MINAGRIS (main objectives are summarized on the next page).

¹ https://ec.europa.eu/research/participants/data/ref/h2020/other/gm/reporting/h2020-tpl-oa-data-mgt-plan-annotated_en.pdf

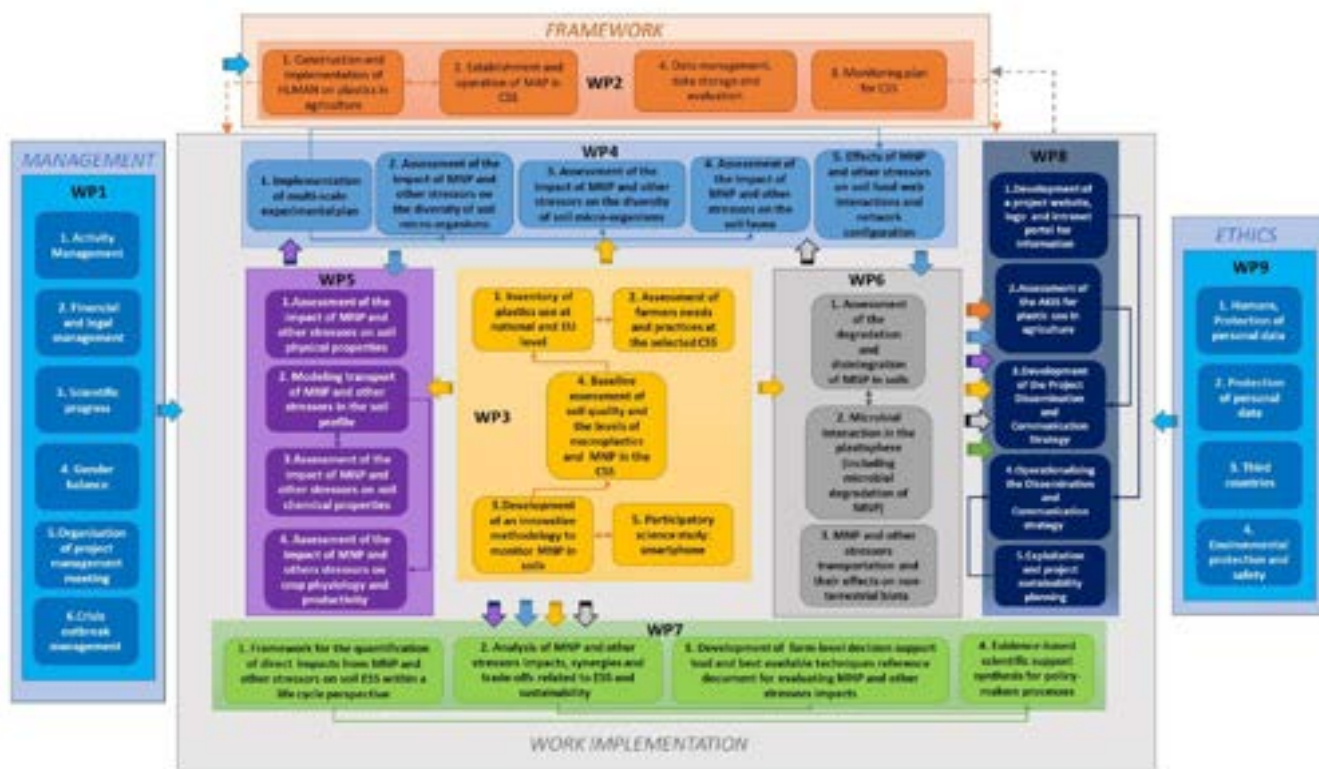


Figure 1: Overview of MINAGRIS data flow

2.1 Data overview and format

This project will produce a broad range of data and reports:

Table 1: Summary of Data used and produced in MINAGRIS

Data overview	Format	Tasks producing data	Data recipient/user	Expected size
Draft reports and deliverables	.docx	All WP	All WP, internally	1GB
Final reports and deliverables	.pdf	All WP	Internally or publicly	500MB
Literature review, reports from stakeholders for plastic use	.docx .xlsx	WP3	WP3	100MB
Draft questionnaires	.docx .xlsx .pdf	T3.2, T7.2	WP2, WP3, WP4, WP5, WP6, WP7, WP8	10MB 10MB
Informed consents and ethics related documents	.pdf .doc	WP9, WP3	All WP	10MB
Agreements of data and sample transference	.pdf	WP3, WP4, WP5, WP6, WP7	WP3, WP4, WP5, WP6, WP7	100MB
Mailing lists and contacts of stakeholders	.xlsx	WP1, WP2, WP3, WP7, WP8	WP1, WP2, WP3, WP7, WP8	500kb
Data from CSS farms survey: Plastic use and other agronomic management practices, crop characteristics, cost-benefits, plastic contamination awareness	.xlsx .pdf	WP3, WP7	WP3, WP4, WP5, WP6, WP7, WP8	2GB
Soil characterization data	.xlsx	WP3, WP5	WP3, WP4, WP5, WP6	2GB
Raw data from plastic analysis with spectral methods	.bsp .dat .dms .dmt .seq .drd .bmp	WP3	WP3	900GB
Plastic contents processed data	.csv	WP3	WP3	1GB
Amplicon sequencing data of 16S rRNA, ITS, 18S rRNA gene from soil DNA/RNA	.fastq files	WP4, WP6	WP4, WP6, WP7	15-20 GB
Amplicon sequencing data of the amoA gene from soil DNA/RNA	.fastq files	WP4, WP6	WP4, WP6, WP7	15-20 GB
soil physical and chemical properties	.xls	WP5	WP3, WP4, WP5, WP6,	2GB
Crop physiology and productivity	.xls	WP5	WP3, WP4, WP5, WP6,	2GB
Rates of bioprocesses in soil (nitrification, microbial respiration via MicroResp)	.xls	WP4	WP4, WP6, WP7	2 MB
Enzymatic activities in soil	.xls	WP4	WP4, WP6, WP7	2 MB
q-PCR abundance data for various functional microbial groups	.xls	WP4	WP4, WP6, WP7	4 MB
Abundance data of soil biota (earthworms, arthropods, collembola)	.xls	WP4	WP4, WP5, WP7	4 MB

Measurements of Nitrogen transformation process in liquid cultures of AOM	.xls	WP4	WP4, WP5, WP6, WP7	2 MB
Shotgun metagenomic data from platisphere	.fastq	WP6	WP6	30-50 GB
Shotgun plasmidome data from platisphere	.fastq	WP6	WP6	15-20 GB
Amplicon sequencing data of 16S rRNA, ITS gene from soil and platisphere DNA	.fastq	WP6	WP6	10-15 GB
qPCR abundance data for Antibiotic Resistance Genes in the platisphere DNA	xls	WP6	WP6	2 MB
Maps/Photo's/Video's	.JPEG .MP4	All WP	All WP and dissemination	100GB
Other, unforeseen data				100GB

2.2 Data origin and size

In the first phase of the project, available datasets will be used (review and data mining). Here, open access datasets is expected to be mainly used. The vast majority of the data in the MINAGRIS project will come from data collection at CSS (WP3) and controlled lab or field experiments (WP4-5-6).

WP1: will produce a list of Minagris partners and internal communication documents

WP2: will manage a list of stakeholders (MAP) and gather sampling and analysis methods in a monitoring plan

WP3: will manage a review of existing knowledge on plastic use, a list of farms in each CSS, survey answers, and measurements made on soils and plastics.

WP4: will produce data on the effects of MPs, individually or in combination with other stressors, on the soil biota (fauna and microbes)

WP5: will produce data from impacts of MNP on soil physical and chemical properties, data from transporting MNP in the soil profile and impact of MNP on crop physiology and productivity

WP6: will produce novel data regarding plastics characteristics, plastisphere molecular composition, isolates and genomes of isolates

WP7: will draft a questionnaire for CSS farmers, anonymised, analyse the results; will quantify environmental, economic and social impacts

WP8:

WP9: Informed consents and ethics related documents, agreements of data and sample transfer.

The total size of the data is not yet specified in this stage of the project. A rough estimate is that each plastic analysis leads to 2GB data for a total of 900GB raw data but the processed data represents only 1GB. Microbiome analysis will lead to about 160 GB in total. Maps, photos and videos will also take a significant storage space to which we reserve an additional 100GB. The SharePoint is an adaptable service, the storage can be expanded as much as needed. With this option, we can meet large unforeseen data demands.

2.3 Data utility

MINAGRIS aims to ensure the visibility of the data that is generated within the project (see data security section), via multiple dissemination activities and communication tools. The deliverables of MINAGRIS can be Public or Confidential. The MINAGRIS deliverables that must be produced and their corresponding dissemination level are listed in Appendix 1.

All public documents, including guidelines and deliverables will be put on the project website (<http://minagris.eu/>). These can be utilized by third parties immediately. The website will also publish announcements of MINAGRIS, such as media news and workshops to inform the broader community. Further outreach to the general public will be through dialog events with stakeholders, media, interviews and social media channels (LinkedIn, Facebook, YouTube and Twitter). Practice abstracts will also be available via the EIP-agri webpage (<https://ec.europa.eu/eip/agriculture/en>). Bi-annual newsletters on project updates and results are shared with subscribed people. In first instance, all organizations that have written a support letter - annex of the Grant Agreement - will be invited to subscribe. Subscription is done via the website or email request and includes researchers, companies, NGOs, policy-makers, practitioners, and the general public.

Scientific articles will be submitted to open access peer reviewed journals to promote visibility and accessibility of the scientific data generated by the project. Data used within MINAGRIS publications will first remain confidential to avoid jeopardising the chances of publication.

In short, data will/can be used by:

- MINAGRIS consortium
- Scientific community including other EU-projects
- Regional, national and international stakeholders
- European Commission
- National, EU and global bodies
- The general public.

3. FAIR data

3.1. Making data findable

Data will be made publicly available via the MINAGRIS website accompanied with the respective metadata.

For metadata, datasets and templates we name them with:

- The acronym of the project
- Task or deliverable number
- Indication: dataset, metadata, template, report
- The File Name (short)
- The version of the file

Example: MINAGRIS_D8.2_Report_Data Management Plan_V1

Next to clear versioning within the title of the file there will be a version control system for files within the MINAGRIS repository. Versioning creates backups of files which are accessible via the Versions tab on the Details sidebar. This tab contains the history of the file where you can roll back a file to any previous version. The versioning app expires old versions automatically to make sure that the user doesn't run out of space.

3.2. Accessible

To share data within the consortium, a secure platform has been developed for MINAGRIS on SharePoint (<https://wageningenur4.sharepoint.com/sites/Minagriscoordination/>). This platform will allow sharing of data. The latest local, national and international rules on data protection - in particular, the General Data Protection Regulation (EU) 2016/679 (GDPR)³ - will be followed. GDPR is a regulation by which the European Parliament, the Council of the European Union and the European Commission intend to strengthen and unify data protection for all individuals within the European Union (EU). The MINAGRIS GDPR Policy can be found <http://minagris.eu/index.php/project-info/copyright-and-disclaimer>.

Sharing data within the consortium partners, will be done via:

- 1) the MINAGRIS website for publicly available documents as deliverables, milestones, reports etc.
- 2) the MINAGRIS SharePoint for documents with confidential information as data resulting from case study sites, experiments and toolbox development. This repository is password secured and will be providing access to data through a web interface and view, sync and share the files across devices. It also offers the possibility to give each user restrictions to what is accessible. The repository is keeping track of users logging in and editing or downloading data. This enables to restore the availability and access to the data in a timely manner in the event of a physical or technical incident.

For data generated during the MINAGRIS project, the data provider shall sign the data transfer agreement to confirm ethic and legal compliance. Uploaded data is directly accessible for users within the MINAGRIS consortium working in the corresponding Work Package.

MINAGRIS will produce a protocol for transfer of personal data between the EU, England and Switzerland. List of names and contact details of persons who confirmed to be appointed as data protection officers (DPO) for each beneficiary will be saved and provided if required. Data processing and data use will be transparent under supervision of the WP Leader's institute Data Protection Officer (DPO).

Sharing data outside the consortium will be done via:

- 1) The MINAGRIS website. Public documents can be accessed and downloaded from the MINAGRIS website in the 'download' section.
- 2) Articles/publications/Zenodo/github or other open access repositories
- 3) Upload of molecular data on NCBI Sequence Read Archive, upload of data used for publications in open access repositories whenever possible.

3.3. Interoperable

The database will use acknowledged names, symbols and units for target variables. The location of the farms where information and samples were collected will be kept private by the CSS leaders, and task leaders and only anonymized data will be shared publicly. Standard vocabulary will be used from each involved domain. Next to an explanatory file for each variable, there will be a MINAGRIS appendix to explain all terms used in the MINAGRIS project.

3.4. Reusable

When data is public, the re-use of the data is possible through the open repositories where the data will be stored. This public data will then also be available for re-use by third parties, even after the end of the project. Confidential data will only be shared within the consortium and will therefore only be reusable by partners. Data for research papers will be discussed between relevant partners, and decision will be taken according to the European and national rules. When data is published, partners are encouraged to share this within their network (conferences, social media etc) in order to maximise re-use.

The specific decision on an embargo for research data will be taken by the responsible MINAGRIS partners. Scientific research articles should have an open access at the latest on publication if in an Open Access journal, or within 6 months of publication. For research data, open access should by default be provided when the associated research paper is available in open access.

Without data standards and data quality, the data re-use between researchers and institutions is not possible. Data need to be standardized, and agreements on representations, formats and definitions of common data are needed. A standardized data coding system and corresponding data formats will be defined in the monitoring plan. Quality control of these data is the responsibility of the relevant WP leader, supported by the Data Managers.

Data will remain re-usable after the end of the project for at least 5 years after its end. Most data will be submitted in digital repositories. In case repositories will disappear or experience data loss, partners will be enquired to upload the data to another repository and correct the references to the data. Therefore datasets must be stored at the institutional servers for at least 5 years.

4. Allocation of resources

4.1. Estimation of the costs

The shared repository will be hosted on the Sharepoint provided by WUR (<https://wageningenur4.sharepoint.com/sites/Minagriscoordination>). The SharePoint will cost 1.92 €/GB/year with the first 10GB being free. The maintenance and support fee by the WUR IT service desk are included in the costs. Cost for data management is covered in the WUR sub-contracting budget defined in the consortium agreement.

4.2. Data Manager

The project data repository and maintenance of the database will be done by UBERN. Together with the support of WUR they will safeguard the data quality, setup required infrastructure for storage and backup needs within MINAGRIS and facilitate data archiving and data sharing. Every month the data infrastructure will be checked and updated if necessary. Small changes to improve clarity or data uploading support will be done ad-hoc.

5. Data security

Each MINAGRIS partner will follow the Europe's General Data Protection Requirements (GDPR). Apart from the GDPR, the consortium partners regard privacy and data protection as a fundamental principle and hence apply strict policy on this matter. All data will be collected, handled, transferred and analysed in a secure setting for a defined purpose and not further processed for other purposes incompatible with the aims of MINAGRIS.

5.1. Data storage and data access

Data that is generated or collected during the MINAGRIS project will be stored in the SharePoint. The servers are in a highly secured location with adapted measures against intrusion, hacking or natural catastrophes such as floods or fires. MINAGRIS will produce a protocol for transfer of personal data between the EU, the UK and Switzerland.

Final drafts of documents and deliverables will be stored 1) at the responsible partner 2) at the MINAGRIS coordinator server 3) at the MINAGRIS website, where there will be an open access part for public reports.

For Citizen Science-based observational data, submitted by users on the Citizen Science platform SPOTTERON, all observational data is accessible for the work package leader for export as file in a table format (CSV). The platform has the necessary technical organizational measures (TOM) in place to protect access and storage of observational data. Exported data-sets can be published publicly by the project in an anonymized form (deletion of user generated texts. aka spot descriptions)

5.2. Data confidentiality and integrity

Datasets that include farmers and other stockholders personal information will be pseudonymized before use in the project. This means any information that would individually or collectively allow you to identify someone directly or indirectly will be encrypted. Pseudonymization will make it unable for the user of the data to identify the natural person without the use of additional data. This additional information is kept separately and is subject to technical and organisational measures to ensure that the personal data are not attributed to an identified or identifiable natural person. Proper pseudonymization and anonymisation techniques will be used to secure any personal data. Participants will also be informed about data confidentiality and integrity and are invited to sign an informed consent.

5.3. Data back-up

Datasets will be shared via private data repositories with an automated back-up system. The research data manager, assigned by UBERN, will inform the project partners on how to safely upload datasets to such a shared data repository to ensure that all of the collected datasets are correctly stored and backed up. Data storage and/or backups via portable devices is discouraged within the consortium to avoid data loss and breaching. The following guidelines will be followed in order to ensure the security of the data:

- Store data in at least two separate locations to avoid loss of data. We recommend a secured institutional drive and the secured online MINAGRIS sharepoint
- Raw data, which can be very heavy and require specific software to be analyzed (e.g. Spectral images of extracted plastics) may be stored only in each in institutional repository as soon as the processed data are available on the MINAGRIS sharepoint
- Encrypt data if it is believed necessary by the participating researchers
- Limit the use of personal computer devices
- Limit the use of USB flash drives
- Label files in a systematically structured way in order to ensure the coherence of the final dataset.

5.4. Data preservation

All processed data will be preserved on the central server (which have automatic back-up procedures). Data will be kept by a period of 5 years after the project ends, to be available for auditing by the Ethics Board or any competent authority.

6. Ethical aspects

The MINAGRIS partners will also comply with the eight enforceable principles of good practice for personal data management. They will thus make sure that data is:

- Fairly and lawfully processed
- Processed for limited purposes
- Adequate, relevant and not excessive
- Accurate
- Not kept longer than necessary
- processed in accordance with the data subject's rights
- Secure
- not transferred without adequate labelling and protection

More specifically, the farmer participating will be kept updated with the goals and progresses of the project and given the opportunity to withdraw at any moment. No samples from human or other vertebrates will be used in the project. The farmer information will be limited to the specificities of their farm, their agricultural managements, their awareness of plastic contamination and will be kept anonymous. The quality of data collected across the project will be ensured through the use of common methodology and will be assessed with an initial comparative test of laboratories performing the same measurements

Ethical issues that might arise will be dealt with by MINAGRIS with the appropriate care, in a professional way, following very closely established EU regulations, GDPR, and corresponding national laws about privacy, confidentiality, and consent. A dedicated Ethics Committee of WP10 is part of MINAGRIS's structure, guided by an external Ethics Advisor. The MINAGRIS Ethics Committee oversees monitoring and advising/discussions on all ethical issues related to the animal and human studies, personal data protection and involvement of third countries.

The Ethics Committee will keep records of documents that may have to be provided on request, such as (i) opinions and/or approvals by ethics committees and/or competent authorities for human volunteer studies and research activities in CSS; (ii) copies of training certificates/personal licences of staff involved in animal experiments, and (iii) copies of import/export authorisations as required by national and/or EU legislation. Details on human cells/tissues used in organoid system will be collected as well as copies of documents for using, producing and/or collecting human cells and/or tissues that require e.g. ethics approval, import licence, accreditation/designation/authorisation/licensing.

Case study site leaders have their own responsibility to comply with ethical issues on a regional or national level.

For the Citizen Science App of the project, the partner SPOTTERON applies a high level of digital privacy ethics to the CS Application along with a strict no-user-tracking, no-user-monetization policy. The SPOTTERON platform makes clear separation between project-specific data and platform-specific data. This provides the benefit that MINAGRIS does not process personal data of e.g. user accounts on the platform and is only processing data entries of CS observations. The resulting images from CS observations are licensed as CC0 (Creative Commons Zero) by the users, hence the authorship does not need to be cited and no personal data must be processed for UGC (User-generated content).

7. Other issues

The DMP is a living document which will be updated as the project progresses making it possible other issues will be added in the next version. The first version, with the core guidelines will be delivered in month 3 (30 November 2021). The DMP will be discussed regularly at the consortium meetings, and DMP updates will be described in the periodic progress reports.

Appendix 1: Deliverables of MINAGRIS

#	Deliverable name	WP	Lead	Type	Dissem. level	Delivery month
1.1	Crisis outbreak management strategy	1	WU	R	PU	6
1.2	Periodic project reports	1	EQY	R	PU	18,36,54,60
1.3	Periodic scientific reports	1	UTH	R	PU	18-36-54,60
1.3	Gender equality report	1	UBERN	R	PU	24, 48
2.1	Data Management Plan	2	WU	R	PU	3
2.2	MAPs structure: identification of stakeholders to be included at the CSS	2	UBERN	Other	CO	7
2.3	Monitoring plan	2	UBERN	R	PU	8
2.4	Database of the collected field, laboratory and interview data and evaluation date	2	UBERN	Other	CO	48
3.1	Report on the typology of farms and their practices related to plastic in the CSS and their needs; feedback and expectations of stakeholders	3	WR	R	CO	6
3.2	Standardized methods and quality criteria for the analysis of MaP and MNP in agricultural soils	3	UBERN	R	PU	6, 24
3.3	Intentional use, unintentional input, types and sources of plastics on and in the soil in agricultural practices in the EU	3	WR	R	PU	44
3.4	Use of a smartphone app as a tool for participative detecting and monitoring of visually recognizable plastic remainders in soils	3	AGES	Other	PU	20, 48
4.1	Protocol for multi-scale experiments	4	UTH	R	PU	11
4.2	Guidelines on the assessment of the toxicity of MNP and other stressors on soil microbial functioning	4	FUB	R	PU	46
4.3	Guidelines on the assessment of the toxicity of MNP and other stressors on soil microbial diversity	4	INRAE	R	PU	49
4.4	List of soil biota indicators affected by MNP and other stressors	4	WU	R	PU	52
4.5	Guidelines on the assessment of the toxicity of MNP and other stressors on soil fauna	4	UCSC	R	PU	56
4.6	Guidelines for assessing effects of MNP and other stressors on the entire soil food web	4	WU	R	PU	60
5.1	Effects of MNP on the soil physical properties related to soil water	5	UL	R	PU	48
5.2	Report of modelling transport of MNP in soil	5	UBERN	R	PU	48
5.3	Effects of MNP on the soil chemical properties	5	WU	R	PU	54
5.4	Impact of MNP on crop productivity and plant physiology	5	FIBL-CH	R	PU	54
5.5	NP plant uptake and transfer to the food chain – Calculation of threshold values for health risk	5	UBERN	R	PU	56
6.1	Degradability report of MNP in soils	6	UBERN	R	PU	48
6.2	List of microorganisms composing the plastisphere microbiome per soil and MP type including culture collection and genomes	6	UCSC/FUB	OTHER	PU	52
6.3	Assembled metagenome and plasmidome of the plastisphere	6	UTH	OTHER	PU	52
6.4	Biotic and abiotic MNP transportation characterization and monitoring of sublethal effects on bees	6	WU	R	PU	56
7.1	Framework for quantifying impacts of MNP use on ESS	7	DTU	R	PU	36
7.2	Synthesis report on ESS and sustainability impacts and trade-offs	7	FIBL-AT	R	PU	54
7.3	BREF document for the use of plastic in agriculture	7	NVM	R	PU	58
7.4	Report-recommendations for policymakers in EU agriculture	7	FIBL-AT	R	PU	60
8.1	MINAGRIS visual identity and project website	8	WU	OTHER	PU	5
8.2	Assessment of AKIS for plastic use in agriculture and user demand finalized	8	UoG	R	PU	9
8.3	D&C Strategy and Reports on the activities	8	UoG	R	CO	12,36, 60
8.4	Practice abstracts	12	UoG	R	CO	12
8.5	Practice abstracts	60	UoG	R	CO	60
9.1	POPD – Requirement No.2	9	EQY	OTHER	CO	6
9.2	NEC – Requirement No.3	9	UBERN	OTHER	CO	6
9.3	EPQ – Requirement No. 4	9	UBERN	OTHER	CO	6

