



1.7

Data Management Plan

Project Title	B-THENET (BEST PRACTICES AND INNOVATIONS FOR A SUSTAINABLE BEEKEEPING)
Contract No.	101059812
Instrument	Horizon Europe Coordination and support action (CSA)
Thematic Priority	Innovative governance, environmental observations, and digital solutions in support of the Green Deal
Start of Project	1 September 2022
Duration	48 months



Istituto Zooprofilattico Sperimentale
del Lazio e della Toscana *M. Aleandri*



UNIVERSIDAD
COMPLUTENSE
MADRID



InHort
INSTYTUT OGRODNICTWA



UNIVERSITY OF
HOHENHEIM



Latvia University
of Life Sciences
and Technologies



KARL-FRANZENS-UNIVERSITÄT GRAZ
UNIVERSITY OF GRAZ



LOBA®



Funded by
the European Union

backcoordinator@bthenet.eu

Deliverable title	Data Management Plan
Deliverable number	D1.7
Deliverable version	1.0
Contractual date of delivery	28 February 2023
Actual date of delivery	28 February 2023
Nature of deliverable	Other
Dissemination level	Public
Number of pages	22
Work Package	WP1
Task(s)	T1.3
Leading Partner	APRE
Co-Leading Partner	IZSLT
Author(s)	Flavia Fusconi (APRE)
EC Project Officer	Celine CHOQUER

Abstract	Definition of the data management strategy. The document establishes the nature of data, procedures and tools to manage the data in line with the FAIR principles.
Keywords	Data, sound data management, FAIR principles

Copyright

© Copyright 2020 B-THENET Consortium

This document may not be copied, reproduced, or modified in whole or in part for any purpose without written permission from the B-THENET Consortium. In addition to such written permission to copy, reproduce, or modify this document in whole or part, an acknowledgement of the authors of the document and all applicable portions of the copyright notice must be clearly referenced.

All rights reserved.

Contributors

NAME	ORGANISATION
Veronica Manara, Marco Pietropaoli and Giovanni Formato	IZSLT
Filippo Jannoni-Sebastianini	APIMONDIA
Aleksejs Zacepins	LBTU
Noa Simon	BEELIFE
Robert Brodschneider	UGRAZ
Flemming Vejsnaes, Ole Kilpinen	BIAVL
Ellen Danneels	UGENT
Lotta Fabricius Kristiansen	SLU

The information and views set out in this report are those of the author(s) and do not necessarily reflect the official opinion of the European Union. Neither the European Union institutions and bodies nor any person acting on their behalf.

Abbreviations and Acronyms

Abbreviation	Meaning
AB	Advisor Board
CC	Creative Commons
D.	Deliverable
DEC	Dissemination, Exploitation and Communication
DG	Directorate-General
DMP	Data Management Plan
EU	European Union
FAIR	Findable, Accessible, Interoperable, and Reusable
GDPR	General Data Protection Regulation
MB	Management Board
PID	Persistent Identifiers
R&I	Research and innovation
TN	Thematic Network
WP	Work Package

Index of Contents

1	Introduction	6
2	Data summary	7
2.1	Purpose of the data collection and/or generated and its relation to the objectives of the project.....	7
2.2	Types and formats of collected and/or generated data	9
2.2.1	Data collected and/or generated through direct input methods	9
2.2.2	Data collected and/or generated by the B-THENET Platforms	10
2.2.3	Data collected and/or generated by communication, dissemination and DEC activities	11
2.2.4	Data collected and/or generated by project coordination	12
2.3	Origin of data and re-use from existing research projects and initiatives	12
2.4	Expected size of data.....	13
3	FAIR Data Management	16
3.1	FAIR Data: Making data findable.....	16
3.2	FAIR Data: Making data accessible.....	18
3.3	FAIR Data: Making data interoperable.....	18
3.4	FAIR Data: Increase data re-use	19
4	Conclusions and way forward	20
5	References.....	21

1 Introduction

The objective of the Data Management Plan (DMP) – D1.7 – is to provide relevant information concerning the nature of data that will be collected and/or generated during B-THENET, the standards that will be used, how the data will be preserved and what parts of datasets will be shared for reuse. In line with the objective of T1.3 “Data management Plan and Ethics”, APRE, with the contribution of all partners, prepared the Data Management Plan (DMP) following the recommendation provided in the "Guidelines on FAIR Data Management in Horizon 2020¹" and Horizon Europe Data Management Plan Template². In the same time, it was ensured that resources and data can be findable, accessible, interoperable and re-usable (FAIR). Moreover, it was guaranteed in time updating with the periodic evaluation/assessment of the project (periodic report) in case of significant changes (e.g. new data/resources, changes in consortium policies, changes in consortium composition). During the preparation of the DMP, APRE, with the support of TN's partnership, has verified the possible contributions to the open research data, open EC database and open knowledge repositories. Transparency, legal and social implications of information and knowledge will be considered.

The DMP meets the following objectives:

- provide information on the nature of data to be collected and/or generated (purpose, type, format, expected volume, and origin);
- describe the management procedures to collect and/or generate data in B-THENET during and after the end of the project, serving as the key element of good data management;
- outline the methodology and standards to guarantee the management of the collected and/or generated data as well as to make them Findable, Accessible, Interoperable and Re-usable (FAIR).

The deliverable is structured in 4 Chapters, as follows:

- **Chapter 1** introduces the objectives and structure of the DMP in connection with the Task 1.3 “Data Management Plan and Ethics”.
- **Chapter 2** defines the purposes of the data collected and/or generated and its relation to the objectives of the project. Moreover, it outlines data types and formats, expected size. The chapter concluded clarifying the origin and users of B-THENET data.
- **Chapter 3** describes the methodology and standards to adhere to a FAIR data principles in the framework of B-THENET, during and after the lifecycle of the project.
- **Chapter 4** concludes and identifies the next methodological measures foreseen under the DMP.

¹ https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf

² <https://enspire.science/wp-content/uploads/2021/09/Horizon-Europe-Data-Management-Plan-Template.pdf>

2 Data summary

The B-THENET activities are based on the collection and generation of personal data, according to the General Data Protection Regulation² (GDPR), and data gathered by surveys, focus groups event activities etc. Since the former has already been treated in the D.1.6 “Ethical issues report”, the DMP only deals with the second category of data, which includes quantitative and qualitative data or a combination of those. Moreover, the DMP establishes the data methodological approaches and standards able to produce new knowledge and evidence-based outcomes and deliverables as well as meet the objectives of the project.

The following sub-chapters clarifies the purposes of the data collection and/or generation and its relation to the objectives of the project. Besides, it outlines the types and formats of this data as well as its origin and expected size.

2.1 Purpose of the data collection and/or generated and its relation to the objectives of the project

B-THENET is a 48-month-long Cooperation and Support Action with the ambition to modernise the beekeeping sector, sharing knowledge that is ready to be put in practice and digitalising the sector. The achievement of the B-THENET general objectives and the production of evidenced-base outcomes and deliverables requires the collection and/or generation of data pertinent to the B-THENET Work Packages activities. Having in mind that, project data management is characterised by operations of collection, categorization, validation, and evaluation of data to maximise their re-use.

The following list provides details on the project activities where scientific data management is foreseen:

- development of an inventory of best practices and innovation through the EU online survey management system. A bottom-up approach will allow to rate the most relevant practices and innovations to be applied in beekeeping;
- development of practices and innovation collection from existing networks and projects (e.g. <https://cordis.europa.eu/it>). BEELIFE steers networking and knowledge exchange activities with relevant networks (e.g. COST-Actions) and initiatives (e.g. EU Bee Platform, Honeybee Valley) to map all EU research project results. A list of practices and innovations deriving from those activities will be published on the Platforms;
- organization of National and International events and webinars involving beekeepers and stakeholders. The training activities will be performed with a standardized sharing/learning and educating methodology. The activity will generate reports including information related to the specific task (e.g. number of events realized, number of participants, topics discussed, training certificates issued, management issues, etc.);
- analysis of needs, interests and social challenges for beekeepers, advisors, and all other stakeholders will be implemented through an empirical approach. LBTU will study the

target audiences' preferences, behavioural aspects, citizen perceptions, and innovative solutions, in the 15 Consortium Countries;

- development of B-THENET Platforms. The Platforms will constitute the virtual architecture for validating practices and innovations, knowledge exchange, and collecting the best practices. B-THENET recognise the tool as a long-term data storage along with the dedicated Zenodo Community and or EU-FarmBook;
- monitoring and evaluation of the dissemination communication, and exploitation results of the project with a view to maximizing and assessing the impact and fulfilling the reporting requirements towards the Granting Authority;
- promotion of networking with other projects (e.g. EU-FarmBook, ATTRACTISS, ModernAKIS, FoodSafety4.EU) and key actors through dedicated events, which have the ambition to establish other project and sector's collaborations and increase the collective impacts and visibility;
- collection of critical evaluation from the Advisory Board (AB) on project's major results and advice in favour of the Consortium, with the ambition to support the wider dissemination and uptake of project's results;
- project coordination, with the ambition to successfully reach the project objectives, produce evidence-based project results, and guarantee sound management of data.

2.2 Types and formats of collected and/or generated data

As already stated in the Grant Agreement, the type of data collected and/or generated in B-THENET relate to three categories: observational, experimental and event related. Moreover, the DMP deepens the subdivision of the data types according to the context where the data will be collected and/or generate. This subdivision considers:

- Data collected and/or generated through direct input methods;
- Data collected and/or generated by the B-THENET Platforms;
- Data collected and/or generated by DEC activities;
- Data collected and/or generated by project coordination.

2.2.1 Data collected and/or generated through direct input methods

Development of surveys on best practices and innovations

The development of surveys on best beekeeping practices and innovations aims to develop better beekeeping practices to be available to all beekeepers and foster exchange of information and expertise among beekeepers and advisors. The process is carried out through two steps: inventory of priority practices and innovations and validation of practices in the Platforms. In both phases, B-THENET collects data. In the first task, surveys are conducted to identify and rate the most relevant beekeeping practices and innovations for beekeepers. Moreover, surveys will allow beekeepers to describe in detail beekeeping practices and innovations. Liking rates and scientific considerations will be stored in texts (such as TXT, HTML, XML, PDF/A) and images (JPEG, JPG-2000, PNG, TIFF) on the project website as well as EUSurvey accessible to the Coordinator and APRE. Practices identified with this bottom-up approach, will be fully described by national B-THENET Centres. Finally, validation will be uploaded on the Exchange platform, where users will be able to improve their descriptions. A report documenting the overall outputs of users' comments on practices in the Exchange platform is expected to be produced. Finally, the practices will be reported in the Deliverable "Results of validation of practices from the exchange platform" (D.3.1) and its updates.

Practices and innovation collection from network and research

A dedicated activity to map the ongoing practices and innovation is implemented by BEELIFE, UGENT, UGRAZ and LBTU. In the task, collected practices from the networks and research will be used to identify and select best beekeeping practices, which should be included in the B-THENET Platforms as open data. The type of data will be text (such as TXT, HTML, XML, PDF/A), image (JPEG, JPG-2000, PNG, TIFF) and video files. Moreover, the collected data will be included in the Work Package 2 (WP) Deliverables, in particular, the "Report on priority practices and innovations bottom-up" (D.2.6) and "Categorization of practices in the platforms (D.2.10) and their updates, which are expected to be stored in Zenodo.

National and International B-THENET Centres events and webinars

Within the National B-THENET Centres of 13 Countries and the 3 International B-THENET Centres, education on different levels will take place. During the project lifecycle, different surveys will be carried out to collect data (e.g. asking beekeepers to share their best innovations and practices). The purpose of all the data collection is to create an online best practices and

innovations portfolio. The education material will be produced as Text (such as TXT, HTML, XML, PDF/A, etc.), Databases (XML, CSV), Image (JPEG, JPG-2000, PNG, TIFF), Audio (AIFF, WAVE) and video (e.g. MP4).

Sociological Studies (analysis of beekeepers' perceptions)

The purpose of this data management plan is to outline the procedures for collecting, storing, sharing, and preserving the sociological (information perception) survey data collected as part of the B-THENET Project. This survey data will be used to identify beekeepers' preferences for the ways of information perception. Collected survey data will be used anonymously, only in summarised way to draw conclusions on the beekeeper's preferences in relation to the perception of information (audio, text, visual, etc.) and preferred length of the best beekeeping practice description. Data will be stored in excel files (.xlsx). The survey data will be stored in CSV or XLS format on a Project cloud storage and will be available for all project partners. It is not planned to make data publicly available. Finally, the results of the survey analysis may be available through pre-printed or registered reports and they are expected to deposit in Zenodo Community anonymously.

2.2.2 Data collected and/or generated by the B-THENET Platforms

Data generated and collected by Platform Users

The online platforms will allow Project Partners, the Advisory Board, and Collaborating Partners (as Users of the platforms) to create Practices in the form of Wordpress posts (text and multimedia). Moreover, pages (text and multimedia) can be generated by the Coordinator to describe some project activities. Users can categorise "Practices" per category/tag or according to specific fields and they can edit the first version of the posts thanks to a collaborative plugin. The collaborative plugin traces time, author and the entity of the modification of the posts. Project Partners, the Advisory Board, and Collaborating Partners can approve the publication of posts in the "Exchange platform" or publish them in the "Repository Platform".

Users can register to the platforms. Different data are collected depending on User Role in the beekeeping sector. At the present stage the following data could be generated by Users: First Name, Last Name, Username, Email address, Password, Role, Zip code, Country, Institute, Stakeholder category, Spatial level of interaction, Stakeholder type, Main language spoken, Second language spoken. The following fields can be changed in order to fulfil project goals. Registered users can comment, suggest modification/improvement, and request information on "Practices" published in the "Exchange platform" in the form of Wordpress comment.

Registered users can publish images, audio, documents, video or link media to published "Practices" and give a score to "Practices" published in the "Exchange platform".

Website Analytics are generated by specific plugins, stored in the MYSQL database, and can be downloaded and used by the project coordinator as DOC/DOCX, HTML, XML, PDF/A, PPT/PPTX, XLS/XLSX, Image (e.g. JPEG, JPG-2000), Audio (e.g. AIFF, WAVE), Video (e.g. MP4) files to fulfil project objectives.

All data generated are stored in a MYSQL database (text, formatting, codes for the functionalities of the Wordpress installation) or stored as files in the platform server as DOC/DOCX, HTML, XML,

PDF/A, PPT/PPTX, XLS/XLSX, Image (e.g. JPEG, JPG-2000), Audio (e.g. AIFF, WAVE), Video (e.g. MP4).

2.2.3 Data collected and/or generated by communication, dissemination and DEC activities

Website

The B-THENET website will be created at M9 to provide visibility to B-THENET and public project results. The website will be hosting news, events, results, and content extracted from the deliverables and reports. To adhere to the FAIR principles, Open Educational Resources, collected and/or generated by the international B-THENET Centres activities, will be deposited on a dedicated website page. The same data will be shared in Zenodo Community. Visitors' statistics (anonymised data) will also be collected and/or generated through an analytics service in compliance with GDPR and Italian Data Protection Authority (*"Garante per la protezione dei dati personali"*). These statistics will be used for analysis purposes and they will be stored in excel files (.xlsx) and word document (.docx) for the qualitative analysis. LOBA has already anticipated the concerning data will be included in Deliverables D4.7, D4.8, D4.9 "Report on Dissemination and Communication activities". Each version of deliverable will be deposited in the Zenodo Community.

Social Media statistics (including Facebook, Twitter, LinkedIn and YouTube)

This data will be collected through regular monitoring of the B-THENET social media statistics (Facebook, Instagram, Twitter, and LinkedIn) with a view to estimating the performance of the project's social media activity in terms of dissemination and communication, and stakeholder engagement. Data will be quantitative addressing the metrics registered for each channel (e.g. followers, tweets impressions on Twitter, number of likes on Instagram, etc.). Moreover, the statistics will be followed by a qualitative analysis of the collected data and written considerations about to improve the Social Media's performance to achieve a higher number of target audience. In line with that, the quantitative data will be stored in a Microsoft excel file (.xlsx) while the analysis of the results will be deposited in a standard word document (.docx). Finally, in the project OneDrive, LOBA has shared a Microsoft excel file (.xlsx) with Management Board (MB) to monthly choose and validate the Social Media content. LOBA has already anticipated the concerning data will be included in the Deliverables D4.7, D4.8, D4.9 "Report on Dissemination and Communication activities". Each version of the deliverable will deposited in the Zenodo Community.

Data collected from project events (International B-THENET Centres events, networks with other EU and national projects or stakeholders, etc.)

Dissemination monitoring activities are performed periodically from APRE, as WP4 Leader, and IZSLT, as Project Coordinator. The purpose of collecting these data is to evaluate the success and efficiency of the dissemination performance during the lifecycle of the project. APRE provided the Partners with a Microsoft excel file (.xlsx), uploaded on the project OneDrive, where the Partners report each project activity performed or to be performed. Moreover, B-THENET Partners participate in relevant international events in order to engage stakeholders and

maximise the project visibility, thus collecting general information about the events attended is implemented through the same Microsoft excel file (.xlsx).

Data will also be collected during the international B-THENET Centres events and networking opportunities with other EU and national projects and stakeholders. During the two International B-THENET events for beekeepers, training activities will be provided: 80 practices (already analysed by the National Centres) will be shared and discussed on the data obtained, on how to improve/better exploit them. APIMONDIA will collect feedback from the participants in a Word document accessible to the Partner. The data will facilitate the validation of practices shared in the Platforms. Moreover, SLU will select the topics that is important to have in the training of advisors. Finally, BEELIFE will provide a report on clustering Activities. The information will be stored in Microsoft Word documents (.docx) and published in the respective deliverables (D.4.2 “Guidelines for advisors in beekeeping and Open Educational Resource training in advisory services in beekeeping” - D.4.12 “Guidelines on Best Beekeepers Practices for beekeepers” - D.4.10 “Report on clustering activities M24”) through the Platform and Zenodo. Finally, a spreadsheet including attendees’ demographic information will be deposited in the B-THENET OneDrive folder for each event organised by the project.

2.2.4 Data collected and/or generated by project coordination

During the coordination activities of B-THENET, qualitative and quantitative data are collected and/or generated. The data occur in the following contexts:

- internal and external communication,
- WP meetings,
- calls with MB and AB,
- quality management activities,
- progress monitoring,
- risk analysis.

The concerning data are stored in noted minutes, written considerations, roadmaps, agreements and reports describing outcomes and development of activities and procedures. The data will be closed and only accessible to the Partners on the B-THENET OneDrive folder. The type of data will be Text (e.g. TXT, HTML, XML, PDF/A).

2.3 Origin of data and re-use from existing research projects and initiatives

In B-THENET, qualitative and quantitative data are collected and/or generated by the Beneficiaries and beekeepers, advisors and stakeholders. The latter provides the main contribution to the inventory and categorization of practices and innovations, generation of data in B-THENET Exchange Platform, project events, and DEC monitoring activities. The target groups from which new data are expected, include:

- Beekeepers
- Advisors
- All other stakeholders (e.g. research institutes, innovators, honey industries, large-scale and small-scale distributions, consumers, editors of beekeeping magazines, farmers, consultants, policy-makers, EC Directorate-Generals, International Organization such as FAO, WOA, EFSA, etc.)

Moreover, re-used data will be processed from Horizon Europe, Horizon 2020, and national project (e.g. BETTER-B) and initiatives (e.g. COST-Actions, EU Bee Platform, Honeybee Valley) will be used to map the state of art in the beekeeping sector. These data will be shared in the B-THENET Platform and Zenodo community. Finally, Consortium's knowledge and experience, coming from other projects and similar initiatives, will directly or indirectly contribute to carrying out the project activities.

2.4 Expected size of data

The sub-chapter lists the B-THENET activities in which data will be collected and/or generated, the type and source of data, and the expected size of data.

Name of the Activity	Description of data	Data type (observational, experimental, event related)	Format of data	Expected size of data during the project lifecycle (KB) ³
Surveys on best practices and innovations	Survey responses	Observational data	• DOC/DOCX, • HTML, • XML, • PDF/A, • Image (e.g. JPEG, JPG-2000)	800.000 KB
Practices and innovation collection from network and research	Practices from relevant networks and research activities	Observational data	• DOC/DOCX, • HTML, • XML, • PDF/A, • PPT/PPTX; • Image (e.g. JPEG, JPG-2000) • Audio (e.g. AIFF, WAVE) • Video (e.g. MP4)	2.000.000 KB
National B-THENET Centres events and webinars	Educational materials, Survey responses	Event related data	• DOC/DOCX, • HTML, • XML, • PDF/A, • PPT/PPTX • Database (XML, CSV)	5.000 KB

³ The estimation of expected size is based on the volume of data collected and/or generated in similar activities implemented by the Beneficiaries in the past unless otherwise indicated.

			• Image (e.g. JPEG, JPG-2000,) • Audio (e.g. AIFF, WAVE)	
Social Studies	Survey responses	Observational data	• CSV • XLSX • DOC/DOCX, • HTML, • XML, • PDF/A, • PPT/PPTX	5.000 KB
B-THENET Platform activities	Practices description, ratings, collaborative activities, Website Analytics	Observational and Experimental data	• DOC/DOCX, • HTML, • XML, • PDF/A, • PPT/PPTX; • XLS/XLSX; • Image (e.g. JPEG, JPG-2000) • Audio (e.g. AIFF, WAVE) • Video (e.g. MP4)	10.000.000 KB
Monitoring and evaluation of the dissemination and communication results	Social media Statistics, Website Analytics	Observational and Experimental data	• DOC/DOCX, • XLSX	500 KB per file
International B-THENET Centres events, networks with other EU and national projects or stakeholders	Data collected from dissemination events	Event related data	• DOC/DOCX, • XLSX	500 KB per file
Project coordination	Data collected from Project coordination	Observational data	• DOC/DOCX, • HTML, • XML, • PDF/A, • PPT/PPTX • Image (e.g. JPEG, JPG-2000) • XLS/XLSX,	15.000.000 KB

			• Image (e.g. JPEG, JPG-2000) • Audio (e.g. AIFF, WAVE) • Video (e.g. MP4) • ZIP	
--	--	--	---	--

3 FAIR Data Management

The European Commission considers mandatory that the data management of projects, funded under Horizon Europe, adhere to FAIR principles. As consequence, the project Coordinator along with the Beneficiaries commit to use standards and metadata to make data findable, allow data accessibility and interoperability via trusted long-term repositories as well as facilitate the reusability of the data, specifying which data will be open and data sharing procedures.

The following sub-Chapters establish the methodology followed in B-THENET to make data FAIR: findable, accessible, interoperable, and re-usable.

3.1 FAIR Data: Making data findable

Data storage and backup

B-THENET collects, generates and manage data through surveys, exchange activities in the Platform, dissemination events etc. The 18 Beneficiaries have defined internal and trusted repositories which follow the FAIR principles.

List of NOT trusted repositories but appropriate for long-term storing of data collected and/or generated by B-THENET and used to facilitate the daily collaboration among the Beneficiaries

- **B-THENET Platform:** it is the principal project repository where the best practices will be stored for long-term. The tool is based on open-source software and composed of four Platforms (*“Research and innovation (R&I) Platform”*; *“Practices platform”*, *“Exchange Platform”*, and *“Repository Platform”*) which figure out the phase of inventory, categorisation, analysis, exchange and storage of the B-THENET best practices. In particular, at least 20 best practices will be shared yearly on the Repository Platform (for a total of about 80 practices in four years) in the form of audio/video/text, etc. In the Platforms will be deposited open data or data subject to pseudonymization or anonymization.
- **OneDrive:** it is a hosting service operated by Microsoft where the Partners store the project documents (such as the deliverable submitted or to be submitted, dissemination and communication monitoring report, etc.) to manage the daily activities in B-THENET. The project OneDrive folder was created by IZSLT as a private space that only the Beneficiaries can access. Open, closed and confidential data will be collected in this folder.
- **Website:** B-THENET will use the facility as a repository of Open Education Resources. The Data will be stored for at least 10 years.
- **Local drivers:** they are internal facilities for individual long-term storage and are under the ownership and responsibility of Beneficiaries. The DMP deliverable does not manage these types of facilities.

List of trusted repositories appropriate for long-term storing of data collected and/or generated by B-THENET and used to facilitate the daily collaboration among the Beneficiaries

- **Zenodo:** a B-THENET Community will be created and all public deliverables and relevant milestones, training materials, journal articles and conference contributions, as well as surveys and questionnaires, will be deposited and made publicly available. Open access

will be provided immediately under the latest available version of the Creative Commons Licence (CC).

- **EU-FarmBook** (<https://www.eufarmbook.eu/>): EU-FarmBook, is a Horizon Europe project that is working at regional, national, and European levels, to build a Digital Platform, gathering and sharing agriculture and forestry knowledge. As soon as the EU-FarmBook platform will be ready to receive practices, the best beekeeping practices identified with B-THENET project will be stored for the long term.

Standard identification mechanism

B-THENET highlights the importance to make the data collected and/or generated findable to the Partners and external groups. Having in mind that, the project's open data will be associated with Persistent Identifiers (PIDs), namely a long-lasting reference to a digital resource⁴. As OpenAIRE stated "[...] *There are different PID types for different kinds of resources. In the current research environment we most commonly see two varieties: those for objects (publications, data, software, such as URNs, DOIs, ARKs, Handle) and those for people (researchers, authors, contributors, such as ORCIDs, ISNIs) [...]*".

For the open data deposited in Zenodo, the repository will associate a DOI to the data.

Naming conventions and metadata

B-THENET Consortium has established a naming internal convention that allows facilitating the understanding, status (keeping track of changes), and version of a file and the data included.

In particular, B-THENET has established the following naming convention:

- Name of the project
- Name of activity in which data are collected and/or generated
- Issue Date
- Version number/status

Some examples can facilitate the understanding of name convention framework:

- B-THENET_Dissemination and Communication activities data_03.02.23_final
- B-THENET_Mandatory Survey_08.02.23_draft

Moreover, B-THENET is expected to adopt a metadata approach to further increase the long-term discoverability of the data, while also facilitating its re-use.

The metadata "*include information such as contact information, geographic locations, details about units of measure, abbreviations or codes used in the dataset, instrument, and protocol information, survey tool details, provenance and version information and much more*"⁵.

The metadata used by B-THENET will be administrative (date created, data size, data type, data source, etc.) descriptive (bibliographic data, keywords, title, etc.), legal metadata (copyrights and licensing). Nevertheless, the project does not exclude the use of other kinds of metadata, if necessary.

⁴ <https://www.openaire.eu/what-is-a-persistent-identifier>

⁵ <https://www.openaire.eu/what-is-metadata>

3.2 FAIR Data: Making data accessible

The data collected and/or generated by the project will be accessible to all Partners. It will be stored in the B-THENET OneDrive folder where only the Beneficiaries can log in after an authentication procedure managed by the Coordinator. Moreover, the open data is also expected to save in the B-THENET Platforms and Zenodo where beekeepers, advisors and stakeholders can access freely. On the other hand, if a data cannot be accessible publicly, B-THENET will only store the metadata on Zenodo.

B-THENET could gather data by merging non-personal and personal information. In line with that, these data will be collected after an informed consent according to Art. 13 of GDPR. Moreover, they will be stored publicly after pseudonymization or anonymization and in accordance with the purpose of the consent given (article 25 GDPR). The project data will not be sold to any third party.

All information in whatever form or mode of communication, which is disclosed by a Party (the “Disclosing Party”) to any other Party (the “Recipient”) in connection with the Project during its implementation, is marked as “confidential” at the time of disclosure. The confidential data will be stored in a secure facility of the Partner responsible for collecting the data and it will be maintained without authorized disclosure for five years after the final payment.

In line with that, Article 13, Article 15, Article 16 and Article 17 of the Grant Agreement will be followed by the Beneficiaries, which have detailed their commitment in the B-THENET Consortium Agreement. The latter, in Chapter 8 of B-THENET Consortium Agreement has detailed the project provision about ownership, transfer and dissemination of results and the Beneficiaries will follow accordingly.

Data preservation and archiving

For the long-term data archiving and preservation, B-THENET has decided to use the Platforms and a dedicated Zenodo Community. The data on Zenodo will be stored for the lifetime of the repository due to the use of CERN’s Data Centre.

3.3 FAIR Data: Making data interoperable

As explained in L. Steele & T. Orrell (2017)⁶, the interoperability is *“the ability to join up data from different sources in a standardised and contextualised way”*. In line with that, B-THENET has established a Data Management approach in which data format and metadata standards facilitate the interoperability among project data.

The formats which support the interoperability are postscripts (e.g., pdf), machine-readable formats (e.g. xml, html), spreadsheets, (e.g., xlsx, csv, etc.), text documents (e.g., docx). More details are described in Chapter 2.

In particular, interoperability for the close data will be ensured through the utilization of Dublin Core Metadata standards. These standards are stated as a *“set of fifteen “core” elements*

⁶ L. Steele & T. Orrell (2017). The frontiers of data interoperability for sustainable development. Publish What You Fund and Development Initiatives
https://www.publishwhatyoufund.org/app/uploads/2017/11/JUDS_Report_Web_061117.pdf

(properties) for describing resources”⁷ which guarantee quality and uniformity of data, while continuing to be interoperable with other data sources in the related data context. On the other hand, the open data will be interoperable thank to Zenodo community which use JSON Schema as internal representation of metadata.⁸

The project will also give particular attention to the interoperability with the EIP-AGRI database and EU-FarmBook *reservoir* through administrative, descriptive, and legal metadata.

3.4 FAIR Data: Increase data re-use

The B-THENET Beneficiaries and Platform users will mainly use the project data and the main part of project data will be under CC license. In line with that, the project has classified data into open, sensitive and closed. The use and access of data will be different according to its type:

- Open data: must be freely used and citable. Authorization to use it is not required.
- Sensitive data: are confidential/restricted data that could require data management procedure to be used or cited. Authorization for the use could be required to the data’s subject or researcher. An example in B-THENET could be data collected by surveys for beekeepers.
- Closed data: cannot be used or cited.

⁷ <https://www.dublincore.org/specifications/dublin-core/dces/>

⁸ <https://about.zenodo.org/principles/>

4 Conclusions and way forward

The purpose of this deliverable is to regulate the management of data collected and/or generated during the project lifecycle and ensure the adherence of data and methodology to the FAIR principles. The DMP states the purposes under which the data are collected and/or generated, the nature of data, and the procedures to make them findable, accessible, interoperable and re-usable.

Any relevant modification of the data management will imply a revision of the present document.

5 References

- Horizon Europe Data Management Plan Template Version 1.0 05 May 2021
- H2020 Programme, Guidelines on FAIR Data Management in Horizon 2020, Version 3.0 26 July 2016
- L. Steele & T. Orrell (2017). The frontiers of data interoperability for sustainable development. Publish What You Fund and Development Initiatives
- OpenAIRE, What is a persistent identifies
- OpenAIRE, What is a metadata

B^{THE} NET



Istituto Zooprofilattico Sperimentale
del Lazio e della Toscana *M. Aleandri*



UNIVERSIDAD
COMPLUTENSE
MADRID



InHort
INSTYTUT OGRODNICTWA



UNIVERSITY OF
HOHENHEIM



Latvia University of
Life Sciences and
Technologies



KARL-FRANZENS-UNIVERSITÄT GRAZ
UNIVERSITY OF GRAZ



LOBA®



Funded by
the European Union

info@bthenet.eu