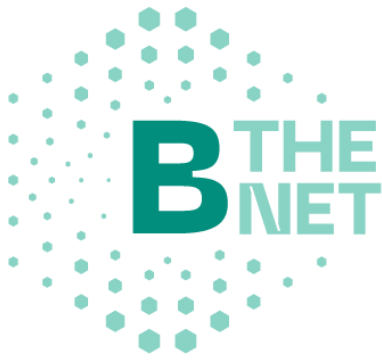




D2.7

Report on practices and innovations from networks and research M16

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*



APRE
Agenzia per la Promozione
della Ricerca Europea



UNIVERSIDAD
COMPLUTENSE
MADRID



ELGO - DIMITRA
HELLENIC AGRICULTURAL
ORGANIZATION - DIMITRA



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

Deliverable title	Report on practices and innovations from networks and research M16
Deliverable number	D2.7
Deliverable version	1.0
Previous version(s)	-
Contractual date of delivery	31 December 2023
Actual date of delivery	30 December 2023
Deliverable filename	D2.7 - Report on practices and innovations from networks and research M16
Nature of deliverable	DATA — data sets, microdata, etc + Report
Dissemination level	Public
Number of pages	13
Work Package	WP2
Task(s)	T2.3
Partner responsible	BEELIFE, UGRAZ, UGENT, LBTU
Author(s)	Noa Simon Delso (BEELIFE)
Editor	Veronica Menara (IZSLT)
EC Project Officer	Céline Choquer
Abstract	Deliverable 2.7 reports the results of a desk research where we screened for European research programmes potentially generating useful innovations and practices in beekeeping. The document is an update of Deliverable 2.6, where a database of research projects and networks yielding practices and innovations was presented in M7. In Deliverable 2.7, the database was updated, and the Technology Readiness Level (TRL) of the results of the projects screened were analysed.
Keywords	EU research project, beekeeping practices, innovations, investment, application.

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
Noa Simon Delso, Cindy Adolphe	BEELIFE
Kristina Gratzner, Robert Brodschneider	UGRAZ
Ellen Danneels	UGENT
Filippo Jannoni-Sebastianini	APIMONDIA
Aleksejs Zacepins	LBTU
Atila Kunszabó	UVMB

Revision History

VERSION	DATE	REVIEWER	MODIFICATIONS
1.0	29/12/2023	Veronica Manara (IZSLT)	Validation

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.

Table of Abbreviations and Acronyms

Abbreviation	Meaning
AA	Apiculture Association
TRL	Technology Readiness Level

Index of Contents

1	Executive Summary	7
2	Introduction	8
3	Methodology	9
3.1	Identification of relevant research projects.....	9
3.2	Identification of relevant publications	9
4	Results	10
5	Conclusions	11
6	References.....	12

1 Executive Summary

Deliverable 2.7 reports the results of a desk research where we screened for European research programmes potentially generating useful innovations and practices in beekeeping. We have updated the database with newly arrived projects in this version (following D2.6, published in M7). Additionally, we have analysed the TRL level of the projects' results and outputs and identified the actions to bring lower TRL levels to ready-to-apply practices/innovations.

In the present deliverable, we focused on European research projects. We used the CORDIS website to identify historical projects, using keywords. Due to our experts' knowledge, we realised that not all projects available could be identified in this way. We also performed a Google search based on the same keywords. B-THENET partners were requested to complete the list with information about projects they were/are involved in. The desk research rendered a database reporting specific administrative-related project information (metadata), such as the research programme to which they belong, funding allocated, starting and ending dates, etc. Besides, we evaluated the innovations and practices developed by the projects with the potential to include them among the practices discussed and developed in B-THENET. Scientific and dissemination publications mentioning beekeeping practices were also identified and included in an additional database.

A total of 67 projects were identified and analysed by the partners, and more than 20 publications. It must be mentioned that most of the European research investment did not render practices and innovations at TRL9, which was the objective of the exercise (i.e., identify ready-to-use practices and innovations that we can validate and disseminate in B-THENET). Many of them remained at Fundamental Research or Proof of Concept levels. We decided to identify the end users of the projects' results. Indeed, in our opinion, only 56% of the results of the projects could have beekeepers as target users, from which a large majority would also have other stakeholders, such as veterinarians, scientists, and decision-makers as end users.

Some projects especially targeted beekeeping husbandry practices, B-PRACTICES, BeeB, Bee Informed Partnership or Honey Bee Health Coalition, identified and structured a list of practices and innovations. These have been included in a third database and will contribute to the prioritisation, validation and dissemination of practices work carried out in B-THENET.

It must be mentioned that the B-THENET network recognised other sources of funding not related to research but used for practical research, the National Beekeeping Programmes (First Pillar under Common Agricultural Policy (CAP), Regulation (EU) No 1308/2013). In future updates of the present deliverable, a review of the national or regional initiatives will be included.

2 Introduction

The project B-THENET aims to modernise the beekeeping sector by sharing knowledge ready to be implemented and fostering best practices exchange.

In particular, the project pursues the following objectives:

- Modernize the EU beekeeping sector by establishing a multi-actor network with complementary knowledge that connects beekeepers, researchers, advisors, and the other actors in the apiculture sector.
- Collect, categorize (“Inventory”), and select good practices for sustainable beekeeping and new research findings ready to put into practice or not sufficiently known using a bottom-up methodology.
- Create a digital knowledge platform (“Exchange”) to increase the flow of practical information and knowledge sharing within the EU.
- Create a digital knowledge platform (“Repository”) to collect, share and store knowledge on best practices, for the long term, facilitating and harmonizing the education of the EU beekeeping sector.

The present deliverable aimed to update the database produced in M7, reporting the list of European projects that could possibly generate practices and innovations that can be included in B-THENET for validation and dissemination.

BeeLife, with the contribution of all partners and the Advisory Board, mapped the available EU research project results that could provide useful practices and innovations to B-THENET. This Task aims to identify a list of practices and innovations based on European research activities.

3 Methodology

3.1 Identification of relevant research projects

We aimed to identify practices and innovations developed through European (and some non-EU) research projects. We used the CORDIS database to search for projects by using keywords such as “bees”, “honey bees”, “beekeeping”, “innovation”, and “beekeeping projects” in all programme frameworks. Due to our expert’s knowledge, we realised that relevant projects could not be identified in this way. Searches were also done using Google, based on the same keywords.

B-THENET partners were also requested to complete the list with information about projects they were/currently are involved in. A common database was compiled to integrate the information from the previous search. The database included project administrative-related information, such as the research programmes to which they belong, funding allocated, starting and ending dates, website, etc. Besides, we evaluated the project's outcomes, mainly the innovations and practices developed by the project, which could be considered in the analysis of B-THENET.

Apimondia also identified some research projects from abroad (USA) that were included in the database for transparency. However, it must be noted that the consortium has not systematically looked for non-European research projects dealing with the topic.

Afterwards, we analysed the TRL level of the outputs and results described for the different projects (from 0 (Fundamental Research) to 9 (ready to apply practice or innovation)) and we defined the necessary steps for the identified practices or innovations to arrive to TRL 9, when applicable.

3.2 Identification of relevant publications

Scientific and dissemination publications on beekeeping practices were also identified and included in an additional database.

4 Results

A total of 64 projects were identified, representing a total expenditure of above 100 million euros. However, only a minority of the projects delivered ready-to-implemented practices, e.g. B-Practices project, BeeB, SmartBees, or BeeDoc (Disease diagnostic tools), and innovations, e.g. BeeHome or Hapi. Other projects' results had other public targets, e.g., PoshBee, whose public was pesticide risk assessors and managers and academia, or STEP, whose public was mainly decision-makers, academia and conservationists. It must be highlighted that the available information on the project outcomes is scarce or missing. There are neither final reports, publications, or datasets available for a consequent amount of the projects identified. This is unfortunate because it makes it impossible to track the usefulness and efficacy of public spending. Additionally, decision-makers would not be misled by the public spending on the topic, for a small proportion goes to field practitioners. This is expected, for research projects normally do not aim to develop TRL9 solutions. However, it seems necessary for public authorities managing research funding to know the current situation to use it more strategically.

The list of scientific publications was uploaded, but mainly dissemination publications were added. Almost 250 individual practices have been identified by the different projects. They have been classified according to two criteria: (1) if they refer to beekeeping practices, apiary environment or beekeeping products; and if related to beekeeping practices, if they refer to (2) Animal feeding and watering, Disease management, General apiary management, Hygiene, Record-keeping, Training and Veterinary medicines. It can be noted that this classification is somehow biased towards the management of sanitary issues affecting honey bee health instead of other practices related to the environment or Beekeeping Products. The reason behind this is that it has been based on the outcome of the B-Practices project, which was developed mainly by veterinarians and sanitary experts.

5 Conclusions

The present work has delivered three databases: (1) an updated list of European research projects versed or related to honey bees or beekeeping; (2) an updated list of publications defining practices and innovations relevant to beekeeping management; and (3) an updated list of practices related to beekeeping management. The latter constitutes a candidate list of practices and innovations from which end-users (beekeepers and advisors) will need to assess and prioritise the importance and may become objects of further development within the B-THENET project.

The work developed so far made it clear that the large majority of public investment in research related to bee health did not lead to a change in practices in the field or did not develop ready-to-use innovations. Indeed, only two EU projects focused on beekeeping management practices and training, and provided the identified practices dealt with within B-THENET. However, B-THENET partners identified other sources of funding, namely National Apiculture Programmes (measures included within the First Pillar under the CAP, Regulation (EU) No 1308/2013), as the ones rendering more field-applicable practices.

In the following steps of the current analysis, we would like to render publicly available the results obtained, in an accessible and simplified way. The beekeeping projects linked to the Erasmus+ program (i.e., “Innovative Blended Learning Toolkit for the Safe Pest Management of Honeybees” - blesabee) may also be more deeply investigated. The above-mentioned outputs will be included in the next update of the Deliverable (D2.8, due in month 25).

6 References

European Parliament and Council of the European Communities, Regulation (EU) No 1308/2013 of the European Parliament and of the Council of 17 December 2013 establishing a common organisation of the markets in agricultural products and repealing Council Regulations (EEC) No 922/72, (EEC) No 234/79, (EC) No 1037/2001 and (EC) No 1234/2007.

The references to the different projects investigated have been included directly into the databases, which will be made publicly available in a user-friendly format in the next update of the current deliverable, foreseen in M25.

B THE NET



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



APRE
Agenzia per la Promozione
della Ricerca Europea



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