



D3.15

Establishment of the 13 National B-THENET Centres

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Abstract	13 National B-THENET Centres have been established in Austria (UGRAZ), Belgium (UGENT), Croatia (UNIZG), Germany (UHOH), Greece (HAO), Hungary (UVMB), Italy (APIMONDIA), Poland (INHORT), Slovakia (UVLF), Slovenia (SBA), Spain (UCM), Sweden (SLU), under the coordination of Denmark (BIAVL). Each National B-THENET Centre was constituted by pairing beekeeper’s associations with research institutes or universities, to fulfil at 360° the needs of the EU beekeeping sector. Their facilities include demonstration apiaries, laboratories and meeting rooms that will be used in the national events and webinars organised by partners, involving researchers, beekeepers, and advisors. Over the first 10 months of the project, National B-THENET centres worked with a bottom-up approach to identify, categorise, describe, and validate best practices that will be object of discussion of the Thematic Network in 2023. Beekeepers and advisors will be trained on validated best practices with a standardised training methodology and will be awarded certification of competences.
Keywords	EU beekeeping, Thematic Network, National B-THENET Centres, Beekeepers, Advisors is Beekeeping, Good Beekeeping Practices, Biosecurity Measures in Beekeeping

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Table of Abbreviations and Acronyms

Abbreviation	Meaning
TN	Thematic Network
GBPs	Good Beekeeping Practices
BMBs	Biosecurity Measures in Beekeeping

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1 Executive Summary

Deliverable 3.15 presents an overview on the establishment and core activities of the 13 National B-THENET Centres of the European project B-THENET (GA N. 101059812).

National centres are distributed across 13 EU countries, in Austria (UGRAZ), Belgium (UGENT), Croatia (UNIZG), Germany (UHOH), Greece (HAO), Hungary (UVMB), Italy (APIMONDIA), Poland (INHORT), Slovakia (UULF), Slovenia (SBA), Spain (UCM), Sweden (SLU), under the coordination of Denmark (BIAVL).

Each one of them is constituted by a project partner working with a collaborating partner, consisting of a beekeepers' association, research institute or university.

In the first 10 months of the project, National B-THENET centres have worked with a bottom-up approach to identify, categorise, describe and validate best beekeeping practices and innovations to discuss among EU beekeepers and advisors in 2023.

Good practices will be validated online and on-field, and will then become "*Best Beekeeping Practices*", defining "the best beekeeping management that could be adopted in a specific geographical area, considering the given specific climatic conditions, the bee genetic, the beekeeping equipment and the bee diseases. National B-THENET Centres will host national events and webinars involving researchers, beekeepers and advisors for dissemination and training purposes. Training on best practices and innovations will be performed with a standardized sharing/learning and educating methodology, and certification of competences for beekeepers and advisors will be issued.

2 Introduction

National B-THENET Centres are national hubs of the project B-THENET, that aims to modernise the Beekeeping sector by sharing knowledge ready to be put into practice and fostering best practices exchanges.

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.

National B-THENET Centres constitute the operational gateway connecting EU beekeepers and advisors with the project B-THENET. In 2023, during the first 10 months of the project, they were founded in 13 countries of the EU, specifically:

- Austria (UGRAZ)
- Belgium (UGENT)
- Croatia (UNIZG)
- Denmark (BIAVL) who coordinates National Centres
- Germany (UHOH)
- Greece (HAO)
- Hungary (UVMB)
- Italy (APIMONDIA)
- Poland (INHORT)
- Slovakia (UVLF)
- Slovenia (SBA)
- Spain (UCM)
- Sweden (SLU)

Each National B-THENET Centre was constituted by pairing beekeeper’s associations with research institutes or universities. The establishment of such collaborations was realised to achieve balance between practical and theoretical knowledge, and to ensure that the needs of the sector are met at 360°. National Centres will operate in their national language and will take advantage of already existing local professional relations to maximise the impact of B-THENET Thematic Network.

The national B-THENET Centres will act as back-offices for advisors and front-office for beekeepers. National events and webinars will be organised by the partners involving researchers, beekeepers and advisors at national level for practical training on best practices and innovations. TN partners will standardize sharing/learning and educating methodologies and develop surveys to monitor the efficiency and progress of the activities.

The high-quality training will consider also the gender dimension and will engage young people. Training certificates on best practices will be issued at national level. Moreover, a feedback system will allow to evaluate the effective adoption/learning of the best practices, innovations and the emerging end user's needs.

During the first 10 months the main focus has been on establishing the 13 national B-THENET Centres. Moreover, the network of beekeepers, advisors and researchers, worked with a bottom-up approach to identify, categorise, describe in detail and validate the first 22 best beekeeping practices and innovations that are object of discussion in B-THENET in 2023.

In the present report, an overview of the 13 facilities is presented, as well as a summary of B-THENET centres core activities concerning the identification and development of best practices, and the foreseen training.

3 Description of the National B-THENET Centres

All National B-THENET Centres have demonstration apiaries where exchange and training activities can take place. Facilities can also include laboratories and meeting rooms that will be used in the national events and webinars organised by partners, involving researchers, beekeepers and advisors. In **table 1** is presented an overview of the 13 National B-THENET Centres describing their facilities, contact details, responsible persons, and collaborating partners.

Table 1. National B-THENET centres established in 13 EU countries. **1A** focuses reports details of main points of contact, while **1B** provides an overview of facilities and collaborating partners for each national centre.

1A

Country	Responsible partner	Organization	Person in charge	Contact details
Italy	APIMONDIA	International Federation of Beekeepers Associations	Filippo Jannoni Sebastianini	apimondia@mclink.it
Sweden	SLU	Swedish University of Agricultural Sciences	Lotta Fabricius Kristiansen	lotta.fabricius@slu.se
Denmark	BIAVL	Danish Beekeepers Association	Flemming Vejsnaes	fv@biavl.dk
Slovenia	SBA	Slovenian Beekeepers Association	Peter Kozmus	peter.kozmus@czs.si
Spain	UCM	University Complutense Madrid	Aránzazu Meana	ameana@ucm.es
Greece	HAO	Hellenic Agriculture Organization	Fani Hatjina	fhatjina@elgo.gr
Croatia	UNIZG	Faculty of Veterinary Medicine University of Zagreb	Ivana Tlak Gajger	itlak@vef.unizg.hr

Poland	INHORT	The National Institute of Horticultural Research	Małgorzata Bieńkowska	malgorzata.bienkowski@inhort.pl
Slovakia	UVLF	University of Veterinary Medicine and Pharmacy in Košice	Juraj Toporčák, Dagmar Mudroňová	dagmar.mudronova@uvlf.sk
Belgium	Honeybee Valley	Ghent University	Dirk de Graaf, Ellen Danneels	ellen.danneels@ugent.be
Germany	UHOH	University of Hohenheim	Kirsten Traynor	kirsten.traynor@uni-hohenheim.de
Hungary	UVMB	University of Veterinary Medicine Budapest	Gyula Kasza	kasza.gyula@univet.hu
Austria	University of Graz	University of Graz	Robert Brodschneider	robert.brodschneider@uni-graz.at

1B

Country	Responsible partner	National Centre Address	Facilities	Collaborating Partners
Italy	APIMONDIA	Corso Vittorio Emanuele II, 101 - 00186 Rome, Italy	Apiary + workshop facility available at ARA	Associazione Romagnola Apicoltori - ARA, Bagnacavallo - RA
Sweden	SLU	1. Ulls väg 16, 756 51 Uppsala, Sweden and 2. Gråbrödragatan 7, 532 31 Skara, Sweden	Two apiaries with 10 colonies and meeting facilities at each site. In Uppsala honey extraction facility is included.	Swedish University of Agricultural Sciences, Swedish Beekeepers Association, Swedish professional beekeepers association
Denmark	BIAVL	Fulbyvej 15, DK4180 Sorø, Denmark	One apiary with four colonies, Meeting rooms and other meeting facilities, honey laboratory	Danish Beekeepers Association
Slovenia	SBA	Slovenian Beekeepers' Association,	Eleven apiaries with 4 bee colonies and workshop	Slovenian Beekeepers' Association

		Brdo pri lukovici 8, 1225 Lukovica, Slovenia	facilities at each site.	
Spain	UCM	Avda Puerta de Hierro, s/n, 28040 Madrid, Spain	One apiary with 10 colonies Teaching room for 70 assistants and laboratory for 24 assistants and showroom available for permanent visiting Close by Veterinary Faculty teaching and meeting rooms available	Faculty of Veterinary University Complutense Madrid Asociación Apicultores Guadalajara Asociación Veterinarios Especialistas en Sanidad y Producción Apícola Fundación Amigos de las Abejas Aula Apícola Sierra de Hoyo
Greece	HAO	Department fo Apiculture, Nea Moudania, 63200 Greece	2 apiaries with about 200 colonies, teaching and meeting rooms, demonstration rooms and facilities for bee diseases, alternative method for queen mating	Department of Apiculture- HAO; Federation of Greek Beekeepers Association; Association of Breeders for Greek Queens
Croatia	UNIZG	Heinzelova 55, 10 000 Zagreb, Croatia	Educative-archive station for beekeeping, Laboratory for Honeybee Diseases APISlab, two observation honeybee colonies, lecture and office facilities, practicals. Additionally, regional	Faculty of Veterinary Medicine University of Zagreb; Croatian Beekeepers Association; Beekeeping Association Krizevci
Poland	INHORT	Koźłataja 14/11, 31-502 Kraków, Poland	Seven apiaries including one in ecological management system (total of 180 colonies), conference room, national B-THENET	Cracow Beekeeper Association

			centre office, bee products quality laboratory	
Slovakia	UVLF	Komenskeho 73, 04181 Košice, Slovakia	Three apiaries including 120 colonies, conference room, laboratory and teaching rooms, educative facilities for beekeeping	Vocational Secondary School pod Bánošom, Banská Bystrica; Slovak Beekeepers Association
Belgium	Honeybee Valley	Krijgslaan 281, S33, 9000 Gent, Belgium	One apiary with 12 colonies, meeting rooms and other meeting facilities, honey extraction facility	Vlaams Vulgarisatie Centrum voor Bijenteelt (VVCB)
Germany	UHOH	Erna-Hruschka-Weg 6, 70599 Stuttgart, Germany	Diverse apiaries with 175 colonies, large institute with laboratory and practical rooms	Deutscher Imkerbund
Hungary	UVMB	2225 Üllő Dóra-major	Under development, meeting room and laboratory already available	Hungarian National Beekeepers' Association
Austria	University of Graz	Institute of Biology, Universitätsplatz 2, 8010 Graz, Austria	Meeting rooms, experimental apiary in front of the building, a second apiary will be set up in 2024	Collaboration partner Biene Österreich

4 National B-THENET Centres bottom-up approach and core activities

4.1.1 Selection of themes to be discussed in B-THENET project.

One of the initial duties of B-THENET centres, is identifying the topics that will object of discussion and development over the 4 years of the project B-THENET. In 2023, starting from knowledge acquired from previous EU projects focusing on identifying good practices, B-THENET centres selected the themes to be discussed in the TN (**Table 2**). Each year, the 13 B-THENET centres will join their efforts to develop good beekeeping practices and biosecurity measures concerning the themes listed below, encompassing the primary areas of interest of EU beekeepers.

Table 2. Themes identified by National B-THENET centres that will be discussed over the 4 years of the project B-THENET.

THEMES	YEAR
Apiary set-up and management/maintenance	2023
Varroosis	
Colony set-up and daily management/maintenance	2024
American foulbrood	
Record-keeping	2025
Bee feeding and watering	
European foulbrood	
Routine (preventive) hygiene practices	2026
Nosemosis + Small Hive Beetle + <i>Vespa velutina</i>	

4.1.2 Involvement of beekeepers in the identification of priority practices and innovations in the EU

One of the main goals of B-THENET, is to apply a bottom-up approach in the identification of good beekeeping practices. The bottom-up approach, foresees the involvement of beekeepers in each step of the strategy necessary to collect, categorise, develop, validate, and disseminate good beekeeping practices in the EU. After defining the broad areas of interest (themes) investigated in the project, B-THENET centres focused on involving beekeepers in the selection of practices that they considered priority.

The tool used to achieve this goal, was the development and distribution of surveys. B-THENET centres developed a survey that required beekeepers to rate the practices that they deemed as most relevant, among a list of practices falling under the 2023 themes (apiary set-up and management/maintenance and varroosis). Beekeepers were also asked to suggest practices that they felt were not included in the provided list. To reach the largest number of EU beekeepers, the survey was developed in English, and translated in the 14 languages of the project partners (Croatian, Danish, Flemish, French, German, Greek, Hungarian, Italian, Latvian, Polish, Swedish, Slovakian, Slovenian, Spanish). Each B-THENET centre distributed the survey among beekeepers belonging to their already established networks.

2,094 answers from 22 EU Member States (Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Netherlands, Poland, Romania, Slovak Republic, Slovenia, Spain and Sweden) were received to the survey. The 13 national B-THENET centres analysed beekeeper's responses, and based on beekeepers preferences, they identified the list of 22 beekeeping practices that are object of B-THENET discussion in 2023 (**Table 3**).

Table 3. 2023 Inventory of Good Beekeeping Practices and Biosecurity Measures that are priority to EU beekeepers.

CATEGORY: GOOD BEEKEEPING PRACTICES Theme: "APIARY SET-UP AND MANAGEMENT/MAINTENANCE" Practices to "PROPERLY PLACE HIVES IN THE APIARY"	
Cluster 1: Identify a proper area to locate the apiary	
Avoiding exposure to pollutants (e.g. pesticides, heavy metals, etc.)	
Setting-up apiaries in an area accessible to vehicles (e.g. relevance of solid/dry ground)	
Avoiding areas where allergenic (e.g. <i>Ambrosia trifida</i> and <i>Artemisia vulgaris</i>) or toxic (e.g. containing pyrrolizidine alkaloids, like <i>Echium</i> spp., <i>Eupatorium</i> and <i>Senecio</i> spp. etc.) plants could be found in a significant quantity	
Avoiding areas exposed to excessive humidity and wind	
Ensuring presence of trees (or other barriers) to create protection against weather stressors (e.g. heat, wind etc.)	
Maintaining appropriate distance from other apiaries (for hive production and bee health)	
Having enough space for storage rooms/working tools	
Keeping safe distance from houses/ villages (for human safety)	
Preventing theft of hives (e.g. assess presence/build a fence around the apiary)	

Cluster 2: Setting-up of the apiary
Keeping an appropriate number of hives (e.g. consider the amount of melliferous plants and sources of water available in the area where the apiary is located)
Seasonally relocating the apiary (e.g. taking into account the season, wintering close to warmer areas)
Proper positioning of the hive (e.g. providing hives with a proper stand, guaranteeing proper space between hives, providing a proper orientation of the hive entrances so that sun can reach them from the early morning hours to sunset)
Avoiding obstacles for the bees (e.g. high grass/snow in front of the hive entrance)

CATEGORY: BIOSECURITY MEASURES for Varroosis Theme: "VARROOSIS" Biosecurity measures to "GUARANTEE BEST EFFICACY OF ANTI-VARROA TREATMENTS, ESPECIALLY WITH ORGANIC COMPOUNDS"
Cluster 1: How to conduct
Assessment of varroa infestation level during the beekeeping season
Identification of the best moment for varroa treatments according to the national climatic areas.
Cluster 2: Proper use of low environmental impact compounds
Use of oxalic acid (including sublimated)
Use of formic acid
Use of thymol (e.g. applying only when environmental temperature is high enough).
Use other low environmental impact compounds (if medicines are available in your country)
Cluster 3: Biotechniques
Brood removal (e.g. partial drone/worker brood removal or total brood removal/shook swarm)
Queen caging (e.g. use of cages that do not permit the queen to lay eggs or trapping comb)
Heat treatments
Warnings and restrictions for BMBs:
- to treat varroa according to the national legislation (e.g. use only medicines authorized for honey bees);
- to follow the label indication (also considering dispensers, sublimators, etc).
- to rotate active ingredients to reduce the risk of varroa resistance.
- to treat simultaneously all colonies of the same apiary and all apiaries in the same area (cooperation with beekeepers in the neighbourhood to integrate varroa control)

4.1.3 Involvement of beekeepers and advisors in the development and description of good practices

Once priority practices were identified, B-THENET centres' goal was to involve beekeepers and advisors in their description and tailorization to the country-level. For this purpose, B-THENET centres organised exchange meetings where practices were discussed among beekeepers and advisors. The collection of their inputs resulted in the drafting of each one of the 22 practices in B-THENET digital platform (<https://www.bthenet.eu/platform/>), the digital tool of the project designed to connect beekeepers, advisors and other stakeholders of the sectors. Drafts were realised in the 14 different languages of the B-THENET centres, and included step-by-step description (text + images) and categorisation according to the country's' different climatic area

(temperate, cold, sub-tropical), item (e.g. apiary, beehive, colony, nucleus), colony status (growing, stable, wintering preparation, overwintering), production line (honey, royal jelly, pollen, propolis, bees, wax, venom), services (pollination, environmental monitoring, education, apitourism, apitherapy) and tools and supplies required for the practices implementation. Moreover, each practice was analysed and scored by B-THENET centres according to the following criteria: sustainability (including cost-benefit, bee health, human health and environmental protection), scientific value and readiness to use.

4.1.4 Involvement of beekeepers and advisors in the validation of beekeeping practices: online validation and on-field validation

The online community populating B-THENET Exchange Platform will participate in further refinement and tailorization of the practices. Platform users are able to add tips, make questions and to suggest improvements, as well as to rate practices, providing both qualitative and quantitative evaluation of the practice. The outcome of online validation will support National B-THENET centres in the description of their country-level gold standard, in the format of 22 comprehensively described practices that can be easily and readily accessed and adopted by EU beekeepers and advisors.

The on-field validation will take place once all 22 practices are fully validated online, and it will include physical knowledge exchange among National B-THENET Centres and their network of Beekeepers and Advisors. The sessions will follow a standardised training methodology, where the written protocols are followed and validated by beekeepers and advisors, with the aim of further collecting feedback and improving practices from the practical point of view.

Once practices are validated online and on-field thanks to the effort of the 13 National B-THENET centres and of the EU beekeepers and advisors, they will be considered as the Best Beekeeping Practices, and will be published in the long-term repository of the project, the Repository Platform where they will serve as training and information material.

5 National Centres' Events

Each year, the project B-THENET will validate at least 20 best beekeeping practices (reaching a total of at least 80 best practices). Over the course of the four years of the project, National B-THENET Centres will be responsible for educational and training activities on the validated best practices. The target group of the training activities will be EU beekeepers and advisors, and they will be carried out with a standardised training methodology. Beekeepers will receive national certification accrediting their completion of the national beekeeping training. **Table 4** presents an overview of the number of training events foreseen in B-THENET in 4 years.

Table 4. National B-THENET centres events in 4 years. A total of 52 events are foreseen for beekeepers and advisors between 2023 and 2026.

13 centres		
Events in 4 years	Beekeepers	Advisors
Webinar + On-field training	52	
Conference	52	

6 Conclusions

13 National B-THENET Centres have been successfully established. Over the four years of the project B-THENET, they will operate in 13 EU countries to connect beekeepers, advisors, researchers, and other stakeholders of the sector, both on their physical premises and on B-THENET online platforms. National B-THENET centres will work towards the collection, development, and validation of the 80 best practices yielded by the project and will train EU beekeepers and advisors with a standardised methodology, acknowledging the completion of the trainings with a standardised certificate.

B THE NET



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