2.22

Methodology definition for the analysis of practices

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info@bthenet.eu

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Author(s)	Aleksejs Zacepins (LLU), Vitalijs Komasilovs (LLU), Marco Pietropaoli (IZSLT), Veronica Manara (IZSLT), Giovanni Formato (IZSLT)
Editor(s)	Giovanni Formato (IZSLT), Marco Pietropaoli (IZSLT), Veronica Manara (IZSLT),
EC Project Officer	Céline Choquer

Abstract	This deliverable concerns the scientific methodology that will be applied to rate best practices identified with a bottom-up approach by beekeepers. The methodology will consider the analysis of the following criteria: 1. Sustainability, that includes: cost-benefit, bee health, human health and environmental protection. 2. Scientific value. 3. Readiness to use.
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Editor(s)

NAME	ORGANISATION
Giovanni Formato	IZSLT
Marco Pietropaoli	IZSLT
Veronica Manara	IZSLT

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Executive Summary

This document is part of the Work Package 2 – Collection and Evaluation of Practices and is linked to the Task 2.5 - Cost benefit, sustainability, scientific and readiness to practice analysis of identified practices.

The deliverable D2.22 represents developed methodology which will be used to evaluate and rate best beekeeping practices, previously identified by EU beekeepers with a bottom-up approach. LLU, task leader, together with IZSLT and the on-line contribution of most of the partners of the Thematic Network developed the methodology. The last includes the following criteria: sustainability (that includes the economic value, human health, bee health and environmental protection), scientific value and readiness-to-use.

Each criterion has its own importance coefficient, which is practice-related and used to calculate the overall score for the individual best practice examined.

Evaluation for rating the best practices will be carried out for each individual practice by beneficiaries through the Exchange activities at level of the B-THENET Centres (national or international).

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1 Introduction

The present document includes description of the methodology for best practices analysis and rating criteria.

B-THENET aims to modernise the Beekeeping sector by sharing knowledge ready to be put into practice and fostering best practices exchanges. The project's ambition is to create a European network, thanks to the shapes of four Platforms: "Practices Platform", "Research & Innovation Platform", "Exchange Platform" and the "Repository platform", which engages relevant actors to collect, organise, share, disseminate, and store valuable knowledge on beekeeping practices as well as on ready-to-use research solutions at national and international level.

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.

B-THENET structure is based on a multi-actor approach, through the participation of Partners and Collaborating Partners with different backgrounds (scientific, SSH, policy-making, etc.) who are showing the capacity to reach the heterogenous target audiences. In other words, the varied composition of the Consortium enables to evaluate the developed practices and select the best beekeeping practices.

Once the Best Practices at the EU level will be identified through a bottom-up approach, they will be then described in detail through "Internal exchange meetings" and rated at level of the B-THENET Centres.

Subsequently, best practices are uploaded on-line in the Exchange Platform, where they are further re-discussed for validation through "Exchange consultation meetings" in local language, not only by all partners at level of the B-THENET Centres, but also by platforms' users. In this way, users of the platforms will be able to improve the description of the practices. Validation of Best Practices at the national (in local language) or international (in English) level, will include the analysis of the practices too. After that, they can be placed in the repository platform to be used as educational material.

Always, practices in the repository platform can be evaluated by the platform users. More in details, those that are considered “defective” by beekeepers will be sent back from “repository” to the “exchange” platform.

After the Executive Summary (Chapter 1) and Introduction (Chapter 2), methodology itself is presented (Chapter 3) and the process of evaluation is described (Chapter 4).

2 Practices evaluation methodology

2.1 General description of the methodology

Practices evaluation methodology will be applied to fully described practices.

The scoring will be carried out for each practice by beneficiaries together with Consortium Partners in an online document in the cloud (internal discussion), as well as, subsequently, by the contribution of all the platforms' users (on-line open access).

Practices evaluation methodology consider three (3) criteria, as reported in the Grant Agreement (GA):

- Sustainability (cost-benefit, bee health, human health, environmental protection)
- Scientific value
- Readiness-to-use (practicability)

Each criterion will be evaluated by giving individual rating by stars, from zero stars up to 3 stars.

The practices overall rank is calculated as a weighted sum of stars for the different criteria considered.

The methodology for analysis and rating the best practices, can be changed, if needed, with the approval of the Management Board.

2.2 Description of the criteria

Section below describes each individual evaluation criterion that will be useful to consistently analyse best practices.

2.2.1 Sustainability

Sustainability definition: Sustainable beekeeping refers to all activities concerned with the practical management of social bee species, that is capable of continuing over time, causing little or no negative impacts to humans and the environment.

To evaluate sustainability the following criteria will be considered:

The cost-benefit analysis will evaluate the potential costs and benefits of a beekeeping practice, in particular its potential effects on production and hive products. The goal is to determine whether the benefits of applying the practice outweigh the costs, and by how much.

- Cost-benefit (of production and hive products)
    - Economic value of the practice will be evaluated considering costs of the materials and time needed to apply it, as well benefits and potential costs would be calculated.
- Bee health
- Human health (of beekeepers and consumers)
- Environmental protection

Rating for cost-benefit:

*** Practice has ≥ 90% benefits and ≤10% costs

** Practice has ~70% benefits and ~ 30% costs

* Practice has ~ 60% benefits and ~ 40% costs

Zero: Practice costs and benefits are ~ equal

Rating for Bee Health

*** Practice has positively high impact on Bee Health (essential)

** Practice has positively medium impact on Bee Health (important)

* Practice has positively low impact on Bee Health (not so important)

Zero: Practice has no impact on Bee Health (practice does not apply to bee health)

Rating for Human Health

*** Practice has an impact on both beekeepers' and consumers' Health (huge number of people positively impacted)

** Practice has an impact on consumers' Health (large number of people positively impacted)

* Practice has an impact on beekeepers' Health (low number of people positively impacted)

Zero: Practice has no impact on beekeepers' and/or consumers' Health (practice does not apply to human health)

Rating for Environmental impact

*** Practice has positive or no impact on the environment

** Practice has a neglectable negative impact on the environment

* Practice has a moderately negative impact on the environment

Zero: Practice has a strong negative/persistently negative impact on environment

2.2.2 Scientific Value

Definition of scientific value: the preservation and promotion of certain qualities or features which have scientific significance.

Users can define this value by citing scientific (or grey but reasonable literature) papers.

Explanation of the star rating:

Zero: Practice is not scientifically proven

* Practice is realistically scientifically based, is not scientifically proven yet

** There are some scientific facts acknowledging the practice (at least one citation in grey literature/beekeepers' magazines)

*** Benefits of the practice are scientifically proven (one citation in IF journal, well defined practice)

2.2.3 Readiness-to-use

Considering that the definition of readiness-to-use is "able to be dispensed with minimal if any effort of preparation", we consider as definition of "readiness-to-use", practices that can be dispensed with minimal if any effort both in terms of beekeepers' knowledge and tools/equipment needed.

Users can define this value by proving with journal articles or other ways. Moreover, the "limited" use of the practice can be related to specific characteristics of the practice itself (e.g. particular tools not easy to find or well-distributed in the Country/Area).

Rating for readiness-to-use (beekeepers' knowledge):

*** Practice requires minimal/if any efforts for its execution (minimal/if any knowledge is required to execute practice)

** Practice requires some efforts for its execution

* Practice requires strong efforts for its execution

Zero: Practice cannot be executed

Rating for readiness-to-use (tools):

*** Practice requires minimal/if any efforts for its execution (minimal/if any tools are required to execute practice)

** Practice requires some efforts for its execution

* Practice requires strong efforts for its execution

Zero: Practice cannot be executed

3 Conclusions

This methodology will be applied for the analysis of the Best Beekeeping Practices that will be identified (with a bottom-up approach according to the European beekeepers' needs) by B-THENET over the course of the 4 years of the Thematic Network.

The analysis will allow to rate best practices through the following criteria:

1. Sustainability. It includes: cost-benefit; bee health, human health; environmental protection.
2. Readiness to use.
3. Scientific value.

Only best practices with the highest score obtained by the above-mentioned analysis will be developed and published, after a specific sociological study, with audio-visual assets, infographics, VR/R tutorial interactive courses explaining at best how to implement them.

Contact persons of National B-THENET centres will fill out dedicated forms (B-THENET Practice Templates) onto which the above-mentioned criteria (readiness-to-use, Sustainability and Scientific value) will facilitate consistent analyses across different countries. "*Exchange internal meetings*" and webinars involving beneficiaries and collaborating partners will be organized by the National B-THENET centres, with the aim of discussing practices both theoretically and on-field at the apiary level. Best practices described in detail will be ready for their publication in local language in the Exchange Platform.

If required, the methodology will be revised during the project.

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