

WORLD CAFÉ ON RESILIENT BEEKEEPING



WORLD CAFE

REPORT

January 2026



APIMONDIA
SCANDINAVIA
2025
SWEDEN | DENMARK | NORWAY
23-27 SEPTEMBER
COPENHAGEN



INSIGNIA-EU



B THE NET



BEE-GUARDS

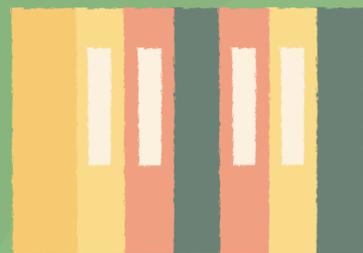


Better-B
FOR RESILIENT BEEKEEPING



Funded by
the European Union





Apimondia Congress 2025, Copenhagen

SESSION CONTEXT

September 26th, 14:30 – 16:30, Hall A3

This session aimed to connect with stakeholders, facilitate discussions, and collect feedback on current challenges and opportunities in European beekeeping and beyond.

This session built upon the EU Projects Introduction (B-THENET, BEE-GUARDS, Better-B, INSIGNIA-EU) on the 24th September. It developed around three themes transversal to the four European Projects Apimondia is currently involved in.



PANEL

MAIN PROGRAM

Part 1. Opening remarks

Part 2. Poll Questions (Icebreaker & Demographics)

Part 3. Group Discussions (3 themes and groups over 3 rounds)

Part 4. Poll questions (Icebreaker & Feedback)

Part 5. Plenary session: reporting results

Part 6. Closing remarks and Farewell

- Fani Hatjina, Apimondia Bee Health Commission/Insignia-EU
- Robert Chlebo, Apimondia Europe Regional Commission
- Raquel Sousa, Apimondia Communications Officer
- Di Prisco Gennaro (BEE-GUARDS)
- Jesus Yaniz (BEE-GUARDS)
- Veronica Manara (B-THENET)
- Flemming Vejsnæs (BEE-GUARDS)
- Marco Pietropaoli (B-THENET/Better-B)
- Martin Bencsik (Better-B)
- Giles Budge (BEE-GUARDS)
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- Robert Brodschneider (BEE-GUARDS/B-THENET/Insignia-EU)
- Lauriane Mariamè (B-THENET)
- Gherardo Bogo (BEE-GUARDS)
- Cecilia Costa (BEE-GUARDS)
- Noa Simon (B-THENET)
- James Williams (Better-B)

THEME DISCUSSIONS



**TECHNOLOGY &
DIGITAL
INNOVATION**

1

**SUSTAINABILITY &
RESILIENCE AGAINST
STRESSORS**

2

**CITIZIEN SCIENCE &
STAKEHOLDER
ENGAGEMENT**

3

Moderators (2-3) and experts (3-4) from the European Projects were assigned to each theme. Their role was to lead, facilitate and report the discussions with participants.





METHODS

- **METHODOLOGY:** World Café in a Cinema setting
- **OBJECTIVES:** Consult with stakeholders and knowledge exchange through group discussions
- **TOOLS:** interactive poll questions exercises, flip charts, group discussions, data gathering and insights (note taking and post-its notes)

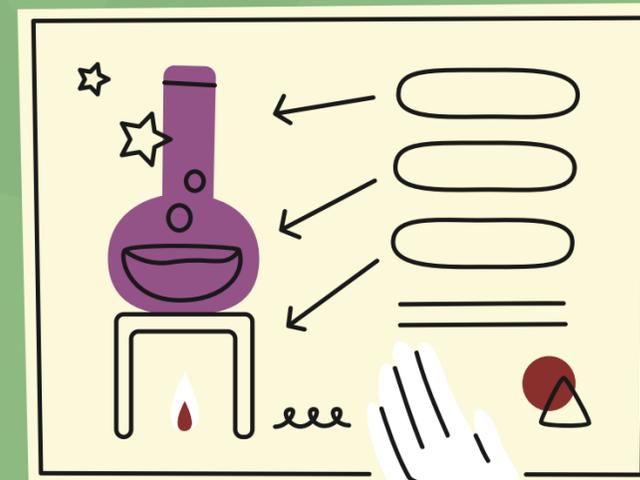
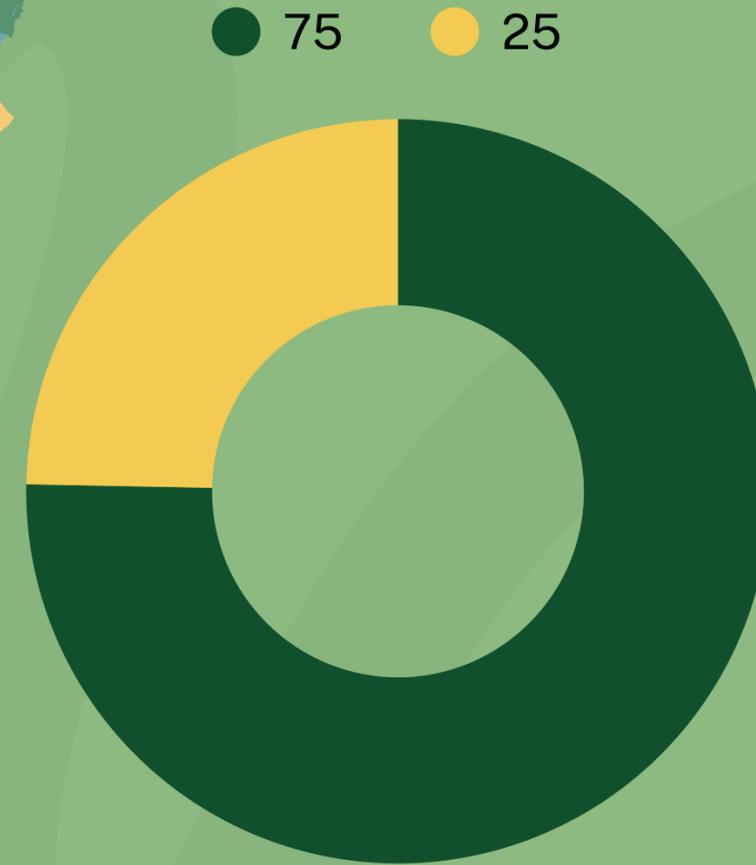


ROUND STRUCTURE

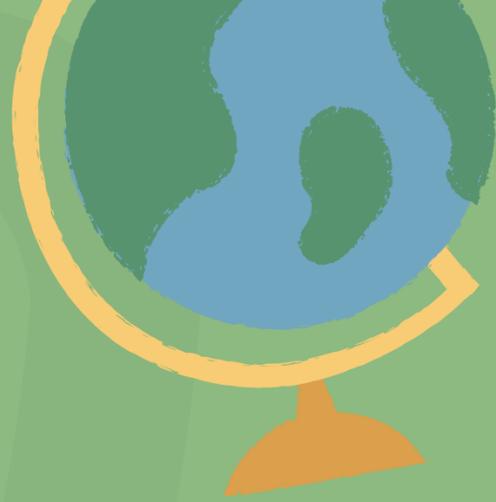
- Three rounds of 25 minutes each (20 + 5 min)
 - Moderators + Experts assigned 1 of 3 themes
 - Participants were randomly assigned a theme (1-3) as they entered the room
- 

REGISTRATION DATA

To ensure an enjoyable and productive environment, participation was limited to the first 150 registrants. **All places were filled, with exactly 150 participants registered: 75.3% confirmed their attendance, while a further 24.7% indicated they would try to attend** (see donut chart).



LIVE POLL #1



OBJECTIVE: Meet the audience and gather insights/data from the diverse audience while promoting discussions (6 questions)

From poll question 1 to 6, we had 64, 61, 69, 72, 74 and 70 respondents, respectively.

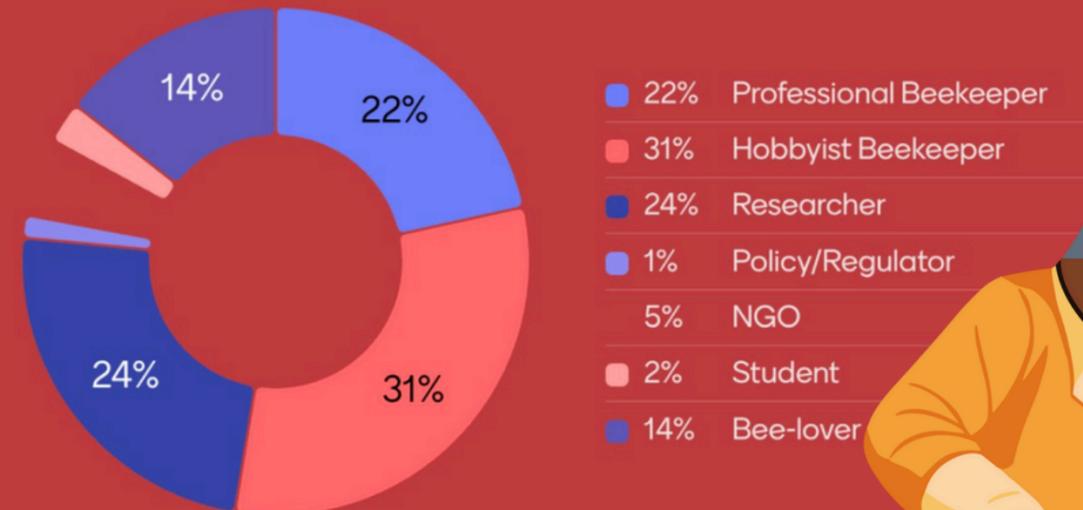
2

Which of the four projects are you most familiar with?



1

What is your primary connection to beekeeping?



LIVE POLL #1



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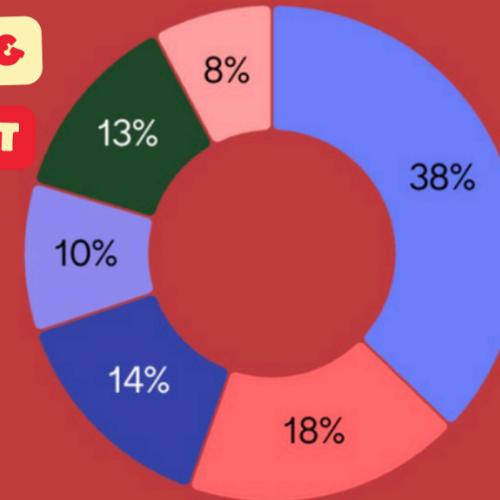
1 TECHNOLOGY & DIGITAL INNOVATION

Which technology do you believe will have the greatest impact on beekeeping in 5 years?



2 SUSTAINABILITY & RESILIENCE AGAINST STRESSORS

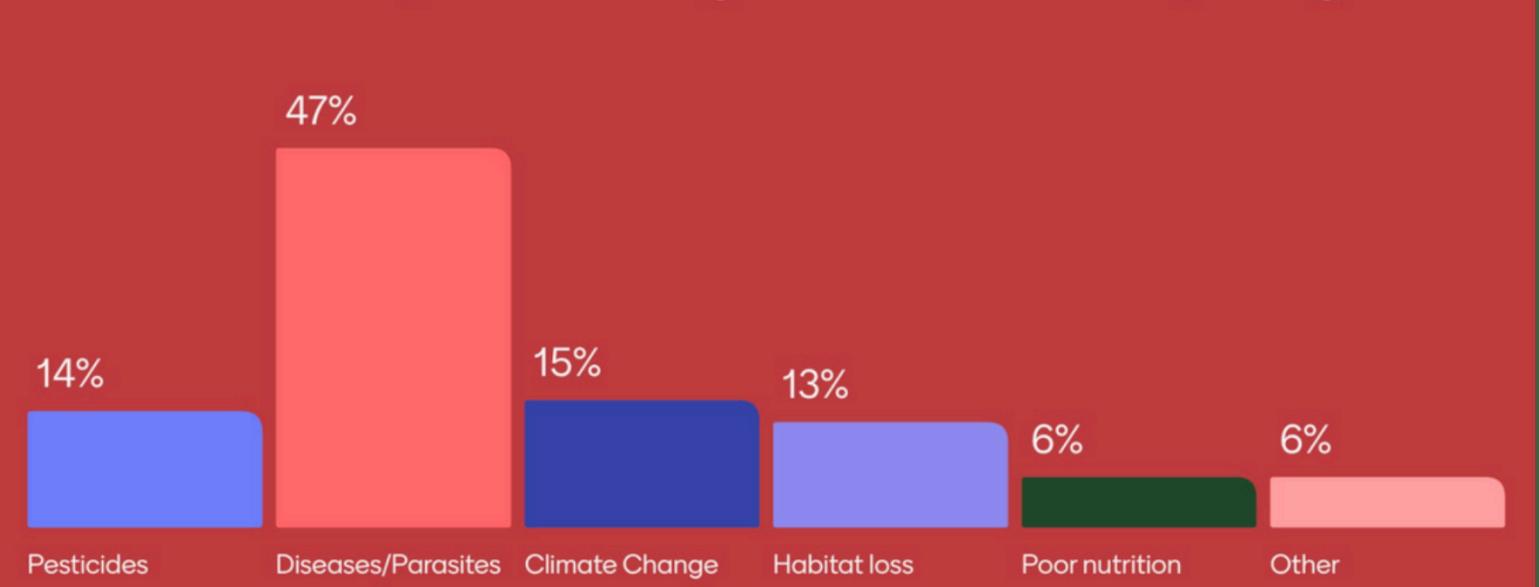
In your opinion, what motivates people most to get involved in bee citizen science?



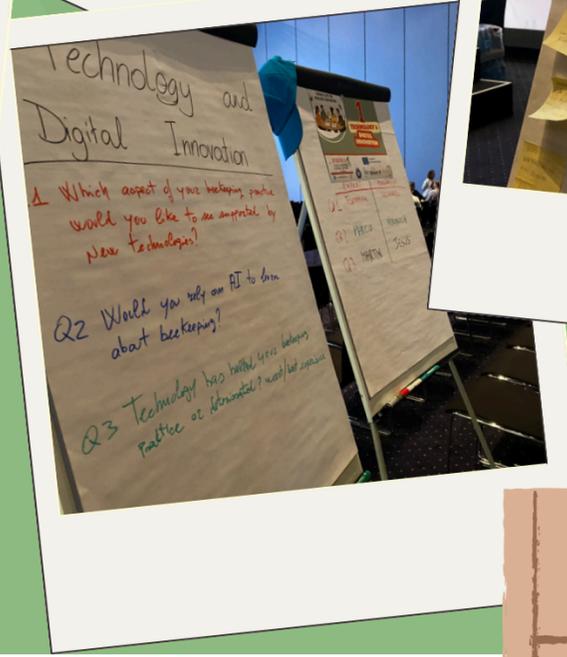
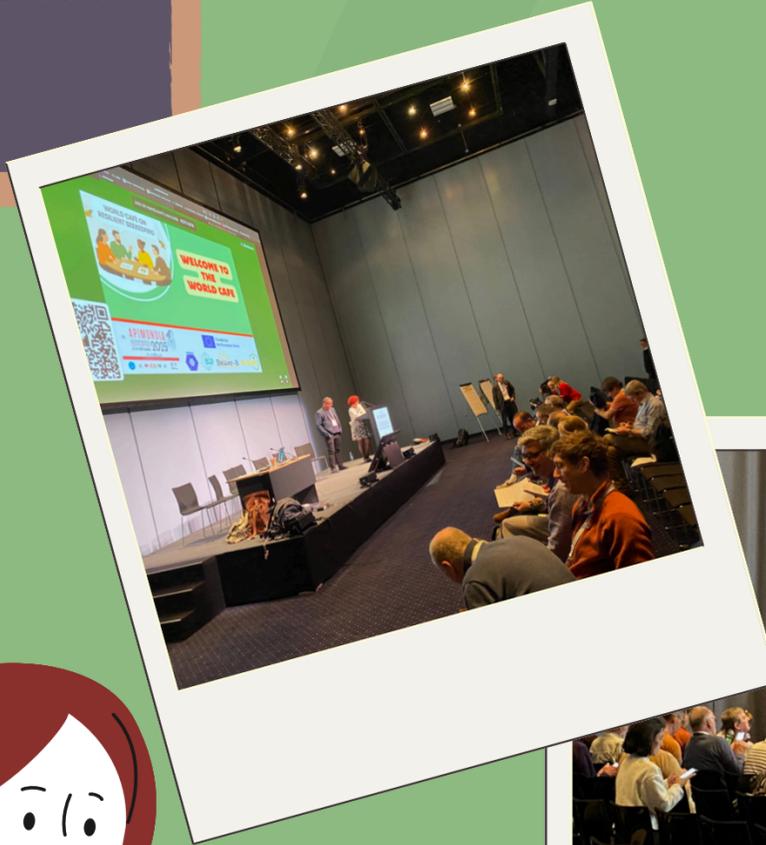
- 38% Protecting pollinators
- 18% Contributing to research
- 14% Learning new skills
- 10% Networking
- 13% Having fun
- 8% Never participated

3 CITIZEN SCIENCE & STAKEHOLDER ENGAGEMENT

Which stressor do you see as the greatest threat to bee your region?



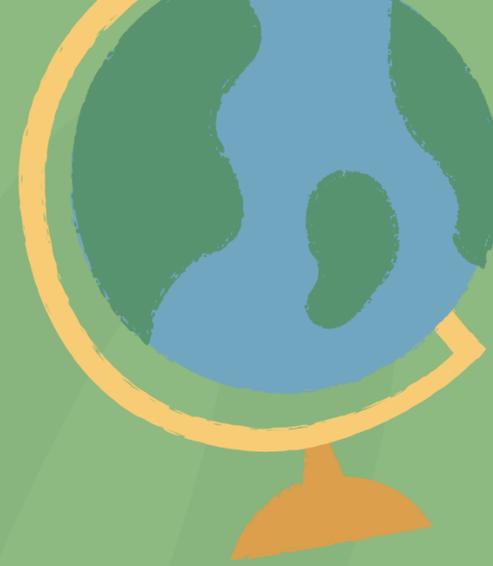
ROUND DISCUSSIONS



LIVE POLL #2

OBJECTIVE: To re-engage the audience, gather feedback, and provide facilitators with time to reflect, consolidate their insights, and report on outcomes (5 questions).

From poll question 7 to 11, we had 27, 35, 40, 39 and 37 respondents, respectively.



7 WHAT HAVE YOU LEARNED SO FAR?

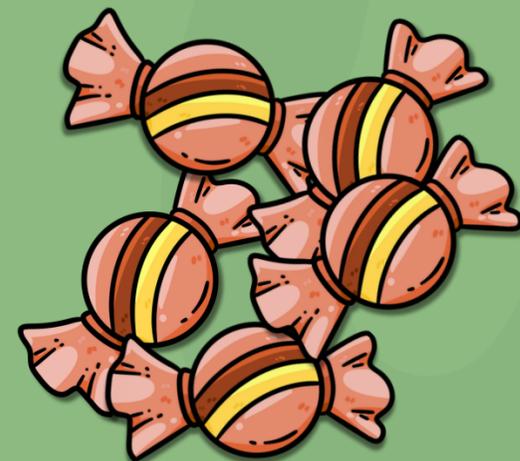


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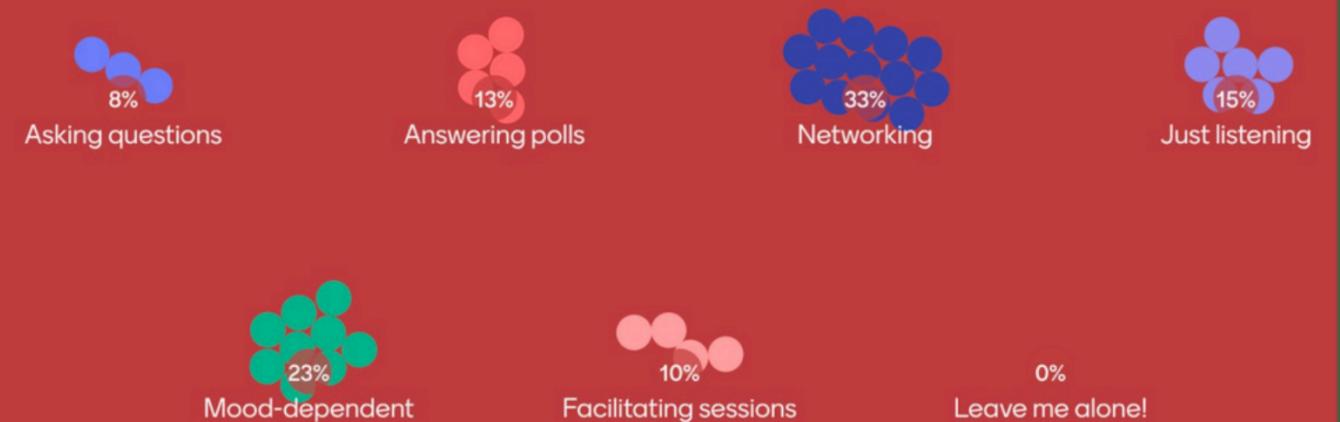
8

How do you rate this session and discussions so far?



9

How do you usually prefer to engage at events?



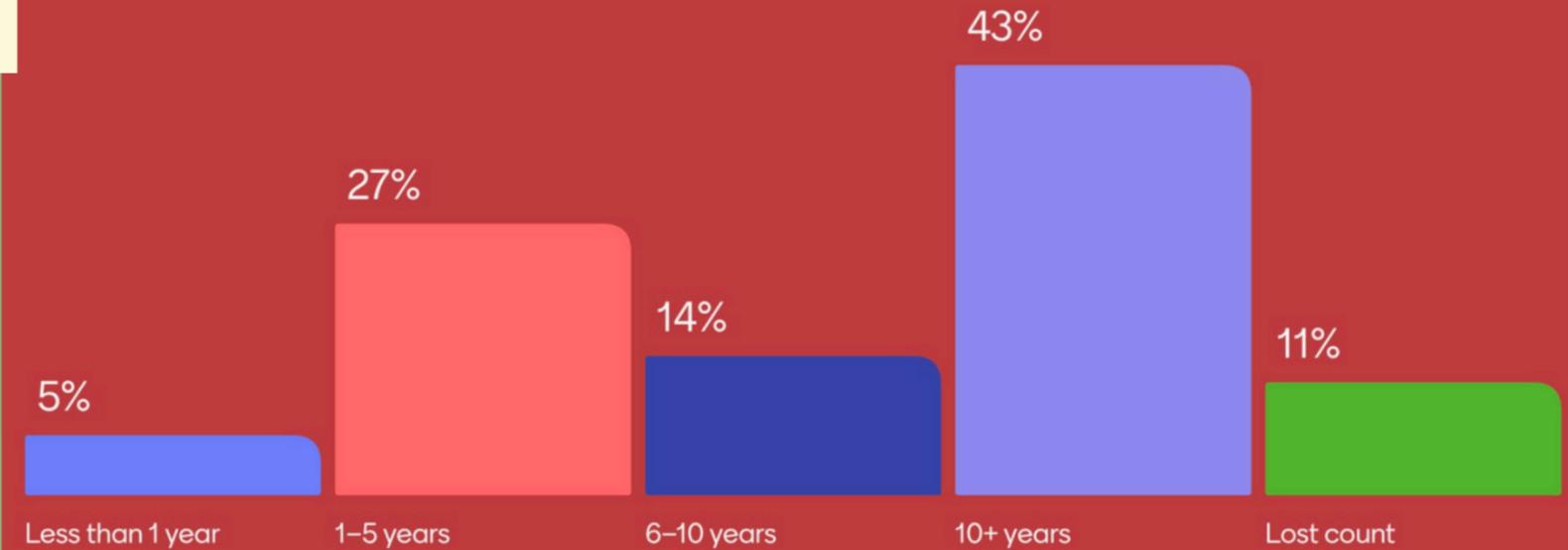
LIVE POLL #2

11

OBJECTIVE: To re-engage the audience, gather feedback, and provide facilitators with time to reflect, consolidate their insights, and report on outcomes (5 questions).

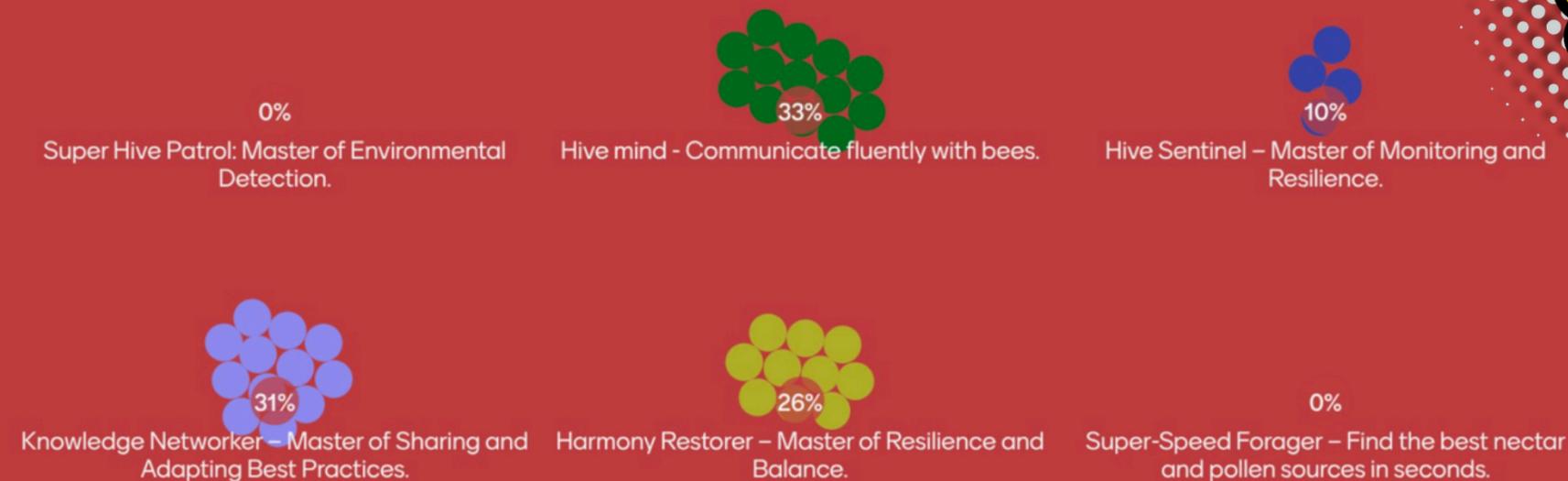
From poll question 7 to 11, we had 27, 35, 40, 39 and 37 respondents, respectively.

How long have you been involved in beekeeping/research?



10

If you could choose a superpower, which one would you choose?





RESULTS

TECHNOLOGY NEEDS



CONTEXT: aimed to promote knowledge exchange and improve honeybee health through digital tools and stakeholder dialogue

OBJECTIVES: to identify priority technological needs, assess trust in AI, and evaluate the practical impact of digital tools in beekeeping

Participants expressed strong interest in digital tools for hive monitoring and management, but highlighted major concerns regarding cost and system fragmentation.

KEY RESULTS:

High demand for monitoring tools:

- GPS and hive weight
- Pathogens and parasites (Varroa, Vespa velutina)
- Bee counters, cameras, sound sensors
- Volatile Organic Compound, pesticide, honey quality sensors

Interest in digital record-keeping and imaging tools

Main concerns:

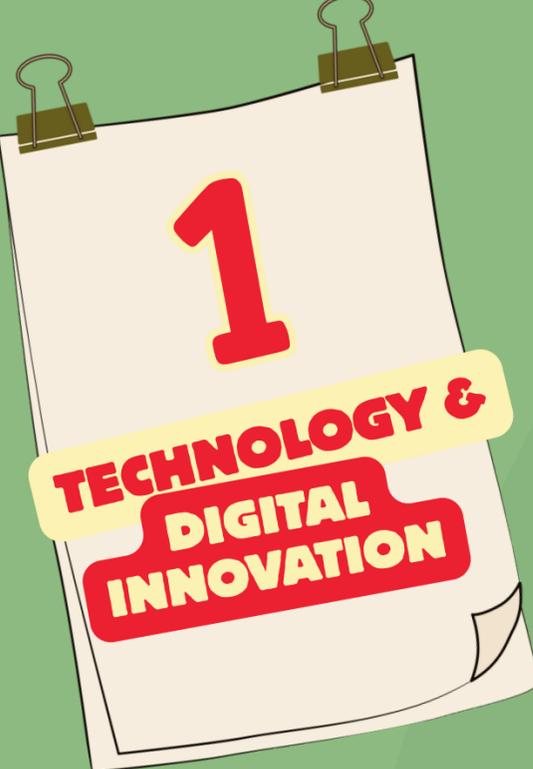
- Too many separate, expensive devices
- Need for integrated, modular systems

MODERATORS
Gennaro Di Prisco (BEE-GUARDS)
Jesus Yaniz (BEE-GUARDS)
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EXPERTS
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Martin Bencsik (Better-B)

Technology must be multifunctional, affordable, and practical.





RESULTS

AI AND DIGITAL TOOLS

CONTEXT: aimed to promote knowledge exchange and improve honey bee health through digital tools and stakeholder dialogue

OBJECTIVES: to identify priority technological needs, assess trust in AI, and evaluate the practical impact of digital tools in beekeeping

Beekeepers showed cautious attitudes towards AI, combined with selective acceptance of useful digital applications.

KEY RESULTS

Low trust in AI for decision-making:

- “Wrong answers”
- Lack of contextual understanding
- Limited reliability

Strong demand for:

- Better training datasets
- Centralised databases
- Expert involvement

Positive views on AI:

- Education and training
- Data analysis
- AI-based Queen detection

Mixed experiences with technology
Barriers: complexity, poor connectivity
Benefits: digital pens, voice assistants, smartphone tools

AI is welcomed as support, not as a replacement for expertise.





RESULTS

STRATEGIC IMPLICATIONS

CONTEXT: aimed to promote knowledge exchange and improve honey bee health through digital tools and stakeholder dialogue

OBJECTIVES: to identify priority technological needs, assess trust in AI, and evaluate the practical impact of digital tools in beekeeping



KEY WORDS



TAKE-HOME MESSAGES

Design technologies based on real-world beekeeper needs

Prioritise:

- Simple interfaces
- Robust hardware
- Offline functionality

Develop shared data infrastructures

Involve practitioners in innovation

Balance automation with human expertise

Sustainable digital innovation in beekeeping depends on **collaboration** between technologists, scientists, and beekeepers to ensure **reliable data collection, user-centred design, and minimal operational complexity.**



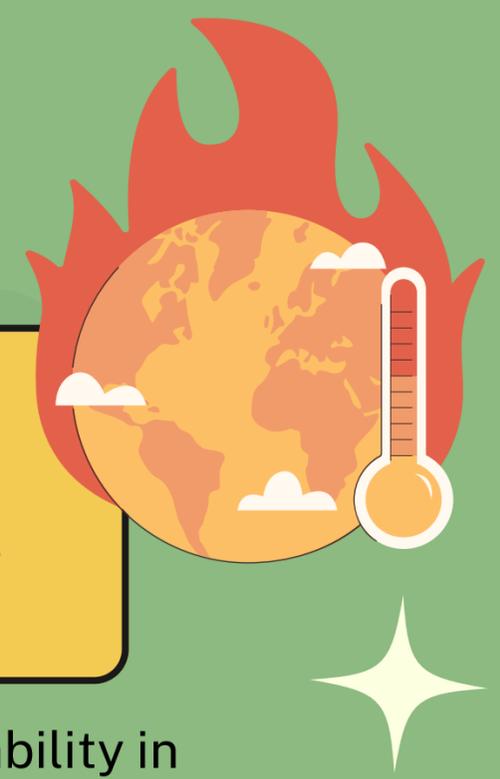


RESULTS

CLIMATE CHANGE & STRESSORS

METHODS: small group discussions and poll questions to learn about the group and their beekeeping operations worldwide.

OBJECTIVES: to identify and understand the impacts of climate change and biotic stressors on participants' beekeeping practices worldwide, and to gather feedback on the general understanding and perceived relevance of current research projects.



Participants from four continents reported that climate change is now a major driver of instability in beekeeping systems, affecting forage, colony cycles, and overwintering success. About 38% of participants had beekeeping as their main professional activity.

KEY RESULTS

Widespread climate impacts reported:

- Longer and unstable summers
- Droughts, floods, wildfires
- Altered flowering times
- Reduced forage availability

Increased difficulty preparing colonies for winter

Extended brood rearing seasons

Disrupted foraging patterns due to irregular weather

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Climate variability is weakening colony resilience and management predictability.



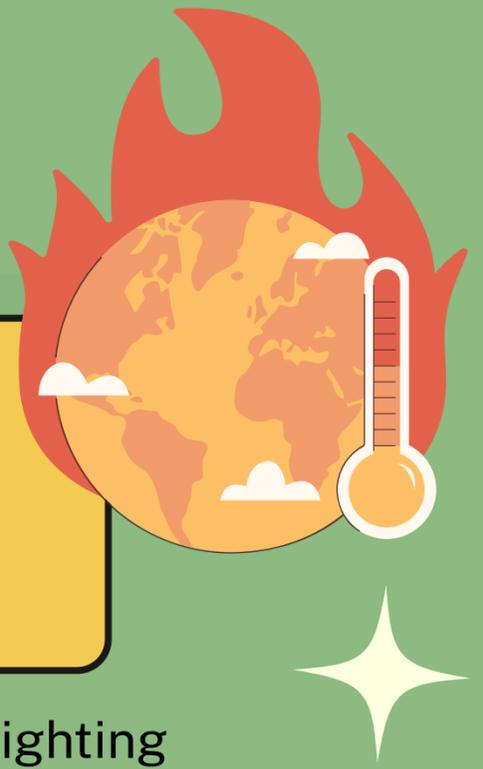


RESULTS

PESTS, DISEASES, AND TRAINING

METHODS: small group discussions and poll questions to learn about the group and their beekeeping operations worldwide.

OBJECTIVES: to identify and understand the impacts of climate change and biotic stressors on participants' beekeeping practices worldwide, and to gather feedback on the general understanding and perceived relevance of current research projects.



Climate change is intensifying pest pressure and complicating control strategies, while highlighting the need for stronger training systems .

KEY RESULTS

Treatment challenges:

- Reduced efficacy of thymol and oxalic acid
- Longer brood periods favour mites

Training priorities:

- Early, progressive education
- Strong practical components
- Apiary-based learning

“What pests and diseases are you most worried about in the future?”



More effective pest management and beekeeper training are central to long-term resilience.

2

**SUSTAINABILITY &
RESILIENCE AGAINST
STRESSORS**

RESULTS

STRATEGIC IMPLICATIONS

CONTEXT: aimed to promote knowledge exchange and improve honeybee health through digital tools and stakeholder dialogue

OBJECTIVES: to identify priority technological needs, assess trust in AI, and evaluate the practical impact of digital tools on beekeeping



TAKE-HOME MESSAGES

- Climate change affects both bee biology and management practices
- Varroa remains the dominant threat under changing conditions
- Stronger collaboration is needed between scientists and beekeepers
- Research outputs must be translated into usable field tool

KEY WORDS

co-creation
training
varroa
resilience
climate
pests
research
adaptation
data practical microplastics gap
management translation
emerging
thermoregulation practice

Research must better address:

- Hive internal environment
- Materials (e.g. plastics)
- Treatment alternatives

Sustainable apiculture requires climate-adapted management, improved pest control, and closer integration between research and practice.





RESULTS

ENGAGEMENT & MOTIVATION

OBJECTIVES: to estimate the level of engagement, motivations and challenges of citizen science. Also, to understand how researcher can improve methodologies and output delivery.



Discussions showed strong interest in citizen science among beekeepers and researchers, with many participants already experienced in collaborative research initiative

KEY RESULTS

High willingness to participate

Balanced participation:

- ~40–60% beekeepers and academics
- ≥20% with prior citizen science experience

Main motivations:

- Learning and knowledge exchange
- Contribution to science and education
- Access to personalised data
- Networking with researchers and policymakers
- Influence on research priorities

Demand for practical, user-friendly outputs (e.g. app-based tools)

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Beekeepers are highly motivated when projects deliver learning opportunities and tangible benefits.





RESULTS

CHALLENGES AND BARRIERS

OBJECTIVES: to estimate the level of engagement, motivations and challenges of citizen science. Also, to understand how researcher can improve methodologies and output delivery.



Despite strong motivation, shortcomings in project design and communication often led to frustration and disengagement

KEY RESULTS

Major challenges:

- Unclear project objectives
- Poorly explained methodologies
- Complex scientific language
- Slow or absent feedback
- Long data-processing times

Limited recognition of contributions

Abrupt project endings

Perception of insufficient appreciation of volunteer effort



Weak communication and lack of feedback undermine long-term participation.



3

CITIZEN SCIENCE &
STAKEHOLDER
ENGAGEMENT

RESULTS

STRATEGIC IMPLICATIONS

OBJECTIVES: to estimate the level of engagement, motivations and challenges of citizen science. Also, to understand how researcher can improve methodologies and output delivery.

TAKE-HOME MESSAGES

- Communicate clearly and inclusively
- Provide practical tools and guidance
- Deliver usable and timely outputs
- Recognise and value participant contributions
- Maintain relationships beyond project duration
- Promote continuity and trust

KEY WORDS

engagement feedback recognition
transparency sharing
long-term science co-creation
participation accessibility data
citizen
capacity building

Effective citizen science in apiculture depends on transparent communication, mutual benefit, and sustained collaboration between researchers and beekeepers.





THANK YOU



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