

**ALPHA Unit**

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 17<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 05-06 July 2016, physical and web meeting**

(Agreed on 19 July 2016)<sup>1</sup>

**Participants**

- **Working Group Members:**<sup>2</sup>
  - Physical attendance in Parma: Gérard Arnold, Gianni Gilioli (only 05/07)
  - Web attendance: Maragert Couvillon (only 05/07), Pascal Hendrikx, Miguel Angel Miranda (only 05/07), Chiara Polce (only 05/07), Marie-Pierre Rivière (only 05/07) and Ulrika Sahlin
  
- **Hearing Experts:**<sup>3</sup>
  - Not applicable
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - ALPHA Unit: Edoardo Carnesecchi, Frank Verdonck
  
- **Others:**
  - Not Applicable

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<sup>1</sup> The publication of the minutes shall be made without delay in compliance with the Founding Regulation and no later than 15 working days following the day of their agreement.

<sup>2</sup> Indicate first full name and then surname (John Smith) all throughout the document.

<sup>3</sup> As defined in Article 17 of the Decision of the Executive Director on the selection of external experts: <http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

## **1. Welcome and apologies for absence**

EFSA welcomed the participants. Apologies were received from Thomas David Breeze, Daniel Oberski and Mohan Raj.

## **2. Adoption of agenda**

The agenda was adopted without changes.

## **3. Declarations of Interest of Working Groups members**

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting. Margaret Couvillon, Chiara Polce and Marie-Pierre Rivière were only involved in TOR1-3 discussions whereas Ullrika Sahlin and Pascal Hendriks were only involved in TOR4 discussions.

## **4. Agreement of the minutes of the 17<sup>th</sup> Working Group web meeting held on 05-06 July, Parma.**

The minutes of this 16<sup>th</sup> Working Group meeting were agreed by written procedure on 19 July 2016.

## **5. Scientific topics for discussion**

TOR1-3 (05/07): Feedback was provided to the WG on the discussion of the draft opinion by the AHAW and the PLH Panels. The figure presenting the relation between pollination supply and demand was again reviewed by the WG. It was finally decided to delete the figure from the opinion as it raised more queries than providing information in addition to what is described in the text. A few other remaining questions were discussed and pending tasks were distributed amongst the WG experts.

TOR4 (05-06/07): The draft text was discussed in detail and suggestions were made on how to further develop the text. Then, a process of working and discussion sessions was initiated. Figures were generated supporting the explanation how multivariate analysis could be used to analyse bee health data. The chapter providing guidance on the design of field surveys was edited and subsequently reviewed. There was agreement on the importance of the examples describing how the HEALTHY-B toolbox could be used for different objectives and by different stakeholder groups. The approach was refined to make the examples more specific and practical. Finally, conclusions and recommendations were drafted and reviewed. Pending tasks were distributed amongst the WG experts.

## **6. Next meeting**

Not foreseen

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<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

**ALPHA Unit**

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 16<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 23-24 May 2016, web meeting**

(Agreed on 10 June 2016)<sup>1</sup>

**Participants**

- **Working Group Members:**<sup>2</sup>
  - Gérard Arnold, Maragert Couvillon, Gianni Gilioli (only 23/05), Miguel Angel Miranda, Mohan Raj (only 24/05), Daniel Oberski (only 24/05), Chiara Polce, Marie-Pierre Rivière and Ullrika Sahlin
  
- **Hearing Experts:**<sup>3</sup>
  - Simone Tosi (only 24/05)
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - ALPHA Unit: Edoardo Carnesecchi, Eliana Lima, Frank Verdonck
  - AMU Unit: Gilles Guillot
  
- **Others:**
  - Not Applicable

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## 1. Welcome and apologies for absence

EFSA welcomed the participants. Apologies were received from Thomas David Breeze and Pascal Hendrikx.

## 2. Adoption of agenda

The agenda was adopted without changes.

## 3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting. Daniel Oberski and Ullrika Sahlin were only involved in TOR4 discussions.

## 4. Hearing experts

Simone Tosi was invited to provide his input from the Italian bee health monitoring projects ApeNet and BeeNet. The hearing expert was not involved in any discussion on conclusions and recommendations.

## 5. Agreement of the minutes of the 16<sup>th</sup> Working Group web meeting held on 23-24 May 2016, Parma.

The minutes of this 16<sup>th</sup> Working Group meeting were agreed by written procedure on 10 June 2016.

## 6. Scientific topics for discussion

23/05: First, the current status of TOR4 was discussed in detail. The section on 'analysis production' will be subdivided in i) description main characteristics and properties of multivariate analysis, ii) description of some applications and examples for its use in analysing bee health, iii) description of pros/cons of using multivariate analysis to assess bee health. Furthermore, the first two approaches were reviewed on how bee health data could be analysed. It was agreed to delete the appendix corresponding to the first approach. The decision tree of approach two was further developed based on the indicators selected in TOR 2. In a second session, pending issues on TORs 1, 2 and 3 were discussed. For instance, the section on target audience was reviewed. Furthermore, the indicator 'dead bees' was renamed as 'worker mortality' and the assessment of 'foraging rate' was again discussed. The factor 'climate type' was clarified and the score of the factor 'snow cover' was reviewed. It was suggested to insert a table on the variables regarding beekeeping management practices (BMP). The overview figure on the selected indicators and factors was commented as well at the corresponding text.

24/05: The section on how the HEALTHY-B toolbox can be used by different stakeholders was discussed. It was agreed to limit the examples but to develop one or two in more detail. Draft conclusions and recommendations were discussed in detail and edited. The session on TOR4 focussed on approach three of the section 'analysis production'. It will be divided into an approach dealing with causal modelling and an approach describing process-based modelling. The later will also refer to the conceptual model that the MUST-B WG is currently developing. Finally, there was a discussion session on the BMP, in particular to the table listing the factors and the (selected) corresponding variables that should be taken into account in field surveys.

<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencpolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

## **7. Next meeting**

05-06 July 2016, physical/web meeting

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ALPHA Unit

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 15<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 03-04 May 2016, Parma**

**(Agreed on 23 May 2016)<sup>1</sup>**

**Participants**

- **Working Group Members:<sup>2</sup>**
  - Gérard Arnold, Maragert Couvillon (via teleconference, 03/05 PM and 04/05 PM), Gianni Gilioli, Miguel Angel Miranda, Mohan Raj, Daniel Oberski (only TOR4; via teleconference, 04/05 AM), Marie-Pierre Rivière and Ullrika Sahlin (only TOR4)
  
- **Hearing Experts<sup>3</sup>:**
  - Simone Tosi (via teleconference, 03/05 PM and 04/05 PM)
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - ALPHA Unit: Edoardo Carnesecchi, Frank Verdonck
  - SCER Unit: Giorgio Sperandio
  
- **Others:**
  - Not Applicable

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## 1. Welcome and apologies for absence

EFSA welcomed the participants. Apologies were received from Thomas David Breeze, Pascal Hendrikx and Chiara Polce.

## 2. Adoption of agenda

The agenda was adopted without changes.

## 3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting. Daniel Oberski and Ullrika Sahlin were only involved in TOR4 discussions.

## 4. Hearing experts

Simone Tosi was invited to provide his input from the Italian bee health monitoring projects ApeNet and BeeNet. The hearing expert was not involved in any discussion on conclusions and recommendations.

## 5. Agreement of the minutes of the 14<sup>th</sup> Working Group web meeting held on 03-04 May 2016, Parma.

The minutes of this 14<sup>th</sup> Working Group meeting were agreed by written procedure on 23 May 2016.

## 6. Scientific topics for discussion

03/05 AM and 04/05 AM: The WG was informed on the AHAW Panel discussion regarding the outcomes of the HEALTHY-B workshop and use of the generated toolbox for different stakeholder groups. The WG agreed that a section should be included in the opinion describing the potential use and benefits of the toolbox for risk assessors, beekeepers, (inter)national public organisations and other groups involved in analysing bee health. It was suggested to include also the methods that could be used for data analysis into the toolbox, instead of limiting the latter to the identified indicators and factors. Furthermore, the current structure of TOR4 was presented to all WG members and the content was discussed. A clear message is that the objective of a field survey needs to be defined first, then the method of analysis should be defined and finally the data collection should be designed. Examples of methods to analyse data will be provided, linking to the list of indicators and factors identified in TORs 2-3. For each of the analysis methods, there will be i) a description of the main characteristics and properties, ii) some applications and examples mentioned referring to the literature and iii) a description of pros/cons of the method to analyse bee health data. Also a first discussion on overarching conclusions and recommendations took place. This was mainly done for TOR1 and some overarching aspects of TORs 2-3. A few gaps were identified for indicators and factors that are considered important to bee health but for which there are technical limitations hampering a harmonised measurement in field surveys.

03/05 PM and 04/05 PM: The WG discussed some pending topics that were discussed during the workshop and that required clarification. For instance, a definition of a colony was included in the text, the use of molecular markers was discussed as well as how to address the indicator colony foraging rate. It was agreed to include veterinary medicines (used by

<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

beekeepers and/or farmers) into the contaminants and a simple manner to classify beekeeper categories was established. Swarm control was considered difficult to implement strictly during the whole active season and therefore not seen as a factor with high priority for inclusion in field surveys. Clarification on the current technical feasibility to define the land cover is required.

## **7. Next meeting**

23-24 May 2016, web meeting



ALPHA Unit

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 14<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 7<sup>th</sup> April 2016 by teleconference**  
**(Agreed on 29 April 2016)<sup>1</sup>**

**Participants**

- **Working Group Members:<sup>2</sup>**
  - Ulrika Sahlin, Pascal Hendriks, Mohan Raj (morning)
  - Gérard Arnold, Margaret Couvillon, Pascal Hendriks, Miguel Miranda, Chiara Polce, Mohan Raj, Marie-Pierre Rivière (afternoon)
  
- **Hearing Experts<sup>3</sup>:**
  - Simone Tosi (afternoon)
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - ALPHA Unit: Eliana Lima, Frank Verdonck, Edoardo Carnesecchi
  - SCER Unit : Giorgio Sperandio
  
- **Others:**
  - Not Applicable

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## **1. Welcome and apologies for absence**

The Chair welcomed the participants.

Apologies were received from Gianni Gilioli, Daniel Oberski and Thomas Breeze.

## **2. Adoption of agenda**

The agenda was adopted without changes.

## **3. Declarations of Interest of Working Groups members**

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

## **4. Agreement of the minutes of the 14<sup>th</sup> Working Group meeting held on 7<sup>th</sup> April 2016, teleconference.**

The minutes of this 14<sup>th</sup> Working Group meeting were agreed by written procedure on 29 April 2016.

## **5. Scientific topic(s) for discussion**

Some changes in the structure of TOR4 were discussed to improve the logic between the different sections and to build it around the four possible analytical goals of a bee health analysis: descriptive, explanatory, predictive and prescriptive. It was agreed to keep the description of these four goals rather short but some examples would be included on how bee health was analysed in previous/on-going projects or studies. The statistical analysis may differ in complexity depending on the extent to which it takes into account causal relations, a health status index or condition the state of a colony on the state at previous time points. The concept of health status index will be better described in the scientific opinion and the three elements leading to complexity will be linked with the three approaches of bee health analysis that will be elaborated as examples. The figure presenting the example of a rule-based decision tree will be made more conceptual and then be further discussed in detail during the next WG meeting. The second example quantifying bee health as a latent variable from a partial least square regression was also discussed in detail. The WG will consult the EPILOBEE data analysis report to understand if a similar analysis has already been used and, if so, what were the obtained outcomes. The third example was discussed briefly since more info on the model that will be generated by the MUST-B WG was required.

A draft presentation was made to introduce the mandate to the participants of the upcoming workshop on bee health. The slides were discussed one by one and edited where required. All the comments received by the workshop participants were merged and provided to the WG, which defined the required action for each comment. Some comments will be

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<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

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addressed during the introduction presentation and others will be scheduled for discussion in the breakout sessions of the workshop. The remaining comments will be discussed by the WG or will be addressed by an individual WG member or EFSA staff member. The role of the chair, rapporteur, EFSA staff during the breakout sessions was explained and a general discussion took place on how the discussions in the breakout groups would be structured. The WG members and EFSA staff will generate slides for each breakout session, which will also serve as basis for the rapporteur to feedback the outcomes to all participants during the general session on the second day of the workshop.

## **6. Any Other Business**

Not Applicable

## **7. Next meeting**

3-4 May, Parma

ALPHA Unit

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 13<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 29 February 2016, web meeting**  
**(Agreed on 04 March 2016)<sup>1</sup>**

**Participants**

- **Working Group Members:<sup>2</sup>**
  - Pascal Hendriks, Daniel Oberski and Ullrika Sahlin
  
- **Hearing Experts<sup>3</sup>:**
  - Not applicable
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - ALPHA Unit: Eliana Lima, Frank Verdonck
  
- **Others:**
  - Not Applicable

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## **1. Welcome and apologies for absence**

EFSA welcomed the participants. Apologies were received from Gianni Gilioli and Mohan Raj.

## **2. Adoption of agenda**

The agenda was adopted without changes.

## **3. Declarations of Interest of Working Groups members**

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting, except for Pascal Hendrikx who did not participate in the discussion on published studies analysing bee health.

## **4. Hearing experts**

Not applicable

## **5. Agreement of the minutes of the 13<sup>th</sup> Working Group web meeting held on 29 February 2016, Parma.**

The minutes of this 13<sup>th</sup> Working Group meeting were agreed by written procedure on 04 March 2016.

## **6. Scientific topics for discussion**

A draft structure of the chapter describing TOR4 was discussed. The objectives and specific requirements of the conceptual framework were discussed and edited. The objectives are organised around the methodologies that could be used to analyse bee health (descriptive, predictive and prescriptive approaches) and the design of the survey. A description will be provided on the use of these approaches in previous bee health field surveys as well as on approaches that have been used in other fields to monitor the status of systems determined by multiple indicators. Survey design and data collection will be limited to noting the key aspects and provide reference to available (guidance) documents. Possible outputs on the analysis of a bee health status will be listed and different levels of complexity will be mentioned. Two or three examples will developed without entering into data analysis.

## **7. Next meeting**

7 April 2016, web meeting

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<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencpolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

ALPHA Unit

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 11<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 07-08 January 2016, Parma (Italy)**

(Agreed on 22 January 2016)<sup>1</sup>

**Participants**

- **Working Group Members:**<sup>2</sup>
  - Gérard Arnold, Margaret Couvillon (via TC on 7<sup>th</sup> Jan), Gianni Gilioli, Pascal Hendrikx, Miguel Angel Miranda (via TC on 7<sup>th</sup> Jan), Daniel Oberski, Mohan Raj, Marie-Pierre Rivière, Ullrika Sahlin, Hans-Hermann Thulke (on 8<sup>th</sup> Jan) and Simone Tosi
  
- **Hearing Experts:**<sup>3</sup>
  - Not applicable
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - ALPHA Unit: Edoardo Carnesecchi, Eliana Lima, Frank Verdonck and Sybren Vos
  - SCER Unit: Ana Afonso and Giorgio Sperandio (on 8<sup>th</sup> Jan)
  - BIOHAZ Unit: Yves Van der Stede (on 8<sup>th</sup> Jan)
  
- **Others:**
  - Not Applicable

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## 1. Welcome and apologies for absence

The Chair welcomed the participants.

## 2. Adoption of agenda

Agenda : (1) TOR 1-2-3 finalization draft text

(2) TOR 4 detailed discussion

TOR1: Identify and define the main attributes of a healthy honey bee colony.

TOR2: Establish a framework that could be used to allow robust and harmonized measurement of the health status of a honey bee colony in field surveys.

TOR3: Assess the availability of validated methods/tools for measuring indicators of honey bee colony health in field surveys.

TOR4: Propose a methodological approach to allow robust and harmonized measurement and comparison of regional bee health status.

The agenda was adopted without changes.

## 3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting, except for Ullrika Sahlin. She has a possible Conflict of Interest regarding the TORs 1, 2 and 3 of the mandate. Therefore, she participated only in TOR4 discussion of the WG meeting.

## 4. Hearing experts

Not applicable

## 5. Agreement of the minutes of the 11<sup>th</sup> Working Group meeting held on 7-8 January 2016, Parma.

The minutes of this 10<sup>th</sup> Working Group meeting were agreed by written procedure on 22 January 2016.

## 6. Scientific topics for discussion

The draft text on TORs 1-2-3 was reviewed by the WG members and the main comments were discussed. The importance of training on the methods that will be used in a survey, will be emphasised in the beginning of the document. The scoring system on the analysis of the indicators and factors was clarified, mainly regarding the priority rating for inclusion in a field survey. In the main text, the scoring of the relevance to the health status of a honey bee colony will be described separately from the scoring on technical feasibility and priority to include in a field survey. The definition of the selected indicators and factors will be explained in the main text and references to the tables in the Appendix will be made for the definitions of other indicators/factors. The glossary will be expanded to include terms such as hive, colony, comb, beekeeper and inspector. The experts indicated that commenting on section 3.3 regarding the outside-hive group of factors was difficult as this part of the document is in a preliminary stage. Summary

<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

tables should be included in the main text on the selected variables and their reporting unit. It would be useful to indicate which indicators/factors have been included in previous field surveys (e.g. Epilobee, Coloss, Beenet). Pollination services are currently difficult to assess in a field survey although they are considered an important output of the colonies' health. It is considered that estimates on harvested products and in-hive products are related to the pollination services provided by a honey bee colony. Instead of presenting a summary table of all the selected indicators and factors, it was agreed to develop an Excel file covering this information and publishing this at the website together with the scientific opinion. This would allow persons to use it as a tool and filter indicators and/or factors according to the criteria they are interested in. The file should also include a representation on the timing and order of the activities that a beekeeper should apply when participating in a field survey.

The objectives of TOR4 are to describe a conceptual framework that could describe the health status of a managed honey bee colony, preferentially at different scales (colony, apiary or geographical area). The framework should facilitate monitoring and comparing the dynamics of the colony health status in space and time, identify the key drivers of bee health, support the design of field surveys and evaluate scenarios by changing environmental drivers, stressors and/or beekeeping management practices. Existing studies on bee health mainly look at colony losses as the only health indicator. The lessons learnt on analysis of bee health data from published studies (e.g. Epilobee, Coloss, etc.) should be collected and incorporated into the framework. However, the framework should be designed to allow a more holistic analysis of bee health. It was agreed that demography (mortality), honey production and pollination services should be considered as the end points of a healthy honey bee colony, as described in TOR1. Three possible approaches were identified: build a model that incorporates the three outcomes, define a 'health status index' as the summary score which best predicts the three outputs based on the colony characteristics and a combination of the two previous options. The WG will further explore these possible approaches.

## **7. Next meetings**

2-3 February 2016, Parma



ALPHA Unit

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 10<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 11-12-13 November 2015, Parma (Italy)**

(Agreed on 24 November 2015)<sup>1</sup>

**Participants**

- **Working Group Members:**<sup>2</sup>
  - Gérard Arnold, Margaret Couvillon, Gianni Gilioli (on 12<sup>th</sup> and 13<sup>th</sup> Nov), Pascal Hendrikx (via TC on 12<sup>th</sup> and 13<sup>th</sup> Nov), Chiara Polce (via TC on 11<sup>th</sup> and 12<sup>th</sup> Nov), Mohan Raj, Marie-Pierre Riviere
  
- **Hearing Experts:**<sup>3</sup>
  - Simone Tosi, Romee van der Zee
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - ALPHA Unit: Edoardo Carnesecchi, Eliana Lima (on 12<sup>th</sup> and 13<sup>th</sup> Nov), Frank Verdonck on 12<sup>th</sup> and 13<sup>th</sup> Nov), Sybren Vos (11<sup>th</sup> Nov)
  - SCER Unit: Stefania Volani (12<sup>th</sup> and 13<sup>th</sup> Nov).
  
- **Others:**
  - Not Applicable

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## **1. Welcome and apologies for absence**

The Chair welcomed the participants.

## **2. Adoption of agenda**

The agenda was adopted without changes.

## **3. Declarations of Interest of Working Groups members**

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

## **4. Hearing experts**

The hearing experts Simone Tosi and Romée van der Zee were invited to inform the WG on activities and data from ApeNet/BeeNet and Coloss, respectively.

## **5. Agreement of the minutes of the 10<sup>th</sup> Working Group meeting held on 11-12-13 Nov 2015, Parma.**

The minutes of this 10<sup>th</sup> Working Group meeting were agreed by written procedure on 24 November 2015.

## **6. Scientific topics for discussion**

The WG made progress in TOR2 and finalized some sections of the appendix providing scores and rationales on the identification of indicators and factors. Several working sessions took place to discuss in detail TOR3 and to further work on the appendix assessing variables and methods of selected indicators and factors.

A methodology based on a supply-demand model for the assessment of the "pollination services" was discussed among the WG.

A scoring system that intends to classify selected variables according to considerations regarding their use in a field survey was discussed and agreed. The scoring system takes into account the variable's coverage/uniqueness, the expertise needed and the data accuracy, among other parameters.

The outcome of the TOR4 discussion in the Oct AHAW Plenary meeting was discussed within the WG. The idea to generate a Health Status Indicator (HSI) looks promising. The technical aspects of possible methodologies that could be used to generate a HSI will be discussed in a next meeting.

## **7. Next meetings**

7-8 Jan 2016, Parma

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<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

**ALPHA Unit**

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 7<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 7<sup>th</sup> till 19<sup>th</sup> October 2015 in Parma and by teleconference**  
**(Agreed on 4 November 2015)<sup>1</sup>**

**Participants**

- **Working Group Members:<sup>2</sup>**
  - Gérard Arnold (physically present on the 13<sup>th</sup>, 14<sup>th</sup>, 15<sup>th</sup> October)
  - Gianni Gilioli (physically present on the 8<sup>th</sup> October; by teleconference on 12<sup>th</sup>, 13<sup>th</sup> and 19<sup>th</sup> October)
  - Marie-Pierre Rivière (by teleconference on the 12<sup>th</sup> and 15<sup>th</sup> October)
  - Margaret Couvillon (by teleconference on the 13<sup>th</sup> and 14<sup>th</sup> October)
  - Chiara Polce (by teleconference on the 12<sup>th</sup> October)
  - Mohan Raj (by teleconference on the 15<sup>th</sup> October)
  - Pascal Hendriks (by teleconference on the 19<sup>th</sup> October)
  
- **Hearing Experts<sup>3</sup>:**
  - Simone Tosi (by teleconference on the 8<sup>th</sup> October, physically present on the 12<sup>th</sup>)
  - Romée van der Zee (by teleconference on the 15<sup>th</sup> and 19<sup>th</sup> October)
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - ALPHA Unit:
    - Edoardo Carnesecchi (8<sup>th</sup> October)
    - Eliana Lima (8<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup> and 14<sup>th</sup> October)
    - Frank Verdonck (12<sup>th</sup>, 13<sup>th</sup>, 14<sup>th</sup>, 15<sup>th</sup> and 19<sup>th</sup> October)

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<sup>3</sup> As defined in Article 17 of the Decision of the Executive Director on the selection of external experts: <http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

- Sybren Vos (8<sup>th</sup> and 12<sup>th</sup> October)  
SCER Unit :
  - Stefania Volani (8th and 12th October)
- **Others:**
  - Not Applicable

## 1. Welcome and apologies for absence

The Chair welcomed the participants.

Apologies were received from Thomas Breeze, hence there was no meeting on 7th Oct.

## 2. Adoption of agenda

The agenda was adopted without changes.

Topic for detailed technical discussion	When
Environmental drivers- pollination services	Wed 7/10
Beekeeping management practices- definition of variables	Thu 8/10
Pests and infectious agents, Environmental drivers, Beekeeping management practices, Outside hive resources – definition of variables, rationales scoring scientific evidence and technical feasibility	Mon 12/10
Demography, In hive products, Behaviour and physiology - definition of variables	Tue 13/10
Queen performance, Demography, In hive products, Behaviour and physiology – rationales for selecting methods	Wed 14/10
Pests and infectious agents– rationales for selecting methods; input Coloss on TOR2	Thu 15/10
TOR 4 - approach	Mon 19/10

## 3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

## 4. Hearing experts

The hearing experts Simone Tosi and Romée van der Zee were invited to inform the WG on activities and data from ApeNet/BeeNet and Coloss, respectively.

<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

## **5. Agreement of the minutes of the 7<sup>th</sup> Working Group meeting held on 8-9-10 July 2015, teleconference.**

The minutes of this 7<sup>th</sup> Working Group meeting were agreed by written procedure on 4<sup>th</sup> November 2015.

## **6. Scientific topic(s) for discussion**

The definitions of the indicators belonging to the attributes 'queen performance', 'behaviour and physiology', 'in hive products', 'infectious agents, pests and predators' and 'demography' were revised. The variable definitions were discussed and the possible methods to assess each variable were listed. The rationale for selecting the best method was discussed, taking into account the methods' or test characteristics, as sensitivity, specificity, equipment required, and limitations to apply in field conditions, among others. Similarly, the definitions of the indicators and variables belonging to the groups of factors 'beekeeping management practices', 'outside hive resources' and 'environmental drivers' were revised. Finally, feedback from the MUST-B WG on the idea to develop a 'health standard index (HSI)' was discussed. It was agreed to further explore the HSI concept but not to perform any data analysis within this mandate.

## **7. Next meeting**

11<sup>th</sup>-12<sup>th</sup>-13<sup>th</sup> November, Parma

**ALPHA Unit**

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 7<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 2-3-4 September 2015, Parma (Italy)**

**(Agreed on 18 September 2015)<sup>1</sup>**

**Participants**

- **Working Group Members:<sup>2</sup>**
  - Gérard Arnold, Tom Breeze (via TC), Magali Chabert (only on 3 and 4 Sep via TC), Margaret Couvillon, Gianni Gilioli, Pascal Hendrikx, Mohan Raj
  
- **Hearing Experts<sup>3</sup>:**
  - Simone Tosi, Romee van der Zee
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - ALPHA Unit: Renata Leuschner, Frank Verdonck, Sybren Vos
  - SCER Unit: Stefania Volani, Agnes Rortais and Ana Afonso (only TOR4 sessions)
  - APDESK Unit: Edoardo Carneseccchi
  
- **Others:**
  - Not Applicable

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## **1. Welcome and apologies for absence**

The Chair welcomed the participants.

## **2. Adoption of agenda**

The agenda was adopted without changes.

## **3. Declarations of Interest of Working Groups members**

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

## **4. Agreement of the minutes of the 7<sup>th</sup> Working Group meeting held on 2-3-4 September 2015, Parma.**

The minutes of this 7th Working Group meeting were agreed by written procedure on 18 September 2015.

## **5. Hearing Expert**

The hearing experts Romee van der Zee and Simone Tosi were invited to provide information on the Coloss and the Italian bee health monitoring programmes, respectively, and beekeeping management practices.

## **6. Scientific topics for discussion**

The meeting started with an overview presentation taking stock of the status of the project as it was at the start of the meeting. Subgroups of experts were made to have detailed technical discussions on definitions of indicators, factors and variables as well as review of the rational and scoring of factors related to environmental drivers, beekeeping management practices and outside-hive resources. The subgroup discussions were alternated with discussion sections involving all available participants to achieve consensus or to discuss a suggested approach or proposal. Presentations were made on the pollination services and outside-hive sampling. An initial discussion took place on the approach that will be used to assess TOR3 using *Varroa* detection as an example. Only the most relevant and recommended test methods will be assessed in detail, whereas other methods might be briefly mentioned as existing alternatives. For indicators or factors that are included in a questionnaire, only the variable to be estimated and the recommended type of output to be reported will be described in the opinion. Finally, the first ideas regarding a possible approach to assess TOR4 were briefly discussed. It was agreed that this will be limited to a conceptual description of a possible way to analyse bee health data obtained in field surveys.

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<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

## **7. Any Other Business**

Not Applicable

## **8. Next meetings**

Mid October 2015, dates to be defined

11-12-13 November 2015, Parma

9-10 December 2015, web meeting



ALPHA Unit

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 6<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 8- 9-10 July 2015 by teleconference**  
**(Agreed on 17<sup>th</sup> August 2015)<sup>1</sup>**

**Participants**

- **Working Group Members:<sup>2</sup>**
  - Gérard Arnold, Gianni Gilioli, Mohan Raj, Marie-Pierre Rivière, Simone Tosi, and Margaret Couvillon (only on 8<sup>th</sup> July)
  
- **Hearing Experts<sup>3</sup>:**
  - Not applicable
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - ALPHA Unit: Renata Leuschner, Eliana Lima, Frank Verdonck, Sybren Vos
  - SCER Unit : Agnes Rortais, Stefania Volani
  - PRAS Unit: Franz Streissl
  
- **Others:**
  - Not Applicable

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## **1. Welcome and apologies for absence**

The Chair welcomed the participants.

Apologies were received from Chiara Polce and Thomas Breeze.

## **2. Adoption of agenda**

The agenda was adopted without changes.

## **3. Declarations of Interest of Working Groups members**

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

## **4. Agreement of the minutes of the 6<sup>th</sup> Working Group meeting held on 8-9-10 July 2015, teleconference.**

The minutes of this 6<sup>th</sup> Working Group meeting were agreed by written procedure on 17<sup>th</sup> August 2015.

## **5. Scientific topic(s) for discussion**

The mind map representing behaviour and physiology of honey bees was revised. The identified indicators were classified in two levels using the same criteria as for other mind maps. Indicators belonging to level 1 were further assigned with 1 or 2 ticks, according with the criteria discussed in the previous meeting. Tables describing the rationales for the classification of the 'outside hive resources', 'in hive resources' and 'beekeeping management practices' indicators were discussed. For the sake of clarification, a short definition of each indicator was included. In preparation of TOR 3, a template table was discussed describing the characteristics that will be assessed for the most commonly used test methods per selected indicator or factor.

## **6. Any Other Business**

Not Applicable

## **7. Next meeting**

2-3-4 September, Parma

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<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

ALPHA Unit

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 5<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 15-16-17 June 2015, Parma (Italy)**

(Agreed on 3 July 2015)<sup>1</sup>

**Participants**

- **Working Group Members:**<sup>2</sup>
  - Gérard Arnold, Tom Breeze (via TC), Gianni Gilioli, Mohan Raj and Marie-Pierre Rivière
  
- **Hearing Experts:**<sup>3</sup>
  - Simone Tosi
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - ALPHA Unit: Ana Afonso (only AM sessions), Renata Leuschner, Frank Verdonck, Sybren Vos (only 15 June AM/PM and 16 June AM),
  - SCER Unit : Stefania Volani
  - PPT Unit: Ana Afonso (only AM sessions)
  
- **Others:**
  - Not Applicable

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<sup>3</sup> As defined in Article 17 of the Decision of the Executive Director on the selection of external experts: <http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

## **1. Welcome and apologies for absence**

The Chair welcomed the participants.

Apologies were received from Chiara Polce, Howard Browman and Jeff Pettis.

## **2. Adoption of agenda**

The agenda was adopted without changes.

## **3. Declarations of Interest of Working Groups members**

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

## **4. Agreement of the minutes of the 4<sup>th</sup> Working Group meeting held on 5 June 2015, teleconference.**

The minutes of this 4th Working Group meeting were agreed by written procedure on 8 July 2015.

## **5. Hearing Expert**

The hearing expert was invited to provide information on the Italian bee health monitoring programme and beekeeping management practices.

## **6. Scientific topic(s) for discussion**

Mind maps were revised representing the in-hive products, environmental drivers, beekeeping practices, outside-hive resources and contaminants and infectious agents, pests and predators. The identified factors were classified in two levels using the same criteria as used to clarify the identified indicators. In cases where a link with the health status of a managed honey bee colony was not applicable, the relevance of the factor to understand the context of the honey bee colony was used as criteria (e.g. location of the hive). An additional scoring has been performed for the indicators and factors belonging to level 1 to differentiate their level of relevance for field surveys. A minimum set of relevant indicators and factors for which data can be collected in a harmonized manner were identified and will be considered as mandatory fields in future field surveys (two green ticks). Together, these indicators and factors should be able to allow a basic assessment of the health status of a managed honey bee colony. Some additional indicators and factors were selected which are useful to enrich the dataset in many situations. These indicators and factors will be considered as recommended fields in future field surveys. Although their collection is recommended in most situations, it might require further method validation for some of the methods to measure the indicators in this category (one green tick). The remaining indicators and factors of level 1 are considered relevant to include in more detailed field studies or in particular situations. The categorization of all indicators (except those belonging

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<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

to the attribute behaviour and physiology) and factors was discussed and experts started to document the rationales for each score.

#### **7. Any Other Business**

Not Applicable

#### **8. Next meeting**

8-9-10 July, teleconference

ALPHA Unit

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 4<sup>th</sup> meeting of the Working Group on Healthy-B**  
**Held on 5 June 2015, teleconference**

**(Agreed on 8 July 2015)<sup>1</sup>**

**Participants**

- **Working Group Members:<sup>2</sup>**
  - Margaret Couvillon, Gianni Gilioli
  
- **Hearing Experts<sup>3</sup>:**
  - Not applicable
  
- **European Commission and/or Member States representatives:**
  - Not applicable
  
- **EFSA:**
  - Sybren Vos
  
- **Others:**
  - Not applicable

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## **1. Welcome and apologies for absence**

The Chair welcomed the participants.

## **2. Adoption of agenda**

The agenda was adopted without changes.

## **3. Declarations of Interest of Working Groups members**

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

## **4. Agreement of the minutes of the 2nd Working Group meeting held on 22-23-24 April 2015, Parma.**

The minutes of the 2nd Working Group meeting were agreed by written procedure on 10 May 2015.

## **5. Scientific topic for discussion**

The WG experts discussed and amended the structure of the mind maps developed for the factors analysis focussing the environmental drivers, outside hive factors and beekeeping management factors that could influence the bee health. Further tasks were distributed to the WG members.

## **6. Any Other Business**

Not Applicable

## **7. Next meeting**

15-17 June, Parma

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<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

**ALPHA Unit**

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 3<sup>rd</sup> meeting of the Working Group on Healthy-B**  
**Held on 1 and 2 June 2015, Brussels (Belgium)**

(Agreed on 17 June 2015)<sup>1</sup>

**Participants**

- **Working Group Members:**<sup>2</sup>
  - Gérard Arnold, Howard Browman, Margaret Couvillon, Gianni Gilioli, Chiara Polce, Mohan Raj and Marie-Pierre Rivière
  
- **Hearing Experts:**<sup>3</sup>
  - Anne Alix (ECPA), Koos Biesmeijer (Super-B), Etienne Bruneau (COPA-COGECA), Martin Dermine (PAN-Europe), Francois Diaz (OIE), Walter Haefeker (EPBA), Klemens Krieger (IFAH-Europe), Geoffrey Williams (COLOSS),
  
- **European Commission and/or Member States representatives:**
  - Pierangelo Bernorio (DG SANTE), Laurence Bonafos (DG AGRI), Wim Haentjens (DG RTD), Laszlo Kuster (DG SANTE), Patrick Murphy (DG ENV)
  
- **EFSA:**
  - ALPHA Unit: Renata Leuschner, Agnes Rortais, Frank Verdonck, Sybren Vos,
  
- **Others:**
  - Not Applicable

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## 1. Welcome and apologies for absence

The Chair welcomed the participants.

Apologies were received from Hans Mattaar and Jeff Pettis.

## 2. Adoption of agenda

The agenda was adopted without changes. Hearing experts and EC representatives participated only on June 1<sup>st</sup> AM, whereas WG members and EFSA staff participated in the whole meeting.

## 3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

## 4. Agreement of the minutes of the 2nd Working Group meeting held on 22-23-24 April 2015, Parma.

The minutes of this 2nd Working Group meeting were agreed by written procedure on 10 May 2015.

## 5. Hearing Expert

The hearing experts were invited to provide the view of their organisation or project on the objectives of the mandate and the first preliminary outcomes.

## 6. Scientific topic(s) for discussion

June 1<sup>st</sup>, AM:

The hearing experts indicated that the HEALTHY-B and MUST-B mandates are positive and ambitious initiatives, which will require a lot of resources for their implementation. Interaction between the EFSA working group and ongoing projects on multiple stressors of bees in several Member States will be useful and prevent to duplicate work. Technologies on automated measurements are under development and should also be considered. The recognition of the role of beekeepers in data collection was appreciated. However, it was also indicated that voluntary involvement of beekeepers could lead to an information bias. Involvement of both beekeepers and inspectors to collect field data has been a fruitful approach. Furthermore, there was general agreement that the timing of data collection is crucial to obtain a rich dataset and a minimum follow-up period of five years was mentioned. Although HEALTHY-B focuses on field surveys, MUST-B will also require data from experimental studies to populate the predictive models. Both HEALTHY-B and MUST-B projects focus on managed honey bees but many aspects will be very relevant and applicable to wild bee species. There are more methods available for honey bees but studies on bumble bees could also provide interesting data as they are for instance not influenced

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<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

by beekeeper practices. It was argued that criteria for a healthy managed bee colony are dependent on the purpose of the beekeeping activity and therefore suggested to mention this in the definition. Furthermore, it was clarified and agreed that absence of clinical disease is a criteria for a healthy bee colony and not absence of an infectious agent. Detailed discussions took place on the already identified indicators and factors. It was agreed that genetically modified plants should not be considered as they are not relevant for bee health in the current European context. Several detailed and specific suggestions were made, for instance to include physiological and immunological indicators.

June 1<sup>st</sup>, PM and June 2<sup>nd</sup> AM, PM:

The WG discussed the feedback received from the hearing experts and EC representatives. Mind maps were revised representing the attributes queen performance, demography, behaviour and physiology and infectious agents, pests and predators. Criteria were designed and agreed upon to classify the identified indicators in two levels. Only the test methods of indicators classified in the highest level will be considered for TOR3.

## **7. Any Other Business**

Not Applicable

## **8. Next meeting**

5 June, teleconference

ALPHA Unit

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 2<sup>nd</sup> meeting of the Working Group on Healthy-B**  
**Held on 22-23-24 April 2015, Parma (Italy)**

**(Agreed on 10 May 2015)<sup>1</sup>**

**Participants**

- **Working Group Members:<sup>2</sup>**
  - HEALTHY-B WG: Gérard Arnold, Margaret Couvillon, Gianni Gilioli, Pascal Hendriks, Jeff Pettis (via teleconference), Chiara Polce (via teleconference on 24 April) and Mohan Raj
  
- **Hearing Experts<sup>3</sup>:**
  - Romée Van Der Zee
  
- **European Commission and/or Member States representatives:**
  - Not Applicable
  
- **EFSA:**
  - ALPHA Unit: Frank Verdonck, Sybren Vos, Renata Leuschner
  
- **Others:**
  - Not Applicable

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## **1. Welcome and apologies for absence**

The Chair welcomed the participants.

Apologies were received from Howard Browman.

## **2. Adoption of agenda**

The agenda was adopted without changes.

## **3. Declarations of Interest of Working Groups members**

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

## **4. Agreement of the minutes of the 1st Working Group meeting held on 12-13 March 2015, Parma.**

The minutes of this 1st Working Group meeting were agreed by written procedure on 19 March 2015.

## **5. Hearing Expert**

Dr. Van Der Zee has been invited to present her views on the mandate and to provide input based on the experiences from the Coloss bee health monitoring activities.

## **6. Scientific topic(s) for discussion**

Scientific documents were screened to identify indicators and factors related to the health status of a managed honey bee colony. Relevant information was extracted and will be documented in detailed tables as Appendix of the scientific document. Criteria were discussed to classify the identified indicators and factors in three priority levels.

## **7. Any Other Business**

Not Applicable

## **8. Next meeting**

01-02 June, Brussels

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<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

**ALPHA Unit**

**Scientific Panel on Animal Health and Welfare**  
**Minutes of the 1<sup>st</sup> meeting of the Working Group on Healthy-B**  
**Held on 12-13 March 2015, Parma (Italy)**

**(Agreed on 19 March 2015)<sup>1</sup>**

**Participants**

- **Working Group Members:<sup>2</sup>**
  - HEALTHY-B WG: Howard Browman (chair), Gérard Arnold, Margaret Couvillon, Gianni Gilioli, Pascal Hendrix, Chiara Polce and Mohan Raj
  - MUST-B WG: Simon More (chair), Gérard Arnold, Frédéric Delbac, Sophie Roelandt, Simone Tosi and Yves Van der Stede
  
- **Hearing Experts<sup>3</sup>:**
  - Cecilia Costa
  
- **European Commission and/or Member States representatives:**
  - Not Applicable
  
- **EFSA:**
  - ALPHA Unit: Frank Verdonk, Sybren Vos, Renata Leuschner
  - SCER Unit: Agnes Rortais, Stefania Volani
  - PRAS Unit : Franz Streissl (via teleconference)
  - COMMS Unit : Simon Terry
  
- **Others:**
  - Not Applicable

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<sup>1</sup> The publication of the minutes shall be made without delay in compliance with the Founding Regulation and no later than 15 working days following the day of their agreement.

<sup>2</sup> Indicate first full name and then surname (John Smith) all throughout the document.

<sup>3</sup> As defined in Article 17 of the Decision of the Executive Director on the selection of external experts: <http://www.efsa.europa.eu/en/keydocs/docs/expertselection.pdf>.

## 1. Welcome and apologies for absence

The Chair welcomed the participants.

Apologies were received from Robert Luttik (MUST-B WG member).

MUST-B WG members, Franz Streissl and Simon Terry only participated in agenda point 6.2.

## 2. Adoption of agenda

The agenda was adopted without changes.

## 3. Declarations of Interest of Working Groups members

In accordance with EFSA's Policy on Independence and Scientific Decision-Making Processes<sup>4</sup> and the Decision of the Executive Director on Declarations of Interest<sup>5</sup>, EFSA screened the Annual Declaration of Interest and the Specific Declaration of Interest filled in by the working group members invited for the present meeting. No Conflicts of Interest related to the issues discussed in this meeting have been identified during the screening process or at the Oral Declaration of Interest at the beginning of this meeting.

## 4. Agreement of the minutes of the 1st Working Group meeting held on 12-13 March 2015, Parma.

The minutes of this 1st Working Group meeting were agreed by written procedure on 19 March 2015.

## 5. Hearing Expert

Dr. Costa has been invited to present her views for topic 6.2 of the present meeting.

## 6. Scientific topic(s) for discussion

### 6.1 12 March 2015 (HEALTHY-B WG only)

The background of the mandate and the terms of reference were presented and discussed. The mandate has the aim to define a healthy managed honey bee colony by attributes and indicators (variables related to attributes) and other factors (variables related to for instance the environment or beekeeping management practices). The indicators and factors have to be measurable by defined methods. The output of this mandate will provide guidance in the design of large-scale multifactorial honey bee colony field surveys using feasible test methods that are already available or will be soon available. It is not the aim to review the current knowledge on bee health, nor to provide guidance to the scientific community on future research activities. The question 'what is a healthy honey bee colony' is difficult to answer. The Animal Health and Welfare Panel has experience with a similar difficult question 'what is good welfare'. Methodologies used in the animal welfare field were briefly discussed as one example of a possible approach. Another methodology used in the field of plant health was also presented. It was agreed that the description of gold standard criteria (attributes) would be useful, although a perfect assessment would never be possible. Therefore, a second layer of indicators/factors has to be defined. The methods/tools which are widely applied in

<sup>4</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencypolicy.pdf>

<sup>5</sup> <http://www.efsa.europa.eu/en/keydocs/docs/independencerules2014.pdf>

field and/or laboratory conditions will be considered this mandate, whereas methods/tools that are only described once in the scientific literature or used only by one research group will not be considered. The assessment of methods/tools will be done for groups of methods/tools (not for all existing variants) and will aim to categorize the methods/tools for characteristics like technical feasibility, reproducibility and sensitivity.

6.2 13 March 2015 (AM; joint meeting HEALTHY-B and MUST-B WGs)

The HEALTHY-B mandate was presented and the complementarity with the overarching MUST-B mandate was discussed in detail. The attributes of a healthy bee colony and definitions of indicators/factors were discussed and agreed. The MUST-B WG will further define the objectives of the future field survey before the HEALTHY-B WG will initiate its activities on TOR4. The experts listed some field studies that have been performed in the past and which would be interesting to consult to identify indicators/factors of a healthy honey bee colony.

6.3 13 March 2015 (PM; HEALTHY-B WG only)

The next steps of the mandate were discussed briefly and tasks were distributed.

## **7. Any Other Business**

Not Applicable

## **8. Next meeting**

22-24 April, Parma