H – Requirement No. 1

Deliverable D10.1

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B-GOOD

Giving Beekeeping Guidance by cOmputatiOnal-assisted Decision making

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Preface

This deliverable is one out of five related to ethics requirements. It covers ethics issues with respect to research involving **human participants** within B-GOOD.

Summary

This deliverable provides further information about the research involving human participants, notably stakeholders involved in the beekeeping sector and beekeepers, who will be recruited to participate in B-GOOD. Data (including personal data) will be collected from said human participants by means of personal interviews, surveys, group discussions and participatory workshops. This deliverable provides an assessment of the related ethics issues and details on the procedures and criteria that will be used to identify and recruit research participants. Furthermore, it details the informed consent procedures that will be implemented for the participation of humans as well as in regard to data processing, and it provides informed consent forms and information sheet templates (firstly in English) covering the voluntary participation and data protection issues. Templates of informed consent forms and information sheets in other languages, as well as ethics approvals obtained from relevant ethics committees will be kept on file.

1. Assessment of ethics issues

One of the key objectives of B-GOOD is to map the business environment and to study the socio-economics of beekeeping. In order to do so, human participants will be involved in socio-economic research. The socio-economic studies and related personal data collection are carried out in WP4 and WP8 of the B-GOOD project with a major involvement of partners UGENT, AU and UCOI.

The proposed studies and chosen multi-actor approach require the involvement of human participants and the collection of primary personal data from actors directly involved in beekeeping. They participate voluntarily as individuals in their role as stakeholders and beekeepers and as adult healthy volunteers involved in social sciences research.

No children/minors, vulnerable population groups, or individuals unable to provide informed consent will be involved.

The human participants will be recruited for and voluntarily involved in personal interviews, surveys, group discussions and participatory workshops, following informed consent.

Informed consent will be asked from all participants before the start of any study or collection of data. To ensure that the rights and integrity of participants are respected, B-GOOD will develop participant information leaflets, informed consent forms and detailed study protocols in accordance with the guidelines and recommendations of the Declaration of Helsinki in its latest version (2013). All studies involving human participants will be handled in accordance with the current data privacy protection regulations, notably the General Data Protection Regulation 2016/679 (GDPR).

The principal researcher involved in a particular study will be responsible for obtaining ethics approval from an ethics committee or equivalent competent authority for the overall study protocol, participant information leaflet and informed consent forms, according to national guidelines. Further details are provided in section 2.4 of this deliverable. B-GOOD commits not to start any study and associated data collection before applicable ethics approval has been obtained.

Each principal investigator involved will be responsible for adequate translation of the informed consent forms into national languages where needed, and for adequate storage of informed

consents according to good practice and national regulations. B-GOOD will ensure that the informed consent forms will be presented in a language and in terms intelligible to the study participants. Interviews will either be performed in English, or in participants' native language by B-GOOD researchers who speak the respective native language. Details on data and information security are provided in "D10.2 POPD – Requirement no. 2" and the B-GOOD Data Management Plan (DMP).

Benefit-sharing with stakeholders and beekeepers will be guaranteed through the planned dissemination and training activities (as described WP7) and through the co-creation of solutions as part of the multi-actor approach followed and described in WP8.

Approvals by ethics committees and/or competent authorities for the social sciences research with humans will be obtained prior to the start of any B-GOOD study or data collection involving human participants and copies of these opinions/approvals will be kept on file and submitted upon request.

Templates of the informed consent forms and information sheets covering the voluntary participation and data protection issues (in language and terms intelligible to the participants) will be kept on file and the English version of the templates to be used with stakeholders and beekeepers are provided as appendices to this deliverable (Appendix 1 and Appendix 2, respectively).

Details on the procedures and criteria that will be used to identify and recruit research participants (i.e. stakeholders and beekeepers), and detailed information on the informed consent procedures that will be implemented for the participation of humans and in regard to the processing of their data are described below in sections 2 and 3.

2. Procedures and criteria for participation

2.1 Participant recruitment

Target participants are stakeholders active in the beekeeping sector (involved in tasks 4.1, 4.3, 8.2 and 8.3) and hobbyist and professional beekeepers (involved in tasks 4.2, 4.3, 8.2 and 8.3).

Group 1: Stakeholders

B-GOOD will identify and establish a list of key stakeholders (as part of milestone 4.1) from which stakeholder participants will be recruited. The list of stakeholders will be updated during the course of the project as new potential contacts emerge. Stakeholders will be identified through the networks of the involved research partners, through collaboration with the EU Bee Partnership and other beekeeping-related projects. The established networks cover the majority of potential stakeholders involved with beekeeping in the EU. As far as necessary, further recruitment of stakeholders will be done by means of snowball sampling, i.e. key stakeholders may refer during their interview to other potential participants who might then be contacted and asked for voluntary participation following the same standard procedures as herewith described.

Group 2: Hobbyist and professional beekeepers

Beekeepers will be identified and recruited through the networks of the involved research partners who have established connections with national and regional beekeeper associations. All involved research institutes have close contacts with beekeeper associations and individual beekeepers as beekeeper associations and their members are typically well connected with research institutes through extension and training activities and national or regional bee programmes.

2.2 Inclusion/exclusion criteria

General inclusion criteria for participation are being of adult age (over 18 years) and being able to provide informed consent. No children/minors, vulnerable population groups, or individuals unable to provide informed consent will be involved.

Specific inclusion criteria for stakeholders are an active involvement in EU beekeeping and associated activities by means of assuming an active role in e.g. associations, governmental or non-governmental organisations, supply and service provision, extension services, dissemination activities, policy making, or others all specifically in relation to beekeeping in the EU. Specific inclusion criteria for beekeepers are being an active beekeeper with at least two production hives for at least two years.

2.3 General commitments with respect to the collection of personal data within B-GOOD

B-GOOD will only collect personal data from the involved human participants that are necessary to achieve the objectives of the research. These include – depending on the target population – socio-demographic characteristics such as age (in years), gender, education (necessary for the profiling of aggregated segments) and urban-rural living environment (necessary for linking with environmental and ecological characteristics), as well as attitudinal (attitudes, beliefs, perceptions, opinions and views) and behavioural (management, decision-making) characteristics, which will all exclusively relate to beekeeping and its context. The socio-economic data are cross-sectional data, i.e. data collected at one point in time.

The collection of personal data will be limited to what is strictly necessary for the purposes of the research and socio-economic statistical analysis procedures. Sensitive personal information relating e.g. to personal health, ethnicity, sexual lifestyle, political opinion, religious or philosophical conviction falls beyond the scope of B-GOOD and will not be probed for.

No confidential data, such as information on private businesses, sensitive business practices, finances or income will be collected from stakeholders. In the case of beekeepers, and in line with the objective of performing production and economic efficiency analyses in task 4.2, data relating to the beekeeping business, production costs and revenues will be collected. In case these data are seen as and indicated to be confidential by the beekeeper but nevertheless voluntarily provided, they will be strictly treated as data given in confidence or data agreed to be kept confidential between the researchers and the beekeeper. These data will be kept secret and out of the public domain. Any reporting based on these data will be done in aggregated and non-identifiable form only. This will be explained to the beekeepers as part of the informed consent.

We are not aware of and do not expect any critical ethical implications of the research results such as stigmatisation or adverse impacts on dignity, autonomy, integrity, privacy of persons. After collection, data and samples will be pseudonymised, stored in a de-identified format, kept securely and shared for study purposes and in dissemination activities only in pseudonymised or aggregated form. Further details are provided in the B-GOOD ethics deliverable on the protection of personal data (D10.2) and the B-GOOD DMP.

2.4 Data collection methods

2.4.1 Task 4.1

Data collection from stakeholders within task 4.1 will be done by means of personal (face-to-face or online) interviews (n=40 stakeholders) (Study 1a), personal feedback interviews and surveys (n=25 stakeholders) (Study 1b), and a quantitative online survey (n=200 stakeholders) (Study 2). Stakeholders will be interviewed/surveyed by B-GOOD researchers in English or in their native language in case English is not feasible and as far as the linguistic skills of the interviewers enable us to do so. The types and contents of data/information that will be collected are detailed below. Issues and procedures related to the protection of personal data are addressed in “D10.2 POPD – Requirement no. 2”.

Study 1a - The personal interviews (n=40 stakeholders) will collect textual data from narratives covering the following topics:

1. SWOT of beekeeping in the EU: views and opinions on internal strengths (S) and weaknesses (W) of the beekeeping sector in the EU in general, in specific countries and regions; views and opinions on external opportunities (O) and threats (T) facing the beekeeping sector in the EU in general, in specific countries and regions;
2. Bee health: views and opinions on what constitutes and characterises a healthy bee colony; the threats to bee colony health; future perspectives and challenges related to bee colony health;
3. Business models: views and opinions on current and future beekeeping business models; identification and profiling of beekeeping business models; forecast on future business models for healthy and sustainable beekeeping in the EU.

Study 1b – The feedback interviews combined with a survey (n=25 stakeholders who already participated in Study 1a) will provide participants with a synthesis of the outcomes of Study 1a and will collect textual data from narratives and quantitative scoring data covering the following topics:

1. Feedback, discussion and consensus-seeking on the identified SWOT-components, their grouping or classification, and meaning;
2. Quantitative scoring following the Strategic-Orientation-Round (SOR) procedure in which stakeholders are asked to provide a score (0-1-2-3) to each combination of S/W and O/T components.

All personal interviews will be audio-taped in order to allow for complete transcription of the narratives, i.e. converting audio-recordings to text for qualitative content analysis using the NVivo software that is designed specifically for gaining insights from qualitative and mixed-methods data. Audio-recordings will be destroyed following transcription. Transcripts will be stored in pseudonymised format on secured institutional servers as text files.

Study 1b is a follow-up to Study 1a. Hence, the 25 stakeholders who take voluntarily part in Study 1b will be recruited from the participants of Study 1a. The study protocol for both parts, including informed consent procedures and the final topic guides, will be submitted for ethics approval from the UZGent-UGent Ethics Committee “Commissie voor Medische Ethiek”, or an equivalent competent authority, in December 2019. Data collection is planned during January-March 2020 for Study 1a and during March-April 2020 for Study 1b. The study protocol for Study 1a is attached as Appendix 3.

Study 2 – The quantitative survey with stakeholders (n=200) will quantify the views and opinions on each of the topics covered in the previous qualitative studies. The survey will therefore cover largely the same topics but in a closed-ended format (i.e. using concrete statements, items, constructs to be scored with predefined response scales, e.g. Likert interval response scales) and a more structured format compared to the previous qualitative exploratory studies:

1. SWOT of beekeeping in the EU: views and opinions on internal strengths (S) and weaknesses (W) of the beekeeping sector in the EU in general, in specific countries and regions; views and opinions on external opportunities (O) and threats (T) facing the beekeeping sector in the EU in general, in specific countries and regions;
2. Bee health: views and opinions on what constitutes and characterises a healthy bee colony; the threats to bee colony health; future perspectives and challenges related to bee colony health;
3. Business models: views and opinions on current and future beekeeping business models; identification and profiling of beekeeping business models; forecast on future business models for healthy and sustainable beekeeping in the EU.

4. In addition, this survey will collect information on stakeholders' personal (non-sensitive, non-confidential) characteristics and background, e.g. age (years), education, type of stakeholder, years of experience with the beekeeping sector, in order to assess whether any of these personal characteristics associate with particular views and opinions on beekeeping, and to allow for the profiling of eventual stakeholder segments.

The quantitative survey data will be recorded and stored on secured institutional servers as a SPSS data file for statistical analysis using SPSS (Statistical Package for Social Sciences).

The protocol for Study 2, including informed consent procedures and the final questionnaires, will be submitted for ethics approval from the UZGent-UGent Ethics Committee "Commissie voor Medische Ethiek" ", or an equivalent competent authority, in September 2020. Data collection is planned during November 2020 – January 2021.

Besides being kept on file, the final study protocols and copies of ethics approvals will be submitted as Appendices to D4.1 for Study 1a and Study 1b, and as Appendices to D4.2 for Study 2.

2.4.2 Task 4.2

Data collection from beekeepers within task 4.2 will be done by means of online surveys. Two studies collecting quantitative data from beekeepers are planned. The first study includes the 40 beekeepers who take part in the field study A experiments. The second study concerns a survey with a pan-European sample of 600 beekeepers. Beekeepers will be surveyed online in English or in their native language as they prefer. The types and contents of data/information that will be collected are similar in both studies as detailed below.

Study 3 – The survey with 40 beekeepers involved in field study A experiments (WP1) will collect quantitative data dealing with:

1. Beekeepers' management characteristics: business objectives, plans, activities, bee health-related management decisions, beekeeping practices;
2. Bee colony attributes, characteristics, and output data relating to economic variables (e.g. costs and revenues) and production performance (outputs such as honey, other apiary products, pollination or extension services);
3. Beekeepers' personal characteristics: age, gender, education, living environment, experience with beekeeping, attendance to training activities, membership of beekeeping associations, attitudes, beliefs and perceptions in relation to their beekeeping business environment.

Data will be stored on secured institutional servers. The protocol for Study 3, including informed consent procedures and the final questionnaires, will be submitted for ethics approval from the UZGent-UGent Ethics Committee "Commissie voor Medische Ethiek" ", or an equivalent a competent authority, in August 2020. Data collection is planned during October-November 2020.

Study 4 – The pan-European survey with 600 beekeepers will collect quantitative data in a similar vein as in Study 3, namely:

1. Beekeepers' management characteristics: business objectives, plans, activities, bee health-related management decisions, beekeeping practices;
2. Bee colony attributes, characteristics, and output data relating to economic variables (e.g. costs and revenues) and production performance (outputs such as honey, other apiary products, pollination or extension services);
3. Beekeepers' personal characteristics: age, gender, education, living environment, experience with beekeeping, attendance to training activities, membership of

beekeeping associations, attitudes, beliefs and perceptions in relation to their beekeeping business environment.

In line with the data minimisation principle, we will use Study 3 to identify key variables that matter and limit our data collection to these in Study 4. Therefore, the questionnaire for Study 4 is expected to be shorter and more selective, especially with respect to economic variables and production performance, as compared to Study 3 since the latter will be used as an extended pilot that should allow us to fine tune our larger-scale data collection.

The protocol for Study 4, including informed consent procedures and the final questionnaires, will be submitted for ethics approval from the UZGent-UGent Ethics Committee "Commissie voor Medische Ethiek" ", or an equivalent competent authority, in June 2021. Data collection is planned during September-November 2021.

For both studies involving beekeepers, the quantitative survey data will be recorded and stored on secured institution servers as a SPSS data file for statistical analysis using SPSS (Statistical Package for Social Sciences). Economic performance data will be stored as an Excel data file for economic efficiency analysis using R.

2.4.3 Tasks 4.3 and 8.2

Data collection from stakeholders and beekeepers within tasks 4.3 and 8.2 will be done by means of facilitated participatory workshops. A single study is planned with workshops convened in five EU countries where participants will be recruited from the established list of key stakeholders (milestone 4.1) as well as from the networks of the involved research partners who have established close connections with national and regional beekeeper associations. Trained B-GOOD researchers acting as moderators/facilitators within each country will host the workshops. The workshops will be conducted either in English or in the native language for each country in case English is not feasible. The types and contents of data/information that will be collected are detailed below.

Study 5 – Workshops will comprise of approximately 20 participants per workshop and will collect qualitative data as part of a prototyping and elicitation protocol (PrOACT; a decision-making model referring to the identification of Problems; Objectives; Activities; Consequences and Tradeoffs). This protocol will engage participants in structured activities to:

1. Gain participant views and opinions on beekeeping related issues within each country and the EU in general, identifying collective problems, objectives and alternative solutions;
2. Collect information on participant's personal characteristics will also be gathered as part of setting up the workshops e.g. age, type of stakeholder, years of experience within the beekeeping sector. This information will be used to ensure workshops have a broad representation.

Participatory workshops will require participant involvement in group exercises with written / diagram outputs. Workshops will be audio-recorded in order to allow for transcription of discussions, i.e. converting audio-recordings to text for further qualitative content analysis using the NVivo software for gaining insights from qualitative and mixed-methods data. Digital images will also be taken and all recordings, images and materials will be electronically stored on secured servers at the relevant institutions of the involved researchers in the study.

The protocol for Study 5, including informed consent procedures and the final workshop format, will be submitted for ethics approval from the UZGent-UGent Ethics Committee "Commissie voor Medische Ethiek", or an equivalent competent authority, and the Aarhus University Ethics Committee.

2.4.4 Task 8.3

Data collection as part of task 8.3 will take the form of two facilitated workshops convened as part of B-GOOD's Multi-Actor Forum. These will take place mid-way and towards the end of

the project. Selected participants will be recruited from the established list of key stakeholders and/or people having participated in previous workshops. The types and contents of data/information that will be collected are detailed below.

Study 6 – Workshops will comprise of approximately 20-30 participants per workshop and will collect qualitative data by engaging participants in structured activities to:

1. Gain participant views and opinions on developments within the B-GOOD project and provide feedback / evaluation of the project's progress in delivering stakeholder focused research, collaborations and bee-management outcomes;
2. Collect information on participant's personal characteristics will also be gathered as part of setting up the workshops e.g. age, type of stakeholder, years of experience within the beekeeping sector. This information will be used to ensure workshops have a broad representation.

As with the previous study, Study 6 workshops will be audio-recorded, notes taken and all materials electronically stored on secured institutional servers.

The protocol for Study 6, including informed consent procedures and the final workshop format, will be submitted for ethics approval from the Aarhus University Ethics Committee.

2.4.5 Task 8.4

Data collection within task 8.4 will be done via a qualitative interview conducted amongst members of the Multi-Actor Forum and selected influential actors, recruited from the list of key stakeholders. Approximately 40 interviews will be conducted and the types and contents of data/information that will be collected are detailed below.

Study 7 – Semi-structured telephone interviews (using both open and closed questions) will be used to:

1. Gather individuals' perceptions and experiences of B-GOOD's collaborative and learning processes and its outcomes.

Interviews will be audio-recorded in order to allow for transcription of discussions, i.e. converting audio-recordings to text for further qualitative content analysis using the NVivo software for gaining insights from qualitative and mixed-methods data. Data will be stored on secured institutional servers.

The protocol for Study 7, including informed consent procedures and the final workshop format, will be submitted for ethics approval from the Aarhus University Ethics Committee.

3. Informed consent procedures

Participants will be given written (in all cases) and oral (in case of interviews and workshops) information on the concerned research of the B-GOOD project through informed consent leaflets and verbal explanations. Informed consent will be obtained in written or electronic format by providing all participants with informed consent forms and information leaflets in English or in their own language as they prefer. The informed consent form together with the information leaflet will inform persons about the purpose, duration and possible adverse events of the studies in a clear and unambiguous way. The informed consent form will be signed by the participant (in written or electronic format), witnessed and dated and kept by the researcher who recruits the participants into the study.

In the informed consent form, it will be clearly stated to the participants that participation is voluntary, neither involving costs nor benefits, that refusal to participate will involve no penalty and that participants may withdraw from participation at all time without penalty, that the data obtained from the study will be pseudonymised and treated confidentially and that the participant's privacy will be protected. The informed consent form will also contain information about data protection, handling and retention.

B-GOOD does not foresee possible adverse effects from participating in its planned socio-economic and social sciences studies, nor stigmatization, discrimination, discomfort or risk, nor possible incidental findings with an impact on the mental and physical health of the participants.

The templates of the informed consent forms for studies with stakeholders in task 4.1 (Study 1a, Study 1b, Study 2) and beekeepers in task 4.2 (Study 3 and Study 4) are provided in Appendix 1 and Appendix 2, respectively.

4. Confirmations

The B-GOOD consortium confirms that copies of opinions/approvals by ethics committees and/or competent authorities for the research involving human participants will be kept on file and made available upon request.

The B-GOOD consortium confirms that copies of informed consent forms and sheets in other languages than English will be kept on file and made available upon request.

5. Appendices

5.1. Template of informed consent form for studies involving stakeholders (in English)
5.2. Template of informed consent form for studies involving beekeepers (in English)
5.3. Study protocol Study 1a: 40 in-depth interviews with beekeepers

Appendix 1. Template of informed consent form for studies involving stakeholders (in English)

INFORMATION SHEET FOR THE PARTICIPANTS (Stakeholders)

Title of the study: B-GOOD Socio-Economics of Beekeeping in the EU

Dear participant,

You are invited to participate in a study. Before you decide to participate in this study, take sufficient time to read this information sheet carefully and discuss this with other people.

Please take time to ask questions if there are any uncertainties or if you require additional information. This process is called "informed consent". Once you have decided to participate in the study, you will be asked to sign the consent form at the end of this information sheet.

1 DESCRIPTION AND PURPOSE OF THE STUDY

The Department of Agricultural Economics of Ghent University (Belgium) conducts an investigation to study the socio-economics of beekeeping in the EU. This study is part of the EU-funded Horizon 2020 project B-GOOD that aims to pave the way towards healthy and sustainable beekeeping in the European Union.

We kindly ask you if you would like to take the time to participate in an interview with us. This will take approximately two hours of your time.

Our purpose is to gain insights in the strengths, weaknesses, opportunities and threats facing beekeeping in the EU, bee health, and current and future business models in EU beekeeping.

The interview will be audio-recorded and audio-records will be transcribed into text format for analysis within maximum one month following the interview. In the meantime, they will stored on secured institutional servers in encrypted format. Audio-records will be permanently deleted right after transcription.

This study was evaluated and approved by the Ethics Committee of Ghent University.

This collection of data is carried out under the supervision of Prof. Wim Verbeke, Ghent University, Department of Agricultural Economics in Belgium (wim.verbeke@ugent.be).

2 CONSENT AND REFUSAL

Your participation in this study is entirely free and voluntary. You can refuse to complete or answer eventual questions and you are free to withdraw from this study interview at any time, without having to justify your decision.

3 ADVANTAGES

Participation in this study will probably not bring you any benefits. However, the insights and results obtained from this study will be communicated to the beekeeping sector and can lead

to the development of improved practices, guidelines, policies and business models that foster healthy and sustainable beekeeping in the EU.

4 COSTS

Your participation in this study does not entail any additional costs for you, but it also offers no financial benefits.

5 CONFIDENTIALITY

In accordance with the General Data Protection Regulation EU/2016/679 (GDPR, April 27, 2016), your privacy will be respected.

If you consent to participate in this study, we will process your data in accordance with the purpose of the study. This processing of data is provided by law on the basis of Article 6, § 1, (b), (e) or (f) and Article 9, § 2 (j) of the General Data Protection Regulation.

All information collected during this study will be pseudonymised. This means your data can still be linked to your personal file. In case of pseudonymisation the key to the code assigned to you will be stored separately and it will only be accessible to the investigators or to the appointed replacement. In this study, data are collected via an interview.

Only pseudonymised data will be used for analysis and in any type of documentation, reports or publications concerning this study. Both personal data and data concerning your views and opinions relating to beekeeping in the EU will be processed and stored for at least 20 years. The controller of the data is the principal investigator of the study, Prof. Wim Verbeke (wim.verbeke@ugent.be). His research team will gain access to your personal file.

In the context of data protection, your pseudonymised data may become publicly available after the study, therefore any interested parties can have access to, process, and/or further analyse your pseudonymised data.

If you wish, the principal investigator or the Data Protection Officer can provide you with more information about the protection of your personal data. In this case, please contact privacy@ugent.be.

Representatives of the promoter, auditors, the Ethics Committee and the competent authorities, all bound by professional secrecy, can have direct access to your data under the responsibility of the investigator (or one of his/her collaborators) in order to check the study procedures and/or the data, without violating its confidentiality. This is only possible within the limits of the relevant laws. By signing this consent form and having received the preliminary explanations, you consent to this access.

You have the right to submit a complaint about how your data is processed to the Data Protection Authority:

Data Protection Authority (DPA)
Rue de la Presse 35 – 1000 Brussels
Tel: +32 2 274 48 00; E-mail: contact@apd-gba.be; Website: www.dataprotectionauthority.be

INFORMED CONSENT FORM FOR THE PARTICIPANTS (stakeholder interviews)

1. I have read and understood the "Information sheet for the participants", page 1 to page 2, and I have received a copy of this document. I have been informed of the nature of the study, its purpose, its duration and what is expected of me.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

2. I agree to participate in the study.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

3. I understand that participation in the study is voluntary and that I can withdraw from the study at any time without giving a reason for this decision and without this having any influence on my further treatment.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

4. I am aware that this study has been approved by an independent Ethics Committee at UZ Gent/UGent and that this study will be conducted according to the guidelines for good clinical practice (ICH/GCP) and the declaration of Helsinki, designed to protect people participating in experiments. This approval should under no circumstances be taken as an incentive to participate in this study.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

5. I have been informed that personal data are processed and stored for at least 20 years. I agree and am aware that I am entitled to access and correct this information. As this data is processed for scientific purposes, I understand that access to my data may be postponed until after the end of the study. If I want access to my data, I will address the investigator who is responsible for the processing of the data.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

6. I am aware and agree that this interview is audio-recorded for the purpose of transcription within maximum one month following this interview. The audio-records will be deleted afterwards.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

DECLARATION BY THE INVESTIGATOR

1. I declare that I have provided the necessary information regarding this study (the nature, the purpose, and the foreseeable effects) orally and a copy of the information document to the participant.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

2. I confirm that no pressure has been exerted on the participant to allow him/her to participate in the study and I am prepared to answer any additional questions.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

Name and first name of the participant	Signature	Date
Name and first name investigator	Signature	Date

2 copies must be completed. The original is kept by the investigator for a period of 25 years, the copy is given to the participant.

Appendix 2. Template of informed consent form for studies involving beekeepers (in English)

INFORMATION SHEET FOR THE PARTICIPANTS (Beekeepers)

Title of the study: B-GOOD Socio-Economics of Beekeeping in the EU

Dear participant,

You are invited to participate in a study. Before you decide to participate in this study, take sufficient time to read this information sheet carefully and discuss this with other people.

Please take time to ask questions if there are any uncertainties or if you require additional information. This process is called "informed consent". Once you have decided to participate in the study, you will be asked to sign the consent form at the end of this information sheet.

1 DESCRIPTION AND PURPOSE OF THE STUDY

The Department of Agricultural Economics of Ghent University (Belgium) conducts an investigation to study the socio-economics of beekeeping in the EU. This study is part of the EU-funded Horizon 2020 project B-GOOD that aims to pave the way towards healthy and sustainable beekeeping in the European Union.

We kindly ask you if you would like to take the time to participate in a survey with us. This will take approximately 30 minutes of your time. Our purpose is to gain insights in your characteristics as a beekeeper, the characteristics of your honey bee colonies and how you manage them, and your opinions towards beekeeping.

This study was evaluated and approved by the Ethics Committee of Ghent University.

This collection of data is carried out under the supervision of Prof. Wim Verbeke, Ghent University, Department of Agricultural Economics in Belgium (wim.verbeke@ugent.be).

2 CONSENT AND REFUSAL

Your participation in this study is entirely free and voluntary. You can refuse to complete eventual questions and you are free to withdraw from this study interview at any time, without having to justify your decision.

3 ADVANTAGES

Participation in this study will probably not bring you any benefits. However, the insights and results obtained from this study will be communicated to the beekeeping sector and can lead to the development of improved practices, guidelines, policies and business models that foster healthy and sustainable beekeeping in the EU.

4 COSTS

Your participation in this study does not entail any additional costs for you, but it also offers no financial benefits.

5 CONFIDENTIALITY

In accordance with the General Data Protection Regulation EU/2016/679 (GDPR, April 27, 2016), your privacy will be respected.

If you consent to participate in this study, we will process your data in accordance with the purpose of the study. This processing of data is provided by law on the basis of Article 6, § 1, (b), (e) or (f) and Article 9, § 2 (j) of the General Data Protection Regulation.

All information collected during this study will be pseudonymised. This means your data can still be linked to your personal file. In case of pseudonymisation the key to the code assigned to you will be stored separately and it will only be accessible to the investigators or to the appointed replacement. In this study, data are collected via survey questionnaire.

Only pseudonymised data will be used for analysis and in any type of documentation, reports or publications concerning this study. Both personal data and data concerning your views and opinions relating to beekeeping in the EU will be processed and stored for at least 20 years. The controller of the data is the principal investigator of the study, Prof. Wim Verbeke (wim.verbeke@ugent.be). His research team will gain access to your personal file.

In the context of data protection, your pseudonymised data may become publicly available after the study, therefore any interested parties can have access to, process, and/or further analyse your pseudonymised data.

If you wish, the principal investigator or the Data Protection Officer can provide you with more information about the protection of your personal data. In this case, please contact privacy@ugent.be.

Representatives of the promoter, auditors, the Ethics Committee and the competent authorities, all bound by professional secrecy, can have direct access to your data under the responsibility of the investigator (or one of his/her collaborators) in order to check the study procedures and/or the data, without violating its confidentiality. This is only possible within the limits of the relevant laws. By signing this consent form and having received the preliminary explanations, you consent to this access.

You have the right to submit a complaint about how your data is processed to the Data Protection Authority:

Data Protection Authority (DPA)
Rue de la Presse 35 – 1000 Brussels
Tel: +32 2 274 48 00; E-mail: contact@apd-gba.be; Website: www.dataprotectionauthority.be

INFORMED CONSENT FORM FOR THE PARTICIPANTS (beekeeper surveys)

1. I have read and understood the "Information sheet for the participants", page 1 to page 2, and I have received a copy of this document. I have been informed of the nature of the study, its purpose, its duration and what is expected of me.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

2. I agree to participate in the study.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

3. I understand that participation in the study is voluntary and that I can withdraw from the study at any time without giving a reason for this decision and without this having any influence on my further treatment.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

4. I am aware that this study has been approved by an independent Ethics Committee at UZ Gent and Ghent University and that this study will be conducted according to the guidelines for good clinical practice (ICH/GCP) and the declaration of Helsinki, designed to protect people participating in experiments. This approval should under no circumstances be taken as an incentive to participate in this study.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

5. I have been informed that both personal data are processed and stored for at least 20 years. I agree and am aware that I am entitled to access and correct this information. As this data is processed for scientific purposes, I understand that access to my data may be postponed until after the end of the study. If I want access to my data, I will address the investigator who is responsible for the processing of the data.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

DECLARATION BY THE INVESTIGATOR

1. I declare that I have provided the necessary information regarding this study (the nature, the purpose, and the foreseeable effects) orally and a copy of the information document to the participant.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

2. I confirm that no pressure has been exerted on the participant to allow him/her to participate in the study and I am prepared to answer any additional questions.

- ❍ Yes
- ❍ No [TERMINATE STUDY]

Name and first name of the participant	Signature	Date
Name and first name investigator	Signature	Date

2 copies must be completed. The original is kept by the investigator for a period of 25 years, the copy is given to the participant.

Appendix 3. Topic guide Study 1a: 40 in-depth interviews with beekeepers

TOPIC GUIDE

IN-DEPTH INTERVIEWS WITH 40 STAKEHOLDERS

Introduction
Introducing the researchers and explaining the purpose of the interview
Informed consent procedure

- Introduction:

Explain the purpose of the interview: investigate the views and opinions of stakeholders about 1) beekeeping in the EU, 2) what characterises a healthy bee colony and 3) current and future beekeeping business models in the EU.

Confidentiality is guaranteed: no names of persons, organisations or companies in the report. The conversation is audio-recorded and will be transcribed to facilitate reporting.

Reporting: the executive summary of a report based the interviews will be distributed among the participants.

Explain working methods. Three topics will be covered:
up to one hour for SWOT of beekeeping in the EU, up to 30 minutes for bee colony health, and up to 30 minutes for current and future beekeeping business models

Topic 1: SWOT facing the EU beekeeping sector

Getting to know stakeholder's views on the EU beekeeping sector

1 What are the stakeholders' associations with the EU beekeeping sector?

2 How broad is your knowledge on the beekeeping sector? What is your specialisation?

3 What is an important internal characteristic of the EU beekeeping sector? e.g. organisation of the sector, quality and experience of beekeepers, quality of extension services, unified vs. dispersed, beekeeping facilities, image and reputation of beekeeping, marketing skills, research and development, profitability…

Internal factors = factors that the sector can change, improve, …. They constitute strengths, weaknesses, or neutral factors.

Is this a <u>strength</u>, <u>weakness</u> or neutrality?

Why do you believe so ?

Can this be generalised across the EU, or is it specific for certain regions, countries, types of beekeepers, …?

- What is another important characteristic of the EU beekeeping sector?

Repeat previous …

- What is another important characteristic of the EU beekeeping sector?

Repeat previous …

Continue until no additional internal characteristics are mentioned.

4 What is an external factor that influences the EU beekeeping sector? e.g. economic forces, political forces, social forces, structural forces, natural environment, technological and scientific environment, trends and evolutions among suppliers and customers to/from the beekeeping sector…

External factors are facts, trends or evolutions in the business environment that the beekeeping sector experiences, undergoes, notices, …, and that may require a response, reaction, … They constitute opportunities, threats or neutral factors.

Is this a <u>opportunity</u>, <u>threat</u> or neutrality?

Why do you believe so ?

Can this be generalised across the EU, or is it specific for certain regions, countries, types of beekeepers, …?

- What is another external factor that influences the EU beekeeping sector?

Repeat previous …

- What is another external factor that influences the EU beekeeping sector?

Repeat previous …

Continue until no additional internal characteristics are mentioned.

Topic 2: Healthy bee colony

Gaining insight into opinions on what characterises a healthy bee colony, a dead bee colony, and bee health in the future.

1 How would you define a healthy bee colony?

2 Why do bee colonies die?

3 How do you envision bee health in the future?

4 Who do you think should be responsible for bee health?

5 What are feasible steps to improve bee health in the future?

Topic 3: Current and future beekeeping business models

Gaining views on current beekeeping business models and potential for business model innovation and sustainability. Mapping of the complexity of the business environment and identification of the key attention points for strategy development.

Explain what a business model is

Give beekeeping business model examples

1) Economic business model- professional

2) Different aim- non-professional

1 In your country, which is the most common of these two business model types? How important is beekeeping for profit/non-profit? Where are beekeepers located?

2 In your country, how to bees fit into the supply chain/institutional environment? E.g. are bees part of the livestock sector, agricultural sector, or other sector? How is the institutional environmental structured? Where are bees placed in the value chain?

3 How has the beekeeping sector in Europe changed in the past 10 years?

4 How do you envision the beekeeping sector in 10 years? E.g. how do you think the institutional environment should be organised in the future?

5 What is needed to achieve this? E.g. innovation and sustainability

6 What are the barriers to achieve this? Identifying gaps between what is wished for and what is feasible