**Appendix A – Case study protocol**

*\*A sample of the interview and workshop materials is shown. The full case study protocol, including workshop outcomes, can be shared upon request.   
\*In Spain and Colombia, interview and workshop materials were translated into Spanish*

**1.1 General interview guide stakeholders**

|  |  |
| --- | --- |
| 1. Introduction | Personal introduction   1. Personal introduction, introduction to the organization, to confirm the role 2. Current role in the organization and activities involved with   Sector introduction   1. Explanation of the current system in place 2. Purpose behind the current practice 3. What are the biggest challenges and issues faced in the current system? 4. If improvement can be made, what are the suggested measures or focal points? |
| 2. Sustainability | 1. Present and expected challenges regarding sustainability 2. Current projects/activities related to improving sustainability (e.g. trainings, certification, organic fertilisers etc.) |
| 3. Impact (goals, challenges, benefits, and harms) of new bio-based supply chain in the region *(show biohub infographic)* | Impact   1. Interest to play a role in a new bio-based supply chain? 2. Identify their foreseen role in the supply chain and elaborate 3. Possible benefits for the organization from the new supply chain 4. Reason for participating in a new supply chain 5. Why is that important?   Hurdles   1. What is preventing them currently in doing so (lack of capacity, funding, policies, infrastructure, trade agreements, knowledge, partnership etc.)   Harms   1. What could threaten the existence/operation of a new bio-based supply chain? 2. What are the disruptions that will happen in the sector and for the sectors associated? |
| 4. Stakeholder analysis (*show power-interest grid)* | 1. Which actors do you think should be included in a new bio-based supply chain? 2. Which actors are missing in the power-interest grid? 3. What do you think of the positions on the power interest grid? |
| 5. Sector specific questions |  |
| 6. Closing | 1. Summarize and ask if there is nothing more to say 2. Follow-up contact 3. Confirm agreements on records, publication 4. Willingness to participate in the workshop |

**1.2 Interview materials**

A diagram of a green field

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*Figure A.1 – Infographic of a potential biohub/new bio-based supply chain*

A black background with a black square

Description automatically generated with medium confidence*A black background with a black square

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*Figure A.2 – Example of the power-interest grid from Spain, before and after feedback from participants*

**1.3 Interview guide in-depth interviews farmers**

1. Introduction
2. Open-ended questions about different aspects of their lives, to understand their daily lives, perspectives and make them think about these aspects. (Living, activities, possessions, person, health, relationships)
3. Ranking of capability cards that represent different aspects of life. We discussed the cards one by one and asked them what those meant to them and to rank the card as most important (!!!!!!) to least important (!) for their wellbeing. In addition, we discussed factors that limit or enable the expansion of these capabilities.
4. Specific questions about their agricultural practices, how they handle their residues, if they are open to selling the residues, and under what conditions. We showed a (simplified) picture of the biohub concept we are working with.

**1.4 Sample of capability cards**

A blue square sign with white text

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All capability cards categories: Social relations, education and knowledge, self-determination, mobility, public participation, nutrition, security, physical health, mental health, satisfactory work, free time and play, care for the environment, housing, and 4 blank cards.

**1.5 Workshop protocol**

* Break up in 3 smaller groups, representing a mix of stakeholders
* Break-out session 1 - Forecasting: Discuss an ideal scenario for +20 years. Participants can choose options for the different variables of the supply chain. The following tools are used:
  + Empty biohub scenario where participants can fill in their ideal choices (figure 3).
  + Poster representing different variables of the biohub, to be filled with post-its (figure 4).
  + Table with options to choose from for each variable (figure 5).
* Break-out session 2 - Backcasting: Create a roadmap for how to achieve the ideal scenario. Identify steps for what is needed in +5 and +10 years to achieve the ideal scenario. Discuss roles, responsibilities, and challenges. Tools:
  + Poster of a roadmap, to be filled with post-its (figure 6).

**1.6 Workshop materials**

Diagram of a diagram of a farm

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A chart with text on it

Description automatically generated with medium confidence*Figure A.3 – Empty biohub scenario*

*Figure A.4 – Example of variables poster from Namibia*

|  |  |
| --- | --- |
| **Variable category** | **Variable options** |
| **Feedstock** | * Acacia Mellifera * Sickle bush * Mixed species |
| **Feedstock harvesting method** | * Manual * Semi-manual * Roller * Other |
| **Feedstock providers** | * Commercial farmers * Resettlement farmers * Communal farmers * Mix |
| **Feedstock processing (incl. cleaning and chipping if necessary) (Ownership)** | * Individual farmers * Centralized facility (Co-operative/Association) * Specialized company/SME * Biorefinery |
| **Feedstock transport (ownership)** | * Farmers * Association/co-operatives * Specialized company/SME * Biorefineries |
| **Feedstock purchasing contractual environment** | * Flexible * Short term * Long term commitment * Right to deliver * Combination |

*A colorful rectangular object with black text

Description automatically generated with medium confidenceFigure A.5 – Sample of variable categories and options from Namibia (options under the category feedstock)*

*Figure A.6 – Poster of the roadmap*