

# D3.8: Training material for SCBMI – final version

## WP3 – Sustainable Collaborative Business Model Innovation

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### Document Information



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## Executive summary

The Ploutos project revolves around a number of sustainable innovations, which are piloted in the Ploutos Sustainable Innovation Pilots (SIPs). In order to shape and maximize the probability of value creation and capture through these innovations for the SIPs, the innovations under consideration per SIP are supported by means of an innovative and participative approach for designing and evaluating *sustainable collaborative business models*, as defined in *D3.2: Ploutos SCBMI approach – final version*. Therefore, the goal of this approach is to design sustainable collaborative business models that support the implementation of the innovation at hand, creating mutual value for each of the relevant stakeholders involved.

The approach follows a process-like set-up and is executed by means of practical workshops with relevant stakeholders for the SIPs. In each of these workshops, analysis and design tools are used to elicit (tacit) knowledge to support the design of sustainable business models that fit the characteristics of the SIP and the innovation at hand. As a result, the tools used may support the identification of innovation risks or strategic business opportunities or may help in unveiling critical assumptions made. These insights consequently are used to support the design of sustainable collaborative business models and to understand (in a qualitative sense) their viability and feasibility in practice.

In this deliverable, helpful video tutorials are included to support the most commonly used tools for the SCBMI approach (see below), as well as a video to elaborate on how the SCBMI approach is used (**youtube link**). This deliverable is a continuation of *D3.7: Training material for SCBMI – second version*, in which the tools used to support the SCBMI approach, including handholds and best practices to support their use. In D3.7, the following set of tools was listed:

- 1) Value proposition statement – **youtube link**
- 2) Innovation Dimensions
- 3) Stakeholder analysis
- 4) DAMIAN – **youtube link**
- 5) Customer Journey – **youtube link**
- 6) Service-Dominant Business Model Radar – **youtube link**
- 7) Benefits Realization Mapping – **youtube link**

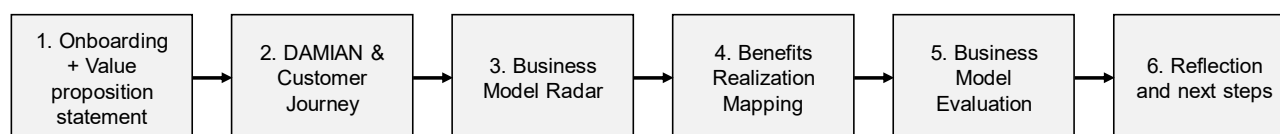
In addition to the description of the tools and the hands-on training material in the form of ‘training cards’ supported as part of D3.7, this deliverable includes helpful tutorial videos on how the tools and SCBMI approach should be used, complemented by a small case example. Here, the most commonly used tools for the SCBMI approach (i.e. VPS, DAMIAN, CJ, SDBMR, BRM, as also described for the workshop-based approach), as well as the SCBMI approach itself, have been covered. These videos can therefore be considered as a quick yet easy to use means to get acquainted with the tools used for the SCBMI approach as well how the approach works in itself. The links to these videos are included behind the name of the tool. Whilst not supported through a short video, the descriptions for the Innovation Dimensions tool and Stakeholder Analysis tool can be used to further deepen the discussions for sustainable collaborative business model innovation.

As there is functional overlap between the tools (i.e., multiple tools addressing the ‘what question’ or ‘identifies risks’ of sustainable collaborative business models) a comparison of tools is provided, as illustrated below. This comparison can help in the selection of tools or shed light on how tools may complement or enrich each other when used. As a key consideration, we observe that the service-dominant business model radar as well as benefits realization mapping cover many dimensions relevant to the SCBMI approach. Accordingly, we position (the use of) these tools as essential to the SCBMI approach, for which other tools can be used to further concretize and clarifying the results to be generated through these tools.

|                                          | What? | How? | Gains? | Society? | Cost? | Risks? | Who? |
|------------------------------------------|-------|------|--------|----------|-------|--------|------|
| <b>Tools used</b>                        |       |      |        |          |       |        |      |
| ▪ Value proposition statement            | ●     | ●    |        |          |       |        | ●    |
| ▪ Tidd and Bessant innovation dimensions | ●     |      |        |          |       | ●      |      |
| ▪ Stakeholder analysis                   |       |      | ●      | ●        | ●     |        | ●    |
| ▪ DAMIAN                                 | ●     | ●    | ●      |          |       |        | ●    |
| ▪ Customer journey                       | ●     | ●    | ●      |          |       |        | ●    |
| ▪ Benefits realization mapping           | ●     | ●    |        | ●        | ●     | ●      | ●    |
| ▪ Service-Dominant Business Model Radar  | ●     | ●    | ●      |          | ●     |        | ●    |

● Fully applicable  
 ● Partially applicable

Based on this selected set of tools, a workshop based format as illustrated below can be proposed (placing the tools in a process-logical order), in which knowledge on various aspects (behavioral, business and technical) is collected to work towards the design of the sustainable collaborative business model and to understand its pathway towards impact. We describe how this workshop-based format can be used to support the SCBBI approach.



Lastly, to demonstrate the working of the tools as well as the application of the SCBBI approach, we illustrate the use of the tools by means of a case study. For this case study, we build on the results generated through application of the SCBBI approach for SIP8. Facilitators can use this case study as a means to learn about the application of tools by trying to answer the following questions: Can I explain the results generated using the tools? Can I replicate this for a different case study? This serves as additional practice for facilitators interested in using the tools.



# 1 Introduction

## 1.1 Project Summary

The Ploutos project focuses on rebalancing the value chain for the agri-food system, transforming it into one that works for the benefit of society and the environment. The project will develop a Sustainable Innovation Framework that applies a systemic approach to the agri-food sector, building on three pillars: Behavioral Innovation, Sustainable Collaborative Business Model Innovation and Data-driven Technology Innovation. Exploiting a history of significant agri-food projects and the respective ecosystems around them, the project will deploy 11 innovative systemic Sustainable Innovation Pilots (SIPs), for which, adopting a multi-actor approach, innovative solutions and methodologies will be implemented, tested and assessed, generating practical learnings as result. The pilots cover a large range of agri-food ecosystems, across 13 countries, covering arable, horticulture (both open fields and greenhouses), perennials and dairy production among others. In each case, behavior change, collaborative business modelling and data driven innovation will be integrated to deliver the most environmentally, socially, and economically sustainable solution. Moreover, a Ploutos Innovation Academy will be established as a vehicle for integrating the know-how, best practices and assessments developed across the project and derived from the Sustainable Innovation Pilots. Ploutos includes 33 partners, 22 of them being end-users, representing all relevant actors in the food system, including farmers, food industry companies, scientists, advisors, ICT specialists and policy makers.

## 1.2 Document Scope

This document, *D3.8: Training material for SCBMI – second version*, serves as training material for supporting the application of the Sustainable Collaborative Business Model Innovation (SCBMI) approach in practical cases (to be found in *D3.2: Ploutos SCBMI approach – final version*). It presents the tools used in the context of Ploutos to facilitate the process of analyzing, designing and evaluating Sustainable Collaborative Business Model Innovations (SCBMIs) in collaboration with the SIPs.

It is the ambition of Ploutos that the approach of sustaining innovations, by means of the SCBMI approach, can be adopted by facilitators to help Ploutos-based and similar pilots to realize their innovation goals. As pilots contexts differ and the SCBMI approach needs to be tailored to the specific situation, we describe the tools used to operationalize the SCBMI approach.

The description of the tools is intended to help facilitators (with experience in workshops and basic understanding of business models) to (i) consider the tool for integration in their SCBMI approach (when and why to use), and (ii) to use the tools in practice. This document is a follow-up of *D3.7: Training material for SCBMI – second version (M24)* in which all tools to support the ‘core’ part of the SCBMI approach were described. In this document, these tools, as well as ‘using’ the SCBMI approach, have been complemented through short videos to further support their use. Accordingly, facilitators and end-users can use these videos to either learn how tools should be applied or to use the videos as a means of training material or to disseminate on how the SCBMI approach can be applied in practice.

### 1.2.1 Context of the tools

As mentioned above, WP3 is centered around Sustainable Collaborative Business Model Innovation. Its objectives are to (i) create a set of reference sustainable business model archetypes, (ii) develop a novel approach for SCBMI with a corresponding toolset in order to (iii) support the Sustainable Innovation Pilots (SIPs) in forming a novel business model that adheres to the Ploutos core principles (i.e., farmer-centricity, mutuality, scalability and multiple values and actors). Additionally, this is all incorporated in the Sustainable Innovation Framework (SIF) that is developed by WP1 as well as the Ploutos Innovation Academy (PIA) of

WP5, with the ultimate goal of constructing a knowledge base that can also be used independently after the Ploutos project has ended.

This deliverable (D3.8) is developed in context of *T3.4 - Support of the Pilots using the Ploutos SCBMI approach*, in which the SIPs receive support to develop and evaluate sustainable collaborative business model(s) that fit the needs and characteristics of the respective SIP and the innovation to be deployed.

The SCBMI approach is in fact a WP3 facilitated process aimed to design and evaluate business models for the innovations that are being developed in scope of the SIPs. The facilitated process consists of analysis tasks, design tasks and evaluation tasks that will be supported by tools, canvasses, and participative workshops. The idea is that relevant actors co-design the business model innovations for their organizations such that the sustainable collaborative business model will exploit the innovation of the SIP and moreover achieve ‘substantial levels’ of sustainability when scaled up. We summarize these requirements as the Ploutos core principles (i.e., farmer-centricity, mutuality, scalability and multiple values) which should (at least implicitly) be taken into account when using the proposed set of tools.

*T3.4 - Support of the Pilots using the Ploutos SCBMI approach* builds on earlier work from *T3.1 – Development of the Ploutos SCBMI approach* and *T3.2 – Investigation of reference sustainable business model archetypes* and represents a way in which the SCBMI approach can be executed in practice by, amongst others, using the reference sustainable business model archetypes. The full methodology, training material and practical examples will be documented in *D3.12: Ploutos Consolidated SCBMI* (M36).

As this deliverable captures the tools used to support the SCBMI approach as well as explains how the SCBMI approach is used, it serves as a reference manual (rather than a research document) to practitioners.

## 1.3 Document Structure

In this document, we describe the final version of our training material for SCBMI.

- Section 1 acts as an introduction
- Section 2 summarizes the Ploutos Sustainable Collaborative Business Modelling Innovation approach, which is the context for the tools presented in this document. It includes a helpful video on how the SCBMI approach is applied.
- Section 3 presents the complete set of tools used in the SCBMI. It also presents the training cards per tool, serving as a helpful guide on how the tool can be used and what its strengths and weaknesses are. Here, the tools used as part of the workshop format have been given further support through helpful short videos, explaining their use in practice.
- Section 4 describes a comparison between tools in terms of how they are used. Based on the set of core tools, a workshop format is proposed to structure use of the tools to support the SCBMI.
- Section 5 illustrates the application of the core tools by means of an illustrative case study (SIP8)
- Section 6 concludes this deliverable and delineates the next steps

## 1.4 Link to the Ploutos Sustainable Innovation Framework

The training material contained in this deliverable will help with concretizing the SIF by providing a hands-on guide for the workshops that need to be performed as part of the framework. The explanations of the tools as well as the training material provided also demonstrate how business, behaviour, technology and decision making come together as part of the SCBMI approach.

## 1.5 Link to the Ploutos Innovation Academy

The material covered in this deliverable will also be presented or used in the PIA (coordinated by WP5). The goal of this document however is to provide a stand-alone guide with training material and practical examples

to be used in the continuation of the pilots as well as similar external use cases. The PIA can moreover be used to provide preparation material for the set of workshops that are part of our SCBMI approach (for example through training cards or walkthrough-like videos and explanations of tools). This allows the introduction of certain (business) concepts, tools and the goal(s) and expected outcomes of a workshop before use in actual workshops as part of WP3. The (meta-)outcomes of the workshops can subsequently also be used to feed the knowledge base of the PIA.

## 2 Ploutos SCBMI

In this section we will briefly recap the Ploutos SCBMI approach, explain how this approach links to other work packages and describe how the corresponding workshops can be prepared, executed and processed. More details on the methodology itself can be found in *D3.2: Ploutos SCBMI approach – final version*.

### 2.1 The Ploutos SCBMI approach

The Ploutos SCBMI approach is a process that facilitates the design and evaluation of business models that create and capture sustainable values by the participation of multiple organizations by means of workshops and tools. Such an approach is not readily available, yet it is needed in the context of the digital and sustainable transition in agriculture which requires the business models of supply chain actors to change in a coordinated way.

Our SCBMI approach consists of nine steps which are executed sequentially, of which the first 7 steps are key to the core process of the SCBMI: these steps actively contribute towards supporting decision making on new business models. These steps can be grouped into phases related to *analysis*, *design* and *evaluation* of the business model and business context. Once commitment is achieved, stakeholders can actively work towards (dedicating resources towards) actual business model implementation and, over time, scaling. The first phases should already consider how likely these scaling intentions will be (as part of the assess and evaluate steps). An overview of the SCBMI approach is illustrated in Figure 1.

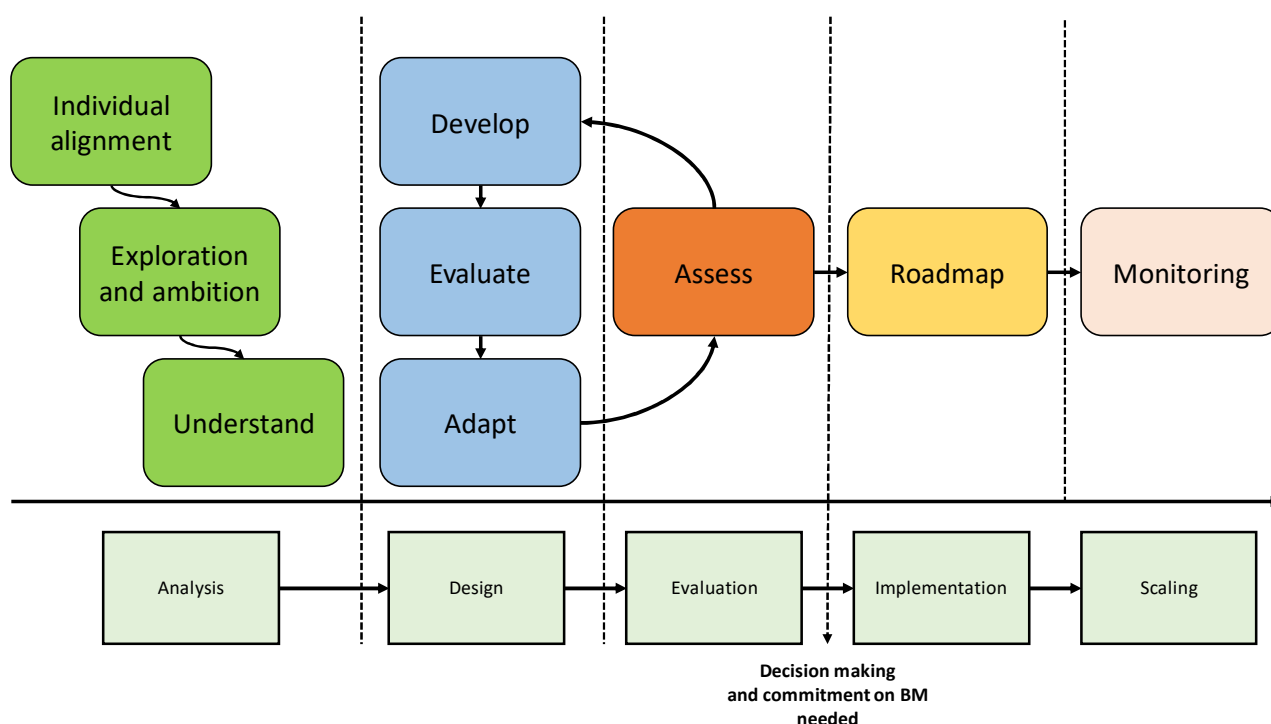


Figure 1: Overview of the Ploutos SCBMI approach

The first phase, the analysis phase, is focused on laying a mutual foundation. Three steps (Individual Alignment, Exploration and Ambition and Understand) are executed in sequence in order to gather all relevant information for the pilot at hand, such as the ecosystem in which it operates, its local context and the current business model as well as the ambitions and strategies from the partners. We will also form a shared vision to work towards for the pilot. To support the communication of motivations and ambitions, this step can be supported through 1-to-1 sessions to capture the true motivations of stakeholders.

In the second phase, the design phase (involving the steps Develop, Evaluate and Adapt), the novel business model is constructed in an iterative process where an initial design is created and evaluated, adapted and assessed in close collaboration with the SIP partners until a satisfactory result is reached. The overview of reference SCBM archetypes (see *D3.3: Reference sustainable collaborative business model archetypes*) serves as a valuable basis here. However, the Ploutos Principles (mutuality, farmer-centricity, multiple values and scalability) are core considerations in designing the collaborative business model. Any business challenges identified (be it technical, social, or financial) should be captured and, if possible, addressed, whereas also critical assumptions should be identified and reflected on. As part of the Develop step, business model design tools such as the SDBM/R will be used to help SIPs in mapping the business model design. The Evaluate step involves understanding by means of Benefits Realization Mapping the *operationalization* and *implementation* of the business model design over time and how it is scaled. Based on challenges identified and important assumptions highlighted, the business model design and BRM are updated as part of the Adapt step.

Once the sustainable collaborative business model has been designed, the evaluation phase takes place. Here, the goal is to assess the long-term robustness and feasibility of the business model design and to understand to what extent the Ploutos principles have been fulfilled. It also zooms in on the scaling intentions the SIP may have regarding the solution and its associated business model design. This phase is generally iterative with the design phase: evaluation may raise challenges and barriers previously unaddressed, which pose potential changes for the business model design. This can result in several design and evaluation iterations before a valid and viable business model design is achieved. To progress to the next phase, commitment of all stakeholders is needed on taking the business model further into the individual stakeholders' decision-making processes.

The next phase (implementation) will be to create a roadmap to ensure that the business model design is gradually implemented over time and to realize the plans made in earlier phases. Potential scaling strategies selected should also be defined further, whereas it should be assessed to what extent the business model *works* in practice. In this phase, meetings are planned with SIP to follow-up on how challenges have been addressed and how they are working towards realizing the intended goals for the SIP (from a business perspective). If necessary, appropriate interventions can be made (updating the business model design, re-evaluating design decisions or improving the impact logic).

The final phase focuses on monitoring the performance of the sustainable collaborative business model (to validate whether a satisfactory business scenario remains to be obtained for all stakeholders involved), and to identify further pathways towards scaling. It entails a plan for the years to come, including a strategy to scale the business model up to a level that in principle should make it applicable in other regions of Europe.

The first three phases (analysis, design and evaluation) constitute the *core part* of the SCBMI approach. These are highly structured in nature and address the various concerns that should be explored to support sustainable collaborative business model design. This part can therefore be characterized as *generalized* and largely similar for all SIPs. The latter two phases (implementation and scaling) are necessarily tailored to the specific needs of the SIPs. From a business perspective, some SIPs may be more mature than others and therefore face vastly different challenges or have different needs regarding business model design. Therefore, these latter two phases of the SCBMI approach can be considered as user-inferred: depending on the needs of the SIPs, we zoom in on specific parts of sustainable collaborative business modelling.

A short video on the SCBMI approach can be found at: **youtube link**. This video explains the phases of the SCBMI approach in brief as well as what activities are considered for each phase.

## 2.2 Integrating business, technology, behavior and value

The SCBMI is presented as a participative design approach that intertwines analysis, design and evaluation of the business models of multiple organizations in coherence and with multiple values (people, planet and profit) in mind. The SCBMI as such thus links different perspectives related to other Ploutos work packages:

- Digital and technological innovations (WP4) form the basis for functionalities (and non-functionalities), that are intended to create value for end users and organizations
- In making use of the innovations or in operating tools that create value for end users, humans and thus behavior innovation (WP2) play an important role, e.g. in adoption of innovations, in new processes, in new mindsets.
- The innovations explored in Ploutos are aimed at creating societal and ecological value, while being economically viable. The performance indicators that indicate the value created by the innovation, on different levels of scaling, is in scope of WP1, bridging technological, social and business aspects.

The SCBMI approach will take these perspectives on board, by means of the tasks and tools used, the questions asked and discussions engaged in. Therefore, the tools and the way they are deployed in context of the SCBMI are continuously open for adaption with inputs from WP1, W2 and WP4 – with the clear aim of improving the exploitation and impact potential of the innovations in the Ploutos SIPs. This is moreover highlighted in Section 4.3 in which we link our used tools to the other work packages.

## 2.3 Preparation and output of the workshops

As also (to be) explained in the workshop format in Section 4.2, each phase for the SCBMI is supported through workshop(s) to operationalize the approach. The first step in preparing a workshop is finding a suitable date and timeslot in which at least the SIP leader and any relevant SIP partners can be present. Ideally, all SIP partners are present such that mutual understanding is encouraged and synergies as well as the value of collaborative efforts can be explored. It is also helps in aligning motivations and drivers as much as possible. When planning the workshop, it should be determined whether the workshop will be conducted F2F or in an online setting – the advantage of F2F workshops is that it better facilitates partners to tag along for the discussion (at the expense of a larger time investment). Depending on how the workshop is conducted (F2F versus online), the tools should be prepared. For F2F settings, typically a template of the tool is printed and used for the workshop – its use is accommodated through post-its such that initial ideas can quickly be captured. In case of an online setting, the required tools for performing a certain workshop are prepared in advance by structuring them in an online whiteboard tool (e.g., Miro) so that they can directly and intuitively be used by the participants.

The tools can be tweaked wherever necessary based on the particular SIP at hand and the results of any previous workshops. For example, if there is a clear distinction between multiple parallel innovations that are performed side-by-side in a pilot, the tools can be structured in such a way that they can be applied for each innovation individually. The agenda of the workshop itself is shared in advance as well as any material that should be read or prepared otherwise, if applicable.

When a workshop is completed, it is important that the gathered information is stored, processed, summarized and shared. We adopt two principles in doing this: on the one hand, we compile the results into a concise poster format in which the outcomes of all the used tools are visually shown and briefly explained in text. An example of such a poster is illustrated in Figure 2. On the other hand (particularly relevant for the evaluation workshop), we compile and bundle all filled-in templates of tools used for a single Powerpoint file, elaborating for each template important findings that were obtained or what open questions still have to be addressed. These pptx. files are shared with stakeholders after the workshop as a reference to support (internal) discussion leading to decision making.



Both sets of documentation not only serve as a future reference for the workshop facilitators and participants, but can also be used by other work packages and SIPs to get a better understanding of the innovation, challenges and drivers of the SIP at hand. Moreover, having a consistent way of processing the workshops makes the integration with the SIF, PIA and deliverables significantly easier, and it gives a hands-on overview of the intended results of a workshop to external practitioner.

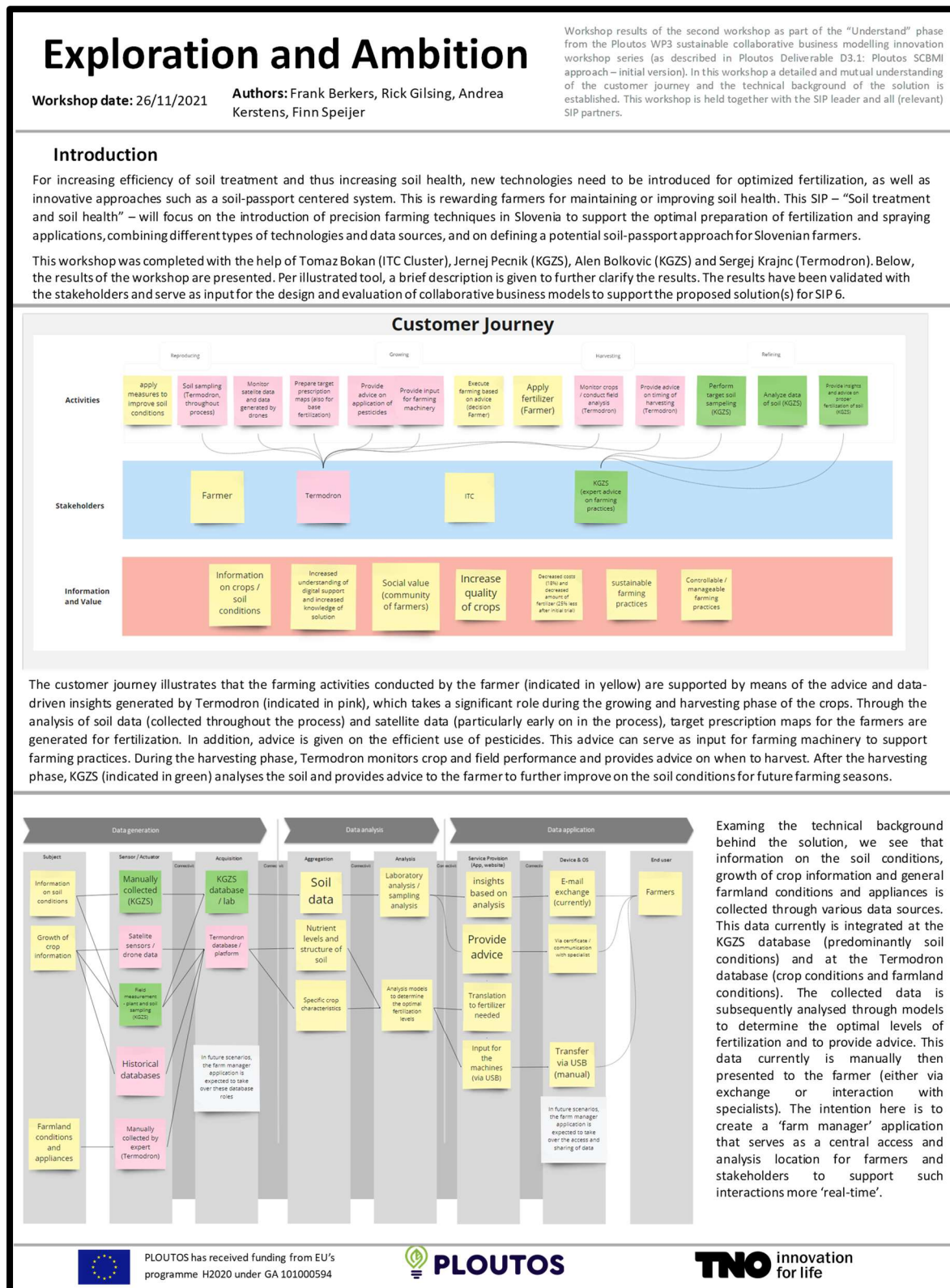


Figure 2: Poster template designed for SIP 6 (Workshop 2)

## 3 Tools for SCBMI

The goal of this section is to give a clear and concise overview of all the tools that we use in our SCBMI workshops. Moreover, the descriptions should be sufficient for an independent practitioner to apply our SCBMI methodology either outside or in context of the Ploutos project as well. In this version we will show the tools used for the SCBMI, as well as provide ‘training cards’ to help the application of these tools. These training cards describe the ‘what’, ‘why’ and ‘how’ of the tools in brief. They also include the strengths and weaknesses of using the tools as well as tips on *how* the tools can best be applied.

For each tool first a brief description is given of the challenge(s) addressed and goal of the tool. Next, an idea is given of when this tool is best used, and the working process is illustrated. Consequently, the intended output is described together with the potential time that is needed to cover the steps of the tool. Lastly, the tool description is concluded with the training card providing a quick overview of the tool.

Note that in *D3.8: Training material for SCBMI - final version*, we will further refine the set of tools used as well as offer additional training material to support their use in practice (e.g. through video-based support as ‘walkthroughs’ of how the tools are used).

The following tools are covered in this section:

1. Value Proposition Statement
2. Innovation Dimensions
3. Stakeholder Analysis
4. DAMIAN
5. Customer Journey
6. Service-Dominant Business Model Radar
7. Benefits Realization Mapping

Per tool, we describe:

- What the purpose or goal of the tool is
- The input needed to use the tool
- The process of applying the tool
- The output that is expected through application of the tool
- The time needed to apply the tool
- A training card presenting an overview of the tool (how it is used, its strengths, weaknesses and tips to use the tool).
- A video to further support the use of the tool (with the exception of the Innovation Dimensions and Stakeholder Analysis tool).



## 3.1 Tool 1 - Value proposition statement

The value proposition statement is a derivative tool of the Value Proposition Canvas (Osterwalder et al., 2014) that helps organizations or institutions to define, visualize and concretize the value of product, service or solution proposed to the customer or end-user.

### 3.1.1 Challenges addressed and goal of the tool

The value proposition statement aids in specifying *what* is offered and to *which* customer segment as well as *why* it is relevant (in terms of the needs of the customer segment). It explicates how this need is satisfied through the value that is created for the end-user or customer. Such value can either relate to taking away existing costs or *pains*, or/ and increasing benefits or *gains*. In short, a successful value proposition communicates clearly the benefit the consumer will receive by purchasing from the business.

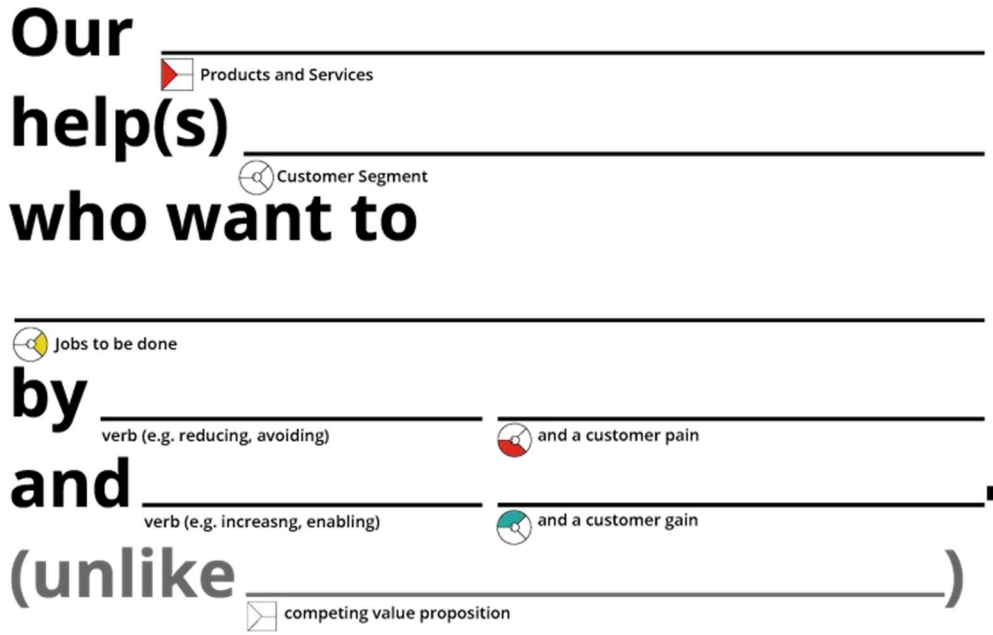
### 3.1.2 Input description

For the (application of the) value proposition statement, stakeholders should have a preliminary understanding of what the solution under consideration is (i.e. what will you intend to offer?) and what the potential customer segment of your solution is (i.e. to whom will you offer the solution?). This way, you can tell the story on how your solution may benefit or help the intended customer segment and help fill in the value proposition statement. Note that technical aspects or considerations for the solution can still be specified later on. If no solution is yet ideated or if it is not clear to whom your solution, service or product will be offered, it would be best to first define these aspects before application of the value proposition statement takes place (to avoid rework).

### 3.1.3 Process

In order to formulate a clear value proposition statement (see Figure 3) the business needs to identify the main problem of the customer. Next, a list of all the benefits that the product or service offers should be formed. These benefits should be concrete and focused on a single job that needs to be done. After the benefits are identified, the following step is to describe what makes these benefits valuable. The value can then be linked back to the customer's problem. Finally, to distinguish the business from others, a part can be added that describes why the product or service is unique. This can be for example a specific additional service that is free and for which other companies charge for.

Optionally, participants can develop alternative formulations and vote for the best parts.



Our help(s) who want to

Products and Services

Customer Segment

Jobs to be done

by

verb (e.g. reducing, avoiding)

and a customer pain

and

verb (e.g. increasng, enabling)

and a customer gain

(unlike competing value proposition)

Figure 3: A canvas for the value proposition statement (Moore & McKenna, 1999).

### 3.1.4 Output description

The result is a clear statement that tells a potential customer why it should buy a product or service from a specific business and not from a competitor. In addition, it can serve as the basis for further communication and concretization of the proposed solution or service. Moreover, given its ease-of-use, stakeholders can quickly reflect on the value proposition specified in case new potential gains are highlighted or pains can be resolved.

### 3.1.5 Timespan

Since (part of) the value proposition has also been covered in the SIP Baseline Questionnaire, it should take about fifteen minutes to fill in, after which an additional 30-45 minutes can be used to discuss the value proposition. Logically, if multiple solutions or value propositions are considered, multiple iterations of the tool should be applied.

### 3.1.6 Training Card – Value proposition statement (VPS)

To support the use of the VPS in practice, the training card for the VPS as illustrated in Figure 4 can be used, providing a quick overview of how the VPS is used as well as its strengths, weaknesses and tips.

### 3.1.7 Video support – Value proposition statement (VPS)

Video-based support for the VPS can be found at: **youtube link**. This video describes in brief how the VPS is used, as well as demonstrates its use by means of a short example.

## Value Proposition Statement (VPS)

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>What</b>        | Tool to understand and communicate the value proposition(s) of new innovations or solutions. It represents a structured template that lists the solution under consideration, the customer or end-user segment addressed, and how the solution creates value for this segment by either removing 'pains' or creating 'gains' for the customer or end-user.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>When to use</b> | <ul style="list-style-type: none"> <li><b>Goal:</b> The VPS supports users in identifying customer or end-user segments for the proposed innovation or solution and to understand the value that is created through the solution for these segments.</li> <li><b>Stage(s):</b> The VPS is used in early stages of the SCBMIP.</li> <li><b>Type:</b> Co-creation workshop (either online or offline, brainstorming)</li> <li><b>Time effort:</b> 30 minute preparation, 1 hour workshop (15 minute fill-in), 1 hour of recording.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>How to use</b>  | <ul style="list-style-type: none"> <li>Appoint a facilitator for filling in the VPS and driving the discussion (typically the SIP leader or orchestrator)</li> <li><b>[Facilitator]</b> Prepare a Miro board or similar online collaboration tool that visualizes the VPS template or use a printed version of the template including post-its and pens.</li> <li><b>[Facilitator]</b> Invite stakeholders relevant to the working or development of the solution to join in for the workshop (e.g. stakeholders that can influence what the solution will look like and how it will work).</li> <li><b>[Facilitator]</b> Engage all stakeholders present – make sure that a participative and safe climate is achieved (and that there are no bad ideas)</li> <li><b>[Facilitator]</b> Explain the VPS template; if needed go through an illustrative and easy example.</li> <li><b>[All]</b> Discuss the solution and ensure that consensus is achieved on <i>what</i> the solution is and <i>how</i> it works</li> <li><b>[All]</b> Discuss the customer / end-user segments that fit the solution. This step can be revisited depending on whether the value created for the customer or end-user makes sense (next step).</li> <li><b>[All]</b> Investigate per customer segment (previous step) what <i>gains</i> are created for this customer segment and what <i>pains</i> are taken away. Then, jointly discuss whether the resulting <i>value proposition</i> is sufficient or whether the customer segment should be revisited. Conduct this step for each customer segment deemed relevant.</li> <li><b>[Facilitator]</b> Once a value proposition (in terms of <i>gains and pains</i>) is specified for all customer segments relevant to the solution, the workshop can be concluded.</li> </ul> |

## Value Proposition Statement (VPS)

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strengths</b>  | <ul style="list-style-type: none"> <li>The VPS forces you as a user to think about your customer or end-user: does it really need my solution? If so, how does the solution help the end-user in achieving its goals? What concrete pains and gains does it solve?</li> <li>The VPS particularly enforces engineers to focus on beneficial technological characteristics, but rather to think about how these characteristics are valuable in the 'eye of the beholder' (the customer or consumer)</li> <li>The VPS is simple and easy to follow (essentially only asking 5 questions related to value creation), but helps in creating alignment between stakeholders and deciding on how the solution should be shaped and for what customer segments.</li> <li>The VPS can be easily used in collaborative settings or brainstorming: this can help in creating a joint understanding.</li> <li>Filling in the VPS does not take a lot of time. Multiple customer segments (if applicable) can be considered in a workshop setting.</li> </ul> |
| <b>Weaknesses</b> | <ul style="list-style-type: none"> <li>Depending on how concrete the solution already is, the VPS can 'seem' trivial. This can make it difficult to motivate stakeholders to participate ('we already know that it is valuable'), yet potential (wrong) assumptions may underlie this thinking. A strong facilitator can help to mitigate this, as well as stressing the importance of creating a shared understanding.</li> <li>The VPS does not offer much guidance on the specification of value propositions. One should avoid drafting value propositions that either do not say much ('our solution provides <i>great</i> quality') or are poorly presented ('our solution offers specific characteristics that enable the customer to tweak their KPIs to help them steer business activities').</li> </ul>                                                                                                                                                                                                                                |
| <b>Tips</b>       | <ul style="list-style-type: none"> <li>Aim to have (a representative of) the customer or end-user at the table: this can help in quickly verifying whether assumed gains and pains are actually relevant for the customer. This works well if it is already more or less apparent what customer segment will be addressed.</li> <li>For ideating customer segments and associated value propositions, each stakeholder can first individually describe what he / she thinks makes sense in the context of the solution. This can then be discussed jointly after which consensus making starts. This can help in avoiding 'group thinking' or and to give an explicit say to each stakeholder at the table.</li> <li>It is a good practice to revisit the VPS later on for the SCBMIP: have our value propositions changed over time? Why is this the case? This can help in better understanding how the solution is used and whether this makes sense.</li> </ul>                                                                               |

Figure 4: Training card – Value proposition statement (VPS)

## 3.2 Tool 2 - Innovation dimensions

The tool presented in Figure 5 is used to understand the innovation nature of the proposed solution. This builds upon the 4Ps of innovation, *product, process, position and paradigm* (Tidd & Bessant, 2020).

- Product refers to the innovative nature regarding the product (or service) that is offered to the customer – is it entirely new (radical) or is it an improvement over existing products that are offered (incremental).
- Process refers to how the solution offered to customers is established or how it is delivered, and the degree to whether incremental or radical changes are foreseen.
- Position refers to the context in which the solution is relevant, and thus also relates to the customer segment. Are we as an organization targeting different customers or different needs of (existing) customers?
- Lastly, paradigm refers to the mental models that are in play with regards to the proposed solution – does it differ explicitly from the existing line of reasoning of the organization, or does it comply with the current mode of thinking?

Considering whether, why and how these dimensions are affected can help stakeholders better understand what the expected impact of the proposed solution can be (in relationship to the highlighted innovation dimensions) and thus what challenges may be faced to establish this impact. In other words, the tool helps to identify changes needed in the dimensions, that may be overlooked initially – as typically innovation projects have a tendency to focus on product (service) innovation.

Using the tool is straightforward – per solution considered, stakeholders can indicate per dimension what the innovation nature is. Positioning it to the boundaries of the circle implies that the dimension is heavily affected (radical innovation), whereas positioning the innovation nature to the centre implies that limited or incremental changes are to be made.

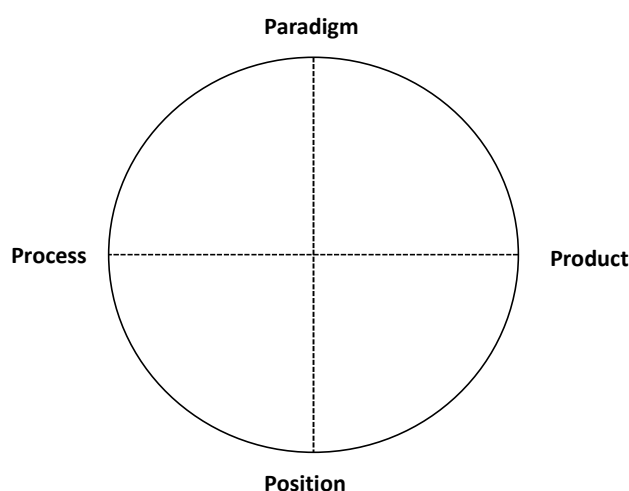


Figure 5: Characterizing the innovation nature of the solution.

### 3.2.1 Challenges addressed and goal of the tool

The tool helps to identify changes needed or implied in the four dimensions. These changes may be overlooked initially – as typically innovation projects have a tendency to focus on product (service) innovation.

### 3.2.2 Input description

A basic understanding of the solution under consideration is needed.

### 3.2.3 Process

The person (innovator) (or multiple) is asked to position its innovation on each of the four axes between incremental (center) and radical (outermost circle), e.g., on a scale from 1 to 5. The person is asked to explain the rationale of the chosen positions.

The facilitator (or other participants) can ask questions for clarification or challenging questions. The task is concluded by summarizing if the task confirmed the current perspective or whether it revealed additional innovation risks.

It may be the case that during the process it appears that the innovation under consideration consists of multiple innovations of different maturities. Then these can be treated individually and ‘as a system’.

This task can be executed online or face to face (F2F).

### 3.2.4 Output description

For each of the considered innovations the task results in:

- Scoring on each of the dimensions
- Rationale for the scoring
- Identification of as-of-yet unidentified innovation risks

### 3.2.5 Timespan

The task can take up to 15 to 30 minutes depending on the complexity of the innovation(s) (logically if multiple innovations are considered, multiple iterations of the tools should be used). The mapping should be concluded with a discussion (approx. 30 minutes) to agree upon the set innovation dimensions.

### 3.2.6 Training card – Innovation dimensions (ID)

To support the use of the innovation dimensions (ID) in practice, the training card for the ID as illustrated in Figure 6 can be used, providing a quick overview of how the ID is used as well as its strengths, weaknesses and tips.

## Innovation Dimensions (ID)

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>What</b>        | Tool to investigate the innovation nature of the proposed solution. Represents a mapping based on the dimensions <i>product</i> , <i>position</i> , <i>process</i> and <i>paradigm</i> to understand the potential impact of the solution.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>When to use</b> | <ul style="list-style-type: none"> <li>• <b>Goal:</b> The ID makes explicit how radical the solution is in terms of innovation. Based on four innovation dimensions (product, position, process, paradigm) it can provide input on where potential challenges may lie with regards to realization of the solution and potential adoption.</li> <li>• <b>Stage(s):</b> The ID is used in early stages of the SCBMIP to clarify / ideate the solution.</li> <li>• <b>Type:</b> Co-creation workshop (either online or offline, brainstorming)</li> <li>• <b>Time effort:</b> 30 minute preparation, 1 hour workshop (15 minute fill-in), 1 hour of recording.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>How to use</b>  | <ul style="list-style-type: none"> <li>• Appoint a facilitator for filling in the ID and driving the discussion (typically the SIP leader or orchestrator)</li> <li>• <b>[Facilitator]</b> Prepare a Miro board or similar online collaboration tool that visualizes the ID template or use a printed version of the template including post-its and pens.</li> <li>• <b>[Facilitator]</b> Invite stakeholders relevant to the working or development of the solution to join in for the workshop (e.g. stakeholders that can influence what the solution will look like and how it will work).</li> <li>• <b>[Facilitator]</b> Engage all stakeholders present – make sure that a participative and safe climate is achieved (and that there are no bad ideas)</li> <li>• <b>[Facilitator]</b> Explain the ID template and its dimensions; if needed go through an illustrative and easy example.</li> <li>• <b>[All]</b> Discuss the solution and ensure that consensus is achieved on <i>what</i> the solution is and <i>how</i> it is expected to work</li> <li>• <b>[All]</b> Explore the <i>product innovation</i> dimension: to what extent is the solution itself new or innovative? What does this imply for potential adoption and what challenges could be faced? Do we need to adapt our solution?</li> <li>• <b>[All]</b> Explore the <i>position innovation</i> dimension: to what extent is the positioning for the solution innovative? What does this imply for potential adoption (different customer segments addressed) and what challenges could be faced?</li> <li>• <b>[All]</b> Explore the <i>process innovation</i> dimension: to what extent does the solution lead to changes for existing processes? What does this imply for potential adoption and what challenges could be faced? Do we need to adapt our solution?</li> <li>• <b>[All]</b> Explore the <i>paradigm innovation</i> dimension: to what extent does the solution call for change in principles / habits? What does this imply for potential adoption and what challenges could be faced? Do we need to adapt our solution?</li> <li>• <b>[Facilitator]</b> Summarize and discuss the findings. What challenges are potentially difficult? How can we take these into account?</li> </ul> |

## Innovation Dimensions (ID)

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strengths</b>  | <ul style="list-style-type: none"> <li>• The ID offers different perspectives on the innovative aspects of the solution: it challenges users to think about the potential impact a new solution may have or what changes in behaviour or business it may demand. This can help in better understanding whether the solution is appropriate or can be considered valuable.</li> <li>• The ID is simple in use and easy to use in collaborative settings, and is a time-efficient activity. The dimensions provide structure to assess the solution from different perspectives, which can already generate significant insights on the (value of the) solution and align perceptions of stakeholders involved.</li> </ul> |
| <b>Weaknesses</b> | <ul style="list-style-type: none"> <li>• The paradigm dimension can sometimes be difficult to understand, as it relates to intangible principles / ways of working that end-users may have in regards to the solution. A good practice here is to clarify how the paradigm dimension works by using illustrative examples.</li> <li>• There is no implicit negative or positive value attached to incremental or radical innovations. Stakeholders themselves should determine what the implication of either a radical / incremental innovation score may be (in terms of challenges). This is ultimately up to the user or stakeholders to consider the solution.</li> </ul>                                           |
| <b>Tips</b>       | <ul style="list-style-type: none"> <li>• Aim to have (a representative of) the customer or end-user at the table: this can help in quickly verifying whether assumptions regarding the innovative nature of the solution are correct.</li> <li>• The ID works well in conjunction with the VPS and can serve as input for the Customer Journey. In terms of process innovation, it can shed light on what steps may be introduced or changes as a result of the solution.</li> </ul>                                                                                                                                                                                                                                     |

Figure 6: Training card - innovation dimensions (ID)

### 3.3 Tool 3 - Stakeholder analysis

Businesses and their projects require participation, guidance, and approval from a wide range of people and parties. A stakeholder analysis, for example performed with the help of a stakeholder map (see Figure 7), can help organizations or business collaborations better understand the role of each stakeholder for the business network and to what extent stakeholders are involved with respect to the proposed innovation or solution.

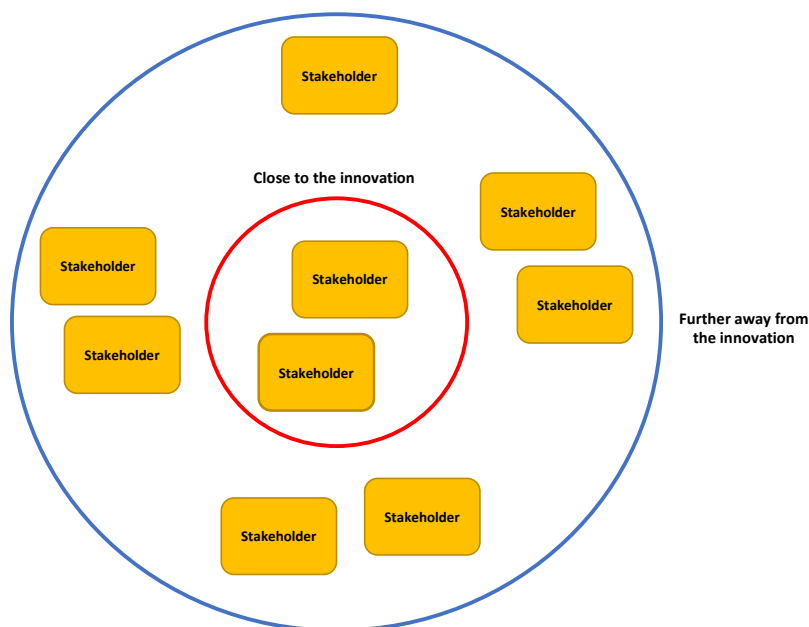


Figure 7: Stakeholder analysis

#### 3.3.1 Challenges addressed and goal of the tool

The stakeholder map helps in making explicit how stakeholders should be engaged for the development and concretization of the solution and thus to set up appropriate engagement and communication plans to do so. It also sheds light on their motivations regarding the solution being developed. Moreover, the tool may serve as the basis for identifying what stakeholders currently are perceived to be missing and should be included as part of the business collaboration. Such inputs are highly relevant for the subsequent definition of the business models central to providing and deploying the intended solutions. It can also help in avoiding complications later on, as stakeholders were not properly engaged in regards to the solution.

#### 3.3.2 Input description

The stakeholder analysis consists of all persons or parties who may affect, be affected by or perceive themselves to be affected by an activity or outcome of the project. Therefore, this tool can be used in the early stages of a project to gain alignment among all stakeholders and help address issues on time. As input, users of the tool should have an understanding of the roles of stakeholders that are affected and have some insights on their drivers and motivations. Furthermore, it is helpful to know whether stakeholders can be engaged or not. Lastly, it can also be valuable to understand what ‘power’ they have for the ecosystem: what happens if a stakeholder is unhappy with the solution or is negatively affected? Do they have significant power in the market that this can pose a risk? These inputs can help in drafting the stakeholder analysis and identifying barriers and challenges towards the roll-out of the solution.

#### 3.3.3 Process

In order to determine who the stakeholders are, organisations can brainstorm with their team to form a list of all persons or parties with that may affect, be affected by or perceive itself to be affected by the innovation



or solution. With this list several stakeholders can be grouped together in terms of their influence, interest and distance to the innovation or solution offered. Therefore it is important to understand how each of these categories feel about the project. (Do they have a financial interest in the outcome? What motivates them? Which project information is important for them? How can you win support? How can you manage their opposition?). This should ultimately result in a categorization of direct / indirect stakeholders, their relative importance and power for the market, their motivations, and mitigation and / or engagement plans to interact with these stakeholders.

### 3.3.4 Output description

The result is a stakeholder map that clearly visualizes which persons or parties are important in the project, their motivations (typically textually described) and how they are affected or influenced by the solution when rolled-out for the market. On the basis of this, barriers and challenges can be described that should be taken into account (depending on the power and motivation of stakeholders). In addition, this can also help in draft potential mitigation (in case stakeholders may pose a threat towards the successful implementation of the solution) and engagement strategies (if stakeholders can be engaged to support the success of the solution) specified for important stakeholders to support solution development and success.

### 3.3.5 Timespan

Depending on the scope and of the SIP innovation(s), the most important stakeholders can be directly identified, especially the ones that are close to the innovation. It can take some more time to identify all the relevant stakeholders that are relevant, yet further away from the innovation. The mapping process accordingly takes 30 minutes to fill-in, but identifying the motivations and drivers of stakeholders can be more time consuming, for which a session of 2 hours can be considered.

### 3.3.6 Training Card – Stakeholder Analysis (SA)

To support the use of the stakeholder analysis (SA) in practice, the training card for the SA as illustrated in Figure 8 can be used, providing a quick overview of how the SA is used as well as its strengths, weaknesses and tips.

## Stakeholder Analysis (SA)

|             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| What        | Tool to identify and analyze important stakeholders (both directly involved for as well as affected / influenced by the solution) as well as their motivations.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| When to use | <ul style="list-style-type: none"> <li><b>Goal:</b> The SA supports to identification of stakeholders relevant to the solution, either directly involved or to manage / mitigate to achieve long-term impact. The SA also provides insights on the motivations of such stakeholders to support engagement / mitigation plans.</li> <li><b>Stage(s):</b> The SA is used in early stages of the SCBMIP to identify what stakeholders to involve.</li> <li><b>Type:</b> Co-creation workshop (either online or offline)</li> <li><b>Time effort:</b> 1 hour preparation, 2 hour workshop (30 minute fill-in), 1 hour of recording.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| How to use  | <ul style="list-style-type: none"> <li>Appoint a facilitator for filling in the SA and driving the discussion (typically the SIP leader or orchestrator)</li> <li><b>[Facilitator]</b> Prepare a Miro board or similar online collaboration tool that visualizes the SA template or use a printed version of the template including post-its and pens.</li> <li><b>[Facilitator]</b> Invite stakeholders relevant to the working or development of the solution to join in for the workshop (e.g. stakeholders that can influence what the solution will look like and how it will work).</li> <li><b>[Facilitator]</b> Engage all stakeholders present – make sure that a participative and safe climate is achieved (and that there are no bad ideas)</li> <li><b>[Facilitator]</b> Explain the SA template and the difference between stakeholders close / distant to the innovation; if needed go through an illustrative and easy example.</li> <li><b>[All]</b> Discuss the solution and ensure that consensus is achieved on <i>what</i> the solution is and <i>how</i> it is expected to work</li> <li><b>[All]</b> Identify stakeholders close to the innovation: what stakeholders should be involved to develop and operate the solution? What are their motivations to be involved or to participate for solution development? Collect these findings, which serve as input for BM design. Also discuss whether any stakeholders are not already involved: why is this the case? What does this imply for solution development?</li> <li><b>[All]</b> Identify stakeholders distant to the innovation: what stakeholders influence your solution or are affected by your solution? To what extent can they be involved to support the success of your solution? In case they cannot be involved, what is their power in the market? Accordingly, what potential barriers or challenges can they bring? Discuss collaboratively what engagement or mitigation strategies should be specified per stakeholder.</li> <li><b>[Facilitator]</b> Summarize the stakeholders, their motivations and potential engagement / mitigation strategies per stakeholder. Discuss the findings. Which stakeholders should be engaged / involved as soon as possible?</li> </ul> |

## Stakeholder Analysis (SA)

|            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strengths  | <ul style="list-style-type: none"> <li>SA is simple in use and straightforward: the mapping of stakeholders is generally intuitive and is not limited, but can help in identifying which stakeholders are critical to manage for your solution.</li> <li>SA offers a free format to map stakeholders: this works well in collaborative settings.</li> <li>SA can be complemented well with business model design: it sheds light on what motivations stakeholders may have to participate in a new business model design. This motivations are generally translated into concrete benefits that should be earned as part of the business model logic.</li> </ul>                                                                                                                                                                                                                                                                                                                                                             |
| Weaknesses | <ul style="list-style-type: none"> <li>In collaborative settings involving many stakeholders, speaking out about motivations to participate for the development of a solution can be tricky and sensitive: one may not fully communicate <i>why</i> they participate for a new initiative as this may potentially harm their competitive position. To mitigate this, consider your stakeholder collaboration firstly as an <i>integrated company</i>: jointly working together to realize a new solution or to achieve long-term impact. This is important to create trust amongst your collaboration. Once the ecosystem for the solution is established and relevant stakeholders are engaged or potential barriers are mitigated, the stakeholder collaboration can focus on individual motivations and to zoom in on what each actor deems important.</li> </ul>                                                                                                                                                         |
| Tips       | <ul style="list-style-type: none"> <li>Policies and regulations are often highly influential for your solution – it can be good to explore for government stakeholders what <i>subset</i> of stakeholders (related to policy making) can be considered here: For example, some policies and regulations may deal with the technical legality of your solution, whereas others may deal with financial aspects such as subsidization. Having these policies clear can help in addressing / engaging such governmental stakeholders more clearly.</li> <li>It can help to go through scenarios when analyzing the motivations of stakeholders: ‘if my solution exists in the market, how would stakeholder X be affected, or how would stakeholder X affect my solution?’ ‘Would stakeholder X need to change its business practices, and can this create a barrier?’ ‘Can they become a potential threat?’. Such scenario building can help in better understanding how stakeholders may respond to your solution.</li> </ul> |

Figure 8: Training card - Stakeholder analysis (SA)

### 3.4 Tool 4 - DAMIAN

To clarify and explicate what a service or solution in a general sense entails and how it is provided to the customer, the service delivery canvas is used, which is part of the Digital Asset Modelling of Interdependencies in Actor Networks (DAMIAN) tool developed by TNO (Berkers et al., 2014). The canvas is displayed in Figure 9.

The motivation behind the DAMIAN methodology is that regular *value chains* are sometimes transformed into *value webs* due to digitization that allows for the convergence of many new data services, devices and distribution models. Different technologies and ownerships can make for similar functionality. This implies that there can be many parallel routes from data creation to service or product consumption, which each have their own involved stakeholders and regulatory boundaries for example. At the same time, these stakeholders can appear in multiple parts of the value web and there can be complex, co-dependent relationships between them. The service delivery canvas aims to concretely visualize these interdependencies and the different types of data that are valorized.

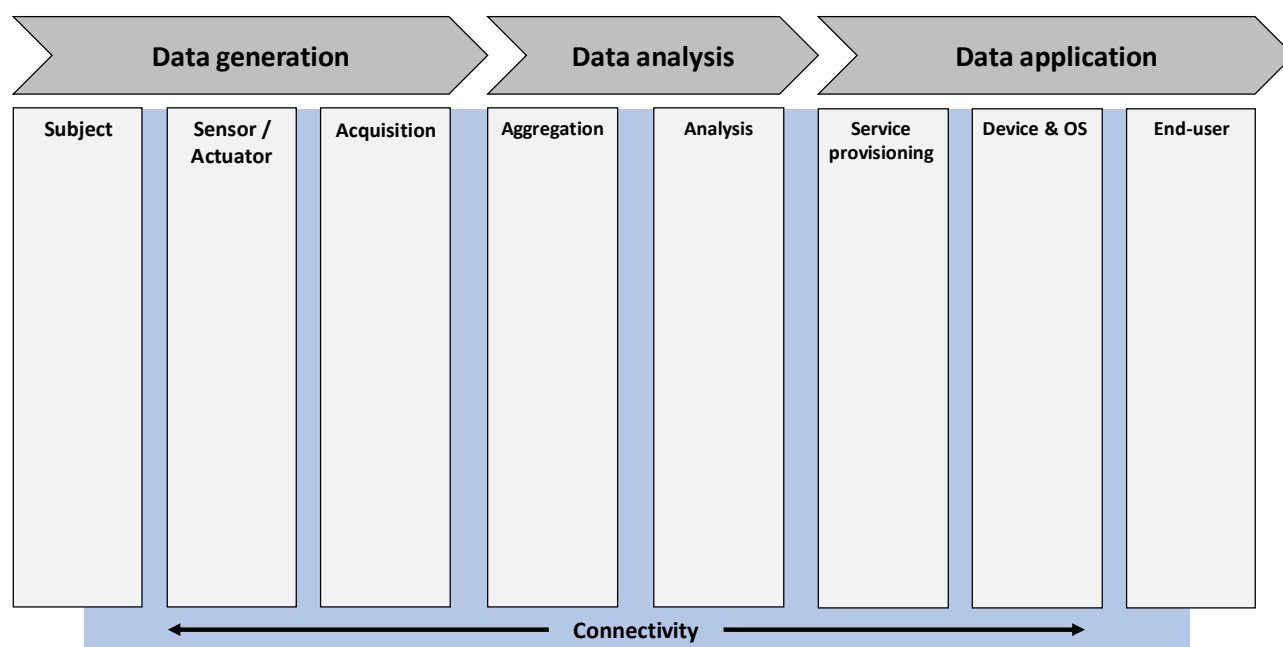


Figure 9: The DAMIAN tool template

#### 3.4.1 Challenges addressed and goal of the tool

DAMIAN consists of 8 categories related to how a service or product-based solution generates data (for example collecting relevant data or producing data), how this data subsequently is analysed (what tools are used and what analysis techniques or methods are used), and how finally the generated data or insights are distributed or delivered to the customer or end-user. The tool is applied from 'left to right', meaning that stakeholders first identify what data is generated, and subsequently for the next column specify how this is generated (for example through technologies such as sensors or actuators) and where this can be accessed (for example through databases or servers that are to be installed or already in place). Next, stakeholders should focus on how the data is analysed, making explicit what data is specifically used and what algorithms or techniques are used to transform or analyse this data to generate the desired results for the service. Lastly, the second to last columns specifies where these insights (available through the service) can be accessed and how (for example through websites or applications) this can be accessed. The last column consequently details what or who will be using the generated insights or transformed data. Finally, in-between most of the

columns, the connectivity between the different steps can be indicated (for example whether the data is processed manually or automatically).

### 3.4.2 Input description

DAMIAN can be used when a data valorization process is in place. When this is not the case yet, the participants can envision the future scenario in which it is. As input, it should be clear what (rough) data will be collected, how this will take place and to what purpose. Any analysis and aggregation activities may already be taken into account (or ideated).

### 3.4.3 Process

The input for the template can be a set of sticky notes mapped onto the canvas that describe that describe the different types of data generation, analysis and application flows, which can be separated or linked. If multiple organizations are involved in these steps, it is important to highlight which stakeholders are active in which part of the data valorization and the relationship between these parties. Conversely, if a single organization is active and responsible for all the steps in the process, the focus could be on the means and asset with which the data is valorized.

Questions that could therefore be answered during the workshop are:

- Which organizations are involved?
- Which functional relationships exist between these organizations?
- Which assets do the organizations use and exchange to deliver the service?

### 3.4.4 Output description

The output of the service delivery canvas is a high-level, qualitative overview (or scenario) of the data processing steps, the way value is created for an end-user and which intermediate steps are required. Moreover, in case multiple organizations are involved the interdependencies of these stakeholders should be made clear, which can serve as a basis to power relations, barriers and drivers of innovation in the ecosystem.

### 3.4.5 Timespan

The time required for filling in an initial version of the DAMIAN takes approximately 1 hour. The canvas can be updated also later on as well to include more information, stakeholders and relationships between them as the project progresses and the business model is formed, particularly if data relationships between stakeholders become increasingly clear.

### 3.4.6 Training card – DAMIAN

To support the use of the DAMIAN in practice, the training card for the DAMIAN as illustrated in Figure 10 can be used, providing a quick overview of how the DAMIAN is used as well as its strengths, weaknesses and tips.

### 3.4.7 Video support – DAMIAN

Video-based support for the DAMIAN tool can be found at: **youtube link**. This video describes in brief how the DAMIAN is used, as well as demonstrates its use by means of a short example.

## DAMIAN

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>What</b>        | Tool to investigate the technical background of the solution and to understand how data is collected and used to create value. It represent a canvas-like template that captures how data is collected, stored, transformed and used (as part of services or platforms) to create value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>When to use</b> | <ul style="list-style-type: none"> <li><b>Goal:</b> The DAMIAN tool is used to map how data is used to create value for end-users / customers. It sheds light on what and how data is collected and how this data is analyzed or transformed. It also indicates who is responsible for doing so.</li> <li><b>Stage(s):</b> The DAMIAN tool typically succeeds the customer journey, reflecting how the steps taken for the customer journey are supported through the technical architecture of the solution.</li> <li><b>Type:</b> Co-creation workshop (either online or offline)</li> <li><b>Time effort:</b> 1 hour preparation, 1 hour workshop, 1 hour of recording</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>How to use</b>  | <ul style="list-style-type: none"> <li>Appoint a facilitator for filling in the DAMIAN tool and driving the discussion (typically the SIP leader or orchestrator)</li> <li><b>[Facilitator]</b> Prepare a Miro board or similar online collaboration tool that visualizes the DAMIAN template or use a printed version of the template including post-its and pens.</li> <li><b>[Facilitator]</b> Invite stakeholders relevant to the working or development of the solution to join in for the workshop (e.g. stakeholders that can influence what the solution will look like and how it will work). Given the technical nature of this task, it is advised that technology stakeholders are definitely involved, but that this can adequately be coupled to business / customer value.</li> <li><b>[Facilitator]</b> Engage all stakeholders present – make sure that a participative and safe climate is achieved</li> <li><b>[Facilitator]</b> Explain the DAMIAN template; if needed go through an illustrative and easy example.</li> <li><b>[All]</b> Discuss the solution and ensure that consensus is achieved on <i>what</i> the solution is and <i>how</i> it works.</li> <li><b>[All]</b> Working from left to right on the template, map what data is collected as part of the solution and by whom this is collected. Also indicate where this data is stored (column 1,2 and 3). Challenge this data collection activity: what does it imply for the customer in terms of effort and data privacy? Why are certain data points collected, what value will they add? Does this have implications for the design of the solution (do we need to consider changes)? Alter any data points if needed until consensus is achieved.</li> <li><b>[All]</b> At the centre of the template, determine how the data is used: is it transformed or analyzed? Are models or mechanisms in place to do so? Why is this the case, what value is created as a result of this (and to whom)? Who is responsible for this activity? Continue until consensus is achieved.</li> <li><b>[All]</b> Focusing on the right of the template, determine how the (transformed) data is accessed and by whom. Are there more users of the data as opposed to the customer? Why is this the case? How does this contribute to value for the customer?</li> <li><b>[Facilitator]</b> Once the mapping is complete, verify that the logic / flow of data is correct and summarize the findings to the stakeholders. Adjust issues for which the data flow is not logical (e.g. data is left unused).</li> </ul> |

## DAMIAN

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strengths</b>  | <ul style="list-style-type: none"> <li>The DAMIAN couples ideation to realization: It forces users to become concrete on how the value defined for the customer journey / VPS is to be realized and whether this can actually be facilitated. It also encourages users to think about why data points are collected, particularly if these are not used later to support value creation. In such cases, this data might not have to be collected.</li> <li>The DAMIAN tool is structured in nature, describing a pathway from data collection towards data use. This logic has to be consistent and correct (data cannot disappear and models can not operate without data). By tracking the flow of data, users can support the mapping process.</li> </ul>                                                                                                                                                                                                                                                                                                                 |
| <b>Weaknesses</b> | <ul style="list-style-type: none"> <li>Despite its value orientation, DAMIAN remains a tool to investigate the technical architecture of solutions. If a solution is not (overly) technical, limited insights will be generated through the application of DAMIAN.</li> <li>Data points can follow different trajectories: if a solution is very data heavy, this may result in multiple intertwined trajectories of how data is used and where data is stored. Using the template, this can potentially make the analysis quite complex and make it (visually) difficult to interpret. A good practice here is to consider grouping data points that more or less describe similar objects (for example grouping all data points that relate to 'soil management').</li> <li>The use of DAMIAN calls for at least some knowledge on what the technical architecture of a solution will look like. While it can be used as an exploratory tool (how do we want to shape our solution?), it works better to investigate an already ideated technical architecture.</li> </ul> |
| <b>Tips</b>       | <ul style="list-style-type: none"> <li>Aim to have (a representative of) the customer or end-user at the table: assumptions regarding value created / value destroyed can immediately be verified to help in making decisions on the technical architecture of the solution.</li> <li>To avoid too abstract discussions, it is often great to illustrate (if available) the working of the solution: if prototypes or sketches are available, these can significantly help in clarifying how data is collected (and what this implies) or how (transformed) data can be accessed and where. Similarly, creating a user story or scenario can help in making things more concrete.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                 |

Figure 10: Training card - DAMIAN

## 3.5 Tool 5 – Customer Journey

The Customer Journey is a tool used to understand the sequence of events that customers or end-users go through when interacting with new innovations or solutions (Norton & Pine, 2013). It therefore helps in understanding how value is created (or potentially destroyed) for the customer by means of the innovation, how stakeholders are involved to support the value creation process and what information needs or assumptions can be identified as part of this value creation process.

### 3.5.1 Challenges addressed and goal of the tool

The Customer Journey forces stakeholders to reflect on or make explicit how it expects the customer or end-user to use an introduced innovation. It calls for identifying the steps a customer end-user has to take to be able to use the innovation, as well as requires stakeholders to determine what value is ultimately created for the customer or end-user and what it potentially has to give up to use the innovation. Logically, new innovations may introduce new steps for the end-user or may require end-users to change their current routines or behaviour. Such changes can be met with resistance or can be considered as costs. The *net* value ultimately captured by the end-user (e.g. the gains minus the burdens as a result of the innovation) may say something about how likely it is that end-users will adopt the innovation under consideration. This can help stakeholders in determining whether the innovation is appropriate for a certain end-user group or how this innovation should be altered to make it more worthwhile. Given its process-like orientation, it also helps in uncovering what actions are required from other stakeholders – at what part of the customer journey are they active and do they have the means to do so. What gaps or assumptions can be identified for the customer journey? Designing the customer journey can help better understanding how the innovation ultimately will be used and foster the adoption of the innovation as critical risks or assumptions can be mapped early on.

### 3.5.2 Input description

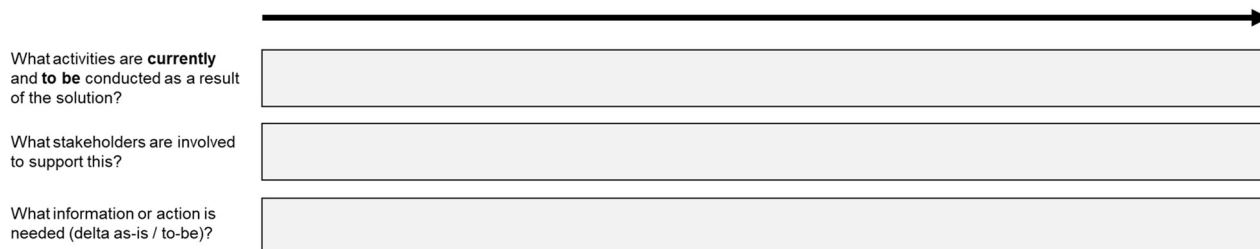
For the tool to be used, the idea for the innovation should be rather concrete: it should be clear what the innovation constitutes and in what context it will be used. Stakeholders using the Customer Journey should also have an idea of what customer or end-user segments to consider for the innovation.

### 3.5.3 Process

The Customer Journey template is presented in Figure 11. The customer journey starts from the top row in which the steps taken (or sequence of events) needed for the end-user to use the innovation are mapped. As this represents a ‘to-be’ situation (as the innovation is likely not deployed yet), these to-be steps should be contrasted as much as possible to the ‘as-is’ situation (what does the end-user currently do). In doing so, it becomes apparent what the delta is that is introduced as a result of the innovation: what changes are introduced and what impact do these changes have. Accordingly, what value(s) can result from this (both positive and negative). What does this mean for the total value that is captured by the end-user? Should changes be made? The steps are generally mapped sequentially, although iterations of the steps taken can occur.

Based on the steps mapped, it becomes apparent how relevant stakeholders are involved for providing the innovation or solution. The second row enables users of the template to map which stakeholders are needed to support specific steps of the process. Here, one may reflect on whether these stakeholders are already involved for the solution, and whether they possess the resources or capabilities to support these steps for the customer journey.

Lastly, using the third (lower) row, the information needs or challenges faced are mapped for the customer journey. For example, steps may be introduced which burden the end-user or may require the end-user to incur certain costs. Alternatively, stakeholders may not be yet able to support steps for the process as the currently lack capabilities or resources to do so. In this row, these challenges can be listed and serve as the starting point for further communication and discussion on how the innovation can be further concretized (bearing in mind how this may create value for the end-user).



What activities are **currently** and **to be** conducted as a result of the solution?

What stakeholders are involved to support this?

What information or action is needed (delta as-is / to-be)?

Figure 11: Customer Journey Template (own illustration)

### 3.5.4 Output description

The outcome of using the Customer Journey tool / template concerns an overview of the steps taken and what new steps are introduced, the stakeholders needed to do so and the current actions, challenges or assumptions that should still be addressed. It provides the starting point for further concretizing the innovation at hand. To what extent is value created or destroyed for the end-user? How will this influence the potential adoption of our innovation? How should the innovation potentially be adapted to increase the likelihood of adoption? What stakeholders should we involved to do so?

### 3.5.5 Timespan

Filling in the Customer Journey is not a time consuming process, but may require several reviews before the use of the innovation has concretized and is dependent on the amount of customer segments to consider: about 0.5-1 hours per iteration should be considered. Application of the customer journey can moreover significantly benefit from including the intended customer as an active stakeholder a source of validation and information. This enables stakeholders to converge towards decisions more quickly on the (perceived use of the) innovation at hand.

### 3.5.6 Training card – Customer Journey (CJ)

To support the use of the Customer journey (CJ) in practice, the training card for the CJ as illustrated in Figure 12 can be used, providing a quick overview of how the CJ is used as well as its strengths, weaknesses and tips.

### 3.5.7 Video support – Customer Journey (CJ)

Video-based support for the Customer Journey tool can be found at: **youtube link**. This video describes in brief how the Customer Journey is used, as well as demonstrates its use by means of a short example.



## Customer Journey (CJ)

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>What</b>        | Tool to analyze the value creation process or 'journey' the customer / end-user takes when using the proposed solution. It represents a template to delineate the steps that are introduced for customers to use the solution. It also captures how these steps are supported through stakeholders and what the process implies in terms of where value is created (or destroyed).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>When to use</b> | <ul style="list-style-type: none"> <li><b>Goal:</b> The customer journey supports users in mapping the value creation process of end-users / customers when using the proposed solution. It generates an overview of the steps taken in this process and explains how this 1) contributes to value creation 2) how stakeholders support the steps taken. These insights can drive decision making on the configuration of the solution.</li> <li><b>Stage(s):</b> The customer journey succeeds the VPS and is also typically used early on for the SCBMIP to understand how the solution will be used in practice</li> <li><b>Type:</b> Co-creation workshop (either online or offline)</li> <li><b>Time effort:</b> 1 hour preparation, 1-2 hour workshop (30 minute fill-in per customer segment), 1-2 hour of recording</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>How to use</b>  | <ul style="list-style-type: none"> <li>Appoint a facilitator for filling in the customer journey and driving the discussion (typically the SIP leader or orchestrator)</li> <li><b>[Facilitator]</b> Prepare a Miro board or similar online collaboration tool that visualizes the customer journey template or use a printed version of the template including post-its and pens. Here, it is important to already determine the scope of the 'journey': what is supported / influenced by the new solution and what is not? Take this as a rule of thumb for pre-filling the as-is process to be considered (top row of the template).</li> <li><b>[Facilitator]</b> Invite stakeholders relevant to the working or development of the solution to join in for the workshop (e.g. stakeholders that can influence what the solution will look like and how it will work).</li> <li><b>[Facilitator]</b> Engage all stakeholders present – make sure that a participative and safe climate is achieved (and that there are no bad ideas)</li> <li><b>[Facilitator]</b> Explain the customer journey template; if needed go through an illustrative and easy example.</li> <li><b>[All]</b> Discuss the solution and associated customer segment and ensure that consensus is achieved on <i>what</i> the solution is and <i>how</i> it works. If multiple customer segments (see VPS) are considered, this step is taken multiple times.</li> <li><b>[All]</b> Jointly go through the steps taken by the customer / end-user to use the solution. Map any <i>new</i> or <i>modified</i> steps (as opposed to the as-is process) taken as a result of the solution (colour-code these). Indicate what stakeholders support these steps (middle row of template). Continue this task until the entire process relevant for the solution is gone through.</li> <li><b>[All]</b> Based on the new or modified steps, judge or determine what impact this may have for the value created by the customer end-user: does it add value? – if so, in what way?; Alternatively, does it destroy value? – if so in what way? map this in the bottom row of the template.</li> <li><b>[Facilitator]</b> Once the customer journey is completed, conclude on whether in general value is <i>created</i> or <i>destroyed</i> for the customer. Discuss this with the stakeholders present until consensus is achieved.</li> </ul> |

## Customer Journey (CJ)

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strengths</b>  | <ul style="list-style-type: none"> <li>The customer journey challenges users to place themselves in the perspective of the customer / end-user: what do I need to do to use this solution? What steps are introduced for me? Does the potential burden created outweigh the potential value it can bring? Through the structure approach posed by the customer journey, users of the tool are required to evaluate for each step what this implies for the customer.</li> <li>The customer journey can be used in a collaborative setting: it serves as the talking point for understanding what the solution should look like and how it works. Sometimes, this knowledge remains tacit if not explicitly discussed, which can lead to potential problems for development later on.</li> <li>The customer journey can give insights on the potential of adoption of a solution: if limited value is created, this can give a sense of whether users will be interested in using it (more so in case a fee is paid to use the solution).</li> </ul> |
| <b>Weaknesses</b> | <ul style="list-style-type: none"> <li>Scoping the customer journey can be difficult: often, users may attribute secondary effects as part of the value creation process or consider effects to broadly ('the solution intends to contribute to attracting young people in agriculture'). Focus on the primary effects for a <i>single</i> user of the solution to generate insights on whether it in general can be deemed valuable.</li> <li>Focusing the customer journey can be difficult: particularly in case of technology-heavy solution, discussions can go into very detailed specifics of the solution / how the customer interacts with a software platform. As a result, this becomes very distant from actual value creation steps or activities introduced. As a rule of thumb, aim for at most 10 steps introduced as a result of the solution for mapping the customer journey: this enables a clear overview and starting point for discussion.</li> </ul>                                                                        |
| <b>Tips</b>       | <ul style="list-style-type: none"> <li>Aim to have (a representative of) the customer or end-user at the table: assumptions regarding value created / value destroyed can immediately be verified to help in mapping the customer journey.</li> <li>To avoid too abstract discussions, it is often great to illustrate (if available) the working of the solution: if prototypes or sketches are available, these can significantly help in clarifying the steps taken for the customer journey. Similarly, creating a user story or scenario can help in making things more concrete.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Figure 12: Training card - Customer Journey

## 3.6 Tool 6 – Service-Dominant Business Model Radar

The Service-Dominant Business Model Radar (SDBM/R) is a tool used to support the design of (service-driven) business models (Turetken et al., 2019). It is based on the premises of service-dominant logic, which considers value creation for customers or end-users through (often digitally-enabled) service-based solutions. In contrast to the popularized Business Model Canvas (BMC) (Osterwalder & Pigneur, 2010), it adopts an explicit networked or collaborative perspective on business modelling, meaning that the business logic central to a business model design is always the result of the collaboration between partners in a business network.

### 3.6.1 Challenges addressed and goal of the tool

The SDBM/R supports users in designing and ideating collaborative business models that fit their sustainability innovation or service solution. The template of the SDBM/R includes elements related to the *value-in-use* that is established through the service solution (i.e., how will you create value through your solution for your customer), the individual *value propositions* of each partner involved in the business network (i.e., what is the role and importance of each actor in the network?), the *resources and activities* needed per partner (i.e. what does each actor need to do to support the business model) and the *actor costs and benefits* (i.e. what value can each actor capture in return through business model participation). Through this structure, the SDBM/R helps users to reflect on the value created through the service, the business partners to involve for the business model design as well as to create a deeper understanding of how each partner can benefit through business model participation. It forces users to become explicit on *how* a new service or innovation is commercialized and helps in identifying business models that ‘work’. This can also help in identifying potential business risks that can be associated to the innovation: for example, to what extent would the customer segment to which we cater our service solution actually be interested in this solution if we examine their costs and benefits? Can partners for our business network actually make the required investments needed to support the implementation / roll-out of the solution? Thinking about the business model design therefore can help in mitigating business challenges and risks early on and can help in communicating how your service solution or innovation will be rolled out.

### 3.6.2 Input description

For the SDBM/R to be used, it should be clear how the service solution will be used by what customer segment(s) and what value can be expected through its use. The Customer Journey (explained in Section 0) can serve as a valuable starting point for this. Additionally, users should have an understanding of partners needed to support the roll-out or deployment of the solution such that the business network for the SDBM/R can be constructed. Here, the stakeholder analysis as explained in Section 0 can be used as a basis.

### 3.6.3 Process

The template of the SDBM/R is presented in Figure 13. Typically, business model design starts from the core of the template (*co-created value-in-use*), focusing on what value is created through use of the sustainability innovation or service solution and serves as the central purpose of the business model (for example create sustainable business practices for farmers). This should be considered in the context of a *customer segment / end-user group* (highlighted in green), as different customer segments may use the service differently or may generate different values through its use.

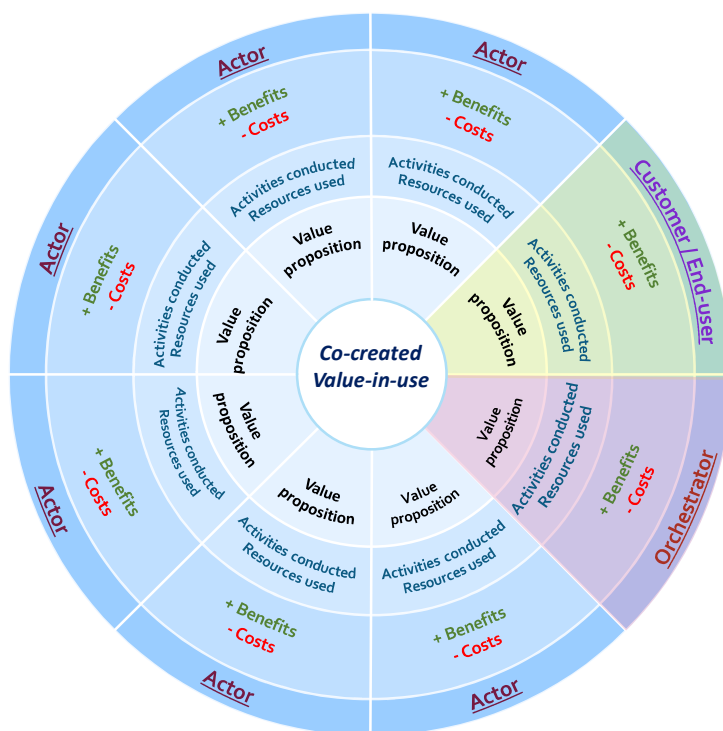


Figure 13: Template for the SDBM/R (from Turetken et al. 2019)

Once the co-created value-in-use and the customer segment are defined, the *orchestrator* for the business model design should be selected. Generally, the orchestrator is a party that has a central or pivotal role for the business network (for example in terms of orchestrating activities or collecting and integrating data) and serves / will serve as the interface to the customer segment (often providing the service to the customer).

After the orchestrator has been selected, the remainder of the business network should be defined. Users should consider what additional stakeholders should be involved to provide or support the proposed service solution. One can distinguish here between stakeholders that are *core* to the solution (i.e., essential to provide the service or deploy the innovation) and those that are *enriching* (i.e., can further enrich the value to be created).

To understand whether the business network is complete, the value propositions of each actor should be considered. As a rule of thumb, the set of value propositions of each actor involved for the business model design should ‘complete’ or enable the co-created value-in-use to be created. Note that the customer segment through use of the service also has its own unique value proposition here. Depending on the set of value propositions, stakeholders can be added (in case a value proposition is missing) or removed (in case value propositions overlap).

Once the actors included and value propositions are defined, the activities and resources can be mapped. On the basis of this, the costs and benefits captured per actor can be detailed, paying attention to how (financial) value is exchanged for the business model design (i.e., who pays who for what services). Logically, if value is exchanged, this results in a ‘cost’ item for the providing party and a ‘benefit’ item for the receiving party.

### 3.6.4 Output description

The result of using the SDBM/R is a (draft) business model design that can be used to communicate on the business logic to be adopted, what value is to be created and how each actor in the business network will be involved. This serves as the starting point for further decision making on implementation of the business model as well as analysis of the underlying business case (quantifying the costs and benefits mapped per stakeholder).

### 3.6.5 Timespan

Application of the SDBM/R generally happens in a workshop context for which ideally all relevant stakeholders to be included for the business network are to be involved. Explaining the logic of applying the SDBM/R as well as conducting the actual business model design activity takes roughly 2 hours to be completed. Note that the level of detail for a business model design depends on the degree to which business decisions can already be concretized and the degree to which costs and benefits can already be defined. As entrepreneurial decision making generally is faced by uncertainty, business model design should therefore be considered as an iterative process.

### 3.6.6 Training card – Service-Dominant Business Model Radar (SDBM/R)

To support the use of the Service-Dominant Business Model Radar (SDBM/R) in practice, the training card for the SDBM/R as illustrated in Figure 14 can be used, providing a quick overview of how the SDBM/R is used as well as its strengths, weaknesses and tips.

### 3.6.7 Video support – Service-Dominant Business Model Radar (SDBM/R)

Video-based support for the SDBM/R tool can be found at: **youtube link**. This video describes in brief how the SDBM/R is used, as well as demonstrates its use by means of a short example.

## Service-Dominant Business Model Radar (SDBM/R)

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>What</b>        | Tool to outline and delineate the different actors in a business model, the joint value that is created, activities and resources performed and benefits and costs associated. It is based on the premises of service-dominant logic, which considers value creation for customers or end-users through (often digitally-enabled) service-based solutions.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>When to use</b> | <ul style="list-style-type: none"> <li>• <b>Goal:</b> The SDBM/R supports users in designing and ideating collaborative business models that fit their sustainability innovation or service solution.</li> <li>• <b>Stage(s):</b> during the design of (service-driven) business models</li> <li>• <b>Type:</b> Co-creation workshop (either online or offline)</li> <li>• <b>Time effort:</b> 1 hour preparation, 2 hours workshop, 1 hour recording</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>How to use</b>  | <ul style="list-style-type: none"> <li>• Appoint a facilitator Prepare a Miro board (or similar) of the radar (online) or a printed version (offline), including post-its and pens.</li> <li>• <b>[Facilitator]</b> All actors in the BMR should be present at the workshop</li> <li>• <b>[Facilitator]</b> Make sure all participants are engaged, can see all ideas and are able to contribute</li> <li>• <b>[Facilitator]</b> Explain the BMR, ask everyone to actively contribute and stress that there are no bad ideas</li> <li>• <b>[All]</b> Start with the center of the model (co-created value-in-use), focussing on what value is created. Make sure all actors agree.</li> <li>• <b>[All]</b> Next, the orchestrator for the business model design should be selected. Generally, the orchestrator is a party that has a central or pivotal role for the business network (for example in terms of orchestrating activities or collecting and integrating data)</li> <li>• <b>[All]</b> After the orchestrator has been selected, the remainder of the business network should be defined, starting with the customer / end-user</li> <li>• <b>[All]</b> To understand whether the business network is complete and correct, the value propositions of each actor should be considered. As a rule of thumb, the set of value propositions of each actor involved for the business model design should 'complete' or enable the co-created value-in-use to be created</li> <li>• <b>[All]</b> Once the actors included and value propositions are defined, the activities and resources can be mapped. On the basis of this, the costs and benefits captured per actor can be detailed, paying attention to how (financial) value is exchanged for the business model design (i.e., who pays who for what services).</li> <li>• <b>[All]</b> This is an iterative process, changes can be made throughout the workshop</li> </ul> |

## Service-Dominant Business Model Radar (SDBM/R)

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strengths</b>  | <ul style="list-style-type: none"> <li>• The tool addresses all aspects of business model design and is easy to use in workshop formats (through post-its).</li> <li>• It adopts an explicit networked or collaborative perspective on business modelling, meaning that the business logic central to a business model design is always the result of the collaboration between partners in a business network.</li> <li>• You can discuss and challenge the views different actors have and collaboratively come to a joint understanding</li> <li>• By constructing a joint view, you increase support for the solution because everybody contributed</li> <li>• By using the BMR implicit assumption about your network partners will be made explicit and can be tested</li> </ul>                                                                                                                                                                                      |
| <b>Weaknesses</b> | <ul style="list-style-type: none"> <li>• All partners must feel at liberty to express their views.</li> <li>• In a group setting it could be complicated for some to speak out potentially negative feedback to network partners</li> <li>• Less informed partners might not be familiar with defining a co-created value-in-use or don't have a clear view of the value proposition</li> <li>• It can be difficult to distinguish what stakeholders should be included as part of the business network and what stakeholders can be considered bilaterally / through outsourcing relationships (outside of the BM). As a rule of thumb, the value proposition offered by each stakeholder is leading. You should consider to what extent this value proposition fits or is essential to the co-creation value-in-use or whether this is stakeholder provides a common service (e.g. regular transport versus specialized transport that helps to create value).</li> </ul> |
| <b>Tips</b>       | <ul style="list-style-type: none"> <li>• It can sometimes be valuable to skip parts of the SDBM/R template to help ideation: for example, rather than focusing on the costs and benefits (which can often result in a rather detailed discussion on whether this is appropriate or viable), you may only focus on how the solution is to be established (and temporarily ignore associated costs). This can help in better clarifying how stakeholders should collaborate to deliver solutions to customers, and what activities as a result should be undertaken.</li> <li>• Colour coding of the exchange of costs and benefits can help in making explicit how (financial) value is exchanged amongst business stakeholders (it becomes more explicit 'who pays who'). This can help in supporting the discussion on what prices should be set for services or products exchanged as part of the business model design.</li> </ul>                                       |

Figure 14: Training card - Service-Dominant Business Model Radar (SDBM/R)

## 3.7 Tool 7 – Benefits Realization Mapping

Benefits Realization Mapping is a tool used to structure and make explicit the logic followed from deliverables towards (long-term) impact. It provides a sequenced perspective on how deliverables *enable* end-users or customers to do things differently, and how this as result may *change their current business activities and practices*. On the basis of this, customers and end-users are *able to capture (but also lose) value*. Depending on the *scale* that is (to be) considered, this contributes to achieving *impact* on scale. Through detailing each these elements, stakeholders are forced to make explicit how they expect to achieve impact through a new solution or innovation.

### 3.7.1 Challenges addressed and goal of the tool

Benefits Realization Mapping (BRM) is predominantly used to help stakeholders in explicating their *impact logic*: how do I intend to achieve (long-term) impact, what logic is followed and does this make sense. It also helps in uncovering what activities of partners in the business network are needed and when they are needed. This can help in highlighting important assumptions that have been made regarding the impact logic (for example on how end-users will use an innovation or service solution) or can aid the identification of business risks (for example, can a partner for our network support scaling activities)? Furthermore, it helps in jointly agreeing on what scale for the innovation should be considered and what scaling strategies can be considered in this perspective. Any uncertainties or unclarities identified through the use of benefits realization mapping can help in further concretizing the business model design or aid decision making on the implementation or roll-out of the innovation or solution.

### 3.7.2 Input description

BRM builds upon tools such as the DAMIAN tool (Section 3.4), the Customer Journey (Section 3.5) and the SDBM/R (Section 3.6). To use Benefits Realization Mapping, users should have a clear understanding of what the solution under consideration constitutes and how and by whom it will be used (for which the DAMIAN and Customer Journey tools can serve as a fruitful basis) as well as understand what stakeholders are needed to support the roll-out / deployment of the solution (for which the SDBM/R can be used as a starting point). BRM subsequently adds an explicit time dimension for this by explaining how the collaboration of partners and deployment of the solution contributes to 1) pilot level impact and, depending on the scaling strategy selected 2) large scale impact.

### 3.7.3 Process

The template of BRM is presented in Figure 15. One can see that six columns are included as part of the mapping procedure. The columns on either end of the spectrum (the deliverables and long-term impact to be desired) should be known to users and are the starting point for working with the BRM: these columns respectively describe the solution or services you intend to deploy (deliverables) and the things you or your collaboration intend to achieve through this solution over time (long-term impact). Consequently, the goal is to draft the *impact logic* followed by which the deliverables result in long-term impact, working from *left* to *right* on the template.

The *inputs and enablers* column captures how the deliverables enable users of the proposed solution to do new things or to do things differently. For example, if a DSS solution is offered to farmers, this solution provides *input* to farmers with regards to *advice* on their farming practices. Alternatively, if the solution constitutes a communication platform to interact with suppliers or value chain partners, it *enables* the farmer to do so. Note that as multiple solutions can be indicated for the *deliverables* column, multiple *inputs and enablers* can be specified here.



The *business and behaviour changes* column captures what is needed for the inputs and enablers to be used: it describes the activities, resources, capabilities and steps taken to ensure that the user receives input or is enabled to do new things / to do things differently. It also delineates who is responsible for doing so. For the example of the DSS solution, it is required that the DSS is operational and running (which is a task for the service provider responsible for operating the DSS). Additionally, it has to be clear how data is collected to operate the DSS (whether this is collected through sensors at the farmer or as a result of manual input by the farmer). Depending on what collection procedure is selected, this introduces activities for the farmer (input data on farming practices) or activities for service / technology providers (collect data at the farmer). Logically, based on the data collected, the next step is to analyze the data (service provider) and to provide advice to the farmer (service provider). Consequently, farmers have to follow-up on the advice (farmer) and to implement changes to their current farming practices (farmer) which may result in reduction of resources needed and potential sustainability effects.

When mapping the *business / behaviour changes*, users should identify what assumptions, risks or challenges may underlie each step taken. Therefore, users should ‘challenge’ each step mapped for the BRM: For example, what is the incentive of farmers to adopt the advice given? Can we readily assume that they will adopt the advice? what can we do to stimulate this desired behaviour? Furthermore, will they adopt the advice properly? To what extent can we help farmers in doing so? Alternatively, if technology providers are involved to collect data, this requires technology providers to install sensors at the farmers. Do they have enough sensors available? What is timing of the sensor deployment at farmers, and what does this imply for the roll-out of the solution? Additionally, use of sensors may also pose challenges in regards to how data privacy for the farmer is handled. How does this affect the adoption of the service? How can we mitigate these risks? To support the mapping of steps and the identification of assumptions, risks and challenges, one can build here on the insights generated through the DAMIAN tool (technical background), Customer Journey (value for the end-user) and SDBM/R (stakeholders involved and their respective resources).



Figure 15: Benefits Realization Mapping (own illustration)

Once the steps have been mapped for the *business / behaviour changes column*, the outcomes on pilot level can be described. If the steps are taken, what value can end-users for the pilot create (but also potentially lose?). In case of the DSS solution, follow-up of the advice should lead to reduced fertilizer needed and overall increases in farming efficiency (note that this is again an assumption and should be verified). These



sustainability effects may also be relevant for other actors in the collaboration / business model design. Additionally, the quality of the produce may increase which may result in increased sales prices (assumption).

Logically, there is a discrepancy between outcomes on a pilot level (small-scale output and generally short-term oriented) and long-term impacts (requiring a large scale and long-term results). Therefore, the column *scale outcomes* bridges the gap between what is achieved on pilot level and what long-term impact intentions the consortium / collaboration has specified. In this column, users should think about how the activities only pilot level are *scaled*: what scaling strategy is selected, how does this help in achieving long-term impact and what does this imply for each of the stakeholders involved to support this scaling intention? For example, in the case of the DSS, the consortium may desire to expand its user base to four times its size to achieve its long-term impact objectives. It should then be verified where these users are located (geographically) and whether these users can be serviced. One should also verify whether partners (such as the technology provider) are able to scale: do they have significant man-power or resources to support these scaling intentions? What is their lead time to do so? Any prerequisites or requirements towards scaling should be mapped here such that the overall *impact logic* can be completed. Users should also make apparent how scaling intentions mapped here may contribute to the long-term impact objectives mapped earlier.

### 3.7.4 Timespan

BRM is conducted in a workshop setting and calls for a thorough analysis of how a consortium or collaboration intends to achieve impact and what potential assumptions and risks may underlie this logic. Accordingly, ideally all stakeholders for the collaboration should be present to support this analysis. Conducting BRM in a workshop generally takes 2 hours to complete. Depending on how assumptions evolve over time or how the risks and challenges identified are addressed as a result of BRM, the BRM is likely to be revisited to modify or update the *impact logic* followed. Using the BRM therefore should very much be considered as an iterative task.

### 3.7.5 Training card – Benefits Realization Mapping (BRM)

To support the use of the Benefits Realization Mapping (BRM) in practice, the training card for the BRM as illustrated in Figure 16 can be used, providing a quick overview of how the BRM is used as well as its strengths, weaknesses and tips.

### 3.7.6 Video support – Benefits Realization Mapping (BRM)

Video-based support for the BRM tool can be found at: **youtube link**. This video describes in brief how the BRM is used, as well as demonstrates its use by means of a short example.

## Benefits Realization Mapping (BRM)

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>What</b>        | Tool to analyze the implementation and realization of the business model over time and to investigate the pathway towards impact and its underlying assumptions and challenges. It represents a process-like template describing the spectrum from solution towards long-term impact.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>When to use</b> | <ul style="list-style-type: none"> <li><b>Goal:</b> BRM is used to analyze what activities through time each stakeholder needs to make to realize the proposed BM / solution and to identify assumptions and challenges related to these activities. It also couples BM realization to achieving long-term impact: what is needed <i>at what scale</i> to do so?</li> <li><b>Stage(s):</b> BRM typically concludes the SCMIIP and succeeds the use of the SDBM/R.</li> <li><b>Type:</b> Co-evaluation workshop (either online or offline)</li> <li><b>Time effort:</b> 2 hour preparation, 2 hour workshop (depending on the size of the stakeholder group), 2 hour of recording</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>How to use</b>  | <ul style="list-style-type: none"> <li>Appoint a facilitator for filling in the BRM and driving the discussion (typically the SIP leader or orchestrator)</li> <li><b>[Facilitator]</b> Prepare a Miro board or similar online collaboration tool that visualizes the BRM or use a printed version of the template including post-its and pens.</li> <li><b>[Facilitator]</b> Invite stakeholders relevant to the working or development of the solution to join in for the workshop (e.g. stakeholders that can influence what the solution will look like and how it will work).</li> <li><b>[Facilitator]</b> Engage all stakeholders present – make sure that a participative and safe climate is achieved</li> <li><b>[Facilitator]</b> Explain the BRM template; if needed go through an illustrative and easy example.</li> <li><b>[All]</b> map the solution and deliverables for the ‘deliverables’ column and describe what this solution enables (and for whom). Also indicate what stakeholder is responsible for <i>providing / enabling</i> the solution. Continue this task until all enablers are defined. Note that a solution can consist of multiple deliverables with different enablers. Then, map what long-term impact is to be achieved per stakeholder in the ‘long-term impact’ column. The goal is to clarify the pathway between the columns.</li> <li><b>[All]</b> For the ‘business changes’ column, map the steps that should be taken to achieve impact on a pilot level. Generally, this follows the process of the end-user using the solution. Next, <i>challenge</i> each step: What assumptions underlie the step? Can the step be realized and are the assumptions realistic? What potential barriers can be identified? Continue this task until all steps have been assessed. This should result in a longlist of assumptions / challenges open and a ‘pathway towards impact’.</li> <li><b>[All]</b> For the ‘pilot impact’ column, indicate how the pathway towards impact creates (or destroys) value for stakeholders involved. Discuss whether this value is appropriate for all stakeholders involved and what the <i>discrepancy / delta</i> is in regards to long-term impact. What does this imply for the scaling intentions?</li> <li><b>[All]</b> For the ‘scaling’ column, discuss jointly what scaling strategies will be pursued (also see the tips for BRM). The selected scaling strategies should contribute to achieving long-term impact. For the (set of) strategies selected, determine what steps should be taken by what stakeholders to facilitate this. Again, <i>challenge</i> these steps to identify assumptions / barriers.</li> <li><b>[Facilitator]</b> Once the BRM is filled in, the pathway towards impact should be verified and checked. Jointly discuss whether the pathway makes sense, and how potential barriers can be addressed. Make any changes to the BM if needed to do so.</li> </ul> |

## Benefits Realization Mapping (BRM)

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Strengths</b>  | <ul style="list-style-type: none"> <li>The BRM includes a explicit time dimension / process-orientation, and provides a holistic perspective on how the stakeholder consortium will realize the collaborative business model / implement the solution as well as how this is linked to long-term impact. It therefore brings together solution, BM and long-term impact for stakeholders to reflect on, putting the pieces together.</li> <li>The BRM enables users to become concrete about BM implementation: it enables stakeholders to challenge the assumptions or risks underlying activities towards BM implementation and can help in understanding whether the BM is appropriate. It also sheds light on whether stakeholders are able to scale to achieve long-term objectives.</li> </ul>                                                                                                                                                                                      |
| <b>Weaknesses</b> | <ul style="list-style-type: none"> <li>Filling in a BRM is a complex task: it covers the implementation and realization of the BM / solution and may involve talking about different types of challenges and assumptions (technical to business to social). As a consequence, an experienced facilitator is needed to guide the application of this tool.</li> <li>Depending on how large the stakeholder consortium is, multiple workshop sessions may be needed to cover the perspective of each stakeholder.</li> <li>The pathway towards impact can become interwoven and interlinked with many concurrent tasks or activities, making it increasingly difficult to interpret or communicate on the BRM. An idea could be to break the BRM in parts or to discuss the BRM per deliverable of the solution (however, both may tarnish the holistic perspective).</li> </ul>                                                                                                            |
| <b>Tips</b>       | <ul style="list-style-type: none"> <li>As the BRM can go into detail quickly it is a good practice to pre-fill the BRM before the workshop. This helps to manage time effectively for the workshop and to steer discussion and decision making more efficiently. The facilitator can ask stakeholders for their most important challenges still remaining and to already map these challenges for the BRM. This can serve in the workshop as the starting point for discussion.</li> <li>Since different activities can be executed by different stakeholders, often jointly, it is a good practice to color-code activities by the stakeholder(s) that is(are) involved in it. This can help in maintaining the interpretability of the BRM.</li> <li>The BRM should serve as a driver to invest / work towards implementation: It is therefore valuable to focus explicitly on what each stakeholders desires to achieve long-term (final column) to create such commitment.</li> </ul> |

Figure 16: Training card - Benefits Realization Mapping (BRM)

## 4 Supporting the application of the SCBMI

In this section, we elaborate on how the SCBMI approach can be supported through the use of the tools illustrated. To do so, we first compare the illustrated tools based on their purpose for business decision making to understand what commonalities, differences and synergies exist between tools. This will highlight what tools should definitely be used and what tools can be used to deepen certain decisions. Next, based on this comparison, we will present a workshop-based plan in which we provide a structure to apply the tools in practice (executing the SCBMI approach) based on a logical sequence between the tools.

### 4.1 Comparison of the tools

The descriptions for using the tools for the SCBMI approach illustrate that the tools are often complementary or interrelated and that some of the tools overlap in terms of their use and purpose. They may however differ in depth, usability and complexity. Therefore, it would be valuable to understand what synergies exist between tools or what tools should *minimally* be used to support business model innovation and what tools can serve as an exploratory, deepening or thought exercise to zoom in on a specific aspect of business model innovation. This leads to a prioritization or suggestions of tools to be used to support the SCBMI approach. We can express the purpose of tools by means of the following criteria:

- The **what**: a tool addresses the proposed solution or service that is central for a pilot consortium or collaboration. It forces users of the tool to zoom in on the specifics of the solution from a technical, innovation or value perspective (*what does the solution entail*).
- The **how**: a tool addresses how the proposed solution is used to facilitate value creation. It forces users of the tool to explore the process followed or steps taken or activities needed to support the execution / implementation of the proposed solution (*how does the solution work*).
- The **gains**: a tool addresses the gains (benefits, which can be financial, social or environmental in nature) that are achieved for stakeholders through the proposed solution. It forces users to zoom in on how all stakeholders capture value through business model innovation (*how is each actor able to capture value through the solution*).
- The **society**: a tool addresses how (societal) impact is established by means of the proposed solution. This refers to impact on a large-scale (*how do we achieve impact through the solution*).
- The **costs**: a tool addresses the costs that stakeholders incur through participation in the business model design. Again, these costs can be financial, social or environmental in nature (*what will it cost each actor to facilitate or support the solution*).
- The **risks**: a tool addresses the (identification of) risks, assumptions or challenges that underlie the use, deployment and outcomes of the proposed solution (*what risks, challenges and assumptions underlie the proposed solution*).
- The **who**: a tool address who should be involved to support the deployment and roll-out of the proposed solution(*who is involved to support the solution*).

Based on these criteria, the comparison between tools is depicted in Figure 17:

|                                          | What? | How? | Gains? | Society? | Cost? | Risks? | Who? |
|------------------------------------------|-------|------|--------|----------|-------|--------|------|
| <b>Tools used</b>                        |       |      |        |          |       |        |      |
| ▪ Value proposition statement            | ●     | ●    |        |          |       |        | ●    |
| ▪ Tidd and Bessant innovation dimensions | ●     |      |        |          |       | ●      |      |
| ▪ Stakeholder analysis                   |       |      | ●      | ●        | ●     |        | ●    |
| ▪ DAMIAN                                 | ●     | ●    | ●      |          |       |        | ●    |
| ▪ Customer journey                       | ●     | ●    | ●      |          |       |        | ●    |
| ▪ Benefits realization mapping           | ●     | ●    |        | ●        | ●     | ●      | ●    |
| ▪ Service-Dominant Business Model Radar  | ●     | ●    | ●      |          | ●     |        | ●    |

● Fully applicable  
 ● Partially applicable

Figure 17: Comparison between tools used to support the SCBMI approach

One can see that a lot of the tools presented cover the What, Who and Who dimension, zooming in on what the solution or innovation at hand concerns, how it is enacted or used and who should be involved to do so. We can also see that the purpose of some tools strongly overlaps with others that also addresses other purposes. We can also see that for some criteria only a select set of tools is available: for example, the impact achieved for society is only addressed through Benefits realization mapping

The comparison also makes explicit that the benefits realization mapping and the Service-Dominant Business Model Radar cover a lot of the criteria listed: these tools provide a strong perspective on how the solution will be developed, value capture for stakeholders involved and impact generation over time. As a result, we propose that the use of these tools can be considered as ‘core’ to the SCBMI approach – their joint use covers all criteria listed. However, the what dimension (particularly if we consider the technical background of the solution) is only partially covered. To this end, we complement the use of the BRM and the SDBM/R by means of the *customer journey*, *DAMIAN* and *the value proposition statement* to support the SCBMI approach. As indicated, these tools have been supported through video-based walkthroughs as part of this deliverable. Note that, e.g., the Innovation Dimensions (Tidd & Bessant) Model is then implicitly accounted for.

Although the tools can in principle be used freely in any order, we advocate the following order given the level of detail and complexity embedded for the tool:

1. Value Proposition Statement: Understand what value is expected for whom as a result of the proposed solution and whether this seems realistic.
2. Customer Journey: Explore the process by which end-users create value through the proposed solution and what stakeholders are needed to support this.
3. DAMIAN: Analyze the technical background for the proposed solution and how this may contribute to value co-creation and delivery.
4. Service-Dominant Business Model Radar: Design the business structure and network needed to support the (roll-out of) the proposed solution and zoom in on the expected revenue model.
5. Benefits Realization Mapping: Map in detail the pathway by which the solution contributes to impact over time and how the business model is to be scaled.

Note that the other tools (stakeholder analysis, innovation dimensions) can be used to preliminarily explore or further deepen the analysis and can contribute to the evaluation of design decisions made. The need for such activities should be determined in the onboarding.



## 4.2 Reference workshop plan for SCBMI

Based on the core tools, the following workshop sequence (as indicated in Figure 18) can be followed to support the SCBMI approach and to help foster business decision making:

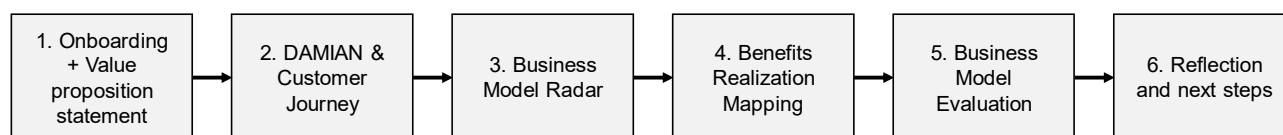


Figure 18: Workshop sequence to support SCBMI

**Workshop 1 – onboarding and value proposition statement**, serves as a soft entry in the SCBMI approach. In this workshop, the goal is to understand the objectives, motivations and perceptions of stakeholders to be involved for a project or SIP and to see whether such perspectives can be aligned. SCBMI is very much a *collaborative, multi-stakeholder* approach: if stakeholders have different motivations or have vastly different objectives, attitudes or experiences, this can create conflict or hinder the development and roll-out of innovative solutions as the project progresses (as for example stakeholders are only motivated by financial gain or do not consider the same scale for solution roll-out). It is also important to understand to what extent stakeholders have experience in business modelling and what their current role is for their respective organization: will you need additional support to help them make business decisions or can potentially parts of the process be accelerated as stakeholders are aware of business challenges faced? Workshop 1 is concluded using the value proposition statement – the stakeholder group should shed light on the innovative solution under consideration and collaboratively discuss *for whom (customer / end-user)* this solution is valuable and *how* its use enables *value creation for this customer / end-user*. Note that the Ploutos principles (farmer-centricity, mutual value) should drive discussions on how value is created. Any differences of opinion should be resolved before the next workshop is started.

**Workshop 2 – DAMIAN and Customer Journey** continues the discussion on the innovative solution, investigating *how* the solution will be used in practice by customers / end-users and *what* is needed to support the solution (in terms of stakeholders and technical background). It should be clear what steps the end-user / customer will take to use the innovative solution to create value and what efforts of stakeholders are needed to support this. This should be coupled to a discussion on what data is collected (and by whom) and whether this facilitates value creation (or could potentially destruct value due to privacy issues or due to the efforts needed by end-users). After workshop 2, the stakeholder group should fully understand how the solution will work in practice and what resources are needed to support its use. Note that in cases where the technological set-up (architecture) is already quite clear, the DAMIAN tool can be addressed relatively straightforward. It can then be done to have a ‘quick start’ in the workshop.

**Workshop 3 – Business Model Radar** focuses on the design of the business model, exploring the business structure appropriate to support the innovative solution and understanding the costs and benefits that can be appropriated for stakeholders involved for the business model design. After this workshop, it should be clear what stakeholders take part for the business model design, why they are involved (what value do they contribute?) and how each stakeholders is able to capture value in return (generating a positive balance of costs and benefits) as a result of participation. It should also become apparent whether the business model design strategically can be motivated for each stakeholder (do we want to pursue this business model) and what potential business challenges exist towards its implementation. Workshop 3 is concluded with a draft business model design as well as an indicative analysis of what costs and benefits each stakeholder receives through participation.

**Workshop 4 – Benefits Realization Mapping** analyzes the operationalization of the business model design. Here, stakeholders should investigate through benefits realization mapping whether each step towards value creation can be executed or whether the necessary resources and capabilities are in place to do so.

Stakeholders should challenge each step to identify possible implicit assumptions made for the business model design or challenges that should still be resolved. It also clarifies in detail what is asked from each individual stakeholder involved. Next to operationalization, the consortium / stakeholder collaboration should also zoom in on how the business model design will be scaled to achieve the impact goals set for workshop 1. Any changes required to the business model design as a result of BRM should be documented and made.

**Workshop 5 – Business Model Evaluation** concerns a final business model ‘check’. In this workshop, the business model design is considered in light of its desirability (how does it create / destroy value for end-users / farmers?), viability (how does it create / destroy value for stakeholders involved, both economically, socially as well as environmentally?), feasibility (what challenges do we still see towards business model implementation?) and robustness (to what extent can the business model design react to external changes?). Stakeholders should collaboratively discuss each criteria and judge or ‘score’ to what extent the business model performs for each criteria. If the business model design does not perform well for a certain criteria, the stakeholders should collaboratively decide whether this warrants business model redesign or whether this can be resolved for the current BM.

**Workshop 6 – Reflection and next steps** concludes the core sustainable collaborative business modelling process. Here, the consortium reflects on the decision made and plans the next steps towards execution. In case business model tests are specified (to validate assumptions uncovered through BRM) these serve as the starting point for further business model refinement or implementation.

### 4.3 Links to business, technology, behavior and sustainable innovation per tool

One of the key propositions of the Ploutos project is the combination between and the unification of behavioral, business and technological innovation, which are represented in work packages 1 to 4. All of the tools described in this subsection also link to these work packages as displayed in *Table 1*. Insights generated through use of the tools can therefore contribute to answering questions posed for work packages 1, 2 and 4 in Ploutos.

Table 1: Links between workshop tools and other work packages

| Tool                                          | Work package                                                                                       |                                                                                                           |                                                                                                                                 |
|-----------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
|                                               | WP1<br>Sustainable Innovation Framework                                                            | WP2<br>Social Sustainability, Behaviour change and ecosystem engagement                                   | WP4<br>Data Driven Technological Innovation                                                                                     |
| 1. Value proposition (VP) statement           | VP specifies values to be created. Associated performance indicators should be in line with these. | The value propositions defined have implications for behavioural change or adoption of new solutions.     | A VP may highlight specific functions (or non-functions) of a new digital technology as well as refer to competing alternatives |
| 2. Innovation nature of the proposed solution | Mindset innovation typically requires wide awareness in the whole ecosystem                        | Specifically the mindset and the process dimension of the tools may point to potential behavioural change | (Digital) Technology innovations typically link to product (service) innovation, or process innovations.                        |

|                                 |                                                                                                                                                                              |                                                                                                                                                                      |                                                                                                                                                                                      |
|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. Stakeholder analysis         | Systemic innovations typically may affect the whole ecosystem                                                                                                                | Behavioural aspects are related to humans as operators in the service and as end users                                                                               | Stakeholders can be providers or users of technology                                                                                                                                 |
| 4. DAMIAN                       | The tool maps technological architecture and actors                                                                                                                          | End users and operators can be identified                                                                                                                            | Providers supplying or operating technology from raw data to 'consumption' (usage) of data driven services are mapped                                                                |
| 5. Customer Journey             | (The tool maps actors and the end users' process as potential situations where behavior change may be needed)                                                                | The value creation process helps unveil where end-users / customers are required to <i>change</i> their behaviour and whether this makes sense.                      | Sheds light on what input is needed (in terms of data or technology support) to support steps of the value creation process (how the farmer interacts with technological solutions). |
| 6. Business Model Radar         | The BM design provides a holistic perspective on how behaviour, business and technology innovation is merged to arrive at a 'viable' scenario for all stakeholders involved. | The BM design provides input to how stakeholders in the value chain may be required to change current business practices, which is input for behavioural innovation. | Data-driven insights can serve as an important value to motivate business model participation of stakeholders                                                                        |
| 7. Benefits Realization Mapping | BRM brings together behavioural, technical and business aspects into an integrated story, helping in aligning each of the work packages                                      | BRM makes explicit what each stakeholder should change as a result of the new BM which can be a determinant for behaviour innovation and management.                 | BRM provides high-level insights on the deployment of technology needed to support the solution and their relative timing.                                                           |



## 5 Illustrating the use of the tools – SIP 8

In this section, we illustrate the use of the tools by means of the results generated through SIP 8. Specifically, following the core set of tools listed in Section 4.1, we demonstrate how the value proposition statement, customer journey, DAMIAN, BMR and BRM are used to support business model innovation.

### 5.1 SIP 8 Introduction

The solution central for SIP 8 entails a (platform-based) service focused on carbon sequestration that provides data-driven insights to farmers to improve their soil management. Through using the platform, farmers can enter data on their soil conditions. Through using the platform, farmers can enter data on their soil conditions and consequently receive insights on how well their soil is performing (in terms of carbon stored) and receive advice on how to improve their soil management. The main advantage of using this tool over existing ones in the market is the fact that the tool proposed for SIP 8 leverages model-based analysis to calculate carbon stored for the soil (as opposed to measurement based). This significantly reduces the costs of the service whilst still providing reliable indicators and advice on soil management to farmers.

Additionally, SIP 8 intends to connect the efforts of farmers to store carbon for the soil to some form of financial compensation for the farmer to stimulate carbon sequestration (which has positive environmental effects). To do so, the solution offered for SIP 8 also enables farmers to earn (validated) carbon credits based on their carbon farming activities. These carbon credits can consequently be sold on open markets or to dedicated suppliers .

### 5.2 SIP 8 Value Proposition Statement

Based on the solution description and its intended value(s) for the end-user, the value proposition statement as illustrated in Figure 19 can be drafted, taking the farmer as the end-user of the solution. The solution however can also be aimed at *buyers of carbon credits*, that wish to source locally generated carbon credits to contribute to their sustainability goals. In such a case, the value proposition statement as illustrated in Figure 20 can be drafted, illustrating that the value proposition statement depends on the end-user that is considered (and the value created for this end-user).

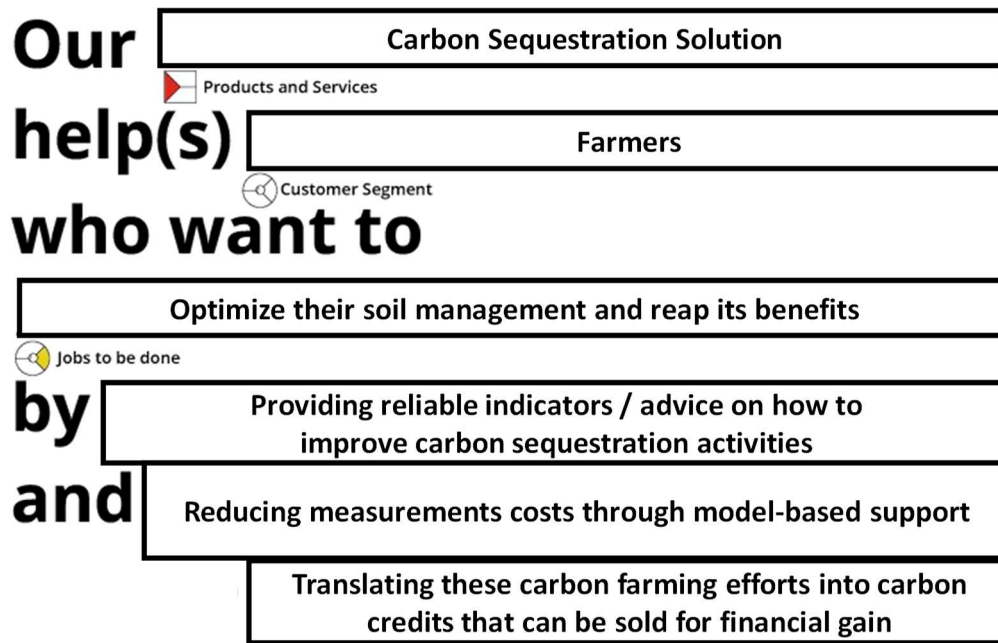


Figure 19: Value proposition statement for SIP 8

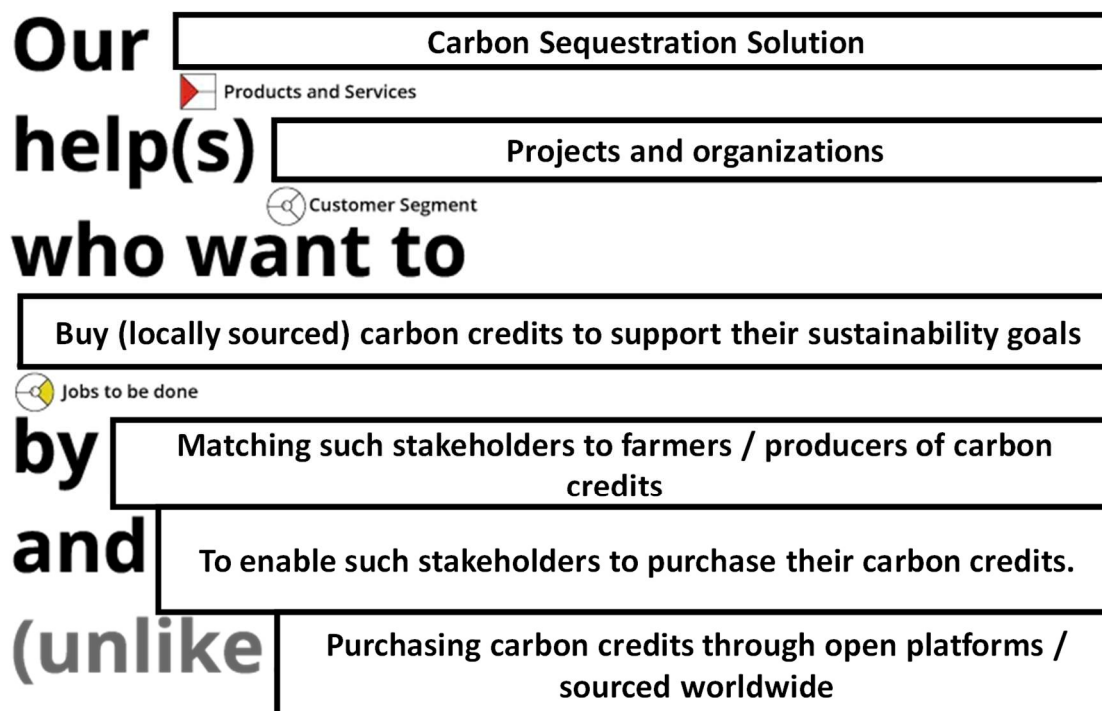


Figure 20: (Alternative) Value proposition statement for SIP 8

### 5.3 SIP 8 Customer Journey

To understand how the solution central to SIP 8 works, the customer journey is used. This offers a step-by-step representation of how the solution is used by the farmer (or a project or organization willing to buy carbon credits). The customer journey for SIP 8 is illustrated in Figure 21. Starting from the crop rotation at the start of a season, farmers collect input for the tool on their current soil performance and / or apply measures that have been suggested based on the previous season. During the reproduction and growing phase, the solution generates machine data (collected through sensors on tractors and farming appliances)

to be used to support the model-based analysis. Here, the farmer is also expected to apply compost and store carbon for the soil based on previous advice given. Similarly, for the harvesting phase, suggestions are given to prepare the soil for next seasons. Once the produce is harvested and ready for wholesaling, the solution collects satellite data on soil performance as well as reads the data provided by the farmer and machine data. Based on this, a sustainability indicator is calculated, whereas based on the delta of carbon captured credits can be earned. This process is (periodically) verified by a third party verification partner. Once verified, the carbon credits can be sold / transferred through the solution to interested projects and organizations.

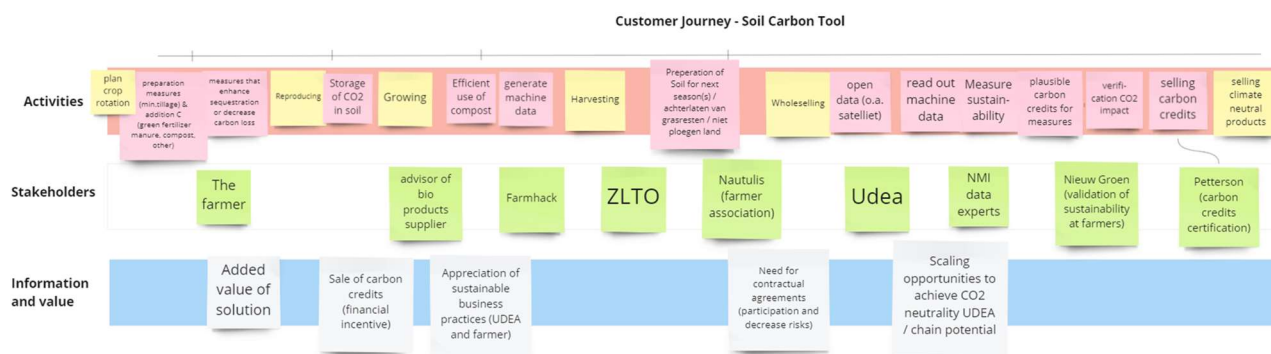


Figure 21: Customer Journey for SIP 8

We can see for the customer journey that a set of stakeholders is involved, such as the farmer, technology provider (Farmhack), the solution service provider (ZLTO), projects and organizations interested in buying carbon credits (UDEA), verification partners (Peterson) and data experts for data analysis (NMI). It is also indicated what values are obtained through this process: carbon credits can be sold for financial compensation whereas farmers are appreciated for their sustainable efforts. However, contractual agreements are needed to engage in carbon exchange, whereas the solution requires scaling for interested projects and organizations to achieve CO<sub>2</sub> neutrality.

## 5.4 SIP 8 DAMIAN

Application of the DAMIAN tool for SIP 8 is illustrated in Figure 22. On the left side, we can see that data is collected on farmland characteristics, soil characteristics as well as (current) soil measurements. We also see that data is collected on crops. These data points are manually entered to the platform by the farmer or are the result of data registers at local governments. We also see that data is collected (automated) through sensors on machines used throughout the season as well as satellite data to monitor soil performance (meteorological databases). The collective of data points is stored in the database of the service provider ZLTO / NMI. From here, the data is analyzed to calculate sustainability scores and to provide advice to farmers. It is also used to calculate carbon credits (in collaboration with verification partners). Both data outputs can be accessed through the platform offered or through a dedicated website or app on which users (such as projects interested in buying carbon credits, farmers but also banks or investors) can interact.

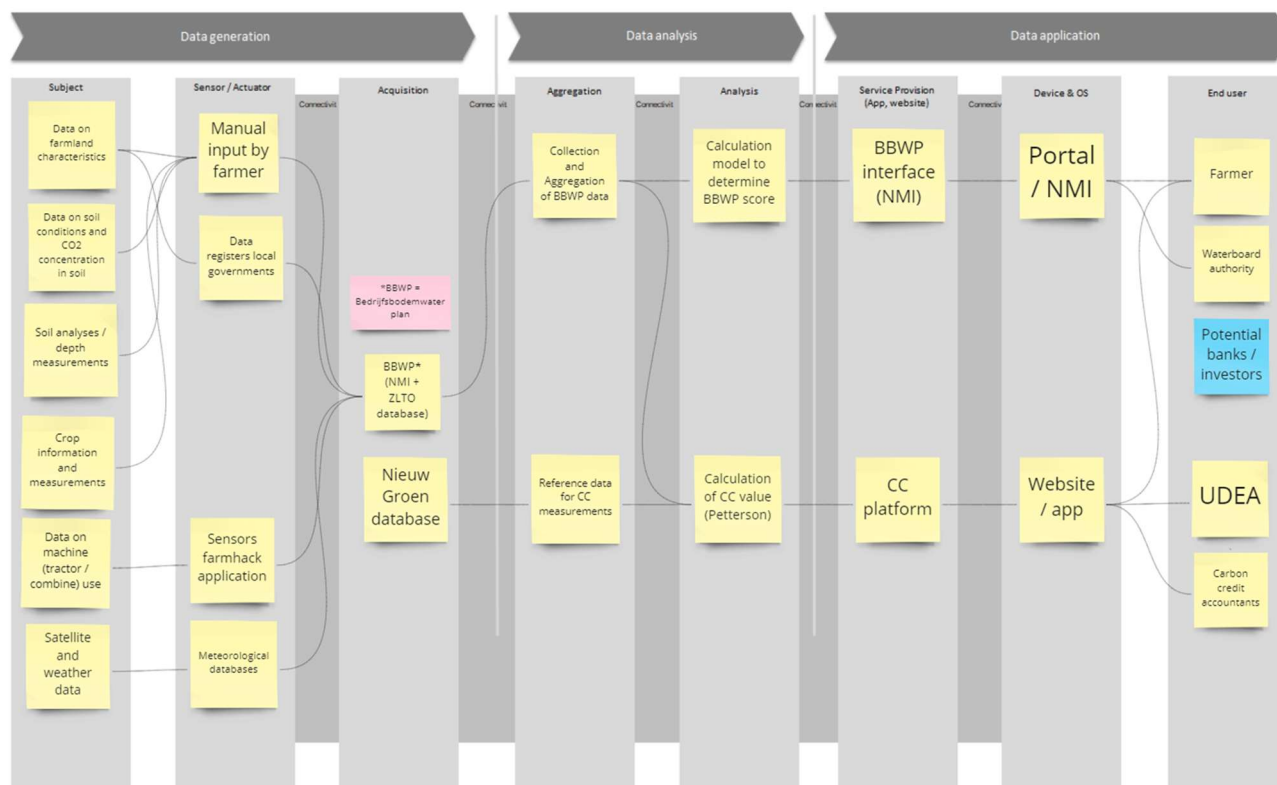


Figure 22: Application of the DAMIAN tool for SIP 8

## 5.5 SIP 8 Business Model Radar

To represent the business model design for SIP 8, the business model radar (BMR) is used, which is illustrated in Figure 23. Here, the business model design takes projects or organizations interested in buying (locally sourced) carbon credits as the customer segment.

The model starts in the core of the template, which shows the co-created value-in-use. This value is discussed with all participants of the workshop and all should agree. In this radar, the co-created value-in-use is considered in the context of the customer ZLTO Partner (e.g. UDEA), which is the end-user of the carbon credits in this case. The value proposition of the ZLTO Partner (e.g. UDEA) is supporting their farmers, relationship management while at the same time reducing their carbon footprint.

ZLTO is the Orchestrating Service Provider in this model. They play a vital role in the business model by providing carbon farming advice and farmer support. They also link the farmer to the tech provider.

The other actors in this business model are farmers, technology provider and Peterson (the verification partner). The farmers are the actors that obtain the carbon credits fees from the ZLTO partner by performing the carbon farming, while at the same time increasing their sustainability. ZLTO provides advice to the farmers on how to do so and farmers pay a service fee to ZLTO. Technology Provider NMI provides technology for the farming activities and receive a fee from the farmers to do so. Peterson will validate the carbon credits and receive a fee from ZLTO. Farmhack collects and monitors data from farming activities (from tractor data). They receive a fee from ZLTO.

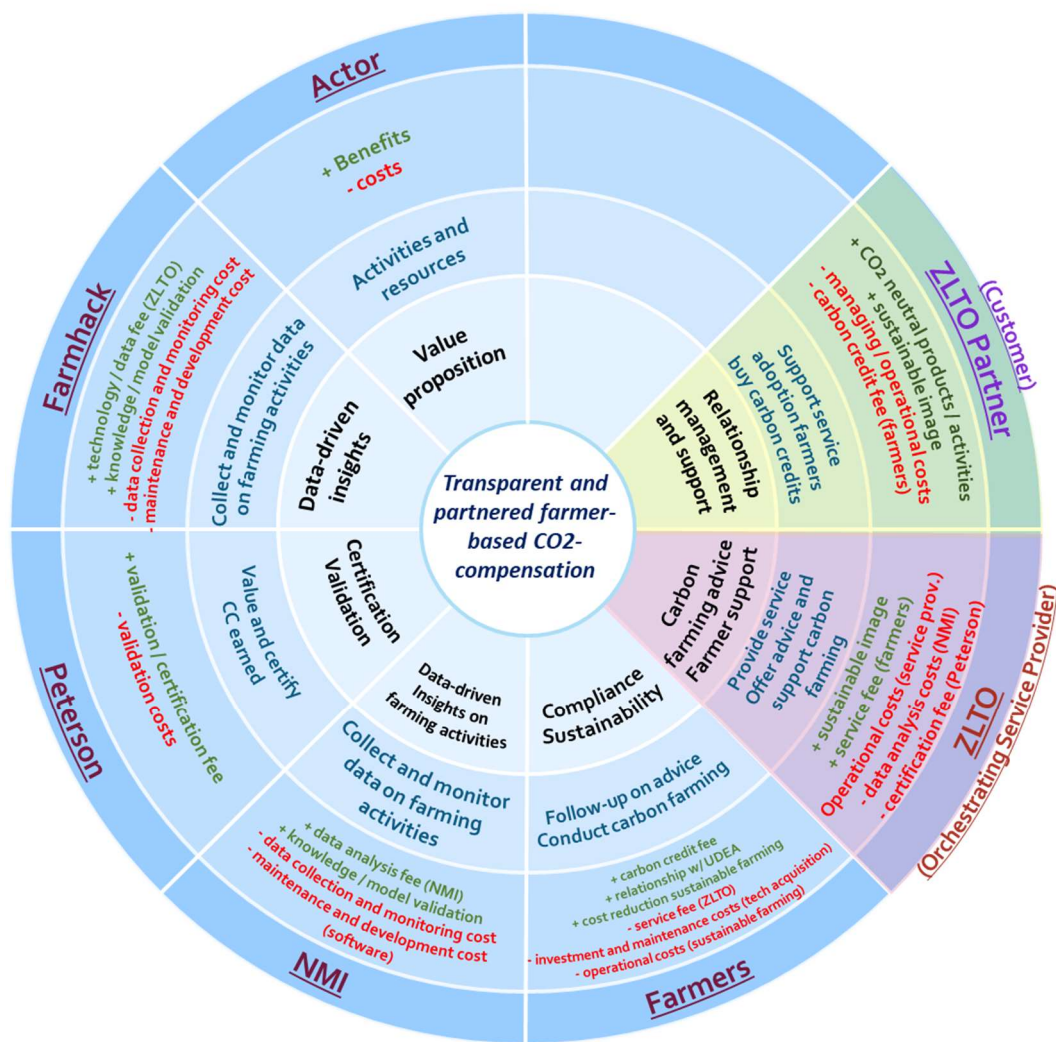


Figure 23: Application of the Business Model Radar for SIP 8

## 5.6 SIP 8 Benefits Realization Mapping

To explore the underlying assumptions and challenges for the business model design drafted for SIP 8 and to understand how the business model design is to be scaled over time, benefits realization mapping (BRM) is used. The BRM for SIP 8 is illustrated in Figure 24. Once can see that the carbon sequestration platform / service enables the farmer to receive advice on carbon sequestration activities / sustainable farming. To do so, data is collected at farm appliances by Farmhack, but also requires data to be entered by the farmer as well as periodical soil sampling by ZLTO. Logically, this calls for support in terms of sensors to collect data (Farmhack) as well as available personnel (ZLTO) to do so, which should be considered for business model implementation. Based on the advice and application of carbon sequestration practices, carbon credits can be earned by farmers. This requires farmers to follow up (long-term) on the advice given. Here, support should be given to the farmers to do so. This is to be conducted by UDEA (to strengthen its relationship to its farmers) as well as ZLTO. The generation of carbon credits also depends on the validation of the process to earn carbon credits. This validation is conducted by Peterson, verifying that the process adheres to European agreements on carbon credit specification.

The carbon credits earned are purchased by UDEA. This should be contractually agreed upon with the farmer, determining the price for which the carbon credits are to be bought as well as the length of this collaboration. Purchasing the carbon credits helps UDEA in decreasing its CO2 footprint. Logically, the farmer can receive a financial compensation in return. This compensation should not be considered as a means to generate



significant revenues: it is an incentive for farmers already interested in becoming sustainable. This collaboration between UDEA and the farmer is also expected to contribute to the relationship between both stakeholders, aimed at co-creating value to achieve CO2 neutral, biological products for consumer markets.

For the farmer, using the service also contributes to its soil performance (which is expected to improve its produce quality and yield over time). This can help in achieving sustainable farming practices for Dutch farmers, which is in line with the goals of ZLTO. However, this does call for significant scaling of the current number of farmers involved. This requires ZLTO to scale as well and to attract other retailers or projects interested in buying carbon credits as well as farmers to do so.

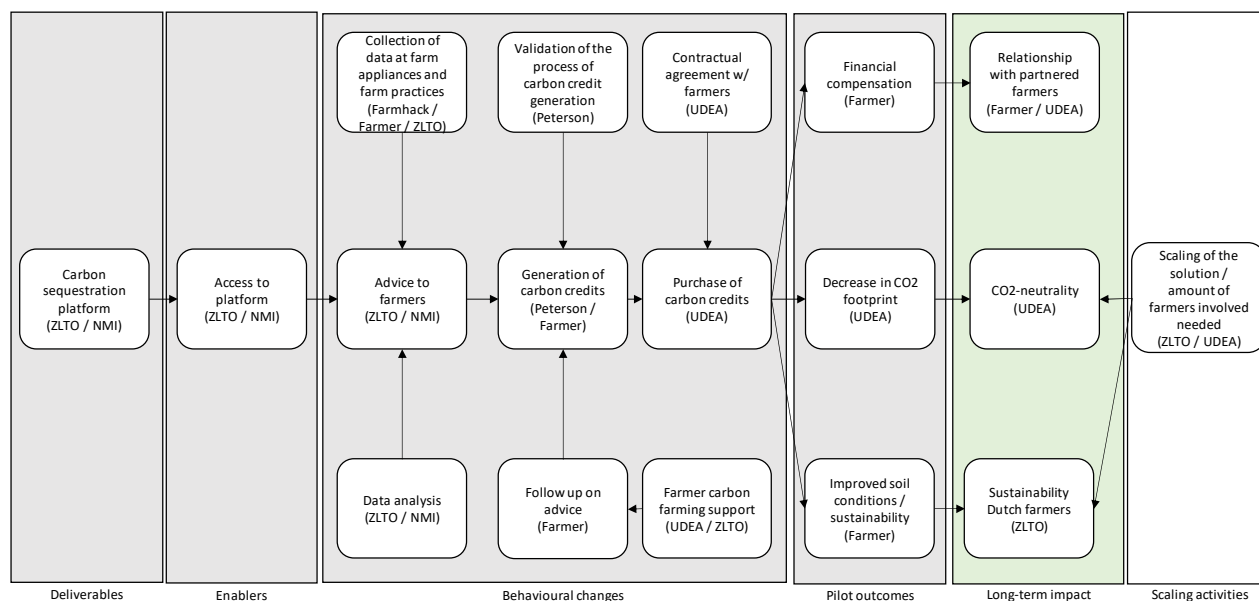


Figure 24: Benefits Realization Mapping for SIP 8

## 6 Conclusion

In this deliverable we present the tools used as part of the methodology for designing and evaluating Sustainable Collaborative Business Model Innovations, as defined in *D3.2: Ploutos SCBMI approach – final version*. These tools can be seen as a specification and reference for the operationalization of this methodology and help in guiding business decision making. The objective of these tools, in general, is to elicit and structure knowledge related to the desired innovation, identify innovation risks, identify strategic options, communicate about the innovation and moreover generate insights relevant for designing and evaluating sustainable collaborative business model innovations.

This deliverable: *Training material for SCBMI – final version*) covers the complete list of tools used to support the SCBMI approach. Each tool is complemented by a ‘training card’ that presents a quick overview of how the tool is used. The applicability of these tools has been validated through a large set of the SIPs involved for Ploutos. In addition to the training cards, the main tools used as part of the workshop-based set up for conducting the SCBMI approach have been complemented by means of video support. These video support includes additional cases, demonstrating how the tools should be used. These cases are based on results generated through Ploutos. Additional, a ‘full’ demonstration of the SCBMI approach (using the workshop format) for SIP 8 is included. The results of SIP 8 have been used to illustrate the application of the (core set of) tools used. The results per tool can help future facilitators or orchestrators of workshops to reflect on how the tools have been applied and whether they can explain the results obtained. This helps facilitators in better understanding how to apply the tools in practice. The training cards and video-based walkthroughs consequently can be used by facilitators to ‘refresh’ their knowledge on how tools are used or to use these materials as a means of further dissemination.



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