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Name of KIC project the report results from that contributed to/ resulted in the deliverable	Building a Methodology and Community of Practice for Catalyzing Transformative Change through System Innovation (MOTION)
Name of report	Report (DEL 200255-03): The Monitoring, Evaluation & Learning (MEL) Module and Indicator Development with SATURN, SusMo and ACTonNBS
Summary/brief description of report	This document contains a report on the development of a Monitoring, Evaluation and Learning (MEL) module, and indicator development with MOTION's three partner projects, SATURN, SuSMo and ACTonNBS. The report discusses the principles of Transformative Innovaton Policy (chapter 1), the application of the MEL module in the three partner projects (chapter 2,3,4), and ends with a general discussion and conclusion (chapter 5).
Date of report	16 December 2020

Climate-KIC is supported by the EIT, a body of the European Union

Report on the Monitoring, Evaluation & Learning (MEL) Module and Indicator Development with SATURN, SuSMo and ACTonNBS

Building a Methodology and Community of Practice for Catalysing Transformative Change through System Innovation (MOTION)

EIT Climate-KIC Plaza ID: 200255

Deliverable 200255-D03

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1 Introduction

In working with the different projects (SATURN, SUSMO, ACTonNBS)[1] under MOTION, different research steps have been taken for formative evaluation as part of the MEL phase. These research steps are not only methodologically different, but also set different priorities and are therefore at different stages of implementation. To this end, the different research approaches used in each project are described individually in this report. Nevertheless, all approaches draw on the concept of Transformative Outcomes (Ghosh et al. 2020), share an overarching module-based approach (Figure 1), and are based on the Evaluation Principles for Transformative Innovation Policy (TIP) (Molas-Gallart et al. 2020). The final chapter "General discussion and conclusion" reflects on the commonalities, opportunities, constraints and conceptual ambiguities between them.

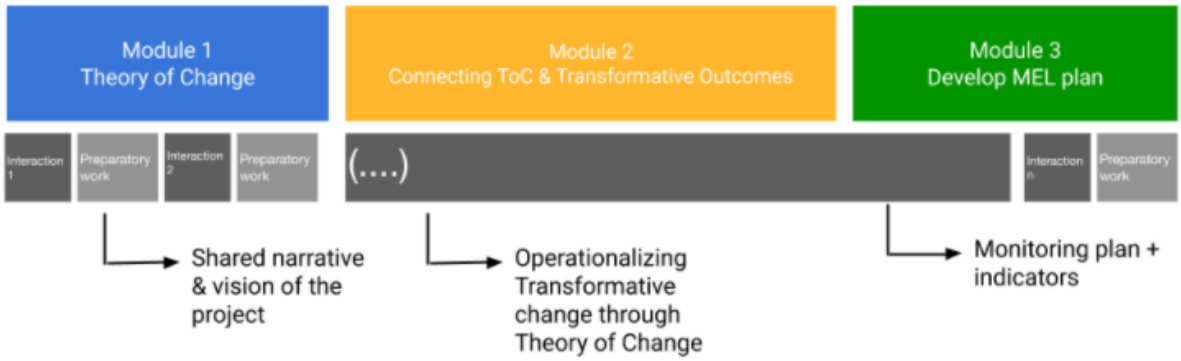

Figure 1: Three different modules structure the work with SATURN, SUSMO and ACTonNBS

Before describing each research pathway of SATURN, SUSMO and ACTonNBS, the first section describes how they adhere to the evaluation principles for TIP by Molas Gallart et al. (2020). These principles are of great importance as each of the projects in which MOTION is involved has transformative ambitions in terms of facilitating system innovation[2].

1.1 Principles for evaluating Transformative Innovation Policy (TIP)

Molas-Gallart et al. (2020) specify six guiding principles for the evaluation of transformative innovation policy. Whether and how the formative evaluation approach taken with SATURN, SUSMO and ACTonNBS is congruent with the principles is described in the following section. One principle (5. Use a nested approach to assess multi-level TIPs) was not addressed by any of them as the scope of MOTION focuses on a formative evaluation approach at the project level rather than the program level.

Principle 1: Adopt a formative approach to evaluation

All formative evaluation pathways described in this report rest on an understanding of learning rather than accountability.

[1] SATURN; SUSMO and ACTonNBS are all part of the ecosystem innovation program of EIT-Climate KIC
[2] Background information on the rational for MOTION can be found here: http://www.tipconsortium.net/experiment/the-motion-project/

In the case of **SATURN** the research approach described in detail in this report involved a self-assessment with a rating scale. Yet, the scoring was used to facilitate a structured discussion for reflecting on project activities and goals vis-à-vis key elements of the Transformative Outcomes (TO). This was done with the aim of learning more about the project's current ability to achieve a transformative outcome and collectively identifying areas for improvement.

In the case of **SuSMo,** the approach adopted sought to trigger reflexivity through the discussion of criteria for evaluating the pathways to the change aimed by the intervention. The MEL framework is therefore aimed at understanding how key elements of the selected pathways may contribute to the project goal, how are they evolving overtime (despite the lack of a baseline) and what can be done to improve the process. In doing so, the framework is not intended for external assessment, but for the project members to review and be conscious of their activities, outputs and outcomes. Hence, the indicators and the method to achieve them are preliminary and by no means aim to assess the impact of the project. However, through reflection and learning, the framework prepares the actors to engage in accountability processes.

In the case of **ACTonNBS,** the formative evaluation logic was promoted from the first interaction so that a flexible understanding of the project and its different work packages occurred with the aim of rethinking how the collaborative work would result in potential insights for tools, activities and outcomes. Each interview and each workshop developed was then conceptualised as part of an integral conversation about how Nature Based Solutions need to be mainstreamed into cities' decision-making processes through a larger and deeper multi-stakeholder engagement.

Principle 2: Integrate evaluation with policy design and implementation

For the purposes of this research, we treat the projects MOTION is working with as an experimental policy engagement and the process of evaluating their implementation as an important part of the policy process. Furthermore, the formative evaluation pathways described in this deliverable were integrated into the execution of the projects themselves. Yet, it has to be pointed out, that none of the formative evaluation approaches described here were part of the designs of the projects from their beginning. Through their application, valuable insights emerged, and we hope that they have now become an integral part of the execution of the projects in 2021.

Principle 3: The evaluation process should be inclusive and participatory

Each formative evaluation pathway described here is based on a co-creation approach between practitioners from the project and MOTION team members who acted as facilitators in the evaluation process. Such an approach posits that evaluation experts should not superimpose externally planned evaluation procedures but work with participants to enable learning with the project team, to draw on their knowledge for identifying elements that warrant adaptations to a project and to develop research outputs (e.g. Theories of Change (ToCs), Indicators, etc.) that are based on projects needs in order to enable their uptake and use.

Principle 4: Use of mix of methods and techniques.

The pathways described in this deliverable borrow from different qualitative methodologies and draw on different participatory research techniques.

In the case of **SATURN** a participatory self-assessment approach was employed that facilitates group reflection in a workshop setting. This helped to take the individual standpoints into account that reflect the different geographies of the project as well as the different domains of innovation activities that the participants work with. In the next steps, the participatory approach will be combined with the use of quantitative indicators where applicable in order to deepen the reflection on project activities vis-à-vis TOs.

In the case of **SuSMo**, the MEL phase is yet to be implemented (in 2021). The approach aims to combine quantitative methodologies (network analysis) with qualitative ones (learning histories). This choice is based on the availability of data and how appropriate each method is considering the characteristics of each pathway, associated transformative outcomes and end-goals.

In the case of **ACTonNBS**, a qualitative approach through individual interviews was integrated with document analysis and participatory discussions in virtual workshops. This mix of methods and techniques allowed, first, to reflect collaboratively about different theories of change that existed and second to link them with TOs and pathways. Open discussions were key to co-create alternative views and therefore to enhance the potential evaluation spaces across work packages and across activities. Finally, a formative understanding of evaluation was promoted through learning and reflecting.

Principle 5: Use a nested approach to assess multi-level TIPs

This principle is not addressed because the formative evaluation pathways described here were developed at project level only and a nested approach is currently pursued. While the SATURN, SUSMO and ACTonNBS all combine different niche experiments there are no separate ToCs or evaluation activities for the niche experiments that could then be aggregated to the project level (i.e. nesting of experiments in project). Neither did MOTION develop a ToC or initiate evaluation activities at the level of the program yet (Climate Innovation Ecosystem) under which the different projects run (i.e. nesting of projects in program). However, we expect that the MEL approaches developed in MOTION can be adapted and generalised for application at other levels in the future. This line of work will continue in the final year of MOTION.

Principle 6: Use a flexible Theory of Change (ToC).

All ToCs developed as part of the formative evaluation pathways described here are considered flexible in that they do not assume fixed chains of cause and effect relationships between their elements. Rather, they were developed as a learning device that captures the diversity of activities and output in the projects in order to structure a reflection process about these elements from a transformative change perspective. While the ToCs are somewhat consolidated at this stage of the research they also remain open to new insights about project context or prioritisation of activities that projects are pursuing in their last year of implementation.

In the case of **SATURN**, the self-assessment approach and the data analysis described in this report led to additional inputs, activities and outputs for improving on the TO “Circulation” and “Upscaling”. These elements will be incorporated in the overall SATURN ToC.

In the case of **SuSMo** a new theory of change was built from scratch for the project. In the process of developing this Theory of Change, the SuSMo team discovered the connections between different actions and pathways in the projects, and their relation to transformative outcomes. The ToC went through several rounds of co-creation (in workshops) and revisions, resulting in a validated Theory of

Change for SuSMo. This ToC is meant to be revised by mid-2021 as part of a process of compiling the learnings of the SuSMo project and thinking about its continuity.

In the case of **ACTonNBS,** original ToC per work package were revisited, discussed, and synthetized to create an ACT on NBS Theory of Change and better understand how the project intervened in different contexts. Once thoroughly explored, this ToC was used as a milestone towards assessing TOs resulting from the project's inputs, activities and outputs. This exercise was considered very helpful to observe potential pathways of change and to co-create processes towards transformation.

2 Monitoring, Evaluation and Learning (MEL) Module in SATURN

The following section describes the development and application of a self-assessment approach and Transformative Outcome (TO)[3] indicators as part of the monitoring, evaluation and learning phase of the SATURN – MOTION collaboration.

It is important to note, that this is not a standalone piece of work. Instead, the research steps described here are part of an overarching collaboration between MOTION and SATURN in which a number of interactions took place[4]. Those interactions are guided by three overarching modules that have different foci. The first module relates to project activities that elicit a Theory of Change with project partners. Building on these interactions the second module connects the Theory of Change with the Transformative Outcomes. The third Module is about the development of a Monitoring, Evaluation and Learning Framework.

This deliverable describes the research steps that form the starting point of the third module. However, the steps described here need to be seen as embedded in this earlier work. Taken together, they address the objectives of the MOTION-SATURN collaboration.

[3] The concept of the Transformative Outcomes developed by Ghosh et al. (2020) can be found here: http://www.tipconsortium.net/publication/transformative-outcomes-assessing-and-reorienting-experimentation-with-transformative-innovation-policy/

[4] These interactions are also visualised here: https://miro.com/app/board/o9J_ktT5qhs=/

Table 1: Sequence of research steps and related modules in the SATURN-MOTION collaboration

ACTION	PARTICIPANTS	AIMS & ACTIVITIES	METHODS
Preperatory Work			
Interaction 1	With Project leaders	- Establish a trusting relationship - Clarifying structure and process of MOTION collaboration	Online meeting
Questionaire	With all the hubs	- Better understanding of SATURN specifics	Online questionnaire
Module 1 – Theory of Change (ToC)			
Interaction 2	With hubs leaders	- Going deeper in the questionnaire and clarifying remaining questions - Building trust with hub leaders - Outlining the value of Motion - Adressing concerns of hub leaders - Clarify next steps	Online meeting & presentation
Interaction 3	With each hub: With Trento. 90 minutes With Birmingham. 60 minutes. With Gothenburg. 60 minutes.	- This was done with each hub individually: - Refamiliarise participants with the ToC. - Reflect on it - Re (De) sctructuration of original ToC.	Group discussion supported with MIRO board
Analytical step	(Internal)	- Structure information with Transformative Outcomes lens. - Looking for points in common keeping idiosincracy. - Analysing existing Activities, Outputs, Outcomes	Content analisis of Project documents & reports
Interaction 4	With Trento Hub	- Validate the reinterpretation of Outcomes of the ToC	Online validation with Google Docs
Module 2 – Connecting ToCs with Transformative Outcomes			
Interaction 5	With Trento Hub & Birmingham	- Relating activities to transformation phases - Validation of previous analysis in workshop format - Participants reintroduced to the basic transition concepts - Reinterpreted outcomes were mapped against an adaptation of the socio-technical transition X-Curve. - Outcomes reinterpretation (from MIRO). - Validation of each TO, reflect on it and add details	Online meeting & Miro Canvas
Analytical Step	(Internal)	- Conduct a TO analysis across the different hubs matching activities and actions to the TOs. - Relating activities to TO across all hubs	
Interaction 6	With all huibs	- Present the Analysis - Flag the Narrative - Group validation and priorisation of TOs with all SATURN partners	Online meeting & Miro Canvas
Module 3 – Develop MEL plan			
Internal Testing of Self-Assessment Methodology	MOTION Team	- Testing of methodology - Refinement with Experts	Online meeting
Interaction 7 – Application of Self-Assessment Methodology	With all hubs	- Enable learning through reflection. - Provide orientation on improving a project in relation to a TO. - Provide a tool & strengthen capacity of practitioners to work with concepts.	Online meeting with Self-Assessment Approach
Analytical Step	(internal)	- Development of embedded ToCs for “Circulating” and “Upscaling” - Development of Indicators	
Learning Step – Dissemination of WS results	All SATURN partners	- Provide Summary Report of self-assessment to SATURN participants to deepen learning on TO self-assessment	Report

2.1 Overview of research steps for MEL with SATURN

In the following sections we describe how the development and application of the self-assessment approach as well as the development of embedded ToCs and indicators. Two reasons led to the use of these research steps. First, it was considered important to use a participatory methodology in order to co-develop indicators with SATURN. We saw this as crucial for developing indicators that are based on project needs and therefore useful for SATURN in order to sustain their engagement in the next steps of MOTION. Second, it was considered important that the process for developing indicators is a formative intervention and supports capacity building with partners.

Figure 1 illustrates the research steps described in this deliverable as well as the tangible and intangible outputs related to them. This figure shall also provide orientation in reading this report. To this end, each of the four phases depicted in the diagram correspond to the sections that follow.

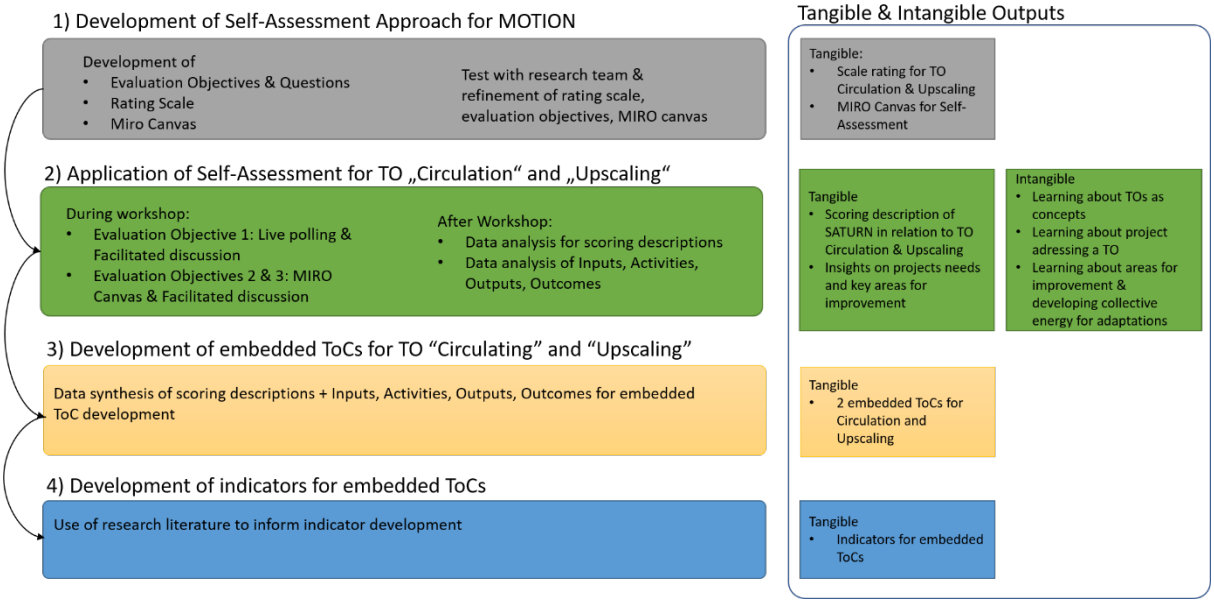

Figure 2: Process diagram of the development and application of the self-assessment approach and the corresponding tangible & intangible outputs.

2.2 Development of the Self-Assessment Approach for MOTION

Inspiration for this approach was drawn from previous experiences with participatory self-assessment and benchmarking in the urban water management sector in Australia. The conceptual foundations of the self-assessment process are using Transition Theory and it was used as in combination with other activities for facilitating transformative changes in urban water management sectors.

While the so called Water Sensitive City Index[5] (Chesterfield et al., 2016; Rogers et al., 2020) was not developed for formative evaluation purposes, group reflection and group learning are central reasons of its application (Rogers et al. 2020). The authors highlight that participants of benchmarking workshops valued the following aspects:

[5] https://watersensitivecities.org.au/solutions/wsc-index/

1) The self-assessment process helped them to increase their understanding of the concepts that the approach is working with. In the context of MOTION this relates to the TO and the different elements that they entail.
2) The self-assessment process helped the facilitation of cross stakeholder dialogue. In the context of MOTION this relates to projects partners of different work packages as well as different hub locations.
3) The self-assessment process helped to develop a collective understanding on the current situation. In the context of MOTION this relates to how SATURN is doing in terms of achieving a TO.
4) The self-assessment process supported the articulation of aspirational outcomes for the future. In the context of MOTION, this refers to the activities that SATURN can use to improve the specific TO of "Circulation" and "Upscaling".

While the self-assessment process was originally developed for an application in a particular sector (urban water management) the principle idea and process are not sector specific and it has been pointed out that the self-assessment process can support learning in different contexts (Rogers et al., 2020). Rogers et al. (2020) state that the insights derived from application and testing "*point to a promising direction for the design of other indicator initiatives beyond water— particularly those aiming to drive system change through collaboration and learning across multi-sectoral policy-makers, strategists and practitioners*." This notion of learning in multi-sector policy environments makes this self-assessment particularly valuable for the purposes of MOTION and suggests that this approach can be applied for other use cases too.

Another important consideration for advancing this self-assessment for the purposes of MOTION was the importance of developing indicators together with project partners. This will make them particularly useful for them and support their uptake in practice (Rogers et al. 2020). If indicators are not co-developed they *"often fail to meet the needs of policy and decisions-makers, as the development process does not adequately engage them or identify their information requirements*" (Rogers et al. 2020).

2.3 Development of evaluation objectives & questions

The strength of the self-assessment approach lies in its ability to structure a discussion that is based on the self-evaluation of individuals with a shared reference point (e.g. project). The scale enables a targeted group reflection but this process needs to be guided by evaluation objectives. To this end, four evaluation objectives were defined and operationalised through evaluation questions listed below:

1. Evaluating the extent of a project addressing a TO:

Questions related to this evaluation objective:

- Who has voted for a [NUMBER] and can you tell me what has triggered that decision?
- Why have you voted for a [NUMBER] and not the next higher one? Which elements of the criteria held you back?
- Who was standing between 2 scores and why did you then choose one score over the other?

2. Evaluating inputs for improving on a TO

Questions related to this evaluation objective:

- What else is needed to improve the rating scale of the project for a Transformative Outcome?

3. Evaluating activities for improving on a TO

Questions related to this evaluation objective:

- How could existing activities improve in order to achieve a higher score for a Transformative Outcome?
- What new activities could be instantiated in order to achieve a higher score for a Transformative Outcome?
- What are barriers that prevent us from getting to a higher score?

4. Eliciting signals and indicators

Questions related to this evaluation objective:

- How can we assess if we are making progress towards a higher score?

2.4 Development of the rating scale for TO "Circulating" and "Upscaling"

Before describing the rating scale for the two TOs it has to be highlighted that the TO "Circulating" and the TO "Upscaling" were selected as priority Outcomes in previous research steps. This selection is based on practicalities (i.e. resource constraints in working with TOs) but it is also reflective of the strengths and weaknesses of SATURN identified in previous research steps. We discuss the logic and importance of this prioritisation in the last section of this report.

At the heart of the approach sits a rating system that structures a TO on a scale from 1 - 5. A benefit of the rating scale is its ability to break down complex concepts and make them more tangible by specifying constituting elements at each level of the rating scale. The scale is used by participants scoring a unit of analysis (e.g. project or program) with an online voting tool and the results are shared immediately. It has to be highlighted that the score itself is secondary. Instead, reflection on the scores with evaluation objectives move to the fore. The evaluation objectives elicit the underlying reasons behind a rating and open a targeted discussion for group reflection and learning (see Rogers et al. 2020).

The rating scale was developed by the AIT research team and then tested with MOTION team members. Subsequently the exact wording of the rating scale was further refined by a Transformative Outcome Expert (Bipashyee Gosh) to make sure that the scale captures the essence of the TO ("Upscaling" & "Circulating"). Additional feedback was obtained by a linguist and participatory methods experts (Jose Manuel Corvillo) with the aim of simplifying the scale and its elements. Both rounds of feedback provided valuable additional feedback for the final rating scale.

Final rating scale of the TO Circulating:

TO "Circulating":

1) Experiences from the new practices in a niche are **not collected** and **not shared**.

2) Experiences with the new practices **are sometimes collected**. These collected experiences are **only shared** with actors of a **particular niche**.

3) Experiences with the new practices are **often collected** and **synthesised**. This is **made available** to other actors from a different niche. **Other resources** (e.g. people and products) **hardly exchange**.

4) Experiences with the new practices are **systematically collected** and **regularly synthesized** into **learning materials**. They are easily **accessible** and **shared between different niches**. **Other resources** (e.g. people and products) **increasingly exchange** among niches.

5) **All Learnings** are **systematically collected, aggregated** and **shared** between **many niches** and **a wider stakeholder group**. A **wide variety of resources** (Ideas, People, Texts, Products, Rules) are **interactively circulating** between niches but also between **niches and regimes**.

To support participants understanding of the rating scale the following key definitions where developed:

"collecting": the purposeful activity of harvesting project data, experiences and learning

"synthesising": the condensation of data analysis, experiences and learnings with elements of reflection and generalisation

"learning material": a physical product that embodies synthesized knowledge for the possibility of sharing and distributing

Final rating scale for the TO "Upscaling":

TO "Upscaling":

1) The new practices **only exist in a niche**. They are **not taken** up by any other actors and there is **no interest** to do so.

2) The **benefits** of the new practices are **increasingly recognised** by others outside a niche. While a **few actors outside a niche are interested** to adopt the practices, their **uptake remains an isolated** event.

3) The practices are **adopted by interested actors**, and they **start to diffuse** beyond a particular niche. They start to become a **viable alternative** to established practices on the market.

4) The practices are **adopted by many actors** and **user preferences** begin to change. Their **diffusion rate increases steadily,** and, through this scaling, they are **competitive to established practices** on the market.

5) The **adoption rate of the new practices is high** (adopted by most actors), **they diffuse widely** with great **speed** across **national and international markets**. The practices have established **new user preferences** and they have been accepted as **a new mainstream option.**

To support participants understanding of the rating scale the following key definitions where developed:

"uptake": the adoption of an innovation or new practice

"viable alternative": an alternative that is recognised by many as a good option in different aspects (price, utility, ease of use, etc.)

"diffusion": the process of gaining momentum and spreading across a sector or market

2.5 Use of the rating scale in the workshops

The process for rating was done with an online polling tool[6]. The benefit of live online polling is that it provides an instant snapshot of the rating and that participants can immediately see the aggregated and anonymous results. The tool also provides for small customisation of the design so that the layout can be adapted to the scale rating. The rating scale was used as described above.

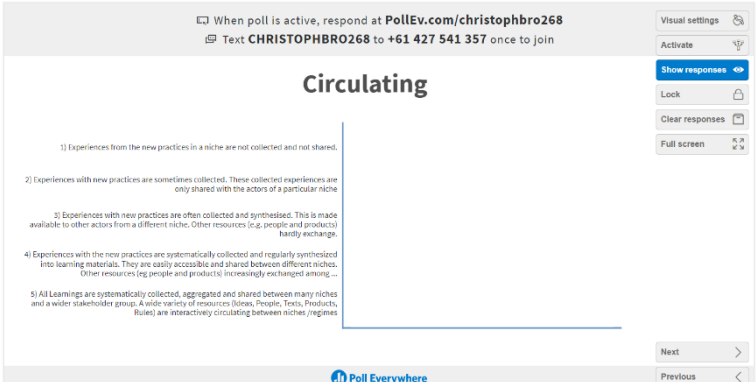

Figure 3: Online Polling Tool

First, participants are asked to familiarise themselves with the rating scale. Second, the facilitator goes through each rating scale and highlights the differences between each. Third, participants are asked if they have any questions. Lastly, the online voting is conducted and when everyone has finished voting the results are presented to the whole group.

2.6 Development of the MIRO Canvas

The MIRO canvas was developed to facilitate and structure the group reflection for each of the evaluation objectives.

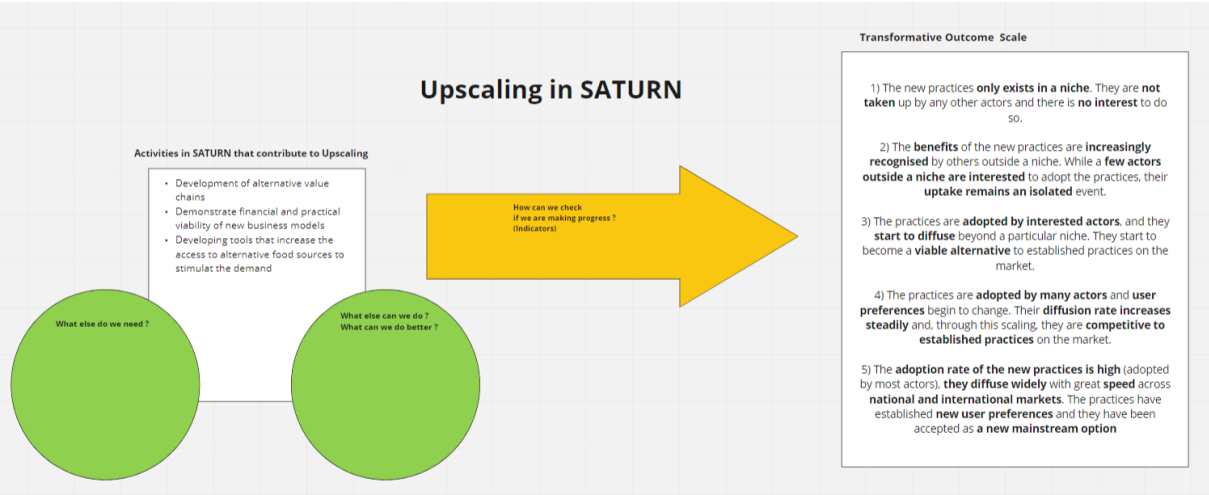

Figure 4: MIRO Canvas for guiding a discussion during the self-assessment workshop

[6] https://www.polleverywhere.com/

2.7 Testing the self-assessment approach

Before using the methodology with participants from SATURN, the approach was trialled with some members of the MOTION team. In doing so, the team members ran through a self-evaluation process of MOTION for the TO of "Circulation":

The MOTION members provided the following rating for the TO "Circulation". The discussion that emerged from this self-evaluation led to a range of different insights on the TO "Circulation" which are summarised in the following screenshot:

Figure 5: MOTION team members having a lough during the testing

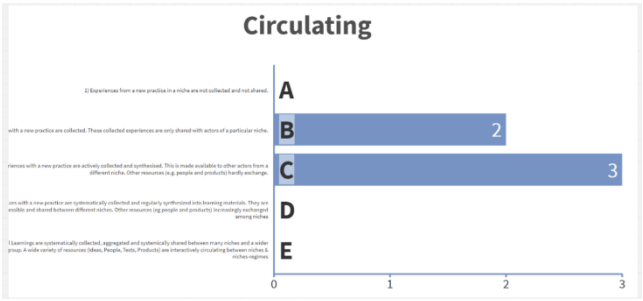

Figure 6: Voting Results of TO Circulating

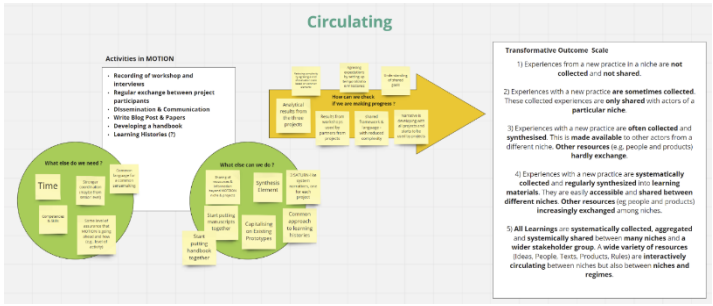

Figure 7: Miro Canvas capturing the discussion on Circulating in MOTION

As the main objective of this step was to test and refine the methodology, group feedback on the method and process was particularly important. The following points were raised by the MOTION members which led to a refinement of the approach for the subsequent application in the workshop with SATURN:

1) It was mentioned that it is important to highlight the timeframe of this self-assessment (i.e. that this is about the current status of the project, rather than an anticipated status related to the goals in the future)
2) It was mentioned that the scale incorporated a lot of complexity. While it was argued that simplicity of the scale (i.e. constituting elements of a TO) could improve the understanding of workshop participants for a TO, it was also seen as important not to simplify too much in order to capture the breadth of elements of a TO.
3) It was mentioned that it would be beneficial to further test the scale with one SATURN member before the workshop.

2.8 Application of the self-assessment approach for TO "Circulating"

2.8.1 Results related to objective 1 "Evaluating the extend of a project addressing a TO"

In total, 8 participants voted on how SATURN is currently addressing "Circulation". Four people have voted for a number 2 and four people have voted for a number 3. In the discussion, several participants noted that they were standing in between votes and saw SATURN as being between those two scores. No one mentioned a lower scoring or a higher scoring which is why an overall score of 2.5 is therefore assigned to SATURN in relation to "Circulation" with a confidence rating "high".

> *"I think the truth is that the project is between 2 and 3" [Participant from Birmingham]*

The justification and reflections on this scoring provided valuable insights on SATURN and stimulated an open discussion on how participants perceived SATURNs' current strengths and weaknesses in relation to this TO. One participant from the Birmingham hub noted during the session:

> *"So I think this exercise is helpful because it helps us to evaluate our progress to date." [Participant from Birmingham]*

Additionally, the scale rating and the descriptive detail that it entails enabled a level of reflection on a more granular level (i.e. around constituting elements of a TO). The lively discussion that emerged after the rating showed that people could connect to the rating scale and immediately relate their work of SATURN to it. As such, it can be assumed that this made a TO more tangible and strengthened participants understanding of the concepts.

The following section is an assessment of SATURN of the TO "Circulation". On one hand this analysis is based on the reflections of participants in relation to the Evaluation Objective 1 (How a project is currently addressing a particular TO) during the workshop. Additionally, this was triangulated with results from early workshops and content analysis of project documents.

SATURNs score of "Circulation": 2.5; confidence: High

The collection of knowledge, experiences and project outputs is ongoing and increases as the activities in the different hubs are taking place. While there are ambitions to strengthen the synthesis of new knowledge and experiences across the different hubs, these activities are predominately happening within the different hubs at a local scale. At this local level, knowledge collection and synthesis are developed and ongoing.

While regular formats of exchange between people in Gothenburg, Birmingham and Trento are set up, these meetings mostly serve project management and administrative purposes. Formats that facilitate the sharing of content specific knowledge and exchange are happening to a lesser extent at project level. Some projects outputs are still in development and are therefore not shared yet. While projects partners have visited each other personally as part of a personal exchange, this has not happened often and has been made more difficult with the Covid-19 crisis. As such, the circulation of knowledge and experiences as well as interim/preliminary project outputs is mostly happening at the regional or hub level. At this level, the circulation of knowledge and experiences goes beyond the people of a hub and extends to those who work at the pilot cases.

The circulation of knowledge and experiences is also supported by the active dissemination of project outputs through a variety of different outlets specific to different target audiences. To this end, different media channels (e.g. video, social media), face to face engagement opportunities (e.g. conferences, exhibitions, talks and presentations) as well as academic outlets (e.g. journals and books) are used. Additionally, SATURN partners have started to engage with people external to the project in a more systematic way (e.g. workshops). Mostly, these activities are, however, more regional in focus. The engagement with an audience for the circulation of knowledge and experiences beyond the regional level is starting to increase (e.g. conferences or webinars).

2.8.2 Results related to objective 2 "Evaluating inputs for improving on a TO"

The following results are from the discussion related to the evaluative Objective Number 2 (Evaluating inputs for improving on a TO). The results are based on qualitative data from the discussion as well as the information provided on the canvas.

Table 2: Synthesis of workshop results related to evaluation objective 2

Need	**Elements of need**	**Exemplifying quotes**
clearer directions & guidance on what is needed and wanted by CKIC	• Clearer and more foreseeable requests (Scope & timing) for additional / change to existing activities.	*"so for us the funder wasn't very clear, for example we found out in February that we have to have another KPI on communication or financial sustainability and luckily the team has already embedded this is the system from the start"* *"within the flexibility that the project allows us it would have been great to have more guidance on what it is that they need or expect"*
Stability and Continuity within the current project period	• No more crisis events such as Corona or Brexit	

2.8.3 Results related to objective 3 "Evaluating activities for improving on a TO"

The following results are from the discussion related to the evaluative Objective Number 3 (Evaluating activities for improving on a TO). The results are based on qualitative data from the discussion as well as the information provided on the canvas.

Table 3: Synthesis of workshop results related to evaluation objective 3

Improvements	**Elements of improvement**	**Exemplifying quotes**
A common / shared framework that helps our knowledge and experience collection and synthesis	• A shared framework for the project which still appreciates and allows for the local differences to come through • The local differences need to be identified and analysed. • Findings from the pilot cases need to be systematically collected, regularly updated and synthesized	*"What really started to come particularly in these last few months is that there is a consensus that we are getting much closer to a common framework"* *"just to collect the challenges and learnings from the pilot cases is important as I don't think we do that yet"*
communication and outreach	• Improve the website by making it more visible and improve the ranking that it gets on google. At the moment it is not easy to find online • Showcase the learnings from the pilot cases better and present them as they proceed.	*"At the moment I don't really use it so much – I don't know about the others but I think we could be better with the home page or for sharing information more generally"*
Engagement of stakeholders for enabling the application of project results	• Experimentation with the application of project (research) results in practice and with different stakeholders • Activities where research outputs and outcomes are brought to other stakeholders from non-academic backgrounds	
Formats for content exchange and knowledge sharing in a practical way	• Meaningful exchange formats where knowledge and experiences can be shared between the hubs • Exchange of human resources through job shadowing or researchers exchange • See and learn from each other on-site and in-action • Improve learning and knowledge exchange between the pilot cases themselves • Improvements to the internal dissemination and communication on content information/knowledge from the pilot cases	*"I think we need more exchanging moments because sometimes we meet and then we discuss about project bureaucracies and not about our experiences"* *"We could have meetings where we discuss in more detail the pilot cases and share our learnings and experiences"*

2.9 Application of the self-assessment approach for TO "Upscaling"

2.9.1 Results related to objective 1 "Evaluating the extend of a project addressing a TO"

In total, 8 participants voted on how SATURN is currently addressing "Upscaling". Four people have voted for a number 2 and four people have voted for a number 3. In the discussion, several participants noted that they were standing in between scores. Compared to the discussion on "Circulation" there was a tendency for some participants to consider voting for a 1. Those participants saw SATURN as standing between 1 and 2 while others saw SATURN as standing between 2 and 3. Overall, the discussion revealed a greater ambiguity and more "spread" between how people would score the project. As such, an overall score of 2.5 is assigned to SATURN in relation to "Upscaling" with a confidence rating "Low".

> *"In this case this time I was more in trouble within myself if we are between 2 or 3 but considering the last progresses we made I then voted a 3" [Participant from Trento]*
>
> *"Probably the only reason I didn't vote 1 was is because I think there are a lot of places that are interested" [Participant from Birmingham]*

The following section is an assessment of SATURN for the TO "Upscaling". On one hand this analysis is based on the reflections of participants in relation to the Evaluation Objective 1 (How a project is currently addressing a particular TO) during the workshop. Additionally, this was triangulated with results from early workshops and content analysis of project documents.

SATURNs score of "Upscaling": 2.5; confidence: Low

Compared to the beginning, when project activities were isolated and experimental, SATURN activities have now started to solidify showcasing viable real-world applications of innovative practices. As SATURN progresses, the project is increasingly attracting interest by external stakeholders due to an intensification of engagement activities with them. However, this engagement is currently focused on actors that share a similar approach and values to sustainable land use management (e.g. satellite cities). Nevertheless, these actors have a keen interest in the SATURN ideas and practices and show a willingness to adopt them.

Locally, SATURN has helped to connect supply and demand for alternative land use management practices and possible outputs (e.g. food produce). To this end, some instruments that SATURN was able to use have helped to increase the access to alternative practices such as locally farmed produce (e.g. through digital platforms). As such, SATURN was able to show that alternative land use practices are viable and profitable beyond a specific demonstration case. However, these alternative value chains are thus far only created locally (at hub level) and only in the context of the project. There is little actual application or uptake beyond the SATURN sphere. As such, the practices and associated value chains are not necessarily seen as a viable alternative from market perspectives and currently market viability is not reached.

2.9.2 Results related to objective 2 "Evaluating inputs for improving on a TO"

Due to time constrains evaluation objective 2 was not addressed in the workshop.

2.9.3 Results related to objective 3 "Evaluating activities for improving on a TO"

The following results are from the discussion related to the evaluative Objective Number 3 (Evaluating activities for improving on a TO). The results are based on qualitative data from the discussion as well as the information provided on the canvas.

Table 4: Synthesis of workshop results related to evaluation objective 3

Improvements	**Elements of improvement**	**Exemplifying quotes**
Develop new financial opportunities	• Seek for further funding opportunities to ensure continued use of project results • Continuity in terms of finding future opportunities to continue what has been developed so far.	
Develop a collection of practical tools in an accessible format that match need of different stakeholders	• Collect experiences and learnings of the different hubs and turn them into a practical toolbox that can be picked up by external stakeholders • Engage with stakeholders to share existing experiences and find out what their requirements for the tools are	
Integrate the tools into a "product" that can be marketed to others	• Development of a product that integrates the different hubs activities & tools so that they can become more easily accessible by others • Develop and test a "product" that can be adopted or used by others. • Focus more on a market approach → develop something that can be applied and used by others and that can be "sold" to others	*"it would be very valuable for the project next year when we think about how we present this as a proper tool and to make it look like a product or methodology so that a city or region or a big company would be interested in"*
Assess value generation of practices for different stakeholders & communication of it	• Demonstrate the value that a practical application of a practice can bring to different stakeholders. • Think about and make explicit the financial elements related to a practice to be able to communicate them.	

2.10 Development of embedded ToCs for “Circulating” and “Upscaling”

The analysis of the workshop results was translated into an embedded ToC for the Outcome “Circulating” and “Upscaling”. They are considered as embedded because the ToCs developed in this section reflect and build on the overall ToC of SATURN but incorporate new knowledge and information gained through the self-assessment. Activities that are already reflected in the overall ToC of SATURN are excluded from these ToCs because they were not developed with a view on improving on a TO as part of the MOTION process.

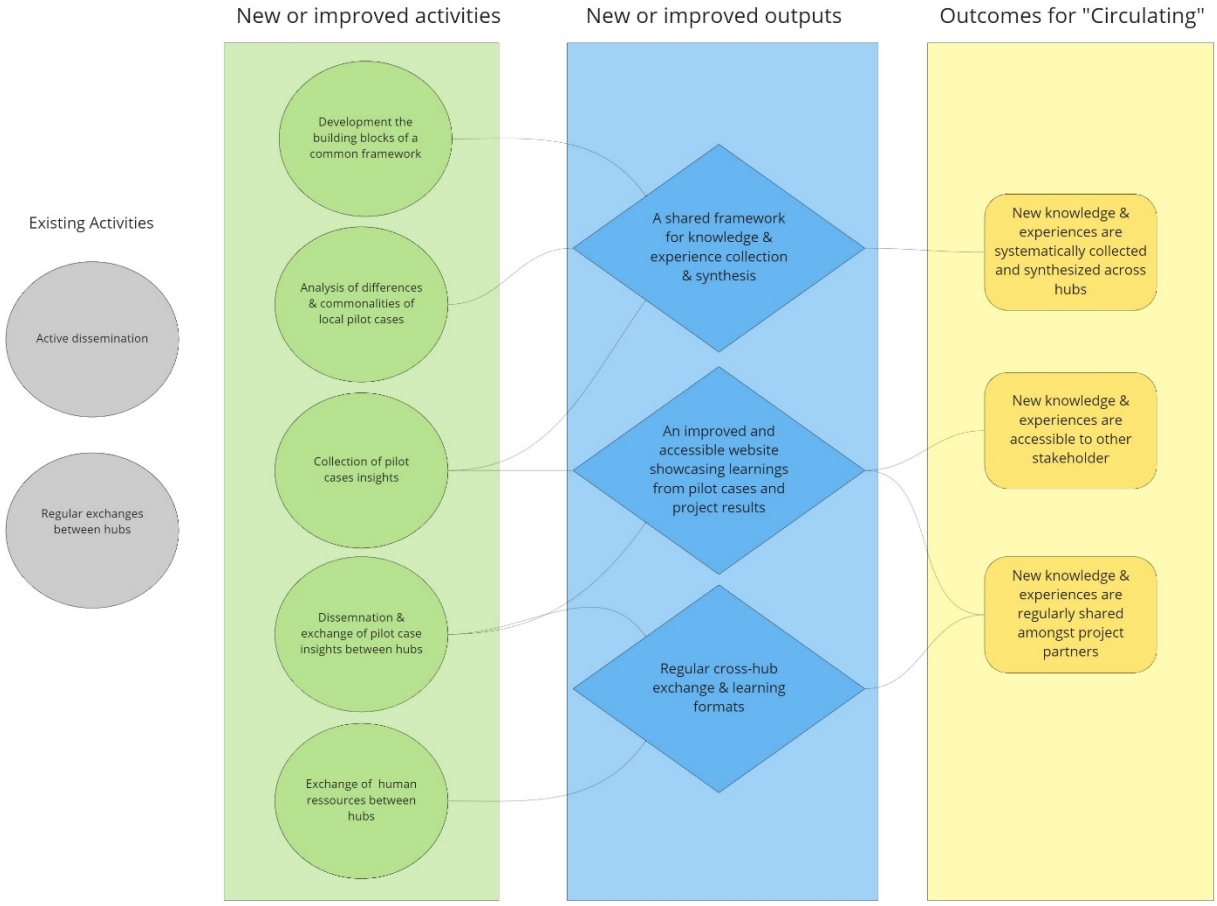

Figure 8: Embedded ToC for improving on “Circulation”

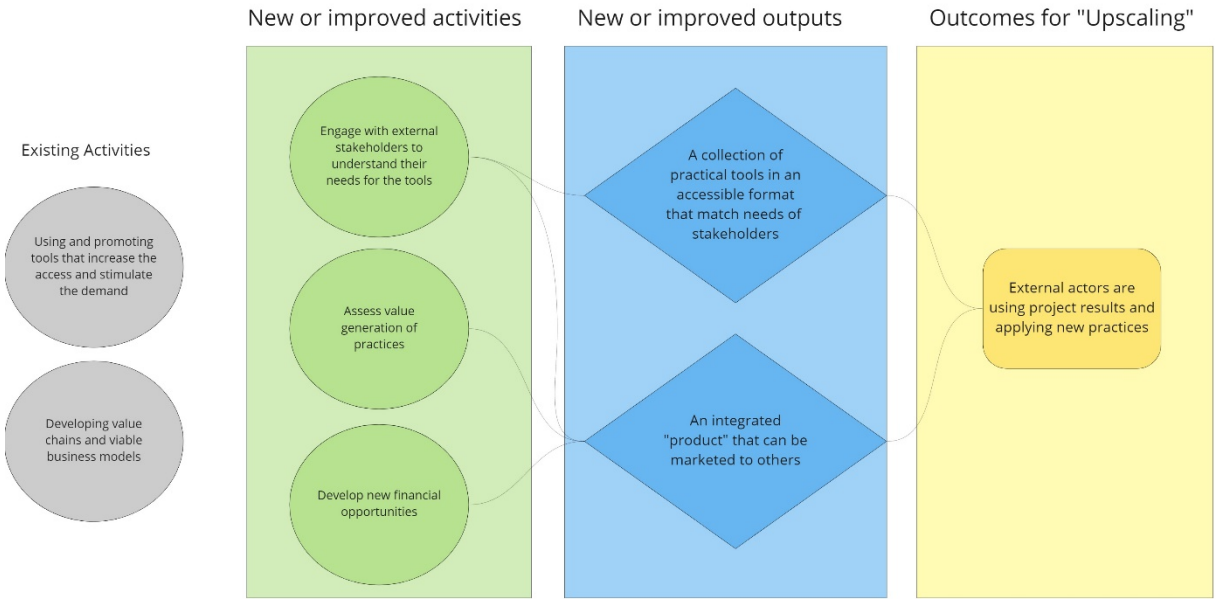

Figure 9: Embedded ToC for improving on "Upscaling"

2.11 Development of Indicators for the embedded ToCs

2.11.1 Indicators for "Circulating"

The embedded ToCs were the basis for developing indicators for each of the outcomes related to "Circulation" (see yellow boxes in figures above).

The outcomes specified during the workshop indicate three overarching elements namely a) collection & synthesis b) access and c) sharing of knowledge and experiences *between* the hubs as well as a wider stakeholder group.

To inform the development of the indicators, literature on "knowledge management" was used which has its roots in management and organisational studies. Here, different studies (such as Brink, 2001; Shannak, 2009) have provided valuable input for developing indicators for the outcomes related to "Circulation". Brink (2001) for example specifies that the conditions for effective knowledge management should be developed in three dimensions: social, organisational and technical. It is through the interplay of elements across these dimension that effective knowledge management can be developed (Brink, 2001).

1) Organisational conditions refer to the strategy, structure, management and processes that can be established to improve knowledge management.
2) Technical conditions refer to the effective use of information and communication technologies for the support of knowledge management activities as well as interpersonal and group communication.
3) Social conditions refer to the motivation, values and attitudes of people that influence knowledge management behaviours.

Table 5: Indicators for embedded ToC related to "Circulating"

	Outcomes	Measuring target (Evidence for...)	Domain (Evidence of...)	Indicators	Source
Organisational	New Knowledge & Experiences are systematically collected and synthesized across hubs	• Knowledge & Experience Collection across hubs • Knowledge & Experience synthesis across hubs	• Systematic collection of new knowledge within a hub • Systematic synthesis of knowledge across hubs	• Establishment of a knowledge management framework (e.g. database) applicable to all pilot cases (binary) • Number of updates to knowledge management framework (e.g. database) per month	Survey (Quantitative)
Technical	New Knowledge & Experiences are accessible to other stakeholders	• External knowledge & experience accessibility	Accessibility to knowledge	• Number of knowledge documents on website • Number of social media post related to knowledge documents	Web Site (Quantitative)
			Accesses	• Number of unique users • Number of returning users • Number of downloads	Web Site (Quantitative)
			Arrangement and classification of knowledge	• Establishment of a knowledge taxonomy on website (binary) • Number of items per category	Web Site (Quantitative)
Social	New knowledge & experiences are regularly shared amongst project partners	• Knowledge & experience sharing among partners (including pilot cases)	Participation in sharing opportunities	• Number of hours the partners participate in workshops/seminars/network events or other activities, per month • Number of hours the pilot cases participate in workshops/seminars/network events or other activities, per month	Survey (Quantitative)
			Attitude towards sharing	• Partners feeling comfortable to share knowledge • Partners appreciate the value of sharing knowledge	Survey (Quantitative)

2.11.2 Indicators for "Upscaling"

For the definition of indicators for Upscaling, the embedded ToC (see Figure 9) and the main identified outcome (external actors are using project results and applying new practices) was used as a starting point.

The subsequent delineation of indicators was then informed by conceptual literature on scaling up sustainable energy innovations and literature on upscaling of business models and services. For example, some key patterns for upscaling have been derived by Naber et al. 2017, who distinguish the following pattern of upscaling based upon previous studies:

- Growing - the experiment continues, and more actors participate, or the scale at which technologies are used increases

- Replication - the main concept of the experiment is replicated in other locations or contexts
- Accumulation - experiments are linked to other initiatives
- Transformation - the experiment shapes wider institutional change in the regime selection environment

Upscaling might also refer to different dimensions as identified by Jolly et al. (2012) being: 1) quantitative upscaling in terms of the number of beneficiaries, 2) organisational upscaling in terms of expanding the capacity of existing business, developing resources, building a knowledge base, etc., 3) Geographical: upscaling in terms of regional expansion, 4) depth ,in the sense of achieving greater impact in an existing location, 5) functionality, in terms of developing new products and services, 6) institutional, upscaling in terms of transforming existing institutions and creating new ones, and 7) replication, i.e. upscaling in terms of the replication of a particular business model, by supporting and incubating new entrepreneurs.

For the case of the SATURN project, the most relevant aspects for detailing indicators as pictured in the table below refer to:

- the attraction of interest to a certain good that has been created (e.g. new knowledge, role model, method, practices etc.), i.e. external actors are being addressed by the activities as a precondition to stimulate demand
- the creation of a perception of usefulness and valorisation, i.e. external actors are incorporating results for preparing their own activities, and
- the implementation of results, i.e. external actors actually make use of the results and implement the outputs of the project on its own.

Relevant indicator domains relate to 1) the network size and structure, 2) the perception of the usefulness of the (project) results, and 3) the dynamics of growth related to various upscaling dimension, and 4) the size and quality of the uptake of results.

Table 6: Indicators for embedded ToC related to "Upscaling"

Outcome	Measuring target (Evidence for...)	Domain (Evidence of...)	Indicators	Source
External actors are using project results and are applying new practices	Continuous engagement of external actors	Actors targeted and scope of engagement activities	#Nr. and type of actors addressed outside the core project team: event participants, calls, emails, etc. [counting] - If applicable, percentage of newcomers # Nr. and type of external actors participating in activities (at hub location/across hubs) increases # Nr. and type of activities addressing actors outside the core project team # Nr. and purpose of outputs established for external actors	Stakeholder database List of attendants in project activities etc.
	Valorisation of project results by external actors	Incorporation of needs & demands of external actors	# of activities to identify needs & demand of external actors # of activities that systematise and translate needs & demand of external actors into project results # needs & demands of external actors are well reflected in the outputs of the projects activities	Survey among key target group
		Perception of value of project and its results by external actors	# of external actors having a positive opinion of the project as a result of their engagement % of users who declaring that they would recommend project results	
	Use of project results by external actors	Uptake of project results	# of external actors who have used project results or elements of project results # of external actors who have adapted projects results	Survey, Success stories/Case studies

2.12 Reflections and concluding remarks

Importance of embedding the self-assessment in a series of preceding research steps in order to be effective for MEL

First, we want to point out that the application of the self-assessment approach should be seen as a first element of the MEL phase. While the specific indicators for monitoring were developed after the workshop, the group reflection on how the project is addressing a TO and what can be done to improve is already an important formative aspect and starting point for more targeted monitoring and evaluation in the next steps to come.

As such, the approach described here is only one element in a series of steps that, collectively, address the objectives of the MOTION – SATURN collaboration. The self-assessment approach needs to be seen

as embedded in those earlier steps and in those that will follow (Table 1). It is through this series of interactions that make the self-assessment process a valuable tool for formative evaluation purposes with transformative change concepts. A case in point here is the need to clarify the meaning of concepts in previous steps. More specifically, a basic understanding of the Transformative Outcomes concept as well as the notion that combinations of Transformative Outcomes relate to processes of niche building, niche mainstreaming and regime destabilisation, is considered a prerequisite for the application of the self-assessment. Without developing this understanding previously, it would have been much harder for participants to engage with the self-assessment and some of the tangible and intangible outputs (Figure 1) would have been harder to realise.

Another example for seeing this approach as part of larger sequence of research step is the prioritisation of the Outcome "Circulation" and "Upscaling" by SATURN partners. The selection on these two outcomes was based on earlier research steps that helped to identify weaknesses and strengths of the project in relation to transformative outcomes. These steps showed that SATURN had some activities in place related to the process of niche mainstreaming, but these were not as well developed as activities that related to the process of niche building. This pointed to an area of improvement for strengthening the transformative potential of the project under the assumption that strengthening or stretching less developed TOs of a project lead to an increase in transformation potential.

This finding becomes particularly relevant when we take the opportunities of SATURN into account that come from its project structure and design. For example, SATURN is set up as a multi-location project that encapsulates a range of different innovation activities of different niches. The prioritisation of TOs capitalises on the opportunities that the multi-location and multi-niche structure brings. We think that these opportunities are reflected in the embedded ToCs and the indicators because they pick up on the issue of knowledge management and flows (related to Circulation) between the geographies as well as the combination of different innovation outputs from different domains into packages that are attractive to external actors (related to Upscaling). Overall, the prioritisation of TOs builds on areas for improvement as well as opportunities that are inherent to the project design of SATURN.

<u>The rating scale makes TOs more tangible and enables learning</u>

When taking the points made above into account, the self-assessment described in this deliverable is valuable to "zoom-in" on a project in order to enable a more in-depth reflection about the project in relation to TOs. As such, the methodology has a diagnostic character. Yet, it is strictly formative in that the diagnosis is the anchor for reflection, rather than accountability. We think that this is important to highlight to participants (e.g. emails leading up to workshop, presentation) as the scale-rating could easily be interpreted as a judgement of performance.

An important element of the methodology is the scale description of the TO. The benefits of the scale rating became evident during the workshop. Particularly so when used for the purposes of group reflection and learning. For example, a lively discussion emerged on the different constituting elements of a TO vis a vis the evaluation objectives. Participants discussed their perceptions on if, how and to what extent they saw elements of a TO addressed through the project, the additional activities that would strengthen a TO and the inputs needed to do so.

We think that we can attribute some of the benefits to the rating scale that was developed for this assessment. It helped to unpack the elements that constitute a TO. This made the TO more tangible to participants and provided a more concrete reference point, and therefore orientation, for reflection. We think that it made a TO more relatable and we argue that it helped to internalise the meaning of a TO and its importance in the context of SATURN. While we have no clear evidence of this at this point in time, the good workshop discussion on the constituting elements vis a vis SATURN is perhaps a signal that this was achieved. Additionally, it should be pointed out that SATURN participants in Birmingham have started to use the TO concepts in their own workshops with stakeholders (i.e outside of the MOTION-SATURN collaboration). This is perhaps another signal that participants have started to internalise the concepts.

On a group level, it can be argued that this process has helped to create a shared understanding of what a TO in the context of SATURN means as well as a shared understanding of how SATURN is currently addressing a TO and areas for improvement. We think that this is an important outcome of the self-assessment as it provides the basis and energy for adaptations to the project (even though this is not necessarily within the scope of the MOTION – SATURN collaboration).

Relating project characteristics to Transformative Outcomes

Another benefit of the self-assessment process became evident during data analysis. Despite time constraints we obtained valuable insights on what SATURN participants perceived as areas for improvement, the activities related to these areas as the inputs required. These insights were strongly related to project needs because participants were voicing themselves what it is that they want to improve. At the same time, the insights were clearly relatable to a TO. As such, it was possible to construct embedded ToCs for each of the TO that demonstrate this relationship between project specific needs and transversal elements related to a TO. We argue that this co-creative and needs based approach is essential for identifying and acting upon those areas for improvement while remaining congruent with the TO framework.

Moreover, the embedded ToCs then became the basis for developing indicators for each of the outcome elements of “Circulation” and “Upscaling” (yellow in Figure 8 and 9). We think that the relationship between project needs and TO, as reflected in the embedded ToCs helped to create indicators that are a) relevant to the project partners and therefore useful and b) indicative of tracking progress towards a TO. While we think that we were able to thereby strengthen the conceptual relationship between TOs, project needs and indicators the issue of causality between these elements remains and requires testing and reflection in the next research phase.

Furthermore, the granularity and rather technical nature of some of the indicators (e.g. # of unique website users; # number of website downloads) raise the question if and to what extend these indicators facilitate learning about more abstract, or higher-level, concepts such as a TO. We therefore think it is critical that the next research steps of the MEL module are able to link granular indicators with overarching transformation concepts in order to stimulate and direct reflexivity and learning where its most effective.

Areas for improving the self-assessment for application in a workshop

- We followed the evaluation objectives in consecutive order. In hindsight evaluation objective 3 should be addressed before evaluation objective 2 (i.e. “areas of improvement” before “inputs needed”). This would have enabled a more targeted discussion on the inputs needed for a particular area of improvement.
- The evaluation questions on the canvas should be improved. In hindsight the canvas question of “What else do we need” is perhaps too close to “What else do we need *to do*” and could be misinterpreted in that regard. A question along the lines of “What inputs are required for these activities” would perhaps work better (also in relation to the point made above).
- More time is required for the self-assessment. The workshop had a total of 90minutes which was too short and some elements could not be discussed (i.e. evaluation objective 4). A possibility would be to shorten the presentation in the beginning of the workshop, even though important element need to be communicated in this step (e.g. that this is about reflection and not accountability despite the scoring) or to lengthen the workshop time. Alternatively, if this would be done for many TOs, the group could be split to run the self-assessment in parallel with plenary sessions to report back to others. Of course, this is dependent on group size.

3 Monitoring, Evaluation and Learning (MEL) Module in SUSMO

3.1 Introduction

In contextualizing the transformative outcomes and developing indicators SUSMO used a co-design approach. It is important to keep in mind a few aspects that have defined our methodological approach: first, SuSMo had no Theory of Change when they started to collaborate with MOTION, and a large part of the work has been to co-develop one (Figure 9). Second, in comparison to the other two projects, the SuSMo team is small (3-5 people per workshop) and in general has limited time to participate in these interactions. Last, the transformative outcomes relevant for SuSMo were selected by the MOTION research team based on the co-developed theory of change. While initially we had defined a larger number of TOs relevant to SuSMo, at the present stage we are sticking to 5 transformative outcomes (networking, learning, unlearning, circulation and expectation dynamics), which have been adapted to fit SuSMo’s aims and project strategy.

So far, this work has led us to a series of dimensions and project collaboration roadmap that need to be translated into a MEL proposal by the MOTION team (tbd Nov-Dec 2020).

Table 7. Description of activities conducted by the MOTION – SuSMo project

ACTION	PARTICIPANTS	AIMS & ACTIVITIES	METHODS
Preparatory Work			
Preliminary research	(Internal)	- Gather contextual information about SuSMo's project goals and approach, and current activities in relation to MEL.	Desk research
Interaction 1 (Interview)	SuSMo project leaders		Interview
Module 1 – Theory of Change (ToC)			
Interaction 2 (workshop 1)	SuSMo project leaders	- Co-develop a Theory of Change for SuSMo, with the identification of 5 different change pathways; - Exploration of how TOs could be understood against SuSMO's own activities and outcomes;	Group discussion supported with MIRO board
Module 2 – Connecting ToCs with Transformative Outcomes			
Interaction 3 (workshop 2)	SuSMo project leaders	- Refining of SuSMo's theory of change; - Embedding of transformative outcomes into the ToC (in the context of different pathways).	Group discussion supported with MIRO board
Interaction 4 (meeting)	SuSMo project leaders	- Discussion of MOTION proposal for MEL phase; - Selection of pathways to focus on the MEL phase; - Agreement on a third workshop.	Online meeting (SuSMo routine meeting)
Module 3 – Develop MEL plan			
Interaction 4 (workshop 3)	SuSMo project leaders	- Brief review of streamlined version of the SuSMo ToC; - Discussion of how certain transformative outcomes interact and form the basis for the selected pathways; - Discussion of indicators – types, interpretation, source, relevance and feasibility – for the selected pathways and their TOs; - Discussion of a roadmap proposal for the MEL phase.	Group discussion supported with MIRO board and online pooling tool

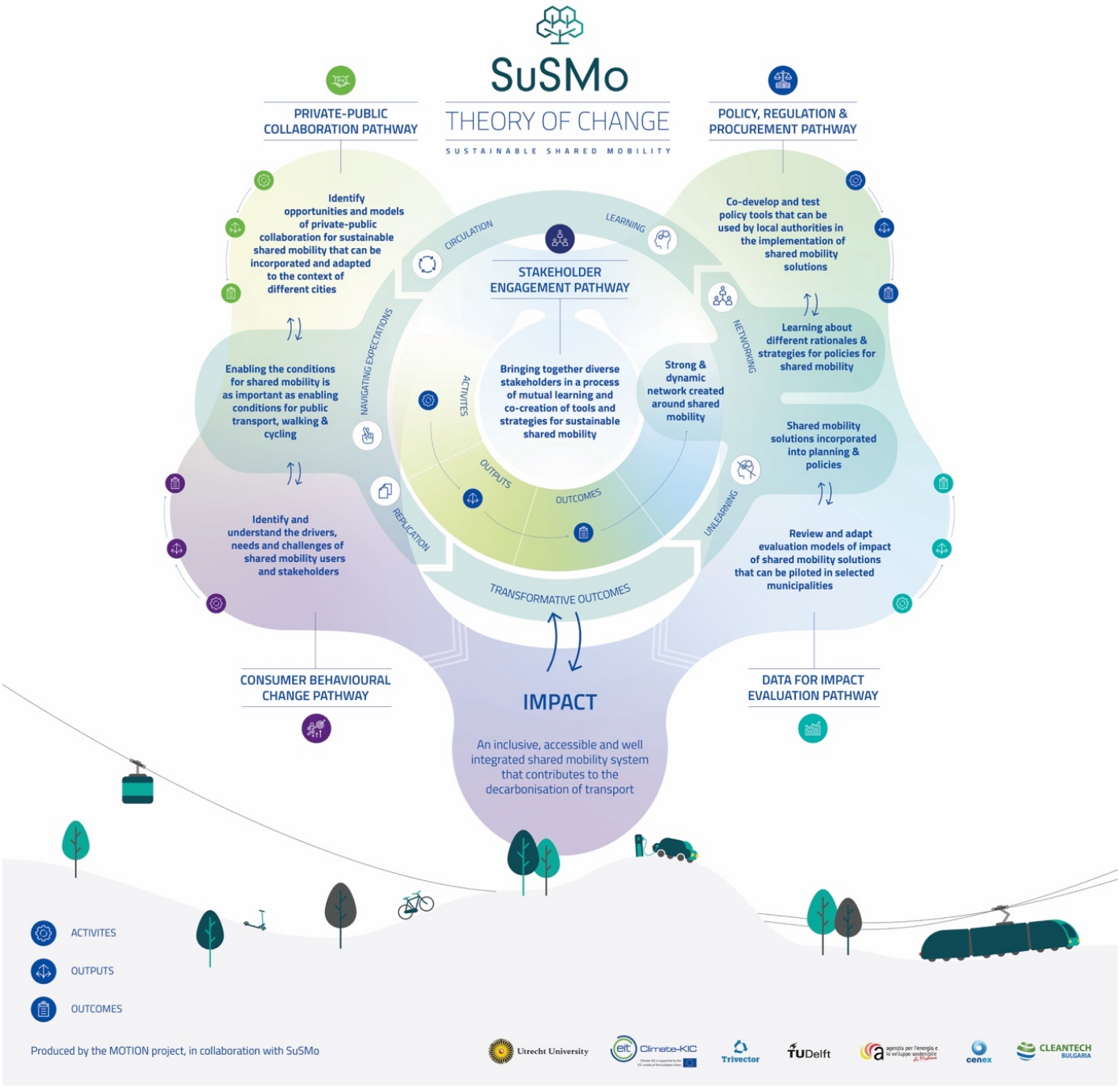

Figure 10. SuSMo's final version of Theory of Change

3.2 Developing indicators for pathways of change in SUSMO

A key outcome from Modules 1 and 2 was the selection, by the SuSMo team, of the transformative outcomes that are relevant for the project. Workshop 2 initially focused on the contextualization of the five SuSMo change pathways in relation to six transformative outcomes selected by the MOTION team, namely: learning, networking, expectations, circulation, niche-regime interactions and unlearning. Based on the results of this exercise, the outcome "niche-regime interactions" was removed as it seemed not to be highly relevant to SuSMo's current activities. Another important choice, by the SuSMo team, was to group "learning" and "unlearning", as they understood that, given the aims of the SuSMo project, unlearning was a prerequisite for learning. It is also important to note that SuSMo devotes one pathway to evaluation (data for impact evaluation of shared mobility) of the impact of shared mobility intervention on various dimensions of the system (environmental, access, quality, etc.). It was therefore important for the MEL element supported by MOTION to address more the procedural aspects of SuSMo. Therefore, our proposal focused on the adoption, update and adaptation of the evaluation tool by SuSMo partners and other actors within their network.

So far, SUSMO has developed dimensions of inquiry (not yet indicators) for three selected pathways: (i) Stakeholder Engagement pathway; (ii) Data for Impact Evaluation pathway; and (ii) Policy, Regulation and Procurement pathway. The dimensions as sketched so far refer to outcomes of the project. This is the result of two constraints/requirements from project partners: timing and project needs. With respect to timeline, one of the pathways of the MEL framework ((iii) data for impact evaluation) will be finished by April 2021; therefore, there is not much space to revise activities, but the emphasis should be on understanding the implementation phase. More in general, the efforts of year 2021 for SuSMo will focus on implementation of the tools and methods, and looking for mechanisms to ensure its sustainability (especially financial sustainability). Understanding the process of adoption is key to SuSMo strategy. In the next steps the specific indicators need to be further developed into a clear MEL proposal for SuSMo, taking into account the project needs and deadlines.

For the first interaction of Module 3 (MOTION - SuSMO workshop 3), the MOTION Team offered a tentative conceptual framework that illustrated the processes through which Transformative Outcomes would come about. The aim was to facilitate the understanding of Transformative Outcomes, key for identifying and prioritizing indicators for the MEL Framework. Considering the two pathways selected (PRP Pathway and Data for Impact Evaluation Pathway), and the fundamental role of the Stakeholder Engagement Pathway, the MOTION Team proposed to focus on five transformative outcomes: **networking**; **circulation** of knowledge, **learning** and **unlearning** (skills, routines, etc.); and changes in **expectations**, values and shared visions about shared mobility. Figure 10 underscores the importance to understand the quality of the SuSMo network of stakeholders, and raises some criteria for it: network size, diversity of stakeholders, links between stakeholders and strength of links, network outreach, and attachment of stakeholders to the network (see Table 8 for an explanation of these dimensions). Secondly, the Figure proposes a "motor" that connects circulation of knowledge to learning/unlearning and to change in expectation: a loop that leads to changing practices in shared mobility through the development, adoption and adaptation of tools.

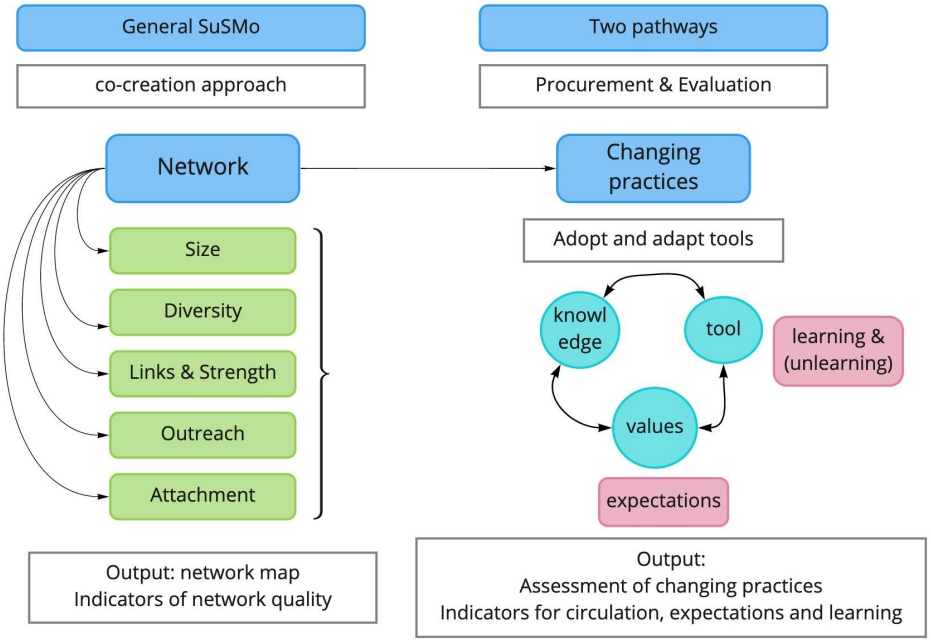

Figure 11. Conceptual framework of SuSMo's Monitoring, Evaluation and Learning (MEL) approach

The stakeholder engagement pathway is at the core of the ToC of SuSMo, and is common to all the other pathways. It focuses on co-creation of tools and methods for sustainable shared mobility, mutual learning and building a community of practice that can be understood as a network of shared mobility. For analysis purposes, we focused on different dimensions of networking (which relate to various TOs) to understand the evolution of this pathway.

The other two pathways (Data for Impact Evaluation & Policy, Regulation and Procurement) were chosen because they relate to a similar process, which is the development, adoption and adaptation of new tools and practices (see Figure 10). The adoption of new tools is transversal to SuSMo's theory of change, and to understand this specific process we used Shove's theory of social practices. This theory understands the changes in practices as an interplay between material elements (guides, data, etc), knowledge (capacities, methods, etc.) and meaning (values, expectations). We think this can co-relate to transformative outcomes of circulation, learning & unlearning (which the participants saw as highly connected) and expectations, as explained in the following figure. The framework was developed by the MOTION team.

To explore the different dimensions of the MEL framework, the MOTION team prepared a Matrix to be completed for each of the three selected pathways. The matrix was composed of the following elements (Figure 4 provides an example for the Data for Impact Evaluation pathway):

1. Description of the current state of the pathway;
2. Attributes of selected dimensions for each of the pathways
3. Two separate rankings of each of these dimensions based on feasibility and relevance (using an online polling tool)

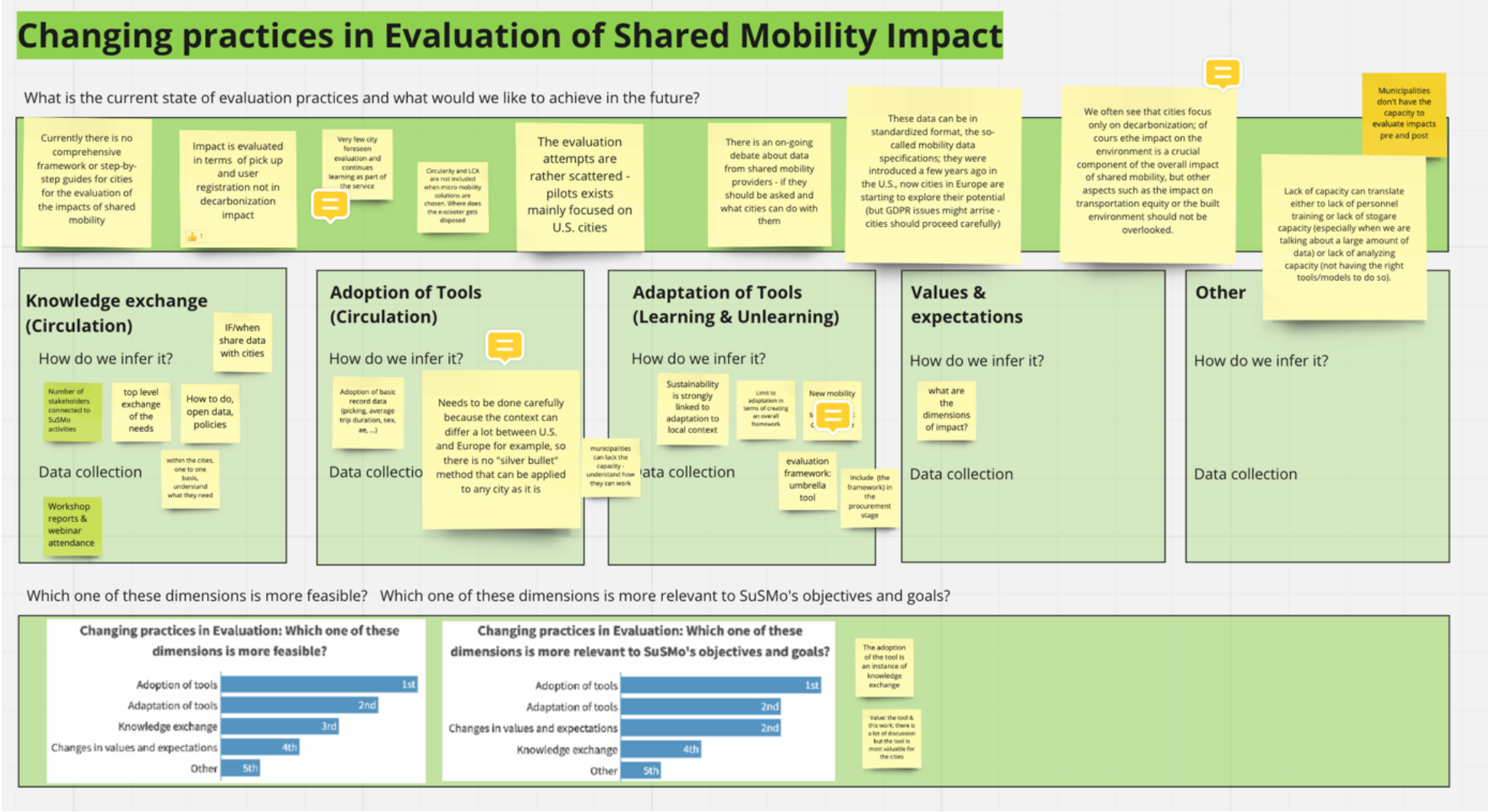

Figure 12 Matrix for the identification of indicators for SUSMO's Data for Impact Evaluation pathway

This matrix was completed for each of the three pathways, the results are described in the following section. The discussion of these elements by the SuSMo Team, guided by the MOTION Team, is supposed to trigger reflexivity and represents an important aspect of the formative evaluation approach being developed for SuSMo. It is however important to note that only 3 SuSMo team members participated in this part of the workshop, so any actions resulting from the analysis are still to be discussed with the rest of the team.

3.2.1 Stakeholder engagement pathway

Stakeholder engagement is the most important process in SuSMo: it is from the stakeholder engagement pathway that the other pathways develop. By means of stakeholder engagement, the project seeks to identify key trends related to shared mobility, and to understand (and align) expectations and visions about them. It further seeks to promote stakeholder interaction and exchange of experiences. Thus, stakeholder engagement also allows for the identification of shared needs, while giving attention to the different contexts (cities) where shared mobility solutions are deployed.

When describing the current state of this pathway, the participants mentioned that the network seems to be already diverse, as it is composed of sub-networks from European cities, which include municipal officers, citizen associations, the EIT Climate-KIC community, consultants and experts and shared mobility operators. SuSMo is currently exploring potential synergies, linkages and possibilities for collaboration with the European network POLIS and the Shared-Use Mobility Centre in the U.S., thus increasing the international outreach of the network. They also mentioned the need to consider the "micro-networks" within the larger networks that can be found at local scale. Participants discussed each of the proposed dimensions for the stakeholder engagement pathway (Table 8) :

Table 8. Specification of dimensions for the stakeholders engagement pathway. Columns 3 and 4 reflect the suggestions of the participants of workshop 3. Column 2 was added by the authors for explanatory purposes.

Dimension	Explanation	How can it be inferred?	Data collection
Size of the network	It refers to the size (as in number of members) of a given network and its associated networks	Number of stakeholders connected to SuSMo activities Different levels of engagement of these stakeholders (municipalities and mobility agencies, private operators, others)	Workshops reports & webinar attendance Calls and day to day strategy sharing
Diversity of the network	It refers to the degree to which members of a network differ in several dimensions (geography, private or public actor, socio-technical system they operate, etc.)	Diverse knowledge Geographical diversity Different socio-ecosystems (within EU and extra EU)	Geographical coverage of the stakeholders
Strength of ties within the network	It refers to the type and frequency of exchange between two nodes in a network.	How often they collaborate Alignment of strategies Types of links of collaboration (work within each pathway)	
Outreach	It refers to the ability of an actor or node within a network to reach other actors or nodes, being these in adjacent networks or beyond.	Adjacent networks Market size The Doers – officers, municipalities and operators People that can make decisions and influence delivery	Subscription to newsletter
Attachment	It refers to the resilience of ties within a network; that is, what makes an actor to remain part of a network in the long run.	Reasons and incentives to stay in the network Without any ego attached to that Workshop might strengthen these connections	Tools as nodes of the network

Participants ranked the different dimensions in terms of feasibility (of collecting evidence) and relevance (for monitoring and evaluation):

- **Feasibility**: Size > Diversity> Outreach > Links & strength > Attachment
- **Relevance**: Attachment > Diversity > Links & strength > Outreach > Size

The result points to a trade-off between feasibility and relevance, a challenge that the MOTION research team will have to take into account when designing the MEL framework.

3.3.2 Changing practices in PRP (Policy, Regulation & Procurement) pathway

This pathway relates to the implementation of new methods and tools to incorporate shared mobility solutions into transport planning through procurement and other policy planning instances, relevant to local governments (city level). This pathway will support the testing and implementation of these new methods and at least one municipality in Europe, and from there, promote cross-learning and adoption in partner cities.

When describing the current state of the pathway the participants mentioned how shared mobility is not currently part of the procurement process and overall, there is a disconnection between transport policy and shared mobility. They mentioned that there is enthusiasm about sustainable, low carbon shared mobility solutions, but not much clarity on how to implement it. They see an opportunity for triple helix types of partnership and innovation, but there is yet not clarity on how to move from experimentation to adoption of and long-term operation of shared mobility systems. Participants discussed the different dimensions for monitoring of this pathway (Table 9) and ranked them in terms of feasibility and relevance.

Table 9. Description of dimensions for the PRP pathway. Column 2 was added by the authors for clarity. Column 3 reflects the contributions of participants of workshop 3. Column 2 relates each dimension to the specific Transformative Outcomes. For this pathway, there were no specific suggestions about data collection methods.

Dimension	Explanation	How do we infer it?	Transformative Outcomes
Knowledge exchange	It refers to the exchange of information (technical, organizational, information about implementation, etc) between two or more partners of SuSMo	Partners exchange experience with each other Share documents, webinars, best practices Involving many beneficiaries; youth and migrants and let them evaluate it Increased interest and request to share knowledge	Circulation
Adoption of Tools	It refers to the process of incorporating a tool or a set of tools developed by the SuSMo project l into the shared mobility framework and practices of an organization partner to SuSMo	Diffusion of the tools and actual use In certain cases (regulation) it may require changes of (by) ways or new programmes Open data project to promote new ideas (hackathons) and new business Evidence of trial and error Unlearning classical transport model approach	Circulation and Learning
Adaptation of Tools	It refers to the process of reviewing, reflecting on and changing the consideration and parameters of a tool	Modification of the tool to specific urban context Reflection about the importance of context; for example, in a webinar	Learning and Unlearning

	developed by the SuSMo projects, so it can fit better the needs of a given organization	Create a wiki to continuously update Adopting new transport model evaluation matrix	
Values and expectations	It refers to changes in the beliefs, shared visions and concerns about the future, of partners of the SuSMo project as a result of the engagement with the project	Changes in attitudes, changes in opinions More conscious awareness of incumbent pathway and conflict with nice Accepting that trying/possibility of failure	Expectation Dynamics
Other	Other aspects relevant to this pathway mentioned by the participants	Is there room for failures? Partners telling about their cases and experiments Mobilize the network to show experience of learning Shows that the network is strong Without ego: there will be other tools Change that micromobility is seen as "furniture" and not part of urban design	Learning and Unlearning Expectation Dynamics

Ranking:

- **Feasibility**: Adoption > Knowledge exchange > Adaptation > Changes in values and expectations
- **Relevance**: Changes in values and expectations > Adoption > Knowledge exchange > Adaptation

The results again point to the potential trade-off between feasibility and relevance for the PRP pathway indicators, which creates challenges for the MEL phase

3.3.3 Changing practices in Data for Evaluation pathway

This pathway responds to the lack of holistic frameworks to evaluate the impacts of shared mobility in various dimensions, from carbon emissions, transport equity, built infrastructure, usability, etc. This in turn results in impact being evaluated in terms of user adoption, but not in reference to decarbonization, impact on transportation equity or the built environment. Therefore, very few cities see the evaluation of shared mobility as part of a continuous learning process that could improve the transportation system. Furthermore, the current models do not address issues of circularity or Life-Cycle Analysis (LCA). One of the key debates at the moment relates to the use of data for shared mobility providers, the data can be structured in a standardized format (mobility data specifications) which has been implemented in the US but only recently in Europe. Here, General Data Protection Regulation (GDPR) might be an issue when implementing this data framework, as well as the (lack of) capacity and personnel at the municipal level, as well as storage capacity, to deal with this type of data and evaluation models. Table 10 presents the results of participants' discussion of the different dimensions for monitoring of this pathway (Table 10), which were ranked in terms of feasibility and relevance.

Table 10. Description of dimensions for the Data for Evaluation pathway. Data collection column is not included since there was no information provided by the participants

Dimension	Explanation	How do we infer it?	Transformative Outcomes
Knowledge exchange	It refers to the exchange of information (technical, organizational, information about implementation, etc) between two or more partners of SuSMo	Number of stakeholders connected to SuSMo activities Top level exchange of the needs How to do open data polities IF/when share data with cities Within the cities, one to one basis, understand what they need	Circulation
Adoption of Tools	It refers to the process of incorporating a tool or a set of tools developed by the SuSMo project l into the shared mobility framework and practices of an organization partner to SuSMo	Adoption of basic record data (picking, average trip duration, sex, age…) Needs to be done carefully because the context can differ a lot between U.S. and Europe for example, so there is no "silver bullet" method that can be applied to any city as it is Adoption of standard mobility data framework	Circulation and Learning
Adaptation of Tools	It refers to the process of reviewing, reflecting on and changing the consideration and parameters of a tool developed by the SuSMo projects, so it can fit better the needs of a given organization	Sustainability is strongly linked to adaptation to local context municipalities can lack the capacity - understand how they can work Limit to adaptation in terms of creating an overall framework New mobility data specification: open source evaluation framework: umbrella tool Include (the framework) in the procurement stage	Learning and Unlearning
Values and expectations	It refers to changes in the beliefs, shared visions and concerns about the future, of partners of the SuSMo project as a result of the engagement with the project	(This dimension was not completed by the participants due to time constraints)	Expectation Dynamics

Ranking:

- **Feasibility**: Adoption > Adaptation > Knowledge exchange > Changes in values and expectations
- **Relevance**: Adoption > Adaptation > Changes in values and expectations > Knowledge exchange

In the case of Data for Evaluation, the results indicate more congruence between feasibility and relevance of indicators. However, it must be noted that the low number of participants make these results (i.e. from all rankings in the SuSMo approach) only indicative, and the MOTION research team will treat them with care when designing the MEL framework.

For these two last pathways, the method that will be proposed for the MEL phase is Learning Histories. This is because we expect that the number of cases of implementation of these two tools will be limited and during a specific period of time. Therefore, it is possible to develop specific learning histories for each of the implementations of the tools.

3.3 Reflections and concluding remarks

As a result of the work Theory of Change and MEL work conducted with SuSMo in 2020 we can provide the following reflections

(i) In order to work effectively with transformative outcomes, these need to be embedded and aligned with the project goals (design and implementation) from early on.

A large part of the process of working with SuSMo in 2020 has been the development of their Theory of Change. In this process, we have embedded the transformative outcomes from the start, and these have evolved as our mutual understanding of the project improves. As the SuSMo team was able to better understand the connections between their different pathways and their contribution to systems transformation, we were able to refine the transformative outcomes to be used in the MEL framework. In that respect, a key learning is that the transformative outcomes cannot be easily used as a stand-alone device, nor as a checkpoint for system transformation. In fact, our experience indicates that they are only useful when connected to a contextual understanding of systems transformation. This has implications for the transfer and scaling up of the methodology, where training, mentoring and appropriate tools to understand how to use transformative outcomes are essential.

The need to work with transformative outcomes from the start means that the framework needs to be communicable to the partners early on as well, so that they can develop an understanding of it that can be related to the experimental project. Similar to SATURN, the experience with SuSMo showed that TOs are not straightforward concepts. Nor for partners with basic knowledge of transition concepts (such as the Multi-Level Perspective) and even less so for those that are not familiar with socio-technical transitions theory. The development of tools that "translate" the transformative outcomes to concrete and relatable examples is a necessity for future projects that will employ the experimental methodology being developed by MOTION.

(ii) The transformative outcomes as useful components of a MEL framework for transformative change and need to be adaptable and adapted to the framework, understanding and needs of the project

In line with the previous point, we learned that in order to embed the transformative outcomes in an initiative, they need to be adapted (selected, combined) according to the characteristics and ambitions of each case. In our case, for example, the SuSMo team considered that learning and unlearning are outcomes that go together if we think from the perspective of the project plan and the activities oriented toward the implementation of tools by local governments.

In comparison to the SATURN project, we were less strict about the three overarching processes that frame the transformative outcomes (niche building, niche expansion, regime destabilization). We believe this is because SuSMo activities are already not just occurring at the niche level, and shared mobility actors encompass both niche and regime actors. In that sense, this is not a typical "niche construction" project but rather one that already looks at adapting and changing the practices of the regime.

(iii) While our approach makes strong emphasis on the formative nature of the evaluation conducted, there is always an element of accountability that needs to be acknowledged and aligned in the MEL activities, including considerations about the type of indicators and the way in which these are going to be delivered.

The approach that we take in the MOTION project is formative and we believe this a key element in promoting reflexivity and therefore supporting systems transformation. We have emphasized this consistently in our work with SuSMo, reiterating that the purpose of an evaluation (monitoring) is to understand how a project is doing and reformulating some elements if needed, always with the main goal of learning about the project itself and system change.

Nevertheless, it is important to recognize that the results of the MEL process, such as narratives, learning histories, visualizations, indicators and others, play a communication function and therefore can be used as an accountability tool for partners of a project. Showing coherence within a project, that it is going in the right direction, that it is capable of learning and adopting key lessons – these are elements of accountability to partners and funders that need to be acknowledged. In this sense, the approach developed by MOTION can provide partners with the tools for accountability procedures.

4 Monitoring, Evaluation and Learning (MEL) Module in ACTonNBS

4.1 Introduction

For ACT on NBS, matched to INGENIO (CSIC-UPV), the phase for the development of indicators has not started yet. It will form part of the co-design of the MEL phase, which will start during December 2020 (Table 11 depicts previous steps). The interactions between INGENIO and ACT on NBS are leaving now the second stage of MOTION's modular approach (Module 2, see Fig. 13 below) to the development of the formative evaluation methodology. In the case of ACT on NBS, the latter is centred around three primary means: (1) the collaborative revision and development of ACT on NBS Theory of Change, with a specific focus on its outcomes and their relationship with the tools and activities deployed during the project; (2) the use of the Transformative Outcomes typology to identify and reflect on how to leverage and amplify the identified ToC's outcomes, so that they can contribute to the achievement of ACT on NBS long-term impacts; (3) the promotion of a formative understanding of evaluation that can help ACT on NBS partners to increase their strategic thinking towards transformation through learning and reflexive processes.

4.2 Overview of work with ACT on NBS

INGENIO's approach is participatory and consists of the following methods:

- Document analysis.
- Semi-structured interviews.
- Participant observation in workshops, aided by an online whiteboard platform.
- Qualitative content analysis.
- Online questionnaires.

As with AIT, INGENIO's approach is guided by Molas-Gallart et al. (2020) six principles for the evaluation of transformative innovation policy. For INGENIO, principle 5 guides the thinking about how ACT on NBS (project level) can inform the development of an innovation ecosystem for the upscaling and institutionalisation of Nature Based Solutions in urban planning at a European scale.

Table 18: Sequence of research steps and related modules in the ACTonNBS collaboration

ACTION	PARTICIPANTS	AIMS & ACTIVITIES	METHODS
Starting situation research (Feb 2020)	Research team	• Identify key concerns which could affect the interactions	Preliminary exploration of project's material and context. Qualitative content analysis.
Interviews (Mar-Apr 2020)	ACT on NBS representatives	This step was aimed at trust building, introducing MOTION and identifying ACT on NBS partners prior knowledge about theoretical concepts, and documenting lessons learned by partners. • Semi-structured interviews to representatives of the five work packages conducted with a questionnaire developed by the INGENIO team, which included the MOTION description.	Semi-structured interviews.
Document Analysis (Mar-Apr 2020)	Research team	• Document analysis based on sources provided by the ACT on NBS team.	Document analysis
Eliciting Theory of Change (April 2020)	Research team	This step was aimed at transforming and synthesizing ACT on NBS ToCs (one per Work Package) into a conceptual map, producing a visual ToC that allowed to rework and co-design next interactions, aligning their internal logic with transitions theory (specifically the TOs) for Module 2, starting thinking in terms of pathways, and establishing activities, outputs and outcomes for being evaluated in Module 3. • Participatory workshop aided by a Miro board, 5 steps approach. • Grouping of the elements of the ToCs by three actor types identified during the previous analysis step.	Preparatory work for participatory workshop

Workshop 1 (May 18 2020)	ACT on NBS representatives	This step was aimed at putting in context MOTION methodology, checking expectations from participants, co-designing the ToC (1st version) based on previous steps, agreeing on objectives between both parts, describing the principles of formative evaluation. • Introduction of MOTION's approach and expectations from participants. • Presentation and discussion of ToC (elicited by MOTION). • Participants were divided in 2 groups for working on ToC specifications based on previous analysis step allowing a balanced representation of all work packages.	Participatory workshop
Workshop 2 (July 3 2020)	ACT on NBS representatives	This step was aimed at assessing the usefulness of the TOs typology for generating new systemic-level insights and ideas to develop ACT on NBS ToC, and identifying a set of relevant TOs for the MEL phase. • Review TOs theory. • Classify OUTCOMES according TOs. Matching. • Discussion with questions: (i) the link between outcomes and TOs; (ii) the usefulness of the classification; (iii) prioritization.	Participatory workshop
Follow-up interviews (July-August 2020)	ACT on NBS representatives	This step was aimed at revisiting the resulting classification of ACT on NBS outcomes using TOs from Workshop 2 (participants that had not participated were offered the opportunity to perform the exercise prior to the interview), gathering information about the outcomes that ACT on NBS was currently monitoring and others to be prioritised for monitoring, reflecting together about how INGENIO could provide support during the MEL Phase.	Semi-structured interviews.

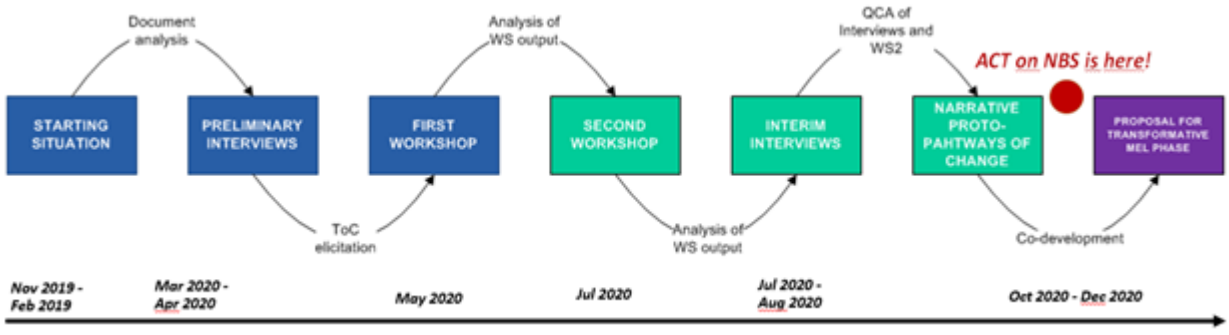

Figure 13 MOTION's modular approach to the development of the formative evaluation methodology as applied to ACT on NBS.

So far, this work has led to a narrative conveying three complementary moving parts from ACT on NBS ToC, synthesising how the project pursues different portfolios of activities and outcomes to induce the upscaling of NBS in cities, in an integrated way. Those moving parts are reinterpreted as three proto-pathways of change: learning pathway, circulation and replication pathway, and institutionalisation pathway. Figure 14 illustrates a preliminary selection of outcomes. The account also brings challenges and constraints found along the way, as well as insights that can help the project to shift trajectory and reorganise where necessary to reinvigorate ACT on NBS transformative potential. The current plan is to further co-develop the narrative and use it to inform the co-design of a MEL phase to be implemented in the next and last stage of ACT on NBS.

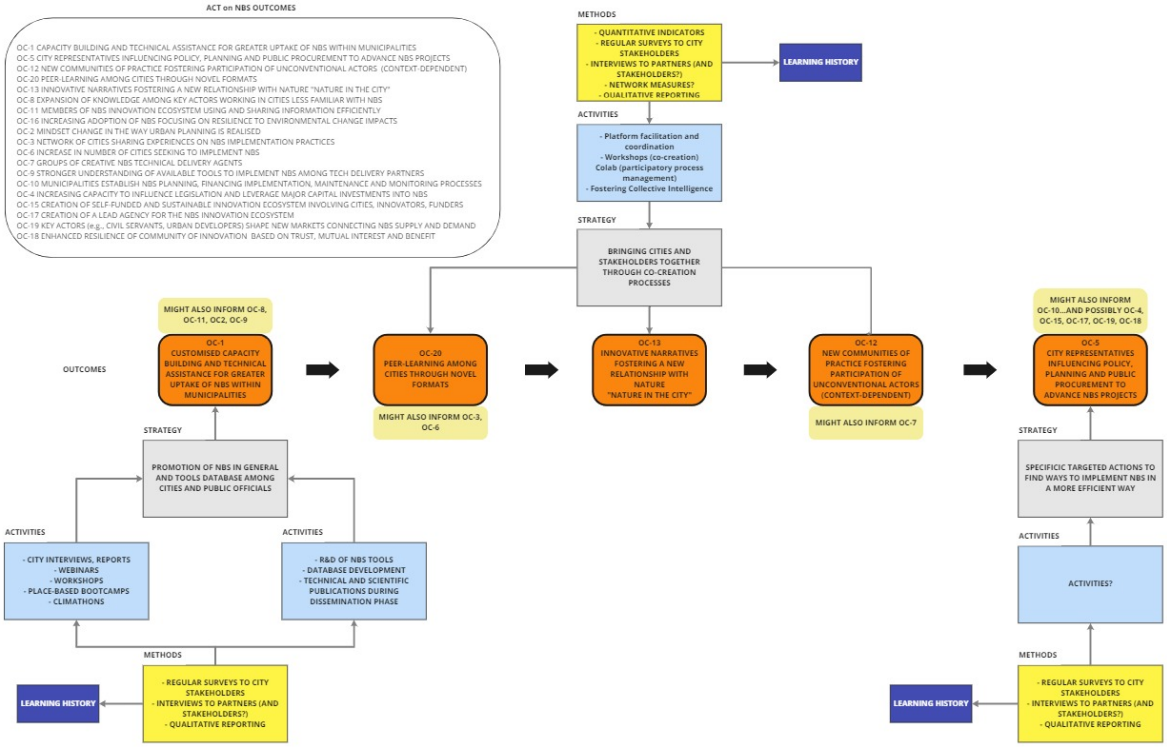

Figure 14 Conceptual map presenting a preliminary selection of outcomes as a basis for the future co-creation work towards a transformative MEL phase for ACT on NBS

4.3 Reflections and concluding remarks

ACT on NBS partners generally agree that, from now onwards, the project must be precise and targeted, avoiding the opening of too many different activities and outcomes to be accomplished. The Transformative Outcomes can be used retroactively to support decision making on how to narrow down and map a clear set of outcomes and the routes to their achievement. This calls for a joint exercise aimed at identifying productive ways for synthesising and intensifying areas that are recurrently mentioned in advisory board meetings, and in which ACT on NBS has generally shown good performance *"aligned with what cities have asked for"* in the project's events. At this point of

development and landscape, it is important for ACT on NBS to take stock of advancements and accomplishments in a compelling and consistent way, rather than further diversifying work areas. During the MEL phase, a process of thinking and discovery supported by MOTION's formative evaluation function might be devised around the co-development of a mixed methods approach to enable the monitoring of ACT on NBS activities and outcomes.

The main aim of this workstream will be the administration of regular surveys to city stakeholders (e.g. every six months) to learn more about their areas of interest, where are the gaps in relationship with other activities, projects and programs in the NBS topic area, or show transformative changes. MOTION will provide a draft survey including questions related to the conceptual and monitoring elements, to be reviewed by ACT on NBS partners for further development and piloting, including questions to fulfil their requirements. The first stage of the MEL phase will include the selection and description the TOs to be monitored, and their "operationalisation" through the definition of indicators, or questionnaire instruments to be used in such monitoring. The need to understand what is changing when an ACT on NBS activity occurs and to what level does that change contribute to overall transformation remains and should be openly discussed. Innovative quantitative measures are challenging, though. For example, ACT on NBS is not currently monitoring NBS projects and planning through metrics, as available metrics refer to different elements, levels and scales than those that are of relevance to ACT on NBS. As compared to other activities funded for instance through the H2020 Programme, and the normal work of cities, ACT on NBS is still concerned with small scale interventions. This a reason why the project focus is on "connecting". In a broad perspective, ACT on NBS wants to demonstrate there is 100% use of NBS in decision making in urban development and so on. But it is hard to measure how much of that is as a result of us and how much happens anyway.

5 General discussion and conclusion

Opportunities and Constraints from an outward and inward-Looking MEL perspective:

The different research approaches across the projects demonstrate the possibility of pursuing a more inward looking as well as a more outward looking formative evaluation process that will have an influence on the indicators that are developed. For example, SATURN's approach to evaluating "Circulating" is more inward looking and aims to reflect on knowledge transfer and synthesis across the different niches with which the project works and to identify ways in which this can be facilitated through the project itself. In other instances, the MEL steps taken thus far and those that have been outlined for the future are oriented towards an outside perspective looking at the relation and interaction with the system that it is embedded. For example, the SATURN indicators that relate to "Upscaling" clearly reflect this character. We can attribute these different evaluation perspectives to the nature of the TOs itself (i.e. Upscaling is per definition a process that addresses system elements beyond the project). However, this seems to be also an implicit strategic choice in focus that is an implicit negotiation that emerges through the interactions with the project partners and based on their needs and interests. The clearest example of this is the approach taken by ACTonNBS where survey to external stakeholders will be conducted with the aim of facilitating learning about contextual changes

to the project. Clearly, an important aspect that can support project adaptations or focus of activities in relation to changes in the external environment.

Overall, we regard this bi-directionality of monitoring, evaluation and learning (i.e. more inward vs more outward looking) a strength that the TO framework brings to a MEL framework because it provides flexibility about what it is that projects want or need to learn about. We think that making the combination of these perspective more explicit can enable learning about internal project dynamics and linking this up with learning about the system with which the project interacts. This is particularly attractive for considering and incorporating a co-evolutionary perspective in MEL that is arguably important for transformative innovation policy.

Additionally, this opens up an avenue to address the issue of accountability in MEL that cannot be neglected when it comes to demonstrating the effectiveness and value of TIP projects. We don't see this as a contradiction to the formative character of the MEL steps taken thus far. Rather, it could provide a complementary benefit to future users of the methodology. However, such an outward oriented application poses a difficulty in terms of developing and using indicators that are within the capacity of the project to use. While indicators related to an inward-looking perspective are more project related and therefore easier for a project to apply in their MEL activities, indicators that relate to the outside perspective are perhaps more difficulty for the project partners to use or would require considerably more effort for MEL. While the ACTonNBS collaboration exemplifies how technical assistance can help in such an effort, the use of system-oriented indicators and the additional resources and capacities required make them better situated for MEL at program level.

Importance of sequencing research steps for capacity building & meaningful MEL with transformative change concepts

All project collaborations described in this deliverable followed a sequential research approach that was guided by the modules of MOTION (Figure 1). The development of a TOC (Module 1) and the linking with TO concepts (Module 2) are important from a MEL perspective (Module 3) because the interactions that preceded module 3 lay important groundwork for effective MEL with transformative change concepts. It was through these steps that participants in each of the projects became familiar with the transformative outcomes as well as the benefits of formative evaluation more generally. It can be argued that without these steps, it would have been very difficult for participants to meaningfully engage with the transformative change concepts in the MEL phase and there would have been less interest to do so. Taken together, this would forestall learning effects as MOTION continues to proceed with the next steps in the MEL module. This is particularly the case when considering the resource intensity of formative MEL and that it has not been part of the project design from the outset.

Additionally, the important role of a dedicated process facilitator and analysist became evident in working with the different projects. This was fulfilled by the MOTION team with the aim of building capacities amongst project participants to conduct formative MEL with TOs independently. A deeper understanding of the theoretical building blocks, the requirements for quality workshop facilitation and analytical capacities are skills and attributes that need to be strengthened amongst projects partners in 2021, or anyone who wants to use this methodology in the future, in order to apply it in a meaningful way.

Selection and prioritisation of TOs

The sequencing of research steps described above points to another important aspects when working with TOs in MEL. This concerns the prioritisation or purposeful selection of TOs that should precede a more in-depth formative evaluation. While we acknowledge that this reduces the breadth of reflection opportunities, we maintain that this is an important practical aspect when wanting to develop insights for adaptations to a project or adaptations to a portfolio of projects "along the way". Resource constraints, strengths and weaknesses, project structure or strategic intent of a project are all reasons that warrant such a prioritisation of TOs. The same can be argued for a program. Here, a prioritisation of the TOs that a portfolio of projects addresses collectively could also be required. In this case, it will be dependent on the strategic direction of a program (e.g. the development of niches versus the disruption of regimes) and the translation of this strategy into complementary outcomes of a constellation of projects.

Conceptual ambiguities of TOs

Two conceptual questions kept on re-emerging when working with the TOs. First, at several times it was questioned whether the TOs relates to a process or an outcome as the name would suggest. This ambiguity is also reflected in the latest thesis of the TOs by Ghosh et al. (2020) in which the authors also describe them as an outcome and process using the terms interchangeably. For the purposes of this research, we treated them as both, which is also reflected in the indicators developed for e.g. TO "Circulation". Some of them are clear process indicators, while others are outcome indicators. This conceptual ambiguity can cause confusion, or least create a difficulty, when the concepts are used by someone less versed with transformative change theory. As such, we see this not only as a semantic issue but an important conceptual issue to be addressed in order to provide clarity for practitioners in using the concepts and the methodology – a precondition for wider uptake and use.

The second question that re-emerged at different times is also a conceptual one and pertains to the boundaries of a Transformative Outcome. At several times we were questioning where the conceptual boundaries of one TO start and where they end (i.e. can you achieve "Upscaling" without "Replicating" in the context of a cross-European project structure?). At other times we saw core elements of one TO (e.g. "Networking") as a critical element or driver of another TO (e.g. "Upscaling"). While this is not an issue when using these concepts in a workshop setting where processes of deliberation, reflection and learning take centre stage, it does pose a difficulty when developing indicators that are clear, measurable and attributable to the Transformative Outcomes that they are supposed to relate to.

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