

Deliverable 5.1: Theory of Change

Deep Demonstration of a Circular, Regenerative and Low-Carbon Economy in Slovenia: Implementation of Phase 2

Work Package 2: Sensemaking and Actionable Intelligence

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climate-kic.org

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1. Theory of Change approach

1.1 What is a Theory of Change?

Theory of Change (TOC), alternatively termed as 'impact logic', is a term used to describe a conceptual model for explaining how change is expected to happen and how a particular initiative contributes to impact. A Theory of Change usually comprises a diagram or visual map that includes the specified changes and how they are directly or indirectly connected to each other and the activities of the initiative. This visual representation is set out in a logical way that shows the causal connections between each expected change and the preconditions that need to be in place before a change occurs. Development of theories of change for systems level change is more complicated than for a single project or programme, as they encompass different types of interventions, and involve multiple organisations and actor groups working across different context. Furthermore, it is difficult to predict upfront exactly how the change will happen, as many of the changes are interconnected in complex, nonlinear ways. Hence, it is necessary to go beyond classic linear logic models that have been used in the past for policies, programmes, and projects, particularly in the public sector.

A Theory of Change is therefore a theory, a product, and a process at the same time. It is a theory as it is based on assumptions about how the changes will unfold; it is a product as the output is a diagram illustrating how the change is expected to unfold with metrics attached to it; it is a process of articulating the way we think about a current problem, the long term change we seek, and what needs to happen for that change to come about. It is also a continual reflection on whether, how and why the change is occurring, hence why it is not static, and the product will change overtime.

1.2 Why develop a Theory of Change?

Developing a theory of change is useful for creating a shared understanding of how change is expected to happen, and how the different actions and actors are connected and collectively contribute to achieving desired impact goals. As such it can serve as both a communications tool and a framework for tracking progress through monitoring and evaluation. This helps to maintain a focus on the relevant outcomes and the evidence needed for learning and adaptation as the initiative develops over time. It is therefore a space for questioning and learning with hypotheses that we can test along the delivery of the project. At the same time, this approach can also help the Slovenian government with its visioning and action-planning processes, framing or reviewing its key strategic objectives, as well as build an effecting process to monitor, measure and learn from its progress towards circularity and climate neutrality overall.

As the Slovenian Deep Demonstration progresses, some changes will emerge that were not possible to predict up-front. Therefore, a process of continuous learning will be needed, and the initial theory of change model will have to be reviewed and adapted to reflect new knowledge and understanding as initiatives develop over time. In this way, the TOC can be seen as a living process of doing, reviewing, and updating in step with the nature and pace of change.

1.3 Essential elements and process steps

A fully developed Theory of Change (TOC) comprises:

- A diagram, or visual representation of how changes are expected to happen
- A narrative description that tells the story of change
- A list of assumptions associated with the change processes

A TOC is developed by first focusing on the intended impact and then working backward, defining the impact pathways that are a set of intended changes and making explicit the causal mechanisms between them. It describes how the proposed interventions are expected to produce the series of changes (early changes that can be observed as precursors to later changes) which are necessary to produce the key outcomes that will eventually lead to the desired long-term impacts to transition Slovenia to a circular economy.

Developing a TOC requires a shift away from day-to-day activities to focus on the changes that need to happen over time to achieve the ultimate impact. This means moving on from a focus on activities and outputs (the results of activities) to outcomes which are the desired changes for individuals or groups of people, institutions, policy, the environment, etc. It can take a concerted effort to successfully shift the focus from more easily measurable outputs to outcomes - which are harder to measure, are the result of many factors and not directly attributable to your actions alone.

The changes may also need to happen in sequence or concurrently, can be iterative, and may take longer than the term of the current strategic plan or work plan. Because it is difficult to pin down a highly precise timeline of change for a complex, systems-oriented initiative like the Slovenia Deep Demonstration, the temporal aspect was set out in phases of short-, mid- and long-term changes with the assumption that the progress and change processes underway will most likely continue until 2030.

Finally, the TOC also identifies and describes the main assumptions that stakeholders hold (ie. beliefs or mental models of why certain things happen, external risks and/or enablers, and preconditions for change that are outside of the programme scope) and that will affect whether and to what extent the desired changes, outcomes, or impacts will occur.

To develop a Theory of Change for the Slovenia Deep Demonstration, the EIT Climate-KIC team first prepared a draft based on their knowledge of the context of the project and organised a full-day workshop with multiple Slovenian stakeholders in October 2022. The TOC diagrams were then developed by impact pathway (or by actor as explained in the overall narrative in 2.1), following a step-by-step backward mapping process and using a set of key questions:

- What must be in place for this outcome to be achieved?
- What key changes do we want to see happening?
- What necessary and sufficient preconditions/requirements are needed to achieve it?
- What long-term, mid-term, short-term changes do we expect to see unfolding?
- What interventions could we include in the DD Portfolio of actions to influence these changes?
- What can we action in the next 6 to 12 months?
- What immediate effects can we expect from these interventions?

The Deep Demonstration initiative is complex with a lot of elements and simultaneous outcomes to include in the TOC. Therefore, we decided to separate the TOC into four impact pathways to facilitate

its understanding. Nevertheless, we still explored and mapped interactions between these pathways through a world café exercise where needs and the interconnections were identified.

2. Slovenia Deep Demonstration Theory of Change

2.1 Overall narrative

Slovenia wants to significantly reduce greenhouse gas emissions while having a resilient and prosperous society with enhanced wellbeing. Our current mindset, based on the ideas of growth, consumption and productivity, alongside increasing urbanisation, is putting pressure on our natural resources and overall ecosystems, and challenging our ability to reduce emissions that contribute to climate change.

The role of the circular economy is important for both climate mitigation and emissions reduction. To achieve the above vision, Slovenia aims to decarbonise its economy and transform its society by promoting local value creation and resilient transformation of all communities nationally, based on local needs, opportunities, and resources. As Slovenia is a small country, there are more opportunities to link national and local approaches to this transformation by combining top-down and bottom-up initiatives and working collaboratively with the four actor groups that are at the heart of this transformation: citizens, businesses, public sector and academic research. Policy, education and entrepreneurship are central and strongly interconnected in defining economic activities, shaping the choices, institutions and opportunities of a country's socio-economic system. In addition to these three areas, citizens provide social and political legitimacy and are both the driver and the ultimate beneficiary of the decisions made.

For this reason, the Slovenia Deep Demonstration's Theory of Change focuses on these four actor groups as focal areas of change. The public sector is the main actor driving changes in policy, investment and infrastructure to support this transformation; businesses include entrepreneurs but also SMEs and established companies, their needs and opportunities to adapt and innovate in this process; academic research represents both higher education and research institutions that drive and influence education, research and knowledge exchange in the country. Finally, this transformation would not be possible without citizens who constitute the identity and the social and political basis of the country. This is why each of these actors represents an impact pathway that - coordinated and intertwined with each other is required to ultimately achieve the desired impact. Following, these four impact pathways are described.

The first impact pathway relates to **citizens and communities**, representing all citizens, making choices every day about how to live, move and consume, and with whom they engage. Everyday behaviours reflect local conditions and culture which can lead to a greater change in social habits. Shifting citizens' consumption habits towards more sustainable lifestyles and create local value, and building communities that can scale these changes, is an essential step in this transformation. For this

to happen, we must first understand the needs of citizens and communities in order to create the right infrastructure, resources and incentives to drive change. This includes raising awareness, capability building and of course access to affordable circular solutions that create local value. By intervening in these areas, we expect to first observe changes in awareness of the benefits of more sustainable lifestyles, as well as the infrastructure and resources available to implement these changes. NGOs, schools and municipalities play a key role in driving these early changes. In the long term, this would lead to a change in habits in key areas such as food consumption, mobility and living environment, changing the general mindset, shifting away from 'cheap and fast', to 'long term and quality'.

To get citizens to transform their ways of living, we need a supply of sustainable products and services promoting sustainable behaviours. This leads us to the second impact pathway, which relates to **businesses** that are key players in establishing circular markets across industries and value chains, that can unlock longer-term change and contribute to a thriving sustainable economy that foster local value. For this change to take place in the country's economic matrix, multiple interventions are needed: education and awareness raising are a starting point, but so are concrete actions like the introduction of new rules such as standards and certification, new taxes on non-circular practices, compulsory circular procurement; alongside financial support for circular business models, new technologies that enable the transition and support in strategy and implementation. In the short term, education and awareness raising will lead businesses to rethink their business models based on citizens' needs and influence (i.e., sharing, repairing, no packaging, digitalisation). The introduction of new regulations will also make them review their business processes, expand industrial symbiosis practices to shorten their supply chain, and explore sustainable reporting, certifications and sustainable credit scores. The combination of all these interventions will lead to an increase in the number of circular jobs and the creation of new businesses dealing with local, secondary materials and waste. In the long run, businesses take full responsibility for their sustainable operations, make their footprint transparent, offer products that are designed to last long, services that support a sustainable lifestyle, and adapt their own ways of working to be fully flexible and sustainable.

The third impact pathway relates to the changes driven by the **public sector**. This is the key actor in designing and implementing the regulation, policy, public services and investments that enable circular practices at all levels. We expect that the Deep Demonstration's Policy Lab, will shift the current bureaucratic mindset into a truly innovative one, encouraging policy experimentation on complex circular challenges, driving collaboration across multiple Ministries and with other social actors such as citizens and research centres, as well as connecting to the broader EU context and member countries. Practical training programmes on circular thinking and systems innovation will be delivered to civil servants designing policies, alongside the implementation of policy impact assessment tools. In this way, we expect to have circular experts present in each ministry and an inter-ministerial working group innovating together on common policy challenges. Through knowledge sharing with other countries, Slovenia will start experimenting with policies aimed at behavioural change and upgrade current green criteria to shift public and private spending towards circular solutions. The combination of capacity building and policy experimentation, as well as the creation of communities of practice to learn about the policy impact, will lead to the integration of climate neutrality in most policies in Slovenia, making it an issue owned by both public institutions and citizens. We also expect that this public ownership will enable the implementation of a green governance model to assess transformational impacts in the economy. This will provide a sense of responsibility and empowerment that will lead to a shift in public (and private) spending towards sustainable solutions, representing a new investment paradigm and ultimately re-building trust in public institutions.

Capabilities and the need for relevant knowledge on how to enable the circular transition is a constant theme across the last three pathways already presented. Therefore, **academia and research** represent the fourth pathway, as building an interdisciplinary knowledge base that can address Slovenian circularity challenges is essential for the transformation. Knowledge on how to implement a circular transition must be mandatory in all disciplines and at all levels of education. The current 2030 resolutions for both Higher Education and Scientific research must be leveraged to not only learn about current actions and pilots that contribute to the transition but also to facilitate collaboration between these actors - through investing in people, infrastructure and management - to ultimately enable knowledge transfer. In the short term, we expect climate emergency to become a transversal dimension of curricula at all education levels, with higher education institutions influencing school systems. At the same time, Recovery and Resilience Funds pilots will start to scale and implement changes for the circular transition, accelerating knowledge exchange between education and research and the broader system (i.e., with policy makers, businesses, citizens). Academia and research cannot lead knowledge creation about the circular transition and the objective of climate neutrality without changing their own practices. Therefore, in the short term, universities will start to change the way they work, in order to be fully green down the line. We expect all degree programmes to incorporate the circular economy perspective as they add climate change micro-credentials to their curricula and increase the number of research projects in this area. We also expect a growth in research activities that can provide social and technological solutions and innovations to contribute to this transition and play a key role in strengthening evidence-based policy making.

The Deep Demonstration recognises that the system we seek to change - the entire Slovenian economy – is a complex system. Therefore, to activate the interventions identified in the different pathways, we will use a portfolio of interconnected interventions, to probe, test and learn from the different pathways, enabling us to understand the interactions between the different actors and the expected changes over time. We will focus on five key activation sectors: Built Environment, followed by Food and Agriculture, Mobility, Forest-Wood and Manufacturing. By taking a sectoral approach, we will learn more about the interconnections and feedback loops between these pathways. Nevertheless, current initiatives that are already contributing to local value creation through circular transition will also be considered in this programme.

Finally, the Deep Demonstration is underpinned by certain assumptions that will be tested throughout the programme and in dedicated sensemaking and learning activities.

- A key assumption is that there is political support and ownership for this circular transition alongside a strong willingness to collaborate on the part of stakeholders and openness to learn. Trust and constant information flow should also be in place to be successful.
- The capacity to deliver - both quantitatively and qualitatively – from the Slovenian government is a key requirement to fulfil the project goals, with limited staff turnover.
- Regulations will be an important driver of change (hence the focus on policy innovation in this theory of change) and EU policies and EU funds will enable the transition. EU regulations should not slow down Slovenia's progress and systemic funding (i.e., blended funds - national or EU level) must be available to support the development of innovative ideas and initiatives.
- In terms of content, the Deep Demonstration assumes that there is an established market for secondary raw materials that supports the transition to circular processes, and that data is available to monitor change and impact at all levels (business processes, but also policy innovation, citizen behaviour, etc.).

Dedicated sensemaking and learning activities will take place during the Deep Demonstration delivery to not only learn from the effects of our interventions but also to test these assumptions. The theory of change is a tool that is not static, but allows for continuous reflection on whether, how and why change is occurring and will consequently be adapted over time.

2.2 Visualisation

Overall Theory of Change

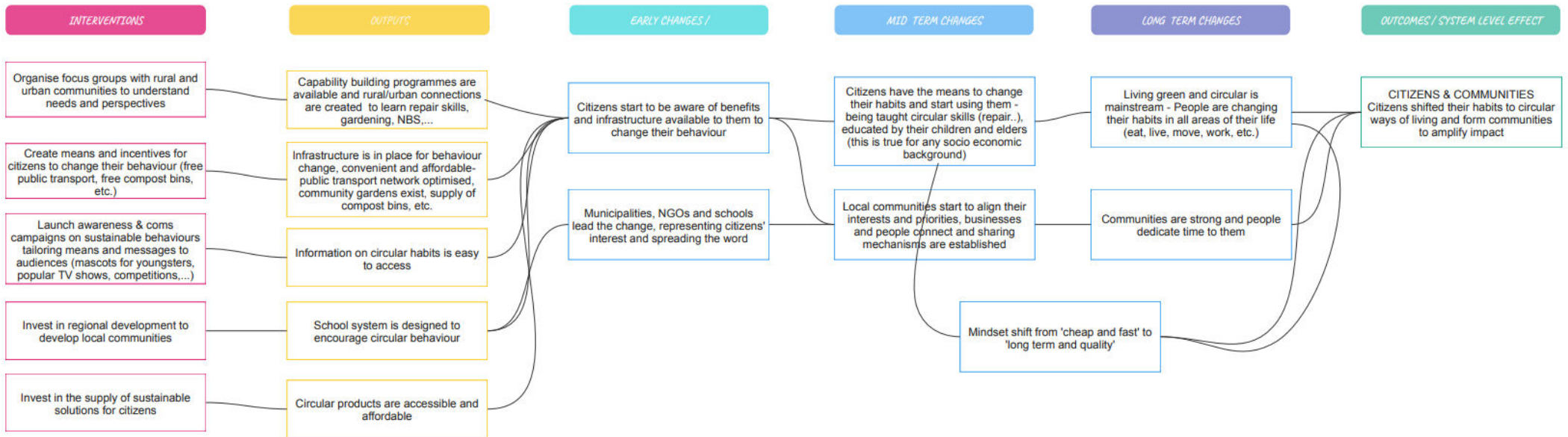
The theory of change has been designed during a face-to-face workshop in Ljubljana in October 2022 and subsequently revised with relevant stakeholders for each pathway: the municipalities of Ljubljana, Kranj and Velenja for the citizen pathway, CER and Spirit for the business pathway, further meetings with MJU for the public sector pathway and MiZS for the Academic research pathway.

We decided not to copy the visual here as it wouldn't be easy to read, therefore only the four impact pathways are represented in the sub-sections below.

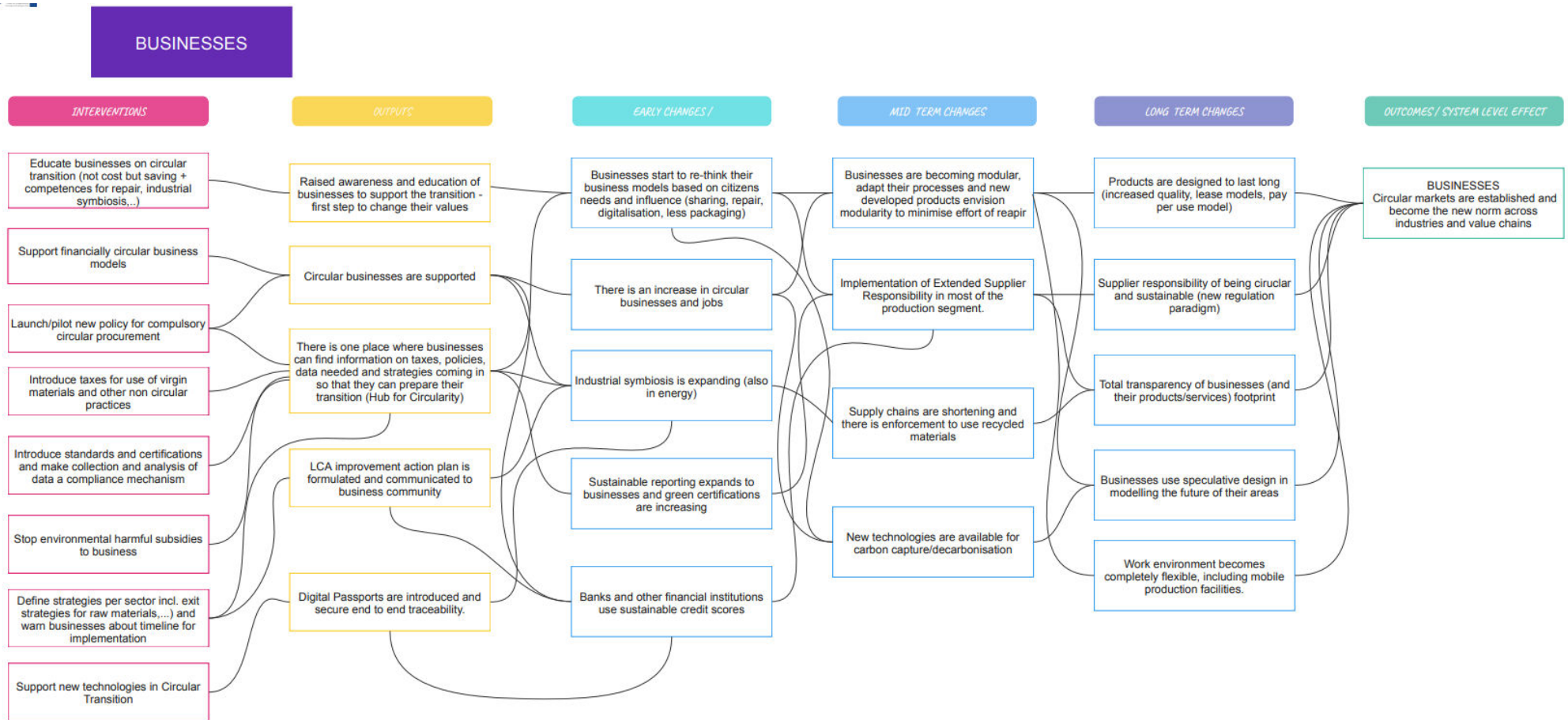


Citizens and Communities pathway

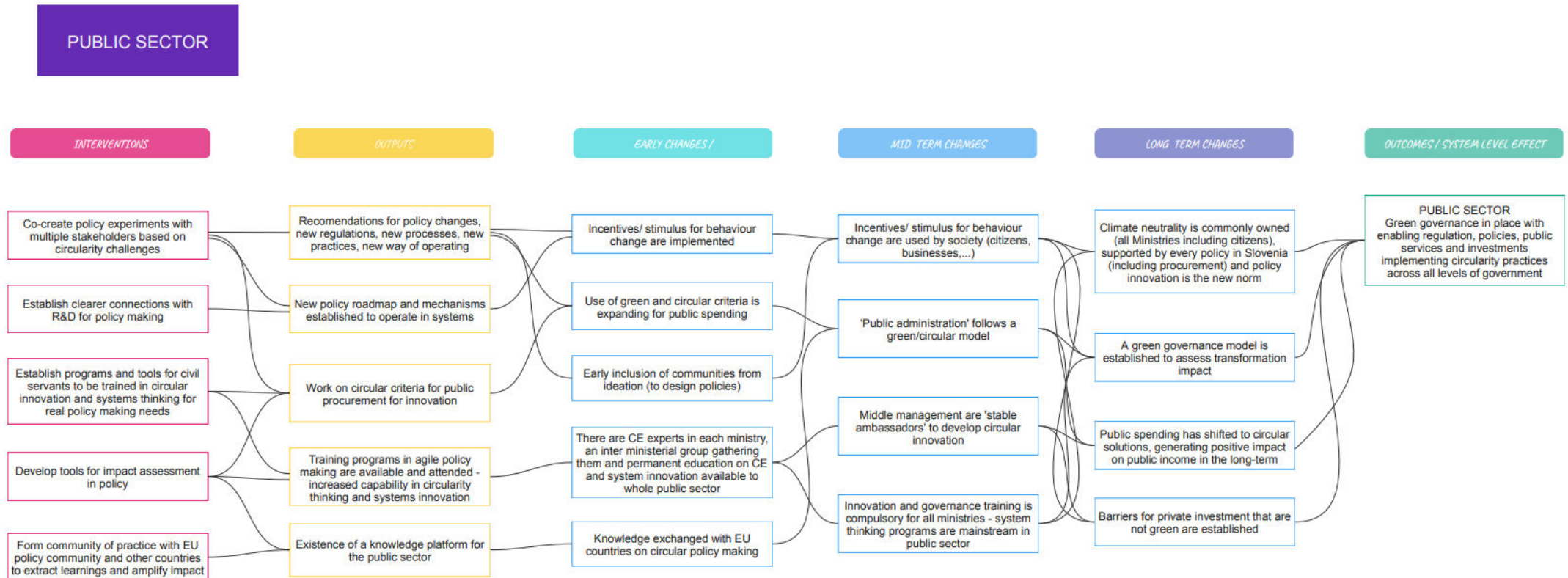
CITIZENS & COMMUNITIES



Businesses pathway

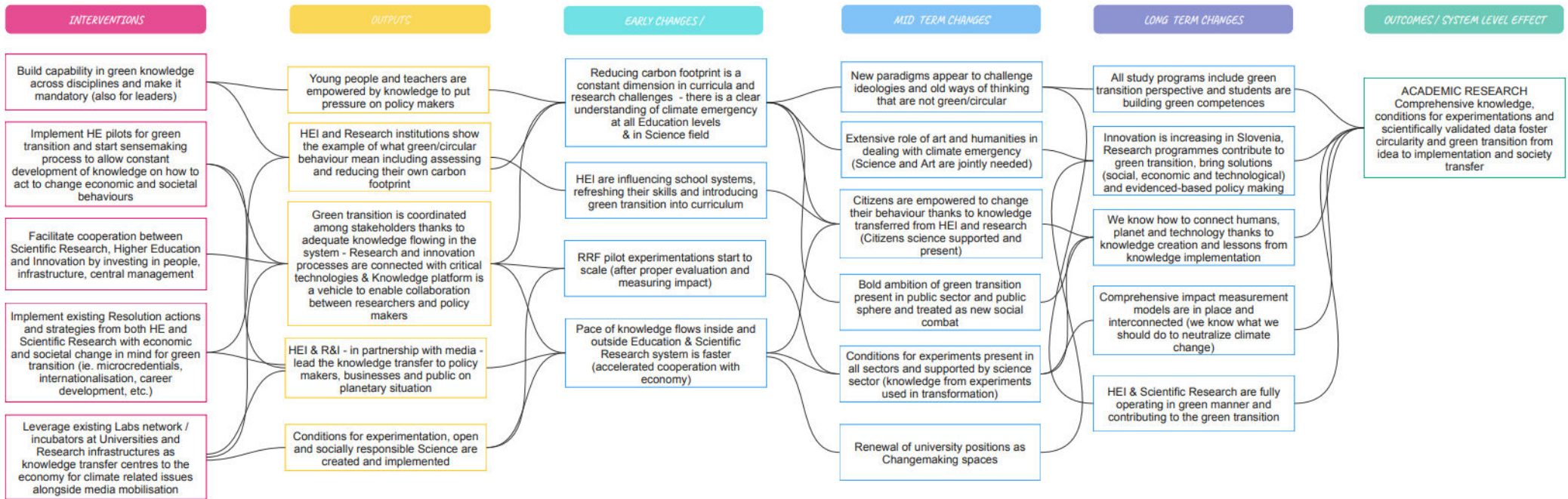


Public sector pathway



Academic Research pathway

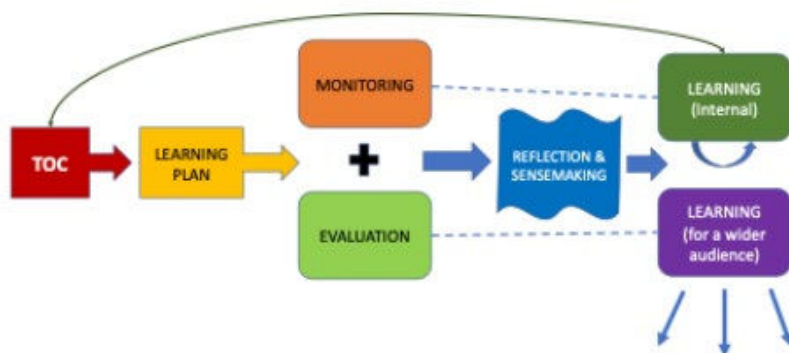
ACADEMIC RESEARCH



3. Using the Theory of Change in practice for the Slovenia DD

3.1 Input into MEL for systems transformation

As described in Section 1.2, a TOC can serve as both a communications tool and a framework for tracking progress and learning using monitoring and evaluation techniques. The diagram below illustrates the relationships between the TOC and Monitoring, Evaluation, and Learning (MEL). Once a TOC has been developed, it can usefully serve as a focal point for identifying learning questions or learning goals. These learning objectives then guide the framing of monitoring and evaluation activities. In this way, it helps to keep the focus on outcomes and results, linking the MEL activities to these and avoiding any tendency to try and measure everything or measure changes or data not relevant for the Deep Demonstration objectives.



The Monitoring, Evaluation and Learning framework for the Slovenia Deep Demonstration is detailed in Deliverable 5.2.

3.2. Input into strategic learning and adaptive governance

The development of a TOC and associated MEL Framework (see the MEL framework in Deliverable 5.2) helps to focus attention on both what is within an initiative's control (usually activities and outputs) and what it is contributing to (outcomes and impact goals) along with other context-related effects and other interventions. From a strategic perspective, maintaining a focus on outcomes and impact goals when conditions continue to change, assists with adaptive governance. The aim is to generate the right information and insights at the right time, as implementation proceeds, building the evidence to support the journey towards transformative outcomes and ultimate impact, and reducing uncertainty around specific interventions and their effects through experimentation and accumulated learning.

The circular transition is a complex mission without clear boundaries, and its outcomes will be influenced by many internal and external factors that are hard to predict like culture and politics but also socio-ecological aspects, trust and relationships between groups, motivation, capability and much more. This requires the Slovenian government to work in an experimental and iterative way as systemic interventions have high probabilities of producing uncertain responses from within the system. Therefore, taking a standard approach of 'analyse, plan, deliver' harbours the risk that the government invests both time and money in solutions that are not viable under real-life conditions. They also risk creating lock-in effects along unfavourable pathways that stray from intended outcomes and impacts. Towards addressing this, taking a reflexive approach of 'test, learn, iterate, adapt' to governance helps build confidence in the direction and progression of impacts pathways. Moreover, this approach enables all relevant stakeholders to shape the work as it develops and course-correct along the pathways through continuous stocktaking and sensemaking. Therefore, accelerating strategic learning and knowledge sharing is a critical driver of Slovenia transition, where the TOC aims to play an important role.

4. Conclusion and next steps

This report presents the Theory of Change that has been developed for the Slovenia Deep Demonstration and is complemented by deliverable 5.2 presenting the Monitoring Evaluation and Learning (MEL) framework developed on the basis of this TOC. Regarding next steps, the TOC will now serve as a reference document for future sensemaking sessions that will be held as part of the Deep Demonstration program of work at both the portfolio and system levels. As mentioned in this report, the TOC is also likely to be adapted over time following the generation of learnings.

Depending on the use the Slovenian government also plans to give to this TOC, as input to strategic learning and adaptive governance, we can explore what would be the best format to present and interact with it, that would allow for dynamic interaction and revision that can reflect the learnings of the project. For example, through an interactive web page or PDF. This would make the TOC more legible but also easier to see connections between pathways, but would require to be updated as we learn and adapt the TOC in response to the learnings of the DD. The choice of the right support will also depend on who (ie. which ministries and potentially other actors) wants to frequently use and adapt the tool.