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Super-Lab Roadmap

Version 1

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Abstract

This Deliverable is a first version blueprint for a Super-Lab Roadmap based on the intermediary results and learnings of the first 12 months of the TRANSFORMER project. It incorporates lessons learned from the participating Transition Super-Labs (WP3), from the definition and categorising of Transition Super-Labs (WP2) and the development of the Evaluation & Impact Assessment (WP6).

Project Partners

Organisation	Country	Abbreviation
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BUSINESS METROPOLE RUHR GMBH	DE	BMR
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Abbreviations

Abbreviation	Definition
EU	European Union
QRAFT	Quantitative Regional Assessment Framework for Transition Super-Labs
SWOT	Strengths, Weaknesses, Opportunities, Threats
TSL	Transition Super-Lab
WP	Work Package

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Executive Summary

This deliverable (D4.1) is the initial version of the Transition Super-Lab Roadmap, serving as a guide for regions interested in developing their own Transition Super-Lab (TSL). It draws upon insights gained from the TRANSFORMER project, where the TSL concept was developed and tested in four European regions (Emilia Romagna, Lower Silesia, Ruhr Area, and Western Macedonia).

Section 1 provides an overview of the document within the context of the TRANSFORMER project. Section 2 introduces the TSL concept, aiming to explain its fundamental elements to a broad audience, including decision-makers who may be interested in understanding the rationale behind it.

In developing this roadmap, every effort was made to produce guidance that is tailored to the practical needs of planners and policymakers all over Europe and the world. Nonetheless, it is essential to acknowledge that the TSL is an idealized concept within a complex policy field that encompasses diverse demands and interests. Adaptability is therefore crucial in customizing this roadmap to specific regional circumstances while progressing towards more sustainable regional areas.

Section 3 offers a detailed, step-by-step description of the TSL development and implementation process. Although primarily intended for regional practitioners and active participants in the planning process, it is written in a manner that can be understood by a wider audience. This section follows the structure of the TSL process, comprising 4 phases, 11 steps, and 32 activities. Each phase and step is accompanied by a concise overview. For each activity, readers will find the rationale, objectives, task descriptions, timing (where possible) and coordination considerations, checklists, and practical examples. The practice examples are derived directly from the TRANSFORMER project, where the TSL approach is being implemented in four regions. The roadmap is complemented by the TRANSFORMER Knowledge Hub and Toolkit, which offer further resources and practical tools to support the TSL development. However, in this initial version of the roadmap, placeholders are provided for practice examples, knowledge hub content and tools, as these will be further elaborated in the subsequent version.

While it is possible to read this document from start to finish, most readers are expected to use Section 3 as a guidance resource throughout the TSL development and implementation process, referring to specific chapters for inspiration at each step.

The final section 4 provides information on the expected development for the second version of this deliverable.

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1 Introduction

Accelerating the transformation towards climate neutrality is of utmost importance to ensure the existence and livelihood of all lifeforms on this planet[1] As the possible pathways to reach the goal of climate neutrality are closely linked to other social, economic and environmental dimensions, this transformation is an extremely complex challenge that requires comprehensive and innovative solutions[2].

The TRANSFORMER project addresses this challenge by focusing on a systemic transformation at a regional scale to accelerate the transition towards climate neutrality: the Transition Super-Lab approach (TSL). In a TSL, enriched living lab methodologies are adapted and applied to develop together (co-create) – with all relevant stakeholders from the quadruple helix – a vision for a regional transformation and a portfolio of large-scale systemic solutions for climate neutrality, net-zero emissions and resilient future. The systemic transformation within TSLs catalyses large and diverse communities to innovate for systemic changes that accelerate the transition. The systemic transformation is addressed by developing and implementing a portfolio of connected solutions ("e.g., pilot use-cases") which engage multiple leverage points at the intersection of socio-technical regimes simultaneously to achieve a rapid and more efficient transformation. [3]

In TRANSFORMER, regions are regarded as a very promising scale to foster this systemic change, as they function as 'burning glasses' where different sections of socio-technical regimes (e.g., transportation, industry, food system) materialize and intersect. The regional level is of crucial importance for fostering a fundamental systemic change and thus accelerating the transition towards climate neutrality.

This deliverable D4.1 "Super-Lab Roadmap" consist of the first version of the blueprint for regions to start developing and implementing Transition Super-Labs. As the roadmap is based on an iterative learning process and lessons learned from the participating TSLs (WP3) this first version is based on the intermediary results and learnings of the first 12 months of the TRANSFORMER project. Therefore, this is an initial version of the roadmap and is based on the first findings. In the second version of this deliverable (D4.2), changes will be expected to the structured roadmap and the lessons learned from the second half of the project will be integrated, along with the final selection of practice examples and tools. To summarise, this version builds upon the lessons learned from the following deliverables developed by multiple partners within the project, namely:

[1] IPCC. (2021). Climate Change 2021: THe Physical Science Basis. Summary for Policymakers. https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf

[2] UN. (2023, September 20). THE 17 GOALS | Sustainable Development. https://sdgs.un.org/goals

[3] The definition of the Transition Super Lab was written by the project consortium as whole.

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- D2.1 Summary of data collection on TSL predecessors
- D2.2 Quantitative mapping research report
- D3.1 Recommendations for Transition Super-Lab coalitions building, empowering of vulnerable and marginalised groups, and vision process.
- D3.2 Definition of Transition Super-Lab use-cases.
- D5.1 Framework for Super-Labs Assessment - version 1

As this deliverable D4.1 is being developed in parallel to the Toolkit (Task 4.2) and the Knowledge Hub (Task 4.3), entries have been added to the structure framework, at the relevant steps, as placeholders in this first version. The final entries for tools and connections to the knowledge hub, along with practice examples, will be developed in the second version of this roadmap (D4.2). Similarly, as the transition model and assessment frameworks are being developed in parallel in WP5, these findings will be incorporated into the roadmap under the second version. Finally, this blueprint will be further discussed and challenged during the activities of the "User Forum" (WP6).

The TRANSFORMER transition model and transition roadmap are both important elements in the context of the transition procedure. They refer to different aspects of the process and are directly linked to each other. The TRANSFORMER transition model refers to a set of principles that supports the conceptual framework of the TSL approach and guides the process of the region's transition towards climate neutrality. It helps define the desired future state of the region, outlines the steps needed to achieve that state, and provides a structured approach for managing the transition. The transition model encompasses various elements such as the vision and goals of the change, the roles and responsibilities of stakeholders involved, the necessary resources, and the strategies for overcoming challenges. It provides a high-level understanding of the transition process and acts as a reference point for decision-making throughout the transition. TRANSFORMER Transition Roadmap, on the other hand, is a detailed plan that outlines the specific activities, milestones, and dependencies involved in implementing a transition. It provides a step-by-step guide for executing the transition model and serves as a communication tool to align stakeholders and keep them informed about the progress of the change. Integrating key tasks, timelines, responsible parties, resource allocation, and any critical dependencies or constraints that need to be considered, provides a more granular view of the transition process, allowing for better coordination and monitoring of the efforts. In summary, the TRANSFORMER transition model is a conceptual framework that defines the overall approach and guiding principles for managing the transition, while the TRANSFORMER transition roadmap is a detailed blueprint that outlines the specific steps and activities to be taken to implement the change according to the transition model. The transition model provides a strategic perspective, while the roadmap offers a tactical view of the transition process.

This deliverable has the objective to define the development and implementation process of a TSL in detail to support future regions in developing their own TSLs. As such, the primary target group for the

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use of the roadmap are regions aiming to initiate a TSL. A secondary target group are those interested parties who by identifying regions could significantly benefit from the TSL approach.

To address this objective this deliverable (D4.1) is structured as follows: the next section (Section 2) introduces the TSL concept, aiming to explain its fundamental elements to a broad audience, including decision-makers who may be interested in understanding the rationale behind it. Section 3 offers a detailed, step-by-step description of the TSL development and implementation process. Although primarily intended for regional practitioners and active participants in the policy planning process, it is written in a manner that can be understood by a wider audience. This section follows the structure of the TSL process, comprising 4 phases, 11 steps, and 32 activities. Each phase and step is accompanied by an overview. For each activity, readers will find the rationale, objectives, task descriptions, timing (where possible) and coordination considerations, checklists, and practical examples. The practice examples are derived directly from the TRANSFORMER project, where the TSL concept was implemented by four regions. However, in this initial version of the roadmap, placeholders are provided for practice examples and tools, as these will be further defined in the subsequent version. While it is possible to read this document from start to finish, most readers are expected to use Section 3 as a guidance resource throughout the TSL process, referring to specific chapters for inspiration at each step. The final section provides information on the expected development for the second version of this deliverable.

The project has defined three different target groups , with a strong focus on Target group C, that are either directly or indirectly influenced by the project activities and will be engaged. These are:

- Target Group A: Project partners in the four TSL regions,
- Target Group B: Stakeholders in the TSL regions, with a particular focus on marginalised communities,
- Target Group C: Follower regions across Europe from the TRANSFORMER User Forum and future regions implementing TSLs. This group is further defined as public authorities, enterprises that invest in renewable energy sources, enterprises active in the energy storage market, technology providers enabling climate transition, researchers in the field of sustainable development, policy analysts, and ecologists.

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2 The concept of Transition Super-Labs

This section is an introduction to the Transition Super-Lab concept. It is intended for all readers with an interest in the regional transition towards climate neutrality, including decision-makers and other stakeholders, not necessarily policy planning experts.

2.1 Characteristics of Transition Super-Labs

Climate change is one of the biggest challenges our generation is facing. To reach the ambitious goals set by the Paris Agreement and the European Green Deal, a radical transformation of the EU's current economy is urgent. Civil society and industries in Europe are confronted with the unprecedented challenge of addressing the 'great transformation' to a carbon-neutral economy within an extremely short period of time.

Reaching the goal of net-zero emissions by 2050 requires immediate actions going beyond the level of fostering innovation and digitalisation in societal niches. In fact, it calls for an innovation path which sets out to 'design' carbon-neutral societal systems and focus investments in zero-carbon solutions as indicated in the "Final Report of the High-Level Panel on Decarbonisation 2018"[4].

TRANSFORMER took up this challenge by further conceptualizing and applying the Transition Super-Lab (TSL) approach. A Transition Super Lab can be defined as an ecosystem of actors organized to accelerate the transformation towards climate neutrality through innovation, and cross-sectorial synergies on a regional scale. It benefits from collaborative governance, operates in accordance with systemic transformation principles, and utilizes methods and tools to create added value to cross-sectorial initiatives for economic transformation and to provide feasible solutions to complex regional transformation challenges. Moreover, Super-Labs foster the deep integration of these solutions into the DNA of the European economy and society leading to more balanced, focused, sustainable and co-designed policies & governance.[5]

2.1.1 The differences between Living-Labs and Transition Super-Labs

Living Labs and Transition Super Labs (TSLs) exhibit distinct characteristics and objectives. Living Labs, as defined by the European Network of Living Labs (ENoLL), serve as open innovation ecosystems fostering sustainable impact through co-creation, prototyping, testing, and scaling innovations in real-life environments. Acting as intermediaries among citizens, research organizations, companies, and

[4] Final Report of the High-Level Panel of the European Decarbonisation Pathways Initiative (2018), p. 165. Available at: https://ec.europa.eu/info/publications/final-report-high-level-panel-european-decarbonisation-pathways-initiative_en

[5] ibid, see p. 165-166

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government agencies, Living Labs operate with flexibility across sectors and spatial scales[6]. In contrast, TSLs, as conceived in the TRANSFORMER project, centre on trans-sectorial transformation at the regional level. TSLs prioritize collaborative governance, systemic transformation, and multi-stakeholder engagement to drive large-scale systemic changes, focusing on climate neutrality and sustainability. While Living Labs encompass diverse implementations and emphasize joint value creation and sustainable impact without specifying particular objectives related to climate neutrality or sustainability, TSLs stand out for their strategic regional focus and purposeful alignment with cross-sectorial initiatives, thereby offering distinct ecosystems tailored for comprehensive regional transformations towards climate neutrality.

2.1.2 The importance of regional transition

The term "regional" generally refers to a geographic area smaller than a nation but larger than a local municipality or city. As identified by the OECD, regions encompass sub-national entities such as provinces, states, districts, or other administrative divisions that share certain economic, social, or geographic characteristics.[7]

Within the context of the TRANSFORMER project, regions hold significant promise as a key spatial dimension for driving systemic shifts. They act as concentrated focal points where different aspects of socio-technical systems, such as transportation, industry, and food systems, come together and become tangible. Effective change in these societal systems on a regional scale has the potential to greatly expedite the transition to zero emissions across Europe and even on a global scale. Thus, the regional level plays a critical role in systemic transformations, thereby showing high potential for accelerating the journey toward climate neutrality. Furthermore, concentrating efforts at the regional level offers the prospect of bridging the gap between local and national initiatives, preventing isolated and disconnected projects, and generating synergistic benefits through enhanced regional collaboration. Nevertheless, it is important to note that the study of the regional scale in this context remains insufficiently explored, and there is currently no comprehensive approach to evaluating the climate-driven transition requirements and transformation capacities of various regions[8].

Additionally, the necessity of regional transition gains its significance from the core principles of “just transition”. Just Transition refers to a framework and approach aimed at ensuring a fair and equitable shift from fossil fuel-based economies to more sustainable and low-carbon alternatives[9]. Both concepts,

[6] European Network of Living Labs. https://enoll.org/about-us/

[7] OECD. (n.d.). Geographical definitions for statistical and analytical purposes - OECD. Retrieved September 20, 2023, from https://www.oecd.org/regional/regional-statistics/geographical-definitions.htm

[8] Hansmeier et al., 2021; Mura et al., 2021; Stanickova & Melecký, 2018

[9] d’Antonio, S., Patti, D., Polyak, L., Burgess, J., Campbell, K. (2021). Exploring the just transition Europe, New York. Available at: https://apo.org.au/sites/default/files/resource-files/2021-07/apo-nid316370.pdf

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Just Transition and Regional Transition, share a fundamental goal: to ensure that the profound changes required for climate emergency are implemented in a manner that respects the rights, needs, and well-being of communities. The synergy between these two concepts reinforces the imperative of ensuring equitable and sustainable transformations within specific geographic contexts. They also ensure that the journey towards a climate-neutral future is not only efficient but also marked by fairness, inclusivity, and social harmony.

The "Just Transition Mechanism", a pivotal tool within the European Green Deal, echoes this sentiment. Its purpose is to facilitate the shift toward a climate-neutral economy while leaving no one behind. This mechanism is fortified by three pillars: The Just Transition Fund, the InvestEU "Just Transition" Scheme, and a new Public Sector Loan Facility.

The principles of just transition are equally applicable to regional contexts, emphasizing the importance of ensuring fair and sustainable transformations within a specific geographic area. In this regard, regions play a central role in driving forward the just transition agenda, utilizing their expertise and ability to engage stakeholders. By fostering collaboration at the regional level, embracing inclusive multi-level governance, and effectively coordinating with both local and national authorities, regions can develop comprehensive strategies that facilitate both decarbonization and economic diversification. This strategic approach allows regions to access dedicated resources allocated for just transition under the European Green Deal and its accompanying Just Transition Mechanism.

In principle, the Transition Super-Lab approach emerges as a versatile concept composed to strengthen both just and regional transitions. This assertion is rooted in the shared goals of these transitions – a commitment to transformative change that respects the rights, needs, and prosperity of communities while steering humanity toward a climate-neutral future.

While a multitude of pathways exists to achieve climate neutrality, the TSL approach offers two distinct and compelling advantages as the TRANSFORMER project has identified so far. Primarily, it embodies a distinct methodology that nurtures innovation not solely at the level of individual solutions, but on a systemic level. Secondly, the TSL approach proactively embraces the integration of civil society. This aspect is particularly crucial, given that opposition from segments of civil society can pose formidable obstacles during regional and national transitions. The inclusion of these stakeholders within the TSL framework holds the potential to navigate around such challenges, effectively engaging them as active participants in the transition process.

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2.1.3 The approach of a systemic transformation

A systemic transformation refers to a profound and comprehensive change that occurs across multiple interconnected elements of a complex system. It involves fundamental shifts in the underlying structures, processes, and dynamics of the system, often affecting various components simultaneously[10]. This type of transformation aims to address systemic challenges, create sustainable impact, and bring significant and lasting change that goes beyond incremental improvements. Systemic transformations always require coordinated efforts, innovation, and collaboration among diverse stakeholders to achieve desired outcomes, especially in contexts such as sustainability, social change, and large-scale transitions.

Such an approach is necessary for the context of climate neutrality because addressing climate change and achieving carbon neutrality requires more than just isolated changes or incremental adjustments as climate change is a complex and interconnected challenge that involves multiple sectors, industries, and societal systems.

In that regard, the mentioned approach is essential as it focuses on identifying and changing the underlying structures, norms, behaviours, and technologies that contribute to carbon emissions and environmental degradation. By targeting these elements, a comprehensive and holistic shift can occur that not only reduces greenhouse gas emissions but also creates a more sustainable and resilient society.

Furthermore, systemic transformation recognizes the interdependencies and interactions among various sectors and systems. For example, transitioning to renewable energy sources involves not only changing the energy sector but also considering how it affects transportation, industry, agriculture, and more. Such an approach ensures that changes in one area do not inadvertently lead to negative consequences or shifts in other areas.

The approach aims to drive transformative change that influences entire regions or sectors, and TSL provides the means to achieve such objectives through large-scale living labs by leveraging synergies, identifying leverage points, and creating interconnected solutions that can drive rapid and efficient transitions.

[10] Charveriat, C., et al., & European Commission. Directorate-General for Research and Innovation. (2021). Transformation post-COVID : transformative nations, regions & cities as vectors for change.

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2.1.4 The core elements of the stakeholder engagement process

At the heart of stakeholder involvement lies the principle of their comprehensive engagement. TSLs recognize the immense value of involving a diverse array of stakeholders by incorporating insights and perspectives from citizens, communities, industry experts, researchers, and societal groups. This comprehensive approach ensures that the solutions generated are not only well-rounded but also capable of addressing complex and multi-faceted challenges.

- The concept of **co-creation** is central to the collaborative approach of TSLs. Stakeholders become active collaborators in **co-creating** solutions within TSLs. Their involvement extends beyond mere consultation, empowering them to shape the design and development of **transformative initiatives**. This process fosters a sense of ownership and relevance among stakeholders, resulting in solutions that align closely with real-world needs.
- By **involving those directly affected** by the challenges, TSLs ensure that the solutions proposed are not abstract theories, but **tangible responses** grounded in the realities of the world they seek to transform, bringing a crucial real-life context to the innovation process.
- This process is inherently fuelled by a culture of **innovation**. The **collective participation** of stakeholders fosters an environment ripe for the cultivation of novel ideas and approaches. **Diverse perspectives** often ignite innovative thinking, resulting in ground-breaking solutions.
- In TSLs, stakeholder engagement isn't limited to theory; it extends to the realm of **experimentation**. Stakeholders can test and experiment with ideas and solutions in real-world scenarios. This practical approach provides valuable insights and data, facilitating the refinement and optimization of **transformative initiatives**.
- TSLs evolve into vibrant Learning Arenas where **stakeholders** come together to actively engage in the process of **learning**, **sharing knowledge**, **exchanging experiences**, and **collaborating** on the development of solutions. Learning Arenas are platforms or environments that foster open dialogue, encourage the exchange of ideas, and promote continuous learning and improvement. This dynamic **learning process** enriches the collective understanding and informs the ongoing development of solutions that remain adaptive and responsive.
- Stakeholders also play a pivotal role in the **evaluation of impacts.** Their **first-hand perspectives** provide invaluable insights into the effectiveness and outcomes of implemented solutions. This evaluative process informs necessary refinements and serves as a compass for future directions.
- The principle of **adaptiveness** thrives within TSLs due to stakeholder **engagement**. The iterative feedback loop between stakeholders and TSLs allows for timely adjustments and course corrections based on real-time insights, ensuring that the initiatives remain dynamic and effective.

The Quadruple Helix model takes this stakeholder engagement one step further. By negotiating both top-down and bottom-up approaches, the model focuses on the synergy between grassroots initiatives and higher-level programs. This integrative approach harmonizes diverse efforts, ensuring that TSLs leverage the full spectrum of expertise from academia, industry, government, civil society, and society at

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large. The result is an innovative and transformative ecosystem that optimizes the potential for impactful success.

To ensure a coherent and effective transition towards climate neutrality, involved stakeholders need to contribute to transition processes in various stages such as providing a shared vision and objectives, and ensuring that the transition/s trajectory aligns with the needs of the region. As the process unfolds, stakeholders should contribute their insights to shape scenarios and transition pathways, enriching the exploration of diverse possibilities and validating the chosen routes against real-world feasibility. And once it comes to concrete action, stakeholders should actively participate in the definition and selection of pilot use-cases, engaging in interactive workshops and feedback sessions to identify innovative projects that address regional challenges while advancing broader sustainability goals. Thus, aligning with active and participatory stakeholder engagement processes.

Stakeholders also contribute significantly to setting clear targets and goals for the pilot use-cases, guiding their practical implementation towards desired outcomes. Collaboratively, stakeholders work to establish a governance model that facilitates effective decision-making and accountability within the TSL. They further contribute to the identification of innovative actions that drive systemic transformation and support the overarching objective of climate neutrality.

In this participatory process, stakeholders collaboratively develop comprehensive action plans and assessment frameworks, enabling the systematic execution of initiatives and the ongoing evaluation of progress. Importantly, this process remains characterized by transparency, and participation, through fostering co-creation and ensuring that the transition strategy is well-suited to the region's context. Even though this mostly requires a bottom-up approach, top-down approaches should not be ruled out as an acceleration tool. Throughout, stakeholder engagement, regional alignment, and the application of technology emerge as consistent themes, enriching the pilot use-case development process while respecting the distinctive priorities and challenges of each region.

2.1.5 The benefits of Transition Super-Labs

As outlined in section 2.1.4., the benefits of TSL approaches lie in their inclusiveness and robust participation of different stakeholders on different levels while strategically positioning decarbonization as a core principle.

Building upon this foundation, the approach, while recognising the necessities of systemic transitions and as developed through the TRANSFORMER project, evolves with a distinct objective: simultaneous transformation across multiple societal systems, such as transportation, industrial production, nutrition and carbon sinks. Insights drawn from the interdisciplinary field of transition studies illustrate how these

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societal systems find stability within socio-technical regimes[11]. Such socio-technical regimes are “constituted by the conventions, rules, and norms that guide the uses of particular technologies and the everyday practices of the producers, workers, consumers, state agencies, scientists, societal groups, and businesspeople who participate in the regime”[12].

To achieve this ambitious goal, the concept of regions emerges as they are fostering systemic innovation and creating an environment where different elements merge to fuel meaningful change.
In this context, Transition Super-Labs adapt and weave enriched living lab methodologies into their fabric. This involves an intricate collaboration, engaging all relevant stakeholders from the quadruple helix - academia, industry, government, and civil society. Together, they embark on crafting a visionary journey, steering towards regional transformations. What accompanies this vision is a comprehensive portfolio of large-scale systemic solutions tailored to achieve climate neutrality, net-zero emissions, and a resilient future.

Transformation approaches further catalyse changes across diverse levels thus mostly resulting in tangible changes. The realization of this systemic transformation hinges on the creation and execution of an interconnected solutions portfolio, referred to as "pilot use-cases" at a later stage. These initiatives strategically activate multiple leverage points at the intersection of socio-technical regimes, all operating concurrently. This orchestrated approach aims to expedite the transformation process, with enhanced efficiency.

In summary, Transition Super-Labs offer a novel and holistic approach to driving systemic innovation, fostering cross-sector collaboration, and achieving transformative changes in pursuit of climate neutrality and sustainability. By focusing on interconnected societal systems and engaging a diverse range of stakeholders, TSLs have the potential to create meaningful and lasting impacts on a regional scale.

[11] Geels, F. W. (2002): Technological transitions as evolutionary reconfiguration processes: a multi-level perspective and a case study. In: Research Policy 31 (8-9), pp. 1257–1274

[12] Lawhon, M.; Murphy, J. T. (2012): Socio-technical regimes and sustainability transitions. In: Progress in Human Geography 36 (3), pp. 354–378, see, p. 357

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2.1.6 Transition Super-Labs in a nutshell

The concept of Transition Super-Labs (TSLs) embodies a transformative and collaborative approach that addresses the urgent need for climate neutrality within a short timeframe. These labs serve as dynamic ecosystems, uniting diverse stakeholders in a collective effort to accelerate regional transformations towards a carbon-neutral economy. Transition Super-Labs are characterized by their commitment to collaborative governance, systemic transformation, and the utilization of innovative methods and tools. By fostering cross-sectorial synergies and focusing on regional-scale initiatives, these labs aim to drive comprehensive and sustainable solutions. This chapter has explored various key elements that define the Transition Super-Lab concept, including its distinctive characteristics, the significance of regional transitions, the systemic transformation approach, stakeholder engagement, and the multitude of advantages that arise from this collaborative framework.

Key Takeaways:

- TSLs are innovative ecosystems that bring together stakeholders to drive regional transitions towards climate neutrality.
- The distinctive attributes of TSLs differentiate them from traditional living labs, emphasizing systemic transformation and cross-sectorial collaboration.
- Regional transitions play a crucial role in achieving climate neutrality, serving as focal points for diverse socio-technical regimes to intersect and transform.
- The synergy between "Just Transition" and "Regional Transition" reinforces the importance of equitable and sustainable transformations within specific geographic contexts.
- Stakeholder engagement within Transition Super-Labs ensures a participatory and adaptive approach, enriching the co-creation process and fostering ownership among diverse actors driving innovation, experimentation, and adaptiveness.
- The adaptation of Quadruple Helix model in TSLs integrates expertise from academia, industry, government, and civil society, enhancing the potential for impactful outcomes.
- The TSL approach emphasizes simultaneous transformation across multiple societal systems, leveraging the innovative convergence of elements within regions to fuel systemic innovation.
- By orchestrating systemic transformation within TSLs, cross-sector collaboration, and interconnected solutions portfolios are harnessed to expedite the transition process, fostering meaningful and lasting impacts on a regional scale.

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2.2 Main elements of the Transition Super-Lab development process

The TRANSFORMER project has expanded upon the components of a Transition Super-Lab (TSL) and applied them in four regions: the Ruhr Area (Germany), Emilia Romagna (Italy), Lower Silesia (Poland), and Western Macedonia (Greece). Drawing from reflections and the initial implementation of a TSL in these regions, the essential elements necessary for the development of a Transition Super-Lab were formulated into distinct phases, steps, and activities that can guide practitioners in developing and implementing the TSL process. It is important to note that certain steps may be conducted simultaneously, adjusted in sequence as per specific requirements, or omitted partially if their results are already obtainable from a previous source. This flexibility allows for adaptation to local circumstances and needs.

This need for flexibility was fully understood by the TRANSFORMER regions and future TSLs are encouraged to make reasonable adaptations if required by their specific situations – as long as the core elements of a TSL are followed. An overview of the four phases of the TSL development process is defined below.

Phase 1 serves as the foundational stage within the Transition Super-Lab development process, where politicians and practitioners initially delineate the scope of the TSL through policy analysis and stakeholder engagement. This foundational step involves the construction of a diverse stakeholder coalition and the establishment of a governance model that fosters collaboration and ownership. Through the co-creation of a shared vision and objectives, practitioners facilitate alignment and inclusivity among stakeholders. Additionally, the development of scenarios and transition pathways aids in anticipating change and bridging perspectives. This phase ending with a transition readiness assessment lays the essential groundwork for subsequent TSL phases.

Phase 2 marks a progression within the TSL development process, transitioning toward a more strategic level and establishing the groundwork for the operational stage. The focus of this phase centres on collaboratively defining pilot use-cases—tangible project ideas aimed at realizing climate neutrality and driving systemic transformation. These use-cases are tailored to the regional context and are informed by insights gathered in the initial phase. Following the selection of pilot use-cases, a comprehensive examination of their feasibility takes place, after which goals, indicators, and targets are co-defined for each use-case. Moreover, Phase 2 underscores the importance of reinforcing stakeholder engagement and the governance model to ensure ongoing alignment with evolving needs and roles.

Phase 3 of the TSL development process is dedicated to propelling the climate transition forward by integrating innovative solutions. This phase encompasses activities that involve identifying innovative solutions derived from global best practices, delineating "quick wins" to catalyse momentum, and

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crafting comprehensive fact sheets for each pilot use-case to effectively communicate objectives, stakeholders, impacts, and value propositions. Additionally, Phase 3 encompasses the creation and execution of an action plan, which encompasses activities such as pinpointing funding sources and assessing financial capacities, establishing consensus on priorities and responsibilities, designing a comprehensive implementation timeline, and constructing a structured assessment plan to methodically gauge the progress and impact of transition initiatives.

Phase 4 revolves around the pivotal stages of monitoring, assessing, and optimizing the impact of regional transition endeavours. This phase encompasses activities related to the implementation and experimentation of pilot use-cases, continuous monitoring and evaluation of outcomes and impacts in line with the assessment plan formulated in the previous phase, deriving insights from lessons learned to inform future decision-making and enhance effectiveness, defining exemplary innovative transition projects that serve as notable models of innovation, and conducting an iterative assessment of the region's readiness for transition.

These phases collectively guide the TSL development process towards successful climate neutrality and sustainable development outcomes, incorporating innovation, collaboration, assessment, and continuous improvement.

3 Developing and implementing a Transition Super-Lab

This roadmap is designed for individuals working in urban and regional institutions, as well as other stakeholders involved in the creation and execution of the TSL process. The purpose of the roadmap is to outline the steps involved in preparing and implementing a regional TSL. This process consists of four distinct phases, comprising 11 key steps that are further divided into 32 activities. Every phase of the roadmap begins and concludes with a significant milestone, which is tied to a decision or outcome necessary for the subsequent phases. These milestones mark the completion of the previous phase. The blueprint document provides a comprehensive overview of each step, along with its associated activities. It includes the following details:

- The rationale behind each activity highlights the issues to be addressed and the questions that need to be answered.
- The specific objectives of each activity.
- The primary tasks that must be accomplished within each activity.
- Requirements for timing and coordination with other activities.
- A checklist of the necessary steps to be taken.

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It is important to note that the order of the activities is based on logical connections rather than strict sequences. In practice, certain activities may be carried out partially in parallel or incorporate feedback loops. The timing and coordination section for each activity emphasizes critical aspects in this regard. Following this page, there is a visual overview of the TSL process, which is then followed by a detailed description of all the steps and activities involved in developing and implementing a regional TSL. To support users in this process, the second version of this roadmap will include practical examples from the TRANSFORMER project, as well as related projects, tools from the TRANSFORMER toolkit, and knowledge snapshots from the Transformer Knowledge Hub. Placeholders for these elements have been added to the first version of this Roadmap to highlight the expected contributions from the project.

The practice examples are drawn from the experiences of the TRANSFORMER regions (Ruhr Area, GERMANY, Emilia Romagna, ITALY, Lower Silesia, POLAND, and Western Macedonia, GREECE). It is worth noting that while some examples may not fulfil all requirements, they serve to illustrate activities that are part of the process of developing and implementing a regional TSL. The objective is to offer a diverse range of examples from these various European regions, demonstrating that these activities can be carried out in different local contexts.

The TSL Roadmap

As already outlined above, the TSL Roadmap consists of four phases with 11 main steps that are further broken down into 32 activities. All four phases of the cycle start and end with a milestone. These milestones are linked to a decision or an outcome of the process and mark the completion of the previous phase.

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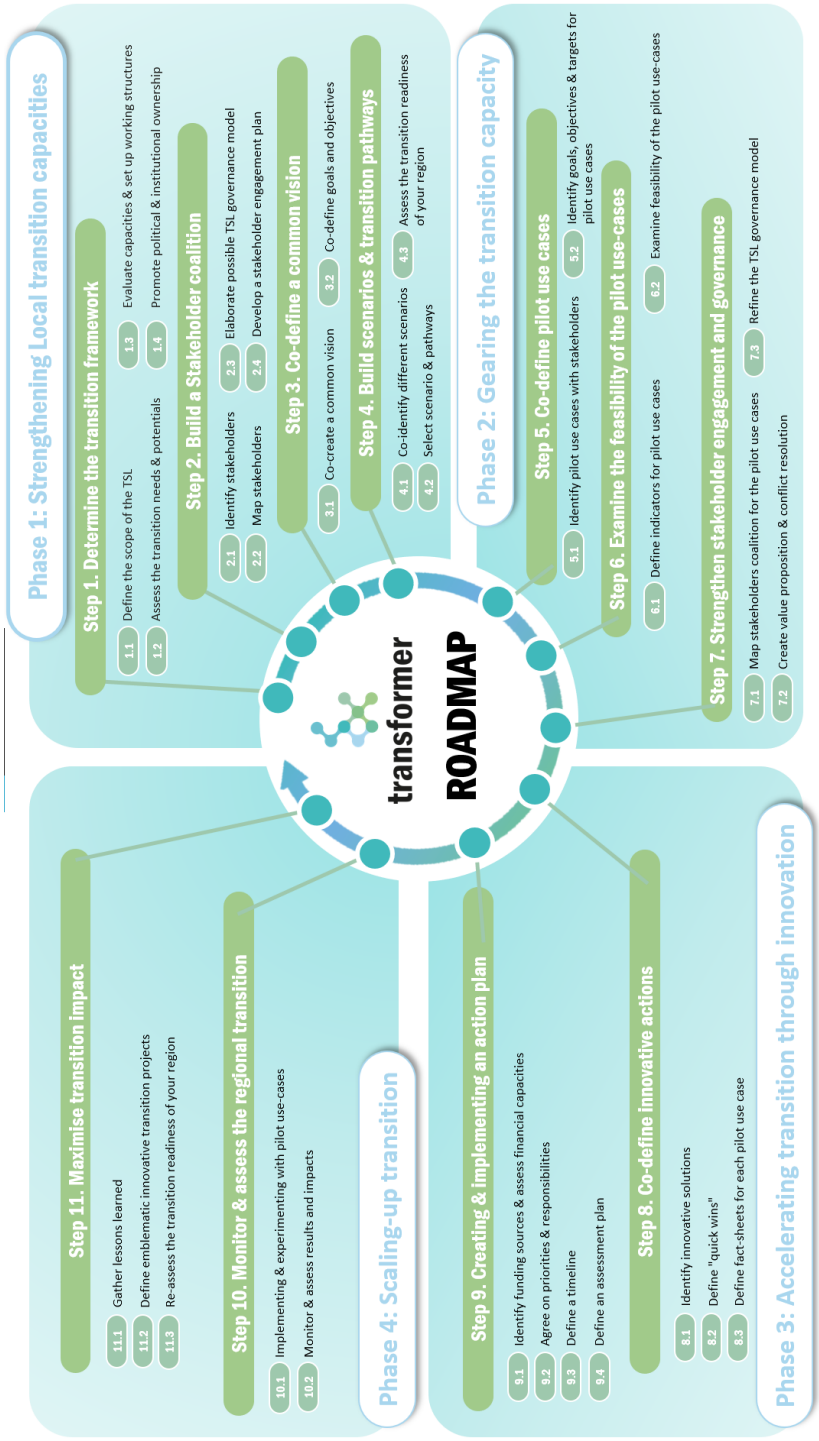

Figure 1. The 11 steps of the Transition Super Lab roadmap – a detailed overview (draft)

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3.1 Phase 1: Strengthening regional transition

Milestone: Initiation and commitment for starting the TSL process

The inception of a Transition Super-Lab (TSL) marks a pivotal moment where strategic decisions are made to initiate the process. Establishing a TSL should be grounded in the recognition that it serves as a means, not an end, working toward overarching goals like fostering climate neutrality and systemic change at the regional level. The commitment to embark on a TSL journey should inherently align with its broader objectives.

A Transition Super-Lab presents an avenue for uniting impactful, large-scale ventures with comprehensive participation strategies, a combination crucial for garnering public support and driving a comprehensive climate transition. In certain scenarios, a significant regional strategy or infrastructure project centred on climate neutrality could catalyse the initiation of a cross-sectoral approach facilitated by the TSL framework.

Effectively conveying the impending challenges and repercussions that may unfold if the status quo persists can serve as a persuasive method for practitioners to convince their institutions to initiate a TSL in their region. Illustrating the potential negative consequences through visual aids, such as maps and statistics, can amplify the urgency for regional decision-makers. Additionally, by showcasing how a TSL can address pressing regional concerns, it establishes a connection to ongoing priorities, further underscoring its value.

The inaugural phase's cornerstone is a decisive commitment from regional decision-makers to formulate and actualize a TSL. This first phase will be fortified by addressing fundamental questions in the upcoming activities:

- What resources are available (e.g. personal, financial, time, etc.)?
- What contextual factors influence the endeavour (e.g. legal and policy framework, etc.)?
- What are the transition needs and potentials?
- Which stakeholders need to be engaged and onboard?

This initial step shapes the foundation upon which the subsequent stages of the TSL journey will be built, ensuring a comprehensive and strategic approach toward achieving regional climate transition goals.

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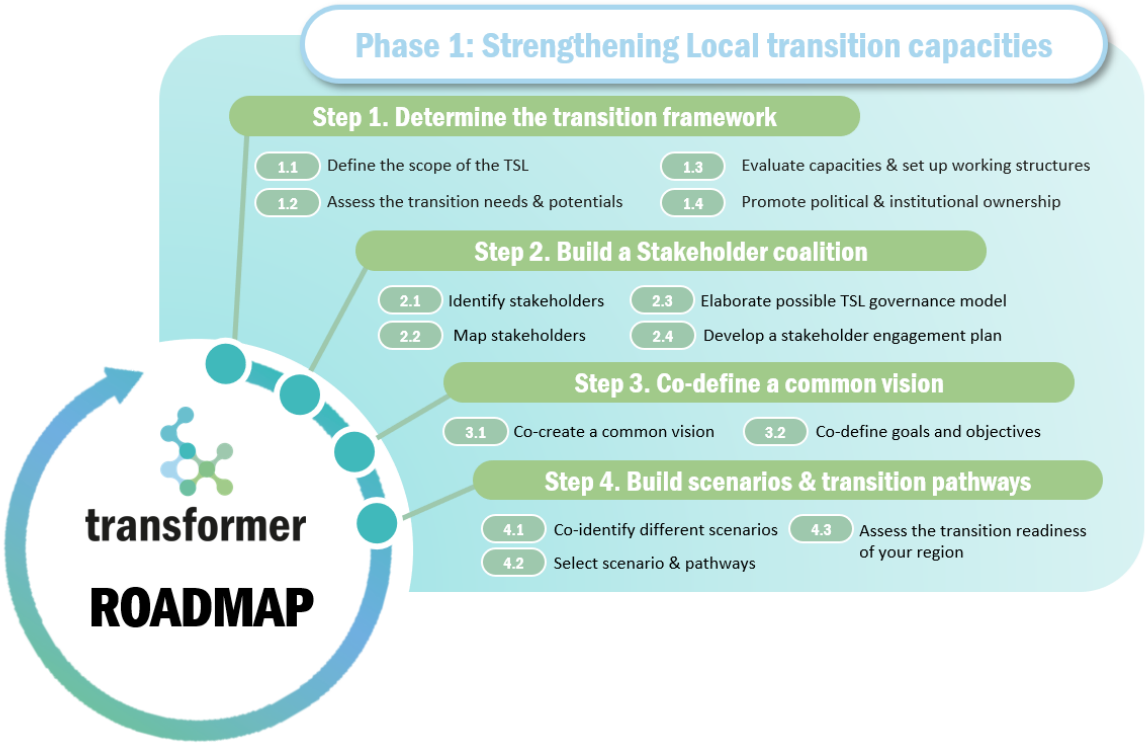

Figure 2. Phase 1 of the TSL development process (draft)

3.1.1 Step 1: Determine the transition framework

Activity 1.1 Define the scope of the Transition Super-Lab

At the beginning of the TSL development, the practitioners starting off the process need to first identify the relevant scope the TSL will aim to cover and address. To do so, a first review of regional and national policy frameworks and strategies existing and ongoing should be conducted to identify key interests and challenges the region is facing. Gaps and barriers should be identified and potentially addressed in the development of the TSL.

Practitioners can also conduct interviews of specific stakeholders that emerge from the existing framework or experts that would be beneficial in understanding the regional context and ecosystem. In addition, surveys could be set up and distributed to various or specific stakeholders to further identify the needs of the regions, specific interests, values or weak points in the transition process. Such surveys or interviews can also serve as a means to confirm certain aspects of the scope that have been identified by the practitioners establishing the TSL.

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Even though Activity 1.1 is a first step, it should be considered as an iterative loop in Activities 1.2 and 1.3.

Objectives

- Identify and assess: Planning documents, strategies and objectives that might influence your TSL. For example, EU, national or regional climate transition strategies, as well as sectorial strategies that may exist.
- Create a summary of the regional and national framework with suggestions on how to address it in your TSL.
- Define the geographical scope of your TSL.

Tasks

- Review existing policies, regulations, and plans related to the climate-neutral transition in the region in multiple sectors.
- Identify gaps or barriers in the current framework that could be addressed through the implementation of a TSL.
- Conduct (informal) expert interviews and surveys to gather insights on regional needs, interests, values, and weak points.
- Analyse existing data and research relevant to the region to identify key challenges and opportunities. While moving forward with activities 1.2. and 1.3. this task could be repeated.

Timing and coordination

- Define geographic scope early so that it is considered when setting up the working structure (Activity 1.3) and when defining the stakeholder and citizen involvement (Activities 2.1, 2.2 and 2.3).

Checklist

- ❑ Relevant national and regional documents were reviewed, and the results were summarised.
- ❑ Opportunities and impacts identified that might result from the regional and national framework.
- ❑ Geographic scope defined.

Toolbox 1. Transitioncamp

Activity 1.2 Assess the transition needs and potentials

To substantiate the determined TSL scope outlined in Activity 1.1, practitioners can undertake a first evaluation of the region's transition needs and potentials. This evaluation may be based on several steps and methodologies. As a first step, the Quantitative Regional Assessment Framework for Transition Super-Labs (QRAFT) could be conducted as the first assessment of transition needs and potential to identify the most important “topics” (such as agriculture, energy, manufacturing, mobility, etc.) for becoming climate neutral. The process could be followed by expert interviews to verify and complement

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the quantitative assessment. As a second step, two SWOT[13] analyses (overall SWOT analysis and topic-based SWOT) should be performed, potentially followed by expert interviews to complement the information. As a third step, practitioners should get familiarised with the methodology for assessing the efficiency and success of the Transition Process towards climate neutrality based on the TRANSFORMER transition model. Regions possess the capacity to define their transition needs and potentials for curbing GHG emissions, particularly from a TSL standpoint. Acknowledging the complexity inherent in appraising such needs and potentials, TRANSFORMER has introduced a Quantitative Regional Assessment Framework for Transition Super-Labs (QRAFT). As outlined above, this framework will support conducting the first steps in the TSL process of identifying the regional challenge and possible topics for transition and developing a vision for transformation. It is designed to function as a tool for gaining a data-driven understanding of the importance of different possible TSL topics within a region for stakeholders with limited overview on sectors with transition needs from their region. It also enables knowledgeable stakeholders to question existing narratives about their region if necessary. QRAFT serves as a substantial first step which could be complemented by a qualitative and context-sensitive methodology, being developed in TRANSFORMER. Leveraging publicly accessible statistical data within the European Union's domain, this methodology stands as a valuable resource. Detailed information about this tool can be found in Toolbox 2.

As a second step, two SWOT analyses, complemented by the expert interviews should be followed after the above-mentioned first step. The first SWOT analysis is an overall analysis while the second serves as a topic-based (identified during QRAFT) review.

As a third step, TRANSFORMER has taken strides in crafting a methodology for assessing the efficiency and success of the Transition Process towards climate neutrality based on the TRANSFORMER transition model. This methodology integrated into the Knowledge Hub will guide TSLs throughout the assessment activities, providing a synopsis of criteria, methods, data analysis tools and data management processes for validating and evaluating the efficiency and success of the transition sub-activities. Through the implementation of this methodology, the TSLs will be able to coordinate their activities and set clear timelines, responsibilities, and tasks for all participating parties, minimizing effort towards the achievement of the transition towards climate neutrality. Finally, the methodology for assessing the efficiency and success of the Transition Process towards climate neutrality will support TSLs in reporting their assessment processes and outcomes and ensure the harmonization of the assessment activities among TSLs to achieve and support cross-TSL assessment.

[13] Strength, Weakness, Opportunities, Threats

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Objectives

- Establish a systematic approach for assessing the transition needs and potentials of the region within the context of the TSL.
- Enable the TSL to set clear timelines, responsibilities, and tasks for all participating parties to streamline assessment efforts.
- Enhance the ability of the TSL to report their assessment processes and outcomes effectively.

Tasks

- Perform detailed analysis using QRAFT methodology for identifying transition needs and potential for becoming climate neutral.
- Perform two SWOT analyses, 1) Overall SWOT and 2) Topic-based SWOT.

For both tasks, several sub-tasks should be performed. Such as:

- Gather relevant data to be used by identifying relevant datasets and open-source data. Collect data related to regional emissions, economic sectors, and other relevant indicators. Ensure the accuracy and reliability of the data collected.
- Analyse the data and identify the transition needs and potentials. Analyse the data to identify key areas for GHG emissions reduction and potential opportunities. Validate the results using statistical methods and quality assurance procedures.
- Develop a report detailing the assessment processes undertaken and summarising the results of the assessment, including insights, observations, and recommendations for the future steps of the TSL development.
- Perform expert interviews to validate the qualitative data.
- Get familiarised with the methodology for assessing the efficiency and success of the Transition Process towards climate neutrality based on the TRANSFORMER transition model. For this step, no specific data is needed to be collected. The transition model should be checked with a focus on timelines, steps, and participants of the task. Familiarize with elements of readiness assessment.

Timing and coordination

- Performing analysis using QRAFT methodology should be done at an early stage to achieve success in transition processes.
- The implementation of the methodology for assessing the efficiency and success of the Transition Process towards climate neutrality starts in Activity 1.2 but will be taken further in Step 9 of the roadmap.

Checklist

- ❑ Relevant data sources were identified, and data was collected.
- ❑ SWOT analyses were performed and the results assessed
- ❑ Data analysis was conducted using qualitative and quantitative data as well as expert interviews.
- ❑ A comprehensive assessment report was prepared.

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Activity 1.3 Evaluate capacities and set up working structures

At the outset, it is essential to conduct a comprehensive self-assessment of planning practices, capacities, and resources to customize the Transition Super-Lab (TSL) process to your specific local context. This assessment enables you to identify strengths, weaknesses, barriers, and drivers that may impact the successful development of a Transition Super-Lab. Assessing the available capacity and resources for its development and implementation is crucial. This includes considering the availability of human resources, such as skilled staff, as well as financial resources. Insufficient resources can pose challenges in effectively carrying out the TSL and achieving success.

To effectively develop a Transition Super-Lab (TSL) in your local context, it is crucial to gain a comprehensive understanding of the strengths, weaknesses, and opportunities of current practices related to sustainable planning and development. This includes skills for the organization initiating the TSL process in areas such as stakeholder engagement, data analysis and project management. Additionally, it is important to assess both confirmed and potential financial resources available for both the development of the TSL and the implementation of pilot use-cases. This assessment will help determine the financial feasibility and sustainability of the TSL development and ensure that adequate resources are allocated for successful implementation.

It is also crucial to assess and address the capacities within the leading organization(s) and among stakeholders. This entails evaluating the available skills and expertise related to climate transition and other sectors that the TSL will address. Additionally, it is essential to develop a strategy that addresses any skill gaps that may exist. This strategy may involve various approaches such as providing training programs, fostering collaborations, considering recruitment options, or even subcontracting.

When embarking on the development process of the TSL, it is necessary for the leading organisation initiating the process to define the required budget and obtain political approval for the allocated funds. This step ensures that adequate financial resources are available to support the entire planning process effectively. Additionally, assessing the likely budgetary framework for the development and implementation of the TSL approach and its pilot use-cases is crucial. This assessment should take into account funding opportunities at the local, regional, national, EU, and external levels. While the estimation of the budgetary framework may still be approximate at this stage, it plays a vital role in maintaining realistic expectations and facilitating informed decision-making throughout the development process.

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The mentioned activities also prepare the ground for future activities focusing on establishing the governance models (Activity 2.3) and assessment of transition preparedness (4.3).

Objectives

- Evaluate current planning practices and identify strengths, weaknesses, and opportunities to tailor the TSL to the local context.
- Roughly assess available financial resources for TSL development
- Evaluate skills and expertise within the organization initiating the TSL approach
- Potentially address skill gaps through training, collaborations, recruitment, or subcontracting to enhance capacities related to climate transition and relevant sectors.
- Establish the required budget for TSL development.
- Explore funding opportunities at local, regional, national, EU, and external levels.
- Make informed decisions based on the budgetary framework while maintaining realistic expectations.

Tasks

- Conduct an inventory of existing resources, infrastructure, and expertise in the region.
- Assess the availability and accessibility of funding sources and financial capacities and identify some that could be leveraged through stakeholder engagement. Identify confirmed and potential financial resources for TSL development.
- Identify gaps in knowledge, skills, and technology that may hinder the transition process and could be leveraged through stakeholder engagement. Assess capacities within the leading organisation Identify skills and expertise relevant to climate transition and other TSL sectors. Identify skill gaps and areas for improvement. Explore available training and knowledge in the TRANSFORMER Knowledge Hub.
- Facilitate communication among the members to ensure smooth coordination and foster collaboration and knowledge sharing.

Timing and coordination

- This activity is needed at the beginning, with results to be taken into account for setting up effective working structures, especially in the core team. It might take several weeks to conduct this activity.
- Barriers may be taken into account in Phase 3 of the roadmap, particularly during Activity 9.2.

Checklist

- ❑ A comprehensive evaluation of planning practices and capacities was completed.
- ❑ Identification and analysis of financial resources conducted.
- ❑ Assessment of available skills and expertise within organizations and stakeholders.
- ❑ Strategy developed to address skill gaps.
- ❑ The budget was defined
- ❑ Preliminary evaluation of budgetary framework and funding opportunities completed.

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Activity 1.4 Promote political and institutional ownership.

This activity underscores the importance of fostering political and institutional ownership to ensure the successful development of a Transition Super-Lab. Gaining political and institutional support enhances the visibility and credibility of the TSL process, encouraging cross-sectoral collaboration and access to essential resources. By securing an endorsement from political bodies and key institutions, the TSL may gain access to vital funding, expertise, and stakeholders, thus facilitating a more comprehensive and impactful transition strategy. This activity serves as a bridge between the TSL and relevant decision-making bodies, creating an environment conducive to effective planning, implementation, and resource allocation.

Objectives

- Secure political and institutional support for the TSL development process to enhance its credibility and effectiveness.
- Ensure the availability of financial resources by obtaining political approval for allocated funds and accessing funding opportunities.
- Promote collaboration among various sectors addressed in the TSL by fostering institutional ownership, encouraging cross-sectoral partnerships, and leveraging shared goals.
- Facilitate access to specific stakeholders by establishing institutional connections, thereby enriching stakeholder engagement and expertise.

Tasks

- Engage with local and regional government officials and policymakers to secure their commitment to TSL development.
- Seek endorsement or support from key decision-makers.
- Form partnerships with relevant government agencies or departments to ensure coordination and alignment.
- Establish clear lines of communication and decision-making processes within the political and institutional framework.

Timing and coordination

- Initial engagement with political and institutional stakeholders should start early in the TSL development process to ensure alignment with their agendas.
- Regular interactions and consultations with relevant bodies should occur throughout the development process to maintain engagement and secure necessary approvals.
- The collaboration with political stakeholders should be integrated into the overall TSL timeline to align with critical milestones and funding cycles.

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Checklist

- ❑ Develop a comprehensive strategy for engaging political and institutional stakeholders, highlighting the TSL's relevance to their goals.
- ❑ Prepare compelling documents and presentations that outline the TSL's objectives, benefits, and expected outcomes.
- ❑ Explore funding opportunities that align with the TSL's mission and present proposals to potential funding sources.
- ❑ Establish formal collaboration mechanisms with supportive institutions, clarifying roles and responsibilities.
- ❑ Design a communication plan to maintain regular interaction, update stakeholders on progress, and address any concerns.
- ❑ Organize events or workshops to present the TSL to political stakeholders and highlight its potential impact on the community and environment.

3.1.2 Step 2: Build a stakeholder coalition

Climate-neutral regional transitions entail complex challenges that necessitate a diverse range of insights, skills, and resources for effective resolution. Engaging a broad spectrum of stakeholders with varied expertise, backgrounds, and ideas is crucial. This inclusivity fosters a comprehensive and co-creative approach, fostering innovative solutions that account for distinct stakeholder needs. [14] Early involvement of diverse stakeholders in TSL inception significantly boosts buy-in and support for proposed changes. This collaborative approach forms a solid foundation for subsequent stages, streamlining action plan creation and implementation (Phase 3). This proactive engagement guarantees stakeholder voices and perspectives contribute to a robust and successful transition process.

This is yet another pivotal stage in TSL development, creating a coalition of stakeholders for collaboration and co-creation throughout the TSL development process. It encompasses activities to identify, map, and engage a diverse array of stakeholders and start defining their roles in the process. Coalition building involves groups with shared values, interests, and goals partnering to enhance collective power[15]. The coalition building may start in Step 2 of the TSL process but continues through the transition process.

The process identifies key stakeholders, clarifies their interests and roles, develops a comprehensive engagement plan and initiates a TSL governance model definition. This uncovers essential participants, including diverse individuals and organizations. Understanding their contributions and impact, along

[14] Frantzeskaki, N., & Rok, A. (2018). Co-producing urban sustainability transitions knowledge with community, policy and science [PDF file]. Retrieved from https://www.sciencedirect.com/science/article/pii/S2210422417306786

[15] Spangler, B. (2003, June). Coalition Building. Conflict Information Consortium.

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with a structured engagement plan, builds support for successful TSL development and pilot use-case implementation and transition outcomes.

Activity 2.1 Identify stakeholders.

Stakeholder identification aims to ensure the inclusion of a diverse range of individuals, organizations, and entities that have a vested interest or are impacted by the TSL development. This inclusivity ensures that the perspectives, expertise, and needs of various stakeholders are considered and are not left out, resulting in more comprehensive and well-rounded decision-making.

The mentioned process also helps to ensure that the TSL aligns with their interests, objectives, and priorities. It enables a better understanding of the concerns, aspirations, and expectations of different stakeholders, allowing for the development of strategies that address their specific needs. This alignment increases the likelihood of stakeholder buy-in, support, and active participation throughout the TSL development and implementation phases.

Stakeholders can contribute with resources, including financial, technical, and human resources, that are essential for the success of the TSL. By identifying stakeholders, opportunities for resource mobilization and collaboration can be identified and pursued, even at a later stage of the process, facilitating the allocation of necessary resources to support the TSL process and pilot use-cases (e.g. in Phase 3).

Identification of potential conflicts or divergent interests among different parties can also be achieved through this step. By understanding the landscape of stakeholders, conflicts can be anticipated and addressed through effective conflict resolution mechanisms (see activity 2.3). This proactive approach will help mitigate conflicts and foster constructive dialogue and collaboration among stakeholders.

Overall, activity is the initial step in stakeholder coalition building that lays the foundation for a participatory and stakeholder-driven approach, maximizing the potential for a successful and impactful TSL process.

Objectives

- Identify all stakeholders along the quadruple helix: academia, government, civil society and business/industry.
- Identify key stakeholders and veto players from the different sectors that the TSL will tackle.
- Identify their perspectives, expertise and needs.
- Identify their concerns, aspirations and expectations.

Tasks

- Identify and list the stakeholders relevant to the Transition Super-Lab, including government agencies, community organizations, businesses, educational institutions, and residents.
- Initiate a first interest/influence matrix which will be finalised in Activitiy 2.2

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- Consider all stakeholders who have a vested interest or influence in the transition process.
- Further effort in the identification of marginalised and vulnerable groups may be required to ensure the diversity of the stakeholder coalition.[16]
- Start by identifying and understanding their needs, as this will shape the strategies and actions moving forward.

Timing and coordination

- Refer to Activity 1.1 about the definition of the TSL's scope to identify stakeholders within this scope.
- Refer to Activity 1.2 regarding the assessment of the transition and the sectors that needed to be addressed by the transition.
- Finalise the interest/influence matrix in Activity 2.2

Checklist

- ❑ Identify diverse individuals, organizations, and entities impacted by or with a vested interest in TSL development.
- ❑ Ensure a comprehensive and inclusive range of stakeholders representing diverse perspectives, expertise, and needs.
- ❑ Understand the concerns, aspirations, and expectations of different stakeholders for informed decision-making.
- ❑ Identify potential resource contributors, including financial, technical, and human resources.
- ❑ Anticipate and identify potential conflicts or divergent interests among stakeholders.

Practice Example 2. TRANSFORMER example about stakeholder identification

Toolbox 4. Transitioncamp

Activity 2.2 Map stakeholders

After identifying all relevant stakeholders within the TSL ecosystem, it is essential to map them within the TSL ecosystem to be able to involve them in the process. By mapping stakeholders based on their interests and influence, practitioners can establish key relationships and effectively engage with them.

[16] Marginalized groups, according to the European Institute for Gender Equality (2023), are those facing discrimination based on factors like sex, gender, age, ethnicity, religion, health status, disability, sexual orientation, gender identity, education, income, or geographic location. In contrast, the United Nations Human Rights Office of the High Commissioner, in their publication on vulnerable people within the European Union and International Human Rights Law (n.d.), defines vulnerable individuals as those who do not speak the national language of their residing country. This category encompasses children, individuals with mental, emotional, or physical disabilities, people with dependents, those who are illiterate, asylum-seekers, and individuals dependent on drugs or alcohol.

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First, practitioners can use an interest and influence matrix to map all stakeholders, determining their significance and potential impact on the TSL. This helps prioritize stakeholders based on their importance, influence, and level of interest in the TSL process. Understanding stakeholders' needs is essential for practitioners, allowing them to tailor strategies that meet their expectations and motivations.

Practitioners should also consider the positive impacts of the TSL, such as environmental benefits and economic advantages like cost reduction and job creation in green sectors. As the process includes different stakeholders with different perceptions of transition processes, it will be important to clearly define expectations of their contributions through face-to-face discussions. This could be achieved through defining the broad categories of stakeholder's roles (such as provider of tools and data for building common understanding creation, capacity for conflict solving, implementer, conditions creator, stakeholder engagement lead, etc.) during the transition process.

By mapping stakeholders, and their relationships as a basis for cross-sectorial synergies and analysing their roles, practitioners would ensure effective engagement, alignment of interests, and the development of value propositions. This practical approach fosters collaboration and ensures diverse perspectives are integrated into the TSL, leading to a successful implementation.

Objectives

- Identify opportunities for resource mobilisation and collaboration.
- Identify the specific roles that stakeholders could play within the coalition.
- Mapp stakeholders within the coalition in terms of their roles, influence and interests.
- Define a value proposition for stakeholders.

Tasks

- Sufficient time should be dedicated to analysing the identified stakeholders to gain a deeper understanding of their interests, roles, influence and expectations on the transition process. Categorize stakeholders based on their level of involvement and impact on the transition process. By mapping out the veto players and having an adapted strategy for them, potential conflicts and challenges can be anticipated and addressed proactively.
- Visualize the stakeholder network and connections to understand the broader ecosystem. Prioritize stakeholders based on their importance, roles, influence, and level of interest in the TSL. Classify them accordingly, such as stakeholders important for securing feasibility, those involved in implementation, veto stakeholders, those impacted by the implementation, and transition facilitators.
- Define a value proposition for each group of stakeholders, highlighting how the TSL contributes to climate transition.

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Timing and coordination

- The identification of stakeholders (Activity 2.1) is essential to proceed with the mapping of stakeholders (Activity 2.2). It is, however, possible to run these activities in parallel.
- Activity 2.2 should help in the development of a stakeholder communication and engagement plan (Activity 2.3) and subsequently in the activities taking place under Step 7 when practitioners will strengthen stakeholder engagement to prepare for the definition of the action plans.

Checklist

- ❑ Analyse identified stakeholders to understand their expectations and motivations.
- ❑ Define value propositions for each stakeholder group, showcasing the TSL's contributions to climate transition.

Toolbox 5. Transitioncamp

Practice Example 3. Stakeholder mapping along the interest vs. influence matric from one of the TRANSFORMER TSL

Activity 2.3 Elaborate on possible TSL governance model

The governance of TSLs plays a key role in orchestrating collaborative efforts, ensuring efficient decision-making, and fostering cross-sectorial coordination for effective regional transformation towards climate neutrality. A well-defined governance model is essential to address the challenges of diverse stakeholder engagement, conflict resolution, inter-departmental coordination, and sustainable long-term operation. This activity aims for practitioners to start elaborating an appropriate governance framework that aligns with the TSL's objectives, leverages cross-sectorial planning, and facilitates seamless collaboration among stakeholders. The governance model will be finalised in Activity 7.3 “Refine the TSL governance model”.

Objectives

- Identify a governance model that accommodates the region's institutional and socio-economic context, promoting cross-sectorial collaboration and conflict resolution among stakeholders.
- Explore the concept of polycentric governance to establish effective decision-making mechanisms through the TSL development process at various levels, fostering local autonomy while maintaining overall cohesion.

Tasks

- Examine the institutional, socio-economic, and political landscape of the region to understand governance challenges and opportunities. A PESTEL analysis could be one of the tools for the task.
- Study the "Models of Governance" canvas developed by ENoLL to evaluate various governance models applicable to TSLs (see knowledge hub box below)
- Analyse the strengths and weaknesses of different models in the context of TSL objectives and regional needs.

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- Explore polycentric governance principles to determine how decision-making can be distributed across different levels while ensuring alignment and coordination. Polycentric governance refers to a decentralized system of governance where decision-making authority and responsibilities are distributed across multiple centres or levels rather than being concentrated in a single governing entity. In a polycentric governance model, various actors, institutions, and organizations operate semi-autonomously within their defined spheres of influence, collaborating and interacting to address complex issues, manage resources, and achieve common goals. Nevertheless, defining the stakeholder lead could benefit to ease the process of engagement processes.[17][18]
- Identify stakeholders' roles, responsibilities and contributions within the TSL framework to be taken up in the elaboration of the stakeholder engagement and communication plan in the next activity.
- Formulate strategies to facilitate inter-departmental coordination, ensuring harmonized implementation of climate-neutral solutions.
- Recognize that governance arrangements may change over time and require continuous review and adjustment to accommodate evolving needs.

Timing and coordination

- This activity should serve as a basis for the elaboration of the stakeholder engagement and communication plan developed in the next Activity (see Activity 2.4).
- Due to the evolving nature of the TSL and its stakeholder engagement, the TSL governance model will be further refined in Activity 7.3.

Checklist

- ❑ Analysed the regional context, identifying governance challenges and opportunities.
- ❑ Evaluated various governance models.
- ❑ Designed mechanisms for conflict resolution to ensure fairness and efficiency.
- ❑ Formulated strategies for inter-departmental coordination to achieve holistic climate-neutral solutions.

Knowledge hub box 1. Models of governance from EnoLL – including polycentric governance model

Toolbox 6. PESTEL Analysis

[17] Homsy, G. C., & Warner, M. E. (2014). Cities and Sustainability: Polycentric Actions and Multilevel governance. Http://Dx.Doi.Org/10.1177/1078087414530545, 51(1), 46–73. https://doi.org/10.1177/1078087414530545

[18] Zingraff-Hamed, A., Martin, J., Lupp, G., Linnerooth-Bayer, J., Pauleit, S. (2019). Designing a resilient waterscape using a living lab and catalyzing polycentric governance, Landscape Architecture Frontiers, 7 (3), 12-31.

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Activity 2.4 Develop a stakeholder communication and engagement plan

To effectively develop a TSL, it is crucial to establish a stakeholder communication and engagement plan, as this will support practitioners throughout the TSL development process.

It is necessary to define a clear strategy for stakeholder engagement. Before reaching out to stakeholders to start the co-creation process, it is important to identify the communication approach for different stakeholders. This would include defining the communication channels, strategies and approaches with respective stakeholders, determining the number of workshops required, setting goals for each workshop, and establishing a work plan and timeline.

Managing expectations and providing incentives are also essential aspects of the strategy. Additionally, it is important to determine which stakeholders should attend specific workshops and establish how stakeholders will be kept updated on the progress and process between workshops. Identifying desired outcomes and defining strategies to achieve them are also important components of the engagement plan.

Building a stakeholder coalition is an ongoing and complex process that requires a clear strategy. Outlining the objectives and expected outcomes for the coalition-building process is essential. At this stage, it is important to set realistic expectations and consider what can be realistically achieved. This will aid in identifying the right audience to involve and selecting suitable participation and co-creation methodologies. Familiarizing oneself with co-creation methodologies is a necessary step to ensure effective stakeholder engagement.

When establishing a coalition, it is important to be inclusive and not limit participation to only those who are recognized as leaders or have an acknowledged mandate for action. It is crucial to be open to the involvement of so-called "unusual suspects" to achieve a diverse and representative coalition.

To ensure the input of different stakeholders, a combined effort is required to set the agenda for the TSL development process. The entity leading the process should collaborate with stakeholders to establish a co-creation approach. An agile approach should be adopted, finding a balance between top-down and bottom-up participation. This approach needs to be developed from a local perspective that is more relatable and considers the specific context of the region. Practitioners should re-evaluate if this approach is in alignment with having a regional perspective while considering the local contexts.

<u>Objectives</u>

- Develop a robust stakeholder communication and engagement plan to facilitate seamless interaction throughout the TSL development process. Define clear strategies for stakeholder engagement, ensuring appropriate approaches for diverse stakeholders.
- Align stakeholders' expectations by establishing achievable goals and outcomes for the co-creation process.

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- Form a diverse and representative stakeholder coalition, including "unusual suspects," to foster comprehensive engagement. Consider setting up a core group of key stakeholders to ensure participation at all times in the TSL process.
- Create a flexible co-creation approach that balances top-down and bottom-up participation, respecting the regional context.

Tasks

- Determine the goals, objectives, and desired outcomes of stakeholder engagement for each step of the TSL process. Design a detailed work plan outlining the sequence of workshops, activities, and milestones. Define which stakeholders attend specific workshops and establish methods for progress updates.
- Identify the appropriate methods and channels for engaging with different stakeholder groups. Familiarize stakeholders with various co-creation methodologies to ensure effective engagement.
- Develop a communication plan to keep stakeholders informed and engaged throughout the TSL development process.
- Develop mechanisms to manage stakeholders' expectations and create incentives for engagement.
- Establish feedback mechanisms to collect input, address concerns, and incorporate stakeholder perspectives.
- Develop an agile co-creation approach, aligning with the regional context and balancing participation modes.

Timing and coordination

- It is essential to finish planning the main involvement activities before initiating the next phases of the TSL process, to ensure that all stakeholders involved in the coalition are aware of the upcoming activities and steps.
- While the coalition is built during Step 2 of the TSL process, stakeholders will be involved throughout the entire TSL process. As the TSL is being developed, changes to the stakeholder communication and engagement plan may arise. Therefore, practitioners should remain flexible and able to adapt the plan while communicating it clearly to the stakeholder coalition.
- Make sure to involve citizens in important decisions of selected steps (Step 3). Citizen engagement might be more successful when done well in selected activities instead of trying to involve them in too many activities.

Checklist

- ❑ Develop a clear communication and stakeholder engagement plan.
- ❑ Establish achievable goals and outcomes for each workshop.
- ❑ Define desired outcomes for the coalition-building process.

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Knowledge hub box 2. A specific strategy for stakeholder engagement

Toolbox 7. Tools to define a stakeholder engagement plan & Communication plan

Practice Example 4. Practice example from one of TRANSFORMER TSL

3.1.3 Step 3: Co-define a common vision for the TSL

Developing a common vision (Activity 3.1) and objectives (Activity 3.2) is foundational in creating a TSL, engaging stakeholders from the start, aligning goals, enhancing communication, and harnessing diverse expertise. Involving stakeholders promotes inclusivity and generates a sense of ownership. It concentrates efforts on measurable outcomes, guiding resource allocation, strategy, and performance evaluation. This collaborative approach builds a dynamic, effective TSL, adaptable to change and driving a meaningful regional transition.

Activity 3.1 Co-create a common vision

The establishment of a shared vision within the realm of TSLs is not only a conceptual exercise but an essential activity that fundamentally shapes the trajectory of regional transformation while providing a clear set of goals, direction alignment and collaboration among the key stakeholders. A TSL vision is an ideal representation of the future of the region that captures a common understanding of the desirable and transformative direction towards a sustainable society.

A coherent and collectively endorsed vision delineates the direction of progress. The creation of such a vision cultivates alignment, fosters collaboration, and orchestrates concerted efforts among diverse stakeholders. Offering a shared point of reference mitigates fragmentation and ensures that the entire stakeholder community is synchronized in their aspirations and actions.

The journey towards a common vision commences once the regional's transition needs and potentials are comprehensively analysed (Step 1), and the relevant stakeholders are identified (Step 2). This juncture marks the inception of a collaborative process where these stakeholders are convened to collectively articulate the contours of the desired future – a future that encapsulates the challenges and aspirations of the region. By involving stakeholders from the outset, this process capitalizes on any existing visions outlined in strategic plans, enriching them with diverse perspectives and insights.

Crucially, this collaborative vision-building phase catalyses cross-sectoral collaboration. It enables stakeholders who might not have traditionally collaborated to forge connections and articulate a shared purpose. In this context, potential conflicts of interest can be proactively addressed, fostering mutual understanding and alignment, all of which are integral for a successful, sustained transformation. In cases where a vision might have been sown through earlier exercises involving specific stakeholders, this groundwork can then be amplified and confirmed with the broader stakeholder coalition, harmonizing the vision across diverse perspectives.

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However, the endeavour of crafting a vision is not devoid of challenges. The inherent nature of TSLs, simultaneously regional and having a complex stakeholder engagement process, introduces intricacies that demand deft navigation. While regional authorities hold a central role in catalysing TSLs, the bottom-up principle should be the cornerstone of the stakeholder engagement process, in alignment with the top-down processes being used simultaneously.

Navigating the journey of vision development entails an evolution from abstract ideals to tangible milestones. While broad, general discussions might seem daunting, concreteness offers a more targeted approach to thematic TSL development. Working with sub-visions that augment the broader vision with tangible ideas has proved fruitful in contextualizing the vision's impact in the context of TRANSFORMER.

Objectives

- Open the participatory and interactive process including diverse stakeholders from the coalition.
- Identify a clear, comprehensive and common TSL vision, and potential sub-visions, reflecting the dynamic and innovative aspects of a TSL.
- Establish a collaborative environment that encourages cross-sectoral engagement, fostering connections and synergies among stakeholders who might not have traditionally collaborated.
- Proactively identify and address potential conflicts of interest among stakeholders during the vision building process, ensuring alignment and understanding before progressing further in the transition process.

Tasks

- Facilitate workshops or meetings with diverse stakeholders to collectively define a shared vision for the transition.
- Encourage open dialogue and collaboration to ensure that the vision reflects the aspirations and priorities of all stakeholders.
- Arrange thematic working groups with certain stakeholders to define sub-visions if necessary.
- Use visual aids, storytelling, or other creative techniques to help stakeholders visualize and articulate their ideas.
- Document the common vision clearly and concisely so that can be easily understood and communicated to others.

Timing and coordination

- Activity 3.1 builds upon the results of Step 1, mainly the identification of transition needs and potentials, and Step 2, mainly on the identification of stakeholders and their interests and role in the regional transition process.

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Checklist

- ❑ Establish a participatory vision development process involving stakeholders.
- ❑ Collaboratively define an ideal representation of the region's future that aligns with sustainability, encompassing a common understanding of a transformational direction
- ❑ Garner stakeholder alignment, securing commitment to the envisioned transformation.
- ❑ Addressed potential conflicts of interest and facilitated understanding among stakeholders.

Toolbox 8. Transitioncamp

Practice Example 5. Practice example from one of TRANSFORMER TSL

Activity 3.2 Co-define main goals and objectives

After formulating the shared vision through collaboration with stakeholders, practitioners can proceed to delineate concrete objectives that signify the desired transformative outcomes. Establishing these objectives plays a vital role in clarifying the targeted changes and improvements sought within the region. By defining these objectives, the focus shifts to precisely identifying the necessary alterations, thereby enhancing the clarity of the transformation process.

The process of defining objectives carries a systemic and cross-sectoral significance, intricately woven into the fabric of regional transition. This strategic alignment serves as a vital resource for subsequent stages, particularly during the development of pilot use-cases within the TSL framework (Step 5 and 6). Crafting objectives that span various sectors and systems facilitates the seamless integration of these goals into the pilot use-case formulation process, fostering a cohesive and integrated approach to transformation.

The inclusion of stakeholders in the objective-setting process is paramount to ensure the acknowledgement and acceptance of the identified priorities. This collaborative approach not only deepens the engagement of key players but also positions the TSL process to move closer to the definition and realization of the pilot use-cases.

In essence, this activity of defining main goals and objectives encapsulates the essence of the shared vision, channelling it into specific, actionable directions. By establishing these objectives, practitioners lay the foundation for a coordinated, inclusive, and impactful transformation journey.

Objectives

- Identify what the TSL should achieve, accounting for all aspects of the common vision and all sectors involved in the TSL.
- Formulate clear objectives and strategic priorities to specify the direction for improvement.

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Tasks

- Based on the common vision, analyse which improvements it outlines. Assess and define the desired improvements together with stakeholders. Align the goals and objectives with the broader sustainability and development agendas of the region when they exist. Prepare and follow up by holding stakeholders' workshops and meetings to ensure their buy-in and sense of ownership of the TSL. Define strategic objectives for all the themes that reflect the needs of stakeholders and citizens in the region.
- Define clear objectives that will help orientate the definition of pilot use-cases in Step 5. Specify what objectives should be achieved and how they are relevant to the regional transition. If possible, specify how these objectives can be easily measured and if a timeframe applies to them.

Timing and coordination

- This Activity builds on the common vision (Activity 3.1) and leads to the definition of scenarios and transition pathways (Step 4).
- This Activity may be run in parallel with Activity 3.1

Checklist

- ❑ Vision reviewed to guide the development of objectives.
- ❑ Draft objectives and goals developed and discussed with key stakeholders.

Toolbox 9. Tool: Transitioncamp

3.1.4 Step 4: Build scenarios & transition pathways

A scenario can be defined as a structured framework comprising various feasible pathways aimed at achieving a desired vision. It involves considering different possibilities and assessing the potential pathways to determine the most suitable approach. Pathways are specific routes of actions taken to reach the vision with a structured approach.

Scenarios can play a vital role in guiding sustainable transitions as they support practitioners in anticipating change, challenging current systemic practices, creating urgency, bridging perspectives and facilitating paradigm shifts. Scenarios surface potential shifts in society, aiding practitioners in anticipating and preparing for changes in political, economic, and social landscapes. Transition scenarios prompt a shift away from unsustainable practices, encouraging the exploration of alternative pathways. Deliberation over desirable sustainability pathways and targets underscores the urgency for action,

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emphasizing the bridge between the present and the future. Transition scenarios bridge the common long-term vision with short-term actions, aligning overarching objectives with immediate steps.[19]

Activity 4.1 Co-identify different scenarios

This activity presents both opportunities and challenges. Developing scenarios is pivotal for envisioning possible pathways towards achieving the TSL's objectives and vision, offering insights into potential transition trajectories. However, building scenarios within a TSL framework involves certain challenges. Determining the optimal number of scenarios to develop is crucial. Too few scenarios might limit the exploration of diverse strategies, while an excessive number can lead to confusion and resource constraints. It's essential to strike a balance that allows for comprehensive exploration without overwhelming stakeholders. Incorporating the TSL's vision and objectives adds complexity, as scenarios must align with these foundational elements while remaining adaptable to various future possibilities. Careful consideration is needed to ensure that the scenarios are consistent with the TSL's overarching aims. Furthermore, the participatory nature of TSLs necessitates engaging stakeholders in co-identifying scenarios. This collaborative process can yield diverse perspectives and insights but also demands effective facilitation to manage varying opinions and expectations.

Objectives

- Collaboratively explore a range of potential scenarios that align with the TSL's overarching vision and objectives, allowing stakeholders to collectively envision diverse futures.
- To ensure that the developed scenarios are contextually relevant to the specific regional circumstances and challenges addressed by the TSL, taking into account the region's specific characteristics.

Tasks

- Conduct scenario planning exercises to explore various possible futures for the region. This can be done within the TSL working group, with a few selected stakeholders or the stakeholder coalition as a whole.
- Explore possible future developments of the most relevant external factors for regional and cross-sectorial transition. Consider current trends and likely changes as projected by recent experts within the stakeholder coalition. Consider also less likely but highly disruptive changes that would heavily influence different sectors in your region. Identify different factors and uncertainties that may influence the transition process, such as technological advancements, policy changes, or socio-economic shifts.

[19] Sondeijker, S., Geurts, J., Rotmans, J. and Tukker, A. (2006), "Imagining sustainability: the added value of transition scenarios in transition management", Foresight, Vol. 8 No. 5, pp. 15-30. https://doi.org/10.1108/14636680610703063

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- Develop several scenarios that describe alternative policy priorities among the selected sectors of the TSL and their impacts on a strategic level with the stakeholder coalition. Practitioners should develop at least three scenarios:
    - A business-as-usual scenario that describes the development forecasted if the current policy direction is continued and only measures that have already been planned are implemented.
    - Alternative scenarios that describe forecasted developments resulting from different strategic policy priorities. Such scenarios show the contributions of different policy directions, helping practitioners define what to put the most emphasis on. It is recommended to include only sustainable policy directions, as the business-as-usual scenario already allows the comparison with a less sustainable scenario.

Timing and coordination

- Refer to Activities 1.1 and 1.2 to align the scenarios with the identified scope of the TSL, as well as the transition needs and potentials.
- Refer to Activities 3.1 and 3.2 to ensure that the vision and objectives are considered when building the scenarios. The scenario development accompanies the development of the vision and objectives and may be developed in parallel with Activity 3.1 and 3.2.

Checklist

- ❑ Impacts of potential changes in external factors explored and considered in the scenarios.
- ❑ Different alternative scenarios described, include a business-as-usual scenario.

Toolbox 10. Transitioncamp

Practice Example 6. Practice example from one of TRANSFORMER TSL

Activity 4.2 Select scenario and pathways

This activity is guided by the specificity of a TSL's cross-sectorial approach, necessitating the exploration and evaluation of multiple pathways within a chosen scenario. This activity entails a collaborative dialogue within the stakeholder coalition to deliberate on various scenarios and their potential impacts. By presenting diverse prospective futures and engaging stakeholders in reflective discussions, a collective comprehension of the available options for the future emerges. This process not only fosters a shared awareness of the intricate interdependencies and trade-offs across sectors but also underscores the complexity of strategic decisions and risks inherent in the transition. Working collaboratively, the stakeholder coalition endeavours to attain a mutual understanding of the most desirable scenario.

Subsequently, multiple pathways are conceived to achieve this preferred scenario, reflecting the coalition's commitment to shaping a sustainable and effective transition. This activity can be done through a SWOT analysis or similar analyses for purposefulness, feasibility, sustainability and risk aspects thus providing a clear image of enablers and barriers for each pathway contributing to the selection of the most suitable pathway. Through this activity, stakeholders align their aspirations, build consensus,

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and chart a course that maximizes the likelihood of achieving the TSL's overarching vision and objectives.

Objectives

- Facilitate well-informed decision-making within the stakeholder coalition by presenting a range of scenarios, and collectively assessing the scenarios.
- Work collectively to design multiple pathways that lead to the selected desirable scenario, exploring a range of strategies and actions for achieving the envisioned future.
- Recognize the need for ongoing adaptation and refinement of pathways as new information emerges or circumstances change, ensuring the transition strategy remains flexible and responsive.
- Establish transparent communication channels to relay scenario outcomes, pathway details, and rationale to the broader stakeholder community, enhancing understanding and accountability.

Tasks

- Engage with specific stakeholders to discuss the scenarios. Try to reach typically underrepresented groups to ensure the representation of opinions in the selection of a scenario and multiple pathways. Citizens and civil society can be engaged through different means by being informed, surveyed or represented during stakeholder workshops. Evaluate and analyse the identified scenarios to understand their feasibility and potential impacts.
- Prepare a SWOT analysis or similar analyses for purposefulness, feasibility, sustainability and risk aspects.
- Once the scenario is chosen, develop multiple transition pathways that will help outline the specific actions, strategies, and milestones required to achieve the desired outcomes at a later stage of the process. Consider different approaches and strategies for each pathway to provide flexibility and adaptability in the transition process. Consider already identifying which stakeholders are key for each transition pathway.

Timing and coordination

- This Activity should build on the scenarios defined in Activity 4.1 and consider the results of Activity 1.1, 1.2, 3.1 and 3.2.

Checklist

- ❑ One scenario has been selected and approved by relevant stakeholders.
- ❑ Multiple pathways to achieve the selected scenario have been developed collaboratively with relevant stakeholders.

Knowledge hub box 3. SWOT & similar analyses

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Activity 4.3 Assess the transition readiness of the region.

Activity 4.3 aims to prepare TSLs to evaluate the transition readiness of regions. Assessing the transition readiness provides valuable insights into the region's preparedness to embark on a climate-neutral transformation journey. By systematically analysing different dimensions of readiness, this activity offers regions a comprehensive understanding of their strengths and weaknesses, fostering informed decision-making, targeted interventions, and the alignment of TSL efforts with regional needs.

This assessment forms a foundation for guiding regions towards a successful transition process and enabling them to leverage the benefits of the TSL ecosystem. Furthermore, this activity includes the qualitative assessment of various elements that characterised the transition-ready ecosystems such as governance & fusion, openness & greenness, transparency and cross-sectorial collaboration, regulations and economy, infrastructure, technology & tools and civil society and stakeholders. Finally, the stakeholders develop core elements for TSLs that are aligned with the methodology for assessing the efficiency and success of the Transition Process towards climate neutrality of Activity 1.2, enhancing their strategic approach to monitoring and evaluation.

Practitioners will be able to conduct this activity by taking up the Transition Readiness Assessment Framework which is being developed in TRANSFORMER and includes a Transition Readiness Self-Assessment Tool.[20] Through dedicated questions, the tool assesses the region's transition readiness providing a Transition Readiness score (at both total and element level). The tool also encompasses a methodology for identifying the weak points of the region related to its transition readiness. This latest allows for a comparative assessment with benchmark and other regions, highlighting areas of concern that fall below the average performance. These results combined with the outcomes of the QRAFT methodology (Activity 1.2) provide valuable input to regions on what they should focus on to achieve a speedy and successful transition.

Objectives

- Conduct a thorough evaluation of the transition readiness of the region by analysing various elements of readiness, identifying the weak points, considering the progress and further refinement the TSL in the previous steps.
- Collaboratively develop core indicators at the strategic level that will guide the TSLs' monitoring and evaluation efforts throughout the transition process. These indicators support the implementation of the methodology for assessing the efficiency and success of the Transition Process towards climate neutrality that started in Activity 1.2

[20] This tool is currently being developed as part of TRANSFORMER WP5 activities and will be finalised by the end of the project.

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Tasks

- Familiarize all stakeholders with the developed TRANSFORMER Transition Readiness Framework and its methodology.
- Gather necessary data and information about each region's governance structure, policy framework, stakeholder engagement, technological infrastructure, economic status, and social readiness.
- Utilize the Transition Readiness Self-Assessment Tool to calculate scores for elements and sub-elements based on responses to relevant questions. Perform a quantitative assessment of transition readiness for each region and identify its weak points, including the calculation of mean, median, standard deviation, minimum, and maximum scores.
- Organise a stakeholder workshop to validate the results of the Transition Readiness Self-Assessment Tool, discuss the region's strong and weak points, benchmark the region against other regions' transition readiness and gain insights on a way forward.
- Collaboratively define core indicators at the strategic level that align with TSL objectives and transition goals. Ensure that these indicators cover essential aspects of the TSL process and its impact on regional transformation and are aligned with the methodology for assessing the efficiency and success of the Transition Process towards climate neutrality of Activity 1.2

Timing and coordination

- This activity builds upon the first results of the QRAFT and the methodology for assessing the efficiency and success of the Transition Process towards climate neutrality from Activity 1.2
- It provides a foundational framework for the development of indicators in Activity 6.1 related to pilot use-cases.
- It establishes a baseline for creating the assessment plan in Activity 9.4.
- It serves as a cornerstone, to which reference will be made in Activity 11.3.

Checklist

- ❑ Utilized the Transition Readiness Self-Assessment Tool to calculate quantitative transition readiness scores.
- ❑ Collaboratively defined core indicators at the strategic level that align with TSL objectives and transition goals.

Knowledge hub box 4. TRANSFORMER Transition Readiness Assessment Framework, its core Indicators and Self-assessment Tool

Practice Example 7. Example from one of the TRANSFORMER regions implementing the TRANSFORMER Transition Assessment Framework

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Milestone

As this phase draws to a close, a significant milestone is reached in the progression of the transition process – Phase 1, "Strengthening Regional Transition," has been completed. Throughout this phase, critical groundwork has been laid, and comprehensive assessment steps have been undertaken, resulting in a deep understanding of the regional transition needs, challenges and framework. Concurrently, robust working structures and stakeholder coalitions have been forged, setting the stage for the development of a tailored TSL strategy. This strategy encompasses a common vision, precise objectives and goals, and an apt scenario and strategic pathways for the regional transition.

Collaborative efforts with key stakeholders have fostered a shared understanding of the primary challenges and opportunities that punctuate the regional landscape. This collaborative endeavour extends its reach to include influential stakeholders and local decision-makers, thereby solidifying acceptance, fostering accountability, and providing a firm foundation for the impending gearing of the regional transition.

By accomplishing these core activities, practitioners will find themselves suitably prepared to transition into the subsequent phases.

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3.2 Phase 2: Gearing regional transition capacities

Milestone: Setting the ground for the operational stage

With this second phase, the TSL development process moves further in the definition of the strategic level and prepares for the operational level. This phase focuses on gearing regional transition capacities by collaboratively defining pilot-use-cases, their goals and targets while setting the ground for implementation in terms of stakeholder engagement and the governance of the TSL.

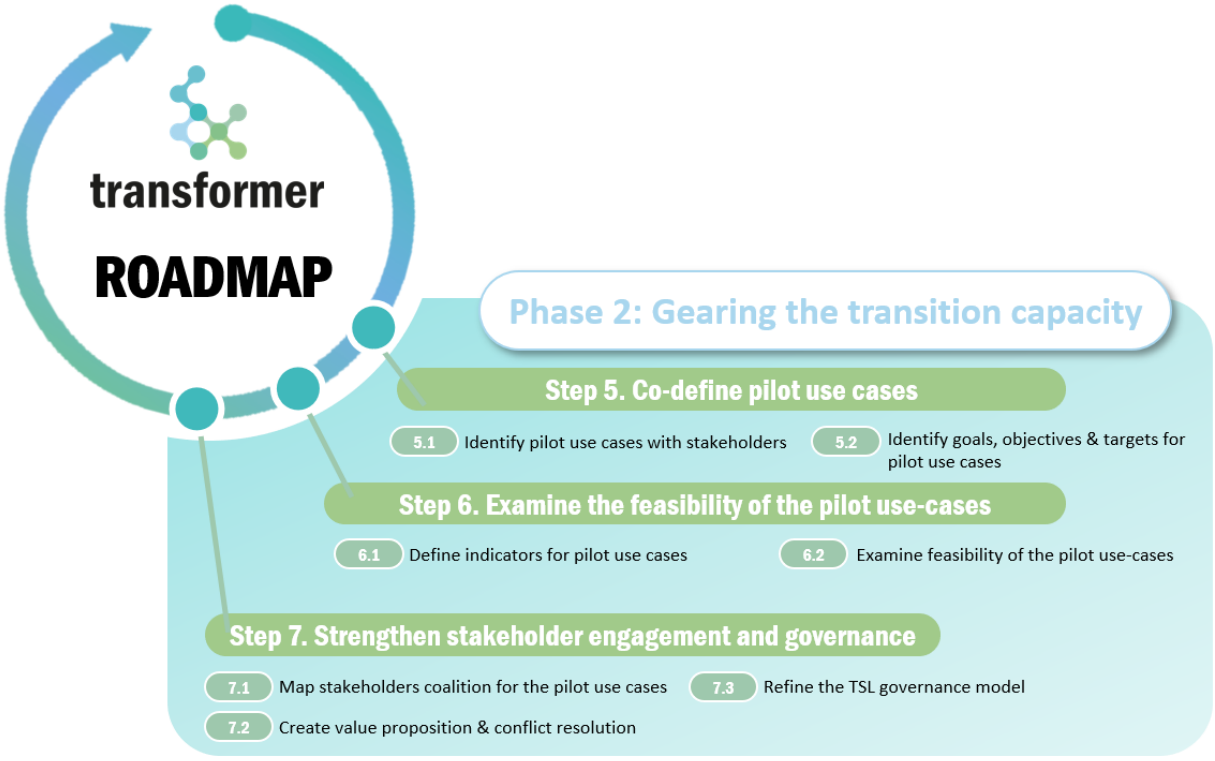

Figure 3. Phase 2 of the TSL development process (draft)

3.2.1 Step 5: Co-define pilot use-cases

In the fifth step of the TSL process, pilot use-cases are collaboratively crafted project ideas aimed at achieving climate neutrality and driving systemic transformation, tailored to facilitate regional transformation based on insights from earlier knowledge acquisition. Engaging relevant stakeholders is central to this step, establishing a strong coalition that enhances the pilot use-case definition. These pilot use-cases are central to the TSL, embodying innovation and aligning with the living-lab concept.

This step meticulously co-defines goals, objectives and targets for each pilot use-case, aligning them with the TSL's overarching objectives. It's a crucial preparatory measure for subsequent phases,

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especially in formulating action plans (Step 9). Precise goals establish essential groundwork, ensuring each use-case remains focused and purpose-driven, facilitating tailored action plans. These agreed-upon objectives and targets serve as a compass for monitoring progress and impact, offering tangible measures of success and identifying areas for improvement. This collaborative goal-setting not only ensures a structured implementation phase but also enhances the potential for desired impact, guiding actions, fostering collaboration, and promoting a sustainable and transformative transition. This step is an essential preparation to define indicators and examine the feasibility of pilot use-cases (Step 6).

By co-defining goals, objectives and targets at this juncture, the TSL practitioners are not only ensuring a structured implementation phase but also enhancing the potential for the desired impact. As the subsequent phases unfold, the co-created goals will serve as the guiding principles that drive actions, facilitate collaboration, and contribute to the realization of a sustainable and transformative transition.

Activity 5.1: Identity pilot use-cases with stakeholders

This activity is key in the TSL process, as these use-cases play a foundational role in achieving climate neutrality and driving systemic transformation. Pilot use-cases, as defined in TRANSFORMER, offer a goal-oriented set of interactions between different actors, allowing for the comprehensive exploration of pertinent issues and resources essential for the development of TSLs. Additionally, these use-cases serve as real-life experiments, facilitating concept refinement and practical implementation.

TRANSFORMER has developed the following characteristics for pilot use-cases:

- They contribute to the goal of climate neutrality (according to agreed visions and scenarios);
- They provide a potential for systemic transformation;
- They have been co-created and will be co-implemented;
- They define a goal-oriented set of interactions between actors across sectors;
- They help identify all relevant issues and resources for the development of Transition Super Labs;
- They have a regional character, going beyond merely local solutions and have an expected value for the region;
- They are real-life experiments and follow innovative approaches, which serve for the concept development and its implementation in practice.

Objectives

- Collaboratively identify pilot use-cases that contribute significantly to the overarching goal of achieving climate neutrality, aligning with agreed-upon visions, scenarios and pathways
- Pinpoint pilot use-cases that hold the potential to instigate systemic transformation across various sectors, fostering an integrated approach to regional sustainability. Select pilot use-cases that possess a regional character, surpassing local solutions to generate regional value and impact.
- Ensure that the pilot use-cases as a package have synergies between them and are cross-sectorial to help overcome barriers to implementation and exploit these synergies.
- Embrace innovative practices that contribute to the conceptual evolution of sustainable practices.

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Tasks

- Foster active participation of stakeholders in brainstorming sessions to identify potential pilot use-cases that seamlessly align with the overarching transition vision, objectives, selected scenario, and transition pathways. This process should actively incorporate diverse stakeholder input and perspectives to ensure an inclusive and comprehensive range of pilot use-case possibilities.
- Organize interactive discussions and workshops that strategically identify geographic and thematic areas within the region where pilot use-cases can yield the most impactful outcomes in terms of achieving climate neutrality and instigating systemic change.
- Institute sustainable mechanisms for ongoing engagement with stakeholders, ensuring a consistent process of assessment, enhancement, and fine-tuning of the selected pilot use-cases. This approach values and incorporates stakeholders' insightful inputs and suggestions throughout the entire lifecycle.
- Apply a structured approach to prioritize pilot use-cases based on their potential to generate impact, feasibility, and alignment with the shared vision and goals. The selection process should identify combinations that enhance each other's effectiveness and ensure mutual reinforcement.
- Scrutinize the selected pilot use-cases to ensure they comprehensively address all designated objectives, including the consideration of potential externalities that might arise from their implementation.
- Maintain meticulous documentation capturing the rationale behind each pilot use-case selection, inclusive of stakeholder feedback, and a transparent account of the decision-making process. This documentation ensures transparency and accountability while enabling a clear retrospective analysis of the selection journey.

Timing and coordination

- Utilize the findings from Activities 1.1, 1.2, and 4.3 to validate that the chosen pilot use-cases effectively address the challenges and requirements of the regional transition towards achieving climate neutrality.
- Guarantee that the selected pilot use-cases are meticulously developed and collaboratively agreed upon, encompassing sufficient details to facilitate the seamless progression to the subsequent activity.

Checklist

- ❑ Potential package of pilot use-cases identified that are expected to realise cross-sectorial synergies and overcome implementation barriers

Toolbox 11. Open Matchmaker, Transitioncamp

Practice Example 8. Practice example from one of TRANSFORMER TSL

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Activity 5.2 Identify goals, objectives and targets for pilot use-cases

In the pursuit of effective and targeted transformation, it is crucial to set clear and specific goals, objectives and targets for each pilot use-case within the TSL framework. These goals provide a focused direction, ensuring that the efforts invested in each use-case contribute meaningfully to the broader transition objectives. Defining measurable and time-bound goals with their respective objectives and targets not only facilitates tracking progress but also fosters a sense of accountability and ownership among stakeholders.

Objectives

- Establish precise and well-defined objectives for each pilot use-case, outlining the desired outcomes and impacts.
- Determine the key aspects that need to be monitored to assess the progress and effectiveness of each pilot use-case.
- Establish specific and attainable targets for each pilot use-case, aligned with their objectives and indicators.

Tasks

- Collaborate with stakeholders to identify the intended outcomes of each pilot use-case. Develop clear and specific goals that reflect the overarching vision of the TSL while addressing the specific challenges of each use-case.
- Empower stakeholders to take ownership of the goals by involving them in the decision-making process. Foster a sense of commitment among stakeholders towards the successful realization of the goals.
- Ensure that the goals and objectives of each pilot use-case are aligned with the broader transition objectives of the TSL. Verify that the goals contribute directly to the regional climate neutrality and systemic transformation agenda.
- Ensure that the defined goals are measurable, enabling the assessment of progress, success and impact. Set time-bound targets that establish milestones for tracking the advancement of each pilot use-case.
- Document the established goals and objectives for each pilot use-case, detailing their alignment with the TSL's vision and objectives. Communicate the defined goals to all stakeholders to promote transparency and shared understanding.
- Define clear and specific targets and milestones for each pilot use-case. These targets should be tailored to the objectives and indicators previously established. Set both quantitative and qualitative targets that effectively capture the desired outcomes of the pilot use-cases. These targets should be discernible, enabling straightforward assessment of progress and impact.
- Ensure that the defined targets are realistic and achievable within the context of the pilot use-cases and the regional transition goals.

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Timing and coordination

- Practitioners should refer to Activity 3.2 to ensure that the goals of the pilot use-cases align with the overarching goals of the TSL.
- This activity will serve as a basis for activities 6.2 and 6.3. Practitioners may want to consider conducting all activities in Step 6 in parallel due to their iterative nature.
- This activity will provide the groundwork for the elaboration of the assessment plan (see Activity 9.4) and the monitoring and assessment of results and impacts (see Activity 10.2)

Checklist

- ❑ Define and prioritize goals suitable to reach the vision for each of the pilot use-cases
- ❑ Targets for each pilot use-case are defined and aligned with their objectives and indicators

Toolbox 12. Transitioncamp

Practice Example 9. Practice example from one of TRANSFORMER TSL

Knowledge hub box 5. TRANSFORMER Evidence-based use-case impact assessment methodology.

3.2.2 Step 6: Examine the feasibility of the pilot use-cases

Step 6 advances from Step 5's finalization by crafting indicators for the co-defined objectives and targets of pilot use-cases. These objectives, targets, and indicators guide progress monitoring, making success measurable and identifying areas for improvement in later TSL stages (Steps 9 and 10). Once pilot use-cases are selected with their goals, objectives, targets, and indicators, a thorough feasibility evaluation is paramount. This feasibility assessment involves scrutinizing technical aspects like available technology, infrastructure, data accessibility, and compatibility. Operational feasibility, including personnel readiness, and economic viability, could be assessed through different methodologies such as cost-benefit analysis and financial backing exploration.

Activity 6.1 Define indicators for each pilot use-case

Aligned with the region's transition readiness and guided by the established assessment framework (see Activity 4.3), this activity helps practitioners further elaborate indicators for their TSL at the pilot use-case level, aligned with their objectives and targets. This strategic step serves as a bridge between the pilot use-case objectives and the forthcoming process of target setting and progress monitoring. The careful selection and articulation of indicators provide a tangible and measurable means to gauge the effectiveness and impact of the pilot use-cases.

By first identifying and defining these indicators, the TSL ensures a robust foundation for subsequent stages of the process. This approach guarantees that the chosen indicators are aligned with the TSL's vision and objectives while being practically measurable. Notably, by defining these indicators early in the process, the TSL can facilitate the seamless integration of monitoring and evaluation efforts as they become intrinsic components of the implementation journey.

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TRANSFORMER's development of a comprehensive set of core indicators further bolsters this process. Drawing from this framework and potentially building upon strategic indicators established in previous activities (see Activity 4.3), the TSL can enhance its indicator selection process.

While this step doesn't encompass the full monitoring and evaluation plan, the early agreement on indicators with stakeholders is of paramount importance. This ensures that these indicators are woven into the fabric of the implementation process, providing a continuous feedback loop that supports effective decision-making, progress assessment, and course correction. By undertaking this activity, the TSL sets the stage for a well-informed, targeted, and successful pilot use-case implementation journey.

Objectives

- Define a set of indicators that allow for the monitoring of progress made towards the achievement of goals and targets for each pilot use-case.
- Select easily measurable and understandable indicators by considering existing data sources (see Activity 1.2 and 5.2), standard indicators (see Activity 4.3) and TRANSFORMER Evidence-based use-case impact assessment methodology.

Tasks

- Create a comprehensive collection of indicators that precisely capture the performance and outcomes of each pilot use-case. These indicators should be carefully selected to encapsulate the essence of the pilot use-case's objectives, ensuring that they provide a comprehensive and accurate representation of their impact. The development of these indicators requires a deep understanding of the intricacies and goals of each use-case, as well as a strong alignment with the broader transition objectives of the TSL.
- Select indicators that are not only directly relevant to the pilot use-case's objectives but are also reliable and easily quantifiable. These indicators should possess an unambiguous link to the specific goals of the use-case, ensuring that the measurements derived from them are meaningful and actionable. Moreover, selecting indicators that can be consistently and accurately measured over time is essential for generating trustworthy insights.
- Identify how the necessary data will be collected to measure each indicator's performance. Defining appropriate data collection methods and establishing a suitable frequency for data gathering is essential. Depending on the nature of the indicator, data might be collected through surveys, sensors, interviews, existing databases, or other means. This ensures a consistent and organized flow of data that supports effective monitoring.

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Timing and coordination

- Connect the pilot use-case indicators to the strategic indicators identified in Activity 4.3
- This activity is linked to activities 6.1 and 6.3. Practitioners may want to consider conducting all activities in Step 6 in parallel due to their iterative nature.
- This activity will provide the groundwork for the elaboration of the assessment plan (see Activity 9.4) and the monitoring and assessment of results and impacts (see Activity 10.2)

Checklist

- ❑ A suitable set of pilot use-cases indicators was selected.
- ❑ Data collection for all indicators identified.

Knowledge hub box 6. TRANSFORMER Indicators from the Transition Assessment Framework

Activity 6.2 Examine the feasibility of pilot use cases

Once the selection of pilot use-cases is complete and their goals, objectives, targets and indicators, it becomes essential to undertake a comprehensive evaluation of their feasibility. The TSLs must gather pertinent data to determine whether delving further into the pilot use-case is warranted. This assessment entails a meticulous examination of various dimensions. From a technical perspective, considerations encompass the availability of requisite technology, infrastructure prerequisites, data accessibility, compatibility with existing systems, and the identification of potential technical hurdles or limitations.

In tandem with the technical aspects, the operational feasibility of the chosen pilot use-cases needs to be scrutinized. This involves an evaluation of factors such as the availability of skilled personnel and the organization's preparedness for change. Furthermore, a thorough assessment of the economic viability is imperative. By conducting a comprehensive cost-benefit analysis, the TSLs can gauge both short-term and long-term costs and advantages associated with the pilot use-case. Exploring potential avenues for financial backing ensures the financial sustainability of the assessed pilot use-case.

In this activity, it's also pivotal to identify legal, regulatory, and socio-economic factors that could potentially impact the implementation of the pilot use-case. Factors like citizens' acceptance, political support, and other socio-economic considerations should be considered. Furthermore, the timeframe horizon for implementation should be established. This comprehensive evaluation process ensures that the selected pilot use-cases align with technical, operational, economic, and regulatory parameters while being cognizant of potential challenges and opportunities.

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Objectives

- Conduct a feasibility assessment of each pilot use-case individually and at the TSL level.
- Finalise the package of pilot use-cases based on the results of the feasibility assessment and validation from the stakeholder coalition.

Tasks

- Evaluate the technical, economic, social, and environmental viability of each pilot use-case. Assess the availability of necessary resources, technology, and expertise required for successful implementation.
- Identify potential risks, challenges, and barriers for each pilot use-case.
- Synthesize the results of the feasibility assessment to determine the overall feasibility of each pilot use-case. Prioritize the pilot use-cases based on their feasibility and potential impact on regional transition goals.
- Test and appraise the identified pilot use-cases in detail. Modify them based on the results to avoid unrealistic projects and ensure cost-effectiveness. Consider different assessment methods and decide which one to use based on your experience, available resources and the types of pilot use-cases to assess (e.g. cost-benefit analyses, multi-criteria analyses, etc.). Examples of feasibility study methods are further detailed in the toolboxes and knowledge hub boxes of this activity.
- Actively involve and get feedback from civil society and the proposed pilot use-cases. They should be involved in their validation and final selection.
- Based on the assessment outcomes, stakeholder feedback, and alignment with regional transition goals, make a final selection of pilot use-cases. Ensure that the selected pilot use-cases demonstrate a high degree of feasibility and potential for impact.

Timing and coordination

- An interactive process takes place between Activity 5.1 and 5.2 to adjust the pilot use-cases or identify new ones based on the results of the feasibility study of each pilot use-case individually and as a package.
- Practitioners may have to use external professional expertise for this evaluation depending on the specificity of the pilot use-case and the expertise available among the core stakeholders.

Checklist

- ❑ Shortlisted package of pilot use-cases tested and appraised for their feasibility.
- ❑ Selected package of pilot use-cases discussed and validated with stakeholder coalition.
- ❑ The final set of pilot use-cases was selected.

Practice Example 10. Practice example from one of TRANSFORMER TSL about their feasibility assessment

Knowledge hub box 7. Example of a feasibility evaluation of a pilot use-case

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3.2.3 Step 7. Strengthen stakeholder engagement and governance

This step can be seen as an iterative loop to Step 2 of the TSL process. While Step 2 initially established a broad coalition of stakeholders for collaborative engagement, this phase aims to refine and consolidate this coalition as the TSL strategy crystallizes and pilot use-cases become defined. The purpose is to ensure that the current stakeholder coalition aligns with the evolving needs and objectives of the TSL, especially concerning the imminent pilot use-case implementation. This iterative loop underscores the significance of adaptable and dynamic stakeholder engagement, one that evolves in sync with the transformation journey. If activity 7.1 and 7.2 are skipped, it is still useful to tend to activity 7.3.

Crucially, in cases where practitioners determine that their stakeholder coalition is comprehensive and no further additions are required, potentially bypassing activities 7.1 and 7.2, it remains essential to focus on activity 7.3. This step ensures that the existing stakeholder coalition maintains its strong alignment, active engagement, and readiness to undertake the roles associated with piloting use-cases. This well-considered approach serves to nurture a robust network of backing and collective responsibility throughout the TSL journey, culminating in heightened efficacy during the execution of pilot use-cases and the realization of intended transition goals.

Activity 7.1 Map stakeholders for each pilot use-cases

This activity is a strategic continuation of the stakeholder engagement process initiated in Step 2. As the TSL journey advances, the landscape of stakeholders and their relevance can shift. This activity acknowledges the evolving nature of the stakeholder coalition and focuses on identifying the specific stakeholders integral to the implementation of each pilot use-case. By refining and customizing the stakeholder groups based on their roles in the pilot use-cases, this activity ensures a well-aligned and targeted approach. The iterative nature of this process ensures that the coalition remains robust and fit for purpose, enhancing its capacity to drive successful pilot use-case execution.

Objectives

- Identify the key stakeholders relevant to each pilot use-case, considering their potential contributions, interests, and influence.
- Evaluate the significance of stakeholders in terms of securing feasibility, facilitating implementation, potential vetoing, impact, and role as a transition facilitator.
- Develop strategies for effectively engaging and mobilizing stakeholders, fostering collaboration and shared commitment specific to the requirements of each pilot use-case.

Tasks

- Reassess the stakeholder coalition considering the evolving landscape of the TSL and the strategic focus of the pilot use-cases.
- Identify stakeholders for each pilot use-case, categorizing them based on their anticipated roles and involvement levels.

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- Analyse stakeholder interests, influence, and resources to determine their potential contributions to each pilot use-case.
- Tailor engagement strategies for each stakeholder group, ensuring their alignment with the aims and priorities of the pilot use-cases.

Timing and coordination

- Start from the results of Activity 2.2 and update the TSL stakeholder map with new information.
- Coordinate with Activity 7.2 to ensure the developed stakeholder engagement strategy aligns with the value propositions and conflict resolution mechanisms.

Checklist

❑ A new stakeholder map has been developed.

Toolbox 13. Open Matchmaker, Transitioncamp

Activity 7.2 Create value propositions and conflict resolution mechanisms

This activity acknowledges that sustained engagement requires clear value propositions for stakeholders, especially as their roles become more defined with the impending pilot use-case implementation. This activity establishes a dynamic two-way relationship, articulating how each stakeholder group contributes to the transformation while clarifying their respective roles. Additionally, recognizing potential conflicts that may arise due to divergent interests or expectations, this activity also underscores the importance of mechanisms to address such conflicts. This iterative loop ensures that stakeholders remain informed, engaged, and well-prepared to assume their roles in the pilot use-case implementation.

Objectives

- Define and communicate the individual value propositions for each stakeholder group, highlighting the benefits they gain from participating in the TSL and contributing to the pilot use-case implementation.
- Identify potential conflicts or disagreements among stakeholders and develop effective mechanisms to address and resolve these conflicts in the context of pilot use-case implementation (examples of conflict resolution mechanisms will be provided in the Knowledge Hub).
- Facilitate open dialogue and negotiation among stakeholders to ensure mutual understanding, alignment, and a shared vision of the value propositions and their contributions.

Tasks

- Develop clear and compelling value propositions for each stakeholder group, showcasing how their participation impacts the success of the TSL and the pilot use-cases.
- Anticipate potential conflicts by analysing stakeholder interests and potential areas of contention.

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- Design conflict resolution mechanisms that provide a structured and collaborative approach to address conflicts constructively.
- Facilitate discussions and engagement workshops where stakeholders can openly address concerns, clarify expectations, and negotiate potential conflicts.
- Ensure that value propositions and conflict resolution mechanisms align with the evolving strategies of the TSL and the specific needs of the pilot use-cases.

Timing and coordination

- Start from the results of Activity 2.2 and update the TSL stakeholder map with new information.

Checklist

- ❑ Value propositions have been defined and communicated to the relevant stakeholders.
- ❑ Conflict resolution mechanisms have been developed.

Activity 7.3 Refine the TSL governance model

As the pilot use-cases of the TSL are further developed, their objectives, indicators, and targets become clearer, necessitating a revaluation of the TSL governance model to prepare for the sharing of the responsibilities for the pilot use-cases implementation. The evolving nature of the TSL requires an iterative approach to the TSL governance refinement, ensuring that the model remains aligned with the emerging priorities and needs of the pilot use-cases. This activity serves as a critical feedback loop, allowing practitioners to adapt the governance model to address the specific requirements of the pilot initiatives, enhance collaboration, and optimize decision-making processes.

Objectives

- Refine the TSL governance model to align with the objectives, indicators, and targets of the pilot use-cases, ensuring that governance mechanisms support the achievement of desired outcomes.
- Identify opportunities to enhance cross-sectorial collaboration and stakeholder engagement within the refined governance model, enabling seamless coordination among diverse stakeholders.
- Evaluate the decision-making mechanisms within the governance model and tailor them to the evolving needs of the pilot use-cases, promoting efficiency and effectiveness.

Tasks

- Assess the existing TSL governance model considering the pilot use-cases' requirements. Determine areas where adjustments or enhancements are necessary to better accommodate the evolving priorities.
- Examine the decision-making processes outlined in the current governance model. Modify and tailor these mechanisms to ensure alignment with the specific decision needs of each pilot use-case.
- Analyse the stakeholder engagement plan developed in the previous activity. Refine engagement strategies to address the specific stakeholder dynamics of each pilot use-case.

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- Assess the strategies for inter-institutional coordination within the governance model. Adapt coordination mechanisms to accommodate the interplay between different pilot use-cases.
- Recognize any new governance needs that emerge from the refined pilot use-cases. Make adjustments to the governance model that address these needs while maintaining overall cohesion.
- Present the refined governance model to key stakeholders for validation and feedback. Incorporate insights and suggestions from stakeholders to enhance the model's effectiveness.
- Document the refined governance model, capturing changes and adaptations made. Communicate the updated model to all relevant stakeholders to ensure transparency and understanding.

Timing and coordination

- This activity serves as an iterative loop to Activity 2.3 to refine the governance model based on the new advancements in the TSL.
- This activity will serve as a basis for Activity 9.2 “Agree on priorities & responsibilities”.

Checklist

- ❑ Evaluate the current governance model in relation to the pilot use-cases' requirements.
- ❑ Refine the governance models along decision-making mechanisms, stakeholder engagement strategies and conflict resolution methods.
- ❑ Validate the refined governance model with key stakeholders and incorporate their feedback.

Milestone

At the end of Phase 2, "Gearing Regional Transition Capacities," a significant achievement stands as a testament to the TSL development progress. During this phase, the TSL journey moved further into the strategic realm, preparing the groundwork for the forthcoming operational stage. Collaboratively defined pilot use-cases, meticulously crafted goals and targets, and a robust stakeholder engagement strategy have been the hallmarks of this phase. Practitioners have transitioned their vision into tangible action by collaboratively co-defining pilot use-cases. By pooling insights from the previous phase, practitioners ensured that each pilot use-case was custom-tailored to drive regional transition efforts. Practitioners also established clear and comprehensive objectives, indicators, and targets for each pilot use-case. The selection of indicators and targets provides a roadmap for measuring progress, creating a framework for continuous evaluation and improvement. Finally, practitioners displayed their commitment to fostering dynamic stakeholder engagement and robust governance. By mapping stakeholders, crafting value propositions, and addressing potential conflicts, practitioners honed a coalition of actors who are not only aligned with the TSL's vision but are also poised to actively participate in the upcoming implementation phase.

As Phase 2 concludes, the TSL stands on the threshold of realizing its objectives. The strategic groundwork has been laid, the goals have been set, and the collaborative network is primed. These achievements serve as a cornerstone for the operational phase that lies ahead.

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3.3 Phase 3: Accelerating transition through innovation

Milestone: identification of innovative solutions and preparation/execution of action plan

Phase 3 will undergo additional refinement in the upcoming second version of this deliverable. In this initial version, the Steps and Activities of Phase 3 have been preliminarily outlined, yet they remain open to further modifications and enhancements during the subsequent development of the second version. The following sections offer a glimpse into the activities that Phase 3 encompasses.

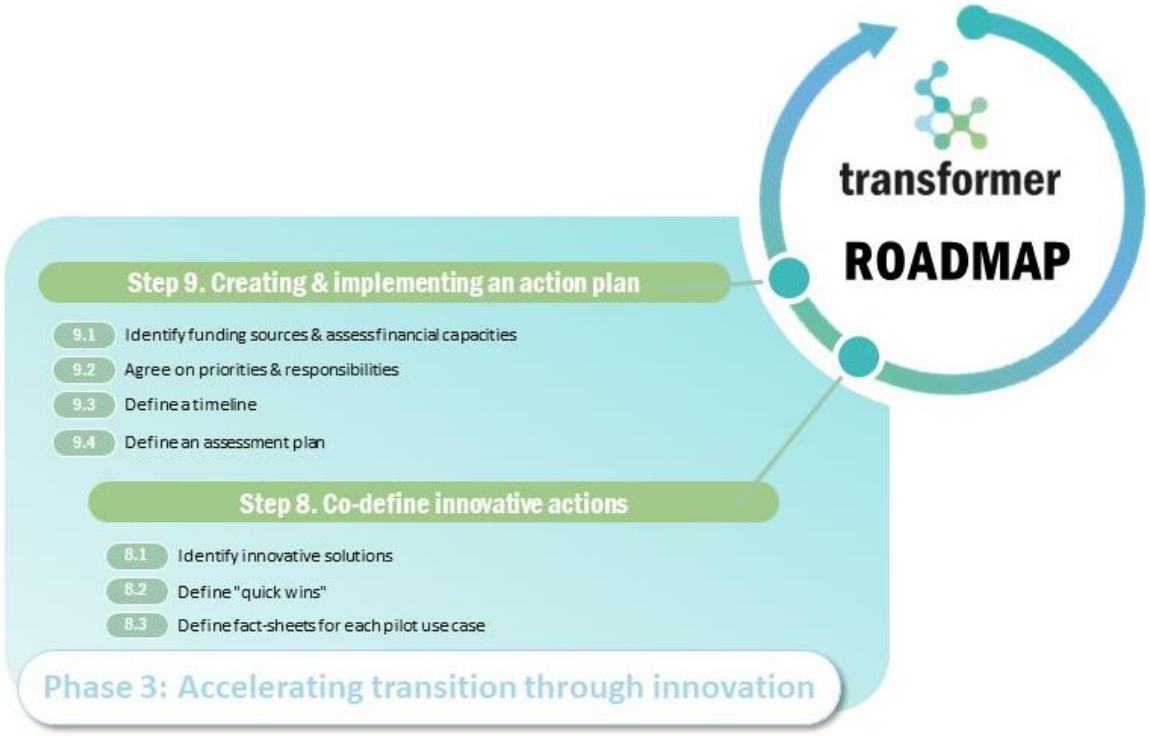

Figure 4. Phase 3 of the TSL development process (draft)

3.3.1 Step 8: Co-define innovative actions

Activity 8.1 Identify innovative solutions

This activity is geared towards accelerating the transition to climate neutrality by incorporating global best practices and innovative ideas by incorporating best practices innovative ideas that were already implemented, tested and evaluated in other regions and contexts. The second version of the document will delve deeper into this, showcasing research methodologies, engaging experts, exploring emerging trends, and establishing a clear hierarchy of solutions based on their potential impact and relevance to local contexts.

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Activity 8.2 Define "quick wins"

In the upcoming second version, this activity will receive more elaboration. It will highlight the importance of "quick wins" within the pilot use-cases as catalysts for stakeholder engagement and building momentum. These swift achievements may not only foster confidence but also contribute to the broader transition objectives. The document will delve into strategies for identifying such wins, ensuring alignment with overall goals, and maintaining stakeholder enthusiasm.

Activity 8.3 Define fact sheets for each pilot use-case

Creating comprehensive fact sheets for each pilot use-case will be further detailed in the second version. These fact sheets play a crucial role in communicating project objectives, stakeholders, impacts, and value propositions. The document will provide more insights into the content, dissemination, and impact of these fact sheets, emphasizing their role in generating awareness and garnering support as well as contributing further to the elaboration of the TSL action plan in Step 9.

3.3.2 Step 9: Creating and Implementing an Action Plan

Activity 9.1 Identify funding sources and assess financial capacities

In the second version, this activity will be expanded to offer a more comprehensive guide. The identification of funding sources and the financial capacities of stakeholders is crucial for a successful transition. The document will delve into various potential funding avenues, mechanisms for assessing financial readiness, and innovative financing options. It will also provide insights into creating a robust financing plan.

Activity 9.2 Agree on priorities & responsibilities

The second version will provide a more detailed exploration of this activity, emphasizing the significance of consensus on priorities and clearly defined roles. Effective collaboration and accountability are pivotal for a successful transition. The document will elaborate on facilitation strategies, mechanisms for role clarity, and fostering collaboration, ensuring the alignment of all stakeholders toward common objectives.

Activity 9.3 Define a timeline

The second version will enhance the discussion around creating a comprehensive timeline. A detailed timeline is essential for the effective execution & implementation of the pilot use-cases. The document will delve into methodologies for crafting timelines that consider dependencies, planning phases, and communication strategies. It will underscore the importance of clear communication and alignment among stakeholders to ensure a smooth transition journey.

Activity 9.4 Define an assessment plan

In this activity, a comprehensive assessment plan will be designed to effectively evaluate the progress, effectiveness, and overall impact of the transition activities undertaken. The plan will outline the key

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indicators, metrics, and evaluation methods that will be used to gauge the success of the initiatives. It will also determine the frequency and scope of the assessments, including baseline assessments, periodic evaluations, and final assessments. This assessment plan will provide a structured framework for systematically measuring the outcomes and effectiveness of the transition process. The assessment plan is built upon the results of the methodology for assessing the efficiency and success of the Transition Process towards climate neutrality in Activity 1.2 and incorporates also the outcomes of Step 5 and 6 related to the use-case impact assessment methodology. This activity will be further developed in the second version of the document to incorporate refined methodologies and enhanced assessment strategies developed under WP5.

Milestone

- Action plan for the TSL created, with action plans for each pilot use-cases
- The assessment plan for the TSL has been defined

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3.4 Phase 4: Scaling-up the transition

Milestone: Monitoring, assessing and optimising the impact

Phase 4 will undergo additional refinement in the upcoming second version of this deliverable. In this initial version, the Steps and Activities of Phase 4 have been preliminarily outlined, yet they remain open to further modifications and enhancements during the subsequent development of the second version. The following sections offer a glimpse into the activities that Phase 4 encompasses.

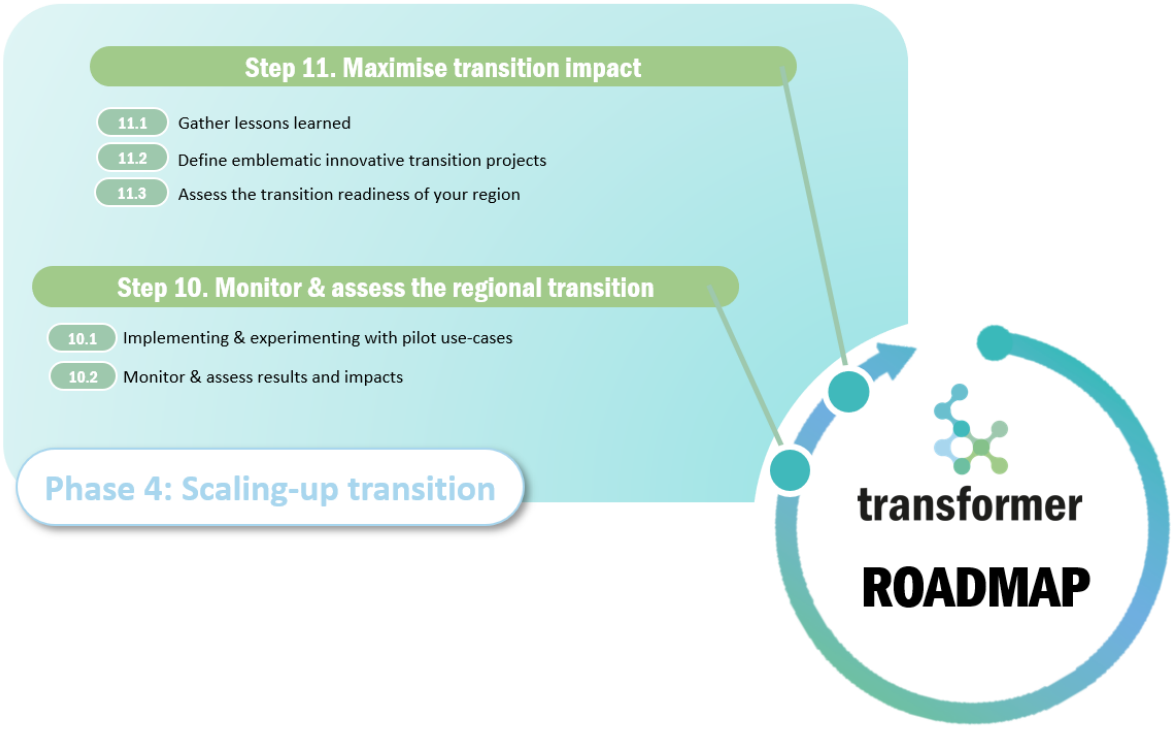

Figure 5. Phase 4 of the TSL development process (draft)

3.4.1 Step 10: Monitor & assess the regional transition

Activity 10.1 Implementing & experimenting with pilot use-cases

This activity serves as a pivotal step, translating the previously defined elements of the pilot use-cases into tangible actions that drive regional transformation. The second version will detail the precise tasks to initiate, execute, and experiment with selected pilot use-cases, ensuring they align with the overarching transition objectives. It will elaborate on methodologies for engaging stakeholders and implementing innovative strategies. By offering detailed insights into this implementation phase, the document will empower TSL practitioners with the practical know-how needed to effectively apply pilot use-cases, experiment with transformative ideas, and lay the foundation for sustainable change.

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Activity 10.2 Monitor & assess results and impacts

This activity focuses on establishing a robust monitoring and reporting system to track the progress and outcomes of the transition activities continuously based on the assessment plan defined in Activity 9.4. This system that will be integrated into the TRANSFORMER Knowledge Hub may regularly collect and analyse data related to the identified indicators and metrics. The collected insights may be shared with stakeholders, decision-makers, and the public to ensure transparency and accountability. The monitoring results may serve to showcase achievements and guide decision-making by identifying areas for enhancement and necessary adjustments to the transition strategy. The second version of the document will further detail how to perform TSL impact assessment and improve data collection techniques for more accurate assessment, building upon the lessons learned in WP5.

3.4.2 Step 11: Maximise transition impact

Activity 11.1 Gather lessons learned

This activity involves conducting systematic reviews and evaluations of the transition activities that have been implemented. The goal is to extract valuable lessons and insights from both successful endeavours and challenges encountered during the transition process. The lessons learned will be documented in a structured manner and shared with relevant stakeholders and practitioners. By sharing these experiences, the aim is to inform future decision-making, enhance the effectiveness of upcoming initiatives, and prevent potential pitfalls. In the second version of the document, the process of conducting systematic reviews will be further refined and elaborated upon.

Activity 11.2 Define emblematic innovative transition projects

In this activity, emblematic innovative transition projects will be identified and defined. These projects can encompass large-scale initiatives, those with high transformative impact, or those with potential for scalability and replication. The purpose of these projects is to serve as prominent examples of innovation within the transition process, inspiring stakeholders and civil society. Emblematic projects highlight the vision, goals, and targets of the transition, while also providing valuable insights for refining and improving future actions. In the second version of the document, more specific criteria for selecting emblematic projects and their strategic implementation will be included, ensuring their maximum impact on the transition process.

Activity 11.3 Re-Assess the transition readiness of your region

This activity will outline a dynamic process that starts in Phase 1 and integrates the transition readiness assessment as an iterative loop at the end of the roadmap. This approach aims to capture the essence of continuous improvement and learning within the Transition Super-Lab framework. By revisiting the transition readiness assessment, the second version of the document will guide practitioners in evaluating the progress and evolution of their region's preparedness for transformation. This iterative loop not only emphasizes the adaptive nature of the TSL approach but also fosters a deeper understanding of how the suggested process contributes to the enhancement of regional transition

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readiness over time. Through this activity, TSLs can systematically identify areas of improvement and gauge the effectiveness of their strategies, ultimately ensuring a more resilient and responsive pathway toward achieving climate neutrality and sustainable development.

Milestone

The milestones for Step 10 will be further elaborated in the second version of this document. These milestones will focus on:

- Detailed tasks to initiate, execute and experiment with selected pilot use-cases are set.
- Key indicators for setting robust monitoring and reporting systems are defined.
- The process of conducting a systematic review is refined.
- Innovative projects are defined.
- The transition readiness assessment is finalised.

4 Conclusion

In conclusion, this deliverable lays out the first version of a comprehensive blueprint to guide regions in the development of Transition Super Labs to accelerate the transition towards climate neutrality. As the world faces the critical imperative of achieving climate neutrality, the complexity of this challenge demands innovative, systemic solutions that address the intricate interplay between social, economic, and environmental dimensions.

The deliverable, is rooted in an iterative learning process, integrating insights and lessons drawn from the project's first 12 months. This first version of the roadmap serves as a structured framework for the key steps in developing a TSL. It draws upon the knowledge gleaned from various project activities and learnings, shaping a detailed pathway for regions to embark on their TSL journey.

While this version provides a strong foundation, it is designed to evolve. The forthcoming second version, (D4.2) will incorporate changes based on the refined structured framework, lessons learned from the later phases of the project, and the integration of practice examples, tools and knowledge hub content. The roadmap's ongoing development will benefit from the collaborative input of the "User Forum" (WP6), ensuring that it remains adaptable and responsive to the needs of regions initiating TSLs.

Addressing a diverse readership, the roadmap spans the TSL process in a user-friendly manner, offering step-by-step guidance for regional practitioners and decision-makers alike. With its structured approach, practical examples, and coordination considerations, the roadmap supports regions in creating TSLs tailored to their distinctive contexts and challenges. This aspect will be further revised and improved in the second version of the roadmap. Following is the non-exhaustive list of topics for further elaboration in preparation for the second version:

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1. As the project continues, the roadmap will evolve into **a more robust and agile tool**, embracing for example principles of **agility and agile planning** to balance complexity with expediency.
2. It will explore further connections between the TSL approach and other **similar regional and collaborative approaches**, such as, for example, Social Network Theories and Learning Regions.
3. We will explore other links that can be made with existing efforts to accelerate climate transitions, such as the **climate city contracts and the Net Zero Cities initiatives (i.e. EU-100-city mission)**.
4. Further elaboration of the assessment of regional transition needs and potentials for the reduction of GHG emissions from a TSL perspective is expected as part of the activities conducted in WP2 "Mapping, defining, and categorising of Transition Super-Labs". This will include further refinement of the **quantitative mapping of European Regions** and the quantitative assessment framework for Transition Super-Labs. As part of these activities, the project will further explore the **complexity of the regional concept within European member states**, highlighting the different governmental levels and decision-making structures and powers regionally as well as how future TSL can be developed in diverse regional frameworks existing in Europe with their **varying levels of political and financial powers**.
5. In addition, activities in WP5 "Evaluation & Impact Assessment" will further develop **the Transition Assessment Framework including the following methodologies related to Transition readiness assessment, Assessment of the efficiency and success of the Transition Process towards climate neutrality and Evidence-based use-case impact assessment.**

In essence, this first version of the Transition Super Labs Roadmap provides the first groundwork of a dynamic instrument that should not only guide regions in the present but evolve alongside the ever-changing landscape of climate action. Through iterative learning, integration of best practices, and collaboration among stakeholders, we will continue to refine this guidance, ensuring that regions across Europe and beyond are empowered to take decisive steps towards a sustainable and climate-neutral future.

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