

RIS3CAT Monitoring

8. Articulating shared agendas for sustainability and social change

A contribution from the territory to the EU debate
on transitions to sustainability

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A contribution from the territory to the EU debate on transitions to sustainability
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1. Introduction

In recent years, a broad consensus has been reached in European society on the urgent need to provide effective responses to problems such as climate change, pollution, waste of resources, persistent unemployment and so on. These problems are the direct result of our model of economic and social development. To respond to them, the European Union (hereafter, the EU) is committed to achieving the Sustainable Development Goals (hereafter, SDGs) and established the objective of becoming the world's first climate neutral continent by the year 2050.

To advance towards these goals, it is essential to answer such questions as the following: how can we produce food and support rural communities without damaging the environment? How can we ensure a fair transition without leaving any group or community behind? How can we redirect private and public resources currently devoted to activities that cause environmental degradation and climate change towards activities that promote sustainability?

The solutions will require fundamental changes in lifestyles and patterns of consumption and production. That is to say, transitions from present systems towards sustainability. According to the European Environment Agency (2019), sustainability transitions can be defined as long-term processes that involve transformations of society as the result of the emergence and dissemination of new forms of innovation that promote new ways of thinking and living (new social practices, new technologies, new business models, etc.). The emergence and impact of these innovations cannot be predicted in advance and, therefore, transitions are uncertain processes that often have unexpected results and unintended effects.

These transitions generate new opportunities as regards the creation of jobs, the emergence of new business models and improving quality of life but, at the same time, also cause disruptions in established investments, behaviours, knowledge and prevailing values in society. They also generate impacts that focus on certain sectors and territories, which often cause multiple resistances to change.

The territory is key in these transitions, since this is where new responses to major societal challenges are tested (for example, through food and energy cooperatives, or shared mobility solutions). Local authorities have powers in fields as vital to sustainability as transport and waste management, and can generate and test new solutions that can later be reproduced on a more global scale.

The governance of sustainability transitions presents a challenge, since it requires combining top-down interventions by the public administration (establishment of long-term goals, involvement of actors, coordination of actions and management of risks and unintended consequences) with bottom-up initiatives launched by innovative

communities, companies and civil society organisations. This governance therefore requires new forms of cooperation between governments, academia, companies and civil society. These new forms of cooperation should be more participatory, flexible, open and dynamic, and encourage experimentation, learning and adaptability.

The purpose of this working paper is to contribute thoughts and recommendations to promote, through the local sphere and co-financed by the EU, the articulation of shared agendas for sustainability and social change that can help to develop more effective, innovative responses to the challenges facing the territory and to meet the ambitious targets that the European Community has established for the coming years.

The proposals contained in this document are formulated on the basis of academic literature, EU guides and publications and are also based on learnings generated by the initiatives and projects described below, and in close collaboration with the main actors in them:

- [RIS3CAT](#) (the Research and Innovation Strategy for the Smart Specialisation of Catalonia), which provides learnings on the impact of EU funds to promote collective actions by quadruple helix actors to provide more effective responses to societal challenges. The proposal is based on two RIS3CAT instruments deployed in the 2014-2020 period: territorial specialisation and competitiveness projects (PECTs) and the Catlabs programme.
- The [Biolab Ponent](#) pilot project in Lleida, (financed by the ERDF, the EAFRD and EFS). This is a living lab promoted by a coalition of farmers, livestock breeders, local and regional authorities, experts and researchers aware of the opportunities offered by the circular bioeconomy to develop and implement innovations in the local sphere, and business models that deploy the circular bioeconomy in rural communities.
- The [SeeRRI](#) project (financed by the Horizon 2020 European programme), which establishes the bases for constructing responsible and sustainable research and innovation ecosystems in Europe through a conceptual framework that integrates a responsible approach to research and innovation with the regional development policies of EU territories (RIS3). Within this framework, one of the three pilot projects underway focuses on managing the transition of the B-30 (a group of 3 municipalities around Barcelona) industrial territory to the circular economy. To this end, the project adopts a zero waste strategy, which is expected to strengthen interrelations between actors in the research and innovation system and to contribute to the sustainability and responsibility of this ecosystem.
- The initiative and working group [Understanding and Managing Industrial Transitions](#), launched by the European Commission's JRC (Joint Research Centre) with the aim of providing support for regional (and where appropriate national) authorities facing

major industrial transitions by charting actionable paths towards employment-intensive economic growth.

The paper is structured into the following sections:

- Following this brief introduction, Section 2 presents, as preliminary food for thought, the key elements for work in view of the complexity of the challenges facing society today.
- Section 3 defines shared agendas and proposes recommendations for design and implementation processes for them.
- Section 4 describes shared agendas in the literature on sustainability transitions and transformative innovation policies.

Finally, Section 5 presents cases studies of initiatives that promote shared agendas in Catalonia with financing from European funds. The learnings generated by these cases, which are key to RIS3CAT in the 2021-2027 period, will be used to improve and extend future editions of this working document.

2. Introductory thoughts

Shared agendas for sustainability and social change focus on today's societal challenges and, particularly, on SDGs and the problems generated in specific territories. These problems are complex and closely interrelated, as they are the result of everyday interactions between consumers, producers, public policy makers, researchers, the media and other actors and, therefore, there is no optimal way of addressing them. Rather, they have multiple potential solutions.

Understanding the nature of these complex problems is key to suggesting possible, really effective responses to them. Accordingly, it is useful to remember that, generally speaking, these problems can be classified into the following four types:¹

1. **Simple problems.** These are relatively easy to define explicitly and can be understood by most people. They are explained by direct cause-effect relationships and have (or may have) a correct answer. To resolve them, it is necessary to follow best practice (a solution already tried and tested). The main limitation is usually lack of necessary resources.
2. **Complicated problems.** These are also explained through cause-effect relationships, but in this case they are more difficult to understand. They can be resolved, but there may be more than one possible solution to them. Technical knowledge is needed to resolve them, but good practice is often used, too. The main challenges are to provide the necessary resources and to identify and apply an effective solution.
3. **Complex problems.** These can be identified and defined, but have the following characteristics:
 - We are not sure whether we understand them and we do not know the solutions to them.
 - The opinion of the experts and the actors about what to do to solve them is diverse and often contradictory.
 - There are multiple interconnections between the problems and their context, which is unstable and changing.
 - There is no party involved in the problem that can resolve it without the intervention of any of the other parties.

¹ Classification adapted from Conway, Masters and Thorold (2017).

- There is a need for technical knowledge and a learning process to co-develop a new solution. Experimentation is necessary.

4. **Chaotic problems.** In this case, there are no apparent causal relationships. As a result, intuition is a key factor in developing effective solutions to these types of problems. It is not possible to predict the time needed to solve them; this depends greatly on innovations and the solutions developed and implemented.

In order to meet the SDGs, then, it is necessary to address complexity and uncertainty. Complexity, ambivalence and interaction are necessary, however, too much complexity, ambivalence and interaction reduce the capacity for action. Voss and Kemp (2006) speak of the "efficacy paradox of complexity": in order to guarantee the efficacy of strategies in complex environments, many very different elements need to be taken into account, and one must be flexible enough to adapt to unexpected events. However, at the same time, it is vital to reduce the number of elements that are taken into account in order to make decisions. Along these same lines, and in accordance with the idea of "thinking like a system, acting like an entrepreneur" (Conway, Masters and Thorold, 2017), with regard to shared agendas we propose two different stages to deal with complexity:

1. **Think like a system**

SDGs cannot be analysed using the linear models of cause and effect under the traditional rationalist approach; rather, they should be studied through a systemic approach.

In the process of analysing major challenges and related problems and opportunities, and in the discussions necessary to establish possible goals and solutions, it is advisable to maintain complexity and uncertainty. Since a wide range of actors take part in these discussions, it is important to accept that challenges can be addressed from a wide variety of approaches. The purpose of this discussion is not to select the best possible strategy, but to identify points at which action is possible to change things in the desired direction (opportunities or leverage points in the system) and possible options for action

2. **Act like an entrepreneur**

The shared agenda is articulated through concrete actions aimed at addressing specific problems. These actions are established as pilot projects or experiments, and are monitored in order to study their impacts and consequences with the aim of identifying the most effective ways to address the challenge and its related problems.

3. Shared agendas for sustainability and social change

3.1. Concept

Shared agendas for sustainability and social change are agendas that articulate, through a participatory model of governance, the collective action of various actors aimed at addressing a common challenge (usually related to SDGs) in the territory and the problems that this challenge may generate.

Although the specific organisation of shared agendas depends on the challenge, the territory and the actors involved, we can highlight the following common features:

- They are based on intersectorial cooperation and the generation of shared knowledge between government, academia, companies and civil society, aimed at understanding and managing complex problems from a holistic and dynamic perspective, taking into account the long-term effects and the direct and indirect impacts. Accordingly, articulating shared agendas requires us to cross the boundaries between different disciplines of knowledge and between science and society.
- They focus their action on change, transformation and powerful (collective) impact that is sustained over time.
- They are adaptive strategies which respond actively to unexpected effects, developments, achievements and failures. Experimentation, monitoring and strategic learning are key elements in shared agendas.
- They explore alternative routes, try to predict the systemic effects the long-term actions will cause, evaluate the results of the actions in order to learn, and integrate learnings in actions.
- They have their own governance model, which includes actors in the territory that are relevant in the field of the challenge and the problems they generate.
- They are organised according to demand, to respond to specific needs and problems of groups in the territory, through the design of solutions.² They include, from the beginning, groups affected by the problems they address, but they also go beyond this initial goal in order to reproduce or scale up successful solutions and link them to more global strategies and agendas, such as EU research and innovation missions.³

² Kemp and Ramani (2019).

³ Mazzucato (2018).

Both these missions and shared agendas have as their main objective that of articulating effective responses to societal challenges that contribute to meeting SDGs, although they do so from complementary perspectives. In this context, a key challenge for the EU over the coming period (2021-2027) is to find mechanisms to enable the articulation of shared agendas, which are promoted by territories and are often financed by regional EU funds, with missions.

The methodology of the missions⁴ is addressed at governments which promote the participation and engagement of multiple actors through a top-down approach. Shared agendas, on the other hand, are established by coalitions of multiple actors in the territory and take a bottom-up approach. They may be launched by public administrations, but also by universities and other entities in the territory. The directionality of the agendas results from the shared vision and the actions they articulate through a participatory governance model.

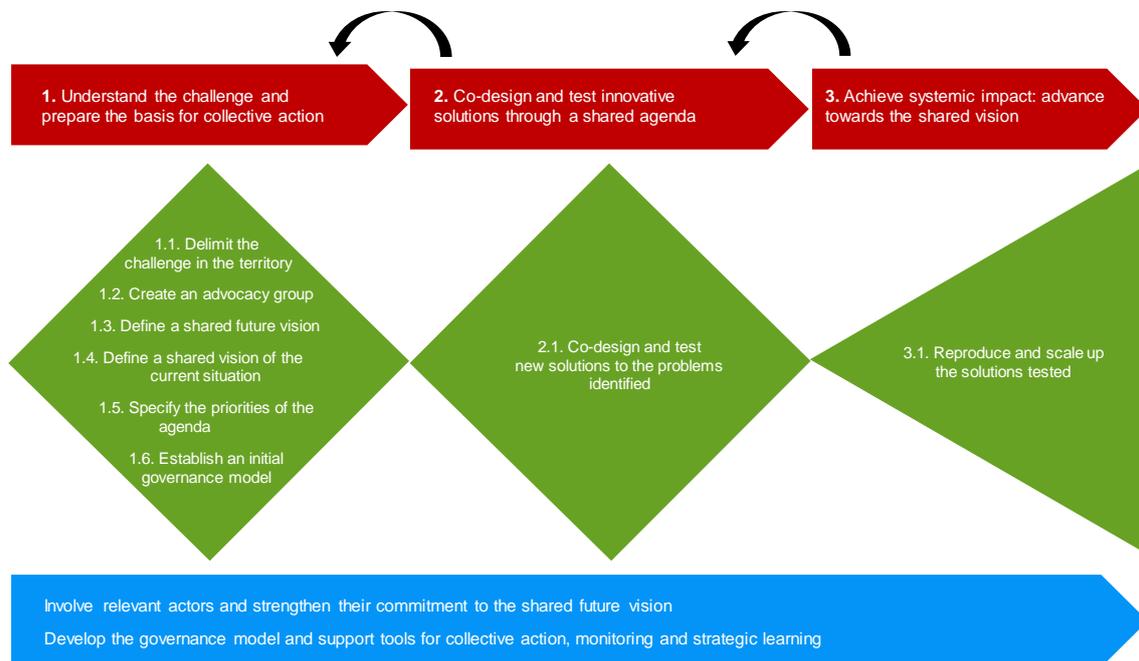
3.2. Steps

Each challenge and each territory, with its actors and its ambitions and capabilities, is different and, therefore, the methodology to develop and implement shared agendas, their governance system and their actions also varies from one case to another. However, this paper proposes a three-step methodology (see Figure 1) to articulate shared agendas in the territory:

1. The purpose of the first step is to prepare, with the actors, the necessary basis to articulate the shared agenda. This involves:
 - Delimiting the challenge in the territory.
 - Identifying the key actors committed to change and establishing an initial advocacy group.
 - Co-developing a shared future vision.
 - Co-developing a shared vision of the current situation, the problems and their causes.
 - Identifying the opportunities (leverage points in the system) on which action is possible and leverage hypotheses that are expected to break the barriers and dynamics that prevent future progress or accelerate positive dynamics already operating.
 - Designing an initial governance model.

⁴ Miedzinski, Mazzucato and Ekins (2019).

Figure 1. Shared agendas in 3 steps



Source: The authors.

2. The second step focuses on the co-design and implementation of solutions. In this step, it is essential to generate meeting spaces where actors in the territory can work together to co-design possible solutions, implement them, learn from them and generate collective knowledge.
3. The third step focuses on transformation and social change, that is to say, achieving collective impact that is sustained in time and contributes to accelerating the transition towards sustainability.

From the outset, a participatory governance model is needed, one that promotes cross-cutting actions, in order to secure and maintain the involvement and commitment of the different actors in co-designing, implementing and monitoring the shared agenda. Governance mechanisms that ensure the active participation of the actors and tools to articulate the collective action and learning are key throughout the process.

The methodological framework proposed by Terry Irwin (2019) for collectively designing solutions to complex challenges that promote the transition is useful for working on steps 1.1-1.5 of shared agendas.

3.3. Delimitation of the challenge in the territory

The starting-point for a shared agenda is the identification of a significant challenge in the territory, one linked to the SDGs and to the EU's strategic objectives that requires the development of new, collaborative approaches and solutions that may be relevant for many other territories.

The first step is to delimit the territory and the scope of the challenge that work will focus on. This requires making an initial study of the problems associated with the challenge and of the actors and factors most closely related to it. It should be noted that it is unlikely that this demarcation will coincide with administrative boundaries of the territory nor with the limits of an academic discipline or field of knowledge.

3.4. Advocacy group

Shared agendas are usually launched by a small number of actors that detect the urgent need to act to provide more effective responses to a challenge in the territory. The characteristics of this initial group depend on the territory, and the challenge and problems and opportunities associated with it. The composition of the group is open and, at first, operates as a core with a view to articulating a coalition of actors committed to transformation and change.

At this initial stage, the priority is to involve people who are committed, rather than entities or individuals representing the territory. However, the advocacy group should have, at the very least, the support of a territorial entity (governmental or other) with the capacity to mobilise the relevant actors and provide the minimum necessary infrastructure to ensure the governance of the shared agenda.

Although shared agendas are usually launched by relatively small groups of people, the aim is to gradually attract other people and entities interested in cooperating to join. The governance model and support tools should help to increase the commitment of the actors involved with the challenge and to attract more actors. To achieve this goal, it is key to raise the awareness of actors about how the current system operates, since this enables mindsets to change and work to be launched to reformulate the cause-effect relationships linked to the challenge.

3.5. Shared future vision

The main objective of the actors in a shared agenda is to reach agreement on a shared future vision to which they commit to devoting efforts and resources. This vision establishes a final situation desired for a territory or a system as regards a challenge. It suggests a narrative shared by the actors and generates acceptability and responsibility regarding the actions promoted by the agenda.

The purpose of this vision is not to establish objectives, but to reconcile the expectations of different actors and to guide and align their efforts to inspire and co-develop new solutions to respond more effectively to the challenge and the problems associated with it.

Within the framework of the vision, the actors should agree on specific shared objectives that are achievable in the medium term and show whether advances are being made in the desired direction.

The vision should be ambitious and inspiring, but also based on present reality; in other words, it should take both global trends and the assets of the territory into account.

3.6. Shared vision of the present situation

Comparing the current system with a vision of how it would be if the challenge were successfully resolved, so that the problems no longer existed, helps understanding of the challenges and related problems and costs in all their dimensions. Shared visions of the current and desired situations are key to changing the mindset of actors, as well as their view of the ecosystem they form part of. It is vital to persuade actors to see themselves as part of a system, to become aware that their actions interact with those of other actors so that, if they coordinate them, they can have more influence and impact on the system. According to Stroh (2015), this change in mindset among actors in the system who decide to align their efforts and promote a shared agenda will drive a movement away from individual solutions and towards coordinated, collective actions.⁵

In this analysis, it is important to take into account both global trends that may affect the challenge (changes in legislation, technological advances, emerging sectors or activities, changes in consumer preferences and new financing opportunities, for example) and the assets and specificities of the territory (legislation, capacities, attitudes, etc.) in relation to the challenge.

Although a SWOT analysis is a useful tool to identify strengths, weaknesses, opportunities and threats in the territory related to the challenge, it is not enough to understand the interconnections among the forces related to the challenge in a dynamic way

⁵ Model based on Senge's Creative Tension Model (2005).

3.6.1. Raising awareness about mindsets

To construct a shared agenda with solid foundations, the actors involved need to understand how much current mindsets, values and beliefs help or hinder progress in the desired direction. That is why it is important to work on the following aspects:

1. Identifying and understanding the current mindsets, values and beliefs of the different actors.
2. Asking whether these current mindsets help to advance in the desired direction.
3. Stimulating the emergence of new, alternative mindsets to encourage exploration of new paths that can enable progress to be made in the desired direction.

Posing the following questions can help actors to increase their awareness of the challenge and the ecosystem and to rethink cause-effect relationships:

- How can our actions contribute to increasing the problem when we want to solve it?
- What are the unintended consequences of our actions?
- What positive things does the current system provide?
- What should we give up in order to move towards the shared vision?
- Can we redesign or replace solutions or actions that prevent us from moving in the desired direction?
- Can the vision of an alternative future drive new arguments and incentives to invest in new solutions that address the problems identified?
- If we identify actions that benefit one group and harm another, can we find new visions and solutions that are more equitable and benefit both?

3.6.2. Mapping forces

The challenge and the problems that it generates can be explained as a set of systemic factors and dynamics. Factors may include people, trends, events, rules, beliefs, etc., which become linked through causal relationships that give rise to patterns or dynamic loops. These factors and dynamics can become positive forces (enablers) for building shared vision, or negative forces (inhibitors), which hinder transformation in the desired direction. These forces can be classified into the following three types:

- Structural, related to the physical and social environment (institutions, transport system, legal system and so on).
- Attitudinal, related to social beliefs, values and norms.

- Transactional, related to the interactions between different groups (lobbies, etc.).

Methodologies exist to represent all these systemic dynamics on a map.⁶ This mapping system can be used to generate new narratives that help to change the actors' mindset and promote collective action.

To understand how the forces in the system work, it may be useful to ask such questions as the following:

- Why (despite our efforts) have we been unable to successfully tackle the challenge?
- What are the forces that cause the current problems?
- What are the consequences of not addressing the challenge?
- What influence does the challenge and associated problems in the current system?
- What groups capture the value of current practices? What is this value?
- What value is lost, destroyed or wasted in current practices? What are the consequences of this? What are the groups most affected by this loss of value?
- How would the system be if the challenge were successfully addressed and the problems associated with it resolved?
- What opportunities could be generated if the challenge were addressed and the associated problems resolved? Who would benefit from this new value? Whose interests would be harmed?

The answers will vary according to the actors and their perspective of the system. That is why it is important for them to work together, in order to formulate a holistic vision of the challenge and the current situation, a shared vision, as this is the basis for articulating the shared agenda.

3.6.3. Mapping actors and initiatives

Maps are also useful tools to identify the relevant actors to the challenge, how they are linked to the predominant factors and dynamics, and their degree of commitment to the challenge and the shared vision.

The purpose of this mapping is to identify:

- The organisations that should be involved, taking into account the areas of competence linked to the challenge.

⁶ See, for example, Omidyar Group (n. d.).

- The people that should be involved according to their degree of commitment to the challenge.
- The initiatives and actions related to the challenge that are promoted by actors in the territory.
- The connections between actors and initiatives and information flows.

In order to decide the best strategy to involve the relevant actors in addressing the challenge, it is key to determine how far these actors are committed to the shared vision, and to ascertain the dynamics or factors that explain any lack of commitment or even opposition among some of the actors. For instance, actors can be classified according to whether they block progress towards the shared vision, are strongly opposed to it, slightly opposed to it, neutral, slightly in favour, strongly committed, or leading change.

3.7. Priorities

Prior analysis and, particularly, the systemic map of forces related to the challenge, provides the basis for identifying the most effective ways of generating changes that can transform the system in the desired direction. The priorities of the shared agenda are defined according to the opportunities to transform the system. Once these opportunities have been identified, it is necessary to identify the obstacles (problems) that prevent the system from moving in the desired direction.

According to the Omidyar Group methodology (Omidyar Group, n. d.), analysis of opportunities and obstacles based on mapping forces, actors and initiatives enables identification of the leverage points in the system with the greatest potential to produce positive changes based on relatively small, feasible efforts.

The following questions are useful for identifying leverage points in the system:

- At present, at what points is the system stuck?
(These points are factors or dynamics in the system, such as norms, attitudes, infrastructure, patterns of consumption, etc., which are unlikely to change in the near future.)
- Where has energy for change accumulated?
(These are points in the current system in which it is possible both to reorganise patterns and drive the emergence of new ones, because the status quo is already being questioned.)
- Where are signs of change in the desired direction detected?

- Where are factors and dynamics that may have expansive effects on other factors and dynamics detected?
- Where are there points that could change the direction of their positive or negative influence?

In this regard, it may also be useful to propose hypotheses for impact in the short-, medium- and long-term, like the examples provided in tables 1 and 2.

Table 1. Impact hypothesis 1: spaces for collaborative innovation

Problem

As there are no spaces for collaborative work where actors can share knowledge and articulate collaborative solutions, there is no articulation of effective responses to complex environmental and societal challenges.

Term	Goal	Hypothesis
Short	To contribute to solving the problem	We respond to the problem by articulating a network of innovation labs that enables quadruple-helix actors in the territory to cooperate actively to identify challenges and co-design and implement solutions. This is because the actors that participate in it will become aware that they share responsibility for what happens in the territory (they are part of both the problem and the possible solutions to it) and will be trained to work collaboratively, taking a systemic approach, on complex problems.
Medium	To generate impact on the dynamics of the system	By training and raising the awareness of quadruple-helix actors that actively participate in the network of innovation labs, we hope to strengthen their commitment to the transition towards a more responsible territorial development model based on articulating shared agendas, which will reduce the conflicts generated by the costs of the transition to certain groups: <ul style="list-style-type: none"> - Government will work with the other actors to make public policies more participatory, transparent and inclusive, and aimed at responding to the needs of citizens. - Research and innovation actors will be involved in the co-development of innovative solutions to respond to the challenges of the territory. - Entrepreneurs and companies will take social and environmental impact into account in decision-making.

3. Shared agendas for sustainability and social change

Term	Goal	Hypothesis
		<ul style="list-style-type: none"> - In cooperation with the other actors, civil society and third sector entities will be able to develop more effective responses to social and environmental challenges. <p>Through both a systemic approach and collaboration, actors will be able to provide more effective answers to challenges.</p>
Long	To transform the system	The more evidence emerges to demonstrate that this way of working is more efficient, the more the current system will be questioned and changed.

Source: The authors.

Table 2. Impact hypothesis 1: highlighting data on available resources

Problem

As there is no available information on resources that are wasted, actors are not aware of the environmental costs and the opportunity costs generated by the current system (loss of economic opportunities and job creation). This is a barrier that prevents the generation of new dynamics to advance towards the circular economy.

Term	Goal	Hypothesis
Short	To contribute to solving the problem	By opening up and highlighting data on available resources in the territory we respond to the problem, because when the actors become aware of the resources available they will understand the costs of the current system and of the opportunities that are being lost.
Medium	To generate impact on the dynamics of the system	<p>By highlighting the resources available and raising awareness about the costs of the current system and the opportunities that are being lost, we hope to change the behaviour of the actors involved in the system:</p> <ul style="list-style-type: none"> - Entrepreneurs and companies will promote new business models and value chains, and modify their current practices to take advantage of the opportunities detected. - Civil society and third sector entities will identify new opportunities to generate social value, such as creating jobs for groups at risk of social exclusion

Term	Goal	Hypothesis
		<ul style="list-style-type: none">- Governments will respond to the growing pressure to change the regulatory framework and generate incentives to move towards the circular economy.- Research and innovation actors will apply their knowledge to seek new uses for available resources, improving the qualities of these resources, etc. <p>Actors will change their behaviour, because they will be more aware of the costs of the current system and the opportunities that are not being taken advantage of.</p>
Long	To transform the system	By changing the actors' behaviour, we hope to move towards a model of totally circular development because, as this change in behaviour becomes more general, market signals will change, as will the regulatory framework and the incentives offered by government.

Source: The authors.

3.8. Actions and impact

As noted in the previous section, the priorities for the shared agendas are the opportunities that enable transformation of the system. The activities in the agendas focus on the problems or obstacles that prevent the realisation of these opportunities and, therefore, the advance towards the shared future vision (see Figure 2).

The problems that can act as points of leverage in the system do not have unique or simple solutions. It is therefore important that the actors involved should discuss the possible solutions and actions, as well as their capacity for impact, which should be tested and validated as pilot projects or experiments.

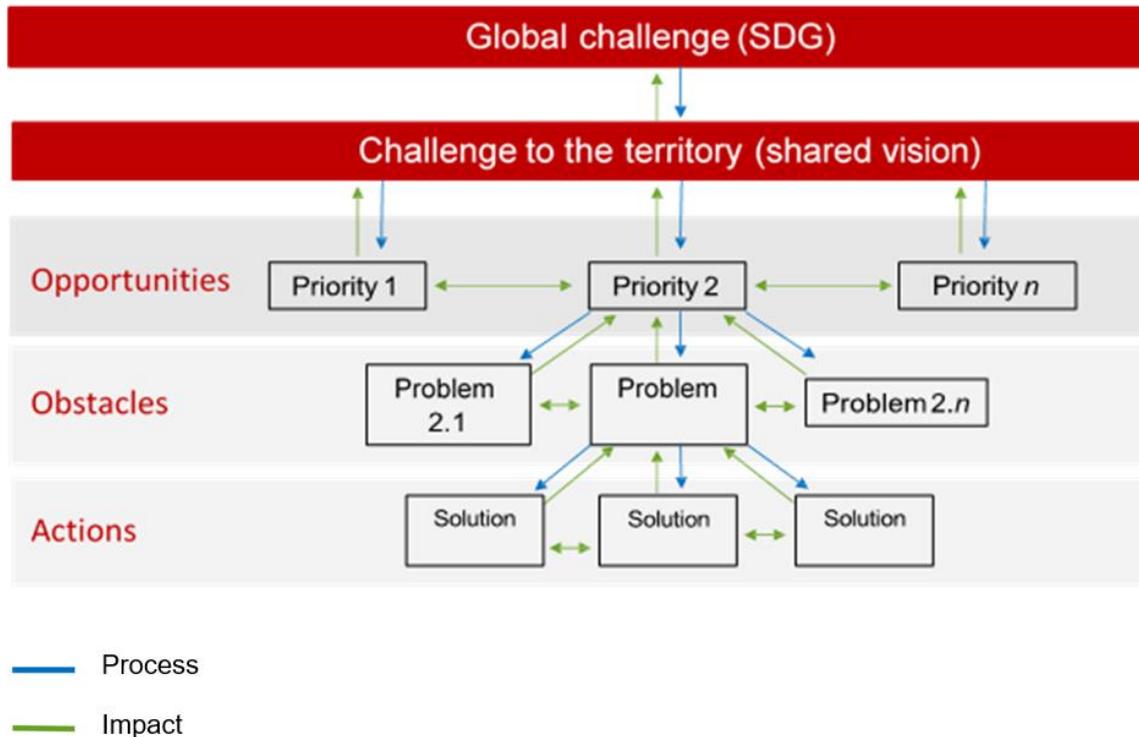
Since the main objective of actions that are promoted within the framework of an agenda is to generate systemic transformation, it is key to consider these actions as experiments that enable lessons to be learned from them and which can then be reproduced in other territories and on a larger scale.

These experiments are open: the objective is to test new concepts and it is, therefore, always uncertain what results will be obtained. According to Torrens and Schot (2017) experimenting enables:

- Testing ideas at small scale before implementing them on a larger scale.
- Improving ideas before implementing them or scaling them up.

- Testing whether ideas that look good on paper also work in practice.

Figure 2. Flow diagram of processes and impacts of shared agendas



Source: The authors.

In the case of complex and complicated problems in which there are several potential solutions and the results are uncertain, experimentation also enables the testing and comparison of alternative solutions in real controlled environments such as so-called living labs.

To maximise the impact of actions, the following elements are key throughout the process:

- The commitment to sustainable and equitable solutions

When selecting possible solutions, it is vital to take into account the capacity to generate value, which actors can capture it (entrepreneurs that can generate new business models based on new value chains, government, etc.), and which actors will bear the costs.

- Monitoring experiments to analyse their results to see how their efficacy can be increased, and to compare these results with those generated by alternative solutions

- Bearing in mind both the territorial and the global perspectives

Although actions on agendas are designed as responses to a challenge in a territory, as they are linked SDGs they also respond to a global challenge that may be important to many other territories. As a result, if the global perspective is present throughout the process, this increases the potential impact of the solution, which can be reproduced in other territories

- Promoting cooperation with actors in other territorial areas

Since the solutions tested in a territory may be relevant to other territories, it is important to identify and share experiences, learnings and projects with actors and social innovation networks engaged in working in the same direction in other territorial areas.

- Link the shared agenda to regional, national, European and global strategies and initiatives

Identifying and articulating complementarities and synergies with other territorial and European Union strategies and programmes can generate new opportunities. In this regard, European research and innovation framework programmes, European cooperation programmes and the operational programmes of the structural funds offer financing opportunities for the actions to be implemented within the framework of shared agendas. As Table 2 shows, government can play a key role in articulating these opportunities.

Table 3. Shared agendas from a multi-level government perspective

Level	Opportunities	Obstacles
Global	<ul style="list-style-type: none"> - Articulation of coordinated responses and collective actions to address global problems that impact on all territories, such as climate change, the effects of globalisation, etc. - Global approach to issues of equity and redistribution (for example, funds for combating climate change) 	<ul style="list-style-type: none"> - Negotiating processes very slow, often unambitious and ineffective as regards the most urgent sustainability challenges - Mechanisms for the implementation weak or non-existent
European	<ul style="list-style-type: none"> - Definition of ambitious visions and goals 	<ul style="list-style-type: none"> - Few resources available apart from the R&D budget, regional policy, the European Investment Bank, common agricultural policy

3. Shared agendas for sustainability and social change

Level	Opportunities	Obstacles
	<ul style="list-style-type: none"> - Establishment of legally binding regulations and directives directly applicable to EU member states - Monitoring member states' progress with regard to transitions - Promotion of investment in infrastructure, capacities, innovation, etc., which can accelerate the transition 	<ul style="list-style-type: none"> - and trans-European infrastructures - Action limited to the EU's areas of competence
National and regional	<ul style="list-style-type: none"> - Potential to finance actions that promote sustainability - Wide range of instruments and policies with potential to promote transitions - Capacity to coordinate the different sectors and levels of government (national, regional, local) by influencing local policies - Capacity to impose binding regulations and market incentives to reorient sectors relevant to the transition (such as transport or energy) in accordance with EU regulations - Capacity to promote investment in infrastructure to accelerate the transition 	<ul style="list-style-type: none"> - Position of strength of the main sectorial actors regarding those responsible for public policies, which can reduce the ambition of sectorial strategies - Lack of knowledge about local realities - Difficult to adapt public policy intervention to local realities - Difficulty for departments or ministries to align policies
Local	<ul style="list-style-type: none"> - Space for experimentation and close cooperation between local actors (government, companies, academia and civil society) - Local authority capacity to promote key agreements as they have powers in key areas for the transition, such as planning (housing, industrial symbiosis, etc.), transport and waste 	<ul style="list-style-type: none"> - Little funding available to reproduce pilot projects (experiments). - Regulation derived from the national or EU context (for example, regulations governing the energy market and state aid) - Action strongly dependent on local political conditions and geographic and economic structures

Source: The authors, based on European Environment Agency (2019).

3.9. Governance model

Identifying and implementing a governance model that is accepted by all actors is an indispensable element in shared agendas.

The governance system for shared agendas should be dynamic, flexible and participatory, and should ensure that all actors involved can make their voices heard. The model should be shared and accepted by all the actors involved, and therefore should be adapted to the characteristics of each territory and agenda.

There follows a proposal for organising the governance of shared agendas at two levels: firstly, to articulate the efforts of all the actors that participate in the agenda as they advance towards the shared future vision; and, secondly, to articulate the efforts of actors around each of the priorities.⁷

A minimal structure is proposed, consisting of a strategic committee and a technical office for the first level, and working groups with a coordinator for the second level. The coordinator may be a person, an entity or a committee formed by a group of people or entities.

3.9.1. First level

The minimum structure for coordinating and promoting a shared agenda is a strategic committee and a technical office.

Initially, the **strategic committee** plays the role of the advocacy group for the agenda (see Section 3.4). Then, as the agenda expands and more actors join, the functions, structure and composition of this committee must be more closely defined, as it provides strategic administration and leads efforts to involve and align actors in the territory towards the shared future vision.

The duties of the **technical office** go far beyond those of a technical office for a strategic plan or traditional strategy. The technical office facilitates and promotes the active participation of the actors and ensures that the governance model is participatory. Accordingly, it should be managed by reference entity in the territory, one that is neutral towards the actors of the system and promotes equity. Its leadership should be accepted by all main actors.

⁷ For more in-depth analysis of participatory governance models, see Berkowitz (in press).

The main duties of the entity that acts as the technical office are as follows:

1. Guiding and coordinating efforts and actions towards the shared future vision
 - Working with the strategic committee and the coordinator of the working groups.
 - Gathering and analysing data, and prioritising opportunities to identify new leverage points and to articulate actions in response to problems identified.
 - Promoting the adaptation of the agenda to changes in the environment and the learnings, while always remembering the shared future, promoting the participation of all actors and respecting the principle of equity.
2. Providing support for actions in the agenda
 - Enabling dialogue among actors.
 - Promoting and guaranteeing complementarities and synergies between the different working groups, and collaborating when necessary.
 - Coordinating the actions of the shared agenda to ensure its coherence, with the ultimate objective of accelerating the process of change.
3. Designing and managing a monitoring system that focuses on learning and promotes adaptation

Bearing in mind that the transitions and transformations promoted by shared agendas are highly unpredictable, open, complex, non-linear processes that often generate unintended consequences, the governance of these agendas should be supported by a monitoring system that focuses on strategic learning and promotes adaptation.

The technical office also establishes the system of shared indicators and compiles, manages and analyses data from them in cooperation with the coordinator of the working groups to assess the impact of actions, learn from them and advance more effectively towards the shared vision.
4. Working to strengthen the actors' commitment and responsibility regarding the shared vision and goals
 - Promoting urgent collective action by the actors.
 - Encouraging interaction and cooperation to articulate more effective responses to problems.
5. Influencing political agendas

Working to influence the political agendas of institutions in the territory and beyond, promoting alliances and initiatives that can help to accelerate the process of social transformation and change.

6. Attracting resources

Seeking sources of financing and resources to promote the actions on the agenda.

7. Communicating

Communication is key, both when seeking the agreement and support of external actors and for increasing the number of actors and generating greater commitment among those involved. It is also vital for generating acceptability and reducing any possible resistance to change among other actors in the system. Communication is then, indispensable for maximising the impact of the shared agenda.

3.9.2. Second level

Shared agendas enable different actors to seek alternative and complementary solutions from different perspectives. The number of priorities, working groups and actors involved may vary. The actors themselves can become involved in various working groups, in which they can play different roles: development actor, involved actor, interested actor, actor that provides support, etc.

Since the priorities can vary greatly, the actors that contribute and the types of actions can also be very different. This makes it necessary for someone to coordinate both the actors in working groups set up around particular priorities and the actions of the various working groups that take part in the shared agenda.

4. Closing thoughts

Problems like climate change, pollution, waste of resources and persistent unemployment are not caused or sustained by external factors, but are the direct result of the process of social development and the predominant socio-technical systems. Socio-technical systems can be defined as the activities that perform basic functions for society. They are used to provide energy, mobility, production, communication, housing, clothing, water, healthcare, materials and food. These systems are configured around routines that define skills, knowledge, technologies, regulations, cultures, user preferences and infrastructures (Schot and Steinmueller, 2018). Focusing on optimising existing socio-technical systems and externalising social and environmental costs is no longer an option (Schot and Kanger, 2018): the basic principle of improving economic, social and environmental realities should now guide the construction of new models or systems in the future, but these models are not predefined and we do not know the most effective trajectories to achieve them.

Transformations require new visions, and very often these new visions emerge from the bottom up, from people and communities who are familiar with and face problems that affect them, and establish networks with other people to articulate disruptive new ideas and solutions. That is why the local sphere is so important: the actors know each other, have the same problems and can share visions and solutions to generate new models of production and distribution, new business models or new forms of consumption (Ramírez and Pinzón Vargas, 2018).

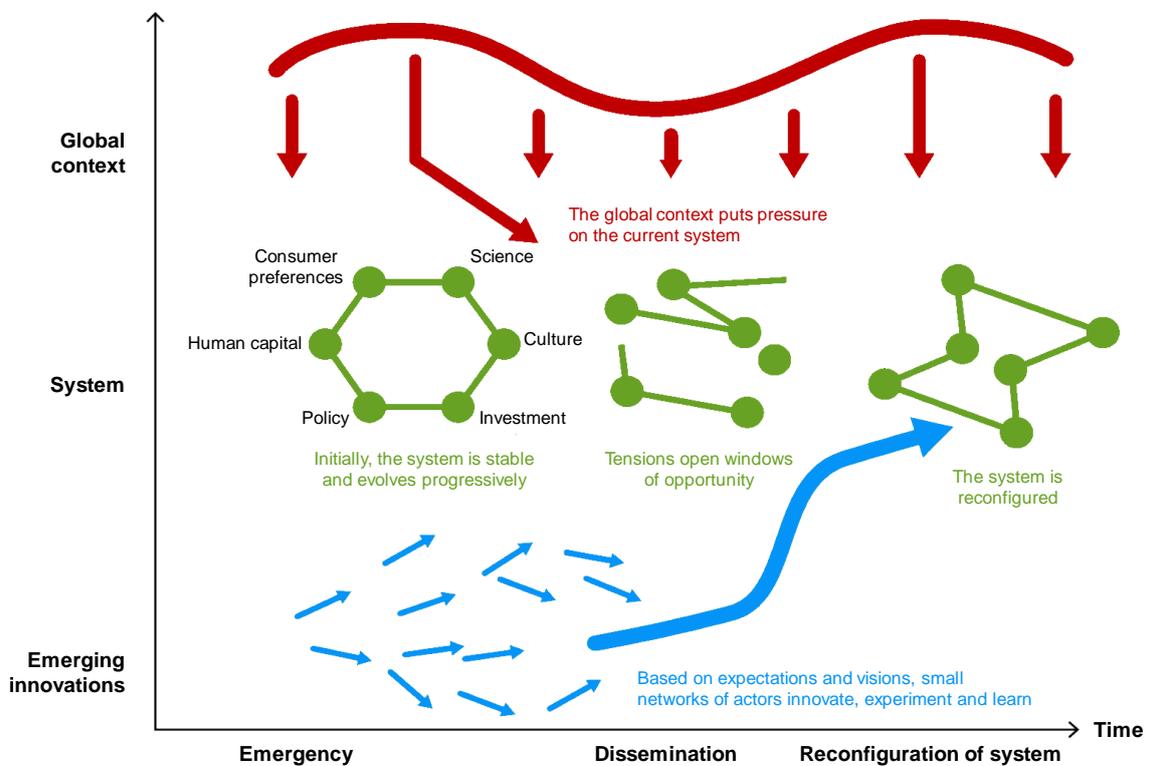
This transformation requires new forms of cooperation between governments, academia, companies and civil society, as well as new forms of participatory governance, with flexible, open and dynamic approaches that encourage experimentation, learning and adaptability. Regional and local policies play a key role in enabling and guiding these processes. It is necessary, not only to promote spaces for meeting and cooperation between different actors, but also, often, to adapt regulatory frameworks. Moreover, new incentives, new forms of financing and new ways of managing shared risk are needed. Governments also play a key role as guarantors, ensuring that these transformative initiatives are equitable and fair in economic, social and environmental terms.

The logic of shared agendas adopts the transition model for sustainability in three stages (emergence, dissemination and reconfiguration of the system) proposed by Geels (2006) from a multi-level perspective (see Figure 3). There are entrepreneurs, researchers, emerging companies and social networks that innovate to respond to new demands and promote emerging technologies or new uses of technologies in all territories. These bottom-up innovations, which are often supported by public funds, can generate disruptions in the predominant socio-technical system, which is shaped by the preferences of consumers, the abilities or capabilities of people (human capital),

science, culture and investments. These disruptions —especially when they are connected to trends in the global context (such as the challenges of climate change or population ageing, for example)— can create windows of opportunity for change and may finally even destabilise the system.

Within this context, this paper proposes the development of shared agendas to articulate and coordinate initiatives and emerging dynamics in the territory, disseminating them and increasing their impact, in order to move towards a new more sustainable and equitable system in economic, social and environmental terms.

Figure 3. Multi-level perspective of sustainability transitions



Source: The authors, based on European Environment Agency (2019), itself based on Geels (2006).

5. Examples

5.1. Biolab Ponent (text by Teresa Botargues)

Biolab Ponent is a shared agenda for sustainability and social change that promotes and articulates the transformation of the current socio-economic model in the western Catalan territory to one of sustainable and inclusive development, based on the green and circular economy.

5.1.1. Territorial sphere

The territory covered by the agenda are six counties in Lleida province: Segrià, Noguera, Pla d'Urgell, Urgell, Segarra and Garrigues. These counties are watered by two large rivers and their tributaries, which have their sources in the Pyrenees: the Segre and the Noguera Ribagorçana.

The geographic relief and the availability of water in this territory, which has a continental Mediterranean climate with little precipitation and greatly contrasting temperatures, have made this territory the largest farming area in Catalonia. The predominant landscape is the result of agricultural activity that has transformed the original vegetation into crops, generating two very different types of terrain: firstly, a dry-farming landscape, often terraced, where olives, almonds and cereals grow; and, secondly, the landscape of irrigated farmlands, with fields where animal fodder, summer cereals and fruit trees are the main crops. There are few woodlands in this area, although the abandonment of farms is causing uncontrolled forest expansion.

With 149 municipalities, a total area of 5,685.95 km² and 361,922 inhabitants, the territory has low population density and high territorial imbalance: 51.5% of the population (186.232 inhabitants) live in just 4 municipalities (including the city of Lleida), while 4.8% of population is divided among 67 municipalities of less than 500 inhabitants, which account for 40% of the total area. There is a huge majority of very small municipalities, one large (Lleida) and a very small number of towns with more than 10,000 inhabitants.

This is, generally speaking, a highly rural area with an economic model largely weighted towards the primary sector and with little capacity to create attractive jobs for local young people.

5.1.2. Challenge

In this context, Biolab Ponent has identified the challenge of adopting a green, circular economic model based on the use of local resources and articulating effective responses to socio-economic problems in the territory to capture the potential social,

economic and environmental benefits of this new model. Based on this challenge, the following strategic objectives have been identified:

- To ensure the economic, social and environmental viability of agricultural and livestock production.
- To strengthen the competitiveness of the territory and job creation by promoting emerging activities linked to the new model.
- To promote a model for the sustainable management of natural capital.
- To contribute to combating climate change.

In this way, the Biolab Ponent challenge is aligned with the global strategy to promote sustainable development, as agreed in the Agenda 2030 in 2015, with the aim of reducing emissions of pollutant gases, reversing the process of biodiversity loss and ensuring the well-being of the world's population.

One of the main challenges at global level is to implement an economic model that is capable both of meeting growing demand for food, water, materials and energy and contributing to mitigating the climate change crisis. This model entails a process of changing from the linear, non-fossil fuel model based on fossil fuels to an organic, circular, renewable model that uses natural capital to obtain food, goods, services and energy in a sustainable way. The great challenge to today's world is, then, to change from a linear production system that is intensive in the use of resources and based on products of fossil origin (non-renewable) and focuses on generating economic value, to a more efficient circular production model based on renewable resources, such as organic ones, that is capable of generating, not only economic value, but also social and environmental value in a shared way.

Figures published by international organisations show that the current production system, which maximises economic profit in the context of a market economy and externalises social and environmental costs, is unsustainable:⁸

- It is estimated that by 2030 the world will need to produce 50% more food and 50% more energy (United Nations, 2012).
- It is calculated that the production of materials of fossil origin accounts for between 60% and 65% of environmental costs, while the production of energy linked to fossil resources accounts for between 35% and 40% of this cost (UNEP, 2017).
- According to the International Energy Agency, only 24% of electricity generated, 10% of heat used and 3.5% of fuels consumed in transport today is produced from renewable energy sources.

⁸ Hetemäki *et al.* (2017).

In the European rural territories every year are generated 900 million tonnes of biomass waste.⁹ This waste could contribute to increasing the availability of secondary raw materials to produce biomaterials in circular processes. The capacity to create jobs and generate added value by the use of this biomass to produce materials far exceeds its potential use as a fuel to produce energy or as a substrate for soil (between 5 and 10 times, and 4 and 9 times more, respectively).¹⁰

5.1.3. Advocacy group

In 2016, Alcarràs Local Authority, the University of Lleida, I2Cat, Alcarràs and Torres de Segre Association for the Sanitary Defence of Porcine Livestock and the company User Feedback Program constituted what can be considered the initial core of the advocacy group for the shared agenda. The group was formed to promote a territorial specialisation and competitiveness project (hereafter, PECT), financed by the ERDF Operational Programme Catalonia 2014-2020, to seek an innovative solution that would promote a true market for livestock manure in Catalonia within the framework of the circular economy.

The synergies between regional and local authorities and the organisation of two innovation camps (in June 2018 and March 2019) are key factors in the process of awareness-raising about the opportunities offered by the green, circular economic model in the territory. As a result, since June 2018, the advocacy group, with support from particular regional and local authorities, has articulated networks of collaboration among other municipalities in the same territory. These networks are based on a systemic approach to the new model, which not only provides for the valorisation of manure, but also creates a scenario in which the territory optimises its resources to produce food, goods, services and energy efficiently and sustainably.

The second call for proposals for the PECT represented a qualitative leap forward and saw the design of the structures necessary to articulate the shared agenda. Lleida Provincial Council began to coordinate the project and serve as the technical office, and the advocacy group was enlarged to include: Lleida Provincial Council Economic Development Trust, Alcarràs Local Authority, Balaguer Local Authority, Bell-lloc d'Urgell Local Authority, Alcarràs and Torres de Segre Association for the Sanitary Defence of Porcine Livestock, the Catalan Federation of Farming Cooperatives (FCAC), the General Community of Urgell Canal Irrigation Farmers (CGRCU), the Catalan Association of Rural Initiatives (ARCA), the Institute of AgriFood Research and Technology (IRTA) and the University of Lleida (UdL).

⁹ Farmer (2012).

¹⁰ Europea Commission (2018).

5.1.4. Governance model

The participants in the Biolab Ponent shared agenda have not yet agreed on a governance model for the initiative. However, Lleida Provincial Council, with support from its Economic Development Trust, is performing duties that can be likened to those of the technical office for a shared agenda Lleida, as most of the actions are implemented in the framework of two projects from the second PECT call for proposals, which is coordinated by Lleida Provincial Council. These duties include:

1. Guiding and coordinating efforts and actions towards the shared future vision.
2. Providing support for the actions established in the agenda.
3. Designing and managing a monitoring system that focuses on learning and promotes adaptation.
4. Working to strengthen the commitment and responsibility of actors as regards the shared vision and goals.
5. Influencing political agendas.
6. Attracting resources.
7. Communication.

5.1.5. Awareness-raising over mindsets

In order to generate broad coalitions of actors to promote the transformation of the territory towards the shared future vision, the Biolab Ponent agenda organises meetings with the overall goal of encouraging these actors to see the green and circular economic model as an opportunity to provide a response to the current problems of the current model, and to raise their awareness about mindsets (values and beliefs) that prevent them from moving forward in this direction and becoming empowered for change.

These meetings include, particularly, two innovation laboratories. At the first, in June 2018, work focused on the following specific objectives:

- Gaining the commitment of the actors involved in developing a territorial project to promote the sustainable circular bioeconomic model (establishing the bio-region and the Baix Segre Biolab).
- Consolidating the work group that drives the challenge.
- Drawing up a calendar for subsequent steps.

Thirty people took part: 1 from Fruites Lozano, 1 from Fruits de Ponent, 1 from SAT de Ramaders del Porcí d'Almenar, 1 from E3G Enginyeria, 1 from Akis International, 1 from IGNIS, 1 from Muns Agroindustrial, 1 from Mat Envases, 1 from Agro Mòdol, 1 beekeeper, 1 farmer, 1 professional from the renewable energy sector, 2 independent professionals, 3 from the Association for the Sanitary Defence of Porcine Livestock, 3 from Alcarràs Local Authority, 1 from Tàrrega Local Authority, 1 from Montoliu Local Authority, 1 from Seròs Local Authority, 2 from Alcarràs Centre for Farming Studies, 2 from the Institute of AgriFood Research and Technology, 1 from Lleida AgriFood Science and Technology Park, 1 from GREiA-UdL and 1 from DBA-UdL.

At the second laboratory, in March 2019, work focused on the following specific objectives:

- Identifying the value chains that the shared agenda should prioritise.
- Describing the system of territorial biorefining necessary to articulate the value chains identified from the technological and organisational points of view.
- Proposing the key elements of the governance model for the shared agenda.

Fifty-nine people took part: 1 from Servei de Gestió Ramadera, 1 from SAT de Ramaders del Porcí d'Almenar, 1 from AgroBank, 1 from Telapolis, 1 from Inmokapital 1988, 2 from Romero Polo, 2 from Becquel Energia, 1 from Muns Agroindustrial, 1 from Fruits de Ponent, 1 from E3G Enginyeria, 1 from Akis International, 1 from Vegas Suport Agrotècnitc, 2 from Griño, 3 entrepreneurs, 1 independent professional, 1 from Terra Alta, 4 from the Association for the Sanitary Defence of Porcine Livestock, 4 from the Asoprovac Catalunya Catalan Association of Cattle Breeders, 1 from DOP Les Garrigues, 1 from the Alfarràs Farming School, 1 from LEQUIA-UdG, 4 from the Institute of AgriFood Research and Technology, 1 from the Biotechnology and AgriFood Development Centre (University of Lleida), 1 from Lleida AgriFood Science and Technology Park, 1 from GREiA-UdL, 1 from the Vic, 1 from Albatàrrec Local Authority, 5 from Alcarràs Local Authority, 2 from Almenar Local Authority, 1 from Lleida City Council (Tourism), 1 from Montoliu Local Authority, 1 from Seròs Local Authority, 1 from Soses Local Authority, 1 from Sudanell Local Authority, 1 from Torres de Segre Local Authority, 1 from the Catalan Waste Agency, 1 from the Catalan Water Agency, and 3 from the Government of Catalonia (Ministry of Agriculture, Livestock and Fishing).

Along the same lines, a collaborative creative activity culminating with a public performance by the theatre group La Fura dels Baus is planned. The aim of this activity is to promote and strengthen collaboration between players in the farming industry and new agents related to the world of R&D&I. The idea is to make the industry more permeable, open, breaking down the borders between the different areas that form the rural world and highlighting the modernisation of the industry through specialisation as

a strategy to enhance competitiveness and as a great opportunity to recover the talent of generations that had moved away from the territory.

5.1.6. Territorial model of open and collaborative innovation

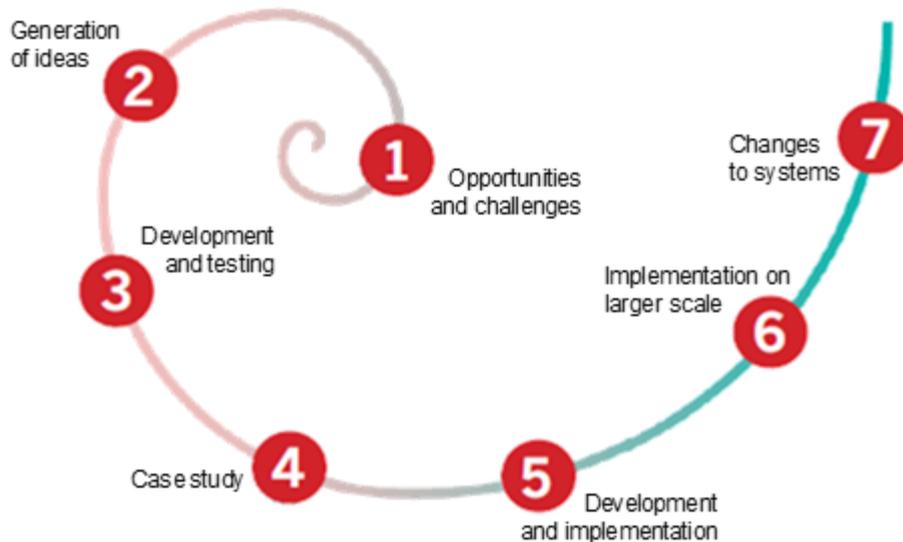
To advance towards a green and circular economy model, Biolab Ponent promotes the creation and consolidation of a territorial structure based on open and collaborative innovation.

The need to transform the current economic model into a green and circular economy model is a complex challenge which involves changes, both social (values, attitudes, norms...) and technical (infrastructure, production processes, technologies...) and as regards the relationships between these two dimensions; in short, changes in the current systems of production and consumption in the territory. This is a complex problem that needs to be approached from a systemic perspective. However, common practice in the territory continues to involve linear innovation processes linked to sectoral technology development that provide responses to specific problems or challenges. Although this model may be appropriate for improving the competitiveness of strategic sectors in the territory, the transformative capacity of these innovations is limited unless they are contextualised within a process of collective response to the challenge in the territory. To maximise the impact of sectoral technological innovations, a paradigm shift is needed.

In the open, collaborative innovation model, quadruple-helix actors (government, academia, companies and civil society) work collaboratively to identify, validate, develop and implement all the innovations (social, technological, organisational, etc.) needed to advance towards a shared future vision. This approach is based on the theory of change linked to the so-called “spiral of social innovation”, which presents systemic social innovation as a process with the following seven steps (see Figure 4):

1. Exploration of challenges and opportunities.
2. Generation of ideas.
3. Prototyping design.
4. Demonstration in real environments.
5. Transfer and implementation.
6. Large-scale implementation and consolidation.
7. Systemic change of model.

Figure 4. Digital social innovation as a driver for change



Source: Bound and Mulgan (2019).

Within this conceptual framework and in the context of the second PECT call for proposals, Biolab Ponent promotes specific projects to foster the systemic innovation processes needed to transform the current economic model in the territory towards the green and circular economy through the transformative power of the agri-food sector, ecosystem services, the production of biomaterials, biofuels and bioenergy, and the promotion of renewable energy and improvement to energy efficiency. The actions include, for example:

- To increase the visibility of available local resources, two 4.0 observatories will be created, one on the development of the sustainable circular bioeconomy and renewable energy, the other on agri-food and environmental resources.
- To enable co-design and co-creation processes among quadruple-helix players, specific physical and virtual spaces will be provided for processes of open and collaborative innovation in the areas of territorial specialisation.
- In order to move from ideas to real changes in the economic model of the territory, pilot projects will be launched for technological validation and analysis of the technical, economic and social viability of innovations: extraction of cellulose from organic matter for the production of biopolymers, and production of new proteins from agri-food production waste. With the same objective, specific spaces will also be established and equipped for small-scale prototyping and experimentation:

a plant health innovation hub for the sustainability and resilience of the agri-food sector; green infrastructure linked to the modernisation of irrigation canals in Urgell; support infrastructure for farm entrepreneurship to enable processes for the integration of new farmers; and a space to validate the technologies needed to articulate the territorial renewable energy and energy efficiency system.

5.1.7. Summary

Biolab Ponent

Shared agenda for sustainability and social change to drive and articulate the transformation of the current socio-economic model in the western territory of Catalonia towards a model of sustainable and inclusive development based on the green and circular economy

Territorial area

Six counties in Lleida province: Segrià, Noguera, Pla d'Urgell, Urgell, Segarra and Garrigues

Shared future vision

Based on an environmentally-friendly green and circular economy model, the territory optimises the use of local resources to produce goods, food, services and energy in the framework of sustainable, inclusive growth that generates wellbeing

Global challenge

To establish an economic model that is able to meet the growing demand for food, water, materials and energy and at the same time contributes to mitigating the climate change crisis; in other words, a green economy model which reduces emissions of pollutant gases, reverses the process of biodiversity loss and ensures the well-being of the world's population

Territorial challenge

To change the current model of production and consumption to one based on the green and circular economy in order to capture the potential social, economic and environmental benefits of this transformation by capitalising on local resources and articulating effective responses to socioeconomic problems in the territory

Opportunities

- To promote new value chains in the territory through the production of biomaterials, biofuels and bioenergy
 - To promote the generation of value in the territory based on renewable energy sources
 - To promote new value chains and new production models that increase the resilience and competitiveness of the agri-food sector
-

Biolab Ponent

- To promote the multifunctionality of rural spaces and convert them into ecosystem service providers
-

Obstacles

- Lack of knowledge about the availability, characteristics and potential value of local resources
 - Lack of awareness about the opportunities offered by the new model
 - Lack of necessary infrastructure for the new model
 - Lack of human capital with appropriate training for the change of model
 - Lack of demand
 - Lack of finance
 - Lack of articulation of innovation ecosystem
-

Actions

- Awareness-raising and empowerment of actors
 - Articulation of collaborative networks
 - Participation in regional, national, European and global networks
 - Creation of tools and physical and digital spaces for open innovation
 - Provision of infrastructure and services for prototyping and experimentation
 - Establishment of an open data platform for local resources
 - Co-design and implementation of experiments and pilot projects to develop new production models, validate technologies and generate value chains
 - Search for financing formulas
-

Source: The author.

5.2. B-30 pilot project (text by Xavier Ariño)

The Autonomous University of Barcelona (hereafter, UAB) and the Government of Catalonia (through the Directorate-General for Economic Promotion, Competition and Regulation) is taking part in [SeeRRI](#), a European project financed by the Horizon 2020 programme, implementing a pilot project in the B-30 territory.

One of the objectives of SeeRRI is to integrate research and innovation into smart territorial specialisation strategies (RIS3s) with the aim of promoting more responsible

and sustainable research and innovation ecosystems that can help to accelerate the transition to a sustainable and inclusive economic model.

The objective of the B-30 Pilot Project is to demonstrate that the methodology of shared agendas for sustainability and social change can contribute to articulating a more responsible and sustainable research and innovation ecosystem, accelerating the transition to this sustainable and inclusive economic model and helping to achieve the SDGs.

5.2.1. Territorial sphere

The territorial sphere in which this project is implemented is an area known as the **B-30** (the name of the road that once crossed this territory), which includes all 23 municipalities between Martorell and La Roca del Vallès from east to west and between Castellar del Vallès and Sant Cugat del Vallès from north to south. The territory has an area of 485 km² and a population of 1,018,166, as well as 30,173 companies and a total of 387,478 people in work.

Today, the B-30 axis is the main industrial agglomeration in Catalonia. It is an area with a lot of industrial land, high population density and a delicate balance between socioeconomic development and sustainability. Here, too, are a large number of research and knowledge transfer centres, a fact that entails competitive advantages and generates considerable added value for the smart specialisation strategy. These characteristics make this axis a unique territory, one that functions as a real research and innovation ecosystem: within the framework of the [Àmbit B30](#) association, local authorities, public entities and companies in the B-30 territory have worked together since 2012 to promote and knowledge research and transfer, fostering and providing support for entrepreneurship.

It was, then, in this context, that the B-30 ([HubB30](#)) innovation hub was launched in 2018. HubB30 is an alliance between the Àmbit B30 association, the UAB, the UAB Research Park, Eurecat, Esade Creapolis, the Polytechnic University of Catalonia, the ALBA Synchrotron and ACCIÓ whose aim is to promote innovation in the B-30 territory and become an international reference based on a model of smart, sustainable and inclusive development.

5.2.2. The challenge

Although there are many differences between Biolab Ponent and B-30 territories, like most territories they nevertheless share the same challenge: to change the current production and consumption model to one based on the **green and circular economy** in order to capture the potential social, economic and environmental benefits of this transformation, benefiting from local resources and articulating effective responses

to socio-economic problems in the territory. Within this shared framework, however, the SeeRRI project focuses on the challenge of promoting the transition of the B-30 industrial territory to the circular economy by articulating a shared agenda with the goal of zero waste generation.

One of the main characteristics of this project is that it addresses cross-cutting and, therefore, multisectorial objectives. The transition to a sustainable, resilient socioeconomic model aimed at zero waste generation requires all players and sectors to work together to overcome obstacles, seeking innovative solutions to complex challenges that affect the system as a whole.

Research and innovation are linked to complex ecosystems that involve the different players in the quadruple helix (government, academia, companies and civil society), as well as flows of people, ideas and financing that generate multiple interactions. Accordingly, the traditional concept of R&D&I as a linear process has been replaced by the idea of dynamic interaction with many different input points and feedback loops and a multidirectional information flow. However, generally speaking, the interaction between quadruple helix players and changing mindsets is rather limited: research policies focus, primarily, on scientific excellence, and innovation policies on competitiveness. As a result, society is disconnected from research and innovation. The concept of **responsible research and innovation** provides a possible framework for overcoming this state of affairs. The concept involves the participation of players in ecosystem throughout the process from the start, during development and until the very end. Applying this new conceptual framework to territorial policies and strategies may help to align processes and results with the values, needs and expectations of society.

5.2.3. The advocacy group

The Autonomous University of Barcelona (UAB) promotes a research and knowledge transfer model that focuses on solving societal challenges through co-creation processes involving quadruple helix players. In this line, the UAB supports the articulation of a shared agenda for zero waste in cooperation with other players in the territory that have launched initiatives in the field of the circular economy and zero waste.

The advocacy group is at the definition stage. The main entities that form the group at present are as follows:

- Autonomous University of Barcelona (UAB)
- UAB Research Park
- Eurecat

- Esade
- Àmbit B30
- Vallès Occidental County Council
- Cerdanyola del Vallès Local Authority
- Granollers Local Authority
- Mollet Local Authority
- Sant Quirze del Vallès Local Authority

The workshops organised for the SeeRRI project in 2020 will help to articulate the advocacy group for the shared agenda.

5.2.4. Governance model

Among the goals of the project is, with stakeholders, to explore how a governance model can be articulated that combines the efforts of players in the system to jointly define future scenarios (shared views) and articulate shared agendas to achieve them. This would generate added value for the multiple initiatives already launched in the territory, as well as enhancing their impact.

HubB30 is a multisectorial platform that promotes research and innovation initiatives in the B-30 territory. Its main mission is to generate participatory dynamics involving quadruple helix players to drive the industrial transition of the territory by identifying challenges and proposing solutions. Accordingly, HubB30 has a structure capable of performing all the duties of a technical office established in the shared agenda methodology:

1. Guiding and coordinating efforts and actions towards the shared future vision.
2. Providing support for the actions established in the agenda.
3. Working to strengthen the commitment and responsibility of actors as regards the shared vision and goals.
4. Influencing political agendas.
5. Attracting resources.
6. Communication.

5.2.5. Awareness-raising over mindsets

Although there is an innovation platform in the territory to generate exchange and cooperation dynamics among players, particularly academia, companies and government (HubB30), further steps are required to articulate a responsible and sustainable research and innovation ecosystem. The players need to become aware about mindsets, inertia and routines that are obstacles to making progress in the desired direction, about the unacceptable costs of continuing to do things the way they have always been done, and about the opportunities generated by joining forces to make more effective responses to challenges in the territory through shared agendas.

The main objective of workshops organised within the framework of the SeeRRI project is to work on this task of awareness-raising among players in the territory and to promote the establishment of an advocacy group, a coalition of players that can join forces to articulate a shared agenda aimed at achieving zero waste. The first workshop took place in December 2019, and three or four more are planned to take place over the course of 2020.

5.2.6. Territorial model of open and collaborative innovation

At the initial stage, the territorial model revolves around the following three strategic actions:

1. Establishment of the B30 OpenLabs network

The purpose of launching this network is to establish and promote spaces for participation and co-creation that can generate new environments for experimentation, innovation and the demonstration of new technologies and methodologies. New, coordinated facilities throughout the B-30 territory will be added to the open innovation spaces currently available at the UAB campus. In this way, a network of laboratories will be established that will promote participatory and co-creative processes. This will enable **validation of HubB30 as a platform for innovation in the territory**. There are two types of laboratories: firstly, manufacturing laboratories, facilities for the rapid prototyping of user-centred solutions; and, secondly, laboratories designed to generate new production models based on user-centred open innovation processes.

2. The Science&Innovation Shop initiative

The aim of this initiative is to make challenges identified in the territory by the B30 OpenLabs Network the subject of research work and degree and master's degree theses by students at the UAB with academic tutorial. This learning methodology, which encourages students to provide solutions to real problems in the territory,

is a central element in the [ECIU-University](#) European project, in which the UAB is a partner.

3. The Citizen Science initiative

This initiative was launched in 2018 within the framework of [Bibliolab ISC2](#), a project aimed at transforming the libraries in three B-30 municipalities (Sabadell, Sant Cugat and Cerdanyola del Vallès), aligning them with new initiatives such as laboratories for manufacturing and new educational models. These and similar initiatives promote the active role of a citizens, generating knowledge and co-creation for social innovation. The goal is to improve learning processes and address territorial challenges linked to sustainability, recycling and waste management.

5.2.7. Summary

B-30 pilot project

A pilot scheme implemented within the framework of the SeeRRI European project, aimed at articulating a more responsible and sustainable research and innovation ecosystem through shared agendas for sustainability and social change.

Territorial area

23 municipalities between Martorell and La Roca del Vallès from east to west and between , Castellar del Vallès and Sant Cugat del Vallès from north to south: Badia del Vallès, Barberà del Vallès, Castellar del Vallès, Castellbisbal, Cerdanyola, Granollers, Martorell, Mollet del Vallès, Montmelò, Montornès del Vallès, Palau-Solità i Plegamans, El Papiol, Parets del Vallès, Polinyà, Ripollet, La Roca del Vallès, Rubí, Sabadell, Sant Cugat, Sant Quirze del Vallès, Santa Perpètua de Mogoda, Terrassa and Vilanova del Vallès.

Shared future vision

The B-30 is a highly competitive, inclusive territory with high quality of life that, through a decarbonised, zero-waste economic development model, creates wealth from the resources it has, generates and receives.

Global challenge

Research and innovation are linked to complex ecosystems which involve quadruple helix players (government, academia, companies and civil society), as well as flows of people, ideas and financing, all of which generates multiple interactions. This is why the traditional concept of R&D&I as a linear process is changing to the idea of a dynamic process of interaction with many input points and feedback loops, and with multidirectional information flows.

In practice, however, the interaction between quadruple helix players and changing mindsets is rather limited: scientific excellence is still the main focus of research policies, while

B-30 pilot project

competitiveness is that of innovation; society continues to be disconnected from research and innovation.

Territorial challenge

To organise a responsible research and innovation ecosystem that can help to transform the current production and consumption system to a circular economy model that capitalises on local resources and articulates effective responses to socio-economic problems in the territory.

Opportunities

- To become a reference territory in Europe as a responsible research and innovation ecosystem, with entities and people committed to the transition to sustainability and achieving the SDGs.
 - To generate new dynamics of cooperation between government, companies, academia and civil society, in order to develop effective solutions to societal challenges (the SDGs) that can be exported around the world.
 - To improve people's quality of life of people by generating economic, social and environmental value from resources available in the territory not currently used.
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Obstacles

- Lack of a culture of collaboration to respond to shared challenges.
 - Lack of human capital with suitable training to articulate shared agendas.
 - Lack of awareness of the real costs of the current system and of the opportunities that are being lost.
 - Lack of awareness of the availability, characteristics and potential value of assets and resources in the territory and the opportunities and benefits of a change in model.
 - Lack of open, collaborative innovation spaces.
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Actions

- Awareness-raising and empowerment of players with regard to challenges in the territory by developing and applying working methodologies for these challenges, as well as work sessions with quadruple helix players and promoting shared agendas.
 - Identification of the bases for a responsible, sustainable research and innovation system that actively contributes to resolving challenges in the territory in cooperation with the rest of the quadruple helix players.
 - Provision of spaces for participation and co-creation to provide environments for experimentation and demonstration of new methodologies and technologies aimed at resolving territorial challenges and accelerating the industrial transition to the circular
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economy (new business models of shared value, new value chains based on resources in the territory, etc.).

Mapping and visualization of resources, challenges and opportunities in the territory through open data platforms.

Source: The author.

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