



D.4.3.1 GOVERNANCE MODEL



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Introduction and Executive Summary

This document describes the governance models proposed as a continuation of the inputs obtained in the 4.2.1 Summary report of the policy experiments. Considering the findings obtained through the literature review, the analysis of current governance arrangements and the comparative analysis of policy experiments, this document aims to propose a governance model suitable for the promotion of transformative innovation at the different governance levels, across the Mediterranean basin.

To facilitate the comprehension of the document, independently from the Summary report, the literature review (chapter 1) and part of the analysis (chapter 3) are directly connected with the Summary report. The methodology (chapter 2) reaffirms the continuity with the summary report, adding methodological steps for the development of the governance model. Specifically, roles and functions are extracted from the analysis of the existing governance arrangements and aligned with the theoretical governance framework to obtain the final governance model proposal.

Chapter 4 collects the findings of the summary report and proposes the theoretical governance structure to be used for the definition of the governance model. This framework is based on the description of four main bodies that can define a basic governance model: decision-making, executive, advisory and support body.

In the discussion, the specific governance model proposed is based on a strategic committee, working groups to develop projects and a technical office to provide support to the previous two bodies. It also proposes a system of 3 stages for implementing such a governance model, aiming at reducing the theory-practice gap that characterises the definition and implementation of a governance model: initiation, consolidation and expansion

The document concludes with some final remarks oriented toward policymakers and academics, emphasising the relevance of this document for their respective fields.

Chapter 1: Literature review

This chapter discusses the literature that has been used to build the theoretical framework of the report. It presents the concepts and theories used to analyse existing reference governance arrangements and the results of previous policy experiments.

It starts with a literature review on the interaction between the directionality of innovation policy, and the increasing demands to integrate the inter-regional, and multi-scalar nature of the innovation process in the design of regional innovation policy. In recent years, innovation policies have been redesigned to align innovation towards societal goals and the pursuit of sustainable development; these demands require a stronger integration of innovation policy across governance levels, as well as across regions and countries.

The chapter continues with an analysis of the literature on governance models adopted in innovation strategies that are promoting sustainable transitions. Thus, the chapter continues by revising characteristics that should be considered when defining a governance model based on multi-level cooperation and the need for directionality. It explores the main characteristics of collective governance models, which have a similar approach used in the definition of shared agendas, and continues to define the characteristics of governance models that promote innovation. It concludes by specifying the different levels of governance that are being considered for the analysis of mission-oriented innovation policies.

1.1 Directionality of inter-regional innovation policies

The last years have witnessed an increased interest on the part of scholars in the directionality of innovation policy. While traditional frames to justify innovation support measures emphasise the relevance of innovation as a driver of economic growth, scholars increasingly pay attention to the social and environmental consequences of innovation (Fitjar et al., 2019; Mazzucato, 2016; Schot & Steinmueller, 2018).

This shift is also visible in the new wave of smart specialisation (S3) strategies for the programming period 2021-2027. Indeed, S3 policies are thus expected to be more responsible (Fitjar et al., 2019), i.e. they are expected to anticipate their positive –and negative– impacts while including the interests and needs of a wide range of stakeholders in their formulation and implementation. Complementarily, they are expected to reflect on their impact and be responsive to emerging needs during implementation. The need to include the interest of a broader range of stakeholders requires new governance models that can facilitate the cooperation among these new agents to be involved.

In response to such needs, innovation policies have been redesigned to align innovation towards societal goals and the pursuit of sustainable development. More generally, a new understanding of Regional Innovation Systems (RIS) has been proposed in the literature, that promotes the alignment of regional innovation priorities to address sustainable development challenges, beyond the pure pursuit of economic growth (Tödtling et al., 2021). The new, challenge-oriented RIS (CoRISs) also integrate the notion that the innovation process –experimentation, diffusion and upscaling of innovations– is likely to take place at different territorial scales, hence involving

cooperation between actors located in different regions and countries (Tödtling et al., 2020, 2021). It requires a governance framework that considers this international cooperation and the existence of different circumstances and interests.

The governance model that is being proposed in this paper focuses on the interaction between the directionality of innovation policy, and the increasing demands to integrate the inter-regional, and multi-scalar nature of the innovation process in the design of regional innovation policy (Tödtling et al., 2020, 2021). It is based on the concept of a shared agendas framework (Ariño & Fernández, 2021; Fernández & Romagosa, 2020; Marinelli et al., 2021), an S3 framework aimed at promoting inclusive multi-stakeholder coalitions addressing sustainable development challenges. This framework, although largely regional, is inspired by the contributions of the transformative innovation policy literature (Molas-Gallart et al., 2020; Schot et al., 2020; Schot & Steinmueller, 2018), which is grounded in the multi-level perspective of change in socio-technical regimes (Geels, 2002). As discussed below and in the results section, the multi-level perspective of transformative innovation policy enables the adaptation of shared agendas to inter-regional, and transnational multi-stakeholder coalitions.

A regional innovation strategy based on the framework of the shared agenda departs from a shared vision for a future, where a sustainable development challenge has been addressed. This vision is to be constructed and shared by a broad stakeholder constituency including actors representing public administration, businesses, universities and research institutions, as well as civil society, through a process whereby these stakeholders come up with a joint definition of the current situation in connection with the challenge. Once the stakeholders come up with a shared understanding of the current situation and a shared vision for the future, a set of priorities is established on the goals that should be pursued through innovation, to bring the current state of affairs as closely as possible to the shared vision for the future. Additionally, the framework advances a governance structure aimed at implementing in practice the shared vision, by experimenting with alternative types of innovations, technological or not (Ariño & Fernández, 2021; Fernández & Romagosa, 2020; Marinelli et al., 2021).

Within transformative innovation policy, it is assumed that the kind of innovations, technical or not, needed to address a sustainable development challenge are likely to overcome the limitations of the dominant socio-technical regime. Dominant regimes –with aspects such as core technologies, user preferences, regulations or cultural patterns– define the contours of the innovations pursued by society, posing a limitation on its ability to address emerging sustainable development challenges like climate change or access to economic development opportunities in developing countries. These challenges are indeed related to the limitations of the dominant socio-technical regime; hence the diffusion of alternative innovations addressing such challenges is likely to overcome the boundaries of the dominant socio-technical regime. For this reason, transformative innovation policy scholars see in these innovations an opportunity to transform the dominant socio-technical regime toward more sustainable development paths (Molas-Gallart et al., 2020; Schot et al., 2020).

However, the multi-level perspective used by transformative innovation policy scholars suggests that regime transformation towards sustainable development is likely to require the interaction

of developments taking place at different territorial scales. Concretely, experimentation in local niches or protected spaces is unlikely to transform a socio-technical regime, unless accompanied by macro-level trends highlighting its limitations, and creating windows of opportunity for niche-level experiments to develop, upscale and gain relevance (Molas-Gallart et al., 2020; Schot et al., 2020).

Shared agendas, like other challenge-oriented regional innovation strategies, can be useful to initiate the development of alternative innovations with regime de-stabilising potential (Tödtling et al., 2021). However, the innovations promoted by these strategies are likely to require the involvement of actors operating in other regions, and at national and international levels of government, to develop and upscale (Tödtling et al., 2020). A broad range of multi-level interactions can be foreseen, including access to national or EU funds (Tödtling et al., 2020), and cooperation with established players to promote policy changes, gain market access, or attract investment (Schot et al., 2020).

For these reasons, the multi-stakeholder coalitions defining a shared agenda are likely to take into account developments in other regions, and at higher levels of government (Ariño & Fernández, 2021; Fernández & Romagosa, 2020). However, these extra-regional developments used to inform a mostly regional agenda could also serve as a departure point to transform what is for the most part a regional innovation policy framework into a fully-fledged multi-level innovation policy framework, aimed at promoting inter-regional cooperation for transformative innovation. Indeed, the goals pursued by a shared agenda are likely to benefit from intensified inter-regional cooperation, when it comes to gaining access to resources useful to upscale regime de-stabilising innovations, such as markets, investments, or policy influence.

1.2 Governance models supporting mission-oriented innovation and shared agendas

This section a) explains how a governance model is needed to promote collaboration among different stakeholders, b) to facilitate multi-level cooperation, c) in a flexible manner due to the high degree of complexity and d) to promote coalitions with a strong orientation towards the SDGs. It responds to the needs mentioned in the previous section of multi-level stakeholder coalitions focused on promoting transformative innovation policies.

Starting with the basics, an initial definition of governance can be based on the five key characteristics that support the need for contemporary understandings of governance, defined by E. Grande (2012):

- Importance of non-hierarchical forms of decision-making, more agile and suitable for complex systems that are constantly and rapidly changing.
- The growing role of actors other than states, which provide resources, knowledge, skills, experience and openness for changes.
- Growing interdependencies between policy areas and societal subsystems, which allows the generation of synergies and brings more systemic thinking in framing and addressing challenges.

- Increasing complexity, strictly related to the increasing uncertainty and interdependencies among actors and challenges
- Increasing importance of coordination and cooperation, as part of the existing interdependencies and the possibility of generating synergies.

These five governance elements are present in mission-oriented innovation policies as well as in transnational shared agendas; they support these innovation frameworks in enhancing coordination and cooperation when addressing systemic, complex problems.

Shared agendas require a governance framework able to bring the different stakeholders that share the agenda to work together towards addressing the focal sustainable development challenge. Responding to this need, collaborative governance brings public and private stakeholders together in collective forums, bringing the public stakeholders to engage in consensus-oriented decision-making (Ansell, C. et al., 2008). Among the characteristics of a collective governance approach (ibid), there are some that show explicitly its suitability to complement shared agendas in the implementation phase of initiatives and activities, such as the leadership of the public sector or the engagement of non-state actors in decision making, beyond consultation.

Linking such governance models with innovation, collaborative innovation is being used to address complex issues and it requires a governance model based on relationships of trust, supported by technological tools and with strong leadership and commitment toward well-established goals (Lopes, A. V. et al., 2022). Similar to shared agendas, collaborative innovation opens innovation to a large variety of stakeholders, taps the available resources for innovation across borders, overcomes cultural restrictions and creates socio-political support for public-led innovation (Bommert, B., 2010). In particular, for the public sector, collaborative innovation offers three elements that respond to restrictive organisational and cultural aspects that tend to be present in public sector innovation (ibid): opens the innovation cycle to internal and external innovation assets; facilitates risk-taking to the public sector, and promotes a positive attitude towards public sector innovation and risk-taking in the socio-political environment.

While collective governance emphasises the need for decision-making by consensus among public and non-public stakeholders, promoting a shared arena where public and non-public entities interact, it does not specifically consider the existence of different levels that might lead to a more decentralised model, as it does the concept of multi-level governance. As defined by Katherine A. Daniell and Adrian Kay (2017), a multi-level governance model is a “...system of governance where there is a dispersion of authority upwards, downwards and sideways between levels of government – local, regional, national and supra-national – as well as across spheres and sectors, including states, markets and civil society.” This approach is very much suited to the diversity of governance levels and policy frameworks operating in the Mediterranean.

While shared agendas require a governance model able to promote cooperation and definition around a common ground, mission-oriented innovation policies need a structured and flexible multi-level governance model able to address all the needs of multi-stakeholder collaboration, with a higher degree of uncertainty, conflict and complexity (Janssen, M. et al., 2016). Innovation per se implies a certain degree of uncertainty towards the output of innovation policies (which might imply the need for trial and error strategies) and it has to deal with the conflicts of interest among stakeholders, particularly between regime incumbents and emerging innovators (Geels, 2002). Moreover, contemporary missions are increasingly complex, since they intend to address

challenges with social, as well as technological components (Janssen, M. et al., 2016). To govern this complexity, a variety of approaches have been rehearsed by missions, which can be summarised in the following dimensions (Larrue, P., 2021):

- Strategic information: selects specific societal challenge(s) and provides the guidance for collective policy intervention towards clear objectives.
- Policy coordination: it is based on the coordination of strategies and activities of the different stakeholders involved in the policy.
- Policy implementation: it ensures the consistency and effectiveness of the modes of intervention, as well as the resource allocation and the monitoring of the actions that will lead to the achievement of the policy objectives.

These three dimensions can be integrated by initiatives addressing sustainable development challenges, bearing in mind that they were initially conceived to provide guidance to institutions operating in the fields of policy setting and implementation.

The last element being considered for the definition of the concept of governance used in this report is related to sustainability transitions. While the previous models are more focused on the structures that might lead to more cooperation or directionality, the transition element also implies the temporal dimension and a gradual change from a current situation to a more sustainable one. Policies for sustainability transitions usually have three main characteristics (Rauschmayer, F. et al., 2013): i) they are prescriptive concerning dynamic societal processes, ii) linked to the normativity of sustainable development, iii) and can link the societal and the individual levels.

This implies the importance of considering sustainability not only at the societal level but also at the individual or niche level. Going back to the multi-level perspective of change in socio-technical regimes (Geels, 2002), the need for specific governance of niches becomes obvious; this implies a certain degree of freedom for experimentation as well as the ability to select those niches with the greatest potential for system transition. Hence, a governance model emerges, that should be able to support novelties and connect stakeholders while promoting alignment towards a new regime configuration. In practical terms, this is a model flexible enough to identify, encourage and support new solutions, even if they imply a change in the status quo.

Thus, based on the present discussion on governance models we can conclude by defining the governance model as:

“An approach to governance that promotes cooperation and collaboration across multiple types of stakeholders at different levels of governance towards sustainability transitions through innovation; to do so, the governance model counts with the long-term support of stakeholders, a shared common agenda and co-defined mission, while being balanced between the necessary flexibility to promote experimentation and the structure that supports the consolidation of new solutions.”

Chapter 2: Methodology

The governance model proposal relies on the results of the summary report (4.2.1 Summary report of the policy experiments) and it is focused on becoming a framework for multi-level and transnational cooperation that is aiming at promoting transformative innovation policies. The common learnings that are being used as inputs for the definition of a governance model are obtained through a multiple case study methodology combining inductive and deductive approaches (Eisenhardt, 1989; Eisenhardt and Grabner, 2007; Gilbert, 2005) of the four policy experiments. The identification of the common learnings was thus backed by the literature review, whereby key dimensions were extracted; these dimensions summarised the principles that governance arrangements should follow to promote transformative innovation. These *deductive* outcomes were in turn complemented and improved by the shared, *inductive* insights gathered from a comparative analysis of existing strategic governance arrangements and initiatives. These insights helped improve the formulation of the dimensions extracted from the literature, by merging some of them or proposing new ones.

The methodology followed provided an additional advantage. Because it is a comparative case study, it is transferable enough to reach conclusions suitable to different geographical locations (Yin, 2014). This transferability aspect is crucial, since the governance model should be robust enough to support stakeholders' efforts to address sustainable development challenges through collaboration on innovation, despite differences in socio-economic and policy contexts across the Mediterranean. Furthermore, the study findings should be transferable to initiatives similar to the proposed governance model, despite contextual differences.

This section will show the methodology followed in a) gathering dimensions of analysis from the literature, b) carrying out comparative analyses of existing governance arrangements and c) policy experiments; d) identifying potential components of the governance model, and their functions.

2.1 Dimensions of analysis

The dimensions of analysis were extracted from the literature review. They guided the empirical analysis of both the existing governance arrangements and the policy experiments through an iterative process whereby these dimensions were further refined. The following branches of the literature were taken into account:

- Responsible Research and Innovation (Fitjar et al., 2019; Stilgoe et al., 2013)
- Transformative Innovation Policy (Ghosh et al., 2021; Molas-Gallart et al., 2020; Schot et al., 2020; Schot & Steinmueller, 2018)
- Mission-oriented approaches (Larrue et al., 2021; Mazzucato, 2016, 2017; Miedzinski et al., 2019)
- Shared Agendas (Ariño & Fernández, 2021; Fernández & Romagosa, 2020; Fernández & Herrera, 2022; Marinelli et al., 2021)¹

¹ The authors held meetings with key informants from the economic promotion area of the Catalan Government (PANORAMED WP Innovation), who suggested references on the Shared Agendas approach. The authors are grateful for the support provided by the key informants.

As part of a common move towards directionality in innovation policy (Schot & Steinmueller, 2018), all these contributions share the view that innovation should not be promoted simply for the sake of securing economic growth and competitiveness, but rather to address sustainable development challenges threatening the sustainability of human societies, and their ability to provide high standards of living without compromising the ecological limits of the planet.

Through different approaches, these strands of the innovation policy literature offer a conceptual framework pointing out the goals and principles that should be followed by a governance model intended to address sustainable development challenges. Additionally, they highlight tools that could be implemented in the development of such a governance model, taking into account that it will operate in a setting like the Mediterranean, where the coordination problems stemming from promoting multi-stakeholder collaboration on innovation are heightened by the multi-level and transnational nature of this setting.

Hence, the following dimensions emerge from the literature review, that are taken into account as a departure point in the next stages of case study comparison:

- Shared vision and agenda: Governance arrangements should promote a consensus across stakeholders on the (i) current state of art in connection with the challenge; (ii) the vision to be pursued to address the challenge; (iii) and the range of innovations that should be promoted to realise this vision.
- Anticipation: Governance arrangements should help multiple stakeholders anticipate the positive (and negative) outcomes of the innovations they pursue, within the sustainable development challenge they address but also beyond.
- Reflexivity: The positive (and negative) outcomes of the innovations pursued should be taken into account since they affect the ability to address the focal sustainable development challenge.
- Inclusiveness: The involvement of a broad range of quadruple helix stakeholders from all over the Mediterranean, operating at different governance levels should be pursued.
- Responsiveness: Governance arrangements should be able to respond to criticisms on the impacts of the innovations they promote, and modify their actions accordingly.
- Experimentation: Governance arrangements provide spaces where multiple types of stakeholders can experiment with innovative solutions to test and adapt them to different contexts and governance levels, learning from the process.
- Niche upscaling: The resources available at different governance levels (financial, knowledge-related, policy-related or otherwise) should be tapped into, to promote the scaling up of local innovations with transformative potential.
- Continuous monitoring and evaluation of roadmaps: The evaluation of the innovation projects pursued should be seen as a continuous process, with milestones in the short, mid and long term enabling to alter previous courses of action. Particularly important is the contribution of monitoring systems to the identification and overcoming of obstacles to the upscaling of innovations.
- Procedures for measuring the impact of innovation actions: The evaluation of the innovation projects pursued should include indicators to measure the impact of the innovative actions carried out within the lifespan of the innovative projects, and afterwards.
- Focus of mission-oriented approaches: Mission-oriented innovation initiatives might follow, to different degrees, three different approaches, which are: i) Strategic

orientation, focused on the selection of specific societal challenges; ii) Policy coordination, focused on the coordination of strategies and activities in different institutions; iii) Policy implementation, aimed at ensuring the consistency and effectiveness of the interventions mobilised to achieve policy objectives.

In the next stages, these dimensions have been selectively aggregated based on the findings from the cross-case comparisons of governance arrangements and policy experiments.

2.2 Analysis of the State of Art

These dimensions have been taken into account in the next step of the multiple case study, where governance arrangements and frameworks are reviewed, with an eye on the development of the governance model to address complex sustainable development challenges in the Mediterranean.

Based on the multiple case study approach formulated above (Eisenhardt, 1989; Eisenhardt and Grabner, 2007; Gilbert, 2005), the goal at this step will be to identify common elements shared by the governance arrangements, along the selected dimensions. The fact that these elements are common to different governance arrangements suggests that they can be put in place to address different sustainable development challenges, despite differences in the context and purpose of the governance arrangement (Tsang, 2013), thereby being useful to the development of a governance model.

Indeed, two types of arrangements and frameworks have been taken into account in the multiple case study, to assess how the governance model could operate within and outside the blue bioeconomy field. Such variation -indeed a *robustness test*- should enable the identification of elements that can support the effective functioning of a relatively broad range of governance arrangements:

- Governance arrangements promoting multi-stakeholder collaboration on innovation, in topics related to the Blue Bioeconomy: B-Blue, Blue Growth Community (BGC), Submariner Network.
- Governance arrangements promoting multi-stakeholder collaboration on innovation, without a specific focus on the Blue Bioeconomy: The Climate Knowledge and Innovation Community of European Institute of Innovation and Technology (Climate-KIC), Green Growth Community (GGC), Prima Foundation, Vanguard Initiative.

However, to ensure that the cases are similar enough in their context to facilitate comparisons (Tsang, 2013) the selected governance arrangements share the trait of being initiatives constructed bottom-up, i.e. emerged from the initiative of organisations and/or local and regional governments. Under these criteria, governance arrangements launched by national governments are not taken into account; although their influence in promoting multi-stakeholder collaboration in the basin is fundamental, these are seen as initiatives launched top down. Hence, the processes taking place within these initiatives might hold notable differences compared to those of bottom-up initiatives.

2.3 Comparative analysis of the policy experiments

The shared findings from the comparative analysis of existing governance initiatives and frameworks helped to identify the shared outcomes from the policy experiments. These were aimed at helping multi-stakeholder networks address the following sustainable development challenges affecting the Mediterranean: Sustainable aquaculture (led by ART-ER); marine macro plastic pollution (CREDA); invasive alien species (IFAPA); digitalisation of the blue bioeconomy (Demokritos).

These differ in two main characteristics: i) the sustainable development challenge addressed in the policy experiment; ii) the specific approaches (i.e. workshop techniques) through which the policy experiment methodology was implemented. While taking into account these differences in context and how they might causally relate to the specific outcomes of the focal policy experiment, the case study methodology focuses on those outcomes that are common to the policy experiments compared. By doing so, findings are unearthed that are more likely to be transferable to future implementations of the policy experiment methodology, increasing the external validity of the case study (Yin, 2014). Thus, the case study approach chosen for the present document would be in-between that of a contextualised explanation, and theory building as defined by Tsang (2013).

2.4 Functions and roles of reference

While the previous sections provide inputs based on the learnings of analysis of existing governance arrangements and the policy experiments being developed, this last source of input extracts functions and roles from the governance arrangements. Such information provides practical inputs to define the starting point of a governance model and its potential evolution over time based on its maturity level. While the roles are indicative to understand the bodies needed for an efficient distribution of responsibilities, the functions will show the responsibilities that can be assigned to different agents. This section aims to be the base of the governance model being proposed, combining a theoretical proposal with specific actions and roles.

Chapter 3: Comparative analyses

The chapter starts by explaining the inputs collected in the summary report, which will be the basis for the construction of the governance model: the results from the (i) comparative analysis of existing governance arrangements, and the (ii) policy experiments. The chapter will conclude by discussing an additional source of inputs based on the analysis of governance arrangements, i.e. (iii) the main roles and associated functions that should be taken into account in the construction of the governance model, making emphasis on the functions as well as the degree of readiness required before implementing well-defined structures. Based on these inputs, chapter 4 will advance a governance model proposal, and how it should be developed across different stages of development.

3.1 Inputs from the summary report

3.1.1. Learning of governance arrangements by dimensions of analysis

The governance arrangements that have been analysed are all promoting multi-stakeholder collaboration on innovation, although some of them are specifically related to the Blue Bioeconomy (B-Blue, BGC), while others are not (Climate KIC, GGC, Prima Foundation, Vanguard Initiative).

Inclusive and responsive shared visions

Analysing the different governance arrangements it has been discovered the importance of inclusiveness to have large representativeness and participation. Such conditions would guarantee that different points of view are taken into account, having an impact on the way decisions are being taken and implemented. In the case of inclusiveness, it promotes the involvement of a wide range of stakeholders, taking into account stakeholders' distribution across the quadruple helix, geographical location and governance levels. These techniques should ensure the inclusion of a broad range of actors in the co-design and implementation of innovations. Different approaches are being followed in the governance arrangements that have been analysed:

- National or regional living labs: they have been used to attract stakeholders with relatively limited resources and a stronger need for rapid returns to participation, such as civil society organisations. The stakeholders to be involved in the living labs were identified through a mapping exercise by each of the project partners, being especially relevant to the identification of frontrunners due to their experience and knowledge of the local blue biotechnology value chain (B-Blue and BLUEfasma projects).
- Working group structure, including
 - Thematic working groups: whereby members share specific knowledge on a concrete topic (Submariner network, BGC, GGC).
 - Policy-oriented working groups: in this case, the members are more diverse and provide different types of expertise to propose policies. These working groups thus provide stakeholders with an opportunity to influence how problems are framed in policy-making (PRIMA Foundation).

- Task-oriented working groups: this structure is focused on aggregating the stakeholders based on a specific task to be done. It allows a higher specialisation in the outputs being produced and facilitates the distribution of competencies among stakeholders (Vanguard Initiative).

Another crucial element for the inclusion and engagement of stakeholders is the networking services provided by the governance arrangement secretariat. In the case of the Submariner Network, the activities of the secretariat are heavily devoted to services that might be of interest to stakeholders interested in being part of innovation project consortia, such as matchmaking activities or coaching services to access funding opportunities and set up project consortia.

Usually, a relatively small number of less empowered stakeholders (.e.g. SMEs and civil society organisations) tend to be involved, compared to stakeholders with more abundant resources. Such limitations might stem from the foundations of most of the project consortia supporting the governance arrangements. However, some of the participatory structures included here (.e.g. BLUEfasma living labs) appear to have been successful in drawing the involvement of less empowered stakeholders due to the applied nature of the innovation projects co-developed in the living labs, whereby stakeholders could foresee rapid returns to their participation.

A combination of territorialised approaches to stakeholder inclusion (.e.g. living labs strongly grounded on local needs and demands) and non-territorialised approaches might succeed in drawing the participation of stakeholders while also providing opportunities for the upscaling of innovations developed locally and regionally. Additionally, the findings of Rosa et al. (2021) and the BLUEfasma project (2022) suggest that multi-level approaches to stakeholder inclusiveness can benefit from increased resources devoted to communication activities.

A strong commitment and participation are the basis of developing a shared vision and agenda. These are frequent among governance arrangements, looking for a shared understanding of three different elements: the current state of affairs in connection with the problems they address; the overall goals to be pursued when addressing the problems, and how these goals should be pursued. It uses these three scenarios to cluster together the governance arrangements and to explain similarities and differences that have been identified.

The existence of a shared vision and agenda is being used to concentrate resources towards common goals in the governance arrangements, especially those that are addressing sustainable development challenges. This is the case of the EIT KIC, where a shared agenda is in-built within the application process to become a KIC. Similarly, the Submariner Network's shared vision and agenda are strongly grounded in an assessment of obstacles and opportunities around marine resources as well as a participatory process in the Baltic region (Schultz-Zehden, A., et al, 2021). In the GGC and BGC, operations also respond to a shared vision and agenda logic, however, it is the product of alignment based on the projects that are being promoted toward common challenges. Finally, in the case of PRIMA, the shared agenda brings different challenges being addressed simultaneously by identifying shared benefits that can bring stakeholders together.

Finally, by promoting transversal participation through different levels, categories and regions, the shared agenda should also promote responsiveness to emerging needs and criticisms along the process of design and implementation of innovations. Indeed, certain flexibility is required and it can be easily accepted by having a shared vision. Monitoring procedures should provide governance arrangements with crucial data on the impact of innovations (e.g. Climate-KIC, the

Submariner Network and the Green Growth Community), providing information for decision making. Likewise, territorial participatory routines should give voice to a relatively broad range of stakeholders (e.g. B-Blue project and Submariner Network). Furthermore, many of the governance arrangements (e.g. Submariner Network, Climate-KIC) have developed a shared agenda grounded on multi-stakeholder participation.

The participation of resource-strained stakeholders should be supported, to include their views in the innovation process; often, these actors might inspire non-technological forms of innovation. Additionally, exercises assessing the ex-post and ex-ante impact of innovations should be explored, since they would provide valuable data for future projects and promote indirect anticipation and reflexivity.

Roadmaps as a tool for anticipation and reflexivity

The need for ensuring alignment among stakeholders and coordination in the implementation of initiatives requires a structure of KPIs able to provide enough information to the stakeholders involved in a governance arrangement. A common platform could concentrate data and at the same time make it accessible, supporting the responsiveness and anticipation dimensions of the governance arrangement (e.g. the PRIMA General Analytics developed by PRIMA Foundation).

To define the actions to be taken in long-term projects and with a large number of stakeholders, some governance arrangement defines roadmaps, specifying the actions to be taken and supporting the delegation of responsibilities. Similar to KPIs, roadmaps are a powerful alignment tool in complex, multi-level initiatives like governance arrangements. They need to be supported by continuous monitoring and evaluation procedures ensuring the adaptation of the roadmap along the way. This flexibility is needed to fulfil the dimensions previously reviewed (particularly that of reflexivity), and to ensure that the roadmap is flexible enough to adapt to uncertain innovation processes. Some examples of roadmaps identified among the governance arrangement analysed are:

- Submariner roadmap (launched in 2015 and revisioned in 2021 (Schultz-Zehden, A., et al, 2021)): the roadmap comprised a range of strategic actions and for each of these strategic actions, the 2021 revision of the strategy evaluated the degree of completion of the related Submariner projects and proposed a revision of these strategic actions with new strategic actions as part of its vision until 2030.
- The Climate-KIC Strategic Agenda (2021) includes a range of measurable goals connected with the sustainable development challenge of addressing climate change, to be fulfilled by 2027. Furthermore, the Agenda includes a risk assessment exercise where actions are foreseen to address risks that might derail the projects supported by the Climate-KIC.
- The GGC aims to coordinate a range of common indicators for assessing the impact of innovation projects. Importantly, they would enable assessing the degree to which shared goals are being achieved, allowing the reorientation of the governance arrangement against new priorities.

The previous examples are based on an exercise to anticipate needs and read trends, plan to be prepared and push toward long-term challenges. To do so, it is important to consider the

positive and negative outcomes of future innovations. While most governance arrangements have been focusing on the positive impacts, the negative ones have been largely neglected, reducing their anticipation capacity. This characteristic stands especially visible in the case of the Climate-KIC: as part of its strategic agenda for 2021-2027, an analysis was produced assessing the potential impacts of the innovations promoted by the KIC, however, little attention was paid to the negative side effects that might stem from innovation.

The lack of an explicit foresight of the negative impacts of the innovations promoted by the governance arrangements might also correlate with the lack of involvement of some groups of stakeholders, especially the ones with limited resources to influence the definition of research and innovation pathways. Therefore, it concludes by stating how foresight exercises with a strong participatory ability can better define a more balanced range of insights on what goals should be pursued.

Finally, a flexible roadmap and the establishment of anticipation mechanisms might facilitate the capacity of the formers to review and adapt themselves based on changing circumstances. Considering the uncertainty and impacts of innovation, it is crucial to gather data to facilitate adaptation processes toward the desired outcome that is being pursued. Additionally, reflexivity can also promote a learning process that brings stakeholders to better adapt themselves and their common agenda, adding reaction capacity within the defined roadmaps.

Reflexivity is strongly related to governance arrangements' efforts to anticipate the impacts of the innovations promoted, through the collection of key performance indicators (KPIs) related to the impact of their innovations. KPIs can be devised in connection to the global goals of the governance arrangement (e.g. Climate-KIC (2021a)), the GGC (CUEIM & UVic, 2021) and the PRIMA analytics platform of the PRIMA Foundation) or can be linked to specific goals adjusted to the characteristics of the stakeholders involved (Submariner Network (Schultz-Zehden, A., et al, 2021) and the B-Blue community (Charlène et al., 2020).

Experimenting and niche upscaling

Across the observed governance arrangements, it is common to implement place-based approaches to promote experimentation with emerging innovations. Through local experimentation, it is expected that user communities will have produced the inputs needed to assess the feasibility of the innovations. The scale of these place-based experiments can vary notably across governance arrangements, from regional pilot sites (B-Blue project and the Submariner network) to an EU-wide network of local innovation hubs (Climate KIC).

Similar to the other dimensions, it is also noteworthy the different emphasis that the governance arrangements assign to experimentation with transformative innovations. Whereas the aforementioned initiatives open the door to experimenting in their living labs and pilot sites with innovations of a relatively low TRL (below or equal to 5), other initiatives are focused on a relatively high TRL (above 5) solutions, to a range of problems more strongly aligned to innovation for growth paradigm such as advanced manufacturing and bioeconomy (the Vanguard Initiative).

Such experimentation is the first step to promoting innovations, which can be further promoted through niche upscaling mechanisms. The coordination among actors at different governance levels has facilitated access to resources for the promotion of local innovations with transformative potential. Niche upscaling entails that the network of actors involved in the governance arrangements provides the resources to identify, sustain and promote solutions developed at the local level. Such support is necessary to increase the likelihood that the innovations contribute to socio-technical regimes' disruption and reconfiguration. The extent to which transformative innovations can be scaled-up might be strongly related to the governance arrangements' capacity to combine territorialised and non-territorialised approaches to innovation co-creation.

- In the case of the Blue Living Labs promoted by BLUEfasma, through its communication activities, BLUEfasma intends to promote the replication and scalability of niche-level, territorial innovations to higher governance levels.
- The Climate-KIC network of local innovation hubs or deep demonstration sites across the EU is another example, based on demonstration sites are locations where a broad range of innovations are tested and evaluated; those innovations with high potential impact are further promoted to be scaled up.
- BGC and the GGC are mainly focused on communicating the results of its member to broader audiences, increasing access to resources and opportunities
- The Submariner Network has engaged in similar practices with its Blue Platform project, which intended to showcase the capabilities of the network and its outputs.

The establishment of such alliances highlights the relevance of multi-level and transnational cooperation in promoting cooperation and knowledge transfer, for example, the interregional cooperation projects between companies and knowledge institutes in a specific technology field or application domain (e.g. Vanguard Initiative). The bridges set by governance arrangements such as the BGC and GGC enable linking the local/regional realities of niche-level experiments with actors operating at the national and transnational governance levels. Particularly relevant appears to be the connection that these governance levels provide to the Mediterranean and EU policy-making arena, potentially influencing the upcoming project funding calls.

Some drawbacks, however, have been identified that should be addressed to increase the effectiveness of these approaches: future horizontal project calls could strengthen the alignment of projects around common sustainable development challenges, with common indicators (Borut et al., 2020); the timeframe of these projects might still be excessively limited for the long-term processes mediating between the testing of niche-level innovations in settings such as living labs, and impacts at higher governance levels (.e.g. policy influence, scaled up innovation projects).

Focus of mission orientation

This dimension considers three different approaches to mission orientation that will provide valuable insights towards what are the common characteristics of governance arrangements, in connection with their orientation towards missions to address sustainable development challenges. The three dimensions being considered are:

- Strategic orientation: it includes governance models that select specific societal challenge(s) and guides collective policy intervention toward clear objectives. It can be easily linked with decision-making bodies where different stakeholders cooperate in the definition of the strategy to be followed and the validation of initiatives implementing the strategy (e.g. the Vanguard Initiative).
- Policy coordination: it is responsible for achieving the mission and its breadth and complexity might increase with the number of policy fields and governance levels covered. This coordination dimension aims at facilitating the alignment between actors implementing initiatives, considering all the potential structures. Among the cases analysed, there are two main situations. In one of them, all the members of a governance arrangement organise themselves in working groups, coordinating actors at a regional or transnational level in a decentralised manner (e.g. BGC); the other one refers to a more centralised approach, where a support body is responsible for coordinating and promoting initiatives (e.g. Submariner Network).
- Policy implementation: it is focused on ensuring the consistency and effectiveness of the modes of intervention, as well as the resource allocation and the monitoring of the actions that will lead to the achievement of the policy objectives. This dimension comprises the monitoring systems required to ensure stakeholder alignment in the implementation of the planned initiatives. Examples can be found for both the GGC and the Climate KIC, which include indicators to measure the impact of the projects promoted.

3.1.2. Learnings from the policy experiments comparative analysis

The comparative analysis was structured around four dimensions gathered from the theoretical framework: i) Shared Vision and Agenda, ii) Anticipation, iii) Reflexivity and iv) Experimentation. These dimensions were supported by others that emerged inductively through the comparative analyses between policy experiments. The latter were: v) Multi-stakeholder Inclusiveness; vi) Multilevel Inclusiveness; vii) Transnational inclusiveness; viii) Tools to promote multi-stakeholder learning in multilevel and transnational settings (transversal category); ix) Balance between Inclusiveness and Implementation Potential. The findings are summarised below.

Shared Vision and Agenda

Across the policy experiments, it is possible to see the application of a range of tools promoting a shared understanding of a) the current state of affairs in the challenge, b) what should be the ideal state of affairs in connection with the challenge, and c) what should be the strategic agenda or roadmap leading to that ideal state of affairs. To reach these common goals, the policy experiments tested a diverse toolkit of methodological approaches, on aspects such as:

- Combining the expression of diverse views with consensus-building. Here, the experiments on the challenges of Plastic Pollution and Circular Aquaculture aimed at combining both aspects through a mixture of group work and plenary discussions, to reach a shared understanding of all three of the previously mentioned goals; in the Plastic Pollution challenge, stakeholders were also supported by techniques visualising relationships between factors relevant to the challenge, i.e. System Mapping. The experiment on the challenge of Digitalising the Blue Bioeconomy followed a similar

approach, however it focused on the goals a) and b). Finally, the experiment on the IAS challenge opted for a different approach, combining a workshop for idea exploration and consensus formation with survey methods to measure the weight of diverse views across types of quadruple helix stakeholders.

- Extent to which the shared agendas can be realised. The policy experiments provided different tools to enable the operability of the shared agenda. Particularly noteworthy is the role played by System Mapping leverage points in the Plastic Pollution challenge, and the use of survey methods in the IAS challenge.

Anticipation & Reflexivity

While anticipation entails predicting future outcomes of innovation before they arrive, reflexivity analyses the positive (and negative) outcomes of the innovations already pursued. This process becomes in turn an input for a learning process and the prediction of the future. Three main approaches can be identified, that combine anticipation and reflexivity:

- **System Mapping.** This approach, implemented in the Plastic Pollution challenge, promotes the identification of positive and negative impacts by analysing the entire complexity of the challenge and defining specific loops, correlations and dimensions. Specifically, the loops are showing how one element has a positive or negative impact on other elements and at the same time, how this first element is connected with the rest of the map.
- **Open dialogue that promotes transfer of experiences across the Mediterranean.** The policy experiment on Sustainable Aquaculture has indirectly obtained anticipation by promoting open dialogue among all the stakeholders. This open and constant dialogue is being used to promote a common understanding of potential threats and opportunities, linked with the previous point of defining a common vision and agenda.
- **Focus on potential positive and negative impacts.** This approach is directly related to the main focus of the policy experiment on the IAS challenge. Current and future innovation strategies might have negative consequences on the environment, and the policy experiment launched a discussion on the negative impacts that might stem from the innovative actions.

Experimentation

Although the relatively short duration of the policy experiments did not allow for testing innovations in real-life settings and exploring how they might be diffused, the policy experiments have provided temporary spaces for experimenting on:

- How to formulate a shared agenda aimed at addressing the focal sustainable development challenge (see Shared Vision and Agenda).
- How to start co-developing innovation ideas that could implement the shared agenda roadmap.

The policy experiments promoted different tools useful to experiment with innovation proposals. In the case of the Plastic Pollution challenge, System Mapping helped stakeholders identify leverage points, whereby they could concentrate their efforts to co-develop innovation proposals. Meanwhile, the Circular Aquaculture challenge experiment allowed stakeholders to assess which collaboration routines could help multiple stakeholders work together, in the context of a Mediterranean Innovation Alliance for a Sustainable Blue Bioeconomy. Finally, the quantitative research techniques applied in the IAS challenge allowed us to identify which innovation proposals gather support for innovation co-creation, and which ones might be supported only by some types of stakeholders.

Multi-stakeholder Inclusiveness

There is a common unbalance in all the policy experiments, which might be caused by the structure itself of the policy experiment. Indeed, the policy experiments have larger participation by agents from universities and research centres and the public administration. Beyond this limitation in terms of balanced representativeness, there are some valuable contributions from the policy experiments to the understanding of this dimension. These include a) the sub-categorisation of each group; b) the use of internally balanced working groups and c) additional efforts to reach a balanced stakeholder distribution.

Multilevel Inclusiveness

To a greater or lesser extent, the policy experiments have been able to draw a multistakeholder constituency capable of supporting the nurturing and maturation of transformative innovations, across governance levels. However, the experiments appear to have faced difficulties in engaging stakeholders operating regionally and transnationally. Such difficulties stem from the mismatch between the incentives of these organisations, and the design and implementation of the policy experiments. To involve regional stakeholders, the following mitigation approaches might be implemented:

- Bidirectional communication efforts to ensure that the framing question is linked to the needs of local and regional stakeholders.
- Targeting leading local/regional stakeholders, to tap on their power to attract broader stakeholder constituencies.
- Regional/national workshops in other languages than English.
- Linkage of the policy experiment workshops with living labs; the latter provide stable spaces whereby the feasibility of innovation proposals is tested in real-life settings.

Likewise, the following mitigation actions have been devised for transnational stakeholders:

- Bidirectional communication efforts to ensure that the framing question is linked to the needs of transnational stakeholders.
- Increased desk research efforts to draw transnational stakeholders, particularly intergovernmental organisations.

- Linkage of the policy experiment workshops with living labs; the latter provide stable spaces whereby the feasibility of innovation proposals is tested in real-life settings.

Transnational Inclusiveness

It is relevant to mention the limitation in the participation of northern shore countries. The stakeholders involved in the policy experiments comprised a broad range of northern Mediterranean countries, however Italy and Spain tended to be overrepresented. This imbalance becomes more visible when comparing the country distribution of those stakeholders that participated across all the policy experiment workshops, where fewer stakeholders were involved. In addition, participation from Southern Mediterranean stakeholders was also limited.

This imbalance has been indirectly mitigated through transnational stakeholders and further tackled with additional mitigation strategies like those mentioned in the other inclusiveness dimensions. In addition, a mix of workshops and surveys (as in the IAS challenge) could help reach a larger number of participants.

Tools to promote multi-stakeholder learning, in multilevel and transnational settings (a transversal category)

The policy experiments have provided the opportunity not only to think about how to tackle sustainable development challenges but have also provided methodological tools that can be further used in other projects. In general, the tools to promote multi-stakeholder learning could be summarised as:

- Shared visions and agendas. Although this process is focused on the definition of the current assessment of a challenge and the future vision to work towards, it is also a negotiation exercise, where the participants learn to bring forward proposals and have to be open to adjustments and concessions.
- Techniques to visualise complex systemic relationships. The Systems Mapping technique applied in the plastic pollution policy experiment is a prime example, showing how relevant it is to visualise in a map the relationships between factors configuring a sustainable development challenge. Particularly interesting is the role that leverage points play, being areas within the map whereby relationships between factors can be tapped into, to trigger system transformation.
- Approaches to take into account the positive and negative impacts of innovation, whether these are direct or indirect.
- Combining quantitative and qualitative research techniques. The use of quantitative techniques allowing to identify, and quantify points of agreement and discussion across stakeholders might be a strong complement to the conversations held in workshop settings.

Balance between Inclusiveness and Implementation Potential

As engagements promoting innovations that can transform socio-technical regimes towards sustainable development paths, policy experiments have to deal with the uneasy balance between the opposite goals of ensuring multi-stakeholder inclusiveness and increasing the implementation potential of the outcomes stemming from the experiments themselves i.e. shared multi-stakeholder agendas and proposals of innovations. To fulfil this goal, the policy experiments have applied a diverse range of approaches, which intend to promote synergies between both goals. These include:

- The use of System Maps as visual representations of sustainable development challenges, whereby the complexity inherent to the challenges is condensed enough to ensure their interpretation.
- The quantification of stakeholder support for the implementation of innovation proposals, extending the reach of the policy experiment and identifying which stakeholder coalitions might support the innovation proposals.
- Focusing the policy experiment workshops to build collaboration routines for multi-stakeholder alliances, rather than on specific actions.

3.2 Roles and functions of comparable governance arrangements

The comparative analysis of the existing governance arrangements provided information about the roles and functions that are used to lead an organisation/initiative, allowing to identify how responsibilities are distributed as well as the existing dynamics of cooperation. Based on that work, the present section introduces the main bodies that could structure a governance model, explaining their characteristics and functions. These bodies are a) decision-making, b) executive, c) support and d) advisory.

The selection of these four bodies is supported by their functions and the dynamics of cooperation that will strengthen the governance model. Indeed, a decision-making body, that takes strategic decisions about the organisation, requires an executive body able to execute them. At the same time, the decision-making body also monitors the task being implemented, requiring accountability and transparent communication from the executive body. To support both bodies in their administrative tasks, but also enhance the connection between the members and the organisation, there is the need for a support body. The cooperation among these three bodies allows an efficient distribution of responsibilities, being the core structure of a governance model with the characteristics of the one that is being proposed. Finally, an advisory body provides the expertise required in dealing with complex challenges considering the regional needs and knowledge, as well as the interests of different stakeholders.

3.2.1. Decision-making body

As discussed in the OECD's publication "The Governance of Regulators" (2014), decision-making bodies are primarily responsible for the oversight, strategic guidance and the operational policy of a governance arrangement. Their responsibilities can be summarised as:

- Setting strategic direction and developing policy, taking into account the mission of the organisation and the goals to be achieved in the short and long term.
- Monitoring performance as a way of guaranteeing that the activity of the organisation is aligned with the goals and objectives that have been defined.
- Ensuring compliance with the law, and the organisation's constitution, becoming a guarantor of internal and external compliance.
- Mediating among members and divergent interests, aiming at finding a compromise among all the members towards a common goal. Especially in a transnational and multi-stakeholder governance arrangement, there is the need to promote a consensus around a common vision and agenda.

Across the governance arrangements analysed, the decision-making body has been identified as responsible for discussing and validating the initiative's strategy and being open to the requests and expectations of members of the initiative. Additionally to the aforementioned competencies, the decision-making body has also these additional competencies:

- Reaffirming the political commitment of all the participants to the long-term strategic direction agreed upon and periodically reviewed (the Vanguard Initiative, BGC).
- Representing the initiative towards external stakeholder communities, leading and promoting lobbying actions (BGC, GGC).
- Resource management/supervision, guaranteeing that funds and other common resources available are efficiently used. Such responsibility is linked to the goal of promoting transparency and accountability within the organisation. The management of the necessary mechanisms might be delegated to another body, which will report periodically to the decision-making body (PRIMA Foundation).
- Delegating powers to other agents (executive body, support body, advisory body) as a way to share responsibilities and empower them. Such competence might affect the balances within a governance model but might be a source of flexibility and evolution over time, from a more centralised to a more decentralised structure (PRIMA Foundation).

3.2.2. Executive body

The executive body is responsible for the implementation of the strategies and monitoring activities. In some organisations, the tasks of the decision-making and the executive body might be merged, while in others they are separated, having the first a more strategic role while the second a more operational role.

As per the governance models analysed, the competencies of the executive body can be summarised as:

- Promoting the implementation of the initiatives aligned with the strategy of the organisation. Such promotion includes a variety of activities, from the definition of working groups to the direct management of projects. Such a task is common to the initiatives with an executive body, as in the examples of the Vanguard Initiative and the PRIMA Foundation.
- Monitoring performance as a way of guaranteeing that the activity of the organisation is aligned with the goals and objectives that have been defined (PRIMA Foundation, GGC).
- Identifying experts for an advisory board, since it is a bridge between the strategic needs of the organisation and the operational needs of the projects. Such experts could be consulted on a case-by-case basis or they could be integrated into an advisory board (PRIMA Foundation, Submariner Network).
- Resource management by the delegation of the decision-making committee. Such delegation implies transferring to the executive body the responsibility of spending the budget allocated by the decision-making body. This distribution of responsibilities follows the principle of subsidiarity; from one side, the executive body is aware of the project requirements and the needs of the day-by-day management; on the other side, the decision-making body assumes monitoring responsibilities after having allocated the budget according to the strategy defined (Submariner Network).
- Delegating powers to the support body, getting less involved in operational tasks and becoming more of a supervisor of the correct implementation (Submariner Network).

3.2.3. Support body

The support body receives powers delegated from the executive and/or decision-making body and is responsible for supporting the rest of the bodies and members of the organisation in implementing projects and initiatives. In some organisations, this body has large power, being responsible for helping working groups in implementing their initiatives, while in others it might rely on a more passive approach. An example of the former is the case of Submariner Network, where the Secretariat is responsible for providing a range of services and benefits to the members of the network; the latter there is the case of PRIMA Foundation, which acts as a liaison between the bodies of the Foundation.

The activities of the support body can be summarised as:

- Operating as a liaison with the rest of the bodies of the organisation (PRIMA Foundation).
- Promoting and representing members' competencies and interests in news and events via different communication channels such as website and social media posts, or quarterly newsletters (Submariner Network, BGC, GGC).
- Searching and sharing funding opportunities, pitching and matchmaking events (Submariner Network).
- Providing matchmaking opportunities for project development among members (Submariner Network).
- Organising events for members (eg. annual members' assembly) and specific workshops (Submariner Network, BGC, GGC).

- Coordinating access and set-up of project development consortia: support, administration and facilitation of projects, thematic networking... (Submariner Network).
- Formulating and disseminating policy-oriented position papers (Submariner Network, BGC, GGC).
- Expert advice and coaching via the secretariat hub and/or direction to relevant network members (Submariner Network).
- Supporting the day-to-day operations and functions of the organisation/network (Vanguard Initiative).

3.2.4. Advisory body

The advisory board is characterised for assisting in the development and implementation of plans and activities. Its members typically have little direct decision-making power but very high influence over the executive or decision-making body and are characterised by deep expertise in the field of activity of the organisation. Beyond their expertise, also the network of connections could be another reason for being included in this group.

The activities of the advisory board can be summarised in the following:

- Providing their experience in a specific field or location, supporting other members of the network that might benefit from their experience (e.g. Sherpa Group in B-Blue).
- Giving strategic advice on the strategic priorities and needs in matters of the strategy defined by the organisation (PRIMA Foundation).
- Being consulted on the content and scope of the annual work plan as well as the decision-making process on scientific and technical aspects for the implementation of the Programme (PRIMA Foundation).

3.2.5. Conclusion: Bodies and functions of a governance model

Based on these categories, it is possible to define a governance model that includes the 4 elements introduced:

- First, there is a decision-making body which takes strategic decisions and is composed of the founders of the organisation, the ones that are providing more resources or simply the most committed ones.
- Second, the executive body is responsible for defining projects and monitoring them, guaranteeing that the organisation's activity is aligned with the mission and values of the organisation.
- Third, a support body would work closely with members through active (matchmaking, the definition of consortia, external communication...) and passive approaches (support on administrative tasks, internal communication...).
- Finally, an advisory group would be established with experts of different fields in different regions and it would be consulted in along different phases of the initiative (ideation, preparation, implementation, follow-up).

Although these roles and functions can be used to simplify the definition of a governance model, it is important to consider some factors that affect the process of understanding the gap between a theoretical governance model and its actual implementation. There is a theory-practice gap reducing the impact of well-designed governance frameworks since they are not being properly implemented (Ko, 2010). This gap can be overcome by considering time as a layer of analysis, which allows some margin for theory-inspired governance frameworks to adapt to a real environment flexibly in terms of people, processes and technology (Sushil, 2016). This flexibility in implementation is not only an approach to reduce the existing theory-practice gap, but also to increase the quality of the governance model as per the dimensions of analysis previously mentioned, increasing responsiveness (Kumar & Stylianou, 2014), reflexivity (Rotmans & Loorbach, 2008) and the experimentation and niche up-scaling (Manning & Reinecke, 2016) of a governance model. Two additional factors might be considered along the practical implementation of the governance model:

- Rigid vs. flexible structures: some governance models might have a more rigid or a more flexible structure, which implies how different functions are delegated or co-shared among different roles. In rigid structures, each role has specific functions and there is not much space for blurry areas which could promote cooperation and integration, but also overlapping decisions and potential conflict; in flexible structures, there is wider participation in decision-making, more delegation of responsibilities and higher tolerance of mistakes, understood as learning opportunities (Sushil, 2016), facilitating cooperation and responsiveness.
- Dynamics of cooperation: Similarly to the previous point, beyond the defined roles and functions, the mechanisms of cooperation between actors might also be key to the functioning of the governance model. These mechanisms could be exemplified by channels of communication, knowledge transfer mechanisms or simply a protocol for meetings. Building trust among actors and promoting the flow of information and knowledge are key to cooperation. Some governance arrangements might be more open and transparent in informing and involving their members in the decision-making process, while others might be less oriented to information sharing based on a structure where each agent has its area of competence and the need for cooperation is more limited.

Chapter 4: Discussion

Inspired by transformative innovation policy and the multi-level perspective, shared agendas (Ariño & Fernández, 2021; Marinelli et al., 2021) propose a methodology that policymakers can apply when addressing sustainable development challenges by proposing transformative innovation solutions. The governance model that is being proposed hereunder focuses on the interaction between the directionality of innovation policy, and the increasing demands to integrate the inter-regional, and multi-scalar nature of the innovation process in the design of regional innovation policy (Tödtling et al., 2020, 2021).

A narrative should be built, aligning a coalition of societal stakeholders around a shared vision. To be able to address the focal sustainable development challenge, however, broad stakeholder participation shall be ensured. In particular, innovators proposing transformative, regime destabilising potential have to contribute actively to the definition of the shared vision and its intermediate goals, so that the limitations of the dominant socio-technical regime can be overcome. For the same reason, these actors should remain tightly involved in the implementation of the shared agenda.

To ensure the participation of a broad stakeholder constituency at all stages in the implementation of the shared vision, and considering the importance of shared agendas in the constitution of a regional governance framework (Fernández & Romagosa, 2020), the governance model proposed requires some pre-conditions to be constituted and a basic structure to start operating. The next section will specify the necessary pre-conditions, the structural bodies being proposed and a system of phases for implementation and growth.

4.1 Initial conditions

The governance model being proposed would require some to follow specific conditions that would allow its correct implementation, reducing any theory-practice gap, enhancing the support of all the members involved and promoting sustainable growth through time. These conditions are extracted from the literature review and the analysis that has been done over the existing governance arrangements and the comparative analysis of the policy experiments. Specifically, four conditions are identified, inspired by the comparative analysis of the governance arrangements:

- Inclusive, and responsive shared visions
- Roadmaps as a tool for anticipation and reflexivity
- Experimentation and niche upscaling
- Focus of mission orientation

4.1.1. Inclusive, and responsive shared visions

Following what has been explained so far, shared agendas depart, like transformative innovation policy (Molas-Gallart et al., 2020; Schot et al., 2020; Schot & Steinmueller, 2018), from the assumption that the dominant socio-technical regime is present in different territorial scales, and global trends such as climate change can open windows of opportunity to alternative innovations. Hence, the governance model proposed should be based on a shared agenda that includes the needs of quadruple helix stakeholders at different governance levels and countries, through bottom-up and top-down instruments. To guarantee that the views of such a broad range of stakeholders are effectively included, the organisation of the governance model should also be able to rapidly respond to emerging stakeholder needs. Specifically, the implementation of the shared agenda is based on participatory methodologies ensuring multi-stakeholder inclusion and the responsiveness of the shared agenda to stakeholder needs. Such methodologies are essential to preserving the participatory character of the shared vision and agenda and ensuring its adaptation to changes in the landscape of the challenge addressed.

A responsive shared vision and agenda will thus increase the flexibility and adaptability of the governance model to support the development and upscaling of emerging innovation opportunities. Likewise, failures and negative impacts in innovation projects should be rapidly detected and addressed. Complementarily, a responsive common vision and agenda will facilitate working groups' alignment towards the goals of the shared agenda, facilitating that the shared agenda is translated into actions and measurable outcomes.

In guaranteeing the involvement of stakeholders in the development and responsiveness of shared visions, some additional considerations should also be borne in mind on the need to be balanced. The balance between such needs might be challenging, hence strategies are proposed to make it more feasible.

- Firstly, a balance should be found between the participation of a broad stakeholder constituency and efficiency in decision making, keeping in mind that a shared agenda will facilitate future collaboration and therefore justify a more comprehensive initial participatory process. To reach a balance between both needs, flexible participation might be promoted particularly after the initial formulation of the shared agenda, with different intensities in stakeholder engagement. For instance, well-resourced stakeholders might become heavily involved in the definition of the shared agenda roadmap and its implementation through the working groups. Meanwhile, a combination of qualitative and quantitative research techniques might be promoted to ensure the involvement of resource-strained stakeholders, i.e. local, half-day workshops combined with online surveys to narrow down preferences on the innovations to be developed. .
- The process to define the shared agenda should also ensure the right balance of representativeness across the different dimensions of inclusiveness identified along the policy experiments, i.e. (i) geographical representation, (ii) quadruple helix category and (iii) governance level. This requirement might be relaxed in the concrete innovation projects developed by working groups (see below), given that experiments with innovations might be suited to specific locations and contexts. However, it is important

to be aware of the triple dimension of inclusiveness, in case it is necessary to address imbalances in participation along the way. For instance, linkages between living labs in different locations (especially between the North and Southern shores of the Mediterranean) might be promoted, to ensure that local, resource-strained stakeholder communities adapt innovations to the needs of different contexts. Likewise, innovation diffusion and upscaling might require the involvement of stakeholders operating at the national and transnational levels, unlocking resources otherwise not available.

4.1.2. Roadmaps a tool for anticipation and reflexivity

After defining a common vision and agenda that will facilitate the internal coordination among the different bodies of governance, a long-term roadmap will further facilitate cooperation translating the mission into a strategy unfolding along specific phases. The roadmap also implies a certain degree of commitment, since the goals that are being set should be supported by actions and stakeholders that are willing and ready to support them.

The goals of a roadmap are usually unfolded into a range of targets; progress in meeting the targets is in turn measured through a system of indicators (that is, KPIs). Clear KPIs not only inform but increase transparency and coordination across stakeholders.

Continuous monitoring of KPIs will provide the governance model roadmap with inputs for anticipating the positive (and negative) impacts of the innovations promoted, together with the insights provided by stakeholders. Anticipation exercises will in turn increase the roadmap's ability to reflect on the impacts of the innovations promoted, adjusting accordingly.

Note that the ability to anticipate and reflect on innovation impacts is also tightly connected to the initial condition of an inclusive, and responsive shared vision.

4.1.3. Experimentation and niche upscaling

As part of their goal of promoting systems transformation, governance models should host, and nurture multiple spaces for experimentation with niche innovations, i.e. innovations able to overcome the limitations of socio-technical regimes. These spaces should be in turn connected with the resources available at national and transnational governance levels.

Indeed, scaling-up local niches is the best example to show how important it is to have a multi-level governance arrangement. Experimentation in local niches needs to be supported by macro-level trends in order to transform a socio-technical regime. A skilful combination of territorialised approaches to stakeholder inclusion (e.g. living labs strongly grounded on local needs and demands) and non-territorialised approaches might succeed in drawing the participation of stakeholders with abundant and limited resources, while also providing opportunities for the upscaling of innovations developed locally and regionally. Specifically, place-based approaches such as living labs can be used to enable multi-stakeholder experimentation with innovations in real-life settings. Innovations can be later on diffused through a diverse array of tools, including networks enabling the adaptation of innovations to

other settings than the original test site; large interregional demonstration projects, or influence to multi-level policy fora.

4.1.4. Focus of mission orientation

Based on the literature on mission-oriented innovation policies (Larrue et al., 2021), three approaches to mission-oriented innovation policy can guide the formulation of the governance model.

Firstly, strategic orientation requires the governance model to define a roadmap to address the societal challenge of interest; the roadmap validates those initiatives that should implement the strategy. Secondly, the policy coordination approach stresses the need for policy coordination, specifically in regard to the actions needed to implement the strategy or roadmap, with procedures to facilitate the alignment between actors implementing the initiatives. These procedures are further strengthened under the third approach -policy implementation-; this approach involves the application of monitoring systems to oversee the implementation of the actions planned under the roadmap, identifying potential misalignments in actual implementation. While the policy coordination approach includes actions to ensure multi-stakeholder coordination *previously* to action implementation, the implementation approach focuses on *ex-post* monitoring and coordination.

All in all, mission-oriented approaches rely on the formulation of mission goals to address a sustainable development challenge. In turn, concrete benchmarks are proposed to measure the extent to which the mission goals are being addressed. This emphasis on measurement supports the alignment of the initiatives addressing the mission, as well as the identification of synergies between them by those bodies in charge of coordinating the mission initiatives.

4.2 Governance model structure

The governance model being proposed presents a lean structure with a decision-making body (strategic committee), a support body (technical office) and an executive power being distributed among the members of different working groups. The initial conditions are specified in section 4.1. will apply differently to each of the bodies depending on the body's functions. Table 1 specifies which initial conditions are relevant for each body.

Table 1. Initial pre-conditions taken into account per working group

Dimensions	Strategic committee	Technical office	Working groups
Inclusive, and responsive shared visions	X		X
Roadmaps as a tool for anticipation and reflexivity		X	X
Experimentation and niche upscaling		X	X
Focus of mission orientation	X	X	

4.2.1. Strategic committee

The strategic committee would perform advocacy group and strategic leadership functions. Its members would be responsible for leading the participatory process to co-create a shared agenda to address the sustainable development challenge of interest, defining later on a roadmap to implement the shared agenda together with the technical office. Once narrowed down, the strategic committee is responsible for the approval of the roadmap, and its future revision based on the inputs provided by the technical office (see sections 4.2.2, 4.3).

The members of the strategic committee would comprise an initial constituency of stakeholders with a common interest in addressing the focal sustainable development challenge. This constituency would be as representative as possible of the quadruple helix, different governance levels, as well as regions and countries across the Mediterranean. Its size should however be small enough to ensure its effective functioning; should the strategic committee reach a size excessively large to ensure this requirement, full voting rights can be restricted to those stakeholders contributing the most to the governance model.

The strategic committee would also devote the resources needed (staff, access to data for KPIs) to maintain a technical office. The latter would in turn be responsible for helping specify the shared agenda roadmap, overseeing its implementation and suggesting changes along the implementation of the roadmap to the strategic committee (see section 4.2.2).

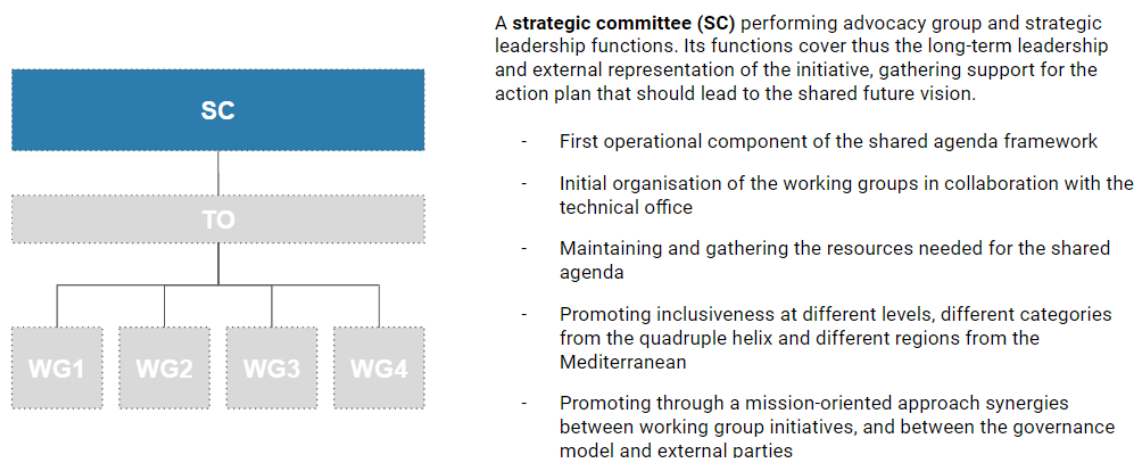
Besides the previously mentioned tasks, the committee would represent a decision-making body not involved in high management tasks but only performing functions concerning long-term leadership and external representation of the initiative.

Initially, the members of this committee would be the founders of the initiative, although its composition would vary according to emerging needs. To ensure the effective functioning of the strategic committee, its founding members should compromise from the beginning of the initiative to a formally established set of rights and rules. These would include mechanisms for the entry and leave of members conditional to their effective participation in the activities of the initiative (i.e. not only the meetings per se but also responsibilities such as the leadership of the shared agenda process, external promotion activities and the launch of and participation in working groups). Likewise, clear expectations should be set on the monetary and in-kind contributions the strategic committee members should provide, which would be fundamental to the functioning of the technical office. Depending on these contributions, members would enjoy different voting rights; in turn, these rights would be essential in facilitating the functioning of the strategic committee should its size be detrimental to effective decision-making. The external representation of the initiative would be carried out by the members in the networks they already participate in, whether they do so as representatives of their organisations or not.

As per the inputs gathered through the analysis of existing governance arrangements and the policy experiments, the strategic committee should take into account the following initial conditions:

- Inclusive, and responsive shared visions:** The strategic committee should aspire to meet the different dimensions of inclusiveness identified along the policy experiments. Specifically, transnational inclusiveness (i) should be met, by including stakeholders representing the needs and interests of the regions involved in the initiative; the committee should likewise be open to include stakeholders from other regions and countries, should the governance model expand its territorial reach. Multi-level inclusiveness (ii) should also be guaranteed, by involving stakeholders operating at the local, regional, national and transnational governance levels. Finally, the strategic committee should also involve quadruple helix stakeholders, guaranteeing multi-stakeholder inclusiveness (iii). By following the three dimensions of inclusiveness, the strategic committee should be able to take into account both the views of local/regional, resource-strained stakeholders as well as national and transnational stakeholders. The former are a source of innovations with transformative potential, while the latter might provide the resources required to extend the reach of these innovations. This composition will increase the legitimacy of the shared vision formulated and advocated by the strategic committee. Furthermore, it will help the shared vision to be permeated by the views of different stakeholder communities, guaranteeing its responsiveness and adaptation to emerging needs.
- Focus of mission orientation:** Mission-oriented approaches like that of the Horizon Europe Mission Restore Our Oceans and its lighthouses (European Commission, 2021b, 2021a) should be followed. In there, mission goals provide a concrete benchmark for aligning working group initiatives towards addressing the sustainable development challenge targeted by the governance model. Furthermore, the strategic committee might tap into the mission goals to promote synergies between the working group initiatives, with the information support provided by the technical office. As external representatives of the governance model, the strategic committee might also use the mission goals to explore synergies with other initiatives addressing complementary sustainable development challenges.

Figure 2 - Strategic committee in the proposed governance model



Source: The authors

4.2.2. Technical office

The technical office fulfils functions such as coordinating and supporting actions towards the shared future vision; designing and managing a monitoring system focused on learning and adaptation; providing equal opportunities for participation; or influencing the agendas of third parties. The technical office is thus mostly concerned with day-to-day guidance and external communication tasks, assuming support and executive body functions. It is the body that mediates between the more abstract, and general functions of the strategic committee and the specific innovation co-creation projects that the working groups carry out to implement the shared agenda. Its staff and funding is to be provided initially by the strategic committee; later on working group members' contributions and project funding will provide additional funding sources for the governance mode, support at a later stage the maintenance of the technical office, and its ability to hire new personnel. Any new job opening, however, should be approved by the strategic committee, to prevent excessive growth within the technical office structure.

As per the inputs gathered through the analysis of existing governance arrangements and the policy experiments, the technical office should take into account the following initial conditions:

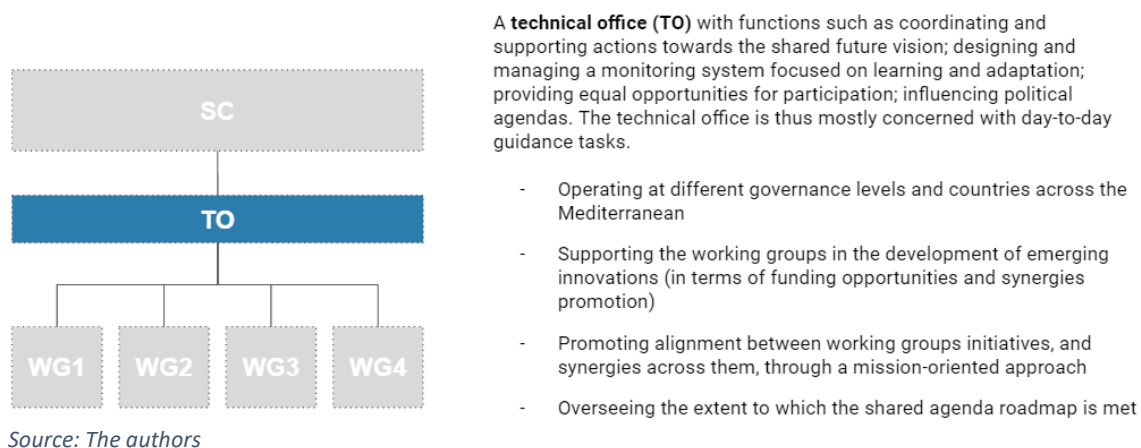
- **Experimentation and niche upscaling:** The technical office would also be responsible for supporting the working groups in the development of emerging innovations. Specifically, the technical office should help working groups implement methodologies for multi-stakeholder co-creation and experimentation with emerging innovations (e.g. training on how to implement living labs approaches). Later on, the technical office would provide a range of activities to support the scaling up of these innovations. Such activities would draw on the multi-level, and transnational nature of the governance model:
 - **Networking and synergies promotion:** The technical office would promote, or directly organise networking activities involving two or more working groups. Through such activities, the technical office would promote mutual learning across working groups, on how they develop and upscale innovations. These activities could also include matchmaking events, to identify collaboration opportunities across working groups. As part of its role in external communications, the technical office is expected to promote the innovation co-creation work carried out by the working groups to external audiences, targeting these communication activities to the characteristics of the specific audiences and ensuring their alignment with the governance model's strategy for branding and participation in external events.
 - **Access to funding opportunities:** Training activities and coaching services would be provided on how to access calls to project funding, at the national and transnational governance levels. As part of its role in external communications, the technical office would draw on the influence of the strategic committee members to identify partners at the national and transnational governance levels (e.g. large corporations) that could support the scaling up of innovations.

- **Focus of mission orientation:** The technical office would support the strategic committee in its task of promoting alignment between working groups initiatives, and synergies across them. Specifically, it would possess the resources needed to oversee the extent to which the innovation projects promoted by the working groups are being aligned; the mission benchmarks support the technical office in the task of ensuring that synergies are realised.
- **Roadmaps as a tool for anticipation and reflexivity:** In the governance model, the technical office fulfils the key roles of helping the strategic committee define the roadmap to implement the shared agenda, overseeing the extent to which the roadmap is met. The technical office should thus possess the resources (staff, access to KPI data) needed to fulfil its monitoring tasks; when not readily available, the technical office should cooperate with the working groups to collect the data feeding the KPIs. With such resources the technical office should also be able to anticipate positive, and negative impacts of innovations, helping the other governance model components reflect on the consequences of such impacts. Furthermore, the technical office should take an active role in feeding working groups with the information needed to avert, or at least minimise, the negative impacts of innovations, in addition to reinforcing the positive impacts. With the information collected, the technical office should also highlight to the strategic committee the need for modifications in the shared agenda roadmap in periodical reviews, contributing to the responsiveness of the strategic committee to emerging needs. Additionally, this information should also help the technical office identify emerging innovation opportunities that could be met by new working groups.

Within the aforementioned features, two processes should in turn increase the reflexivity component of the technical office, fulfilling its functions more effectively. These are:

- **Continuous improvement:** By giving support to different working groups, the technical office will gain practical experience in supporting tasks, being more efficient and able to provide services proactively.
- **Monitoring and knowledge transfer:** having the opportunity of being in contact with the different working groups, the technical office will have the privilege of seeing what is being developed, what works and what could be changed. This will not only facilitate monitoring tasks but also will allow the transfer of knowledge from one working group to another and practice of the learnings obtained.

Figure 3 - Technical Office in the proposed governance model



4.2.3. Working Groups

Working groups of stakeholders align around alternative innovation portfolios. Having a largely self-governed nature, their number and internal composition vary with stakeholder priorities. They add flexibility and experimentation capacity to the governance model, taking the powers of an executive body.

The first working groups could be set top-down by the strategic committee (e.g. by nominating some strategic committee members as founding components of the working groups); however, more groups should indeed emerge later on a bottom up basis, through the promotional activities carried out by the strategic committee. Indeed, the external promotion of the shared agenda carried out by the strategic committee should draw the interest of additional stakeholder constituencies, leading to the formation of new working groups. Furthermore, the technical office should identify innovation opportunities, to be tapped into by additional working groups.

As in the policy experiments, each working group should be based on a constituency of quadruple helix stakeholders, present at different governance levels and countries across the Mediterranean. With this internal composition, the working groups will aim at having a transversal presence that can bring an heterogeneous point of view useful for challenge framing and project ideation and management. This constituency will elect from its members a leader team, which will be responsible for distributing and coordinating tasks across members. The working group members should agree on the length of the management board's mandate, voting a new board at the end of that period.

The development and achievements of each working group will depend on the commitment of each member, which can be also translated into the resources that each of them can bring in terms of financial and human capital, but also time and motivation. A tiered membership structure will be set to guarantee a balance between stakeholder inclusion, and the generation of incentives to effective stakeholder participation (see section 4.3.2). Within this structure, stakeholder participation at little to no cost will be possible, however higher degrees of contribution (in-kind and, especially, monetary) will be rewarded with seats and voting rights at

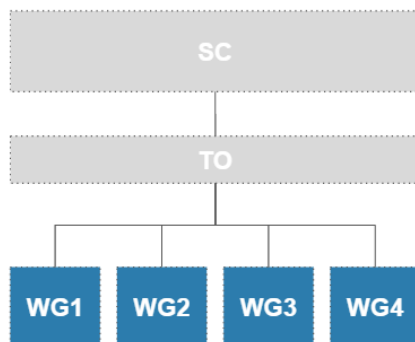
the leader team of the working group. Finally, the technical office is expected to support the innovation co-creation capabilities of the working groups by providing training and advisory services, while also ensuring that the innovation co-creation work of the working groups is aligned with the shared agenda roadmap.

As per the inputs gathered through the analysis of existing governance arrangements and the policy experiments, the working groups should take into account the following initial conditions:

- **Inclusive, and responsive shared visions:** each working group should depart from its own shared agenda process, whereby its members define a roadmap of the innovation portfolio they intend to develop together. All of the groups are expected to fulfil the three inclusiveness dimensions identified along the policy experiments. By doing so, the working groups should be better able to respond to emerging needs (e.g. obstacles preventing the upscaling of transformative innovations, negative innovation impacts). A combination of territorialised approaches to stakeholder inclusion (e.g. living labs strongly grounded on local needs and demands) and non-territorialised approaches (e.g. collaborative projects between working groups and national/transnational stakeholders, networking events involving two or more working groups, cross-working group joint projects) might succeed in ensuring the involvement of a broad, multi-level stakeholder constituency within the working groups. .
 - Note that the working groups will have to deal with the uneasy balance between the goals of inclusiveness and their ability to co-develop and implement effectively innovations. In large working groups, multi-stakeholder coordination might pose a challenge in the ability to experiment with emerging innovations and select with options are more promising. The results from the policy experiments suggest that a range of approaches can help striking such a balance. For instance, System Mapping to condense complex systemic relationships into manageable visual representations whereby innovation opportunities can be highlighted; while quantitative research techniques (e.g. surveys for Social Network Analysis) help identify shared interest around potential innovations.
- **Experimentation and niche upscaling:** Each working group will be responsible to experiment with emerging innovations and define the right mechanisms for niche upscaling. Indeed, each working group is expected to have a specific field of expertise and identify opportunities for developing scalable innovations. To do so, it is fundamental that the working groups fulfil the inclusiveness dimensions: A variety of quadruple helix stakeholders should support the identification of emerging innovation opportunities, as well as experimentation in local/regional, protected niches. Later on, stakeholders operating in other countries than those of the protected niches should support efforts to replicate experiments beyond the original niches; while stakeholders operating at the national and transnational governance levels should help identify opportunities to scale up these innovations. As highlighted before, the technical office is expected to support the scaling up efforts of the working groups by providing training services, networking opportunities and advice on how to access funding opportunities.

- Roadmaps as a tool for anticipation and reflexivity:** Working groups have to be agile in promoting stakeholder engagement and in adapting to new opportunities and circumstances, especially taking into account that the process behind emerging innovations is by definition uncertain. The plan that each group might implement, especially at the beginning, needs to be flexible enough to adapt to the opportunities that each member might bring as well as open to change and learn from mistakes, criticism and in general members' inputs. Each decision that the working groups will take in regards to innovations will imply positive and negative impacts, therefore it is necessary as well to have the capacity to assess future scenarios (both positive and negative; plans should thereby adapt based on these exercises. With time, the working groups will consolidate learning mechanisms useful to other working groups, generating a collective learning experience. Thus, the working groups themselves are expected to develop this foresight capability. However, the technical office should support them in the task; with in-depth insights about future innovation opportunities and risks, as well as knowledge on methodologies useful to identify them, the training and advisory services provided by the technical office will be essential. With the information they acquire on future scenarios, the working groups should also help extend the monitoring capabilities of the technical office, providing the latter with information anticipating the positive, and negative impacts of the innovations promoted. In turn, the technical office might use this information to suggest to the strategic office the need for changes in the formulation of the shared agenda roadmap, in periodical reviews.

Figure 4 - Working group in the proposed governance model



Inter-regional working groups of stakeholders (WG). Working groups of stakeholders aligned around alternative innovation portfolios. Having a largely self-governed nature, their number and internal composition vary with stakeholder priorities. They add flexibility and experimentation capacity to the governance model, taking the powers of an executive body.

- Combination of territorialised approaches to stakeholder inclusion (e.g. living labs) and non-territorialised approaches (e.g. networking events involving two or more working groups)
- Finding balance between the opposite goals of inclusiveness, and increasing the implementation potential
- Promoting the search for resources for innovation diffusion, facilitated by the multi-level and transnational nature of some working groups
- Adjusting to emerging innovation opportunities, providing information to the technical office useful to update the shared agenda roadmap

Source: The authors

In a second stage (see 5.3 Stages of implementation), the working groups structure is expected to evolve to two categories depending on whether their emphasis is on multi-level and transnational coordination, or multi-stakeholder coordination.

- Semi-permanent working groups:** these working groups are conceived as a forum whereby regional, national and transnational authorities (whether EU or Mediterranean) exchange information about complementary innovation priorities in

regional, national and transnational innovation policy. The inclusion of national and transnational representatives can support the unlocking of funding and policy influence nationally (Tödtling et al., 2020, 2021), reinforcing the multi-level and transnational aspect of the governance framework. University representatives from those regions where universities perform a key role in the coordination of S3 (Canto-Farachala et al., 2022) would also be present, supporting the policy coordination work carried out by the authorities.

- **Temporary working groups:** these working groups are constituted and led by quadruple helix stakeholder coalitions present in one or more regions participating in the shared agenda framework and focusing on developing innovations that can contribute to addressing the challenge. This type of working group is thus conceived to reinforce the multistakeholder dimension of the governance framework, as well as promoting transnational cooperation in the processes behind the emergence and diffusion of transformative innovations. These groups are expected to emerge, develop and dissolve according to the life cycle of the innovations they develop; accordingly their duration is likely to vary. Some groups might be relatively short lived because of their focus on specific actions such as preparing a project call or a workshop of emerging innovation opportunities, while others might have a relatively long life span because of their focus on implementing portfolios of innovation projects. Furthermore, these short and mid/long term groups might succeed each other in cycles, with the outcomes of the project calls leading to innovation projects, and the innovations stemming from the latter leading to the preparation of new project calls.

While both types of working groups promote transnational coordination in the identification and diffusion of innovations, the semi-permanent groups focus on multi-level coordination, and the temporary ones on multi-stakeholder coordination.

4.3 Stages of implementation

The implementation of a new governance model requires considering time as a variable and being aware that some solutions or results need some time before being applicable. In a cooperation arrangement with different stakeholders from different regions, levels and quadruple helix categories, there is the need to build an environment of trust to start working together. Although the governance model can be born out of a group of stakeholders that have previously worked together, there are still challenges to be addressed. It is possible to identify three different stages of implementation: initiation, consolidation, and expansion.

4.3.1. Initiation

This phase is characterised by the definition of the shared vision and agenda by the founding group of stakeholders, the establishment of the governance model's strategic committee and technical office, and the emergence of the first working groups. This stage is dominated by the

participatory process to define the shared vision and agenda; hence the governance model structure should be particularly flexible and ready to ensure the inclusiveness of the participatory process across the three dimensions previously identified. Following the definition of the shared vision and agenda (or at least an initial version), a preliminary roadmap is to be defined. The latter task should also be an outcome of the participatory process, although the strategic committee and technical office should acquire a more prominent role in narrowing down the steps included in the roadmap. The better defined the shared vision and roadmap, the easier it will be to delimit the roles and responsibilities of the working groups.

Internally: a founding group of stakeholders interested in addressing a sustainable development challenge constitute the strategic committee; this body, supported later on by the technical office (see below) will steer the participatory process to define the shared vision and agenda, as well as its roadmap.

Within the strategic committee, a management board should be elected that would be responsible for the distribution of tasks across members; this distribution of tasks should balance the need for including a broad range of stakeholders with their willingness and capacity to contribute to the tasks. To ensure the effective functioning of the strategic committee, its founding members should also compromise from the beginning to a formally established set of rights and rules. These would include mechanisms for the entry and leave of members conditional to their effective participation in the activities of the initiative (including not only their involvement in the meetings and in the management of the strategic committee, but also responsibilities such as the leadership of the shared agenda process, external promotion activities and the launch of and participation in working groups).

Once the strategic committee has been established, its members would devote staff and funding to set up a technical office; the staff for the technical office would initially come from the strategic committee members themselves, although job openings can be considered should there be need for competences not available to the members.

Clear expectations should be set on the monetary and in-kind contributions the strategic committee members should provide. Guaranteeing stable funding and staffing of the technical office would be particularly important at this stage, due to the roles performed by this body along the life cycle of the governance model. Depending on these contributions, strategic committee members would enjoy different voting rights. Furthermore, should the strategic committee reach a size excessively large to ensure these requirements, full voting rights can also be restricted to those stakeholders contributing the most to the governance model.

Through a combination of online and in-person workshops, the participatory process to define the shared agenda should include a stakeholder audience as broad as possible. The technical office would experiment with workshop methodologies that help reach a balance between inclusiveness and implementation potential (e.g. system mapping to compress complex systemic processes into manageable diagrams, quantitative approaches such as surveys to help select priorities in a cost-effective format). Based on the outcomes of the participatory process, the strategic committee would define the first working groups, tasking them with the goals of

implementing the innovation potentials identified in the roadmap; to ensure their operativity, each working group should establish a leader team that would distribute the tasks across members, balancing the principles of inclusiveness and effective member participation.

A preliminary calendar of work and reporting meetings should be set by each of the governance model bodies i.e. the strategic committee, technical office and working groups. Finally, a communication channel and an online collaboration platform are also defined to facilitate coordination among members.

Externally: the founding members look for endorsements and partnerships with other organisations that can promote the development of the governance model. The endorsements should draw new stakeholders into the participatory process to define the shared agenda, ultimately attracting new members for the governance model and its working groups. The endorsement should promote the solidity of the organisation towards external parties, increasing its reputation and supporting its relevance vis a vis the policy frameworks operating in the Mediterranean e.g. EUSAIR, UNEP/MAP. Along the conclusion of the shared agenda process, the strategic committee and technical office are also expected to co-define the organisation's strategy for branding and participation in external events, as well as the procedures for its revision. Once established, the technical office will monitor the implementation of the strategy by the strategic committee and the working groups.

4.3.2. Consolidation

In the consolidation phase, the governance model has managed to promote different working groups, tasking them with the goal of developing innovation portfolios and implementing the shared agenda roadmap. The governance model can also count on a well-defined network of external partners and collaborators. This phase is characterised by the preparation of some solid bases for further growth and development. The number of members is stable and big enough to further define the governance model.

Internally: this phase will be focused on enhancing the expertise and the role of the current members into a more sophisticated structure. While the initiation phase was more flexible and open to absorbing new inputs as part of the shared agenda participatory process, this phase will aim at standardising processes to increase the managerial capacity of the organisation. This phase might also require revising the division of responsibilities within the strategic committee as defined by its management board initially. Some members might have invested more in the organisation in terms of human resources, capital and time, being necessary to review the governance structure to better reflect this situation.

The growth of existing working groups should also be supported, and new temporary working groups should be promoted following a bottom-up approach. At this stage, the technical office is expected to assume increasing responsibilities in providing technical support to existing

working groups, while also identifying opportunities for the formation of new working groups. These are expected to engage into experimentation with portfolios of emerging innovations, and the technical office might provide services supporting their experimentation efforts, such as training events on how to implement living lab methodologies or advisory services on how to identify funding opportunities to support such living labs. Finally, a tiered membership structure should be devised by the strategic committee in cooperation with the technical office, to incentivise the engagement of both well-resourced and resource-constrained stakeholders within the working groups.

At this stage, securing stable funding streams will be crucial to support the technical office's efforts in consolidating and monitoring the activity of the working groups. The main funding streams should come from the monetary contributions provided by the strategic committee and working group members, and the project calls won by the working groups; other funding sources are to be explored, also during the expansion phase.

Externally: the consolidation will have an impact as well on the way the organisation is being projected externally. At this stage, the strategy for branding and external promotion should be consolidated, with the technical office monitoring its implementation and proposing reviews of the strategy in periodic meetings with the strategic committee. As part of this consolidation work, the technical office should also implement training activities to enhance the external engagement activities of the working groups. Furthermore, the reach of the strategy could be expanded, with more resources being oriented to policy advocacy tasks, complemented with the preparation of white papers that can promote policy innovation-oriented based on the projects developed so far.

4.3.3. Expansion

This last phase should be activated only once the governance model is consolidated enough to pursue the diffusion and upscaling of the innovations co-developed by its working groups. Likewise, the organisation should possess enough organisational resources to devote efforts towards expanding its membership and fields of expertise. A more complex structure is likely to emerge as a result. Periodical revisions of the shared agenda roadmap should also be expected at this stage, based on the emerging and potential impacts of the innovations promoted.

Internally: at this stage, the growing maturity of the working group projects might require additional efforts on the part of the technical office, thus increased resources should be devoted to support the latter. Specifically, the technical office is expected to devote resources to activities that help the working groups diffuse and scale up the innovations they are promoted, such as networking events with other working groups and in particular national and transnational stakeholders. Additional responsibilities are also expected concerning the technical office's monitoring role, since the innovation projects should be mature enough to

identify those with scalability potential, as well as ongoing and potential positive and negative impacts -note that monitoring routines should be shared between the technical office and the working groups, the latter providing the information the technical office needs to carry out its monitoring work-. Based on the outcomes of the monitoring exercises, the technical office would propose revisions of the shared agenda roadmap to the strategic committee, to be evaluated in periodical revisions. Concerning the working groups specifically, these could be divided among temporary and semi-permanent working groups. The former would focus on developing the innovation portfolios while the latter would specialise on promoting the multi-level and transnational policy coordination required to facilitate innovation diffusion.

Externally: In terms of members, the growth can be gradual from the initiation phase, although it should be manageable to guarantee the correct implementation of the governance model. In this phase it will be possible to absorb new members within the structure of working groups, considering the need to increase the capacity of the technical office or even add an advisory board. In terms of alliances with external networks and policy frameworks, in this phase, it will be possible to increase the commitment of the organisation to other initiatives. Hence, the governance model should no longer be seen as a seeker of endorsement but as an expert and reliable partner.

Figure 3 Stages of implementation

	Phase I - Initiation	Phase II - Consolidation	Phase III - Expansion
Context	Definition of the shared vision and agenda by the founding group of stakeholders, and the establishment of the first building blocks of the governance model.	Focus on innovation co-development. The number of members is stable to define further the governance model.	Emphasis on innovation diffusion and upscaling. Expansion in terms of members and complexity of the structure, achieving full maturity
Internally	<ul style="list-style-type: none"> - Establishment of the strategic committee and the technical office - Participatory process to define the shared vision and agenda - Identification of the first working groups - Definition of a preliminary calendar and the roadmap - Horizontal distribution of tasks - Implementation of communication mechanisms 	<ul style="list-style-type: none"> - Enhancement of the expertise and the role of the current members - Standardisation of processes to increase the managerial capacity - Growth of existing working groups and creation of new ones - Experimentation with portfolios of emerging innovations - Growing role of the technical office in supporting working groups 	<ul style="list-style-type: none"> - Reinforcement of the operational, monitoring or support tasks - Diffusion and enhancement of innovations being promoted - Shared agenda monitoring and revision (technical office and working groups) - Integration of new members and potential definition of tier membership - New working groups according to new members' expertise and opportunities
Externally	<ul style="list-style-type: none"> - Endorsements and partnerships with other organisations - Collocation within the network of policy frameworks operating in the Mediterranean 	<ul style="list-style-type: none"> - Promotion of branding of the organisation - Definition of a strategy of participation in events and congresses - Increase in of advocacy tasks 	<ul style="list-style-type: none"> - Increase in the commitment of the organisation to other initiatives - Consolidation of a network of members and partners, promoting new synergies

Source: The authors

Chapter 5: Final remarks

The present document has proposed a new governance model adapted for the implementation of initiatives aiming at fostering transformative innovation at a transnational level in the Mediterranean region. The governance model proposed is based on the inputs gathered from the literature review, and the comparative analysis of existing governance arrangements as well as policy experiments.

The model proposed is based on a 3-bodies governance model with a strategic committee with decision-making powers, a technical office as a support body with some executive powers, and working groups as promoters of projects and initiatives (executive power). The strategic committee and working groups should be composed of quadruple helix stakeholders, present at different governance levels and countries in the Mediterranean. As for the technical office, its staff and funding would initially be provided by the members of the strategic committee, however more stable funding streams at the consolidation stage should enable the hiring of additional staff by the technical office, supporting its needs.

The strategic committee performs advocacy and strategic leadership functions. It is initially formed by the founding members that are willing and committed to defining the long-term strategy of the organisation, although its membership is to be revised based on the needs of the governance model and actual member contributions. It will use a mission-oriented approach to align the innovations co-developed by the working groups towards the governance model's shared agenda, and promote the alignment between these initiatives and policy development at different governance levels. Additionally, it will also preserve a transversal point of view, aiming for inclusiveness across the (i) quadruple helix distribution, (ii) governance level and (iii) transnational dimensions. The strategic committee will be flexible enough to adapt to new circumstances and opportunities, being open to evolving and changing its composition according to the evolution path of the organisation.

The technical office is mostly concerned with day-to-day guidance and oversight tasks, taking the role of a support body with executive functions. The technical office supports the strategic committee in translating the shared agenda into a practical roadmap, and once the roadmap is established its functions comprise monitoring, coordinating and supporting the actions carried out by the working groups to implement the roadmap while promoting learning and adaptation. It is also focused on supporting the heterogeneity existing in the organisation by engaging and giving support to all the members of the working groups, especially the ones that might present some resource constraints or are less used to being members of a transnational organisation. Additionally, it plays a key role in the evolution of the organisation; as a monitoring body, it is in a privileged position to facilitate the exchange of knowledge and best practices across working groups. Its work is crucial in connecting the working groups to the resources needed to diffuse emerging innovations across the Mediterranean. Among other, these resources might include access to other experimentation sites, finance, markets, or policy influence.

Finally, the working groups represent the executive body and are responsible for developing innovations with transformative potential, aligned with the governance model's shared agenda roadmap. They have a self-governed nature and their number and composition might vary

depending on stakeholder priorities and the phase of development of the organisation itself. The working groups would strive to provide safe spaces for experimentation with portfolios of emerging innovations, pursuing at a later stage their diffusion and upscaling with the goal of challenging the established socio-technical regime. The working groups should thus look for a balance between stakeholder inclusiveness and the implementation potential of the innovations co-developed.

The document also proposed a 3-stages framework for the implementation and development of the governance model. The first stage (initiation) revolves around the participatory process to define the shared agenda and the establishment of the governance model's building blocks, with the resources and support available. It is based on the definition of the three roles aforementioned and it is characterised by a high degree of flexibility, prioritising the participation of members for the development of projects over the constitution of a rigid governance structure. The second phase (consolidation) focuses on the internal governance of the initiative, standardising processes and structures, establishing clear roles and responsibilities, and defining solid bases for the next stage. Because the working groups are expected to work on the development of their own portfolios of emerging innovations, the technical office might gain relevance as a support body. The last phase (expansion) is more open to aggregating new members and creating new working groups, growing always in a sustainable way under the leadership of a strategic committee with consolidated power and the necessary tools to manage a growing organisation. Internally, the working groups should engage in innovation diffusion and upscaling, supported by the technical office. Externally, this phase is focused on increasing the advocacy power of the organisation within the network of organisations operating in similar fields.

The process of developing the governance model offers the following insights for researchers and practitioners:

Academia

- The methodological approach used in the present document obtains inputs from a diversity of sources, including the comparative analysis of governance arrangements and policy experiments. The experimental nature of the latter, furthermore, allowed it to go beyond the limitations of desk research, acquiring information on actual stakeholder behaviour in multi-stakeholder engagements. By combining different information sources, the methodology increases the reliability of the findings.
- Because it relies on a multiple case study approach, the methodology is able to identify findings generalisable enough to be expected in different policy and socio-economic contexts. Despite the specificities of the policy context surrounding the Mediterranean, the common trends identified across governance arrangements and policy experiments might also be expected in settings where actors operate at different governance levels, and across different countries. These settings could be expected, for instance, across

other macro-regional basins of Europe, such as those of the Adriatic-Ionian and the Baltic².

- Hence, the present document contributes to the literature by advancing a replicable methodology, useful to identify routines to align multi-stakeholder networks towards the resolution of complex problems such as sustainable development challenges.
- Furthermore, while the literature has progressed in the development of methodologies to support stakeholder networks in aligning efforts to address sustainable development challenges, we believe that the proposed governance model brings such methodologies to a multi-level and transnational setting.
- Finally, the present approach contributes to mitigate the theory-practice gap, by combining insights from the literature on the directionality of innovation policy with common findings gathered from the actual operation of existing governance arrangements, and policy experiment engagements.

Practitioners

- The present document provides an approach useful to reduce the existing gap between the principles provided by the innovation policy literature, and the practical challenges of implementing models to govern multi-stakeholder initiatives addressing sustainable development challenges, in contexts where it is paramount to take into account the views of stakeholders at different governance levels and countries. The formulation of the governance model is, furthermore, flexible enough to be suited to different sustainable development challenges, and different geographical reaches.
- The governance model proposed here provides a set of steps useful to guide practitioners along the complexities of promoting transformative innovation. The shared agenda roadmap guiding the governance model can be revised periodically, based on the actual and potential impacts of the innovations promoted.
- The governance model is mostly suited to initiatives emerging bottom up, i.e. launched by coalitions of quadruple helix stakeholders rather than intergovernmental networks or institutions. These initiatives, furthermore, could be launched with relatively limited resources, although more or less stable resource streams might be expected at the consolidation and expansion stages. To reach the latter, linkages with actors operating at the national and transnational governance levels might be crucial; these linkages might indeed include governmental institutions.

² More information: https://ec.europa.eu/regional_policy/en/policy/cooperation/macro-regional-strategies/

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