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Collaborative approaches for developing innovative transition pathways towards corporate sustainability

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DECLARATION

DECLARAÇÃO

Declaro que esta tese é o resultado da minha investigação pessoal e independente. O seu conteúdo é original e todas as fontes consultadas estão devidamente mencionadas no texto, nas notas e na bibliografia.

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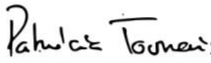

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Lisboa, 11 de março de 2024

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O orientador,

(Nuno Videira)

Lisboa, 11 de março de 2024

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Most people would say the PhD is a lonely work, however I was lucky enough to say otherwise. Despite most of the empirical part of the research being developed during the covid pandemic and being forced to adapt most of the participatory process to an online format, my PhD was a path full of people and organisations, which were cornerstone to successfully finishing this journey.

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COLLABORATIVE APPROACHES FOR DEVELOPING INNOVATIVE TRANSITION PATHWAYS TOWARDS CORPORATE SUSTAINABILITY

Patrícia Tourais

ABSTRACT

Sustainable development has emerged as a major issue in the international agenda with the publication of studies reporting the impacts and long-term effects of human activity in the environment. The creation of guiding frameworks for sustainable development, such as the Sustainable Development Goals (SDGs) Agenda for 2030 by the United Nations, have increased pressure over businesses to adapt their activity accordingly. In this context, Organisational Sustainability (OS) has been widely adopted by organisations to steer sustainability transitions in organisations. However, the lack of effective results in the improvement of social and environmental performance in organisations become clear, bringing to light relevant knowledge gaps concerning key organisational factors influencing business transition towards sustainability.

The current research aims at experimenting collaborative approaches on the development of organisational transition processes towards sustainability, bridging diverse research strands which have been developing studies on this issue. Thus, corporate sustainability, sustainabiity transitions and ecological economics research was used to design a transdisciplinary research setting, divided into two phases (diagnosis and experimentation), to create business sustainability transition strategies, in the Portuguese tourism sector. The diagnosis phase focused on the characterisation of sustainability transformation processes within organisations, based on literature and contributions from sustainability-oriented businesses. The experimentation phase consisted on the application of collaborative approaches to create the organisational sustainability strategy, including an initial participatory moment to characterise the transition context and an in-depth case study, where a procedure was developed and applied.

From the diagnosis phase stood out the need to consider a set of key sustainability enabling factors in sustainability transition process within businesses: 1) embeddedness in the systemic transition context, 2) holistic view of sustainability and the business, 3) stakeholder involvement, 4) integration of innovation as a result of organisational learning, and 5) adoption of long-term thinking. The consultation of sustainability-oriented businesses and stakeholders highlighted the lack of specific methods and tools to support the creation

of sustainability strategies, which led to the use of a wide range of non-standardised approaches. Additionally, the innovation and long-term thinking were not commonly integrated in these processes.

Building on the gaps found on the diagnosis, in the experimentation phase is proposed a methodological framework based on Participatory Systems Mapping to support the characterisation of the sustainability transition context in which the organisation is creating its sustainability strategy. This framework was tested for the Portuguese tourism sector, producing a shared systems view of tourism sustainability issues, as well as shared sustainability visions and broad roadmaps for desired transition pathways.

The second part of the experimentation phase focused on a single tourism business (a resort) to develop and test the Organisational Sustainability Transition procedure, which aimed at co-creating a sustainability transition strategy for the business. This procedure integrated key sustainability enabling factors previously identified throughout the process and resulted on a sustainability strategy, focused on the transition and aiming for sustainability in the long-term.

Both the methodological framework and procedure developed and tested in the experimentation phase contribute to provide businesses guidance on the transition towards sustainability, building on relevant research fields, such as corporate sustainabilty, sustainability transitions and ecological economics. These outputs provide the knowledge to fill gaps identified on the exercise of screening sustainability-oriented businesses and on the literature review.

Keywords: Corporate sustainability; corporate strategic planning; sustainability transitions; transdisciplinary research; stakeholder participation; sustainable tourism

RESUMO

Com a publicação de um conjunto de estudos de base que identificam os impactos e efeitos a longo prazo da atividade humana no ambiente, o desenvolvimento sustentável tornou-se um assunto relevante na agenda internacional. A criação de quadros de orientação para o desenvolvimento sustentável pelas Nações Unidas, tais como os Objetivos de Desenvolvimento Sustentável (ODS) da Agenda 2030, conduziram a um aumento da pressão sobre as organizações para adaptar a sua atividade. Neste contexto, a sustentabilidade organizacional foi adotada de forma transversal pelas organizações para guiarem as suas transições para a sustentabilidade. Contudo, esta abordagem tem revelado uma falta de resultados efetivos na melhoria do desempenho social e ambiental das organizações, fazendo sobressair importantes lacunas no conhecimento relativo aos fatores organizacionais chave que influenciam as transições para a sustentabilidade no contexto organizacional.

O presente estudo tem como objetivo a experimentação de abordagens colaborativas para o desenvolvimento de processos organizacionais de transição para a sustentabilidade, ligando a investigação desenvolvida nesta área em várias áreas de investigação diferentes. Logo, a investigação desenvolvida em sustentabilidade corporativa, transições para a sustentabilidade e economia ecológica foi utilizada para desenhar um processo de investigação transdisciplinar, dividido em duas fases (diagnóstico e experimentação), que culmina com a criação de uma estratégia empresarial de transição para a sustentabilidade, no sector do turismo em Portugal. A fase de diagnóstico foca-se na caracterização do processo de transformação dentro das organizações, com base na literatura e nas contribuições de empresas orientadas para a sustentabilidade. A fase de experimentação consiste na aplicação de abordagens colaborativas na cocriação de uma estratégia organizacional de transição para a sustentabilidade, incluindo um momento colaborativo inicial para caracterizar o contexto de transição e um caso de estudo detalhado, onde um procedimento é desenvolvido e aplicado.

Da fase de diagnóstico identificou-se a necessidade de considerar um conjunto de fatores chave percussores da sustentabilidade nos processos de transição organizacionais: 1) integração no contexto de transição sistémica; 2) visão holística da sustentabilidade e da

empresa; 3) envolvimento de partes interessadas; 4) integração de inovação, como um resultado de aprendizagem organizacional; 5) adoção do pensamento a longo prazo. Através da consulta de empresas orientadas para a sustentabilidade e outras partes interessadas foi possível identificar a falta de métodos e ferramentas específicas para guiar o desenvolvimento de estratégias de sustentabilidade, conduzindo à utilização de um conjunto alargado de abordagens não padronizadas. Outra lacuna identificada através desta consulta, foi a falta de integração da inovação e do pensamento a longo prazo nestes processos.

Com base nas lacunas identificadas no diagnóstico, a fase de experimentação propõe uma abordagem metodológica baseada em mapeamento de sistemas participado para apoiar a caracterização do contexto de transição para a sustentabilidade, no qual a organização está a criar a sua estratégia. Esta abordagem foi testada para o sector português do turismo, produzindo uma visão sistémica partilhada dos problemas de sustentabilidade no turismo, assim como de um conjunto de visões para o futuro e caminhos de transição desejados.

A segunda parte da fase de experimentação focou-se numa empresa do sector do turismo (um hotel resort) para o desenvolvimento e teste de um procedimento de transição organizacional para a sustentabilidade, que teve como objetivo a cocriação de uma estratégia corporativa de transição para a sustentabilidade. Este procedimento integrou os fatores chave percussores da sustentabilidade identificados previamente e conduziu à elaboração de uma estratégia de sustentabilidade, focada na transição e orientada para a sustentabilidade no longo prazo.

Tanto a abordagem metodológica como o procedimento desenvolvidos e testados na fase de experimentação contribuíram para providenciar às organizações orientações na transição para a sustentabilidade, com base em áreas de investigação como a sustentabilidade corporativa, as transições para a sustentabilidade e a economia ecológica. Estes resultados providenciam o conhecimento necessário para preencher as lacunas identificadas na consulta das empresas orientadas para a sustentabilidade e na revisão de literatura.

Palavras-chave: Sustentabilidade organizacional; planeamento estratégico organizacional; transições de sustentabilidade; investigação transdisciplinar; participação de partes interessadas; turismo sustentável

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LIST OF ABBREVIATIONS

CLD – Causal Loop Diagram

CS – Corporate Sustainability

CSR – Corporate Social Responsibility

EE – Ecological Economics

EMS – Environmental Management Systems

FSSD – Framework for Strategic Sustainable Development

MLP – Multi-Level Perspective

NGOs – Non-Governmental Organisations

OS – Organisational Sustainability

OST – Organisational Sustainability Transitions

PSM – Participatory Systems Mapping

SGDs – Sustainable Development Goals

SMEs – Small and Medium Enterprises

SOB – Sustainability-Oriented Businesses

ST – Sustainability Transitions

TBL – Triple Bottom Line

TM – Transition Management

UN – United Nations

1| GENERAL INTRODUCTION

1.1 | ORGANISATIONAL CHALLENGES IN A TRANSITION TOWARDS A SUSTAINABLE SOCIETY

Sustainable development has emerged in the international agenda through the publication of seminal work on environmental problems, such as the Limits of Growth and the Brundtland Report (Meadows et al., 1972; World Commission on Environment and Development, 1987). A transversal focus on economic growth, supported by continuously rising consumption patterns, increased the use of natural resources and intensified environmental degradation (Ward et al., 2016). As environmental problems become more visible and the discussion on the planetary boundaries within which humanity should operate more relevant (Rockström et al., 2009), sustainability has climbed in the priority level on the international agenda (Falkner, 2003).

As a result, the United Nations (UN) have developed multiple initiatives to deal with these global and systemic problems, such as the UN Conferences on Environment and Development, which have started with the popular 'Earth Summit' in Rio de Janeiro in 1992. Among these initiatives, the development of the Sustainable Development Goals (SDGs) Agenda for 2030 stands out as a major step on the creation of guidelines for societal development under sustainability principles. The SDGs allow to frame these global problems from a holistic perspective and define specific goals and targets to achieve by 2030, providing a development direction for society (United Nations, 2015).

At the European level, SDGs have been addressed in policy making processes and in the European Commission (EC) regulatory frame (European Commission, 2021). The UN 2030 Agenda has also been cornerstone in the definition of funding programs, supporting EC Member States development. The widespread use of SDGs as a reference for sustainability at the European level aims at guiding the European Union into sustainability transitions (European Environmental Agency, 2017).

Within this global agenda background, businesses are identified as key actors in the transition towards sustainability (Köhler et al., 2019; United Nations, 2015), since they are capable of influencing the direction and velocity of the process, through the adoption of

diverse roles (Farla et al., 2012). These roles are dependent on the strategies adopted by businesses, which may vary from reactive strategies, focused on risk mitigation and on a superficial approach towards sustainability (introverted profile), to proactive strategies characterised by a holistic and systemic approach to sustainability challenges (visionary profile) (Baumgartner and Ebner, 2010).

Within this vast spectrum of possible strategies, companies have been adapting to this increasing demand for a sustainability transition, through a set of mechanisms to influence decision-making, such as lobbying activities, market influence, participation in rule-setting, issue-framing exercises and implementation, and technological innovation (Falkner, 2008). Among these mechanisms, the creation of private norms and participation in rule-setting became popular, leading to the emergence of voluntary management tools, such as certified environmental management systems (Clapp and Meckling, 2013). As proactive mechanisms to deal with societal demand for improved environmental and social organisational performance, these tools do not gather consensus in literature and among societal actors. Scepticism builds from actors who argue that voluntary management tools allow businesses to create a reputation of sustainability commitment, helpful to deal with societal scrutiny, however they are less effective in supporting an effective organisational change towards sustainability (Cho et al., 2015).

Besides environmental management systems, voluntary management tools include other Corporate Sustainability (CS) approaches (Clapp and Meckling, 2013). CS and Corporate Social Responsibility (CSR) have been often discussed in literature as interchangeable concepts, despite having emerged from different literature strands (Bansal and Song, 2017; Montiel, 2008). Research performed under these two concepts provides extensive literature on the integration of sustainability in organisations, particularly businesses. Another similar concept often used interchangeably is Organisational Sustainability (OS), which differs in its wider scope from CS and CSR, by including other organisations beyond businesses, such as public organisations and Non-Governmental Organisations (NGOs) (Lozano, 2018a).

Multiple business management theories contribute to CS research, such as stakeholder theory, resource-based view and institutional theory, among others (Lozano et al., 2015; Montiel and Delgado-Ceballos, 2014). The adoption of CS approaches has been operationalised by businesses through the implementation of a wide range of management

concepts and tools, aiming at dealing with sustainability aspects either from a multidimensional perspective or focusing instead on a particular environmental and social aspects (Lozano, 2012; Ransburg and Vágási, 2007; Robèrt, 2000; Robèrt et al., 2002). Among these concepts and tools are life cycle assessment, Environmental Management Systems (EMS), the triple bottom line, design for the environment, ecoefficiency and ecolabels (Lozano, 2012). EMS is pointed as overarching management framework, useful in the integration of the remaining tools and capable to guide an organisation in its transformation process towards sustainability (Robèrt, 2000; Robèrt et al., 2002).

Despite the popularity of CS and the associated management tools among companies, the effectiveness of the organisational transition towards sustainability is questioned and debated in literature due to a lack of environmental and social results and a persistence or worsening of problems (Lankoski, 2016). Porter (2008) emphasises a gap between sustainability discourses and intentions presented by businesses and the effective outcomes achieved through their CS approaches. This gap between expectations and achieved performance is also acknowledged in the implementation of management tools, such as EMS (Tourais and Videira, 2016). In most cases, EMS implementation is associated with an improvement in environmental performance, however, in some cases the outcomes are intangible or associated with performance improvements in other areas of the organisations, rather than those related to environmental and social aspects (Boiral et al., 2018; Daddi et al., 2011; Iraldo et al., 2009; Junguitu and Allur, 2019).

The lack of effective results in the improvement of social and environmental performance in businesses, raise questions on the role played by voluntary tools and codes of conduct as propellers of “greenwashing”. Greenwashing implies that businesses adopt this kind of tools solely to achieve an environmental-friendly reputation and consequently a competitive advantage, through the creation of new market niches or regulatory relief. This type of practice is possible since most voluntary CS tools are focused on management practices rather than in performance targets, failing to effectively reduce environmental and social impacts associated with goods and services production (Clapp, 2005, 1998).

Cho et al. (2015) expose a different angle on the greenwashing issue, by arguing that social pressure drives organisations to implement sustainability performance reporting practices, regardless of their effectiveness. Lacking a sustainability approach would hinder

business competitiveness more than the disclosure of scarce and superficially sustainability information. Thus, investment in effective transformation processes towards sustainability in businesses may be directed towards dealing with this social pressure.

Summarising, businesses play a significative role in the transition towards sustainability and despite the efforts already deployed to guide organisations towards CS practices, a gap between sustainability intentions, actions and performance persists (Porter, 2008). Thus, research focusing on how to promote sustainability in companies remains relevant (Chang et al., 2017; Lozano and Garcia, 2020). Within many possible research avenues, the development of empirical studies on the integration of CS in strategic management, focusing on the process of organisational transition towards sustainability and on the creation of corporate sustainability strategies, stands out (Engert et al., 2016; Kitsios et al., 2020; Lahtinen and Yrjölä, 2019; Neugebauer et al., 2016).

1.2 | BRIDGING RESEARCH FIELDS: WHERE DO ORGANISATIONS STAND?

As a transdisciplinary subject, research on organisational sustainability derives from very diverse research fields (Chang et al., 2017; Montiel, 2008). This leads to a heterogenous set of literature, supported by different concepts and perspectives. While this richness provides the required diversity to deal with a complex issue, such as sustainability; it may also interfere with a clear definition of concepts, scope and boundaries (Bansal and Song, 2017; Chang et al., 2017).

As an attempt to build on the richness of sustainability research to further explore the role of organisational transitions, the current study was developed in the intersection of diverse research strands contributing to sustainability research, such as CS, Sustainability Transitions (ST) and Ecological Economics (EE). CS constituted the core field of literature in which the study was first anchored. CS research is in turn characterised by a large amount of studies from a wide range of research backgrounds, such as business management.

Acknowledging the complexity of the relationship between organisations and their context described in the previous section, the current study focuses on potential intersections between CS and research fields targeting the system level, such as ST and EE. The contributions from each research field are described in more detailed in the following

subsections; however, the three strands of literature intersect and align in their claims for transdisciplinarity and action research.

Thus, transdisciplinary arises as a linking research approach, providing the required coherence and background to design a research structure compatible with multiple research fields (Brandt et al., 2013; Caniglia et al., 2021; Shrivastava et al., 2013). The focus of transdisciplinary research on experimentation and stakeholder engagement calls for the definition of a specific application field. The scope of the current study was then set to the tourism sector, as this provides a relevant application area to the study of sustainability in organisations. Conversely, the selection of the tourism sector also allows contributing to the emerging field of sustainable tourism.

Building on these assumptions, Figure 1.1 represents intersections between the research fields considered in this study and to which it aims to contribute, while summarising the key topics addressed from each strand (i.e., "bullet points" in Figure 1.1). Further details on core concepts, boundaries and theoretical contributions are described in the following subsections.

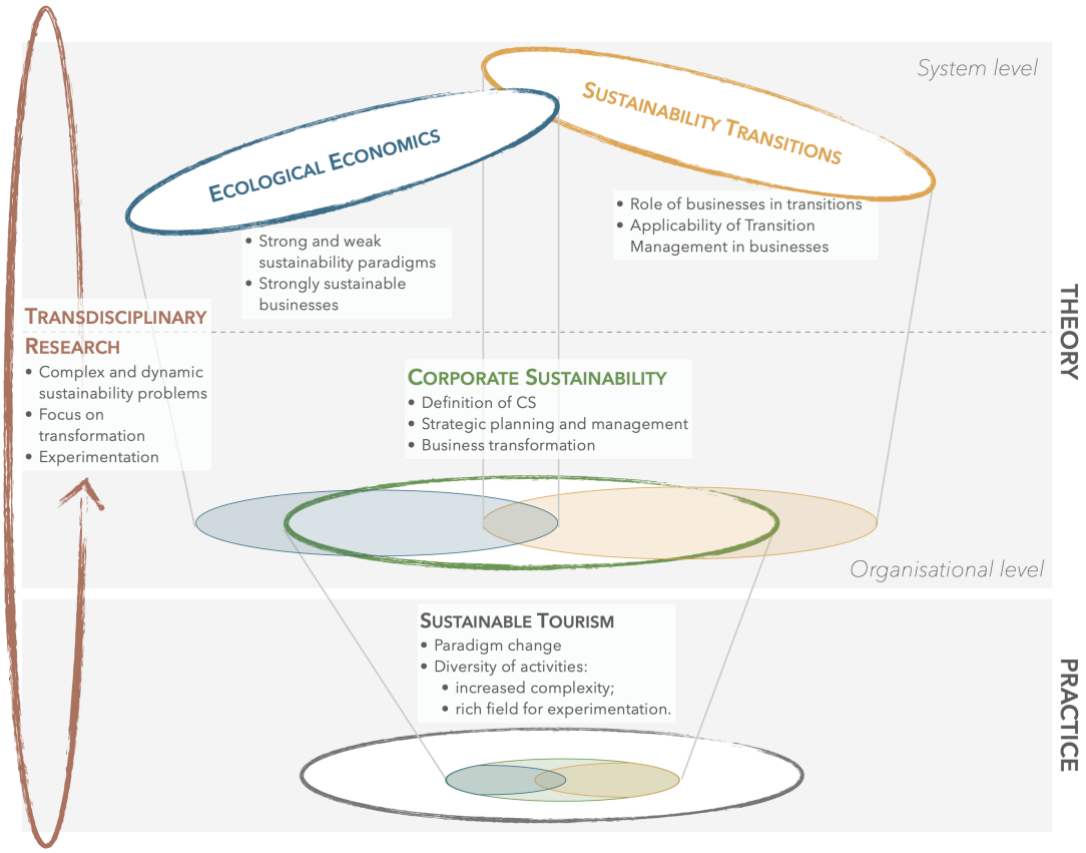

Figure 1.1 - Research fields intersecting in the current research

1.2.1| Corporate sustainability

CS provides a core theoretical background supporting the current study namely by providing: 1) the definition of CS; 2) a focus on the strategic approaches to CS; and 3) methods and tools to perform business transitions towards sustainability.

The definition of CS is a contested topic in literature as a result of the lack of a standardised definition (Montiel and Delgado-Ceballos, 2014). Different theories have been used to conceptualised CS, such as stakeholder theory, institutional theory, resource-based view theory or co-evolutionary theory (Chang et al., 2017; Lozano et al., 2015; Montiel and Delgado-Ceballos, 2014). The undefinition of the CS concept has also contributed to its use as an equivalent to CSR, although these concepts emerged from different literature strands. CSR emerged in management literature in the 1970s through the introduction of ethics in this field; while research on CS developed as a reaction to disruptions caused by economic development in the environment (Bansal and Song, 2017; Montiel, 2008). CS builds on the concept of sustainable development published in the Brundtland Report in 1987 and became more popular in the 1990s. In CS literature, sustainability dimensions (economic, social and environmental) are conceptualised as interconnected, while in many early CSR studies social and economic dimensions are assumed as independent. In relation to the natural environment, CS is more aligned with the intrinsic value paradigm and CSR with the use value paradigm (Montiel, 2008).

Regarding the differences identified, the current study leans towards a CS concept, which is aligned with a strong sustainability approach, as described by Healy et al., (2013). The CS definition adopted in the current study builds on the definition for Organisational Sustainability (OS) developed in Lozano (2018a) and applied in Lozano et al. (2021). Lozano et al. (2021) present a summarised version of the definition:

"*The contributions of the organisation to sustainability's dimensions (economic, environmental, and social dimensions of today, as well as their inter-relations within and throughout the time dimension) through the incorporation of sustainability issues in the organisation's system elements, as well as change processes, and collaboration with its stakeholders to accomplish the organisation's goal or objective*".

Although OS encompasses other types of organisations, such as civil society and public-sector organisations, the definition selected is applicable to companies (Lozano, 2018a).

As elements of strategic positioning, corporate strategies gather core information to guide business activities, such as long-term direction, strategic issues, markets, customer needs, resources and competitive advantage (Galbreath, 2009; Porter, 1996). This information contributes to position the company in the market, build its competitiveness and guide the operational routine (Galbreath, 2009). Regarding the key role of corporate strategies, the integration of sustainability aspects in the formulation of the business strategies is essential to trigger organisational change towards sustainability and effective performance improvement (Baumgartner and Rauter, 2017).

The research on CS at a strategic level focuses on: the integration of sustainability issues in corporate strategies (Bansal and Song, 2017; Baumgartner, 2014; Galbreath, 2009); the definition of different classifications for CS strategic approaches adopted by businesses (Baumgartner and Ebner, 2010; Hanke and Stark, 2009; Neugebauer et al., 2016); the analysis of drivers and enabling factors for a successful integration of CS at a strategic level (Engert et al., 2016; Engert and Baumgartner, 2016); the development of methods and tools to create sustainability strategies, emphasising the strategic planning process (Broman and Robèrt, 2017; França et al., 2017; Kurucz et al., 2017; León-Soriano et al., 2010); and, how can organisations operationalise their sustainability strategies (Engert and Baumgartner, 2016).

An overview of CS research points to an emerging trend of shifting the focus from what sustainability represents to businesses to how it may be integrated in business activities (Chang et al., 2017). This trend is also visible in the literature focusing on the integration of CS in strategic planning and management by the acknowledgement of the lack of empirical studies (Engert et al., 2016). Several scholars mention the need to develop and test potential solutions and guidance on how to formulate and implement corporate sustainability strategies (Engert et al., 2016; Kitsios et al., 2020; Neugebauer et al., 2016).

This gap in literature has been partially addressed through the adoption of different research lines: while some authors focus on the study of change and transformative management as vehicles to better integrate CS in corporate strategies (Lahtinen and Yrjölä, 2019; Lozano and Garcia, 2020); others have developed methodological frameworks or

adapted existing tools to guide sustainability strategic planning (Broman and Robèrt, 2017; León-Soriano et al., 2010).

Lozano and Garcia (2020) suggest that organisational change towards sustainability occurs mostly from a top-down perspective and on internal system elements (such as governance, management and strategy, and operations and production), which are easier to influence in a change process. Lower levels of change are achieved in external system elements, such as collaboration, supply chain and connection with external stakeholders. Regarding the relevance of top management in transformative change processes in organisations, (Lahtinen and Yrjölä, 2019) analysed the levels (strategic, tactical and operational) and styles (analytical and intuitive) of management that are most adequate to promote transformative management towards sustainability.

The role of internal organisational resources, such as dynamic capabilities, is also explored in literature focusing on sustainability strategic planning processes, from a generic perspective by Papagiannakis et al. (2014) and in particular in the implementation of the Framework for Strategic Sustainable Development (FSSD) by Kurucz et al. (2017). Developed by Broman and Robèrt (2017) and Robèrt (2009), the FSSD is one of the most popular theoretical frameworks for the conceptualisation and operationalisation of corporate sustainability strategies. The framework is anchored on a set of core sustainability principles and on a systemic backcasting planning method. Further studies have been comparing and pairing the FSSD with other tools and approaches, such as the Business Model Canvas (França et al., 2017) and the planetary boundaries (Robèrt et al., 2013). The use of existing management tools, such as sustainable balanced scorecard and information systems in the strategic planning process is also explored in literature (Dias-Sardinha et al., 2007; León-Soriano et al., 2010).

Broader conceptualisations of CS, such as enterprise sustainability, reinforce the importance of the context in which the business operates in opposition to the previous literature focus on organisational internal transformation processes (Searcy, 2016). As the strategic orientation of a company is dependent on its context (van Lieshout et al., 2021) and business strategies are one of the key elements linking organisations and their environment in co-evolution processes (Chang et al., 2017), collaborative and interdisciplinary approaches are essential to further develop CS research (Chang et al., 2017; Shrivastava et al., 2013). Also

exploring the application of system approaches on the study of sustainability strategic management in businesses represent an emerging research trend, despite most CS research is still designed within organisational boundaries (Diepenmaat et al., 2020).

1.2.2| Sustainability transitions

Sustainability transitions research focus on the understanding of the dynamics underlying disruptive and broad shifts in society, aiming to address sustainability problems (Köhler et al., 2019; Markard et al., 2012). As a systems approach to sustainability research, transitions studies may provide theoretical background to CS and strategic management literature by exploring: 1) the role of businesses in wider systemic change through the analysis of incumbency and firm strategy (Ruggiero et al., 2021; Turnheim and Sovacool, 2020; van Mossel et al., 2018); and, 2) the applicability of theoretical transition frameworks as guidance on business transformation processes (Lahtinen and Yrjölä, 2019; Loorbach et al., 2010; Loorbach and Wijsman, 2013).

Seminal sustainability transitions research typically identifies strict roles to each type of actor, which are classified under homogenous categories (Köhler et al., 2019; Ruggiero et al., 2021). As an example, businesses operating within an existing regime are classified as incumbents and are portraited as opposing actors, invested in avoiding or delaying sustainability transitions (Geels, 2014; Johnstone et al., 2017). This initial characterisation of incumbents as major actors preventing transitions in regimes is contradicted by recent studies that recognise the heterogeneity among incumbent companies and the necessity to explore this diversity to develop a deeper understanding on the complexities of business strategies when facing a sustainability transition (Ruggiero et al., 2021; Turnheim and Sovacool, 2020).

Diverse strategies may be adopted by businesses in relation to sustainability transitions: 1) become a first-mover and be among the first to enter a niche; 2) follow frontrunners into a niche; 3) remain inert and maintain their behaviour during the transition; and, 4) delay the transition by reducing the pace of change or even prevent it (van Mossel et al., 2018). The type of strategy adopted is influenced by the specificities of the industry or

sector, intrinsic organisational characteristics and the kind challenges faced (Turnheim and Sovacool, 2020).

As a result of the diverse strategies adopted by businesses, different types of actions emerge, such as political coalitions and formal networks, definition of technical standards, management of expectations in relation to novel technologies and developing innovative technologies supporting sustainability transitions (van Mossel et al., 2018). Also, incumbents from adjacent sectors play a role in transitions by bringing large amounts of resources to support specific transition pathways (Ruggiero et al., 2021).

As strategic positioning of businesses in sustainability transitions has a dynamic nature and may shift over time, the same business may be classified as an incumbent in a specific period of time or considering a specific sectorial transition, while adopting a first-mover strategic positioning in another period of time or context (Turnheim and Sovacool, 2020; van Mossel et al., 2018). This shift may be driven by internal change, such as organisational learning, or external factors, such as variations on the external context (Turnheim and Sovacool, 2020). Adaptation plays a relevant role in the survival of incumbents during sustainability transitions since the most likely incumbents to survive are: 1) powerful incumbents with both a wide range and amount of resources and experience in innovative change; and, 2) small incumbents with highly developed dynamic capabilities and capable to follow multiple pathways (van Mossel et al., 2018).

Both dynamic capabilities and the context in which the company operates influence their strategic positioning and the evolution of this position over time (Geels, 2014). The context exerts pressure in organisations, leading to a selection of those capable of adapting (van Mossel et al., 2018). Dynamic capabilities are key elements in organisational adaptation by allowing businesses to navigate through transitions and reframe their context (Garud and Gehman, 2012).

Organisational adaptation requires the development of internal transformation processes, which can be informed by theoretical frameworks developed under the umbrella of sustainability transition studies, such as the Transition Management (TM) framework (Lahtinen and Yrjölä, 2019). TM builds on reflexive governance to shape transition processes through the incorporation of a set of core elements: systems and long-term thinking,

backcasting and forecasting approaches, learning processes, system innovation and experimentation, and stakeholder participation (Kemp and Loorbach, 2006).

A typical TM cycle includes four types of activities: strategic, tactical, operational and reflexive, as pictured in Figure 1.2. The TM cycle is also applicable in a business context, as portrayed by Loorbach et al. (2010) and Loorbach and Wijsman (2013). Strategic activities comprise problem structuring in a long-term perspective, the creation of alternative visions for the future and the establishment of a transition arena, focused on supporting and steering the sustainability transition. Tactical activities include the development of transition agendas, which promote dynamics of building up and breaking down system structures, using relational strategies, such as negotiation, collaboration and lobbying. At an operational level, activities are oriented towards the short-term and the development of new routines. Actors are mobilised to implement experiments tackling system change. Finally, reflexive activities focus on the evaluation of the existing situation and former activities, relying on monitoring systems and aiming to evolve into learning loops, which produce change in the system and reframe problems.

Figure 1.2 - Transition management cycle (Loorbach, 2007; Loorbach and Wijsman, 2013)

In Loorbach et al. (2010), the development of parallel innovation projects aside the current business model allowed the company to explore transition pathways with reduced risk. This type of strategic approach to ongoing sustainability transitions has positive impacts in the organisation: internally, through the creation of new forms of value and an inspirational organisational culture; externally, by providing a common language between the organisation and other actors of the broader society, which enables the creation of innovation pathways (Loorbach and Wijsman, 2013). These studies bridge CS and sustainability transitions research and are among the few efforts to explore business dynamics and individual organisational strategies in the context of wider sustainability transitions, considering that transitions studies are typically focused on socio-technical change mechanisms and patterns (Diepenmaat et al., 2020).

1.2.3| Ecological economics

Ecological economics is a transdisciplinary research field born on the intersection between ecology and economics. In 1989, the creation of the Ecological Economics journal, resulted from a series of meetings from scholars from both disciplines already performing studies and discussing concepts on this intersection (Røpke, 2004). As stated by Costanza (1989) in the first publication of the Ecological Economics journal: "Ecological economics addresses the relationships between ecosystems and economic systems in the broadest sense. These relationships are the locus of many of our most pressing current problems (i.e. sustainability, acid rain, global warming, species extinction, wealth distribution) but they are not well covered by any existing discipline". From an ecological economics perspective, economy is conceptualised as embedded in human society and nature, which represents a significative difference to other research areas (Martínez-Alier and Muradian, 2015).

As a transdisciplinary and broad research field, ecological economics accommodates debates on a wide range of topics; however, the research developed under this field is characterised by its commitment to environmental issues. Ecological economics literature focus on critical environmental and social problems, acknowledging the planetary boundaries and limits of growth, as well as consequent social issues, as equity and distribution (Røpke, 2004).

Another distinctive characteristic of ecological economics research is the adoption of transdisciplinary approaches, which allows scholars to explore theories, tools and ideas from other disciplines to advance on ecological economics research. Thus, this research field embraces pluralistic perspectives and approaches on research topics, instead of a single paradigm (Costanza, 2020). From this pluralism emerged two opposing paradigms on the conceptualisation of sustainability, designated as weak and strong sustainability (Healy et al., 2013; Martínez-Alier and Muradian, 2015).

A weak sustainability perspective accounts different types of capital stocks (manufactured, human, social and natural) as interchangeable and therefore focus on the maintenance of the total amount of capital stock. Strong sustainability implies the maintenance of each type of capital stock, assuming that natural and human made capital are complementary instead of substitutes (Healy et al., 2013; Neumayer, 2013). Thus, the major difference among these two paradigms relies on the type of relation among different type of stocks (i.e., if stocks are complementary or substitutes).

The translation of these concepts into the business context materialises in the tensions between economic, social and environmental dimensions of CS. Thus, a strong sustainability approach in business implies that natural capital cannot be compensated with human and financial capital; while a weak sustainability perspective allows trade-offs between social, economic and environmental values. From an overall perspective, most CS approaches are closer to weak sustainability paradigm since the three types of capital are considered interchangeable and financial value creation is often prioritised and optimised based on other inputs, such as natural resources and human capabilities (Vildåsen et al., 2017).

In a process of sustainable change, weak and strong sustainability paradigms are associated with different types of business strategies. On the one hand, a change towards weak sustainability is mostly associated with the adoption of eco-efficiency strategies. On the other hand, an effective transition towards strong sustainability requires businesses to adopt strategies focusing on eco-efficiency and eco-sufficiency (increase in the production quality and reduction in production quantity) and extend these approaches to customers by encouraging better and less consumption (Heikkurinen et al., 2019).

The creation or transformation into a strongly sustainable business (based on a strong sustainability approach) requires a reflection on the profit maximisation paradigm underlying CS (Upward and Jones, 2016; Vatn, 2020; Vildåsen et al., 2017). The integration of social and environmental capital in the definition of corporate profitability is an option (Vildåsen et al., 2017), along with the redefinition of business success (Upward and Jones, 2016).

Upward and Jones (2016) provide a suggestion on the definition of a 'tri-profitable firm' which aims at producing the sufficient amount of financial rewards, social benefits and environmental regeneration, being sufficiency defined by key stakeholders. Another characteristic of strongly sustainable businesses is the application of this definition throughout the entire value network, implying that no single business can become sustainable without collaborating with its value network partners.

The need for a wider and systemic sustainability transition to support the development of strongly sustainable businesses, anchored in concepts such as sufficiency and degrowth, is acknowledged in literature (Bocken and Short, 2016; Nesterova, 2020). The implications of different growth scenarios in businesses are explored by Harangozo et al. (2018), regarding three different economic growth possibilities: positive, zero and negative. In a scenario of positive economic growth, businesses are expected to focus on innovation and eco-efficiency. A scenario of zero growth implies a shift on business purpose from the profit maximisation to broader goals, such as reduced environmental impacts, social change and sufficiency. In a negative growth scenario, the emergence of other forms of profit making, less dependent on resources and from a bottom-up approach, require businesses to create new strategies to sell conventional products.

Other approaches on the idealisation of strongly sustainable businesses are provided by Bocken and Short (2016) and Nesterova (2020), through the analysis of possible ways to integrate sufficiency and degrowth criteria in businesses, respectively. Bocken and Short (2016) explore the application of the first levels of the waste hierarchy (avoid, reduce and reuse) to analyse possible business strategies for sufficiency. These strategies include conscious techniques of sales and marketing, new revenue models, product longevity to avoid built-in obsolescence, full life-cycle sufficiency, premium price model and consumer engagement and education (Bocken et al., 2020; Bocken and Short, 2016).

A set of key enablers for the adoption of sufficiency strategies in business models was identified in Bocken and Short (2016): mature approach towards sustainability along with a corporate governance orientation from top management, a performance and incentive system aligned with sustainability, strong communication of corporate values, focus on quality and durability, establishment of long-term relationship with customers and preference for organic growth rather than acquisition. The main barriers for sufficiency driven business models are: conventional corporate structures and investors' focus on short-term performance; built-in obsolescence as part of the business model of mass production; and competition among firms which may favour low prices instead of quality and durability (Bocken and Short, 2016).

Sufficiency is among the core degrowth premises used by Nesterova (2020) to describe a strongly sustainable business. In this study, degrowth businesses are described as those focused on ethics instead of profit maximisation, which allows a holistic approach to firm management. These businesses are also characterised by a small scale and belonging to a sector focused on satisfying genuine human needs. As a consequence of the integration of key degrowth premises related to the environment, people and non-humans and deviation from maximisation imperative, these businesses need to shift their success measures to embrace the intangible nature of some of the criteria used.

1.2.4| Transdisciplinary research

Corporate sustainability, sustainability transitions and ecological economics converge on the study of sustainability and contribute to this broader research approach, despite the differences in the perspectives, theoretical frameworks and methods presented. Transdisciplinary research emerges as a response to two major issues explored on sustainability science studies, which are also relevant to these research fields: 1) the dynamics and complexity of systems associated with the study of sustainability problems; and 2) change and transformation processes required to transition into a sustainable society (Nagatsu et al., 2020).

The complexity and dynamic nature of sustainability problems require the involvement of multiple actors in the development of solutions. The involvement of

academics from diverse research fields and other relevant stakeholder from society in the discussion of the sustainability problems and solutions is a key characteristic of transdisciplinary research (Nagatsu et al., 2020; Shrivastava et al., 2013). As a research approach driven by real life challenges, transdisciplinarity relies on collaborative approaches to clarify problems and iteratively developing solutions, overlapping knowledge creation and transfer. As a result, transdisciplinary knowledge is contextualised by values and commitments and has a dynamic nature regarding its evolution in parallel with changes in the context (Shrivastava et al., 2013).

Some of the characteristics of transdisciplinary research are shared by action research studies, namely the phenomenon driven character, the importance of the context and participation of multiple stakeholders. Knowledge creation is also characterised as an entangled process of action, learning and capacity building through co-production. Additionally, action research aims at creating transformative change towards sustainability, through the design of contextualised and shared actions and the development of sustainability capacities (Caniglia et al., 2021). Thus, action research is key to the development of transition and change processes towards sustainability, which was identified as one of the core topics of sustainability science.

As privileged approaches to produce sustainability science, transdisciplinary and action research intersect with studies on CS, sustainability transitions and EE. A robust body of literature on transdisciplinary research has been developed by EE studies, providing useful insights in this area (Nagatsu et al., 2020; Popa et al., 2014). As an example, Brandt et al. (2013) study summarises key process phases, knowledge types, intensity of actor involvement and challenges faced in transdisciplinary research.

Thus, a typical transdisciplinary study unfolds into three phases: 1) collaborative problem framing; 2) co-creation of a solution-oriented and transferable knowledge; 3) integration and application of produced knowledge. This process leads to the production of three types of knowledge: 1) system knowledge (current state of the system and capability to change); 2) target knowledge (includes measures, desired target states and the scope of action) and 3) transformation knowledge (refers to the implications of change and enables the analysis of different pathways for change). The whole process may vary in the intensity of

stakeholder involvement, from the less to the higher level of engagement: information, consultation, collaboration and empowerment (Brandt et al., 2013).

Five major challenges in transdisciplinary research approaches were also identified in Brandt et al. (2013): 1) lack of coherent framing due to heterogeneity; 2) integration of methods considering the diversity and theoretical background of the methods used; 3) selection of the research process and knowledge production among multiple theoretical frameworks available; 4) engagement of practitioners in the process; and, 5) generation of impact since most studies are developed at a local and regional scales.

The application of transdisciplinary research approaches in sustainability transitions is relatively more recent (than applications for instance in EE studies) and associated with the TM theoretical framework through the development of experiments (Bosch and Rotmans, 2008; Halbe et al., 2020; Popa et al., 2014; Weiland et al., 2017). Experimentation is a core element in the translation of transdisciplinary and action research into practice (Caniglia et al., 2017), by focusing on the development of 'knowledge how' or actionable knowledge (Caniglia et al., 2021; Hölscher et al., 2021). This type of knowledge aims at supporting transformative action to address sustainability challenges, solve problems or achieve specific goals (Caniglia et al., 2021; Hölscher et al., 2021).

The focus on change and innovation is one of the characteristics of sustainability experiments allowing to differentiate this type of experimentation from a classical approach (Weiland et al., 2017). Literature from diverse fields provide definitions on sustainability experiments (e.g. Antikainen et al., (2017)), as well as typologies of sustainability experiments (Caniglia et al., 2017; Sengers et al., 2019; Weiland et al., 2017).

Despite diverse conceptualisations, a set of core elements emerge from these diverse definitions: 1) experiments are practice-based, goal-oriented and challenge-led initiatives; 2) aim at producing knowledge (in most cases actionable and transformative knowledge), innovation and social learning; 3) wide range of participants, with or without academic background, bringing to the discussion different forms of knowledge, capabilities, resources and expectations; 4) embraces uncertainty, unpredictability and ambiguity as part of the process (Antikainen et al., 2017; Sengers et al., 2019; Weiland et al., 2017).

The applicability of experimentation in diverse subfields of sustainability sciences led to emergence of multiple classification for experiments, such as described in Weiland et al. (2017) and Caniglia et al. (2017). The central role of experimentation in transition studies led to a diversification of the type of experiments developed under the umbrella of sustainability transitions, including niche, bounded socio-technical and grassroot experiments (Sengers et al., 2019).

The evaluation of sustainability transition experiments is also debated in literature. Despite acknowledging that experiment success is context specific, Antikainen et al. (2017) identify a set of critical success factors: economic viability, public funding, technological development, impact assessments, public policies and regulation. Other factors were considered relevant, such as the involvement of frontrunners in the process, trust building, creation of learning spaces, promotion of open discussions and the maintenance of participatory communication mechanisms during and after experimentation (Antikainen et al., 2017).

From the need to evaluate experiments, emerged evaluation schemes, such as those described by Luederitz et al. (2017) and Williams and Robinson (2020). The former built the evaluation scheme based on four guiding questions: 1) what was generated (outputs); 2) what was accomplished (sustainability outcomes); 3) how it was completed (process); and 4) what was invested (inputs) (Luederitz et al., 2017). The latter developed an evaluation framework based on three elements: 1) process; 2) societal effects; and 3) sustainability transition impacts (Williams and Robinson, 2020). Regardless of the evaluation scheme used, sustainability transition studies focus on experiments that have achieved at least some level of success and report their performance (Antikainen et al., 2017). The lack of focus on experiments that have failed is pointed as a major gap in literature, regarding the high learning potential of these cases (Antikainen et al., 2017; Weiland et al., 2017).

The application of transdisciplinary research approaches in the context of CS is less explored in literature; despite the potential overlapping of principles and orientation with regards to stakeholder involvement and long-term thinking (Shrivastava et al., 2013). The analysis of the role of business in experimentation is thus a research path to further explore in the present study, investigating the link between transdisciplinary research, CS and sustainability transitions (Sengers et al., 2019).

1.2.5| Sustainable tourism

The adoption of an experimental and transdisciplinary research approach requires the selection of a specific empirical context, in which the study is developed. A relevant sectorial application area and empirical context includes bridging elements between the multiple research fields supporting the current study. The analysis of the tourism sector revealed multiple intersection points: 1) continuous growth and global nature of the sector brought to light significative social and environmental impacts, which originated a debate on the need to change the underlying paradigm of tourism (Hall et al., 2015a; Rutty et al., 2015); 2) the sector includes intersections with a wide variety of other activities and sectors, which increases the complexity and diversity of stakeholders to involve in a sustainability transition and provides the ground for transdisciplinary research; 3) the diversity of activities included in the tourism sector provide a rich environment for experimentation on the development of organisational sustainability transitions, which links to CS literature.

Tourism has been promoted as a source of economic growth, either through leveraging economic recovery from crisis or fostering development in advanced and emerging economies (Fletcher et al., 2019). This perspective led to an exponential growth of the sector, increasing the visibility of negative social and environmental impacts associated with touristic activities (Hernández and León, 2013; Niñerola et al., 2019; Rutty et al., 2015). The recent growth of the sector and the characteristics of its activities explain the emergence of the sustainable tourism studies only in the last fifteen years (Font and Lynes, 2018).

While published literature on sustainable tourism has become more common at the end of the twentieth century (from the 90s onward), debates on the relation between tourism and sustainability issues (more specifically, environmental problems) began in the middle of the nineteenth century with the creation of the first national parks and preservation areas (Hall et al., 2015a, 2015b). While the main goal of these areas was resource preservation, allowing public and recreational uses became a common approach to ensure their economic viability, as long as the conserved values were not endangered (Hall et al., 2015a).

The concept of sustainable tourism evolved as literature and debates on sustainable development become more popular, due to conferences organised by the United Nations,

such as Stockholm 1972, studies published as 'The Limits of Growth' in 1972 and 'Our Common Future' in 1987 (also known and as the Brundtland report). From this point, sustainable tourism has focused on the balance between economic, social and environment issues (Hall et al., 2015a).

One of the key topics discussed in sustainability tourism studies is the need to change the current paradigm of tourism (Dwyer, 2018; Fletcher et al., 2019; Higgins-Desbiolles et al., 2019), leading to diverse approaches ranging from overall sectorial studies to exploring the role of organisations and businesses in this transition (e.g., Dwyer (2018) and Hughes and Scheyvens (2016), respectively). From a sectorial perspective, studies explore paradigm changes based on approaches such as degrowth (Higgins-Desbiolles et al., 2019) or the alternative paradigm presented by Dwyer (2018), aiming to deal with overtourism and its negative impacts (Fletcher et al., 2019).

The degrowth paradigm applied to tourism implies a shift to prioritise the needs and interests of the local communities over the tourist. From this perspective, the local community must have stewardship over touristic activities at the destination and retain the main economic benefit from this activity (Higgins-Desbiolles et al., 2019). This shift is also aligned with some emerging approaches aiming to reduce tourism negative impacts, such as slow and responsible tourism (Fletcher et al., 2019).

The transition towards a sustainable tourism encompasses other proposals besides degrowth, as the alternative "sustainable futures" paradigm proposed by Dwyer (2018). This author proposes a transition in seven structural elements from: 1) neo-liberalism to political economy; 2) anthropocentrism to environmental ethics; 3) shareholder to stakeholder orientation; 4) growth to stewardship orientation; 5) price to value; 6) space to place; and 7) promotion by push to promotion by pull. Regardless of the future vision for the sector, the need for a transition towards sustainable tourism is widely acknowledged, which bridges these studies to sustainability transitions research.

The diversity of activities and sectors required to support tourism activities represents an intersection point between sustainable tourism and both sustainability transitions and transdisciplinary research. This heterogeneity adds complexity to the sector (Buhalis, 2000; McKercher, 1999), as well as to the study of possible sustainability transition pathways. The multi-regime perspective focuses on the interactions between regimes while undergoing

sustainability transitions and represents a gap in transition studies (Köhler et al., 2019). Some studies already explored the dynamics and interactions in multi-regime transitions (Papachristos et al., 2013; Raven and Verbong, 2007) and the heterogeneity of sectors supporting tourism may build the ground to further explore this topic.

The diversity of activities included in the tourism sector provide another intersection point between sustainable tourism, transition studies and transdisciplinary research, regarding the application of collaborative approaches. Therefore, a wide range of stakeholders are involved in transition processes, such as the development of innovations in the spectrum between weak and strong sustainability (Panzer-Krause, 2018). Transportation, accommodation, food and restaurants, nature and heritage adventures, activities and amusement parks, sales and marketing are examples of stakeholder groups relevant in TM processes in the tourism sector, as described by Gössling et al. (2012). In this case, an action research approach was applied in the process of planning of a sustainability transition in the Norwegian tourism sector.

The intersection between CS and tourism studies focuses mostly on the hospitality sector and the impact of sustainability approaches in business competitiveness and financial performance (Aragon-Correa et al., 2015). Such a narrower scope leaves unexplored a wide range of possible research lines tackling the diversity inherent to the tourism sector. Thus, multiple research challenges arise from the acknowledgement that a genuine commitment towards sustainability through its integration in business strategy provides additional benefits to companies than reactive strategies towards CS (Font and Lynes, 2018).

Despite the wide amount of literature exploring the interconnection between CSR and tourism, most studies lack primary data to evaluate the extent to which CSR has been adopted and implemented in the tourism sector. Thus, a gap between theoretical advances in CSR and its contribution to sustainable tourism and the current practice in sectorial organisations is identified in literature (Coles et al., 2015).

Among the existing literature were identified the following research lines: integration of management theories in tourism studies and the adoption of a value chain approach in the study of CS (Aragon-Correa et al., 2015); different levels of CSR integration in hospitality regarding the characteristics of the companies (Ertuna et al., 2019); development of responsible businesses under the adoption of CSR approaches (Camilleri, 2014); stakeholder

involvement and impact on the adoption of CSR (González-Rodríguez et al., 2019); the shift to a long-term thinking approach from the current short-term and profit maximisation mindset (Camilleri, 2014; González-Rodríguez et al., 2019).

Other research gaps identified in the field specific literature are similar to those presented in general CS literature, such as exploring the adoption of CS at a strategic level, including the role of organisational capabilities in the development of sustainability strategies (Aragon-Correa et al., 2015; Camilleri, 2014); deepening the knowledge on the context influence on the integration of CS in the organisation (Aragon-Correa et al., 2015); engaging with tourism businesses in the development of empirical research settings (Camilleri, 2014; Font and Lynes, 2018); and including stakeholders in the integration of sustainability in long-term goals (González-Rodríguez et al., 2019).

Consistent social, technological, economic, environmental and political change, as well as disruptive events, are a challenge in setting long-term goals for the tourism sector. As a result, forecast and scenario development are tools available to further integrate long-term thinking in sustainable tourism studies. Forecasts are often used in the tourism sector to provide insights on short-term trends, through causal models and data extrapolation. However, this technique is not adequate to deal with long-term uncertainty and the complexity usually associated with sustainability problems. Despite less adopted in the tourism sector, scenario development is a possible complement to forecasting by providing insights on possible futures for the sector and support organisations in their decision-making processes (Scott and Gössling, 2015).

Bridging together all the research fields included in the current study encompasses the application of CSR or CS approaches as supporting tools for businesses aiming to contribute to a sustainability transition in tourism, as depicted by Hughes and Scheyvens (2016). In this case, the CSR framework proposed focuses on human development and local community well-being, providing businesses guidelines to develop their activities under these main assumptions. This approach to CS in tourism businesses is aligned with the overall degrowth vision proposed by Higgins-Desbiolles et al. (2019).

In summary, the diversity of activities, businesses and contexts encompassed in the tourism sector provides a rich field to explore the application of CS as transition tools towards alternative sustainable paradigms pictured in literature (Aragon-Correa et al., 2015).

1.3 | RESEARCH QUESTIONS

Building on the theoretical background presented and research gaps identified, the current study aims at experimenting collaborative approaches on the development of organisational transition processes towards sustainability. Regarding this main goal, the research activities developed in the current study were guided by the overarching research question 'How can organisations develop a transformation process towards sustainability when embedded in the context of a wider sustainability transition?'.

Considering the main goal and research question, two specific goals were identified to support the design of the research activities: SG 1) characterise sustainability transition processes in organisations; and SG 2) experiment collaborative approaches on the creation of organisational sustainability strategies in a broader transition context.

In regard of the first specific goal (SG 1), two research questions were defined: RQ 1.1) 'What are the theoretical foundations supporting organisations tackling sustainability and developing internal transition processes?'; and RQ 1.2) 'How are sustainability-oriented businesses developing their sustainability strategies and what are the challenges they are facing?'.

Supporting the activities to achieve the second specific goal (SG 2) are other two research questions: RQ 2.1) 'How to apply participatory modelling approaches to scope sustainability problems and challenges in a transition context?'; and RQ 2.2) 'How to create transformative sustainability strategies in organisations, through the application of collaborative approaches?'.

1.4 | DESIGNING THE RESEARCH SETTING

Building on the specific goals defined in the previous section, the current study was organised into two major phases: a diagnosis and an experimentation phase. The diagnosis phase adopts an exploratory approach to develop an analysis on the current state-of-the-art on CS management, both in literature and in practice. The experimentation phase builds on a transdisciplinary approach to propose and test collaborative processes supporting an

organisational transformation towards sustainability. The Portuguese tourism sector was the case study selected to develop the experiments required in the experimentation phase. Figure 1.3 illustrates the structure of the dissertation along with the goals and research questions associated with each part of the study.

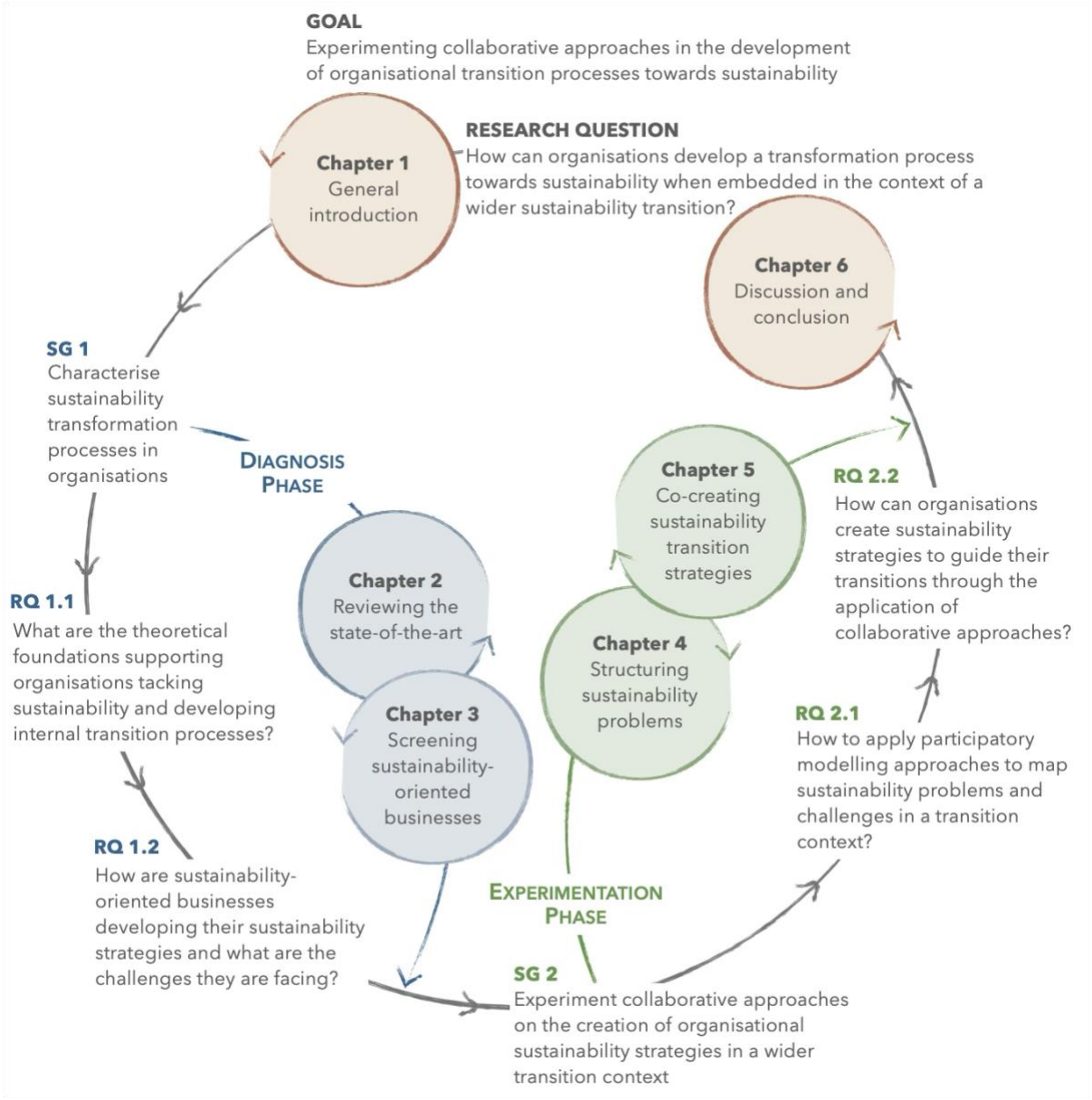

Figure 1.3 - Synthesis of the research setting developed

Diving into the contents included in the dissertation, Chapter 1 introduces the research by providing an outlook on the relevance of the theme, as well as core concepts and frameworks developed under diverse scientific research areas and composing the theoretical background supporting the current study. In this chapter are also included research questions

and goals guiding the study and a general description of the research design applied to answer the proposed questions.

In the diagnosis phase, are included chapters 2 and 3 of the dissertation. Both chapters are exploratory studies aiming at characterising the current state of CS approaches used by organisations and provide different perspectives on the challenges faced by organisations in their transformation processes. Chapter 2 focuses on the state-of-the-art on CS through a literature review and provides a conceptual framework presenting key features and challenges in the implementation of CS approaches. Chapter 3 maps the approaches adopted by Sustainability-Oriented Businesses (SOB) to create sustainability strategies, focusing on key process elements, such as stakeholder involvement, innovation integration and long-term thinking adoption, as well as on the challenges faced throughout these processes.

In the experimentation phase, was developed an experiment on the Portuguese tourism sector, which gave origin to chapter 4 and 5. Chapter 4 describes the development and application of a participatory and conceptual modelling approach to structure and frame sustainability problems in a transition context in the Portuguese tourism sector. The experiment described in chapter 5 focuses on the development and test of a collaborative strategic planning process to create a sustainability transition strategy at an organisational level. The case study presented in this chapter focused on a luxury resort located in the south of Portugal.

Finally, chapter 6 includes the discussion of the results obtained in the diagnosis and experimentation phases, both at the light of the research goals and questions defined and the research gaps identified. This chapter summarises the main findings, identifies the limitations faced during the development of the current research and proposes future research pathways.

The current dissertation also includes three appendices, which present complementary information to the work developed and disclosed in the main text. Appendix A lists research outputs and dissemination, ranging from published articles, book chapters to oral presentations in scientific conferences; as well as other activities developed by the PhD candidate while developing the research work. This Appendix provides a picture on the work developed in the background of the research presented, which not always produced the expected results but allowed the candidate to support the work developed, reflect on the

options selected and learn research methods or practical aspects of the studied issues. Appendices B and C include complementary information of chapter 4 and 5, respectively, which was not possible to include in the main text but was still relevant to understand the results obtained.

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2| REVIEWING THE STATE-OF-THE-ART[1]

INNOVATIVE APPROACHES TO ORGANISATIONAL SUSTAINABILITY: STATE-OF-THE-ART AND CONCEPTUAL FRAMEWORK

ABSTRACT

Organisational Sustainability (OS) has been one of the key research topics in sustainability debates. Organisational approaches that support pathways towards a more sustainable society, such as environmental management and social responsibility instruments, have been widely adopted. However, there are critical gaps in understanding how companies may design strategic pathways, assess alternatives and implement sustainability transitions. Despite multiple theories and methods on how organisations integrate sustainability into their strategies and operations, their efforts to improve sustainability performance still lack effective and consistent results. The main goal of this study is thus to identify key research challenges related with organisational sustainability and develop a conceptual framework to support the implementation of sustainability transitions in organisations. Departing from an in-depth literature review, the proposed conceptual framework supports analysis and implementation of organisational pathways, bringing insights on the key challenges and enablers of innovative long-term solutions. Preliminary results from such analysis point out that organisational sustainability transitions ought to be built in close collaboration with stakeholders, in order to achieve a shared vision of sustainability for the organisation. The pathways towards this vision should then consider the dynamics of the organisational external context and internal factors, such as organisational capabilities, innovation and participatory and systemic assessments of the organisational performance.

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KEYWORDS: Organisational Sustainability; Corporate Sustainability; Meta-review; Conceptual framework

2.1 | INTRODUCTION

The emergence of the sustainability paradigm brought voluntary sustainability tools to a higher level of importance to companies and become essential to assure the success of most companies. Organisational Sustainability (OS) arose as a globalised trend among organisations, influencing their competitiveness and survival regardless of the part of the globe where the company operates (Brones et al., 2017).

Despite their popularity and the increasing number of actors involved in the transition towards sustainability in organisations, the effectiveness of the transition is questioned and widely debated in literature due to lack of environmental and social results and a persistence or worsening of the problems (Lankoski, 2016). The implementation of these tools has proved to improve organisations' performance in some cases; however, some of the outcomes are intangible or associated with other organisational areas rather than environmental and social performance (Daddi et al., 2011; Iraldo et al., 2009). More sceptical authors argue organisations use sustainability voluntary tools promotes greenwashing by allowing the achievement of competitive advantage through an environmental-friendly reputation, without effectively implementing sustainability practices (Clapp, 2005, 1998).

Summarising, there is a gap between organisations' intentions and their actions and performance in relation to sustainability (Porter, 2008). Further research on organisational sustainability, focusing on how to perform a transition towards sustainability, would be useful to close this gap. Organisations have been focusing on stakeholder involvement, sustainability management through voluntary-based tools and different approaches to each dimension of sustainability (Engert and Baumgartner, 2016; Garcia et al., 2016; Zollo et al., 2016). Providing insights on how to adopt more dynamic, holistic and inclusive approaches to sustainability, would allow organisations to close the gap between their intentions and their actions and performance.

The current study aims to provide insights on the main key challenges emerging from literature and regarding the transition of organisations towards sustainability, through the development of a conceptual framework. The following section details the methods applied in the current study. The succeeding two sections refer to the results of the meta-review, firstly by focusing on OS from a conceptual perspective to identify both the theoretical landscape and the key elements of OS definition; secondly describing the emergent issues referring to the integration of sustainability in the organisational structure and functions. The final section reflects the results from meta-review summarised in a conceptual framework, informing on the key emerging challenges in OS research.

2.2 | METHODS

A priori issue on the literature about sustainability in organisations is the diversity of concepts applied in literature. An exploratory search revealed the use of diverse definitions, such as OS, Corporate Social Responsibility (CSR) and Corporate Sustainability (CS). Either these concepts are interchangeable or not is a controversial issue that is recommendable to define in each study (Chang et al., 2017; Montiel, 2008). Since the main goal of the present study was set on the general idea of sustainability in organisations (either companies or other types of organisations, such as public institutions), CS and CSR are considered as similar concepts, despite their differences are acknowledged. CS is an evolution of the CSR concept, as presented by Chang et al. (2017). OS is a more recent concept, however used by researchers as an equivalent of CS, as in Batista and Francisco (2018)

The identification of the key emerging challenges in OS research was performed through a meta-review of the literature. The search for scientific articles was limited to literature reviews, considering the amount of studies developed either from a thematic or methodological perspective and the need for a holistic perspective on OS.

Two sets of keywords were applied in the search for scientific articles on the Scopus database: 1) “organisational sustainability” and “review”; 2) “corporate sustainability” and “review”. The search was limited to articles’ title, abstract and keywords and to articles classified as reviews. Publication date was another limitation criteria, since were only

considered literature reviews published between 1987 (since the CS concept emerged from the Brundtland report that was published in 1987) and February 2018.

The results of the Scopus searches are displayed in Figure 2.1. A screening exercise on the title and abstract of the articles resulting from the search was performed, aimed to identify those effectively focused on OS and conducting a systematic literature review.

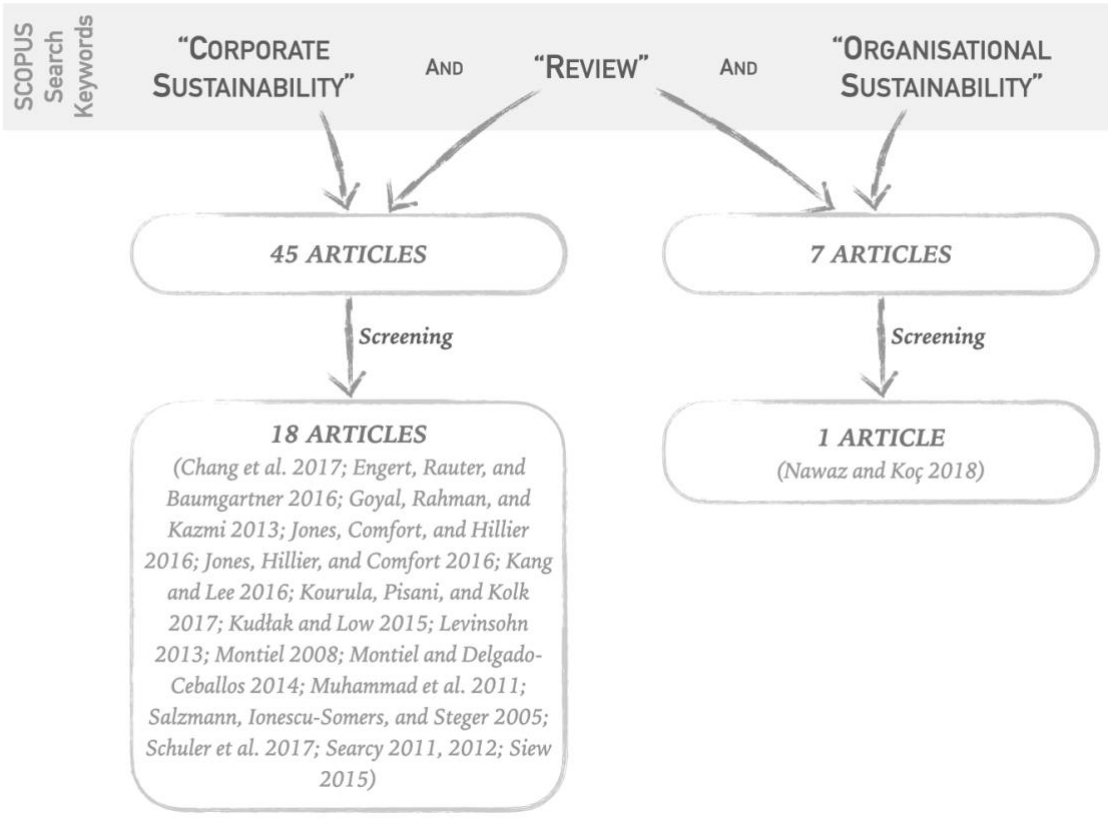

Figure 2.1 - Selection of scientific articles included in the meta-review, including the search and selection method

The final set of 19 articles was analysed and provided the foundation for elaborating the conceptual framework and identifying the key emerging challenges in OS research presented below.

2.3 | ORGANISATIONAL SUSTAINABILITY

Sustainability is an evolving concept that has been defined by multiple authors in diverse variations of the most popular definition published in the Brundtland report in 1987. This definition relies on two basic assumptions: the idea of needs, focusing specially on those that live in poorer conditions; and the limits of the planet to meet both the present and future

needs, taking in consideration technology and the society demand (Schuler et al., 2017). Simplifying, sustainability requires the modification of the production and consumption patterns, the end of poverty and the preservation of ecosystems, in the long-term (Chang et al., 2017).

Sustainability requires the maintenance of current capital stocks, that can be disaggregated into four main types: manufactured, human, social and natural. Based on this definition, authors distinguish between "weak" and "strong" sustainability. The former requires the maintenance of the total capital stock, regardless the partition between each type, representing incremental change. The latter implies that capital stocks are not completely substitutable between each other, requiring structural changes to main each stock level (Healy et al., 2013; Jones et al., 2016a). Thus, a permanent conflict between weak and strong sustainability relies on the substitutability between different capital stocks, implying different levels of change in society (Healy et al., 2013; Levinsohn, 2013).

Sustainability is often characterised as vague and difficult to operationalise; however, organisations rely on this concept to create their own vision of sustainability. Due to the growing importance of sustainability in the organisational and international realms, multiple definitions of sustainability in organisations were developed recurring to diverse research fields and theories (Chang et al., 2017; Siew, 2015).

2.3.1| Theoretical landscape: research fields and theories

The multidisciplinary approach to sustainability is supported in literature by the contribute of diverse research fields and theories to the development of knowledge on OS. Figure 2.2 summarises the main research fields and theories found in literature which contribute to the extensive debate on OS.

Apart from specialised journals and studies, sustainability in organisations is a recurring theme in management and business literature. The structural changes needed in organisations to promote an effective transition towards sustainability are studied at different levels of organisational management: strategic, tactical and operational. The implications of sustainability integration at a strategic level have been addressed in a specific research field: strategic management (Engert et al., 2016).

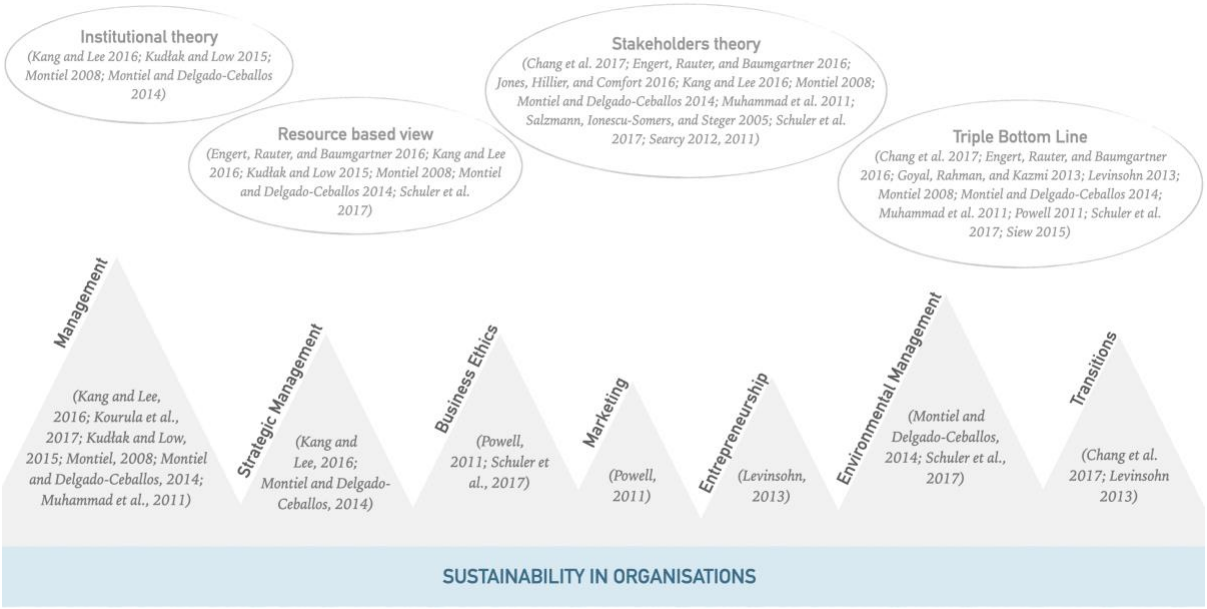

Figure 2.2 - Theoretical landscape on Organisational Sustainability

Strategic management is focused on the relation between the organisational structure and strategy, implying that each company defines a unique position, differentiating itself from competitors by reducing costs or better service (Engert et al., 2016). External and internal factors (such as stakeholders) must be included in strategic management to guarantee long-term effectiveness (Engert et al., 2016; Muhammad et al., 2011).

Including sustainability as part of strategy formulation is a complex task, demanding multi-disciplinary knowledge, management and organisational learning (Engert et al., 2016). Still at this level, (Kang and Lee, 2016) developed a study focused on Corporate Environmental Strategy (CES) that is defined as the integration of environmental activities in the strategic planning process. The relation between CES and organisational performance is explored, taking into consideration relevant variables, such as stakeholder pressure, environmental standards and environmental technology.

The tactical level requires that sustainability is integrated in the designing of organisational structures, policies and processes, while considering stakeholders needs (identified at a strategic level). The development of a system allowing the evaluation of sustainability integration in structures, policies and processes should happen at this level, since the operational level embraces the implementation of the tasks defined at the tactical level, as well as the evaluation of processes and systems in place (Muhammad et al., 2011).

Thus, OS requires a meta-management approach, assuring the organisation is seen as a whole. Vertical and horizontal integration throughout the organisation support this approach. Vertical integration by guaranteeing that the main elements of the organisational strategy are integrated into the organisational goals, targets and process and consequently, the strategy is operationalised. Horizontal integration requires the connection of processes, chains, departments and positions within the organisation, including structures and competencies (Muhammad et al., 2011).

Business ethics also contributes to OS research through the enlightenment on the values behind OS and the implications of employees' ethics in the transition towards OS. (Schuler et al., 2017) explores the implications of environmental ethics in the achievement of OS, balancing three main sustainability concepts (CSR, Environmental Management (EM) and Corporate Political Activity), with four environmental ethics orientations: sustainable resource use, conservation and preservation, rights-based perspectives, and deep ecology (progressive categories from an instrumental value to an intrinsic value perspective). Powell (2011) explores the role of employees' ethics in the creation of an organisational identity and culture prone to sustainability.

Stakeholders and corporate identity are key elements in marketing research, since the creation of an organisational brand or image is essential to stablish a uniform organisational identity. Stakeholder identification is common to marketing and OS, however from the marketing perspective customers and channel members are the key stakeholders (Powell, 2011).

Sustainability entrepreneurship refers to businesses adopting innovations with environmental or social benefits, often driven by values or causes linked to the entrepreneur. Businesses built onto sustainability values from the initial stages are distinguished from those establishing an environment business branch due to opportunity discovery, providing different insights on the needs to transition to OS (Levinsohn, 2013).

The bias in OS studies towards the environment is also relevant in sustainability entrepreneurship research (Levinsohn, 2013), reinforcing the importance of EM research. Schuler et al. (2017) points EM as one of the organisational areas of CS management, emphasising two major lines of research: the relationship between environmental performance and financial performance; and the ways to minimise environmental impacts.

The former focus on efficiency improvements through lean manufacturing and waste reduction, innovation, risk reduction and dealing with stakeholders needs; while the latter studies the effects of regulation, self-regulation (e.g., ISO 14001 standard) and environmental ratings and rankings. An alternative line of research explores the time dimension in environmental changes (short vs long term).

Organisational and other social systems change towards sustainability is the main focus of Transitions Management research, by interlinking systems and governance theories. Business strategies, innovation and the governance of processes assume a key role in the transition towards sustainability (Chang et al., 2017; Levinsohn, 2013). A popular approach in the field of research is the Multi-Level Perspective developed by Geels and Schot (2007), by providing typologies of transition of the socio technical system. The transition results from a non-linear process resulting from the interconnections between three levels: niches, socio-technical regimes, and a socio-technical landscape (Chang et al., 2017).

As a complex and holistic concept, OS draws from diverse theories the needed foundation to conceptualise its main elements (Montiel and Delgado-Ceballos, 2014; Muhammad et al., 2011). Stakeholder theory, institutional theory and Resource-Based View (RBV) are traditionally associated to OS research (Montiel and Delgado-Ceballos, 2014); however other theories are mentioned in literature, as co-evolution, contingency, organisational, motivation, internationalisation, control and market, lean manufacturing, multi-level perspective, environmentalism and sustaincentrism (Chang et al., 2017; Kang and Lee, 2016; Montiel, 2008; Montiel and Delgado-Ceballos, 2014; Schuler et al., 2017; Searcy, 2011). As an example, co-evolution theory classifies companies and environments as co-evolving systems in the transition to OS (Chang et al., 2017). The next subsections focus on the contributions of traditional organisational theories to OS research.

2.3.1.1| Stakeholder theory

Stakeholder theory was developed by Freeman in 1984 and is fundamental in OS research (Jones et al., 2016b; Montiel, 2008; Searcy, 2012). Its main argument reinforces stakeholders importance at a strategic level due to their role in the organisation's survival (Chang et al., 2017; Freeman, 1984; Montiel and Delgado-Ceballos, 2014). All types of

stakeholders should be considered: the traditional (e.g., suppliers, customers and employees) or others as governments, non-governmental organisations (NGOs) and local communities (Chang et al., 2017). This approach diverges from the traditional shareholder supremacy, accountable for the exploitation of market failures in order to achieve short-term profitability, despite social and environmental impacts (Kudłak and Low, 2015).

Primary and secondary stakeholders have different levels of influence in organisations, and therefore different strategies may be required to each of them (Chang et al., 2017; Muhammad et al., 2011; Searcy, 2011). As an example, stakeholders' expectations on an effective transition to OS might motivate the inclusion of sustainability in the organisational strategy (Engert et al., 2016; Kang and Lee, 2016).

Stakeholders legitimacy, urgency and power are dynamic variables influencing the priority level of sustainability issues (Muhammad et al., 2011). Monitoring this variation in time inform the sustainability performance measurement system (Searcy, 2011).

Effective communication with stakeholders promotes vertical and horizontal integration of OS, through the interaction among different stakeholders, the development of competences and knowledge and the establishment of continuous improvement (Muhammad et al., 2011). Stakeholder engagement in the definition of the organisational strategy supports the achievement of long-term goals and the creation of shared value through sponsorships, strategic partnerships and research cooperation (Engert et al., 2016).

Despite the recognised benefits, stakeholders' identification and engagement are costly and time demanding tasks, not always fully supported by top management with human and financial resources. These limitations can compromise the process by the application of stakeholders' involvement formats that are not aligned with the vision, strategy and core competences of the organisation (Engert et al., 2016).

2.3.1.2| Triple Bottom Line

The Triple Bottom Line (TBL) if often pointed as the operationalisation of OS since it requires the evaluation of the economic, social and environmental performance in the organisation (Chang et al., 2017; Engert et al., 2016; Muhammad et al., 2011; Siew, 2015). The balance of these three dimensions leads to the achievement of sustainability and social

responsibility in the long-term (Goyal et al., 2013; Montiel, 2008). Shell developed the 3 Ps terminology (profit, planet and people), often associated to TBL in literature (Levinsohn, 2013; Montiel and Delgado-Ceballos, 2014).

TBL is criticised because promotes a utilitarian and anthropocentric implementation of sustainability, allowing organisations to maintain a profit-oriented format (Chang et al., 2017; Schuler et al., 2017).

2.3.1.3| Institutional theory

Institutional theory explains how sustainability and the associated practices spread among organisations and were accepted as common practice (Kang and Lee, 2016; Montiel and Delgado-Ceballos, 2014). Similar coercive forces on organisations lead to the implementation of also similar sustainability practices (Kang and Lee, 2016). This is also a way that organisations found to legitimise their activities, particularly on foreign countries (Montiel and Delgado-Ceballos, 2014). In these specific cases, the question debated in literature is whether sustainability practices adopted by Multi-National Corporations (MNCs) abroad are driven by the replication of the global organisational strategy or if MNCs tend to transfer non sustainable practices to the foreign units (Kudłak and Low, 2015; Montiel and Delgado-Ceballos, 2014).

2.3.1.4| Resource-Based View

The RBV refers to the internal resources of an organisation as a source of intangible assets, providing the organisation a unique culture and format. Unique characteristics and intangible assets prevent replication and consequently guarantees competitive advantage and long-term performance. Thus, RBV theory relies on the relationships between resources, capabilities, competitive advantage and performance (Kang and Lee, 2016). Since the internal resources and capabilities are the main factor of success, they affect strategic decisions (Engert et al., 2016).

Derived theories emerged from RBV, such as knowledge-based-view, capability-based-view and the most popular among them, the Natural Resource-Based View (NRBV)

(Engert et al., 2016; Montiel and Delgado-Ceballos, 2014). Sustainability competences depend on organisational capabilities, in special dynamic capabilities (Kang and Lee, 2016; Kudłak and Low, 2015). Sustainable development is one of the key strategic capabilities of the NRBV, along with pollution prevention and product stewardship, to achieve superior social and environmental performance (Montiel and Delgado-Ceballos, 2014; Schuler et al., 2017). This key strategic capability evolved into two research lines: clean technology and base of the pyramid strategies (Montiel and Delgado-Ceballos, 2014).

2.3.2| Conceptual definition of Corporate and Organisational Sustainability

How organisations conceptualise sustainability influences the identification and contextualisation of problems, as well as solutions (Schuler et al., 2017). OS, CS and CSR are popular conceptualisations of sustainability in organisations. The overlapping between CS and CSR is debated in literature, since some authors argue that the concepts are interchangeable, while others focus on the differences between them (Chang et al., 2017; Kourula et al., 2017; Montiel, 2008).

CSR emerged from the proactive organisational approach towards environmental and social issues, firstly embedded in management literature and focused on the role of organisations as social agents, and then evolved into a specialised line of research more oriented towards the study of ethics and internal organisational mechanism, among others (Kudłak and Low, 2015; Montiel, 2008).

From a CSR perspective, the environment and local communities are legitimate stakeholders, essential for the survival of the organisation and consequently worthy of attention in the long-term (Chang et al., 2017; Schuler et al., 2017). Wider boundaries are criticised since this approach contradicts the traditional shareholders primacy (Chang et al., 2017); however, an economic approach to CSR allows organisations to prioritise value creation to shareholders, by limiting their responsibilities on the society and the environment only to those situations where shared value is possible. In this context, organisations only adopt CSR activities that aim to improve their competitiveness through value chain efficiency improvements or an enhanced market position (Schuler et al., 2017).

CS has its roots in the sustainable development concept and lacks a universal definition. Nevertheless, the recognition of the importance of stakeholders needs and the balance between social, environmental and economic performance in the long-term are common to most definitions (Chang et al., 2017; Montiel and Delgado-Ceballos, 2014).

TBL is often associated with CS (Chang et al., 2017), despite in some literature the conceptualisation of CS is focused only on two (social and environmental) or one (environmental) dimensions of sustainability (Montiel, 2008; Montiel and Delgado-Ceballos, 2014). Scholars define CS more from a holistic, complex and philosophical perspective, while practitioners are focused on providing guidance (Montiel and Delgado-Ceballos, 2014).

From an initial risk-based compliance, CS becomes complex and an alternative to the traditional business models (Jones et al., 2016a). This shift was promoted by increasingly stricter environmental regulations, costly and scarce natural resources, stakeholder influence in organisational investments and a growth in media coverage of sustainability related issues and actions (Jones et al., 2016b).

Sustainable business models represent a possibility to achieve competitive advantage, through the improvement of products or services (Chang et al., 2017), since traditional business models fail to integrate sustainability at an operation level (Nawaz and Koç, 2018). Sustainability reporting became a mainstream practice as a source of competitive advantage (Chang et al., 2017; Jones et al., 2016b), although this exposes the critical challenge of combining profit making with extended sustainability objectives (Chang et al., 2017).

CS and CSR main differences are: i) the origin of the concepts (CSR in the 1970s and CS in 1990s with the publication in 1987 of the Brundtland report); ii) research approaches on the economic, social and environmental dimensions; iii) interconnection between all the dimensions; iv) conceptualisation of the economic dimension; v) instrumental vs intrinsic value of the environment. Despite the differences, the concepts have been converging and from an operational perspective are interchangeable (Montiel, 2008), providing a definition to sustainability in organisations, as well as operational tips on the transition to OS (Chang et al., 2017).

2.3.3| Sustainability dynamics

Time is an embedded variable of sustainability, considering the necessity to address the needs of the present and future generations, continuously interacting with multiple stakeholders (with variable legitimacy, urgency and power), constant innovation and an increasing complex business environment. Dealing with sustainability dynamics requires the development of organisational capabilities and knowledge (Muhammad et al. 2011; Searcy 2011), as well as a culture of organisational learning to address constant change (Nawaz and Koç 2018).

The dynamic nature of sustainability has implications at the multiple levels of organisational management, from the strategic planning to the evaluation of performance. A cyclical and systematic approach guarantees the flexibility and adaptive skills within organisations, as the example on the evaluation of performance provided by Searcy (2011), through the creation of a framework based on an iterative process.

2.3.3.1| Innovation

The transition towards OS requires not only the improvement of existing capabilities, but also innovation and organisational learning (Nawaz and Koç, 2018). Employees' experiences and skills influence the integration of new knowledge into organisational processes, leading to innovation and increasing organisational resilience by providing the capabilities to address emerging challenges (Muhammad et al., 2011).

Another path towards sustainability innovations is the business model adopted by the organisation (Chang et al., 2017). Sustainability entrepreneurship can be defined as the individual or organisational capability to keep innovating and commercialise these innovations. At an organisational level, innovations vary on degree (incremental or radical innovation) and focus (social or technical), being influenced by diverse factors, such as size (Amui et al., 2017; Levinsohn, 2013).

Large and Small and Medium Enterprises (SMEs) play a complementary role in the innovation process, since SMEs have an advantage in the development of innovations (due to a more flexible structure and business model and different competitive pressures), while

large companies have the resources to commercialise sustainable innovations (Levinsohn, 2013).

Despite the conditioning factors, both technical (process and product) and social innovation contribute to the achievement of strategic advantages, by promoting the inclusion of sustainability and stakeholders' interests in the core strategy. Summarising, innovation promotes the transition of organisations towards sustainability, and the integration of sustainability in the core organisational strategy supports continuously innovation (Engert et al., 2016).

2.3.4| Stakeholders and global governance

The globalisation of economic activities has led to the internationalisation of local value chains and to an increase in the volume and velocity of international trade and investment. Such evolution caused a new balance in global governance, where companies gained power over national states, but not always accommodated the associated responsibilities (Kourula et al., 2017; Kudłak and Low, 2015).

In this context, governmental approaches became insufficient to address environmental and social issues, while companies adopted an active role in the creation and redesign of institutional order (Kourula et al., 2017; Kudłak and Low, 2015). This shift of power propelled two lines of research: one oriented to the study of the role of enterprises as social agents leading change in society and the other focused on the integration of responsibility values in organisational structure and functions, where can be included in the study of sustainability in organisations (Kudłak and Low, 2015).

Corporate Political Activity is an approach adopted in the study of the politicisation of companies, in which the main concern is how organisations maximize their influence over government to create policies that would benefit them (Kudłak and Low, 2015; Schuler et al., 2017). However, business is a heterogeneous group and not all the organisations are able to afford the costs of influencing the public policy process, producing a biased influence in the government policy-making process (Schuler et al., 2017).

Companies are able to influence the live of citizens (mostly large companies) and becoming social agents, their engagement in the development of solutions to the social and

environmental problems caused by their activities has been raising (Chang et al., 2017; Kudłak and Low, 2015). Considering this demand, organisations adopted mainly four types of strategies: reaction, defence, accommodation and proactivity (Chang et al., 2017). Nevertheless, is not clear if responsible organisational behaviour produces effective positive impacts in the society and environment, since the increased power of companies allowed them to self-regulate their activities, avoiding governmental supervision (Kudłak and Low, 2015).

In these cases, NGOs appear as providers of supervision and alternative forms of regulation to fill the voids of legislation, either national or international (Kudłak and Low, 2015). This is especially relevant in cases where companies move their socially irresponsible behaviour to foreign units, which is mostly the case of MNCs (Montiel and Delgado-Ceballos, 2014).

MNCs constitute a popular example of organisational irresponsibility in literature, explained in detail in Kudłak and Low (2015). Some of these companies re-located their activities in developing countries, looking for cheap labour, weak governance structures and local natural resources, in order to improve their profit. Despite the potential to act as relevant development agents in these countries in collaboration with NGOs and national governments, some MNCs are often associated to the worsening of social and environmental problems, such as political corruption and environmental degradation. As a result of local stakeholders' pressure or to replicate the global trend to look for sustainability, MNCs implemented sustainability measures in local communities in health care, education, human rights and environment, among others. However, these efforts have mostly failed to cause positive effects, since the measures adopted are in most cases displaced from the local reality, focused on the improvement of the corporate image and paternalist.

Thus, despite the potential for positive impacts, the shift of MNCs' manufacturing sites to developing countries have increased the gap between the prosperity of developed countries and the poverty of developing countries, reinforcing the negative effects of globalisation and leading environmental movements to encourage local value chains or the effective engagement of local communities (Levinsohn, 2013; Schuler et al., 2017). Another possible approach is the development of performance evaluation systems (such as indicators) to the whole supply chain (Searcy, 2012).

2.4 | SUSTAINABILITY MANAGEMENT IN ORGANISATIONS

Transitioning to sustainability requires a high effort from organisations, since the concept itself is complex, holistic and consequently difficult to grasp. Another difficulty is the continuous change in the environmental, social and economic aspects in which the organisation must focus and the need to adapt sustainability initiatives to local conditions and characteristics. This variability can be attributed to three main reasons: the influence of internal and external factors in organisational resources; the change in legitimacy, power and urgency of stakeholders; and the increase of the complexity of business (Muhammad et al., 2011; Searcy, 2012).

Thus, performing a transition towards sustainability is a high effort task for organisations. To be effectively successful they are required to introduce significant changes in the organisational structure and functions (Kudłak and Low, 2015; Searcy, 2012). In most cases, the efforts to transitioning are supported by voluntary initiatives of self-regulation, which is the case of the implementation of management systems. The obstacles faced by organisations are driven by diverse factors, such as lack of education and training and difficulties in finding the way to integrate sustainability in organisational activities (Searcy, 2012).

2.4.1| Strategic level

The integration of sustainability values at a strategic level allows organisations to change from a reactive to a proactive approach to sustainability. The proactive approach presuppose that organisations go beyond environmental and social legal compliance and actively seek innovative solutions to improve products and organisational processes by sustainability criteria. As a result, organisations with a proactive approach towards sustainability have increased competitive advantage in relation to those that are reactive and do not integrate sustainability issues at a strategic level (Kang and Lee, 2016).

Three factors are relevant in the integration of sustainability at a strategic level: manager attitudes and perceptions of sustainability, organisational culture and the need for more investments. Organisational culture refers to a group of assumptions that the members

of an organisation share and influence their thinking and actions and when transitioning towards sustainability, its values must be embedded in the organisational culture in order to be successful. Organisational learning is a possible vehicle of change of organisational culture (Engert et al., 2016).

To monitor the effectiveness of sustainability integration and the results obtained at other levels, performance variables must be considered, such as environmental and financial performance (Kang and Lee, 2016).

2.4.2| Tactical level

At the management level, developing and maintaining a sustainability orientation represents a challenge to organisations, since a structural change in internal organisational attributes and functions is required (Kudłak and Low, 2015). However, sustainability activities are a source of added value and in most cases also of cost reduction, contributing to the competitive advantage of organisations involved in the transition (Engert et al., 2016). In order to maintain the sustainability orientation in the long-term, organisations must consider the following factors: the perception of managers on the legitimacy of sustainability models, partnerships with diverse sectors, research and development and internationalisation (Kudłak and Low, 2015).

The integration of sustainability in organisations also requires financial efforts in its initial stage, specifically in new technologies, certifications, communication and marketing and human resources. Consequently, the transition must be mostly supported by top management, since commonly the middle management tends to reproduce top management attitudes and behaviours (Engert et al., 2016).

The change process requires strong leadership, thus attitudes, perceptions and the behaviour of the manager responsible to lead the organisation in the transition towards sustainability is relevant. Stakeholder involvement is another essential factor in the organisational change (Engert et al., 2016; Nawaz and Koç, 2018).

2.4.3| Operational level

At an operational level, the transition towards sustainability, requires organisations to introduce significant modifications in organisational processes, such as communication and the management of human resources. For example, the involvement of employees is crucial in the integration of sustainability in processes therefore, the internal communication must guarantee transparency and that employees are aware and fully understand the organisational sustainability goals, strategies and measures (Engert et al., 2016; Powell, 2011). The change in organisational processes is also dependent on the employees' experiences, skills, knowledge and availability to learn (Muhammad et al., 2011), leading to the development of new organisational capabilities and innovation (Powell, 2011). Employees' engagement is a key element in OS, thus understanding employees values and perceptions on sustainability is essential to align organisational and employees' ethics. A possible approach is employees' empowerment in OS activities (Powell, 2011).

Kudłak and Low (2015) reinforces the trend to focus the study of sustainability integration in organisations on human resources issues, such as employees' well-being, job satisfaction and the development and maintenance of a responsibility culture in organisations. Labour ethical problems also are relevant in the transition to sustainability itself, such as working hours, work intensification and addiction. Also, the relations between managers and employees influence the success of sustainability integration.

Management control and the selection of performance indicators that are complementary and consistent with the conventional management tools is another key issue in the management of OS (Engert et al., 2016).

2.4.4| Performance measurement and tools

Organisational sustainability performance is a dynamic concept that requires measurement, including both the internal and external factors promoting the system change. Therefore, a sustainability performance evaluation system must be balanced and take into consideration the singular characteristics and conditions of the organisation, include stakeholders' involvement and provide an effective feedback how to address sustainability in the organisation, including its long-term approach (Searcy, 2011).

Multiple reasons motivate organisations to develop a performance measurement system, such as the evaluation of the progress achieved considering defined goals, informing the decision-making process at a strategic and tactical level and enhance relationships with stakeholders (Searcy, 2011).

How organisations design and implement the evaluation system is a recurrent issue analysed in literature, focusing on the development, selection criteria and design processes and how to use data in the evaluation systems. However, the relation between the development and implementation effectiveness of the evaluation system is still a gap in literature, as well as cumulative impacts assessment interlinked with the long-term perspective of sustainability (Searcy, 2012).

The performance evaluation system itself must be assessed to allow constant updates, to ensure the cohesion of the system and the consideration of changes in stakeholders' legitimacy, power and urgency. The organisation should consider the possibility of benchmarking with other organisations from the same sector, as well as if the assessment should be conducted internally or externally. Three levels of the system should be included in the assessment: individual measures, the whole system and the relation between the system and the operating environment (Searcy, 2011).

Using performance indicators associated with Environmental Management Systems (EMS), sustainability targets or sustainability reporting allows organisations to avoid that indicators became an administrative burden (Searcy, 2012). Management systems provide a framework for organisations to manage their sustainability issues and stakeholders demand in a systematic way (Muhammad et al., 2011), while sustainability reporting aims to measure organisational performance in the sustainability field, by including a social, economic and environmental assessment (Siew, 2015).

Summarising, a wide range of tools is available for organisations that aim to measure sustainability performance. The diversity of tools makes more difficult the comparison between organisations, however allow organisations to select the tools that better suit their goals and strategic vision of sustainability. Simplifying, sustainability tools can be divided into three categories: frameworks, standards and ratings and indices (Siew, 2015).

The Global Reporting Initiative (GRI) constitutes a framework of sustainability performance assessment, providing guidance to organisations and enabling comparison through the standardisation of reports (Chang et al., 2017; Montiel and Delgado-Ceballos, 2014). GRI suggests the division of sustainability into three pillars: in the economic pillar are included indirect impacts but not corporate governance; the social dimension is mostly focused on human rights and the impacts on society; the environmental component is exhaustive, including the diverse thematic areas, such as biodiversity, water, energy, transports and environmental compliance (Montiel and Delgado-Ceballos, 2014). Nevertheless, GRI guidelines do not assure continuous performance improvement, focusing on the management dimension and possibly leading to a false sense of evolution (Siew, 2015).

Diverse standards on management systems are available to organisations, such as ISO 14001 and EMAS. Both are popular standards to address the environmental dimension of sustainability (Montiel and Delgado-Ceballos, 2014; Siew, 2015), however Muhammad et al. (2011) argues that Integrated Management Systems (IMS) provide a potential framework for the integration of sustainability in organisations. Each individual management system allows to fill the needs of different stakeholders and when integrated under a sustainability approach provide a governance structure to promote the transition. From another perspective, Nawaz and Koç (2018) emphasises the voids in IMS left by the differences in design and scope of each management system and provides a sustainability management system developed as a whole.

The Dow Jones Sustainable Index (DJSI) is an example of an index commonly used in literature to identify sustainability frontrunners and in the study of the relationship between firms performance and sustainability. Organisations are selected to the DJSI based on a frontrunner approach, since only the organisations with best results in long-term economic, environmental and social criteria are included in the index. DJSI is also based on the three sustainability pillars: corporate governance is considered in the economic dimension; the social component is focused on employees' attraction and evolution, stakeholders engagement and reporting of social matter; and the environmental pillar includes product stewardship, despite not considering compliance (Montiel and Delgado-Ceballos, 2014).

Notwithstanding, the positive aspects described in the application of these tools, corporate and organisational sustainability are also debated in literature as ways to decrease

stakeholders pressure, without performing a real effort in the transition towards sustainability (Clapp, 2005; Siew, 2015). Stakeholders pressure often lead organisations to report scarce and limited sustainability information, since non-existent reporting would create a greater competitiveness loss than having a non-effective reporting system (Cho et al., 2015).

2.5 | CONCEPTUAL FRAMEWORK ON OS

Sustainability is from definition a complex, holistic and dynamic concept and these characteristics revealed to be obstacles to a universal definition. Researchers agree that each organisation needs to define its vision of sustainability, since there is not a model able to fit all (Nawaz and Koç, 2018; Porter, 2008; Salzmann et al., 2005). Also, the existent definitions of OS rely mostly on the perspective of the most developed countries, leaving behind those in transition or less developed. Finding native definitions of sustainability that fit local realities represents still a challenge in OS research (Goyal et al., 2013; Kourula et al., 2017; Levinsohn, 2013).

Another key challenge emerging from literature is the need to find solutions on how to promote the transition of organisations towards sustainability. These would require organisations either to reduce complexity or to find new ways to deal with it. In this context, researchers identified a trend to a more holistic approach to sustainability, instead of the traditional approaches focused on most cases only on one or two dimensions of sustainability (Chang et al., 2017; Engert et al., 2016; Goyal et al., 2013).

Despite the general acknowledgement of the dynamic nature of sustainability, most OS tools are mostly compliance tools and consequently static. Integrating dynamics into the main concepts and tools of OS would be a challenge that organisations transitioning to sustainability must face (Muhammad et al., 2011; Schuler et al., 2017; Searcy, 2012, 2011).

The continuous change in stakeholder demand requires organisations to keep adapting to emerging and new situations, reinforcing the need for a dynamic approach in stakeholder engagement (Chang et al., 2017; Engert et al., 2016; Jones et al., 2016b). Though employees are consensual key stakeholders, literature fails to provide accurate guidance on how to involve employees effectively on the transition. Employees are the cornerstone in the

change of organisational culture and thus critical to integrate at an operational level sustainability in organisations (Powell, 2011).

Organisational learning is pointed as a key element in the transition towards sustainability, since the capacity to adapt to permanent changeable conditions relies on the organisational capability to keep learning and adapting. In this context, innovation plays a relevant role still lacking clarification and deepen knowledge (Engert et al., 2016).

Figure 2.3 summarises the key emerging challenges of sustainability in organisations in a conceptual framework. The first challenge in OS transition research is how to support organisations in the building of a shared sustainability vision. The organisational setting allowing the achievement of the envisioned organisational state requires the cascading down of sustainability from management to daily operations. In this process, organisational learning and innovation are key elements, as well as the development of dynamic capabilities (Amui et al., 2017). These are also key organisational elements in addressing stakeholders demand from an innovative approach (Zollo et al., 2016), reinforcing the need of more innovation both at a technological and a managerial level, to find new transitioning solutions (Almeida and Melo, 2017; Amui et al., 2017). After all, the main goal is to support organisations to fill the gap between their intentions and effective sustainability performance (Porter, 2008).

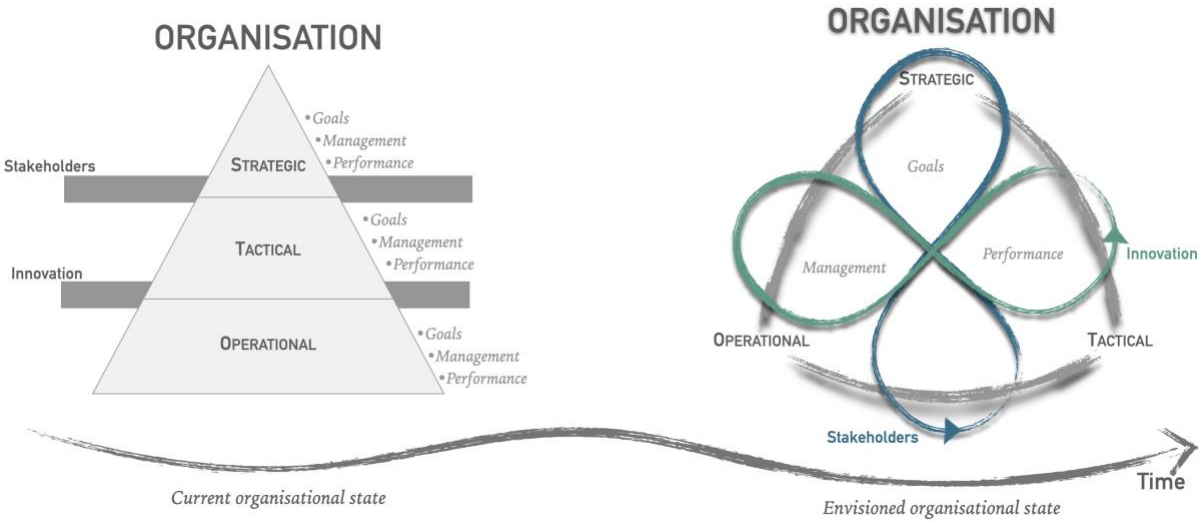

Figure 2.3 - Conceptual framework on Organisational Sustainability

2.6 | CONCLUSION

The main goal of the current study was to identify the key emerging challenges in the transition of organisations towards sustainability. In order to achieve this goal a meta-review of literature reviews was performed focusing on OS and CS, which provided the theoretical background to build a conceptual framework. The conceptual framework constitutes a contribution to literature and future research development, since it allows to identify which are the main research pathways to follow.

The first emergent issue is the very process of defining the concept of sustainability adopted by each organisation and the theoretical background from which it draws to implement its strategy. Sustainability is a value-laden concept and consequently each organisation should be able to define sustainability in relation to its organisational reality. This definition will then affect the pathway selected by the organisation to transition towards sustainability by conditioning stakeholder engagement, strategic management, innovation and performance assessment tools. Developing innovative tools that support organisations in the creation of a shared vision of sustainability and the following change in processes is another emerging topic in this field of research.

Yet another challenge faced by organisations and researchers is how to perform this transition from an integrated perspective, considering both the dimensions of sustainability and a wide concept of organisation, where stakeholders take primacy. This would imply that organisations maintain a holistic definition of sustainability, while integrating and streamlining methods in the change process.

Finally, the long-term perspective underlying sustainability emerges as a key challenge due to the difficulty of guaranteeing a dynamic approach at multiple levels. First of all, is relevant to consider the dynamic of the sustainability concept itself, as well as in the organisation's evolution since constant change is happening both internally and externally. Furthermore, stakeholders' engagement has mostly been studied from a static perspective. However, stakeholder demand is highly dynamic and requires improved and innovative process to take this characteristic into consideration. From a more internal perspective, innovation in the organisation is a key aspect in its evolution, promoting learning and allowing the organisation to explore its capabilities from a dynamic perspective.

Providing organisations support in the transition to sustainability, while considering all the aforementioned issues represents a great challenge. Also, the methods for the transition must be flexible and dynamic, by acknowledging that it is not possible to adopt a unique solution that fits all organisations. Instead, organisations are summoned to develop innovative capabilities to adapt and perform a transition towards a desired sustainability vision.

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3| SCREENING SUSTAINABILITY-ORIENTED BUSINESSES

3.1 | INTRODUCTION

Sustainability has emerged in the international agenda as an answer to global and systemic problems, such as climate change and biodiversity decline (Falkner, 2003). Nowadays, sustainability principles have been adopted as major guidelines to societal development through the definition of the United Nations (UN) Sustainable Development Goals (SDGs). The SDGs allow to frame and organise action around these global problems by defining specific goals and targets to achieve by 2030, providing a development direction for society (United Nations, 2015).

Within this global framework for sustainability, organisations are identified as key players and accountable for the impacts on the environment and society derived from their activities (Brones et al., 2017). Corporate Sustainability (CS) and Corporate Social Responsibility (CSR) are among the most popular approaches adopted by organisations to integrate sustainability into their daily activities. They often lead to the implementation of practices that reduce negative environmental impacts and increase the creation of value to society (Chang et al., 2017). Multiple frameworks, standards, certifications and tools were developed to support organisations in the implementation of CS and CSR (Ransburg and Vágási, 2007), providing also multiple views on sustainability.

While these approaches focus essentially on the efforts of individual companies, businesses can also approach sustainability transitions from a network and systems perspective (Loorbach et al., 2010). Evolving the application of CS and CSR to systemic change in a business context requires companies to plan their activities at a strategic level (Loorbach et al., 2010; Loorbach and Wijsman, 2013). A possible approach is the use of transition management tools and methods as guidance to incorporate disruptive innovation projects along with daily operation (Loorbach and Wijsman, 2013).

The strategies adopted by firms in relation to sustainability transitions are varied and range from supporting to delaying or preventing the transition (Turnheim and Sovacool, 2020; van Mossel et al., 2018). van Mossel et al. (2018) identified four types of behaviour modes adopted by businesses: 1) first to enter niches; 2) follow in niches; 3) remain inert; and, 4) delay or prevent the transition. These behaviour modes are not mutually exclusive or static over time since businesses may shift their strategic positioning during the transition (Turnheim and Sovacool, 2020; van Mossel et al., 2018). In this context, business sustainability strategies emerge as key elements to trigger and guide a deep internal, as well as wider, change towards sustainability (Baumgartner and Rauter, 2017).

Most literature on strategic management for sustainability focus either on theoretical approaches or on particular case studies (Kitsios et al., 2020). Thus, the need to develop further empirical research emerges, to improve understanding on how organisations create their sustainability strategies and effectively integrate sustainability on strategic management (Engert et al., 2016; Neugebauer et al., 2016).

The current study adopts an exploratory approach to uncover how are businesses currently creating their strategies. Thus, its main goal is the characterisation of strategic planning processes developed by businesses transitioning to sustainability. This characterisation relies on a diagnostic mapping exercise, focusing on identifying the methods and tools used by businesses in the creation of their sustainability strategies. The results of this exploratory study will be analysed under the lens of weak and strong sustainability paradigms, as well as sustainability transition research. These research areas provide the scientific background to reflect on possible improvement opportunities.

The chapter is structured as follows: section 3.2 provides an overview of the theoretical background on sustainability strategic planning and management; section 3.3 summarises the methods applied to collect and analyse the information on how organisations are developing their sustainability strategies; section 3.4 describes key results in detail; section 3.5 presents a discussion on the results obtained in the light of existing literature; section 3.6 summarises key conclusions and further research pathways.

3.2 | STRATEGIC PLANNING APPROACHES FOR CORPORATE SUSTAINABILITY

Corporate strategies aim at defining the business positioning in relation to its involving environment by gathering core information to guide business activities, such as long-term direction, strategic issues, markets, customer needs, resources and competitive advantage (Galbreath, 2009; Porter, 1996). Therefore, sustainability strategies are key elements to trigger and guide a deep change towards sustainability within the business environment (Baumgartner and Rauter, 2017).

The sustainability strategy development process may be classified in a spectrum between planned or emergent; and in most cases, organisations adopt a mixed approach (Hanke and Stark, 2009; Neugebauer et al., 2016). Regardless of its planned or emergent nature, strategy creation is a process based on learning that includes formal (e.g., programs, products, structure, system) and informal (e.g., culture, vision, position, people) elements (Hanke and Stark, 2009).

Each organisation has its own unique approach to integrate sustainability goals. Motivations and drivers behind this decision play a relevant role in shaping the strategic planning process (Hanke and Stark, 2009). According to Hanke and Stark (2009) four types of strategies may be identified: 1) management system strategy (legitimation within the organisational system) with a focus on formal implementation, bureaucracy and controlling system; 2) accountability strategy (legitimation in the organisational environment) refers to improved image and reputation through imitation, often without structural change; 3) leadership/commitment strategy (sensemaking within the organisational system) implies negotiation between the internal stakeholders, such as employees and management to create motivation; 4) intersectoral alliances strategy (sensemaking in the organisational environment) is cornerstone to social innovation, through negotiation and collaboration between multiple external stakeholders.

Despite the creation of the profiles mentioned above, Hanke and Stark (2009) acknowledge that organisations may exhibit characteristics from multiple profiles. This is echoed by Baumgartner and Ebner (2010). These authors identified sets of criteria to evaluate three dimensions of sustainability (economic, ecological and social) supporting four profiles of corporate sustainability strategies, which reflect four different levels of maturity: 1)

introverted profile relies on a risk mitigation strategy, built on the compliance to legal and external standards to reduce risks; 2) *extroverted profile* builds on a legitimating strategy, through a focus on external relationships; 3) *conservative profile* is based efficiency strategy by focusing on eco-efficiency and cleaner production; 4) *visionary profile* comprises an holistic sustainability strategy, where sustainability is widespread in all business activities and differentiation and innovation are sources of competitive advantage.

Beside the characterisation of business strategic positioning, studies also propose methods and tools to support organisations in the creation of their sustainability strategies. Among these methods, one of the most popular is the Framework for Strategic Sustainable Development (FSSD) developed in Broman and Robèrt (2017) and Robèrt (2009). This framework builds on a set of core sustainability principles and on a systematic backcasting planning method, which is described in detail in Broman and Robèrt (2017). Literature also focuses on the possible synergies between the FSSD and other tools and approaches, such as the Business Model Canvas (França et al., 2017) and the planetary boundaries (Robèrt et al., 2013). The implementation of the FSSD requires organisations to develop capabilities to support the conceptualisation and operationalisation of a sustainability strategy, such as co-production and involvement in pragmatic experimentation, respectively (Kurucz et al., 2017).

Besides the studies developed on the FSSD, other methods and approaches have been explored, as the example of León-Soriano et al. (2010), proposing a method to develop a sustainability strategic planning process using sustainable balanced scorecard and information systems. Also focusing on the importance of organisational capabilities to the strategic planning process, Papagiannakis et al. (2014) suggest that organisational capabilities as environmental innovation, stakeholder integration and high-order learning contribute to more ambitious goals, representing enabling factors for an improved sustainability strategy. This study also emphasises the importance of continuous improvement cycles (feedback) to support the integration of the sustainability strategy into higher levels of the company's core business capabilities, such as product innovation.

The integration of sustainability at the core of the business is a key factor for a successful formulation and implementation of a sustainability strategy (Engert and Baumgartner, 2016; Papagiannakis et al., 2014). However, other success factors have been

identified to bridge the gap between formulation and operationalisation, such as organisational structure and culture, leadership, management control, employee motivation and qualifications and communication (Engert and Baumgartner, 2016).

Across these studies, some critical factors to the process of creation and operationalisation of sustainability strategies are highlighted, such as stakeholder involvement, innovation integration and long-term thinking (Broman and Robèrt, 2017; Engert et al., 2016; Papagiannakis et al., 2014). These are also key enabling factors identified by Tourais and Videira (2019) to achieve organisational sustainability, along with the definition of sustainability in the organisational context. How a company defines sustainability affects the pathways adopted by the organisation to transition towards sustainability (Tourais and Videira, 2019).

Building on ecological economics research, the definition of sustainability may be anchored in two major paradigms: weak and strong sustainability (Healy et al., 2013). Weak and strong sustainability approaches differ on the assumption on substitutability between different types of capital stocks: a weak sustainability perspective focuses on the maintenance of the total capital stock, regardless of the weight of each stock type (manufactured, human, social and natural); while a strong sustainability approach focus on the maintenance of each type of capital stock, assuming that natural and human made capital are complementary instead of perfect substitutes (Healy et al., 2013; Neumayer, 2013).

From an organisational point of view, weak sustainability may, for instance, translate into placing a focus on production quality and the adoption of efficiency measures; while strong sustainability recognises the need for assessing a reduction in the volume of products and services, considering the availability of limited natural resources, through the adoption of sufficiency approaches (Heikkurinen et al., 2019). So-called 'strong sustainable business' concepts require a redefinition of corporate profitability along with business success, anchored on sustainability goals instead of the traditional profit maximisation paradigm (Upward and Jones, 2016; Vatn, 2020; Vildåsen et al., 2017).

Many organisations have built their sustainability strategies on a weak sustainability perspective (Heikkurinen et al., 2019), failing to fully integrate sustainability into their core business and effectively transition towards sustainability (Porter, 2008). However, new approaches based on stronger perspectives of sustainability, such as sufficiency and degrowth

are surfacing (Bocken et al., 2020; Harangozo et al., 2018; Nesterova, 2020). This is the case of sufficiency-based business model innovations which aim to avoid overconsumption, reduce the use of resources and reuse products over time and by multiple people. One example of this type of innovation is the increasing trend to provide services instead of product ownership, which sets the ground for an extended product life, avoiding obsolescence and enabling repairability and upgrading (Bocken and Short, 2016).

Building on the theoretical background presented, become relevant to collect the perceptions from a group of organisations, from a specific sector and country, on strategic planning processes for sustainability, regarding strategic profiles, frameworks, methods and tools applied.

3.3 | METHODS

A four-step methodological approach was designed to collect insights on how organisations design their sustainability strategies (Figure 3.1). The first step aimed at defining the scope of the study, namely through the identification of criteria to select a sample of participant organisations. The second step comprised information collection through a set of interviews with representatives from organisations included in the sample. In the third step, results obtained in the interviews were analysed through an inductive reasoning approach. In the final step, the results obtained were discussed and validated under the light of existing literature on the topic to identify existing theoretical and practical gaps.

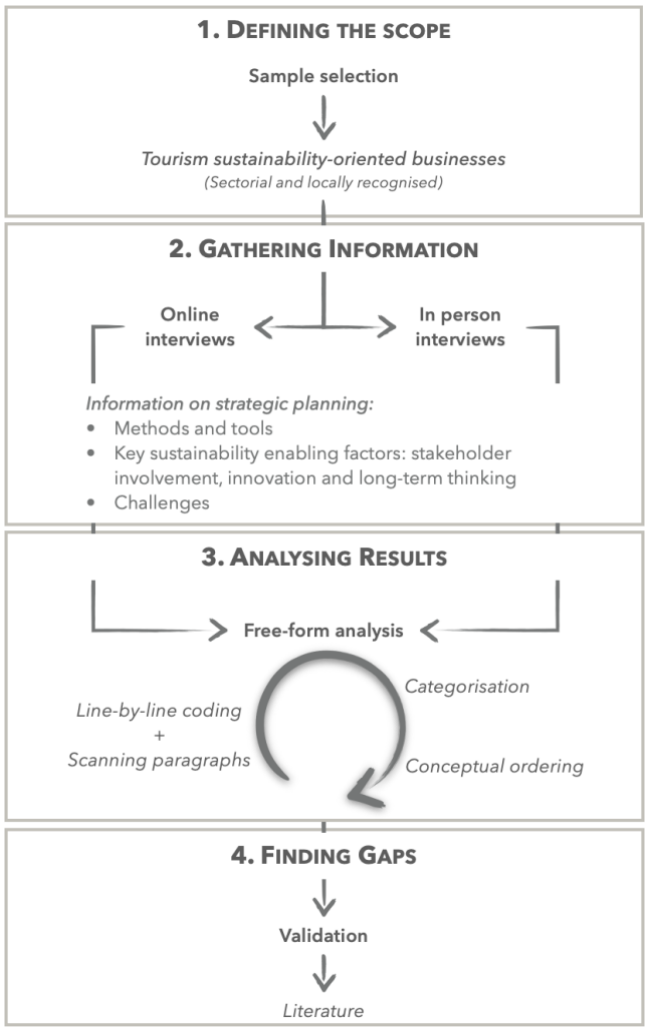

Figure 3.1 - Overview of methodological approach adopted to perform the study

3.3.1| Sample selection

The current study aims at exploring how businesses are creating their sustainability strategies. Thus, the study focuses on organisations that already adopt sustainability practices and, to some extent, tackle sustainability at a strategic and operational level. Following the behaviour modes proposed by van Mossel et al. (2018), the target of this study are businesses predominantly identified as first movers or followers in relation to sustainability transitions, which will be designated as Sustainability-Oriented Businesses (SOB) from this point on. Only businesses already tackling sustainability issues can provide feedback on their strategic planning processes for sustainability, and reflect on main characteristics of the process, key constraints, challenges and improvement needs. SOB consultation aims at collecting insights on: the best practices implemented in the creation of sustainability strategies; innovative

methods and tools adopted; and finally, key challenges faced by businesses in a transition towards sustainability.

SOB identification and selection is a challenging task due to the lack of a global and consensual method to assess and rank businesses regarding their sustainability performance. Multiple rankings, ratings and lists are available, applying diverse methodologies and referring to different scopes (Robèrt, 2000). Despite useful to identify international and large SOB, rankings and ratings are less likely to successfully identify sustainable local and Small and Medium Enterprises (SMEs), creating a bias in the sample towards large and international companies. According to Engert et al. (2016), organisational size influences the approach and strategy adopted by companies in relation to sustainability.

Acknowledging these limitations, the current study followed a two-step sequence to select SOB: 1) the selection of a sectorial and geographical scope; and, 2) an in-depth analysis of the sector within the boundaries defined. This method aims at building an overall view on the context in which these SOB operate, as a cornerstone element to identify key sectorial stakeholders and first movers.

As part of the first step, tourism was selected regarding the characteristics and strategic relevance of the sector at a global level. Overtourism situations have contributed to make visible environmental and social negative impacts of tourism (Penz et al., 2017). In these situations, carrying capacity of touristic destinations is exceeded, leading to negative impacts in ecosystems and residents' quality of life. Overtourism has prompted the debate on the sustainability of a constant growing tourism sector (Fletcher et al., 2019; Higgins-Desbiolles et al., 2019; Panzer-Krause, 2018).

The role of tourism to a global sustainability transition is reinforced by The United Nations under the 2030 Agenda, through the definition of indicators and targets for the tourism sector in relation to SDGs 8, 12 and 14. Despite being directly addressed in these three goals, the sector has the potential to contribute indirectly to many of the other goals (World Tourism Organization, 2019).

Portugal was selected as the geographical scope, considering the increasing weight of tourism in the Portuguese economy (Statistics Portugal, 2019). The sector was used to leverage an economic recovery from an extended period of economic and social crisis,

through the encouragement of entrepreneurism and the promotion of innovative solutions and businesses (Statistics Portugal, 2018). Also, the national regulator entity (Turismo de Portugal) has elaborated a strategy for 2027, which integrates sustainability. From this point of view, the Portuguese tourism sector arises as a rich environment for SOB to flourish, which is key to this study. This proactive approach towards a sustainability transition is also supported by a similar trend at the European level (European Commission, 2022).

SOB selection was focused on the Lisbon district area to facilitate the contact with organisations, without being restricted to it. The identification of Portuguese tourism SOB used as key criterion the adoption of at least one of the following certifications and labels available for tourism companies: the EU Eco-Management and Audit Scheme (EMAS), the EU Ecolabel, ISO 14001 standard and Green Key 2018. This selection was complemented with the consultation of key stakeholders on sustainable tourism, such as public administration and tourism business associations. This approach allowed the application of a snowballing referencing method (Reed et al., 2009) to identify relevant SOB which were not captured through the lists of certified and labelled SOB. Figure 3.2 synthesises the selection process for SOB and key Portuguese tourism stakeholders.

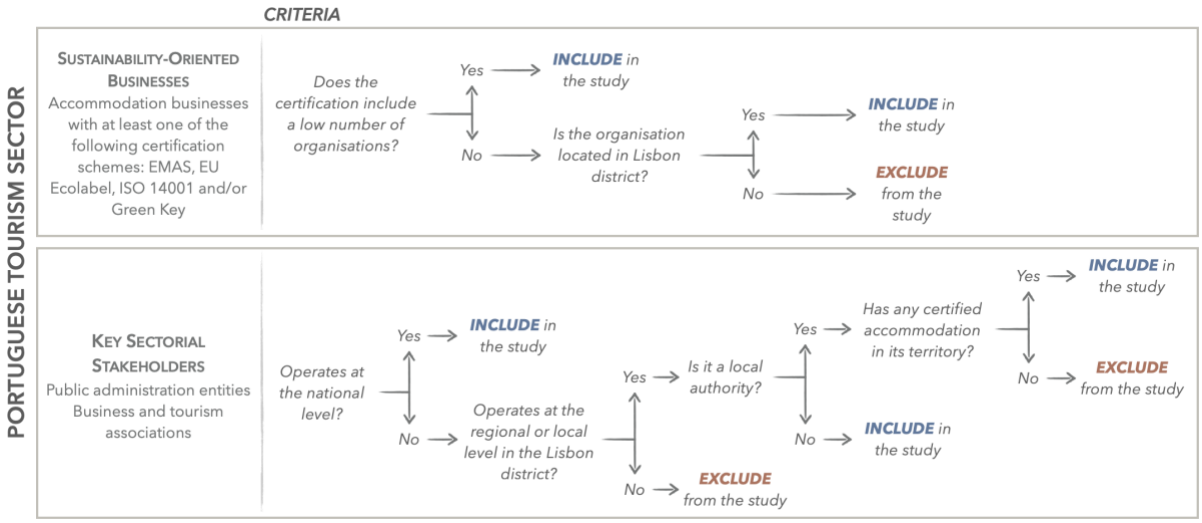

Figure 3.2 - Criteria followed in the identification of SOB and key stakeholders on sustainable tourism

3.3.2| Gathering information

The tool adopted to collect the information identified as relevant for the study was conducting semi-structured interviews with Portuguese SOB and key tourism stakeholders

selected as described in the previous section. Interviews were structured to last 30 minutes and included the following questions:

1) How was planned and elaborated the sustainability strategy?;
2) Which methods and tools were used throughout this process?;
3) Were stakeholders involved? If yes, how?;
4) Was innovation integrated in the process? If yes, how?;
5) Was adopted a long-term thinking perspective? If yes, how?;
6) What were the challenges faced throughout the process?.

Questions 1 and 2 focused on understanding how strategic planning processes for sustainability are designed and implemented. Questions 3 to 5 focus on key enabling factors for a sustainability transition within a business, identified in literature (Broman and Robèrt, 2017; Engert et al., 2016; Papagiannakis et al., 2014; Tourais and Videira, 2019), which are stakeholder involvement, innovation and long-term thinking. Question 6 explored the constraints faced by SOB when creating their sustainability strategies. In the interviews with tourism stakeholders, the questions were adapted to collect the interviewees' perception on how SOB perform their strategic planning process, from a general point of view.

As a result of the mix method approach adopted to identify participants (certified/labelled SOB and snowballing), 82 organisations (including SOB and key stakeholders) were contacted and 25 confirmed their availability to participate in the interviews. Among these 25 participants, 14 were sectorial stakeholders, which included public entities, sectorial and tourism associations, and consultancy organisations; and, 11 were businesses operating in the tourism sector, such as hotels, local accommodations and travel agencies. From the total of 25 interviews completed, most of them took place in person (13), while the remaining took place online (9) or by telephone (3).

3.3.3| Analysing results

Regarding the exploratory nature of the current study, a qualitative data analysis approach, supported by inductive reasoning, was adopted to analyse interview results. Diverse methods are available to perform this type of analysis, including grounded theory. Nevertheless, in this study was followed a free form analysis method, aiming to extrapolate

key ideas from data and map methods and tools adopted by SOB in the creation of their sustainability strategies (Harding and Whitehead, 2012).

Field notes taken during interviews were coded line by line (Ghahramani, 2016) and followed by paragraph scanning to capture tacit ideas and meanings that were relevant to achieve the goal of the current research. These descriptive codes were clustered according to the similarities of their attributes, through an iterative process aiming to achieve the least possible number of categories. A general overview of these categories was developed to support the conceptual ordering process. The whole analysis was developed by one author and reviewed by the other, followed by a discussion of the results (Harding and Whitehead, 2012).

3.3.4| Finding gaps

Both the results and the analysis performed based on the conceptual ordering task, were discussed under the light of existing literature on business strategic planning processes for sustainability. This final validation and discussion aimed at contextualising the results obtained and allowed the identification of current gaps, both from a theoretical and practical point of view. From these gaps is possible to define future research pathways and improvement opportunities for practitioners.

3.4 | CHARACTERISING STRATEGIC SUSTAINABILITY PLANNING PROCESSES

The analysis of results from interviews to Portuguese tourism SOB and stakeholders revealed three major clusters of elements characterising the strategic planning process, as portrayed in Figure 3.3: 1) overall process implementation; 2) insights on key sustainability enablers; 3) challenges faced throughout the process. Each of these major clusters are explored in more detail in the following subsections. The final subsection also includes feedback provided by interviewees on impeding factors or reasons preventing Portuguese tourism SOB to create their sustainability strategies or address key sustainability enabling factors.

Figure 3.3 - Summary of characterisation elements of sustainability strategy creation processes, organised in three clusters of issues revealed by interviewed stakeholders in the Portuguese tourism sector

3.4.1| Overall view of strategic planning for sustainability in the Portuguese tourism sector

When discussing the overall process of planning and developing their sustainability strategies, interviewees first focused their answers on the drivers and motivations leading to the creation of the sustainability strategy (Table 3.1). While most drivers and motivations mentioned by interviewees deal with internal processes, such as the creation of a business case for sustainability or fostering continuous performance improvement; a few are related to external factors, such as aiming at reducing the organisation's dependency on external resources.

Table 3.1 - Characterisation elements of the sustainability strategy creation process described by interviewees

Category	Characterisation of interviewees' answers
Drivers and motivation for the elaboration of the strategy	Internal • Top management • Creating an integrated governance model for the organisation • Sustainability strategy is adopted as a business strategy • Identity and culture changes of the organisation • Accounting for intangibles from the business operation • Fostering continuous improvement of the organisational performance • Allowing the integration of sustainability criteria in projects External • Decreasing organisation resource dependency and the organisation's impacts on resource depletion • Improving organisational resilience • Adoption of certification schemes
Generic approach followed in the development of the strategy	• Top down • Bottom up

Despite this broad categorisation in *internal and external drivers*, some of these factors are in the interface, as mentioned by Lozano (2015). That is the case of the adoption of certification schemes, which usually aims at complying with external stakeholders' expectation and demand, through the creation of a corporate and brand reputation. This type of drivers was also acknowledged by interviewees, due the importance given to the organisational context in which businesses operate and their need to keep up with an ongoing societal transition towards sustainability.

When looking into the steering direction of the approaches followed by Portuguese SOB, interviewees summarised them into top-down and bottom-up approaches, as depicted in Table 3.1. The adoption of both these types of approaches are aligned with the need to consider the continuum from planned to emergent strategy making, defended by Neugebauer et al. (2016). Top-down approaches are usually supported by planned and systematic processes, organised under well-defined steps, which are steered by top management, which ultimately results in a planned strategy. Bottom-up approaches are generally associated with emergent strategy making processes, where strategy formulation and implementation are intertwined.

By adopting a combination of planned and emergent strategy making process, Portuguese SOB from the tourism sector are more capable of addressing sustainability, as argued by Neugebauer et al. (2016). These authors build on the argument that sustainability strategy making is affected by the specific characteristics of each sustainability issue. Therefore, the decision-making processes tackling each issue are contained within the spectrum between planned and emergent strategy making.

When asked about *methods and tools* used to create sustainability strategies, interviewees provided a long and diversified list of methods, among which were included certified management systems (Figure 3.3). Some of these methods and tools (such as certified management systems) were not purposefully designed to support sustainability strategic planning processes in businesses, as mentioned in the literature on business strategic planning for sustainability (Lozano, 2012; Robèrt, 2000; Robèrt et al., 2002).

It is often the case that existing tools created to address environmental and social issues are used to address sustainability in a broader sense. Hence, to be effective drivers for sustainability strategies, these tools would have to be implemented in combination with each other under a holistic approach, attending to each organisation structure and characteristics (Lozano, 2012; Robèrt et al., 2002). Some of these methods and tools would also require adaptations to address more effectively sustainability issues and are mostly focused on operationalisation aspects of the sustainability strategy, such as the case of balanced scorecards (León-Soriano et al., 2010).

As most of the methods and tools mentioned by interviewees focus on the sustainability strategy implementation phase, SOB seem to lack support with respect to the formulation of the strategy itself. Few of the mentioned methods address this aspect, such as 'setting of goals and targets' and the 'development of scenarios, visions and roadmaps'. These are methods more aligned with theoretical frameworks presented in literature to create sustainability strategies, such as the work presented by Broman and Robèrt (2017).

3.4.2| Zooming on key sustainability enabling factors

Building on literature identifying critical factors to create and implement sustainability strategies, interviewees were asked to provide more insights on how Portuguese SOB in the

tourism sector integrate these key sustainability enabling factors in their strategic planning processes. Feedback collected on *stakeholder involvement* is presented in Table 3.2, summarising the type of stakeholders involved, the type of information collected and particular methods used to promote stakeholder involvement.

As stakeholder involvement is acknowledged as widespread practice among Portuguese SOB in tourism, both *internal and external stakeholders* were identified as contributors to sustainability strategy creation. Top management and employees are referred as internal stakeholders, followed by consecutive layers of external stakeholders: i) value chain, including guests and customers; ii) local and sectorial stakeholders, such as sectorial players, local communities and other companies; iii) broader stakeholders such as governments, public institutions, Non-Governmental Organisations (NGOs) and society in general.

Table 3.2 - Characterisation of stakeholder involvement in sustainability strategy creation processes in Portuguese SOB

Category	Characterisation of interviewees' answers
Which stakeholders are involved	• Top management • Employees • Customer/guest • Value chain • Local communities and companies • Government and public institutions • Sectorial stakeholders • NGOs and society
Type of information gathered from stakeholders	• Employees' psychological profiles • Stakeholder expectations, needs and opinions • Customer satisfaction • Relevant sustainability themes
General approaches to involve stakeholders	*Share information* • Communication • Raise awareness *Receive feedback* • Consultation *Bring people together* • Involvement • Trust relationships • Collaboration • Commitment

Category	Characterisation of interviewees' answers
Methods to involve stakeholders	• Stakeholder mapping and analysis • Prioritising local procurement • Encouraging sustainability through personal experiences or organisational culture • Donation of goods and financial resources *Share information* • Sustainability reporting and accounting • Internal communication via messaging and guides • Accommodation regulations *Receive feedback* • Materiality assessment • Meetings *Bring people together* • Training and well-being programs • Projects and partnerships • Flexibility to adapt to stakeholder requests • Spreading sustainability inside the organisation by creating teams, discussion communities, representatives, incentives, signed commitments, co-creating goals and forging trust, emotional and mutual learning relationships • Open days and guided visits
Practices implemented that partially address stakeholder involvement	• Building trust relationships with stakeholders • Monitoring stakeholder interests and expectations • Integration of stakeholder feedback in the organisational strategy • Organisation of sustainability related activities

While interviewees were describing stakeholder involvement in the strategic planning process, mentioned the type of information collected and produced with stakeholders, such as relevant sustainability themes and stakeholder expectations, needs and opinions. In relation to the format and methods used in the interaction, three modes of involvement can be identified (International Association for Public Participation, 2006): 1) sharing information with stakeholders, comprising a unidirectional flow of information from the organisation to stakeholders; 2) receiving feedback from stakeholders, characterised by a unidirectional flow of information from stakeholders to the organisation; and 3) bringing people together to foster higher levels of engagement, where the flow of information is bidirectional. Portuguese SOB adopt approaches and methods under the three involvement modes presented.

In the cases where stakeholder involvement is limited, interviewees mentioned the existence of trust relationships with stakeholders, a monitoring practice targeting stakeholder interests and expectations, followed by the integration of these issues in the sustainability strategy, as well as the organisation of sustainability related activities with these stakeholders. Building on interviewees' feedback, Portuguese SOB in tourism consider that

close and trust relationships with stakeholders legitimise a top-down approach to strategy making, as long as feedback from stakeholders is internalised in the strategy.

From the interviewees' perspective, Portuguese SOB businesses transitioning towards sustainability consider *innovation* as a key feature in process improvement or product development, following the types of innovation described in OECD and Eurostat (2018) and as discussed in Maletič et al. (2016). Innovation also triggers sustainability in the development of collaborations with stakeholders, such as suppliers, universities and even competitors, mostly through the participation in R&D&I projects. The role of stakeholders, either through collaboration or competition, is key for innovation integration (Maletič et al., 2016), regarding the list of inspirational sources provided by interviewees (Table 3.3). The emphasis on customers and market demand is also visible in the management processes used to support innovation integration. Organisational learning appears as another vehicle for innovation integration, regarding the relevance given by interviewees on empirical knowledge (learning by doing) and the indication of monitoring as an important management process.

Table 3.3 - Characterisation of the integration of innovation elements in sustainability strategy creation processes in Portuguese SOB

Category	Characterisation of interviewees' answers
General approaches used to integrate innovation in strategy creation	• Sustainability management from a holistic perspective • Unstructured
Integration through process innovation	• Continuous improvement • Efficiency in resources use • Reduce process's impacts • Technological development and adoption • Certification
Integration through product innovation	• Products' development focused on sustainability • Added value to products
Integration through innovative collaborations with stakeholders	• Suppliers • Universities and schools • Research projects • Competitors
Sources of inspiration and innovation initiatives	• Conferences and fairs (events) • Benchmarking and best practices • Media • Exchange of information with frontrunners • Learning by doing • Strong market competitiveness

Category	Characterisation of interviewees' answers
Management supporting processes	• Innovative marketing • Start-up incubation programs • Monitoring • Raising customer awareness

The characterisation provided by interviewees points to a focus on the integration of innovation while operationalising the sustainability strategy, lacking evidence of innovation being part of its formulation.

According to interviewees, *long-term thinking* is a key sustainability enabler scarcely addressed by Portuguese SOB in their strategic planning processes towards sustainability (Table 3.4). The reduced amount of information collected to characterise the adoption of long-term thinking at a strategic level is evidence of the lack of work developed by Portuguese SOB. From the interviews, two insights stand out: i) collaborations and sharing information about sustainability with other SOB or even competitors support the integration of long-term thinking in the sustainability strategy; ii) management systems and certifications are perceived as adequate tools to the adoption of long-term thinking at a strategic level. This last remark is also aligned (Robèrt, 2000), which presents environmental management systems as an umbrella tool, providing direction for the implementation of other sustainability concepts, methods and tools, while boosting continuous performance improvement.

Table 3.4 - Characterisation of the adoption of long term thinking in sustainability strategy creation processes in Portuguese SOB

Category	Characterisation of interviewees' answers
Management processes used	• Systemic approach to sustainability • Collaborations • Sharing information with competitors and other sustainable businesses
Tools promoting the adoption of long term thinking	• Management systems • Certifications

3.4.3| Challenges, impeding factors and reasons preventing strategic planning for sustainability

While characterising the process employed by Portuguese SOB in the tourism sector to create their sustainability strategies, interviewees enumerated challenges faced during this process (Table 3.5), as well as factors preventing businesses from advancing with a strategic planning process or addressing specific key sustainability enabling factors (Figure 3.4). While the challenges included in the first three categories focus on the strategic planning process and key sustainability enabling factors, the remaining are related to organisational characteristics, business management and context.

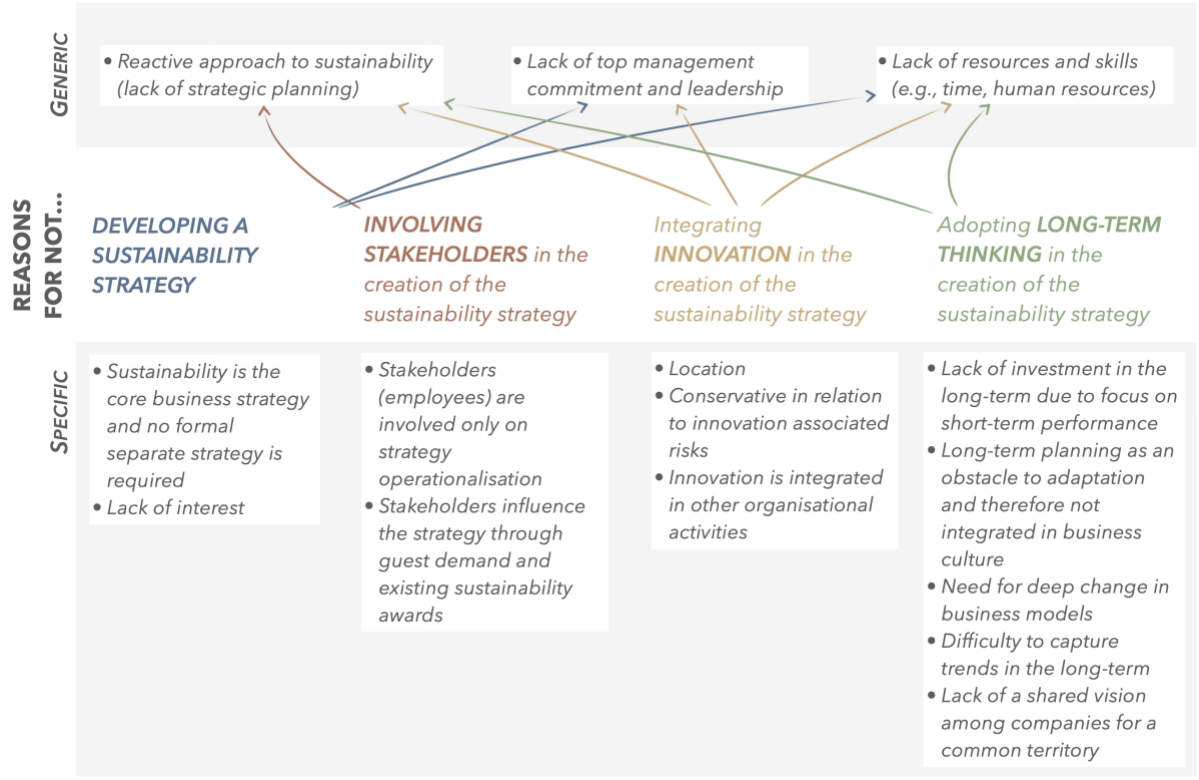

Figure 3.4 - Impeding factors and reasons why SOB are not creating sustainability strategies or addressing key sustainability enabling factors

Table 3.5 - Characterisation of the challenges faced by Portuguese SOB in their sustainability strategy creation processes

Category	Characterisation of interviewees' answers
In the strategic planning process	• Creating a mindset for sustainability • Integrating sustainability in the core business • Multiple sustainability frameworks • Dynamic and complex sustainability trends • Measuring sustainability • Aligning business board interests and sustainability • Operationalise the strategy • Business planning routines
In stakeholder involvement	• Slow change in mentality *Employees* • Maintaining employees' constant engaged • Hiring the required quantity of human resources • Hiring human resources with the adequate competencies • Reduce turnover to promote continuity in strategy operationalisation • Provide effective training • Motivation and mindset • Human resources management *Top management* • Providing the required resources *Costumer/guest* • Influence and transform behaviour *Suppliers and partners* • Influence • Networking • Delays due to dependence relationships *Local community* • Relation with local community
In innovation integration	• Updating technologies and practices • Integration of research and innovation in businesses • Finding knowledge on sustainable options • Management capabilities in relation to technology
Due to organisational size	*Large companies* • Maintaining the connection with the local and employee interests *Small companies* • Physical space to implement some practices • Limited resources • Management limitations • Lack of scale
Related to financial aspects	• Costs • Limited resources • Lack of management capabilities • High investment needs • Profit re investment in the company • Sustainability criteria in the financing sector
In marketing activities	• Marketing of sustainable products and services

Category	Characterisation of interviewees' answers
Related to specific environmental management issues	• Raising awareness • Certification and its maintenance • Climate change • Composting
Due to the context in which the business is embedded	*Legislation and policy* • Relationship with public authorities • Bureaucracy • Tax burden *Culture and education* • Portuguese culture • Integration of new concepts of value creation in tourism education *Sectorial context* • Seasonality of the sector's products and services • Reputation of increasing prices • Adaptation of local trade to tourists and residents needs • Insecurity associated with easy access to local accommodation • Fragmented and disperse structured to develop projects • Self motivation to deal with guests less committed to sustainability

Challenges faced by Portuguese SOB in the *strategic planning process* range from inertia to change to difficulties in dealing with the complex and dynamic nature of sustainability or operationalising the strategy. The *involvement* of employees in the creation of a sustainability strategy is particularly challenging for Portuguese SOB in the tourism sector, mostly due to high turnover rates and the structure (quantity and quality) of human resources. Top management is also perceived as critical regarding their role in resource allocation. In relation to external stakeholders, how to influence customers, suppliers and partners is also seen as a challenge, as well as finding ways to create long lasting and positive relations with the local community.

Innovation is portrayed by interviewees as a challenge due to the constant updating need, difficulty in finding sustainable solutions and acquiring the required capabilities to apply them. Interviewees mentioned that the integration of research and innovation in Portuguese SOB in the tourism sector remains a challenge.

Other challenges disclosed in the interviews, relate to *organisational size* and *financial aspects*, and in specific organisational activities involved in the creation of the sustainability strategy, such as *marketing* and *environmental management*. The investment required to deploy a sustainability strategy, either related to practical implementation or to the acquisition of capabilities was perceived as a burden, in particular to small businesses.

Marketing sustainable products and services, as well as raising awareness and adopting sustainability certifications are challenges to Portuguese SOB in tourism, namely when it concerns addressing specific themes such as climate change and composting.

Beside these internal challenges, interviewees also identified three key *contextual factors* affecting Portuguese tourism SOB operations which pose challenges for the creation of sustainability strategies: i) *national legislation and policy*, due to bureaucracy, taxes and the relationship between businesses and public authorities; ii) *Portuguese cultural behaviour and education system*, which was perceived as reactive and struggling to integrate new concepts of value creation for the tourism sector; and, iii) *tourism sector*, regarding the seasonality associated with touristic activities and the negative impacts associated with tourism on Portuguese residents (e.g. rising prices and shortage of housing in city centres).

Acknowledging the limitations of Portuguese SOB in tourism on the strategic planning process, interviewees provided insights on the impeding factors and reasons why SOB were not developing sustainability strategies or addressing key sustainability enabling factors (Figure 3.4). Generically, three main reasons were mentioned by interviewees: the lack of strategic planning in the sector together with the prevalence of a reactive approach towards sustainability, which is motivated by the lack of top management commitment and adequate leadership in the sustainability transition, subsequently impacting the availability of resources (such as time and specialised human resources) allocated to these initiatives. The importance of leadership to a successful business sustainability strategy implementation is acknowledged in Engert and Baumgartner (2016). Additionally, interviewees mentioned the lack of interest as an impeding factor for a strategic planning process for sustainability. In the other extreme of this spectrum, interviewees also mentioned that some companies might not develop an individualised sustainability strategy since they adopt sustainability as their core business element, and thus the sustainability and business strategies overlap in those cases.

Pointing out specific reasons for not observing a stronger involvement of stakeholders in the strategy development process, interviewees mentioned that it is frequent to involve interested parties only in a subsequent strategy implementation stage. In some cases, stakeholders influence strategy development more indirectly, through market and information mechanisms. Innovation integration is hindered by a perceived conservative

attitude towards risks and performed typically in other processes aside from sustainability strategic planning.

Regarding the adoption of long-term thinking, interviewees mentioned a wide range of impeding factors mostly related with a perceived widespread focus on short-term performance, which is hardly aligned with a long-term thinking approach. Uncertainty in long-term trend forecast is high in the sector and interviewees perceive long-term planning as an obstacle to their adaptation capacity. These impeding factors and reasons preventing the adoption of long-term thinking are aligned with the scarce detail provided by interviewees when asked about how SOB were addressing this key sustainability enabling factor in their strategic planning processes.

3.5 | REFLECTIONS ON THE GAPS IN SUSTAINABILITY STRATEGIC PLANNING

Participants interviewed in this study revealed that diverse methods and tools are in place for SOB to create their sustainability strategies. The development of scenarios, visions and roadmaps, along with the definition of goals and targets are among the few tools also mentioned in literature to structure strategic planning processes (Broman and Robèrt, 2017). Other tools, such as management systems and balanced scorecards have been adapted to support the strategic planning process (León-Soriano et al., 2010; Robèrt et al., 2002). However, most of the methods and tools mentioned by interviewees as commonly used by Portuguese SOB were not designed to support strategic planning processes for sustainability and therefore, require the introduction of adaptations or an umbrella approach to successfully support the creation and implementation of strategies facilitating an organisational transition towards sustainability.

An in-depth analysis of the strategic planning process provided insights on how Portuguese SOB integrate key sustainability enabling factors. Stakeholder involvement is a widespread practice according to the interviewed participants. Businesses adopt a diverse range of approaches and tools to involve stakeholders in their strategic planning process for sustainability. This involvement also varies between information, consultation and collaborative practices, where information and consultation are perceived as the most common approaches adopted by Portuguese SOB in the tourism sector. Collaborative

approaches described were not supported by structured methods in most cases, which may represent an improvement opportunity regarding the relevance of active stakeholder involvement in strategic planning processes (Engert et al., 2016).

In particular, continuous employee involvement in strategic planning processes for sustainability was acknowledged by interviewees as a major challenge due to high turnover rates in the sector, lack of effective training in sustainability, motivation and sustainability mindset. Regarding the key role played by employees in the creation and implementation of sustainability strategies (Linneberg et al., 2019; Tourais and Videira, 2019), the development of methods and tools to address these issues represents an opportunity for further investigation.

While interviewed actors also perceive stakeholder involvement as leverage factor to integrate innovation (e.g., through the collaboration with suppliers, academia or even competitors), results point that this integration occurs mostly at an operational level. At the strategic planning level, Portuguese SOB seem to adopt unstructured approaches and struggle to find knowledge on innovative options, as well as keeping technologies and practices updated.

The adoption of long-term thinking in strategic planning for sustainability remains a challenge to Portuguese SOB in the tourism sector, as most of the feedback obtained points towards the difficulty of these businesses to allocate funds to long-term investments, due to a predominant focus on the short-term performance. To deal with this type of trade-offs, businesses need to consider both long and short-term effects of strategic decisions on the business, society and the natural environment (Baumgartner and Rauter, 2017).

Additionally, interviewed stakeholders identified two contextual obstacles to the adoption of long-term thinking in the strategic planning process: i) long-term planning is perceived as an obstacle to their adaptation capacity to the rapidly changing trends in the tourism sector; and ii) the lack of a shared vision among the companies operating in a specific territory. This insight reinforces previous studies claiming the need for a systemic view and synergies among companies (Telesford and Strachan, 2017), as well as the need to provide businesses methods and tools to support them in their dynamic relation with the environment in which they operate.

Thus, understanding the context in which businesses operate stands out as a major element to take into consideration while creating the sustainability strategy. Evidence of the influence played by the organisational context are the obstacles mentioned in relation to an organisation's national, cultural and sectorial context. Methods and tools used to develop the strategic planning process for sustainability should be capable of overcoming these obstacles and defining a clear positioning in the wider context, including the sustainability transition (Searcy, 2016; van Lieshout et al., 2021).

Addressing other challenges faced by Portuguese SOB require flexible methods and tools, allowing businesses to adapt their strategic planning process according to their size, financial profile, expertise and competence gaps. For example, in the case of large businesses with multiple locations, translating a sustainability strategy developed in the headquarters to a local level requires specific tools for adaptation (Ertuna et al., 2019).

Also, among the challenges faced by SOB are the integration of sustainability in the core business, the creation of a mindset for sustainability, the operationalisation of the strategy and the allocation of resources and investment in long-term projects, which raise the question of whether these organisations are tackling sustainability at a strategical level (Cavaleri and Shabana, 2018). The difficulty of aligning business administration interests with a sustainability approach is in line with the conclusions of both Linneberg et al. (2019) and Ertuna et al. (2019), which acknowledged that SOB are tackling sustainability within the limits of profit maximisation. This situation is also amplified by the difficulty to measure the impacts of sustainability practices. Cavaleri and Shabana (2018) acknowledge the use of inadequate metrics to capture the benefits of sustainability, due to a lack of systemic perspective and capability to account for different types of benefits, besides financial ones.

In the literature, clear profiles are defined for businesses which adopted a leading position regarding a sustainability transition: first movers (van Mossel et al., 2018), frontrunners (Loorbach and Wijsman, 2013) and conservative and visionary (Baumgartner and Ebner, 2010). These profiles are understood to represent proactive strategic positionings to lead sustainability transitions. However, the results obtained in the interviews portray a more diversified picture, in which the strategic planning process described by businesses fits different classifications under these studies. In this context, impeding factors and reasons mentioned during interviews that prevented Portuguese SOB to create sustainability

strategies or address specific key enabling factors are aligned with the non-exclusive and non-static proposal of behavioural modes proposed by van Mossel et al. (2018).

As the results point to a diversified practice of strategic planning processes, it is relevant to reflect on how the characteristics of adopted processes translate the underlying views on sustainability. While most of the challenges, impeding factors and reasons preventing the creation of a sustainability strategy or addressing key enabling factors indicate a general alignment with a weak sustainability perspective, some of the methods and tools identified in the interviews are in line with prepositions of strong sustainability.

Examples in stakeholder involvement are perhaps the most solid advance in this direction displayed in the results. The application of co-creation approaches are preliminary steps to a governance model allowing the democratisation of decision making inside businesses, as proposed by Nesterova (2020). Building a sustainability strategy through a trust relationship with employees, including training and wellbeing programs and the creation of an internal organisational culture embedded in sustainability that encourages employees to adopt sustainability practices in their personal sphere is also aligned with a strong sustainability perspective (Nesterova, 2020).

The development and maintenance of trust and mutual learning relationships with stakeholders is in the long-term provides the ground to the establishment of alternative business models, focused on moderating demand and addressing the needs instead of the wants (Bocken et al., 2020; Bocken and Short, 2016; Heikkurinen et al., 2019). Collaboration with suppliers in innovation initiatives is also key to ensure durability, versatility and quality throughout the whole product or service life cycle, as required in sufficiency business models (Bocken et al., 2020; Bocken and Short, 2016).

These examples of how SOB in the tourism sector are designing sustainability strategies in alignment with a strong sustainability perspective are key to keep developing strategic planning tools and methods that not only allow businesses to address their individual organisational challenges, but also to ensure an alignment with a wider sustainability perspective, and therefore, positioning themselves in the lead to a sustainability transition.

3.6 | CONCLUSIONS

The current exploratory study aimed at diagnosing sustainability strategic planning processes in businesses, while mapping methods and tools used in the creation of sustainability strategies and uncovering how the integration of key sustainability enabling factors (stakeholder involvement, innovation integration and adoption of long-term thinking) is performed. To achieve the proposed goal, a sample of Portuguese SOB and key stakeholders of the tourism sector was identified, and a set of semi-structured interviews was performed to collect information on issues included in the study.

The results obtained provided an overview on how Portuguese SOB create their sustainability strategies and details on the methods and tools applied in this process, as well as on stakeholder involvement, embedding innovation and long-term thinking adoption. Additionally, interviewees provided insights on the major challenges faced by Portuguese tourism SOB while developing strategic planning processes and described what are the major impeding factors and reasons preventing these organisations to further engage on these processes or addressing key enabling factors.

Generally, it was perceived that most SOB adopt a formal planned process to create their sustainability strategies, where stakeholders are involved in multiple ways and formats. Innovation and long-term thinking are factors addressed only by some Portuguese tourism SOB and remain mainly unexplored due to reactive approaches and resistance to change the mindset and core business towards sustainability. These barriers prevent the adoption of a strong sustainability perspective in the design of business transitions, preventing these businesses to adopt a first mover or frontrunner positioning in sustainability transitions.

The strategic planning process adopted to support business positioning in relation to sustainability influences the type of outcome achieved and, therefore, the methods and tools adopted by Portuguese SOB in the tourism sector to create their sustainability strategies can be further improved. These improvement opportunities must be oriented to incorporate a strong sustainability perspective through the methods and tools applied; include an overarching rationale to guide the strategic planning process regarding organisational characteristics and needs; explore the relationship between the business and the context in

which it operates; and promote an in-depth integration of the considered key sustainability enabling factors.

The exploratory nature of this study provides an overall picture on processes implemented by Portuguese SOB to create their sustainability strategies; however, it does not allow the generalisation of the results obtained due to the limited number of participants in comparison with the total number of businesses. Thus, one of the major contributions of this study is the wide range of questions raised by the results obtained and the identification of pathways for further research that it brought to light. Following these preliminary results, more studies based on quantitative and statistical approaches may test the validity of the hypothesis suggested by the perceptions revealed by the participants interviewed in the study.

Further research suggestions focus on the development and adaptation of methods to create sustainability strategies that suit business characteristics and the wider context. Considering the pool of tools and methods identified in this study, a structured approach may be developed and tested to support businesses who aim to participate in a transition towards sustainability, while also guiding and interacting with other organisations that are relevant for the transitioning process.

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4| STRUCTURING SUSTAINABILITY PROBLEMS[2]

A PARTICIPATORY SYSTEMS MAPPING APPROACH FOR SUSTAINABILITY TRANSITIONS: INSIGHTS FROM AN EXPERIENCE IN THE TOURISM SECTOR IN PORTUGAL

ABSTRACT

The use of participatory modelling approaches in sustainability transition studies has been limited despite its potential contributions to transitions research. In this article, a methodological framework was designed based on a Participatory Systems Mapping (PSM) approach to structure and frame sustainability problems in transition management processes. The framework comprises three phases: 1) transition framing and actor selection, 2) PSM transition workshop, and 3) synthesis and evaluation. In a case study of the Portuguese tourism sector, participants created a shared systems view of tourism sustainability issues, based on the development of causal loop diagrams. Transition concepts, such as landscape-regime and niche-regime interactions, are specified in the diagrams. The PSM approach also provided a collaborative platform for co-creation of shared sustainability visions, thus fostering formalisation of a broad roadmap for desired transition pathways.

KEYWORDS: Participatory systems mapping; Transition management; Multi-level perspective; Methodological framework

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4.1 | INTRODUCTION

Sustainability transition studies represent an emerging research field focusing on understanding the dynamics and governance of wide and radical shifts in society aiming to address sustainability problems (Köhler et al., 2019; Markard et al., 2012). Köhler et al. (2019) published a research agenda for sustainability transitions, identifying diverse gaps in literature and research pathways, which include potential synergies with other research areas. As a transdisciplinary research field, sustainability transitions studies benefit from the application of methodologies matured in other research fields, which may be adapted to further advance development of transitions theoretical concepts and empirical applications (Markard et al., 2012). For instance, ecological economics and sustainability transitions studies share core principles, such as a systemic perspective and a focus on stakeholder engagement (Costanza, 2020; Köhler et al., 2019), thus supporting the rationale for advancing research on participatory methods in both fields (Halbe et al., 2015; Videira et al., 2017).

Transition Management (TM) scholars have highlighted the role of reflexive governance processes to understand the dynamics of transitions, through learning-by-doing experiments, which enable long-term thinking and adaptation (Kemp and Loorbach, 2006; Rotmans and Loorbach, 2008). A typical TM cycle unfolds different types of governance activities – strategic, tactical, operational and reflexive (Loorbach and Wijsman, 2013). The strategic level, for example, comprises problem definition and co-creation of sustainability visions and transition pathways, in the context of a transition arena (Frantzeskaki et al., 2012; Rotmans and Loorbach, 2008). It provides the background for a holistic view of the system to guide experiments (Kemp and Loorbach, 2006; Loorbach et al., 2017; Loorbach and Rotmans, 2010). Nonetheless, the design and organisation of participatory processes supporting transition governance activities remains a challenging task as there are still few tried-out guidelines, methods and tools to operationalise such processes (Frantzeskaki et al., 2012; Halbe et al., 2015; Hyysalo et al., 2019).

Against this backdrop, participatory modelling methods are being increasingly studied to understand their role in supporting governance approaches aiming at a purposeful facilitation of sustainability transitions (Halbe et al., 2020, 2015; Holtz et al., 2015). Participatory modelling is hereby generically understood as any type of involvement of

stakeholder groups in conceptual and quantitative model building and use (Videira et al., 2017).

Conceptual modelling is useful in the definition of theoretical underpinnings of sustainability transitions studies. It provides an overview of the system, typically through the construction of causal loop diagrams (Halbe et al., 2015; Holtz et al., 2015). Conceptual modelling enables a shared understanding of sustainability problems by addressing complexity, anticipating long-term systemic effects and allowing a qualitative analysis of problems across scales and disciplinary fields. The system is represented by a structure that includes elements (which are the nodes) and interactions, represented by the links between the elements, allowing the analysis of the network structure (Holtz et al., 2015). Conceptual modelling has been used to improve the understanding on Multi-Level Perspective (MLP) concepts, such as demonstrated in the application of system dynamics to test specific transition pathways (Papachristos, 2011). In this study, conceptual modelling was used to map a generic, high-level representation of key variables, providing a base structure to build a simulation model on the interaction between regime and niche levels. Quantitative modelling often formalises conceptual models so that behaviour over time of variables is computed. For example, Auvinen et al. (2015) have explored the use of system dynamics in the evaluation of different transition policies over time, through simulation models. This type of application allowed to anticipate long-term systemic effects, such as dynamic policy interactions. Both conceptual and quantitative modelling exercises show potential to contribute to the creation of formal descriptions and less abstract definitions of transition concepts, thus reducing their ambiguity (Halbe et al., 2015; Holtz et al., 2015; McDowall and Geels, 2017).

In participatory modelling processes, a necessary preparatory stage of stakeholder identification and selection typically precedes collaborative modelling activities (Videira et al., 2017). Subsequently, selected participants engage in group debates wherein the underlying assumptions of models are made explicit and visible, setting the ground to discuss these assumptions according to different stakeholders' perspectives and values. Differences in the conceptualisation of variables and their interrelationships are brought to light to be openly discussed, allowing identification of roots of disagreement and reaching settlements (Holtz et al., 2015). This process promotes communication and the development of a common

language that is instrumental in the creation of shared understanding and social learning in the scope of transition governance processes (Holtz et al., 2015; Loorbach et al., 2017; Rouwette and Vennix, 2006). It also increases the legitimacy and acceptance of the co-produced model among the stakeholders involved (Holtz et al., 2015; Rouwette and Vennix, 2006).

In transition studies, participatory modelling has been recently explored, for example, as an element of the methodological framework developed by Halbe and Pahl-Wostl (2019), aiming to conceptualise sustainability transitions as multilevel learning processes. Despite increasing experimentation with participatory modelling methods, a comprehensive review by Halbe et al. (2020) shows that these approaches are not consistently applied across the different phases of transition governance processes. More specifically, modelling methods are seldom applied at the inception phase of integrated knowledge production and problem definition.

Hence, this paper aims to address this gap by developing and testing a participatory modelling framework to structure sustainability problems in a transition context. We focus in particular on a conceptual modelling approach – Participatory Systems Mapping (PSM) – which has been applied in the context of ecological economics studies, using causal loop diagrams to foster learning and knowledge co-creation in framing and defining sustainability problems, as well as designing and assessing possible solutions (Sedlacko et al., 2014; Videira et al., 2017). Our specific goals while exploring the role of participatory modelling are twofold: 1) develop a procedure for iterative problem structuring at a strategical level of TM processes, and 2) using conceptual modelling to specify transition concepts in a participatory setting. Despite focusing on problem scoping tasks, the proposed framework establishes connections to other phases of transition governance processes, namely stakeholder selection and participatory visioning. Concomitantly, a reflection will also be provided in connection to other research gaps in transition studies. These include the criticisms to the focus on frontrunners and challenges in stakeholder selection criteria (Hölscher et al., 2018; Hyysalo et al., 2019; Voß et al., 2009), as well as the weak link between transition studies and learning theories (van Mierlo and Beers, 2020; Van Poeck et al., 2020).

The chapter is structured as follows: section 4.2 presents the proposed methodological framework and details the theoretical background supporting its

assumptions; section 4.3 describes the case study of tourism sustainability in Portugal, along with the results from implementation of the methodological framework; section 4.4 presents the discussion of results; and finally, section 4.5 summarises key conclusions and further research pathways.

4.2 | FROM RESEARCH GAPS TOWARDS A METHODOLOGICAL FRAMEWORK

The proposed methodological framework is anchored on PSM – a participatory modelling approach comprising the development of group model building activities through the engagement of stakeholders in the joint construction of Causal Loop Diagrams (CLDs). PSM typically fosters insights on a specific dynamic problem and promotes knowledge exchange (Sedlacko et al., 2014; Videira et al., 2012). This approach is proposed as a tool to structure problem definition and integrated knowledge production at the strategic level of a transition management process (Halbe et al., 2020; Kemp and Loorbach, 2006; Loorbach and Rotmans, 2010). Traditionally, this level of the TM process is characterised by the selection of frontrunners and constitution of a transition arena where sustainability problems are discussed, contextualised and structured. Subsequently, actors involved in the transition arena also develop visions on desired futures and define transition pathways in order to achieve envisioned futures (Hyysalo et al., 2019; Kemp and Loorbach, 2006).

PSM usually allows to address complex and unstructured problems, as demonstrated in diverse applications to environmental and sustainability issues. Some examples include mapping maritime problems in collaboration with stakeholders (Videira et al., 2012), generating insights among researchers and policy-makers into sustainable consumption problems (Sedlacko et al., 2014), creating an integrated overview of degrowth proposals and possible transition pathways (Videira et al., 2014) and conceptualising stakeholders perceptions on the provision of ecosystem services (Lopes and Videira, 2015).

Diagrams such as CLDs are systems thinking tools able to represent group or individual perceptions, mental models and understanding of problems. CLDs allow to conceptualise and frame issues, through the representation of feedback mechanisms using variables and causal chains between variables. Causal relationships can have positive or negative polarities, depending on whether variables change in the same or opposite direction, respectively.

Feedback loops are formed by a group of causal relations that contribute to magnify (reinforcing loop) or to stabilise (balancing loop) the initial state (Lane, 2008). The construction of the CLDs follows the sequence proposed by Videira et al. (2012), where participants select a key problem variable and add causes and consequences to the selected central concept. Finally, participants identify feedback loops by linking consequences to causes.

Figure 4.1 provides an overview of the proposed methodological framework, in which PSM is adopted as the core method. Dark grey shading identifies the core phases of the PSM approach, while the elements represented in light grey are linked to the relevant gaps in the transitions research field addressed by the framework. Blocks with a full line border detail activities extensively discussed in the following sections, based on the results from the PSM transition case study illustrated in this article. The "multiple learning loops" block (represented with a dashed line) addresses potential contributions of the overall process to research gaps related with learning outcomes, for which a preliminary reflection is provided based on the case study findings (see section 4.4). Phase 1 comprises the activities depicted in the block "Stakeholder identification and selection", while the block "Mapping transition concepts" is addressed in both Phase 2 and 3. Blocks "Iterative problem structuring" and "Multiple learning loops" comprise activities cross-cutting all phases of the methodological framework. The following subsections describe into more detail each methodological contribution of the proposed framework.

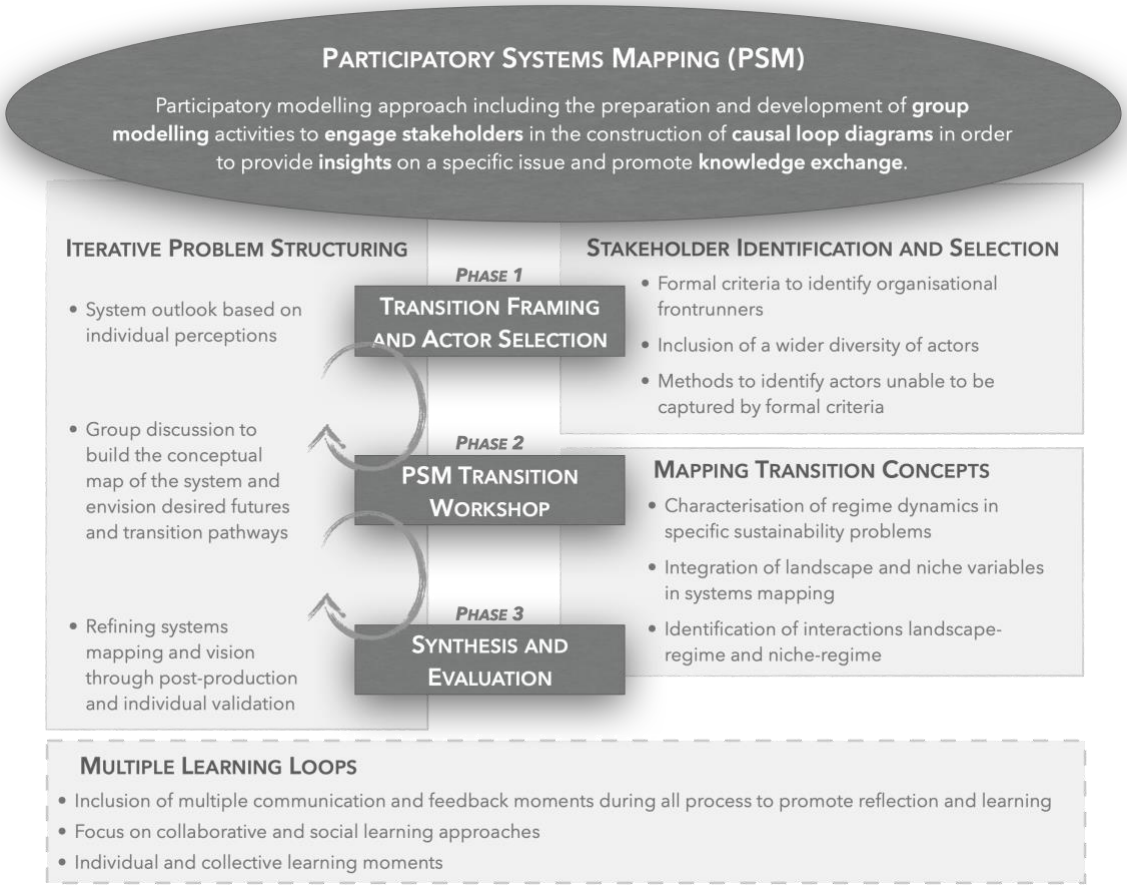


Figure 4.1 - Schematic representation of the proposed methodological framework, including the three phases of the PSM approach and key contributions to sustainability transitions research

4.2.1| Stakeholder identification and selection

This block focuses on the identification and selection of stakeholders considering agency and power issues identified in transition research. It also links to the first phase ("Transition framing and actor selection") proposed in the methodological framework in Figure 4.1. Traditionally, transition management processes rely on the contributions of frontrunners. Frontrunners are visionaries, with an open mind and capable of working outside their area of expertise, that are prone to develop creative and innovative ideas for experimenting (Kemp and Loorbach, 2006; Loorbach and Rotmans, 2010). This concept can also be applied to business context, where frontrunners are defined through their strategic approach to sustainability focused on the implementation of innovative practices aligned with the business value proposition, moving far beyond legal compliance and mitigation of negative impacts (Loorbach and Wijsman, 2013; Porter and Kramer, 2006)

Critics to transition management approach for overly focusing on frontrunners brought the attention to issues such as stakeholder agency and power (Hölscher et al., 2018). These issues were addressed in the pilot testing of the proposed methodological framework by striving for a more inclusive process of stakeholder identification and selection. Thus, along with frontrunners, other relevant stakeholders to the sustainability problem at hand were considered.

Identifying business frontrunners is a challenging task due to the difficulty of defining criteria that translate innovative approaches towards sustainability. Thus, an iterative process resulting from the combination of two procedures is proposed (Reed, 2008): 1) selection of formal criteria, such as identifying stakeholder groups that have adopted voluntary management tools to improve social or environmental performance and 2) promotion of a snowballing stakeholder identification process. The first procedure allows the identification of organisations committed to at least one dimension of sustainability; while the second contributes to the identification of companies recognised by peers as sustainable businesses working on breakthrough innovations. The same procedure should be applied to other actors included in the process along with frontrunners.

On the one hand, the possible bias of the final selection of actors due to the application of the snowballing method (Reed et al., 2009) is balanced through the use of more independent criteria. On the other hand, the possible lack of local contextualisation and ability of these formal criteria to identify disruptive innovations is balanced by the snowballing peer-referral approach.

The snowballing method is operationalised during preparatory interviews with invited stakeholders from business sectors, non-governmental organisations (NGOs), and governmental agencies (Reed et al., 2009). Interviewees are asked about additional relevant actors to be considered for the PSM transition process, as well as for suggested background documents and regulatory frameworks setting the institutional context. A free-form analysis may be applied to the results from the preparatory interviews, such as described in Harding and Whitehead (2012). Other methods for qualitative data analysis may be used to perform this task.

Combining different methods in stakeholder analysis and selection increases the consideration of a greater diversity of perspectives, providing a richer environment to

structure sustainability problems. Broadening the scope to include other relevant actors beside frontrunners sets the ground to a more inclusive process (Reed, 2008). Also, developing a detailed analysis of stakeholders, supported by preparatory interviews and document analysis, sets the background to foster social learning throughout the process (Pahl-Wostl, 2006).

4.2.2| Mapping transition concepts

Modelling processes and participatory models potentially contribute to deepen the understanding on sustainability transitions through, respectively: the creation of a common language that is clear, explicit and systematic; and increased understanding on elements of dynamics in complex systems, such as feedback, causal loops and time delays (Holtz et al., 2015; Videira et al., 2012). Thus, system dynamics is a promising modelling approach to further study sustainability transitions (Papachristos, 2019), providing tools to both deepen the understanding of transitions theories and expand the impact of research (Halbe et al., 2015; Holtz et al., 2015).

In this context, the contribution of participatory modelling to sustainability transition studies has been underexplored, in particular, to facilitate learning in articulation with TM and MLP (Halbe et al., 2015; Holtz et al., 2015; Köhler et al., 2019). Aiming to explore this potential, the methodological framework fosters the inclusion of core sustainability transition concepts in the structure of the workshop exercises (linking to phase 2 “PSM Transition Workshop” of the methodological framework in Figure 4.1). Thus, a clear definition of regime, niche and landscape must be provided to participants, as detailed in Table 4.1.

Table 4.1 - Definitions of regime, landscape and niche applied in the methodological framework

Regime	• Represents the mainstream and institutionalised way of delivering societal functions, relying on a set of shared cognitive routines and rules embedded in knowledge, practices, organisational governance structures, manufacturing processes and product characteristics. • Comprises incumbent actors. • Is characterised by a dynamic stability, based on incremental and path dependent innovation, which may be destabilised by landscape tensions.	(Geels, 2002; Geels and Schot, 2007; Papachristos, 2011; Smith et al., 2010; Sorrell, 2018)

Landscape	• Represents the external structure or context, including heterogeneous physical, political, economic and cultural factors. • Change processes are beyond the direct influence of actors. • Influences the regime usually through gradual change but also through short-term shocks.	(Bui et al., 2016; Geels, 2002; Geels and Schot, 2007; Papachristos, 2011; Smith et al., 2010; Sorrell, 2018)
Niche	• Represents a protected incubation space, characterised by radical innovation emerging unstable and unable to compete in markets, due to relatively low performance and high costs. • Comprises diverse types of learning processes (learning by doing, learning by using and learning by interacting) and innovation (technological, social or/and organisational). • Are supported by small, unstable and fragile networks following flexible and contested rules. • Actors have more agency and freedom, though less power, so need to be more persuasive. • Frontrunners are key actors in the creation of innovation spaces and networks.	(Bui et al., 2016; Geels, 2002; Geels and Schot, 2007; Loorbach and Rotmans, 2010; Smith et al., 2010; Sorrell, 2018)

After these concepts are explained, participants are invited to identify in the CLD variables related to the concepts of landscape and niche. The direct application of these concepts in the construction of CLD may require a narrower approach to the concepts, due to their particular applicability in a specific context. The remaining variables characterise a regime configuration regarding a specific problem, exploring the dynamics associated to that problem and providing a dynamic characterisation of the regime.

Supporting documents are provided to participants aiming to facilitate the understanding on the transition concepts transmitted and to inspire the integration of landscape and niche variables in the developed CLDs. The elaboration of these supporting materials should follow clear rules to avoid misleading participants. For example, supporting materials related to the landscape may be developed according to scientific and policy literature on major global and regional trends, while those regarding the niche may be anchored on the results from the preparatory interviews, through the identification of relevant initiatives aiming to promote sustainability. During the application of the framework, it is relevant to keep in mind that supporting materials should remain a source of inspiration and illustration of transition concepts, although they may not cover the full spectrum of the theoretical concepts initially presented to participants.

The identification of landscape and niche variables and their integration in the CLDs reduces the level of abstraction of these concepts, allowing participants to internalise the

theoretical concepts underpinning sustainability transitions. In some cases, landscape and niche variables may have been included already in the CLD built during the initial workshop exercise. In those cases, this may lead to a repositioning of the variables along the landscape-regime-niche layout (see Figure 4.4). In other cases, participants may include new variables in the initial CLD associated to landscape or niche levels. This integration requires a discussion and the identification of causal relations between regime variables and both landscape and niche variables. This activity potentially builds ground to analyse niche-regime and landscape-regime interactions from a new perspective, bringing to light hidden causal relations and feedback loops.

Additionally, systems diagramming with differentiated landscape and niche variables provide a smooth transition between problem structuring and the subsequent backcasting exercise, where participants are invited to develop a desired future vision for the sustainability issue under study and the roadmap to achieve such vision. The introduction of MLP concepts in the construction of CLD may force participants to reflect on key factors influencing the regime. Thus, at the end of the conceptual diagramming process, participants may not only have co-created a diagnosis on the current state of the system, but also discussed potential stabilising or/and changing drivers. This reflection, along with leverage points exercise are expected to contribute to a holistic view of sustainability problems that leads to more informed and structured future visions.

4.2.3| Iterative problem structuring

Participatory modelling approaches, such as PSM, are commonly developed in three phases: preparation, workshop and follow-up (Videira et al., 2017). Thus, the proposed methodological framework includes in each phase activities aiming at structuring and contextualising sustainability problems, by adopting diverse methods to collect, gather and analyse information.

The initial collection of key information is obtained through the set of preparatory interviews with multiple stakeholders (Pahl-Wostl, 2006; Videira et al., 2012). The main goals of these interviews are twofold: 1) acknowledge different perspectives on sustainability issues, through the identification of stakeholder perceptions on major challenges, problems,

causes, consequences and initiatives; 2) collect actors' contribution to the identification of key sectorial actors to involve in the process (Videira et al., 2012), as discussed in the previous subsection. The analysis of the results obtained in the preparatory interviews rounds up the first step of the problem contextualisation and structuring process by providing an overview of sustainability problems based on stakeholders' contributions. These activities are comprised in the "Transition framing and actor selection" phase of the methodological framework (Figure 4.1).

The "PSM transition workshop" phase (Figure 4.1) comprises the organisation of a participatory modelling workshop, where stakeholders are invited to discuss the sustainability issues characterised in the interviews' results, through the construction of CLDs (Kallis et al., 2006; Lopes and Videira, 2013; Videira et al., 2012). Participants are divided into thematic groups tackling the relevant sustainability issues identified in preparatory interviews (Videira et al., 2014, 2012). In a first round of systems mapping, results from the interviews are used as input and guidance to the identification of major problems, causes and consequences. A second round of CLD co-creation is foreseen after introducing MLP concepts to participants. In this round, the goal is the identification of landscape and niche variables, inspired by major trends and initiatives influencing the problems modelled in the initial round. More details on mapping transition concepts were provided in subsection 4.2.2. Finally, participants vote on leverage points, identifying key places where a small change potentially produces a broader change in the whole system (Meadows, 1999).

The participatory modelling workshop includes also a backcasting exercise, aimed at eliciting visions of desired futures and transition pathways towards sustainability. Backcasting is a useful method to deal with complex problems by looking into major system changes in a long-term horizon (Dreborg, 1996). Participatory backcasting promotes deliberative choices and has been applied in diverse contexts (Vergragt and Quist, 2011). As an example, Robinson et al. (2011) describes the application of different tools in participatory backcasting exercises to involve citizens in vision development.

The methodological framework proposes a backcasting procedure that includes an initial visioning exercise to build a desired future vision, followed by the definition of an action plan or roadmap based on goals, risks and uncertainties, measures, instruments, and key actors. This simplified approach is in line with the modular participatory backcasting

framework proposed by Pereverza et al. (2019). The flexibility of their modular framework allows to adjust the backcasting exercise to socio-cultural contexts and project limitations, such as time availability. The development of possible future scenarios fosters social learning (Pahl-Wostl, 2006) and consequently has potential to improve understanding on the sustainability problem being discussed.

The "Evaluation and synthesis" phase (Figure 4.1) is composed by two activities: 1) evaluation of the process and outcomes of the participatory modelling workshop; 2) post-production of the results obtained in the participatory modelling process (Lopes and Videira, 2015; Sedlacko et al., 2014; Videira et al., 2017).

For evaluation purposes, a group reflection and a post-workshop questionnaire are proposed to collect participants' feedback on the PSM event, process and results (Lopes and Videira, 2015; Videira et al., 2017). Post-production is an iterative process encompassing alternation between inputs from participatory events and inputs outside these events (Sedlacko et al., 2014). This activity aims at improving the quality and usefulness by refining and consolidating workshop results (Lopes and Videira, 2015; Sedlacko et al., 2014). Post-production includes both format and content editing: the former through the digitalisation of the CLD and results from the backcasting exercise; and the latter by the introduction of small changes to better translate group discussions into the CLDs. The modified versions of the CLD should then be validated again by participants to guarantee its alignment with group discussions and allowing the reflection on the overall results, while accommodating potential additional contributions to those collected in the workshop. Validation also includes a second round on the identification of leverage points (Lopes and Videira, 2015; Videira et al., 2012). The final step of the post-production is the analysis of the final version of the CLD, along with the results from the backcasting exercise.

4.2.4| Multiple learning loops

From a sustainability transitions perspective, learning is a key outcome in multiple stages of the transition, such as the facilitation of transition arenas and niche experimentation (van Mierlo and Beers, 2020). Transition arenas are key elements at the strategic level of the transition management process, where actors are challenged to frame and structure

sustainability problems, as well as build visions and transition pathways (Kemp and Loorbach, 2006; Loorbach and Rotmans, 2010), which are the tasks included in the proposed methodological framework.

The PSM approach extends the timeframe of analysis of sustainability issues during the participatory process so that one of the expected outcomes is collaborative learning on problem dynamics (Videira et al., 2017). The learning process relies on a dichotomy between individual and collective learning. Individual learning is promoted through communication of the results from preparatory interviews, and validation of workshop results in the CLD post-production process. Providing feedback on interviews' results to stakeholders before the participatory workshop allows them to confront their perceptions with a wider pool of perspectives on the system. In the validation process, stakeholders receive a final version of the CLDs drafted during workshop exercises. They are granted opportunity to reflect on preliminary results and acknowledge causal relationships and feedback loops which were eventually underexplored during group discussions.

Although learning is a key expected outcome in PSM approaches, it should be noticed that the case study presented below focuses on the evaluation and discussion of outputs from phases 1-3 of the proposed methodological framework. A thorough evaluation of the outcomes related with the 'multiple learning loops' component is outside the scope of this article.

4.3 | APPLYING THE METHODOLOGICAL FRAMEWORK TO A CASE STUDY

4.3.1| Case study description

The methodological framework (Figure 4.1) was applied and tested in the tourism sector in Portugal, through the organisation of a PSM exercise envisioning a sustainability transition and aiming to validate the assumptions underlying its development. The illustrative application of the methodological framework focuses mainly on the elements "Iterative problem structuring" and "Mapping transition concepts", while providing reflections on the implementation of the components "Stakeholder identification and selection" and "Multiple learning loops".

The tourism sector in Portugal has been cornerstone in the country recovery after a long period of economic and social crisis, through the promotion of economic development and increasing its weight in the Portuguese economy (Statistics Portugal, 2019). Also, the national tourism authority – Turismo de Portugal – has elaborated in 2017 a strategy integrating sustainability goals for the sector toward 2027 (Turismo de Portugal, 2017). This strategy provides a blueprint for the transition of the sector towards sustainability. It was elaborated with the participation of several stakeholders through focus groups, strategic labs and public consultation. The strategy envisages promotion of the country as a competitive and sustainable destination, setting targets for selected social, environmental and economic indicators.

From the transitions research point of view, the tourism sector has been scarcely studied. The sector is deeply connected to key socio-technical systems, such as transportation, construction or energy production. The structural dependency on other systems confers a unique profile when focusing on the potential to explore multi-regime interactions. The development of multi-regime perspectives on transition studies is a gap needing further exploration (Köhler et al., 2019; Papachristos et al., 2013), despite initial work already developed, such as described by Raven and Verbong (2007).

Regarding the sustainability agenda, tourism has been growing in the last decades at a global level, with evidence of building environmental and social pressures (Penz et al., 2017). Greenhouse gases emissions from travelling, as well as increased levels of pollution and pressures on ecosystems are associated with high inflow of tourists (Boley, 2015). As a consequence of local accommodation expansion in cities, real estate and rentals prices increased, forcing residents to move out of city centres (Fletcher et al., 2019). The inclusion of specific indicators and targets for tourism in the 2030 Agenda and Sustainable Development Goals (SDGs) from the United Nations is evidence of the relevance of the sector in transitions towards sustainability. Goals 8, 12 and 14 (“Decent work and economic growth”, “Responsible consumption and production” and “Life below water”, respectively) pinpoint tourism directly, although the sector contributes to many other SDGs indirectly (World Tourism Organization, 2019).

Along with the integration of tourism in the international sustainability agenda, the sector provides a rich background to support sustainability debates. First, a great share of

tourism services is connected to nature or rely on ecosystem services, reinforcing the need for sustainable approaches, as discussed by Panzer-Krause (2018). Second, the sector is characterised by a high number of small businesses, that compete with each other while being mutually interconnected to provide a quality service to tourists (McKercher, 1999). This type of business environment associated to the reinforcement of tourism as a response to the 2008 global economic crisis led to the rise of new ways of doing business, such as digital platforms (Fletcher et al., 2019). Third, the relevance of the sector is transversal to multiple geographical scales, from local to global levels. Dilemmas emphasising the relation between local and global dimensions are common, such as tourists travelling to a distant location looking for local experiences, while contributing to the loss of identity in the visited places as described by Fletcher et al. (2019). Fourth, tourism relies on a wide range of other sectors to assure services demanded by customers, thus increasing the level of complexity in the transition towards sustainability (Buhalis, 2000; McKercher, 1999).

Due to the wide range of activities included in the sector, the scope of the study was narrowed to the accommodation subsector. This is characterised by a wide diversity of organisations, ranging from large hotel chains to local accommodations (Styles et al., 2013), which are recognised in the Portuguese legislation. Despite of this narrower scope, the interlinkages and dynamics established with organisations in other tourism subsectors were not excluded from the analysis.

4.3.2| Case study results

As depicted in Figure 4.2, the case study development was organised along the three key phases of the proposed methodological framework which are described in more detail below: 1) transition framing and actor selection, 2) PSM transition workshop, and 3) evaluation and synthesis.

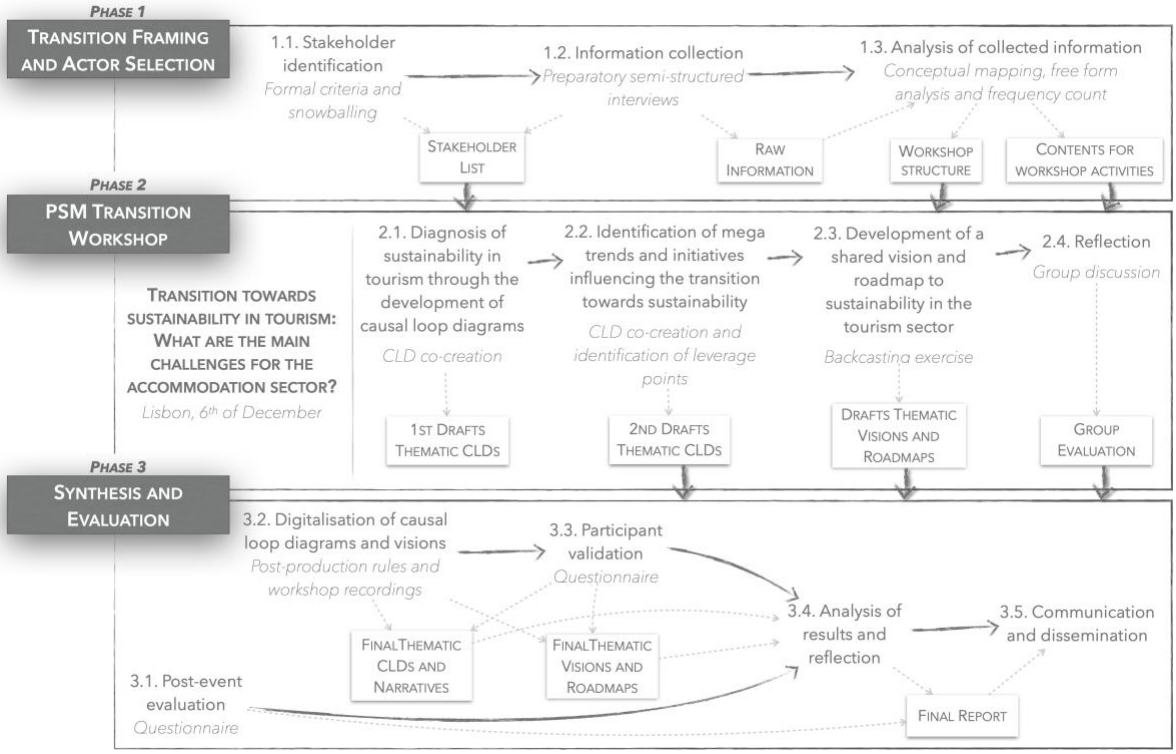


Figure 4.2 - Step-by-step implementation of the methodological framework in the case study of the tourism sector in Portugal

4.3.2.1| Transition framing and actor selection results

The initial task of the process was the identification of key actors from the Portuguese tourism sector through the analysis of sectorial documentation (step 1.1. in Figure 4.2), leading to the inclusion of the following groups of stakeholders: public administration at multiple levels (national, regional and local), business and tourism associations, accommodation companies with sustainability related values or certifications, and academics developing scientific work on the topic.

Stakeholders were invited for a preparatory interview (step 1.2. in Figure 4.2) according to the criteria detailed in Figure B.1 in Appendix B. A proximity criterion was applied, prioritising frontrunners and other actors operating in the Lisbon district to facilitate in-person activities between researchers and stakeholders (i.e., conducting interviews and workshop participation). Nevertheless, frontrunners and actors from other regions were also considered mostly when recommended through the snowballing procedure.

The preparatory interviews aimed at understanding stakeholders' perceptions on the current state of sustainability in the tourism sector; identifying other relevant stakeholders,

through snowballing; and providing background information for structuring the PSM workshop. Interviews followed a semi-structured format, allowing interviewees to explore relevant sustainability issues, while ensuring that information about sustainability initiatives, key actors, problems, causes, consequences and solutions to sustainability issues was collected.

Information gathered in preparatory interviews (step 1.3. in Figure 4.2) was categorised and clustered through the application of a free form analysis (Harding and Whitehead, 2012). This analysis relies on line-by-line coding, defining meanings in paragraphs, categorisation and conceptual ordering, providing a detailed picture on sustainability issues and key tourism actors. Sustainability themes mentioned by interviewees were used to organise sustainability problems in the sector, their causes and consequences, as well as niche initiatives. Frequency count allowed the identification of the more problematic sustainability themes from the stakeholders' perspective, as well as of the key tourism actors to include in the process (Figure B.2 and B.3 in Appendix B). Based on these results, the workshop was structured around three main sustainability themes: 1) water, energy and waste; 2) business ethics and management; and, 3) destination management.

The invitation for the workshop was sent to all stakeholders identified through formal selection criteria or snowballing. A reminder was sent in the week before the workshop, which also included a detailed agenda and a preliminary report on the interviews' results. The PSM workshop took place on the 6th of December of 2019 in Lisbon, gathering 15 participants, from which 7 had been previously interviewed (Figure 4.3). Other 29 tourism actors have been interviewed in Phase 1 and were unable to attend the workshop. The preparation phase contributed to the inclusion of a wider diversity of perspectives and worldviews, considering that not all interviewees were able to participate in the PSM workshop.

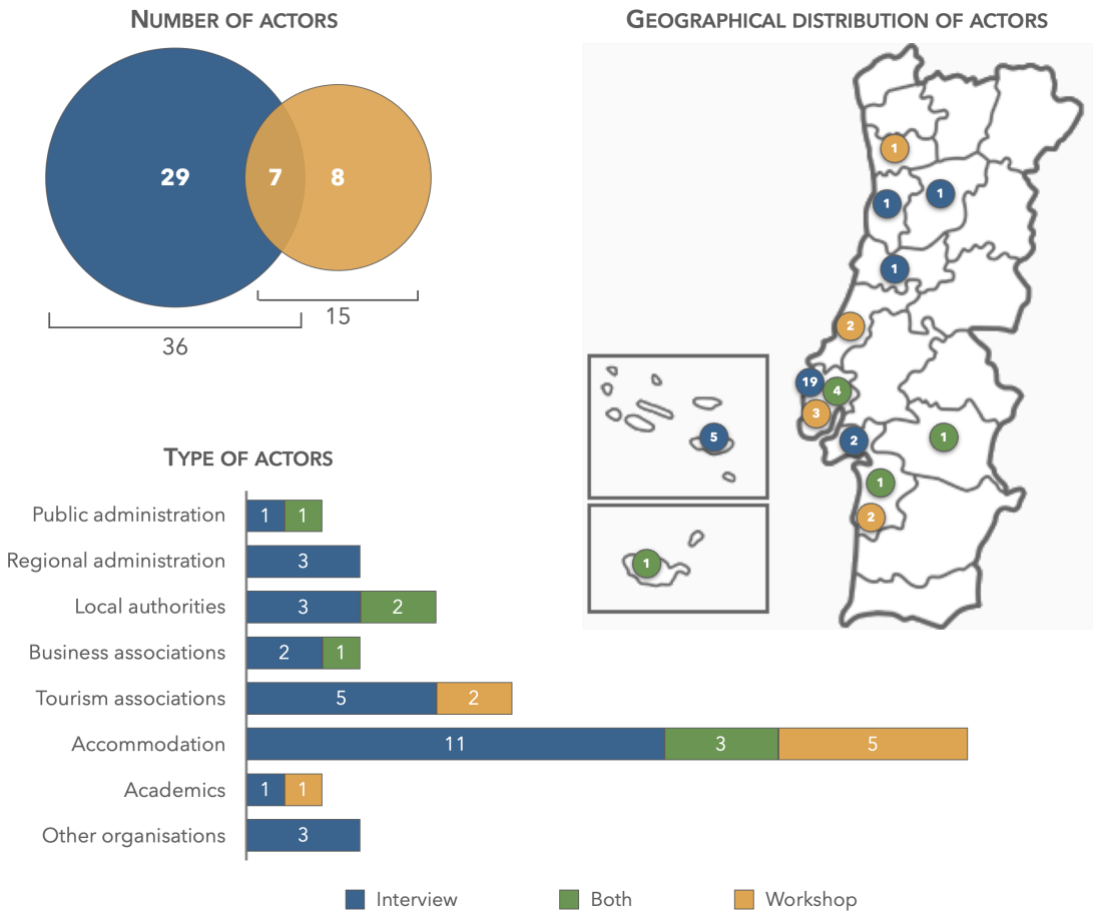


Figure 4.3 - Characterisation of the participants in the whole process of testing the methodological framework

With the typical PSM goal of representing as much diverse mental models as possible, the added value of the proposed stakeholder identification approach is observed by the diversity achieved in organisational types, ranging from public administration entities to accommodation businesses and academia, as well as by the spread on geographical distribution of participants, despite the initial focus on the Lisbon region.

4.3.2.2| PSM transition workshop

The PSM transition workshop was structured around three major tasks: 1) diagnosis of sustainability problems in tourism through the development of causal loop diagrams; 2) identification of mega trends and initiatives influencing the transition towards sustainability; 3) development of a shared vision and roadmap to sustainability in the tourism sector.

The first task was preceded by a presentation from the research team, which conveyed relevant results from the interviews to frame discussions, and explained the theoretical

background and methodological steps to be followed in the creation of CLDs (step 2.1. in Figure 4.2). Support materials were delivered to participants with examples of problems, causes and consequences associated to each sustainability theme collected during interviews. Most participants selected start variables among the list of problems provided as support materials. Two working groups selected more than one initial variable and identified causal relations between them; while the other developed two separate CLDs around two different initial variables.

Previously to the second exercise, the research team introduced MLP and transition concepts of regime, niche and landscape. Participants were asked to identify and introduce new variables at landscape and niche levels, in their thematic CLDs (step 2.2. in Figure 4.2). To inspire and guide participants in this task additional supporting materials were distributed: 1) a list of megatrends, inspired by the European Environment Agency (2015) report and 2) initiatives tackling sustainability in the tourism sector mentioned in preparatory interviews. Voting on leverage points provided a smooth transition between CLD construction and the backcasting exercise, by shifting the mindset from problem mapping to thinking on interventions and solutions. A group rotation was included in step 2.1., allowing participants to contribute to more than one theme and complement the first-round of discussion. After leverage points voting, participants returned to their original thematic group and performed the backcasting exercise based on the iterated CLD.

The backcasting exercise (step 2.3. in Figure 4.2) comprised two key steps: 1) group debate on a shared sustainability vision for the theme, to be achieved by 2040, and 2) sketching a roadmap to achieve the vision, including specific goals, measures, risks and key actors to be engaged in two time periods – i.e., from 2019-2030 and from 2030-2040. The outputs from this exercise, as well as the CLD produced in the previous exercises are presented in subsection 4.3.2.3. as a final version (after participants' validation).

The final workshop activity included a plenary group reflection about the methods used in the workshop and how they have contributed to promote learning, systemic thinking and participants' capacity of evaluating sustainability strategies (step 2.4. in Figure 4.2). Feedback on the method was very positive with highlights on its interactive nature, which allowed idea exchange among participants. Participants also emphasised the structured and iterative approach followed, which created a logic progression from the initial problem

scoping to the operationalisation of solutions discussed in the backcasting exercise. Stakeholders also perceived group rotation as a positive aspect, which enabled complementing CLDs of each discussion group with fresh ideas and perspectives. With respect to the outcomes of the workshop, participants mentioned that the process reinforced the importance of sustainability in tourism and helped to structure problems by representing causal relations and interactions among variables, thus improving systems thinking about transitions. This positive assessment reveals that the proposed methodological framework was found helpful in structuring problems and understanding the consequences of major trends, as well as in the evaluation of sustainability strategies.

4.3.2.3| Synthesis and evaluation

4.3.2.3.1| Synthesis

The results from these exercises were digitalised and reviewed after the workshop in a post-production phase (step 3.2. in Figure 4.2). The revision of the CLDs was supported by audio recordings of each thematic group discussion and results from preparatory interviews. This led to the calibration of the conceptual diagrams by adjusting some variables and identifying variables, causal relationships and feedback loops which had not been represented in the workshop CLDs. Additionally, CLDs were reviewed according to the transition concepts of regime, landscape and niche, to improve matching of the conceptual elements of each level and the understanding of their interactions. As shown in Figure 4.4, the CLD regime structure (i.e., variables, causal links and feedback loops) is represented in black, landscape structure in blue and niche structure in green. Variables framed by a rectangle were identified in the regime building exercise and after classified as being part of the landscape or niche CLD structure.

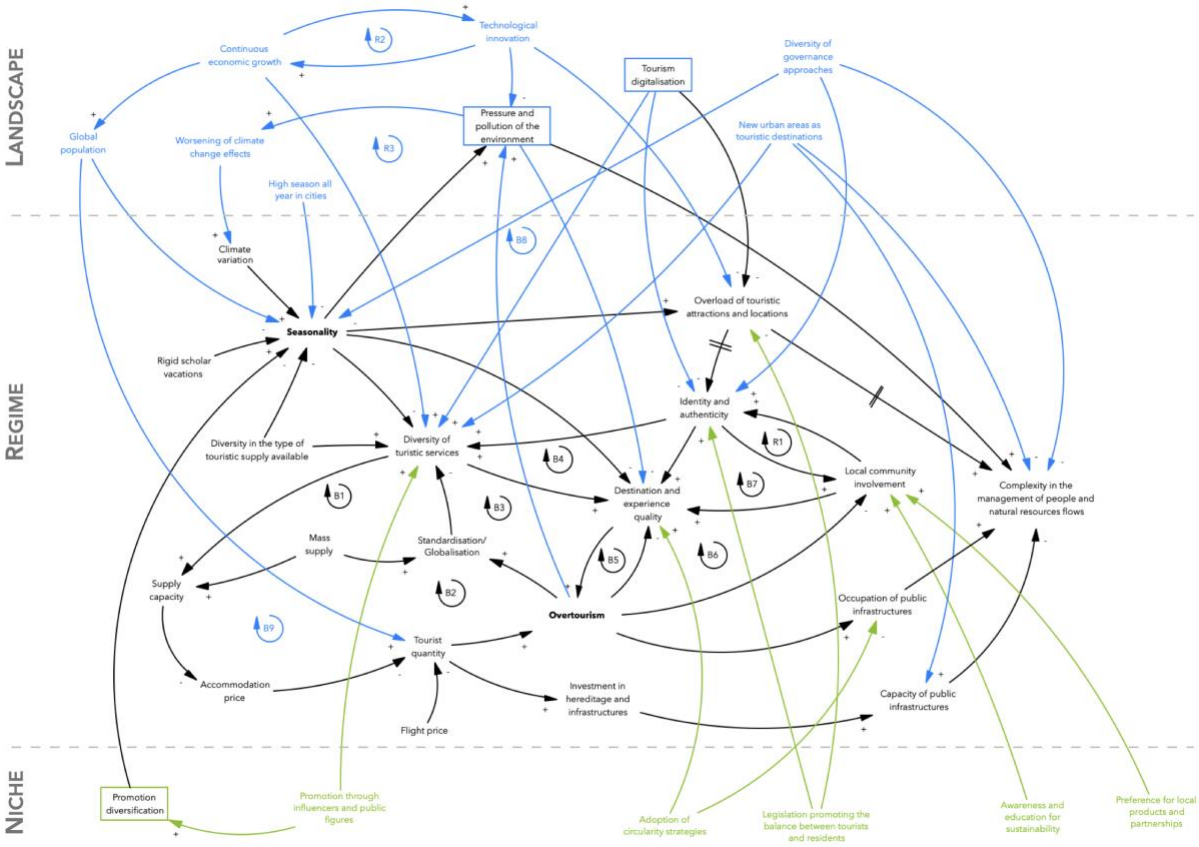


Figure 4.4 - Final CLD for the theme 'Destination Management'

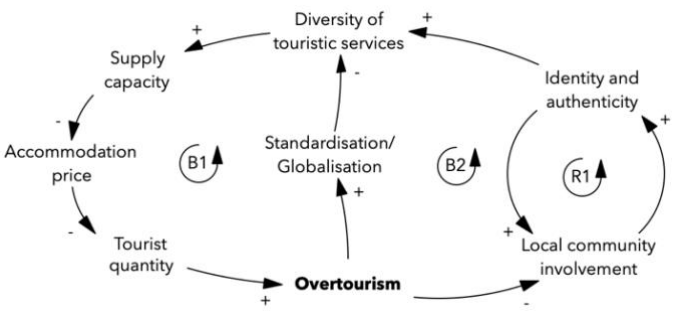
The workshop small-group discussions led to the identification of more than one problem in each theme, and in most cases, problems were interlinked, as pictured in Figure 4.4. This portrays the complexity of the problems at study and made evident the existence of time delays for some causal relationships to materialise. That is the case for the relation between the overload of touristic attractions and locations and the loss of local identity and authenticity, considering for example changes in the type of local market stores due to continuous and excessive tourists flows in a specific place.

The final version of the CLD has multiple feedback loops, identified in the evaluation and synthesis phase. Some of these feedback loops portray dynamics within the landscape or interactions regime-landscape, providing some insights on how the regime can interact or influence structural trends. The niche level is characterised by exogenous variables (i.e., not dependent of other variables and not structurally included in a feedback loop) influencing the regime. This is a characteristic that is shared among almost all CLDs produced (cf. Figure B.4 and Figure B.6 in Appendix B), with exception to the diagram on “Food waste” (cf. Figure B.5 in Appendix B), possibly due to the characteristics of niche experiments. More details on the

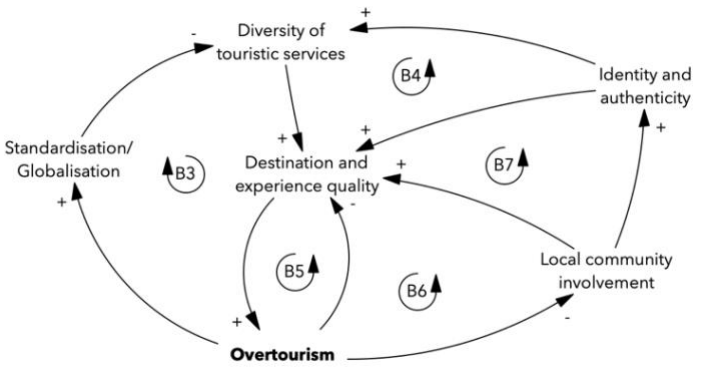
CLDs co-created under the themes “Water, energy and waste” and “Business ethics and management” are presented in Appendix B: Supplementary document on ‘Structuring sustainability problems’.

Following the revision of workshop CLDs, a narrative was written to facilitate analysis of key causal relationships and feedback loops characterising transition elements. As illustrated in Table 4.2, this narrative breaks down the feedback loops in each CLD to provide a step-by-step presentation of depicted causal links. One interesting example in the “Destination management” CLD is the balancing loop B9 (which is represented in detail in a graph in Table 4.2), where the two major problems identified – overtourism and seasonality – are interconnected through landscape variables (climate change). Despite overtourism and seasonality were identified as isolated sustainability problems, the PSM approach allowed the identification of a set of causal relationships that link both problems. Also, this balancing loop was only identified when introduced landscape variables, emphasising the importance of including in the exercise transition concepts, such as regime, niche and landscape. Narratives detailing causal relationships and feedback loops of other themes are included in Appendix B.

Table 4.2 - Narrative and feedback loops of the 'Destination Management' CLD

Regime	In the context of destination management, four core problems were addressed: seasonality, overtourism, maintenance of local identity and authenticity, and complexity in the management of people and natural resources flows. As depicted in the CLD (Figure 4.4), participants paid more attention to the conceptualisation of seasonality and overtourism mechanisms. We isolated the feedback loops in Figure 4.4 and drew simplified CLDs including only the variables integrating the selected loops. The overtourism increases the standardisation and globalisation, reducing the diversity of touristic services in the destination and consequently its supply capacity. This reduction increases the accommodation price, which leads to a decrease in the number of tourists, reducing the overtourism effect (Balancing loop B1). The loss of diversity of touristic services is also caused by increasing overtourism, considering its negative impact in the involvement of the local community and in the identity and authenticity of the destination (B2). These two variables are interrelated since the loss of destination identity and authenticity leads to reduced involvement of the local community and vice-versa (Reinforcing loop R1). 

Increased standardisation and globalisation also contribute to the reduction of the diversity of touristic services, leading to less overtourism through a decrease on the destination and experience quality (B3). Overtourism contributes to a lower destination and experience quality, which decreases overtourism (B5). The reduction of overtourism through the reduction of destination and experience quality have three possible causes: decreasing local community involvement (B6), loss of local identity and authenticity (B7) and lower diversity of touristic services (B4).

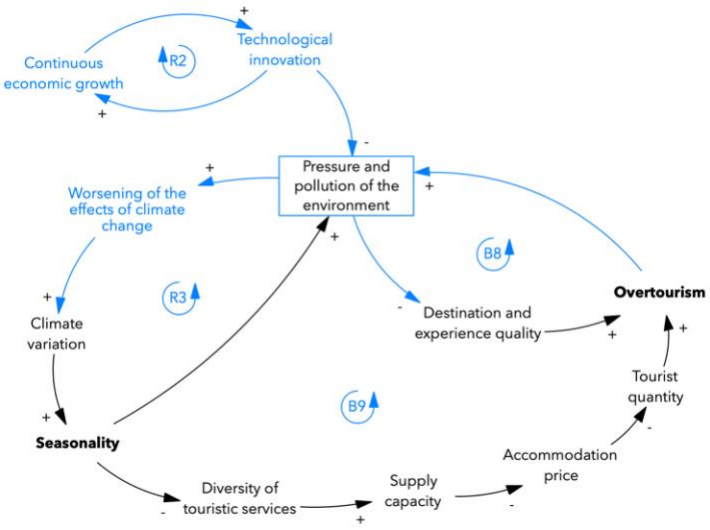


Overtourism raises the occupation of public infrastructures, such as mobility systems, increasing the complexity in the management of people and natural resources flows. On the other hand, higher number of tourists leads to more investment in heritage and public infrastructures, reducing the complexity of managing of people and natural resources flows.

Seasonality is increased by non-flexible scholar vacation periods, low diversity in touristic offer and destination promotion (e.g., predominance of beach destinations), and high climate variation. Destinations with low levels of variation in temperature and rain and temperate weather are able to maintain a constant level of tourism throughout the year. Higher seasonality increases the pressure and pollution on the environment, as well as the overload on touristic locations and attractions, increasing the complexity in the management of people and natural resources flows. The raise in overload on touristic locations and attractions reduces the identity and authenticity of the location, decreasing the destination and experience quality and the diversity of touristic services available for tourists, which also are direct consequences of seasonality. The reduction on the diversity of touristic services is a consequence of the low level of diversity in touristic offer and also decreases the destination and experience quality.

Landscape

Increasing pressure and pollution in the environment worsen the effects of climate change, increasing climate variation, which contributes to higher levels of seasonality in the affected destinations (R3). Higher seasonality also leads to a reduction on the diversity of touristic services, and consequently from the supply capacity. Thus, accommodation prices rise, decreasing the number of tourists in the destination and consequently overtourism and environmental pressure and pollution (B9).



Increased environmental pressure and pollution contributes to the reduction of destination and experience quality, leading to a reduction in overtourism and consequently a reduction of the pressure and pollution in the environment (B8).

	Increasing technological innovation, such as information technologies, reduces the overload on touristic locations and attractions, as well as environmental pressure and pollution, while contributing to increasing economic growth. In its turn, continuous economic growth increases technological innovation (R2) and the global population. Increasing population leads to more tourists in destinations and consequently, overtourism; however, it reduces seasonality by maintaining high levels of tourism all over the year. This effect is seen in European cities, which have reduced seasonality. Another landscape trend is the increase of digitalisation in tourism, which increases the diversity of touristic services and reduces the overload of touristic locals and attractions, as well as destination identity and authenticity. This variable is raised by digitalisation, through the reduction of touristic locals and attractions overload. The increase of new urban areas as touristic destinations increases the diversity of touristic offer, as well as the capacity of infrastructures, reducing the complexity in managing people and natural resources flows. This complexity is also reduced by the diversity in governance approaches (e.g., articulation between tourism actors), which also reduces seasonality and increases local identity and authenticity.
Niche	At niche level, more promotion of alternative business through public figures and influencers increases the diversification in promotion and reduces seasonality, as well as increases the diversity of touristic services. The adoption of a circularity strategies (e.g., resources reuse and waste separation) increases the destination and experience quality and optimises the occupation of infrastructures. More legislation promoting the balance between tourism and residents reduces the overload on touristic locations and attractions, increasing local authenticity. Increasing sustainability awareness and deduction and the preference for local products and partnerships contributes to a wider involvement of the local community.

The co-creation of the CLDs provided a holistic perspective on sustainability problems based on hidden causal relationships, while structuring the debates in each theme. Final CLDs provided an integrated view on the current and mainstream sustainability practices in the Portuguese tourism sector to the majority of workshop participants; however, this result is not consensual. The diversity of actors and consequently, backgrounds and worldviews, sets the ground to have different perceptions on the results obtained, including the contributions of the results to the understanding of the regime.

The identification of mega trends facilitated the adoption of a systemic view to most participants, while the integration of niche variables in the CLD contributed to the identification of leverage points to promote the sustainability transition. The value of CLDs in the operationalisation of both landscape and niche concepts is acknowledged by participants, as portraited in Figure 4.5.

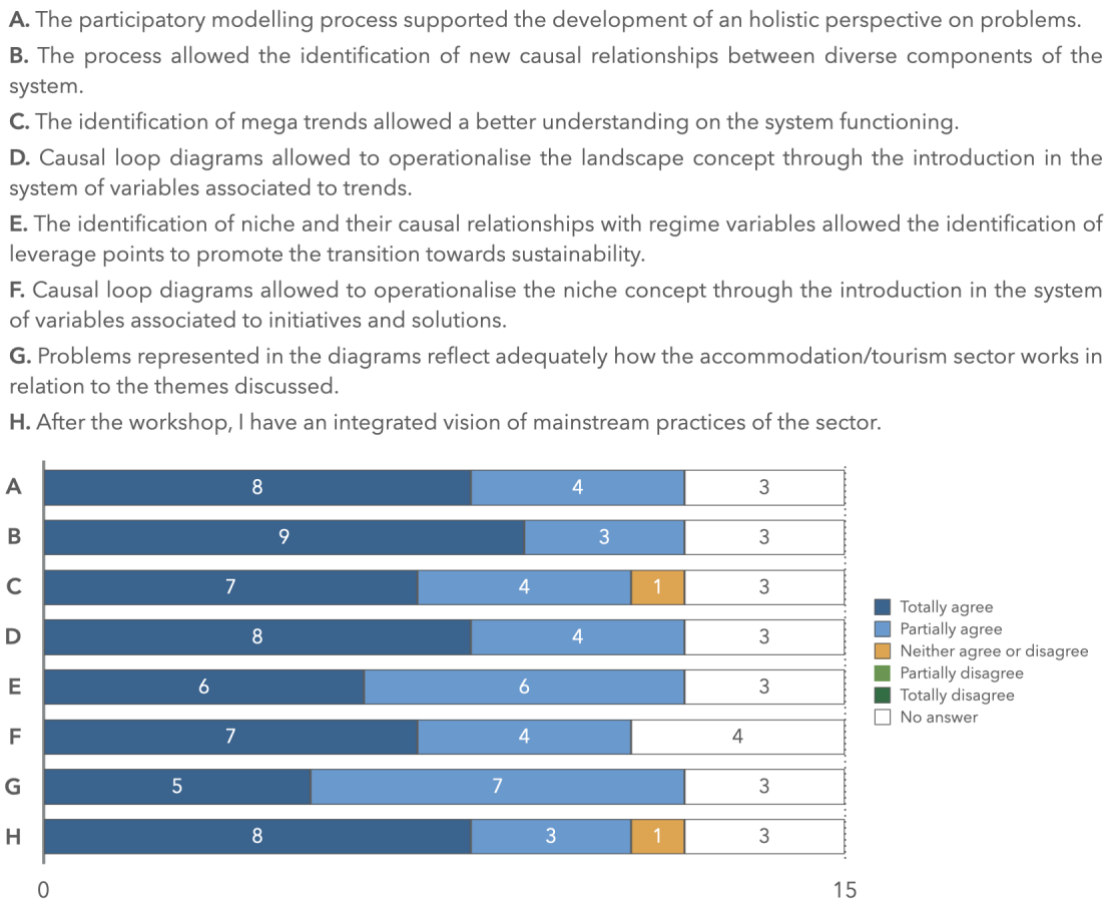


Figure 4.5 - Participants' feedback on the application of transition concepts during the workshop

Participants developed visions for each theme encompassing the diversity of issues beyond the specific sustainability problems mapped in the CLDs, as illustrated in Figure 4.6. Stakeholders working on the theme "Water, energy and waste" focused on energy consumption and food waste issues. Their desired vision, however, focused also on issues of resources and energy flows management, including other types of waste and water management.

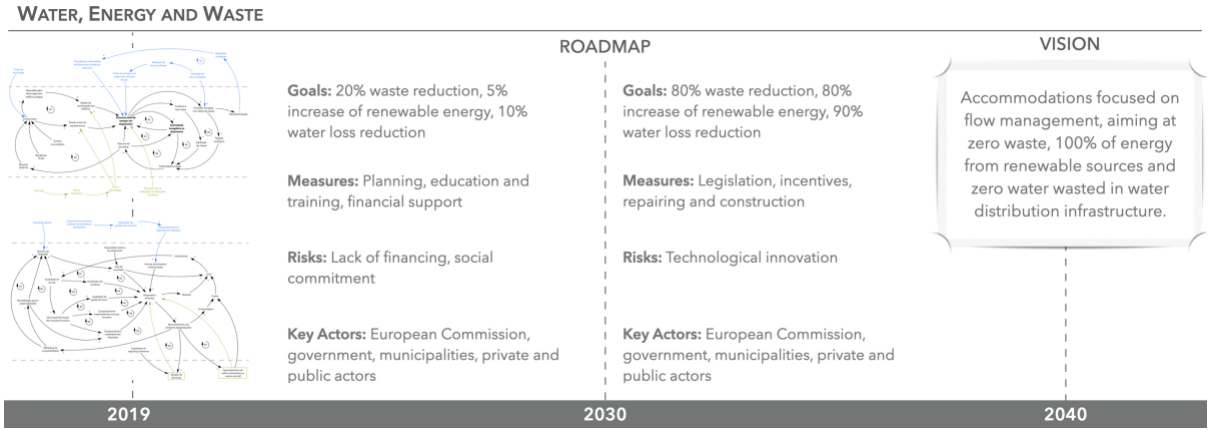


Figure 4.6 - Final vision and roadmap for the theme 'Water, energy and waste'

Goals were mostly focused on increasing efficiency through the definition of quantitative targets and the implementation of measures that were also considered in the CLDs. In this specific case, it is interesting to notice that the risk pointed for the time period between 2030 and 2040 corresponds to a niche variable in the Energy CLD, which is in line with the uncertainty usually associated to niche experimentation. In relation to actors, the emphasis is on public actors, despite including a reference to private actors, which is in line with the results from the preparatory interviews (Figure B.3 in Appendix B). Visions and roadmaps developed under the themes “Business ethics and management” (Figure B.7) and “Destination management” (Figure B.8) are presented in Appendix B.

Comments on the final versions of visions and roadmaps, provided by participants during the validation process (step 3.3. in Figure 4.2), highlighted the need for deeper reflection on issues such as pandemic outbreaks, public health and the capacity of public health systems (Table B.4). These issues were barely discussed during the workshop; however, validation took place during the lockdown to control the Covid-19 pandemic, raising the awareness on this type of risks. Further details on the results from the validation questionnaire are described in Appendix B.

4.3.2.3.2| Evaluation

The evaluation of the workshop was performed in two distinct moments: at the end of the event, where participants were invited to reflect in a round-table format on the tasks developed and evaluate the whole process (step 2.4. in Figure 4.2); and during the post-production stage, through an online questionnaire sent after the meeting (step 3.1. in

Figure 4.2). The questionnaire was structured into three sections: overall reaction, process and methods applied during the event, and workshop products. Figure 4.7 shows selected results of the evaluation questionnaire, while Appendix B (Figures B.10 and B.11 and Table B.5) provides full questionnaire results.

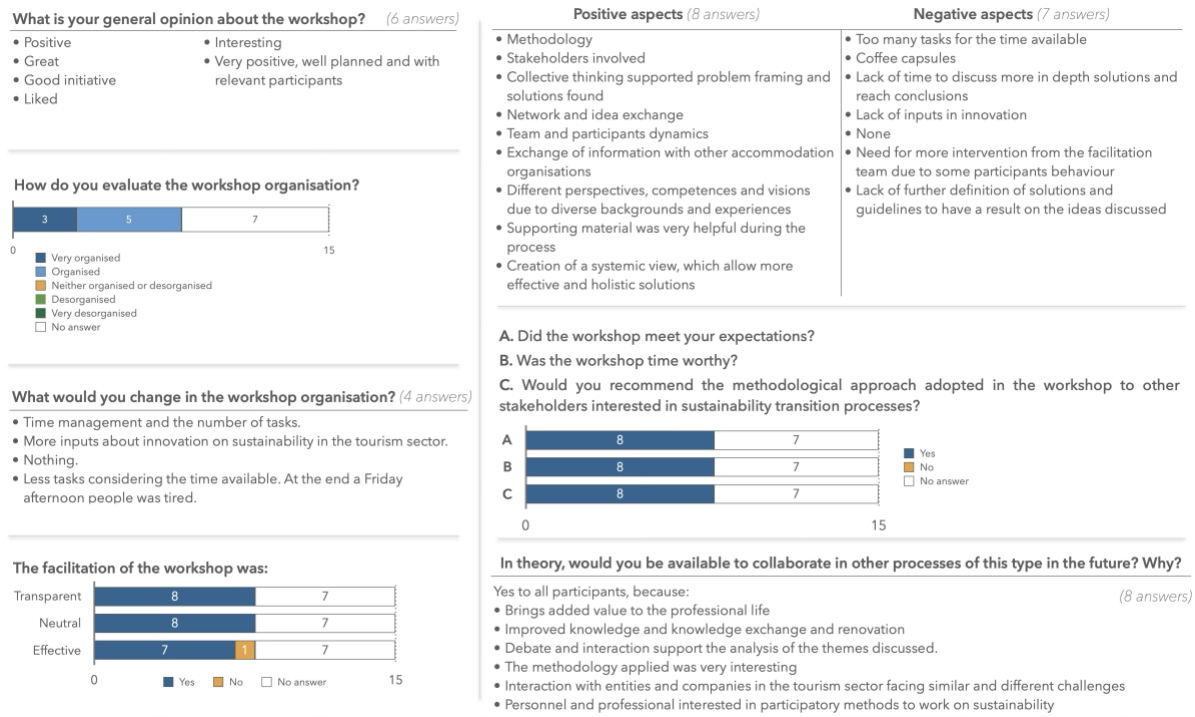


Figure 4.7 - Key results of the workshop evaluation questionnaire

Questionnaire results are in line with the comments received in the reflection moment at the end of the workshop, which was evaluated overall as a positive experience. Suggestions on possible improvements were focused on time management (i.e., more time allocated to each task was suggested), limit the number of tasks planned for each exercise, and integrate more sustainability innovations applicable to the tourism sector. On one hand, there was a perception that more could be done in terms of in-depth debate on the sustainability problems and further development of an implementation plan to achieve the co-created visions. On the other hand, the ambitious number of tasks led to fatigue of participants, who suggested allocating more time to finalise each of the proposed workshop exercises. Regarding positive aspects, respondents mentioned the methodology used and the stakeholders turnout, which allowed to debate different perspectives on the problems due to participants' different backgrounds and experiences. Another positive aspect was the interaction among participants, sharing information and ideas, while thinking collectively in

problem framing and structuring and co-creating a systemic view on tourism sustainability transitions. Additionally, supporting materials were mentioned as very helpful to build the CLDs.

Finally, workshop results were gathered into a final report and sent to all the actors involved in process, either through the interviews or the participation in the workshop (step 3.5. in Figure 4.2). Along with the acknowledgement of their contributions, was expressed the possibility of further comment on the results and overall process.

4.4 | DISCUSSION

The development and implementation of the 3-stage PSM approach was cornerstone to address the research gaps underpinning the motivation for this study. Preparatory interviews allowed to enlarge the pool of contributors in the participatory transition experiment through the integration of their perceptions in multiple time periods (e.g., workshop structuring and supporting material, CLD revision and validation). The progressive integration of transition frameworks in the discussions allowed participants to assimilate underlying concepts (e.g., regime, landscape and niche) and deal with sustainability transitions complexity. The multiple interaction loop with actors aimed to foster individual and collective learning. Additionally, the interactive PSM approach contributed not only to structuring sustainability issues, as suggested by Halbe et al. (2020); but it also provided a methodological framework to specify transition concepts in the context of the case study.

A key contribution of the methodological framework application was the insights provided about the use of participatory modelling approaches to facilitate stakeholder engagement in a TM process. As suggested by Holtz et al. (2015), the participatory modelling approach allowed the creation of a shared language and an increased understanding on causal relations, leading to structured and systemic view of sustainability problems. This contribution is supported by the feedback received from participants through the evaluation questionnaire (cf. Figure 4.5 and Figure B.10 in Appendix B). These achievements contributed to a structured problem definition, which provided the background to the creation of sustainability visions and pathways (Loorbach and Rotmans, 2010).

During the group reflection moment, participants stated that CLDs were useful to provide insights to the discussion and creation of future visions and pathways. This was enhanced by a sequential design of workshop activities, which aimed to launch an initial debate on specific sustainability problems, compel collaborative idea structuring translated into CLDs, and finally, envision possible problem solutions and pathways.

The co-creation of CLDs, visions and roadmaps were achieved through debate and conciliation of different perspectives into a shared final result, through the identification of a compromise among participants and their different views on sustainability in tourism (Figure B.10 in Appendix B). The dynamic of each group was different; however, none of the groups required the intervention of facilitators to help to conciliate their different perspectives. The development of shared visions based on consent and compromise solutions is a characteristic of social learning processes valued in transition processes since it sets the ground for the development of diverse experiments (Pahl-Wostl, 2006; van Mierlo and Beers, 2020). The variety of perspectives about the issues discussed was a result of the diversity of actors and points of view, which is an essential feature to deal with the complexity of the sustainability problems, according to Beers et al. (2016) and Pahl-Wostl (2006).

The implementation of an approach combining formal criteria and snowballing allowed the integration of a wide range of actors, considering both the type of organisations and their geographical location. The iterative approach adopted, which included a preparatory stage with exploratory interviews and then the organisation of a workshop, was instrumental to enlarge the pool of actors, collecting and integrating contributions in different formats and increasing the diversity of perspectives and worldviews in the creation of the final results, as discussed in Smith and Stirling (2010).

Enlarging the pool and the diversity of contributors to map sustainability problems and envision sustainable futures and pathways allows the participation of regime actors and incumbent organisations in this process. These actors may hinder the development of disruptive sustainability visions and transitions pathways due to their embeddedness in the regime and hidden agendas (Loorbach and Rotmans, 2010; Smith and Stirling, 2010). In the described case study, some participants reported that the workshop had no effect on their sustainability related capacities (Table B.5 in Appendix B), which may be evidence on the loss of disruptive outcomes due to the enlargement of the pool of contributors. However, this

result is balanced by the shared perception on the representativeness of workshop participants, in relation to the key actors involved in the sustainability transition of the tourism sector (Figure B.10 in Appendix B). The workshop was also perceived as an opportunity for networking and establishing future collaboration relationships. This contribution is in line with the creation of a transition arena as a key feature of a TM process, where a network of actors is engaged in the transition with the goal of structuring and framing sustainability problems and developing transition experiments (Hyysalo et al., 2019; Kemp and Loorbach, 2006).

The case study also provided insights on the potential of the PSM approach to put into practice in a specific context transition concepts of regime, niche and landscape, which are usually perceived as abstract concepts (Halbe et al., 2015). Introducing landscape and niche variables in CLDs, framing the final result into the MLP and identifying feedback loops contributed to understanding dynamics of each level, as well as possible niche-regime and landscape-regime interactions.

Identifying causal relations and feedback loops connecting landscape and regime variables in a given case and local context, provides insights on how landscape and regime elements are mutually influenced. In the case of relationships between niche-regime variables, the potential of niche innovations on changing the regime can be more explicitly highlighted. Where feedback loops are identified, it is also possible to acknowledge how the regime and niche variables are reinforcing or counterbalancing each other. This type of insights is promoted through the proposed approach, thus evidencing the contribution of PSM to the operationalisation of relationships between elements of the MLP framework. Such analysis is yet underexplored in the literature, with the exception of a few studies, such as the one described by Papachristos (2011).

The contribution to a deeper understanding of niche-regime and landscape-regime interactions is particularly interesting in the context of envisioning desirable futures or developing transition experiments. Framing sustainability problems in a transitions perspective, allows the identification of hidden dynamics of the system, which may support scenario development. These insights might be useful for the creation of desirable futures, and most importantly, in the definition of transition pathways. Nevertheless, further work on

the application of MLP concepts in conceptual modelling processes is needed to provide more insights on the operationalisation of the proposed approach.

The contribution of the methodological framework to learning outcomes along the stages of a TM process were not the main focus of the analysis, although the case study application allowed to reflect on some findings. For instance, the settings of collaborative learning described by van Mierlo and Beers (2020) were only partially achieved since the definition of multiple, well-defined tasks was not enough to create a balance between the amount of tasks and time available. Thus, during the evaluation participants mentioned the difficulty in finishing the set of tasks due to fatigue; and the lack of time to deepen the debates and to networking. Regarding the facilitation, the organising team was considered transparent and neutral for all participants and effective for the majority. Participants' perceptions on the creation and exchange of knowledge that occurred during the event are in line with the concept of single loop learning defined by Kraker et al. (2011). Moreover, the identification of causal relationships and feedback loops was perceived by some participants as a more systemic and structured approach to study sustainability problems, leading to a reframing, which is consistent with the definition of double loop learning presented by Kraker et al. (2011). This is also consistent with an action research way of doing science (Greenwood and Levin, 2007; Köhler et al., 2019). Further applications of the framework focusing on measuring learning outcomes will be instrumental to provide more detailed insights on this topic.

Despite the positive evaluation received from participants in relation to the methods applied during the workshop, the claim to have additional time for a more in-depth debate suggests the need to reconsider the time frame applied. Two possibilities for improvement can be considered in further experiences: increasing the workshop duration to one full day or splitting the workshop into two parts on two half-days. Both options would require an increased stakeholder commitment in terms of time dedicated to the process. However, considering the positive feedback provided by participants regarding their expectations and the availability to participate in this type of events (Figure 4.7), this seems practical and feasible to implement in future applications. The intention of participants to use the workshop results in their work context (Figure B.11 in Appendix B) reflects the usefulness of

the exercise, as well as the possibility of constituting a guiding reference for experimenting in the tourism sector in Portugal, as described in a TM process (Loorbach and Rotmans, 2010).

4.5 | CONCLUSIONS

Participatory modelling methods have been discussed in sustainability transition literature as valuable tools in multiple contexts, namely in the development of strategic activities in TM processes. These activities include problem definition and the co-creation of sustainability visions, as well as transition pathways.

In this study, we have built and tested a methodological framework based on a PSM approach, which allowed to explore the role of conceptual modelling in facilitating initial scoping stages of transition governance processes. The application of the PSM framework allowed to effectively structure and contextualise sustainability problems, while specifying transitions concepts of regime, niche and landscape. The case study developed in the accommodation sector illustrates how the goals proposed for the study were achieved. It was also found that process design may support social learning considering its iterative nature, while allowing the participation of a large spectrum of actors.

From the application of the PSM framework resulted holistic and systemic overview of three key sustainability themes for the Portuguese tourism sector. The CLDs co-created identify regime, landscape and niche variables along with their causal relations. Another finding was the usefulness of these diagrams to set ground for the co-creation of desirable future visions, as well as detailed roadmaps identifying goals, measures, risks and key actors to achieve these visions. These elements represent possible starting points and guidelines for the development of transition experiments, particularly at an organisational level, which constitutes the next stage of our research programme.

Since the application of the methodological framework focused on “Iterative problem structuring” and “Mapping transition concepts”, it would also be relevant to further explore both “Stakeholder identification and selection” and “Multiple learning loops”. In the case of “Stakeholder identification and selection”, scanning for and testing innovative approaches to this phase could provide insights on the influence of PSM framework on balancing agency and power relations in TM processes. To explore “Multiple learning loops”, introducing formal

measurement procedures throughout and after the conceptual modelling process would allow to extensively understand the learning outcomes of the approach. Also, further experimentation in different sectorial, geographical or governance contexts would enrich and develop each feature of the framework. Further replication and use of presented results in the development of future transition experiments is also recommended to consolidate the proposed methodological framework.

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5| CO-CREATING SUSTAINABILITY TRANSITION STRATEGIES[3]

SUSTAINABILITY TRANSITION STRATEGIES IN A BUSINESS CONTEXT: A CO-CREATION PROCESS IN THE PORTUGUESE HOSPITALITY SECTOR

ABSTRACT

The role and impact of businesses in transition processes depend on the strategic positioning of firms regarding long-term sustainability goals. Even though businesses are key actors for transition processes, the literature still lacks an extensive exploration of operational guidelines to support organisations in navigating the complexities of wider sustainability transitions. In this study, contributions from sustainability transitions research to the study of strategic planning processes in a business context were explored to address this gap. A procedure was developed to guide organisations towards development of sustainability transition strategies, which was further tested in a case study from the Portuguese tourism sector. The proposed approach builds on the transition management framework and a set of transversal sustainability elements: a holistic view of sustainability, long-term thinking, stakeholder involvement and innovation. The testing of the proposed procedure resulted on the co-creation of a sustainability transition strategy in a hotel which highlighted the need for participatory and long-term oriented approaches to support businesses in their transformation processes. Improvement opportunities were identified regarding external stakeholder involvement and the integration of innovation elements while co-creating organisational sustainability transition strategies.

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KEYWORDS: Backcasting, Business sustainability strategy, Participatory approach, Sustainability transitions, Strategic planning, Tool

5.1 | INTRODUCTION

Sustainability has emerged in the international agenda as an answer to global and systemic problems, such as climate change and biodiversity decline (Falkner, 2003). To address this type of problems, wide and disruptive shifts, or in other words sustainability transitions, are required in socio-technical systems (Köhler et al., 2019; Markard et al., 2012). Sustainability transitions involve multiple actors (individuals and groups), which influence and steer the direction of the transition (Farla et al., 2012; Smith and Stirling, 2010).

Businesses are key actors in sustainability transitions and play different roles in these processes, according to their strategic positioning in relation to sustainability (Farla et al., 2012; Markard et al., 2012). Although the role of business has already been discussed in sustainability transitions research, further work is required on its intersection with the field of corporate strategic management (Köhler et al., 2019). Transition studies have focused so far on socio-technical change mechanisms and patterns, and less so on business dynamics and individual business strategies (Diepenmaat et al., 2020). More insights are required on how business strategic approaches influence sustainability transitions, through boundary-spanning activities and innovative sustainable business models inspired in strong sustainability approaches (Köhler et al., 2019).

Both research fields acknowledge the limitations faced by organisations in planning and implementing their sustainability strategies as one-off initiatives, as well as the need to further consider a systems approach and collaborate with other actors (Diepenmaat et al., 2020; Loorbach et al., 2010). Still, most studies on corporate sustainability are solely developed within strict organisational boundaries, lacking the acknowledgement of different views on long-term value creation, as well as scarcely incorporating contributions from both internal and external stakeholders in strategic planning processes (Diepenmaat et al., 2020).

The adoption of a strategic approach to corporate sustainability management has been identified as a challenge in the literature (Baumgartner and Rauter, 2017). Lozano (2013) mentions lack of planning in organisational change towards corporate sustainability,

regarding organisational values, visions, philosophies, and policies. Scholars in the field of strategic management have focused on several topics, such as: how businesses can adopt a strategic perspective to their sustainability approach (Baumgartner, 2014; Baumgartner and Rauter, 2017); types of sustainability strategies adopted by businesses (Baumgartner and Ebner, 2010; Hanke and Stark, 2009; Neugebauer et al., 2016); and methods available to create corporate sustainability strategies (Broman and Robèrt, 2017; León-Soriano et al., 2010; Papagiannakis et al., 2014).

One of the most popular methods developed for strategic planning in businesses is the Framework for Strategic Sustainable Development (FSSD), developed throughout multiple studies (Broman and Robèrt, 2017; Holmberg and Robert, 2000; Robèrt, 2000; Robèrt et al., 2002). The FSSD provides a guide for the development of a proactive sustainability strategy based on a set of core principles and a four-step backcasting approach (Broman and Robèrt, 2017; França et al., 2017). Synergies between the FSSD and other tools and approaches have been explored in the literature, such as the Business Model Canvas (França et al., 2017), sustainable balanced scorecard (León-Soriano et al., 2010) and the planetary boundaries framework (Robèrt et al., 2013). Despite evidence of FSSD successful application at different organisational contexts and scales of analysis, empirical applications could be more widespread (Broman and Robèrt, 2017). Thus, the existing literature in corporate strategic planning and management, Kitsios et al. (2020) reinforces the need to further develop empirical research on this topic. One of the major gaps identified is the lack of supplemental practical guidelines to support practitioners in the creation of sustainability strategies that effectively integrate sustainability at the business strategic management level (Engert et al., 2016; Kitsios et al., 2020; Neugebauer et al., 2016).

Adding to this gap, in the sustainability transitions research field few studies have focused on the contributions of transitions literature to strategic planning and management within businesses. The use of the Transition Management (TM) framework in a business context is described in few studies, such as Loorbach et al. (2010) and Loorbach and Wijsman (2013). The TM cycle, divided into four levels (strategic, tactical, operational and reflexive), is considered as a common point between a broader societal transition and a business positioning process in relation to the transition (Loorbach and Wijsman, 2013). This positioning relies on the development of side innovation projects that run in parallel with the

existing business model to explore possible sustainability transition pathways (Loorbach et al., 2010). In these cases, societal transitions are regarded as opportunities for businesses to create new value and an inspirational culture within the company. The use of the TM framework provides a common perspective and language to position businesses in a broader societal context and explore innovation pathways (Loorbach and Wijsman, 2013).

The use of theoretical frameworks produced under the umbrella of sustainability transition studies (as TM) to guide internal transformation processes in organisations towards sustainability is still missing from literature, as mentioned by Lahtinen and Yrjölä (2019). This line of research, while identified as relevant to sustainability transitions research (Köhler et al., 2019), has been scarcely explored in recent literature. Instead, transitions research involving businesses have focused on the role of businesses in sustainability transitions by acknowledging the effect of strategic choices on the transition and that these choices are heterogeneous among businesses and over time (Ruggiero et al., 2021; Turnheim and Sovacool, 2020).

TM framework provides support to long-term planning given its normative orientation, while allowing to deal with the uncertainty associated to long-term horizons (Kemp and Loorbach, 2006; Malekpour, 2020). Participatory modelling, scenarios and other prospective tools applied in participatory settings are identified as key methods to TM processes (Halbe et al., 2020; Malekpour, 2020). However, to our best knowledge, the application of such tools in a transition context, such as the case of Pereverza et al. (2019), has mainly focused on strategic planning processes at a regional, national or sectorial level. Thus, the application of the TM framework, using participatory modelling, backcasting and scenario tools at the organisational level remains to be explored.

To bridge these gaps and research opportunities, the main goal of this study is to explore how businesses can integrate sustainability transition concepts in their strategic planning and management processes, to guide their positioning in a given ongoing sustainability transition process. To this end, a procedure is developed and tested to support the co-creation of a business sustainability transition strategy, framed in a wider societal transition context. This approach aims also at identifying and integrating sustainability-related elements throughout the process, which are key to create an effective sustainability transition strategy.

The procedure proposed is presented in section 5.2, including the rationale and theoretical background underpinning its development. Section 5.3 presents the methodological approach adopted, describing the main characteristics of the selected case study. Section 5.4 summarises the results from the application of the procedure to the case study. These results are discussed in section 5.5, while section 5.6 summarises the main conclusions from the study.

5.2 | Building a procedure for Organisational Sustainability Transitions (OST) planning and management

The proposed Organisational Sustainability Transitions (OST) procedure for guiding a business or organisation to position itself in a wider transition process is anchored on backcasting methods, which allow bridging business strategic planning and sustainability transitions studies.

Backcasting is an approach widely used in sustainability research comprising the creation of a normative scenario or vision for the future, which is followed by the definition of an action plan (Quist and Vergragt, 2006). This approach is usually applied in the context of complex and long-term problems, requiring major change and where dominant trends and externalities are part of the problem (Dreborg, 1996). Regarding these characteristics, backcasting is a good fit for addressing sustainability issues by providing a stepwise approach for the development of enduring solutions. The creation of a sustainability strategy can be divided into two broader phases: formulation and implementation (Engert and Baumgartner, 2016; Mintzberg and Waters, 1985).

Numerous approaches to backcasting exercises are depicted in literature from both business strategic planning and sustainability transitions literature, defining different numbers of steps (Andreotti et al., 2020; Broman and Robèrt, 2017; Pereverza et al., 2019; Quist, 2013). Quist (2013) summarises one of the most popular approaches to backcasting in five major steps: 1) strategic problem orientation; 2) development of future desirable visions; 3) backcasting analysis; 4) elaboration of future alternatives and definition of a follow-up agenda; 5) stimulate follow-up and implementation, while integrating the results.

In the business strategic planning literature, backcasting has also been used to deal with the complexity caused by conflicts between short-term and long-term goals, allowing the identification of business opportunities and how to avoid risks (Holmberg and Robert, 2000). A prominent example of the use of the backcasting approach in this research field is the aforementioned FSSD, which includes an operational procedure with four steps (Broman and Robèrt, 2017) to support backcasting in strategic planning (Broman and Robèrt, 2017). Baumgartner (2014) also relied on backcasting to develop corporate sustainability strategies, emphasising the need to differentiate different management levels (normative, strategic and operational) to guide the whole process.

Backcasting principles are also recognisable in the TM process proposed by Kemp and Loorbach (2006), through the inclusion of steps, such as problem definition, creation of a transition vision, identification of goals and interim objectives, and development of transition paths (Vergragt and Quist, 2011). These activities are gathered into three clusters (strategic, tactical and operational) and presented as a TM cycle by Loorbach (2007). A fourth cluster of activities (reflexive) is identified in the application of the TM cycle to the business context in Loorbach and Wijsman (2013). These clusters in the TM cycle are not necessarily sequential and their implementation is flexible (Loorbach, 2007), which is aligned with the vision for organisation sustainability depicted by Tourais and Videira (2019). Sustainability transitions studies have also applied directly backcasting approaches, such as the modular participatory backcasting proposed by Pereverza et al. (2019). This approach comprises 13 modules (such as, problem orientation, current situation, vision, solutions, drivers, pathways and action plan, among others) adapted to a transition context. It aims to allow a more flexible adaptation of backcasting to each case, through the selection of relevant modules and their associated level of participation.

The OST procedure proposed in Figure 5.1 is anchored on these multiple approaches to backcasting, applied in business strategic planning and sustainability transitions research. The state-of-the-art supported the definition of a set of coherent and interrelated steps, which aim at guiding the cocreation of business sustainability transition strategies. The operational procedure distinguishes between two major stages: planning and implementation, and this article focuses mostly in the former. In the planning phase four steps are included: 1) framing the organisational transition; 2) envisioning sustainable

futures; 3) defining sustainability transition pathways; and 4) planning for action. In the implementation phase, one step is proposed (follow-up) to ensure feedback loops from practice to improve and adjust the outputs from the planning phase. More details on each step are presented in following subsections. Figure 1 also includes a set of cross-cutting elements found in literature as essential for the development of sustainability strategies: 1) a holistic view of sustainability, 2) long-term thinking, 3) stakeholder involvement and 4) innovation. These elements are further explored in the following subsections.

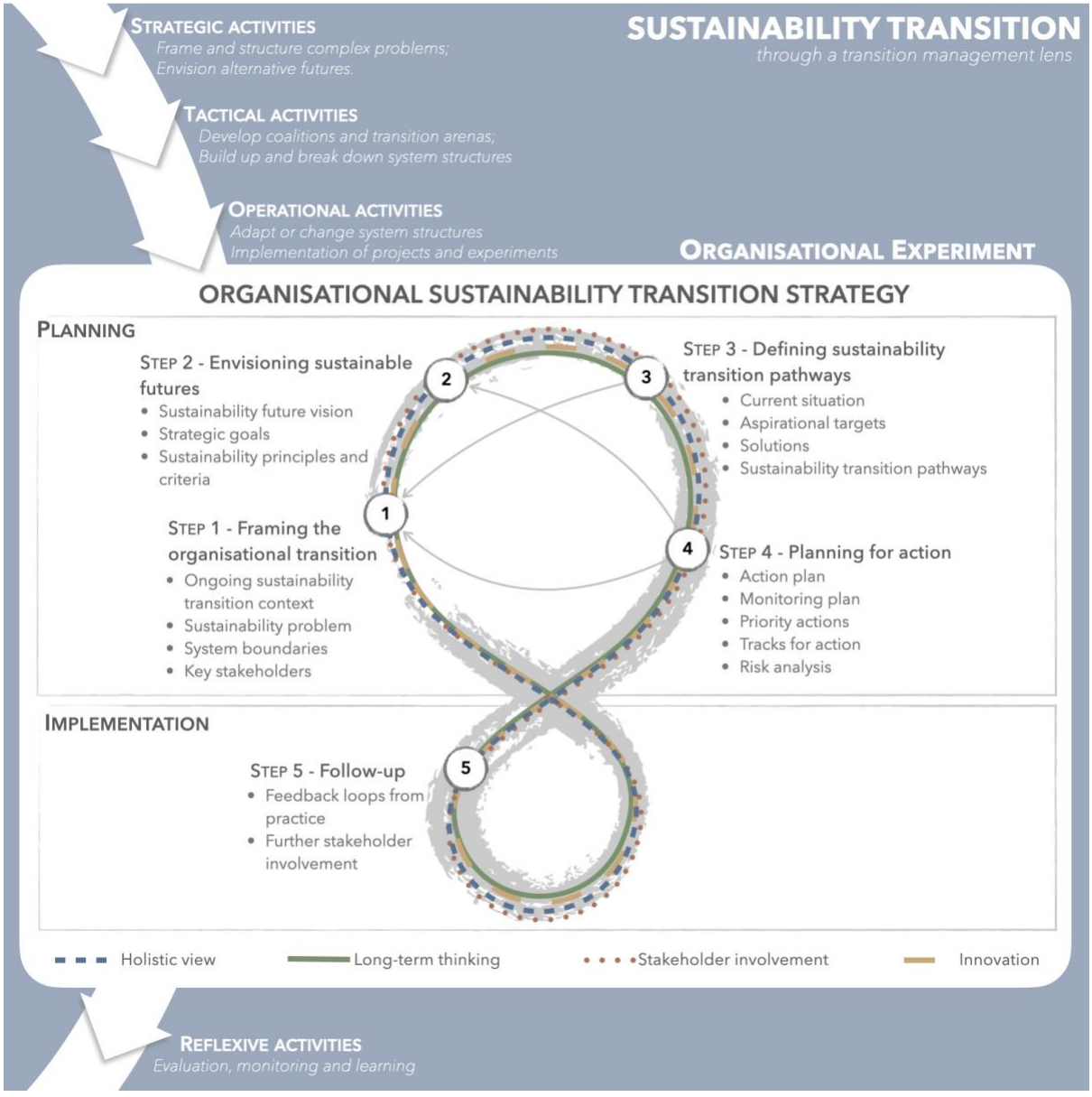

Figure 5.1 - Procedure proposed to guide the co-creation of business sustainability strategies on a transition context

5.2.1| Step 1 - Framing the organisational transition

As societal agents, businesses need to position themselves in wider sustainability transitions, either through the participation in transition networks and coalitions or through the development of organisational strategies (Loorbach et al., 2010; Loorbach and Wijsman, 2013). The development of organisational sustainability strategies requires the acknowledgement of the context in which the organisation operates (Loorbach and Wijsman, 2013; Searcy, 2016; van Lieshout et al., 2021). The TM framework provides guidance to businesses embedded in sustainability transitions by detailing the diversity of activities comprised in this type of processes, even when the transition is not being explicitly managed in accordance to the TM cycle (Loorbach and Wijsman, 2013). Thus, the creation of a sustainability strategy should be framed in a wider sustainability transition. Such framing provides useful information to establishing the scope of a participatory backcasting exercise. Scope definition implies the identification of the problem to be addressed and related key challenges (Pereverza et al., 2019; Quist, 2013). Thus, an initial survey on the major problems and challenges faced in an organisational sustainability transition is required to perform this task. The identification of system boundaries – in terms of space, time and value chain, among other aspects – is another essential task to define the scope of the process.

Reflecting and defining system boundaries is cornerstone to guide the identification of relevant stakeholders (Pereverza et al., 2019; Reed et al., 2009). Stakeholder mapping and analysis are also key activities at this stage (Pereverza et al., 2019; Reed et al., 2009). Stakeholder mapping is an iterative process, that may start from a small pool of stakeholders which is enlarged by successive iterative rounds (Reed, 2008; Tourais and Videira, 2021). Despite its iterative nature and the possibility of different participation levels across the diverse tasks proposed, stakeholder involvement in early stages of backcasting is essential to a successful engagement throughout the whole process (Pereverza et al., 2019; Reed, 2008). In this preparatory step, the goal is to collect stakeholders' perceptions on sustainability-related beliefs and values, problems, possible solutions, opportunities and key sustainability elements (Baumgartner, 2014; Quist, 2013).

5.2.2| Step 2 - Envisioning sustainable futures

Since desirable future visions are social constructs, workshops are the most common method used to create them (Quist, 2013; Quist and Vergragt, 2006). The use of participatory settings for visioning exercises aims at building consensus around shared visions (McPhearson et al., 2016; Pereverza et al., 2019) or mapping different positions to enable a deliberative approach (Reed, 2008; Wiek and Iwaniec, 2014). Besides building consensus, visioning exercises may be applied to build capacity, empower stakeholders, promote ownership or develop accountability (McPhearson et al., 2016). The proposal focuses on visioning's role in consensus building around a shared future vision of sustainability for the organisation, as well as on the creation of stakeholder ownership and accountability.

Different kinds of visions may result depending on the goal and focus of the process, such as feasibility and/or creativity (Quist, 2013). Thus, visions may be constituted only by goals, include transition processes or comprise a holistic pool of options and ideas (McPhearson et al., 2016). In the case of business organisations, the vision can also include core business purpose and values, as well as overall strategic goals (Broman and Robèrt, 2017). The vision must also define sustainability and how this definition is translated into principles and/or strategic organisational criteria (Pereverza et al., 2019; Quist, 2013; Wiek and Iwaniec, 2014).

A future vision is a key reference point to guide a transformation process, from the current state to the desirable envisioned future state (McPhearson et al., 2016; Wiek and Iwaniec, 2014). To support this transformation, the vision must be the result of a shared effort and be a source of inspiration and motivation (Wiek and Iwaniec, 2014). In the OST procedure, embedding sustainability principles and criteria in a future vision is recommended to provide a steady reference and guidance throughout the whole transition planning process.

5.2.3| Step 3 - Defining sustainability transition pathways

The definition of sustainability transition pathways relies on the identification of a set of changes required to lead the organisation from its current situation to the sustainable future vision created in the previous step (Pereverza et al., 2019; Quist and Vergragt, 2006). Thus, the initial task required to develop sustainability transition pathways is a

characterisation of the current situation regarding the key elements of the co-created vision and associated strategic goals (Broman and Robèrt, 2017; Pereverza et al., 2019). The identification of existing challenges and opportunities for achieving the strategic goals, as well as the analysis of resources available, are key elements of the reference situation analysis contributing to the definition of the required changes (Broman and Robèrt, 2017; Quist, 2013).

The second task focuses on identifying a set of possible solutions to the previously identified challenges (Pereverza et al., 2019). All ideas and actions are valid at this point of the backcasting exercise, considering that even if is not possible to implement some of these actions in the present, the conditions may change over time (Broman and Robèrt, 2017). The analysis of these solutions at the light of multiple criteria, such as feasibility, focus on the short, medium or long term, contribution to strategic goals and type of expected outcome is cornerstone in the creation of the sustainability transition pathways. These are finalised by clustering the previously analysed solutions into logical tracks for action to tackle each strategic goal. As an iterative process, this rearrangement can lead to the adjustment of strategic goals or to the definition of aspirational targets that provide guidance over the development and implementation of the sustainability transition pathway (Broman and Robèrt, 2017; Pereverza et al., 2019).

5.2.4| Step 4 - Planning for action

This step focuses on the operationalisation of the sustainability transition strategy, comprising diverse activities, such as the creation of a detailed action plan and an associated monitoring plan, the prioritisation of actions, identification of key capabilities required, definition of action tracks and risk analysis. The action plan is composed by sets of actions aligned to each sustainability transition pathway and allocated to short and long-term time horizons (Pereverza et al., 2019). Aligned with this plan, the tools proposed to support the operationalisation of the sustainability transition strategy are performance evaluation indicators, which facilitate and monitor change in the organisation when associated with specific targets (Broman and Robèrt, 2017).

The adoption of short-term actions to leverage organisational change is supported by a prioritisation process, in which actions are sequenced according to existing organisational capabilities, financial resources and time availability (Quist, 2013; Quist and Vergragt, 2006). This detailed planning of priority actions, including the definition of specific tasks, deadlines for implementation and responsibilities contributes to the transformation required within the organisation (Pereverza et al., 2019; Wiek and Iwaniec, 2014). Conducting assessments, analyses and feasibility studies regarding those actions that lack operationalisation conditions would support their implementation, while maintaining the focus on the long-term (Quist, 2013).

Additionally, the analysis of potential drivers of change, focusing on external and internal forces that can impact the system are relevant in the context of a risk analysis. This analysis would also benefit from the identification of major trends influencing the organisation, as well as uncertainties related to these trends (Pereverza et al., 2019). Considering the iterative nature of the planning process, the action plan may also be revised according to the risk analysis results.

5.2.5| Step 5 - Follow-up

Along with the implementation of the action plan, the operationalisation of an organisational sustainability transition strategy often requires the adaptation of organisational structures and management processes (Baumgartner, 2014). Thus, among the tasks included in the follow-up step are monitoring the results from the implementation of concrete actions and the evaluation of the outcomes and effects (Pereverza et al., 2019; Quist and Vergragt, 2006). These tasks contribute to the continuous improvement and iterative nature of the strategic planning process, by providing the base information for the revision of outputs from previous steps, such as the sustainability vision, sustainability transition pathways or the action plan (Baumgartner, 2014; Pereverza et al., 2019).

Further stakeholder involvement may be also required in this step to support the operationalisation of the sustainability transition strategy. Workshops and other participatory platforms are valuable to promote the commitment of relevant stakeholders in specific actions or solutions (Quist, 2013).

5.2.6| Cross-cutting elements

An organisational transition towards sustainability and its integration in the procedure applied to perform the transition requires the consideration of the set of cross-cutting elements presented in Figure 1: 1) holistic view of sustainability and the organisation; 2) long-term thinking; 3) stakeholder involvement; 4) innovation. These elements are further explained in this subsection along with the underlying theoretical background.

Businesses need to adopt a holistic view of sustainability (Suriyankietkaew and Petison, 2020; Tourais and Videira, 2019), along with new ways to deal with its complex and dynamic nature. In Baumgartner and Ebner's (2010) classification of businesses, systemic visionary strategies reflect high levels of maturity and commitment towards sustainability in all its dimensions (economic, social and environmental). A key characteristic of this type of strategies is the holistic view of sustainability, as well as a wide implementation across all business activities. The alignment between the core business logic and sustainability is essential in proactive strategies, leading to business model redesign (Cavaleri and Shabana, 2018; Schaltegger et al., 2012). Silvestre et al. (2018) argue that frontrunners adopt an integrated perspective of sustainability, anchored on the Triple Bottom Line (TBL) dimensions, to minimise negative impacts.

According to Neugebauer et al. (2016) and Baumgartner (2014), the focus on the long-term is a key characteristic of sustainability strategies, including both its planned and emergent elements. Only including long-term thinking along the whole business planning and management process is possible to deal with the dynamic nature of sustainability (Tourais and Videira, 2019).

This dynamic nature is also fuelled by continuous change in stakeholders' concerns (Tourais and Videira, 2019). Consequently, stakeholder involvement was also considered a transversal element in the OST procedure for creating a sustainability transition strategy. Hanke and Stark (2009) reinforce the importance of including collaborative processes in the creation of a sustainability strategy, to ensure the negotiation of expectations from internal and external stakeholders. In this study, a leadership or commitment strategy implies the collaboration between employees and management, while an intersectoral alliance strategy

comprises the negotiation between diverse external stakeholders. Stakeholder involvement in the strategic process is also defended in other studies due to its benefits (Nunhes et al., 2020), such as promoting shared value creation (Jerónimo Silvestre et al., 2018) or being a source of innovation (Schaltegger et al., 2012).

Baumgartner and Ebner (2010) identify innovation and differentiation as sources of competitive advantage and unique market positioning in businesses with systemic visionary strategies for sustainability. The role of organisational learning and the development of dynamic capabilities in the creation and implementation of sustainability strategies is also highlighted by Teece et al. (1997) and Tourais and Videira (2019).

5.3 | A CASE STUDY FROM THE PORTUGUESE TOURISM SECTOR

The focus on experimentation is a key element in sustainability transitions research, as a part of the TM (Bosch and Rotmans, 2008) and Strategic Niche Management (Raven et al., 2010) approaches. In this context, transition experiments are defined as "innovation projects with a societal challenge as a starting point for learning aimed at contributing to a transition" (Bosch and Rotmans, 2008).

Another key characteristic of experimentation in sustainability science is the role played by societal actors in the experiment (Weiland et al., 2017). These actors are integrated in the experiment both as participants and active players in the construction and definition of the experiment, which may be focused on providing a deeper understanding on a problem or a solution (Caniglia et al., 2017).

The current study relies on experimentation to generate actionable knowledge, which is a research approach commonly applied in sustainability science, in general, and sustainability transition studies, in particularly (Caniglia et al., 2021; Hölscher et al., 2021). The need to perform an in-depth analysis of the application of the OST procedure led to the adoption of a case study approach, focused on learning from experimentation and on the relation between the organisation and its context. These requirements are aligned with the case study approach discussed by Flyvbjerg (2006). As in the case study approach, experiments also focus on learning as a major goal, in particularly from a knowledge

deepening perspective. In this case, the focus is on learning extensively from a specific experiment within its context (Bosch and Rotmans, 2008).

To this end, the tourism sector was identified as relevant field for the application of the OST procedure, regarding the increased awareness of negative impacts of touristic activities (Hernández and León, 2013; Niñerola et al., 2019), the need for a paradigm shift in the sector (Fletcher et al., 2019; Higgins-Desbiolles et al., 2019), as well as the relevance of businesses in the transitions process (Hughes and Scheyvens, 2016). Narrowing the geographical scope, Portugal was selected since the Portuguese national tourism authority (Turismo de Portugal) has been promoting sustainability transitions, namely through the introduction of a vision and strategy for the tourism sector in Portugal to 2027, anchored on sustainability (Turismo de Portugal, 2017). The focus on sustainability has been reinforced by the crisis derived from the COVID pandemic. In this context, Turismo de Portugal developed an action plan for sustainability (cf. (Turismo de Portugal, 2021a) and multiple partnerships were created to support the operationalisation of the strategy and action plan (Turismo de Portugal, 2021b).

The case study company selected to test the OST procedure was identified from a pool of businesses from the Portuguese tourism sector who participate in sustainability transition initiatives. Among these initiatives was the workshop developed by Tourais and Videira (2021) on structuring sustainability problems in the tourism sector in a transition context. In the follow-up of this workshop, the case study organisation (from hereafter referred to as Sustainability Resort) volunteered to participate in the current study and was selected as the business organisation with which the implementation of the proposed procedure was tested.

Sustainability Resort is a five-star resort built in a natural environment and located in Grândola municipality, in Alentejo region (south of Portugal), as illustrated in Figure 5.2. This area has been emerging as a luxury and sustainability-oriented touristic destination under the name of Comporta, which is a small village close to the resort. The resort offers rooms, suits and villas distributed in different buildings, which are integrated in the landscape and scattered in an area of 17 hectares. Along with the high-end accommodation offer, the Sustainability Resort also provides guests a set of experiences embedded in nature and local culture. The company had 111 employees in 2020 and is classified as a SME (Small and

Medium Enterprise). There are fluctuations in the number of employees due to seasonality since the region is considered a beach destination.

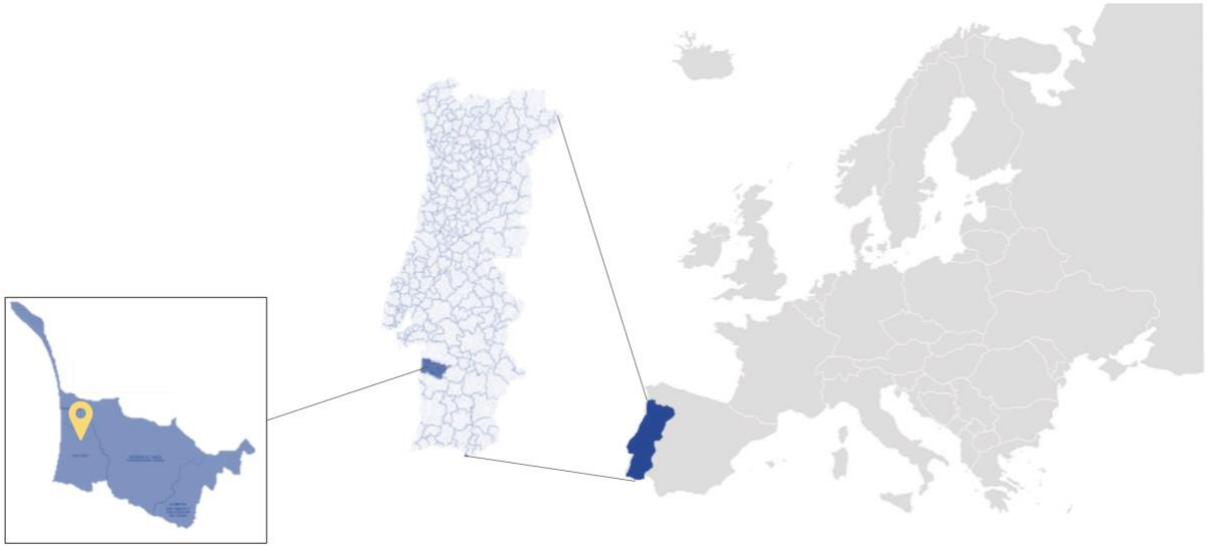

Figure 5.2 - Sustainability Resort location map

An initial meeting between the hotel managers and the authors took place in February 2020 to establish the collaboration goals and a timeline for the activities comprising the cocreation process supporting the testing of the OST procedure. A focal point at the hotel was defined to ensure an agile and flexible communication. Though the timeline considered initially a 3 to 4 month collaboration, this period had to be extended to 16 months due to the covid pandemic outbreak. Public health restrictions in force during this period led to the testing of the framework through organisation of online workshops. Following the preparatory individual interviews, which took place between June and October of 2020, a sequence of five online workshops replaced the two half-day in-person workshops initially planned. The duration of each online session was approximately 1,5 hours, to avoid screen fatigue and achieving a balance between participants' engagement in the workshop and their work routines.

5.4 | RESULTS

The presentation of results achieved through the application of the OST procedure are organised according to the steps described in chapter 5.2 (Figure 5.1). Following the framing of the organisational context supported by individual stakeholder interviews (Step 1), the

workshop-series comprised the following steps: Step 2) envisioning sustainable futures (one online session in January 2021); Step 3) defining transition pathways (two online sessions in February and March 2021); Step 4) planning for action (two online sessions in March and May 2021). Two online collaborative tools were used throughout the workshop series: Zoom (https://zoom.us/pt/) and Miro (https://miro.com). The results from each workshop were analysed and used to prepare the subsequent sessions and additional feedback in-between sessions was collected from participants. These intermediate and individual feedback related to workshops' format and content was very valuable to adapt the proposed methodology to the specific conditions of the hotel.

A total of 27 internal stakeholders were involved, including top managers – owner, operations director and hotel manager – and a wide diversity of departments – maintenance, finance, food and beverage (F&B), housekeeping, sales, human resources, marketing, front office, reservations, landscaping and organic garden, real estate and SPA. Throughout the process, individual interviews had the higher attendance level (18 participants), while the validation workshop had the lower level of attendance (6 participants). Not all participants were involved throughout the whole process: some were only included in later stages, while others changed jobs during the period of the experiment (7 participants).

A more detailed outlook on the application of the OST procedure to the case study selected is presented in Table 5.1. This table discriminates the methods used in each step and correspondent set of tasks in the procedure proposed, a list of stakeholders involved and a summary analysis on how data was collected and interpreted, the main results obtained, as well as contributions to the testing and implementation of the proposed procedure.

Table 5.1 - Summary of results and analysis of the application of the proposed procedure to the selected case study

Methods	Stakeholders	Steps and tasks	Data and analysis	Results	Contribution to proposed procedure
Preliminary interviews	• Owner • Top management • Departments: financial, maintenance, organic garden, housekeeping, SPA, F&B, front office, real estate • Subcontracted: human resources, sales, marketing, landscaping, construction • Total of participants: 18	• Step 1 – Framing the organisational transition: – Ongoing sustainability transition context; Sustainability problems – Engagement of key internal stakeholders	• Use of semi-structured interviews • The script for the interviews was designed using information on sustainability activities, problems and challenges faced in the Portuguese tourism sector transitions workshop (Tourais and Videira, 2021). • The script was divided into three parts, aiming the following goals: – Mapping hotel's key stakeholders, namely by asking about interactions between internal and external stakeholders in daily routines; – Characterising the hotel's sustainability profile, namely by asking interviewees about sustainability concepts and the practices adopted by the hotel; – Eliciting individual future sustainability visions, more specifically by inviting interviewees to reflect on their individual future vision for the hotel, as well as the organisational capabilities required to achieve it.	• Map of the key hotel stakeholders • Individual perceptions on: – Sustainability themes, problems and challenges faced by the hotel; – Sustainability practices already implemented in the hotel; – Individual sustainability visions.	• Initiate stakeholder involvement in early stages of strategy definition • Setting the departing point for the co creation process • Framing within broader sectoral transition processes and bringing key elements of the context in which the hotel operates to the cocreation process
Visioning workshop	• Top management • The following departments: financial, maintenance, organic garden,	• Step 2 – Envisioning sustainable futures: – Sustainability future vision – Strategic goals	• The workshop was structured around 4 major exercises (which are further detailed in Appendix A), using the results from the preliminary interviews as background information:	• Sustainability vision for the hotel • Key sustainability elements • Strategic goals	• The visioning exercise was set to 2040 to promote long term thinking and allow participants to distance themselves from the current

Methods	Stakeholders	Steps and tasks	Data and analysis	Results	Contribution to proposed procedure
	housekeeping, F&B, real estate, reservations • Subcontracted companies accountable for department management: human resources, marketing • Total of participants: 11	− Sustainability principles and criteria	− elicitation of individual perceptions on the future of the hotel (icebreaker, creativity moment and driver of a sustainability mindset); − deliberation on the key elements of the sustainability vision, based on expected results and possible actions; − definition of strategic goals associated to each element of the shared vision and based on expected results; − discussion of sustainability best practices available for implementation and possible actions to support the achievement of the strategic goals. • Post production phase: key sustainability elements were organised by letters, while the associated strategic goals were numbered. Individual feedback was summarised in a short text, capturing a general perspective on the shared sustainability vision for the hotel in 2040	• Best practices and possible actions to achieve the goals proposed	constraints to achieve sustainability • The vision was discussed from a holistic perspective of sustainability to avoid a segmented approach to sustainability (divided into the dimensions: social, economic or environmental). • Introduction of best practices available as a driver to integrate innovative solutions in the strategy.
Backcasting workshops (3 sessions)	• Top management • Departments: financial, maintenance, organic garden, housekeeping, F&B,	• Step 3 – Defining sustainability transition pathways: − Current situation − Aspirational targets − Solutions	• The backcasting exercise was distributed between three iterative working sessions to comply with employees' availability • In the first session background information from the previous working steps (such as sustainability problems and opportunities) was	• Draft versions of the following strategic elements: − Strategic goals − Aspirational aims − Transition pathways − Action plan (including a list of	• Sustainability problems and opportunities were used to set the current situation and explore all possible actions • Introducing alternative transition pathways was a strategy to encourage innovative thinking

Methods	Stakeholders	Steps and tasks	Data and analysis	Results	Contribution to proposed procedure
	real estate, reservations • Subcontracted: human resources, marketing, sales • Total of participants: − 1st session: 11 − 2nd session: 10 − 3rd session: 8	− Sustainability transition pathways • Step 4 – Planning for action: − Action plan − Monitoring plan − Priority actions − Risk analysis	used to explore a set of actions to adopt regarding the defined strategic goals, as well as performance indicators • In the second session alternative transition pathways were explored and actions were organised in time horizons considering implementation constraints and precedence • In the third session the diverse transition pathways were consolidated to achieve each strategic goal, associated aspirational aims, potential implementation synergies, resources required and possible risks to implementation.	actions, time horizon for action implementation, performance indicators and targets, required resources and capabilities, and action tracks – synergies between actions) − Risk analysis	• Implementation on the long-term horizon was an option to ensure the integration of innovative and more demanding solutions • Diagnosis actions were allocated to the short term and were identified as critical to complete the monitoring plan (definition or adjustment of quantitative targets and of performance indicators) • Single actions address multiple sustainability dimensions as a result of the adoption of a holistic approach (e.g., action D1.1.9.) • Aspirational aims were an instrument to keep the strategy ambitious and focus on the long term • MLP provided a framework to organise the risk analysis
Validation workshop	• Top management • Departments: financial, housekeeping, F&B • Subcontracted: marketing • Total of participants: 6	• Step 4 – Planning for action: − Action plan − Monitoring plan − Priority actions − Tracks for action − Risk analysis	• The information produced in the previous steps of the procedure were consolidated in initial version of the sustainability strategy and presented to participants • The applicability of the strategy was discussed to adjust the strategy and provide insights to further developments	• Final version of the organisational sustainability transition strategy	• Discussion of the consolidated results was key to ensure participants' agreement on the final version of the sustainability strategy, thus instrumental in stakeholder involvement

Methods	Stakeholders	Steps and tasks	Data and analysis	Results	Contribution to proposed procedure
Evaluation questionnaire	• Top management • Departments: financial, housekeeping, F&B • Subcontracted: human resources, marketing • Total of participants: 12	• Steps 1-4	• The evaluation questionnaire was structured into three parts aiming to collect information on: – General evaluation of the procedure; – Evaluation of their level of involvement and impact of the procedure; – Evaluation of the co-creation process.	• Participants perceptions on how the overall procedure conducted on the hotel: – Contributed to create a sustainability strategy; – Supported the integration of the cross-cutting sustainability elements identified in literature; – Can be improved.	• Individual and creative tasks (visioning workshop) were perceived as more motivational, while backcasting and validation workshops while more time consuming had higher impact on participants' sustainability approach and its integration on daily work • The procedure was perceived as capable of providing a holistic view of sustainability, involvement internal stakeholders, insights on the transition context and capture long term thinking. • Elements of the procedure aimed at promoting organisational innovations were less visible to participants.

5.4.1| Context of the organisational transition

The first task was the analysis of the ongoing sustainability transition context in which the hotel was developing its strategy. This contextual analysis was informed by a review of public policies and sectorial strategies, as well as the results from a previous transition workshop described in Tourais and Videira (2021). In this study, a shared view of tourism sustainability issues and multi-stakeholder perspectives on desired transition pathways were co-developed. Sustainability activities, problems and challenges faced by the Portuguese tourism sector identified also in this study were used to design the preparatory semi-structured interviews. Along with these interviews, the initial meeting with top management was instrumental to define the boundaries of the co-creation process, which influenced the stakeholder selection.

Figure 5.3 summarises the results from the first part of the interviews, which allowed to classify key stakeholders identified according to different levels of proximity to the hotel. All hotel departments, both managed by employees and subcontracted companies, were considered as internal stakeholders. On the other hand, external stakeholders were subdivided into two levels of proximity. A level closer to the hotel's operations included guests, villas' owners, partners, suppliers and subcontracted companies. Other external stakeholders included the local municipality, the regional tourism administration and a company providing sustainability consulting services.

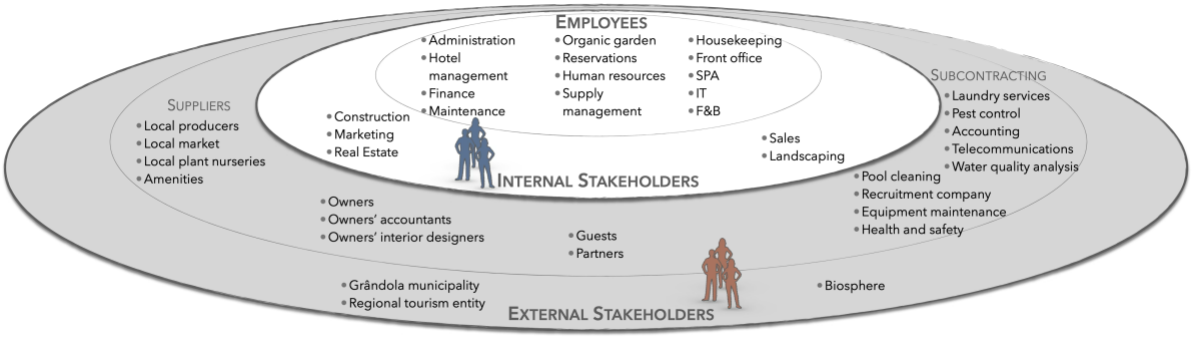

Figure 5.3 - Map of key hotel stakeholders organised by different levels of proximity

5.4.2| Sustainability future envisioned

The core task in the development of "Step 2: Envisioning sustainable futures" was a visioning workshop. The main goal of the workshop was the creation of a shared sustainability

vision for the hotel in 2040. The selected time horizon was aligned with the visioning exercise developed for the tourism sector in the transitions workshop described in Tourais and Videira (2021). Appendix C presents the working canvas used during the visioning exercise, where Figures from C1 to C5 support the description of each exercise in Table 5.1.

The sustainability vision for the hotel obtained is presented in Figure 5.4. The vision included six key elements, focused on different sustainability dimensions and in most cases these elements contribute to more than one sustainability dimension (social, environmental and economic). The interaction of hotel's identity and management practices (elements A, C) with environmental issues (elements D, E, F), as well as the relation with the local community and its cultural heritage (element B) were perceived as pillars to the hotel's transition towards sustainability.

Figure 5.4 - Shared sustainability vision for the hotel in 2040

5.4.3| Sustainability transition pathways

Sustainability transition pathways were co-constructed in a series of three backcasting workshops, along with the action plan. Table 5.2 presents the results of the group discussion on strategic goals, transition pathways and aspirational aims to be achieved.

Table 5.2 - Transition pathways and associated aspirational aims, organised by strategic goal

Strategic goals	Transition pathways	Aspirational aims
A1. Maintain the connection to Nature, local community and sustainability as key elements of the hotel identity	A1.1. Sustainability management	Solid sustainability management system, supporting brand identity.
	A1.2. Coherence between different projects of the brand	Integration of all identity key elements in every project.
	A1.3. Organisational sustainability culture	Sustainability culture across the whole organisation, influencing employees even in the personal life.
B1. Select local and sustainable suppliers	B1.1. Sustainable suppliers	All suppliers adopt sustainability criteria.
	B1.2. Local or regional suppliers	All suppliers are local or regional and contribute to the development of the region.
B2. Establishment of local and sustainable partnerships to increase involvement with local community	B2.1. Participation in destination management and development	The hotel is an active agent in processes of destination planning, development and management.
C1. Ensure human resources training and awareness for sustainability	C1.1. Sustainability training	Continuous sustainability training and awareness for all employees.
	C1.2. Employees' satisfaction	Active and motivated employees, due to increased satisfaction levels in their working situation and personal life.
C2. Become a resilient hotel	C2.1. Monitoring trends and dynamics	Frontrunner in sustainability supported by an early identification of trends and dynamics.
	C2.2. Flexibilization of capabilities and business model	Capacity of adaptation to unexpected events due to diversified capabilities and business models.
D1. Ensure guest awareness in relation to their connection with Nature	D1.1. Supply of experiences embedded in Nature	Supply of experiences embedded in Nature that stand out for their diversity.
	D1.2. Experiences' impact in guests	Staying in the hotel have always a positive impact in the relationship between guests and Nature.
E1. Achieve zero waste	E1.1. Waste production reduction	Reduced waste production in hotel operations and guest stays.
	E1.2. Focus on circularity	The hotel as an active actor promoting an increased circularity in the economy.
	E2.1. Water consumption reduction	Responsible use of water resources.

Strategic goals	Transition pathways	Aspirational aims
E2. Ensure aquifer preservation, even in drought scenarios	E2.2. Water efficiency	Efficient use of water resources through the application of best practices and available technology.
	E2.3. Diversification of sources of water supply	Reuse of all possible water through the diversification of sources of water.
F1. An Increase own food production	F1.1. Optimisation of the organic garden production	Maximal production in the organic garden, respecting all its functions and ecological limitations.
	F1.2. Planning between food production and consumption	Perfect alignment between the organic garden functioning and the uses defined, avoiding inefficiency.
	F1.3. Diversification of food production sites	Frontrunner in the decentralised food production using available internal and external spaces.
F2. Ensure energy autonomy	F2.1. Energy consumption reduction	Responsible and conscious use of energy.
	F2.2. Energy efficiency	Efficient use of energy through the application of best practices and available technology.
	F2.3. Energy production from renewable sources	Own production of all the energy consumed in the hotel.

For each strategic goal a set of two to three complementary transition pathways were defined. Although transition pathways were distributed according to the main goal to which they contribute to, in some cases the same pathway supports multiple strategic goals. That is the case with pathways A1.1. “Sustainability management” and A1.3. “Organisational sustainability culture” which contribute to other strategic goals besides A1 (“Maintain the connection to Nature, local community and sustainability as key elements of the hotel identity”). To achieve strategic goals focused on environmental aspects (such as E1., E2., F1. and F2.) the defined transition pathways are focused on reducing consumption, increasing efficiency and alternative sources for each resource. Strategic goals targeting the remaining social and economic dimensions prioritise diagnosis activities, the definition of a management structured anchored in procedures and responsibility assignment, and the development of collaborations with diverse stakeholders.

5.4.4| Action plan

The action plan was cocreated in an iterative process along with the sustainability transition pathways. This plan includes a list of actions required to achieve a specific strategic goal, the time horizon foreseen for each action and the performance indicators and targets to monitor the achievement of the goal.

Considering the relatively large number of identified sustainability transition pathways, the results are illustrated with three examples: B1.1. “Sustainable suppliers”; C1.2. “Employees’ satisfaction”; and D1.1. “Supply of experiences embedded in Nature”. These pathways were among those discussed more in depth in the collaborative sessions and differ in their scope, being demonstrative of the co-creation work that was developed.

To build each pathway, the starting point of discussion were the problems and opportunities revealed by the interviewed stakeholders at the beginning of the collaborative process. Table 5.3 summarises the characterisation of the baseline situation with respect to problems and opportunities for the selected transition pathways.

Table 5.3 - Characterisation of the current situation for transition pathways B1.1., C1.2. and D1.1.

Transition pathway	Problems	Opportunities
B1.1. Sustainable suppliers	• The remote location of the hotel narrows supplier selection, increases the need for storage and maintaining higher levels of stock, and increases prices; • Hotel’s own food production is not enough for the needs; • Suppliers are not aware of sustainability practices (in particularly smaller; • Higher prices of products with sustainability certifications.	• Creation of trust relationships with suppliers; • Development of good partnerships and a set of rules to guide suppliers; • Increase local and niche suppliers; • Influence suppliers.

Transition pathway	Problems	Opportunities
C1.2. Employees' satisfaction	• At a human resources level: 1) increase motivation and involvement in sustainability initiatives; 2) increase quantity and quality, of human resources considering seasonality and the lack of technical knowledge; 3) reduce turnover; 4) training in sustainability; 5) handle guests not aligned with sustainability principles; 6) improve management awareness in relation to operation tasks; • Improve working conditions in terms of wages and seasonality; • Cost reduction is an obstacle to the operationalisation of sustainability practices.	• Align employees' behaviour with sustainability goals; • Increased training for employees; • Improved education in Portuguese hospitality schools.
D1.1. Supply of experiences embedded in Nature	• Guest behaviour due to the conflict between sustainability and luxury requirements (e.g. need to provide single use amenities even if made from sustainable materials).	• Influence guest behaviour through the experiences offered; • Meet more demanding guests' expectations in relation to sustainability; • Improved natural resources management through the introduction of more indigenous species; balance between hotel operation and biodiversity; balance between guest demand and natural resources.

One of the major problems identified was the relatively remote hotel location, conditioning supplier selection and human resources recruitment since the hotel is in a low-density region. Therefore, the range of suppliers available is narrow and local businesses are in most cases insufficient to supply the hotel. The region also lacks the required human resources from a quantity and quality perspective. Local workforce lacks technical training in tourism and foreign recruitments are difficult to maintain in the long-term. Major opportunities arise from the possibility of creating stronger relationships with suppliers and employees.

The major challenge identified under pathway D1.1. was balancing the concepts of luxury and sustainability in the tourism sector. Guest behaviour is a key factor and the role of the hotel in promoting and raising guests' awareness for sustainability issues is seen as an opportunity.

Following the discussion on problems and opportunities, the construction of each transition pathway used the representation depicted in Figures 5.5, 5.6, and 5.7. These figures

illustrate the final set of actions proposed by workshop participants for pathways B1.1. "Sustainable suppliers", C1.2. "Employees" and D1.1. "Supply of experiences embedded in Nature", respectively. Actions were allocated to each time horizon and this type of representation allowed the identification of precedence relations between them. Additionally, this format included performance indicators and associated targets, as well as aspirational aims for 2040 associated to each strategic goal.

Precedence relations are particularly relevant in cases as those demonstrated in Figure 5.5, where information to calculate performance indicators was lacking. The calculation of the percentage of sustainable suppliers was dependent on action B1.1.1. (a diagnosis action), which comprises the identification of current suppliers with sustainability certifications.

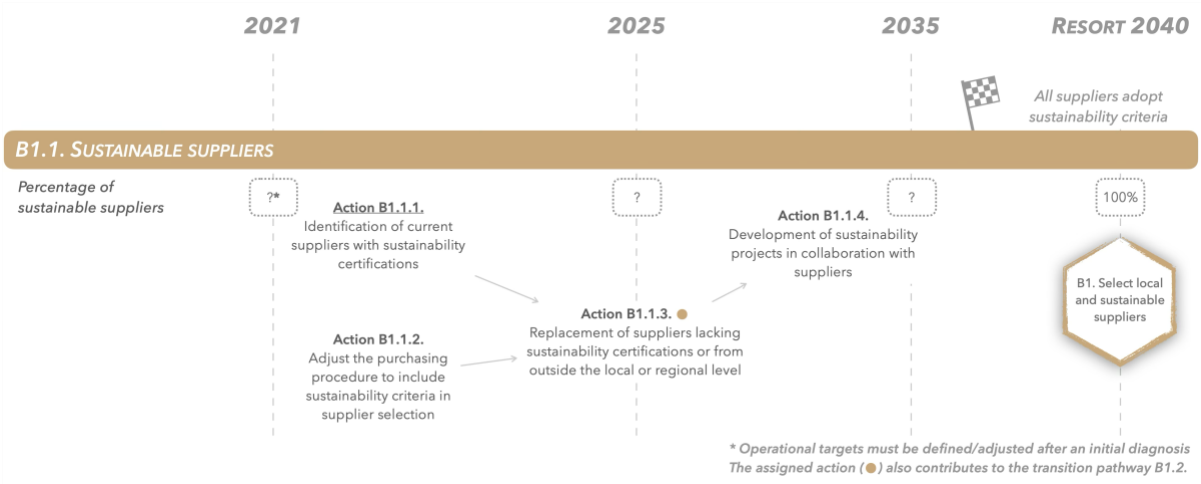

Figure 5.5 - Action and monitoring plan associated to the transition pathway B1.1. Sustainable suppliers

Another characteristic of the transition pathway B1.1. "Sustainable suppliers" depicted Figure 5.5 is action B1.1.3. (changing to more sustainable and local suppliers), which also contributes to the same strategic goal under another sustainability transition pathway (B1.2. "Local and regional supplier"). This interconnection between transition pathways is also visible in Figure 6, where actions C1.2.3. and C1.2.8. also contribute to the creation of an organisational sustainability culture, which was identified as another transition pathway (A1.3. "Organisational sustainability culture") to achieve a different strategic goal defined by the participants.

Figure 5.6 presents the action plan to the sustainability transition pathway C1.2. "Employees' satisfaction", which includes a wide range of actions and two performance

indicators: level of employee satisfaction and employee turnover. As targets were set to reduce employee turnover, actions were defined in the short-term and long-term. As middle management turnover was identified as a key problem in the implementation and maintenance of sustainability practices in the hotel, the first action defined was the adaptation of the indicator to capture this dynamic behaviour. It was also identified for the short-term the need to search and select certification schemes for the improvement of quality in the working environment, such as the "Great place to work" scheme. For the long-term, it was agreed the adoption of the most suited certification scheme, identified in the previous action.

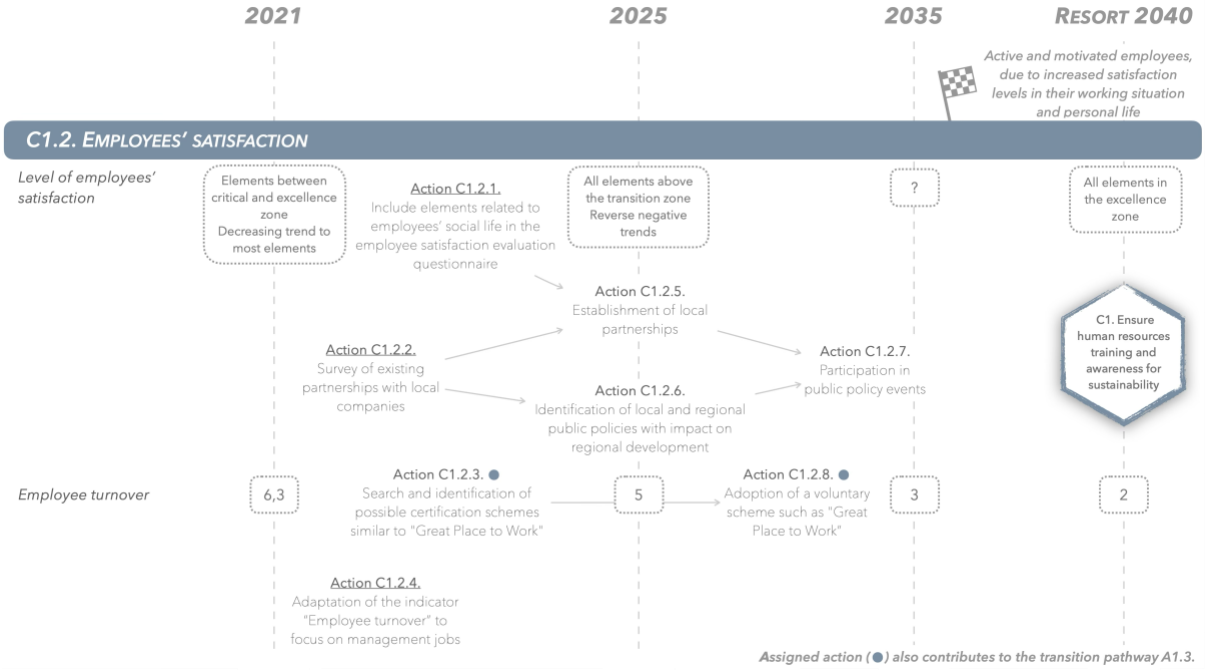

Figure 5.6 - Action and monitoring plan associated to the transition pathway C1.2. 'Employees' satisfaction

Finally, Figure 5.7 illustrates the set of actions discussed under the sustainability transition pathway D1.1. "Supply of experiences embedded in Nature", comprising a wide diversity of proposals. These actions focus on the creation and maintenance of touristic experiences built to raise awareness and support existing ecosystems.

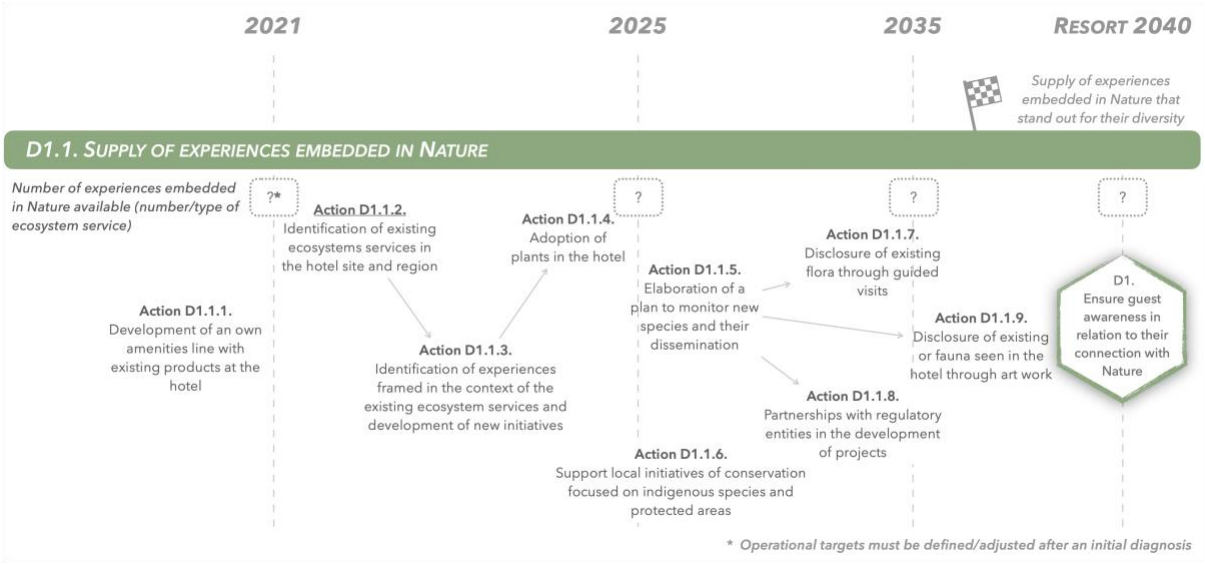

Figure 5.7 - Action and monitoring plan associated to the transition pathway D1.1. 'Supply of experiences embedded in Nature'

Looking forward to the operationalisation of the action plan and considering the critical nature of some actions, a priority list of actions was developed (underlined in Figures 5.5, 5.6, and 5.7 for an easier identification). An analysis of the required resources and capabilities to operationalise these priority actions revealed the need for human resources and knowledge in diverse fields, such as environment and sustainability, hospitality management, human resources, accountability and finance, sales and markets, agriculture, health and wellbeing.

Workshop participants also discussed potential implementation synergies among all actions. This led to the identification of action tracks, which operationalise the strategic plan along four coherent action tracks, which focus on: 1) diagnosis; 2) operational management; 3) capability development; and 4) external relationships (Table 5.4).

Table 5.4 - Details on action tracks defined to ease the implementation of the action plan

Action track	Description	Categories	Actions	2021-2025	2026-2040
Diagnosis	Gathers actions required to characterised in more detail the current situation of the hotel and collect information to define targets and build performance indicators.	• Management processes, • Stakeholders (in general), • Human resources, • Suppliers, • Guests, • Environmental aspects.	27 actions, from which 21 are priority actions	27	0

Action track	Description	Categories	Actions	2021-2025	2026-2040
Operational management	Gathers actions focused on the management processes required to operationalise sustainability.	• Cornerstone elements, • Management processes, • Benchmarking, • Measures.	65 actions, from which 10 are priority actions	47	18
Capability development	Gathers actions focused on the capabilities needed for the operationalisation of the sustainability transition strategy.	• Capability development and monitoring, • Technical training and awareness.	15 actions, from which 1 is a priority action	11	4
External relationships	Gathers actions focused on the establishment of external relationships with organisations that may contribute to the operationalisation of the sustainability transition strategy.	• Stakeholders (in general), • Suppliers, • Businesses, • Local community, • Public entities.	27 actions, from which 2 are priority actions	13	14

Each action track illustrated in Table 5.4 gathers categories of actions that may be implemented at the same time. The number of priority actions included in each track also provides guidance in the prioritisation between tracks. The diagnosis track is a clear priority regarding the number of priority and short-term actions. Operational management and capability development are also more concentrated in the short-term, while external relationships' track includes actions spread throughout the entire timeline proposed for strategy implementation.

The planning phase of the OST procedure was finalised with a risk analysis, including the identification of internal and external risks in relation to the operationalisation of the strategy as a whole and for each key sustainability element. Risks were also analysed under the light of the Multi-Level Perspective (MLP) as pictured in Figure 5.8. The hotel was positioned between niche and regime levels, along with internal risks and risks associated to value chain stakeholders.

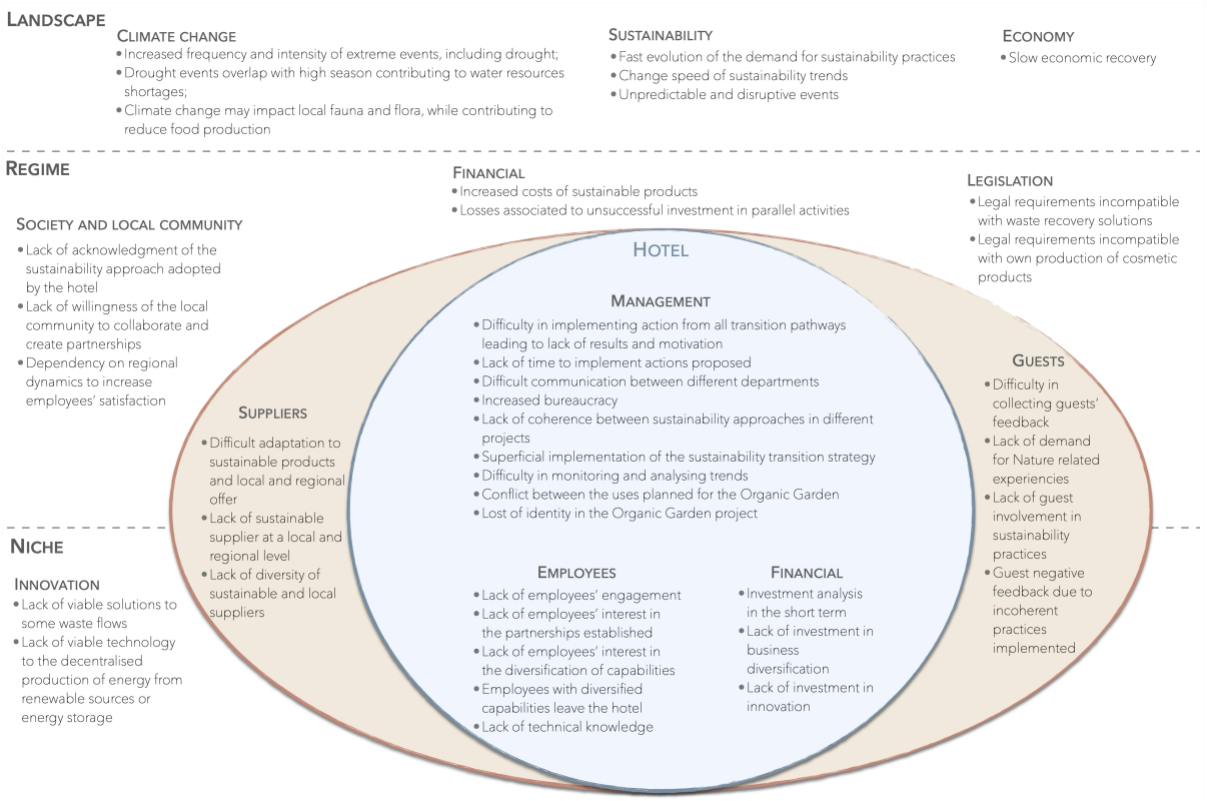

Figure 5.8 - Risk analysis for the implementation of the sustainability transition strategy

Within the internal sphere of the business, were identified risks related to management, employees and financial issues. At the initial stage of the strategy implementation, internal risks are very significative considering the need to promote change in daily operations. Suppliers and guests have a key role in the implementation of the strategy, regarding their availability to collaborate and contribute to the hotel sustainability transition.

External risks, organised under the MLP framework, provide an overview on the factors that may be influenced directly through the hotel and those emerging from the landscape, to which the hotel has less influence. In this case, mitigation measures are even more relevant, as well as the definition of multiple possible scenarios and possible routes for action.

At the niche level, most risks are related to the lack of viable solutions and technology adapted to the hospitality sector (e.g., the lack of economically viable solutions to store energy produced from renewable sources). At the regime level, most risks are related to legal requirements and limitations related to regional development dynamics and policies. Financial risks associated to higher costs of sustainable products and unsuccessful experiments were also considered. Finally, at the landscape level, risks are associated with a

slow economic recovery from the Covid pandemic and fast changing sustainability trends. Another major risk identified is climate change and its effects in the region, given that scenarios of increased frequency of heat waves and reduced precipitation increase the risk of drought in the region (IPCC, 2021; Santos et al., 2019).

5.4.5| Evaluation

Building on the results from the evaluation questionnaire, the co-creation of a sustainability transition strategy for the hotel was perceived a positive experience to participants. The major contributions to the hotel were the increased awareness on sustainability issues and the definition of a shared direction for their sustainability approach, along with the involvement of the whole internal team in the process, according to participants' perceptions. Participants also identified other outcomes, such as, a better understanding of challenges faced by the different hotel departments, the identification of the current situation, target definition, sharing information and ideas and the acknowledgement of the need to have specific human resources to manage sustainability issues. According to participants' perception, the process fostered organisational learning in the sustainability field.

Figure 5.9 summarises the results from the evaluation questionnaire. On the one hand, most participants pointed the individual interviews as the step to which they contributed most and led to high levels of motivation to work on sustainability issues. On the other hand, the steps with higher impact in participants' sustainability approach and integration in daily work were the workshops, namely the backcasting and validation workshops. These workshops were also perceived as the most time-consuming steps included in the process.

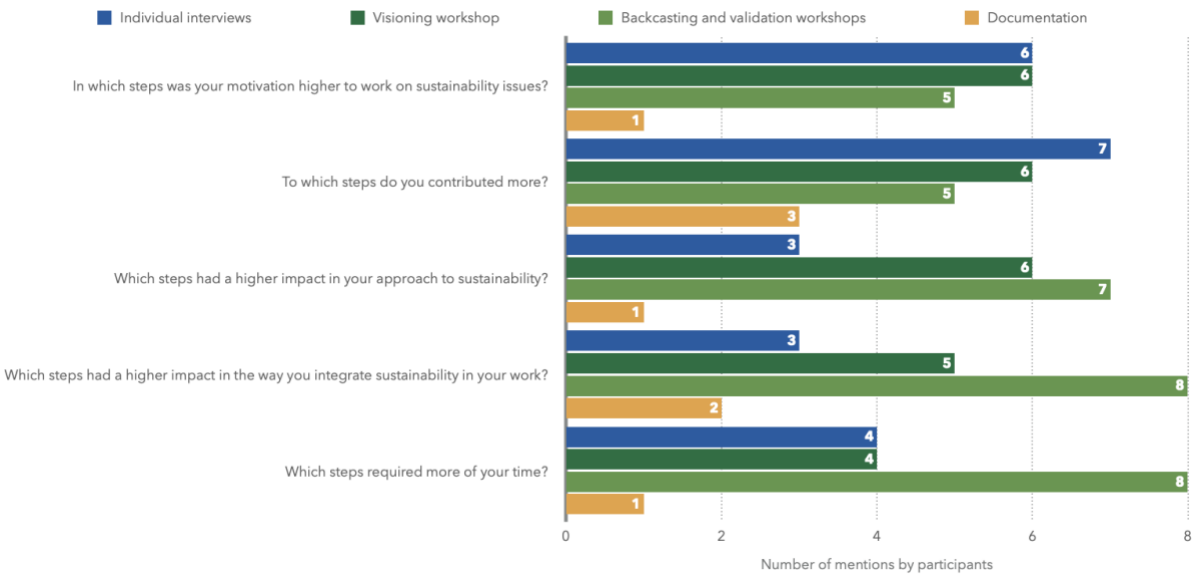

Figure 5.9 - Results on participants' level of involvement and impact from the evaluation questionnaire

The evaluation questionnaire also included questions focusing on each transversal element (holistic view of sustainability and the organisation, long-term thinking, stakeholder involvement and innovation) and the transition context. Results are depicted in Figure 5.10, using a Likert scale.

Most participants agreed the OST procedure contributed to the identification of key sustainability elements for the hotel and to a more integrated sustainability approach. Procedure design implied that both the 2040 sustainability vision for the hotel and the transition pathways defined were co-created around key integrated sustainability elements instead of siloed economic, environmental and social dimensions. As a result, a single key element of the vision, such as “B. Local community and economy”, tackles both economic and social issues, and the transition pathways defined are interrelated through common actions. Thus, the holistic and integrated view of sustainability reinforced synergies and potentially amplifies implementation efficiency since actions were selected according to their potential to contribute to strategic goals that are transversal to multiple sustainability dimensions.

Most participants also agree that the co-creation process supported the identification of relevant sustainability issues in the long-term and the integration of sustainability practices in the action plan that in the short or medium-term would not have been considered. Therefore, embedding long-term thinking in the process allowed the consideration of more ambitious and demanding solutions.

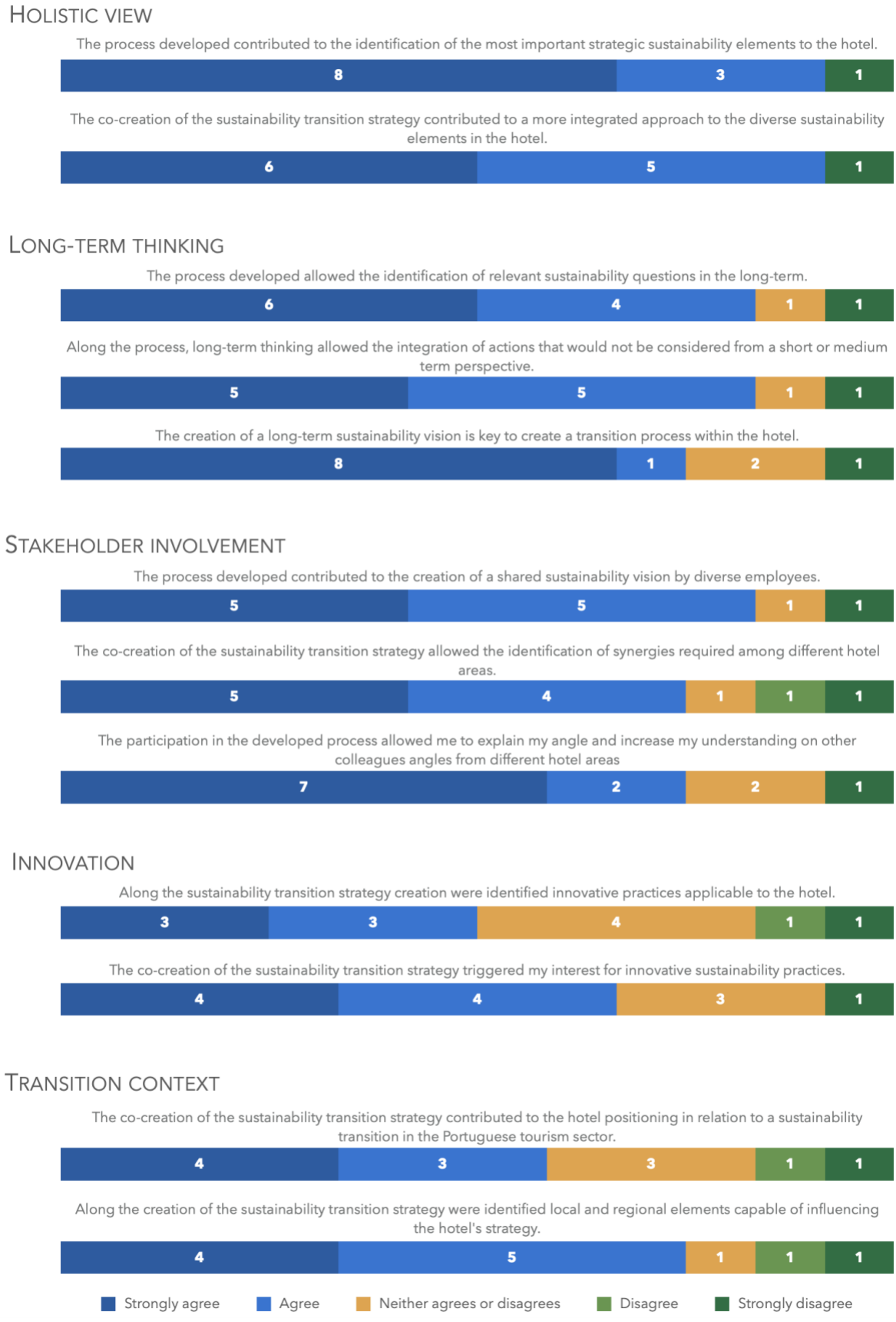

Figure 5.10 - Results on the evaluation of the co-creation process

Most participants agreed the procedure adopted contributed to a shared sustainability vision, the identification of synergies between different hotel areas and an increased understanding on each department's perspective on sustainability, which are compatible with high involvement of internal stakeholders in the creation of the sustainability strategy, as intended by the OST procedure.

Participants were split with respect to the perception on the effect that the process had on the identification of innovative practices to be applied in the hotel. Despite of participants' perceptions, these practices were integrated in the last exercise of the visioning workshop as suggestions to achieve the strategic goals defined and were used throughout the backcasting workshops as references for the development of the action plan. Moreover, the process allowed organisational learning through the identification of the main gaps in the diagnosis of the current situation and need to develop monitoring practices.

Most participants agreed that the process allowed the identification of local and regional elements influencing the hotel's sustainability transition strategy. This was performed through the identification of major problems and opportunities (Table 5.3) and the risk analysis (Figure 5.8). This is a relevant element for the positioning of the hotel in relation to the sustainability in the tourism sector, despite the participants' perceptions on the contribution to this aspect have been somewhat split.

Regarding the cross-cutting elements integrated in the OST procedure, element 1 'holistic view of sustainability and the organisation' was the most perceived by participants in the case study, followed by element 2 'long-term thinking'. On the contrary, element 4 'innovation' was the less clearly identified cross-cutting element throughout the procedure, followed by element 3 'stakeholder involvement'. This evaluation from the participants highlights improvement opportunities regarding innovation integration and stakeholder involvement in the procedure.

Innovation integration may be improved by including in the co-creation process specific exercises comprising the design of innovative solution, using for example the design thinking method and other creative methods and tools. Additionally, the involvement of external stakeholders may provide a source of external inspiration to better integrate innovation in the process, while expanding the scope of the participatory process. Overall, the cross-cutting elements should be addressed in a complementary and synergetic way

(Tourais and Videira, 2019). A comprehensive review of tools that may support organisations to strategically integrate sustainability into their business models and foster the synergies between the proposed cross-cutting elements is provided by Silvestre el al. (2022).

Participants also suggested as improvement opportunities simplifying the process, with shorter and more action-oriented workshops. The involvement of more operational staff in the process along with in person meetings and planning activities for the business low season are suggestions that may contribute to this outcome. Finally, participants mentioned the need to keep the project running, transitioning from the planning to the implementation phase.

5.5 | DISCUSSION

The experiment testing the OST procedure on a case study resulted in the co-creation of a business sustainability transition strategy, which was composed by the following elements: future sustainability vision, anchored on key sustainability elements and strategic goals; set of transition pathways and aspirational aims to each strategic goal; action and monitoring plans, organised in time frames (from short to long term) and prioritised according to action tracks; resources and capabilities required for the strategy implementation; risk analysis; and additional elements, such as a stakeholder map and current problems and opportunities regarding each transition pathway.

The procedure adopted to co-create the strategy ensured several outcomes. First, the sustainability transition strategy included a holistic perspective of sustainability, as the key sustainability elements and the associated strategic goals were developed around sustainability issues instead of the traditional environmental, social and economic dimensions represented in the TBL framework (Jerónimo Silvestre et al., 2015). To this end also contributed the development of transition pathways in a mission-oriented perspective, as proposed by Mazzucato (2018) to public innovation approaches.

The produced strategy was embedded in the current environment in which the business operates and takes into consideration the dynamics associated to the ongoing sustainability transition in the tourism sector, namely through the risk analysis performed. This analysis along with the initial step of framing the business transition in a wider context

provides a solid background to position the business sustainability strategy and allow the co-evolution with the context in which it operates (Chang et al., 2017; van Mossel et al., 2018).

Stakeholders were involved throughout in the whole process, in particular internal stakeholders, including in the initial stages, as suggested by Reed (2008). Stakeholder participation was essential to boost organisation and their contributions valuable inputs in the creation of an action plan grounded on the organisational reality, namely in the prioritisation of action.

The design of the strategy adopted long-term thinking, allowing the inclusion of more ambitious actions that otherwise would be discarded. The acknowledgement of the role of the long-term sustainability vision in guiding the organisational transition confirms that long-term thinking may be used as a tool to accommodate stakeholder interests (González-Rodríguez et al., 2019).

Innovation was integrated in the procedure application through the consideration of the best practices available in the design of the strategy, as well as by discussing alternative transition pathways to achieve the proposed strategic goals. Best sustainability management practices for the tourism sector were collected from the study developed by Styles et al. (2013) and reference certification standards for the sector (such as Green Key and the Global Sustainable Tourism Council). The acknowledgement of the difficulties faced by other departments constitutes a form of organisational learning (Engert et al., 2016) and paves the ground to an improved communication and collaboration between hotel departments, which is cornerstone to foster innovation.

The majority of these outcomes were also perceived by the participants on the co-creation process. Integration of innovation in the sustainability transition strategy is the outcome less recognised by participants, which may be explained by the fact that most innovative practices discussed focused on management or business model levels. Technological innovation tends to be more easily perceived than these other types of innovation.

The contributions of the outcomes achieved in the current study to literature and practice are further explored in the following subsections, as well as limitations of the OST procedure during the case study application.

5.5.1| Contributions to research on organisational sustainability transitions and strategic planning

The experiment developed under the current study to test the application of a procedure to develop a business sustainability transition strategy, framed in a wider societal transition context, is consistent with action research approach (Caniglia et al., 2021), producing actionable knowledge (Hölscher et al., 2021). The adoption of this type of research approaches and producing this kind of knowledge are research gaps identified in literature from sustainability and strategic planning (Chang et al., 2017; Kitsios et al., 2020).

Regarding sustainability transition studies, the current research followed the research path initiated by Loorbach and Wijsman (2013) and proposes a procedure inspired in the TM framework and adapted to the organisational level. This procedure gathers a set of methods and tools used in the application of this framework in other contexts, but also in strategic planning literature (which is the case of participatory backcasting and visioning), while incorporating sustainability transition concepts and insights to enrich the process and the strategy produced.

This consideration of transition concepts and insights is particularly relevant in the initial step of the OST procedure, where the organisational transition is contextualised. The use of information generated in the process of characterising the Portuguese tourism sector transition towards sustainability provided a common ground to discuss the specific context in which the business operates and the expected evolution. This represents a relevant alignment between the approaches adopted at organisational and sectorial levels, providing a common language and perspective on the transition, as suggested by Loorbach and Wijsman (2013).

Another relevant use of transition concepts was introduced in the risk analysis, where the MLP perspective was used as a framework to organise and analyse risks, as well as the organisational capacity to manage and mitigate these risks to the strategy implementation. This approach has the benefit of contributing to a dynamic perspective on the strategy implementation since risks driven by changes on the landscape and regime are mostly associated to the medium and long-term, regarding the characteristics of these levels (Geels and Schot, 2007).

This dynamic perspective is also a characteristic of the strategy produced, since in the short-term, the sustainability transition strategy co-created is focused on internal issues, while the long-term demands for the development of collaborations with external stakeholders. From a strategic planning perspective and building on the work developed by Hanke and Stark (2009), the sustainability transition strategy moves from an initial 'leadership and commitment' approach towards 'intersectoral alliances' profile across time, which represents a change on stakeholder involvement approach during the process of making sense of sustainability within the organisation. This outcome is also aligned with sustainability transitions studies focusing on business strategic positioning in ongoing sustainability transitions, which acknowledge that businesses often assume different roles in time, throughout a sustainability transition (Ruggiero et al., 2021; Turnheim and Sovacool, 2020).

The results obtained also emphasise organisational learning both in relation to sustainability concepts and to the organisational reality. The increased awareness and understanding on the challenges faced by other departments in the implementation of sustainability practices, sharing information and ideas, as well as the acknowledgement of specific organisational capabilities to manage sustainability support this outcome. The importance of organisational learning is mentioned both in strategic planning (Engert et al., 2016) and transition management (Loorbach et al., 2010) literature.

The OST procedure shares several aspects of previous tools supporting organisations in the strategic integration of sustainability in their core operations (Silvestre et al., 2022). For example, OST aligns with the Sustainable Value Exchange Matrix (SVEM) – Integrative Sustainable Intelligence (ISI) tool (Silvestre et al., 2022) in the support of a synergetic view of object-oriented approaches (i.e., those which critically reflect upon the business model) and process-oriented approaches (i.e., those which provide a stepwise guiding sequence).

While sharing elements of other strategic sustainability tools, the OST procedure advances the debate by explicitly framing the strategic planning process in the context of (organisational) sustainability transitions. For example, with respect to the FSSD, the OST procedure brings novelty with respect to two aspects. For one, it promotes an explicit integration of sustainability transitions and transitions management concepts and frameworks in the process design. This allows to bring a structured approach to deal with the relation between the organisation and its evolving landscape, regime and niche innovations,

while steering the organisational transition strategy with a focus on a long-term vision and goals. Secondly, the OST procedure also advances the level of detail and guidance in the more detailed demonstration of the techniques used in the collaborative exercises, which supports the operationalisation of the procedure, facilitating its implementation by practitioners.

5.5.2| Contributions to practice

The major contribution from the current study to practice is the OST procedure, which is anchored on consolidated theoretical background, while maintaining flexibility to be adapted to specific organisational characteristics and context. The definition of a procedure instead of a more pre-determined method allows businesses and other organisations to adopt a wider range of methods and tools to design their sustainability transition strategies.

Additionally, the OST procedure integrates a set of cross-cutting elements acknowledged in literature as essential to achieve sustainability in organisations. Thus, the application of this procedure promotes the alignment of the sustainability strategy with these elements thus guiding the organisation in a directed transition towards sustainability.

From the perspective of organisations acting at a systems level and capable of steering sustainability transitions, as for example regulators, sectorial Non-Governmental Organisations (NGOs) and other public entities, the procedure may be useful to provide support to other organisations and businesses. As the OST procedure is anchored on sustainability transitions studies and encompasses a strong component focused on the interaction between the organisation and its context, it provides an entry point to existing sustainability transition strategies designed at a system level.

5.5.3| Research limitations

Building on the procedure proposed, the case study was planned to have differentiated involvement approaches regarding internal and external stakeholders. The former were involved throughout the whole process, while the latter were supposed to be integrated in the final steps of the planning phase and throughout the implementation phase. Due to time limitations enforced by the restrictions imposed during the Covid pandemic it

was not possible to involve in the reported experiment the external stakeholders. Workshop participants requested shorter online sessions, reducing the time available to involve external stakeholders. This type of limitation in online participatory processes was also experienced by Wu et al. (2021). Nevertheless, external stakeholders are relevant for further discussion and implementation of the action plan and transition pathways, as exemplified by action B1.1.4. "Development of sustainability projects in collaboration with suppliers" (Figure 5.5) and transition pathway "B2.1. Participation in destination management and development" (Table 5.2).

Most limitations identified in the current research were driven by the Covid pandemic outbreak and impacted the test of the OST procedure. The need to perform collaborative workshops in an online format raised a set of questions in relation to the process, which are in some cases aligned with participants' perceptions: not all participants were comfortable to use the technologies required; technical issues or lack of resources compromised the collaborative process; increased fatigue; lack of focus in the exercises due to other requests and commitments; adaptation to online platforms selected and use of more than one platform at the same time; online group discussion requires more facilitation and consequently a higher number of participants could have compromised the level of interaction with the performed tasks (Benson et al., 2021; Wu et al., 2021).

Regarding these limitations, future studies may consider the use of mixed approaches, including both online and in person sessions. Online sessions would allow the participation of stakeholders that otherwise would be unable to attend to the workshops, while in person sessions aim at tackling the previously mentioned limitations.

5.6 | CONCLUSION

The current study aimed at exploring the positioning of businesses in sustainability transitions by integrating transition concepts in their strategic management processes. A procedure for the collaborative creation of a corporate sustainability transition strategy was proposed and tested in a case study in the Portuguese tourism sector. The co-creation process was completely developed online given restrictions imposed by the Covid pandemic outbreak.

The OST procedure proposed was designed in the interface between sustainability transition studies and business strategic planning for sustainability, aiming to address research gaps on both fields through the adoption of sustainability transition concepts and frameworks in the business strategic planning process. The whole procedure was inspired in the TM framework and the MLP was used in the identification of opportunities associated with sustainability problems and in the risk analysis. Background information about a broader tourism sustainability transition roadmap previously developed with a group of stakeholders in the sector was used to prepare the inception interviews and characterise the organisation's context.

The procedure provided a solid framework to deal with the complexity and dynamics of sustainability issues, allowing the characterisation of the context in which the business operates, as well as their interrelationships. This outcome is also confirmed by participants' perceptions that the co-creation of sustainability transition strategy contributed to the positioning of the hotel in the ongoing sustainability transition in the Portuguese tourism sector.

The OST procedure successfully led to the co-creation of a draft sustainability transition strategy for the company, composed by a set of elements, which constitute a blueprint for the internal strategic goals and actions to be pursued by the hotel. The procedure resulted in a sustainability transition strategy integration key cross-cutting elements for sustainability, such as a holistic view of sustainability and the organisation, stakeholder involvement, long-term thinking adoption and innovation integration. Thus, the study has successfully addressed an existing gap regarding the scarcity of empirical studies focused on sustainability transitions strategic planning within businesses, aiming to support practitioners in the field.

The most relevant limitations found in the pilot-testing study were driven by the Covid pandemic outbreak and the adaptations required to the procedure initially planned and concern mostly the lack of involvement of external stakeholders. To this specific case study, this limitation may be tackled given the iterative nature of the process, and further iterations may address this aspect. In future applications of the OST procedure, the involvement of external stakeholders may follow the proposed procedure (Figure 5.1) and be promoted in the discussion of the action plan (Step 4). Feedback provided by external stakeholders on

their expectations for the business sustainability practice may also be relevant in early stages of the strategy design, such as the definition of strategic goals.

Building on these limitations and the exploratory nature of the approach, diverse opportunities for further research were identified. The application of the procedure focusing on the implementation phase, as well as on the feedback loops to the planning phase is a relevant research path. Also, the development of additional case studies without the restrictions derived from the Covid pandemic would provide enriching insights on improvement opportunities for the OST procedure. Regarding the flexible nature of the procedure proposed and the capability to develop tailor made designs, it would also be relevant to experiment with different levels of stakeholder involvement (internal and external) throughout the whole process.

Regarding the overall results achieved, this research addresses the lack of empirical studies on the cocreation of business sustainability strategies, through the application of a collaborative approach inspired and integrating several sustainability transition concepts and frameworks. Apart from the support to businesses and practitioners, the OST procedure advances on approaches supporting integration of sustainability transition concepts in business strategic planning for sustainability, bridging these two research fields.

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6| DISCUSSION AND CONCLUSION

6.1 | KEY FINDINGS AT THE LIGHT OF SPECIFIC GOALS AND RESEARCH QUESTIONS

The research was organised into two major phases: diagnosis and experimentation, addressing respectively the specific goals defined in chapter 1:

- SG1. 'Characterise sustainability transition processes in organisations';
- SG2. 'Experiment collaborative approaches on the creation of organisational sustainability strategies in a broader transition context'.

The insights from the studies developed under each phase aimed at addressing the research questions defined in chapter 1, are described in the following subsections.

6.1.1| Diagnosis phase

In the diagnosis phase two studies were developed to establish the state of the art and identify approaches adopted by organisations to deal with sustainability issues. Each study used a different source of information: while the first study relied on scientific literature on Corporate or Organisational Sustainability (chapter 2: 'Reviewing the state-of-the-art'); the second resulted from the consultation of Portuguese Sustainability-Oriented Business (SOB) and other stakeholders operating in the tourism sector (chapter 3: 'Screening sustainability-oriented businesses').

Regarding the different approaches to collect information, distinct methods were also applied in these two studies and, therefore, complementary results were achieved. 'Reviewing the state-of-the-art' consisted of a literature review and resulted in the development of a conceptual framework, gathering the major challenges faced by organisations in their transition towards sustainability. 'Screening sustainability-oriented businesses' comprised a set of interviews to collect information and identify approaches adopted by SOB in the creation of their sustainability strategies, as well as the challenges faced throughout this process.

The scope of both studies also differs, providing different sets of key findings. In 'Reviewing the state-of-the-art', sustainability in organisations was approached from a broader perspective, while in 'Screening sustainability-oriented businesses', the diagnosis was focused on the sustainability strategic planning process within businesses. Despite narrowing the scope, the boundaries of the latter study were flexible to accommodate insights on the association of the strategic planning process to tactical and operational activities.

Resulting from the differences in scope, 'Reviewing the state-of-the-art' provided a theoretical view on CS relevant elements and research gaps to support organisations on effective transitions towards sustainability. 'Screening sustainability-oriented businesses' produced a diagnosis on strategic planning processes for sustainability, adopted by Portuguese businesses in the tourism sector that are already tackling sustainability issues. This combined diagnosis offered an important link between the theoretical background and the experimentation phase, providing key information to prepare the second phase of the research. More details on the key findings obtained in the first two studies are presented in Figure 6.1. These key findings contributed to address the research questions defined, as explained in the following sections.

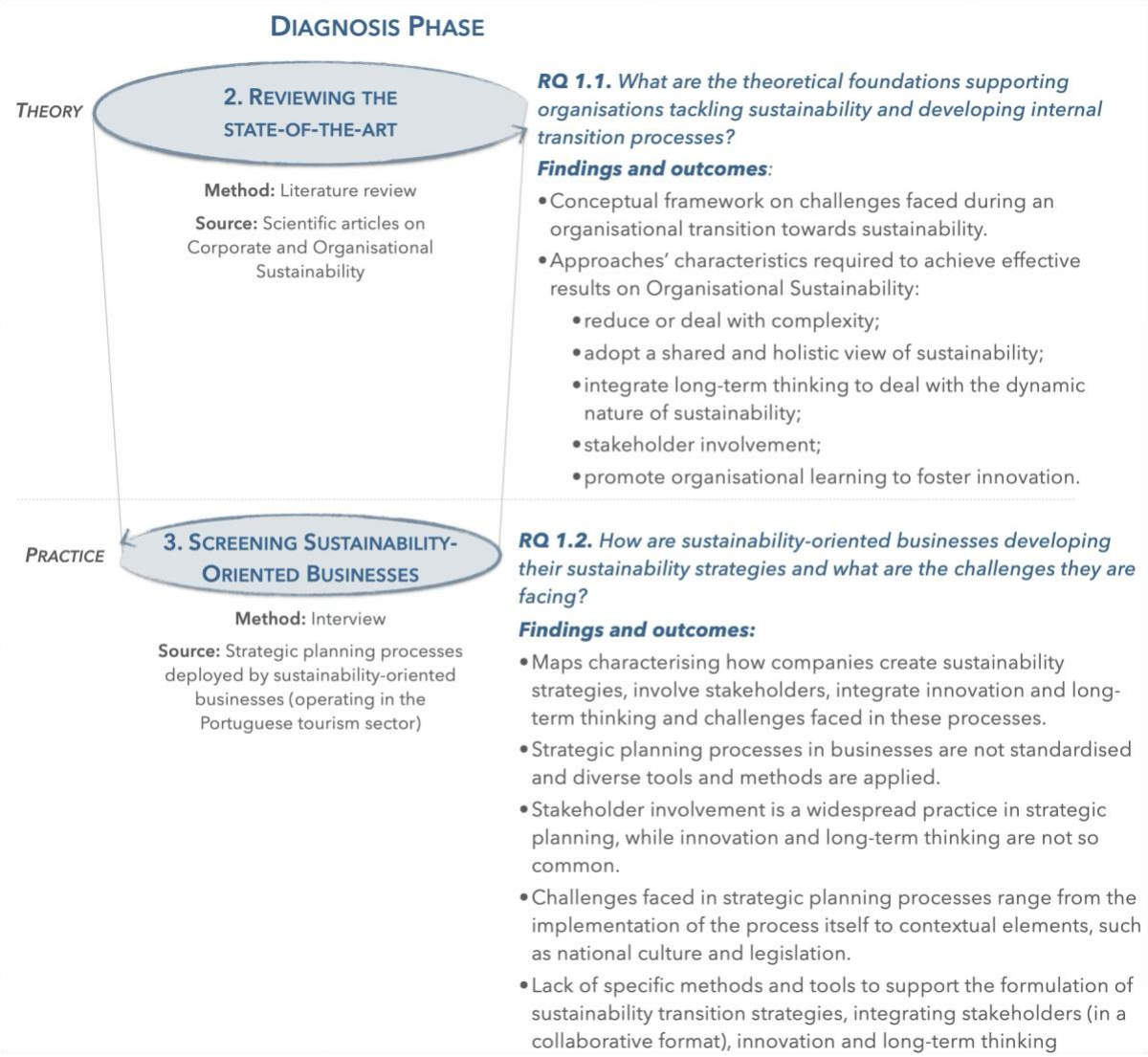

Figure 6.1 - Summary on the key findings produced during the diagnosis phase

6.1.1.1| <u>What are the theoretical foundations supporting organisations tackling sustainability and developing internal transition processes? (RQ1.1.)</u>

Building on the insights provided by chapter 2: 'Reviewing the state-of-the-art', CS literature has been focusing on the definition of sustainability and how it is related with other concepts implying sustainability integration in organisations. Therefore, CS has been analysed under the lens of multiple adjacent research fields, such as business management, strategic management, business ethics, environmental management and sustainability transitions. These research fields present theories capable of supporting organisational transitions towards sustainability, from which stand out stakeholder theory, triple bottom line, institutional theory and resource based-view.

The literature on CS also emphasises the dynamic nature of sustainability and its ramifications at the organisational level, regarding innovation integration, stakeholder involvement and the development of performance measurement tools. The role of stakeholders in businesses is a key research topic, as well as the implications of stakeholder engagement on global governance; sustainability management at strategic, tactical and operational level; and tools and methods used to manage sustainability in businesses.

A major challenge identified in literature was the lack of CS approaches capturing the complex, holistic and dynamic nature of sustainability, as well as alternative definitions that would better fit specific contexts. Regarding the importance of the strategic planning process to trigger and guide the organisational transition towards sustainability (Baumgartner and Rauter, 2017), 'Reviewing the state-of-the-art' provides insights on required approaches to promote these transitions. The need to focus on how to promote sustainability integration in businesses is aligned with a current shift for actionable research instead of the traditional focus on what is sustainability in a business context (Chang et al., 2017).

Building on this major challenge and the need to provide guidance on how to formulate corporate sustainability transition strategies (Engert et al., 2016; Kitsios et al., 2020; Neugebauer et al., 2016), the first study revealed that CS approaches must be focused on: 1) reducing or helping businesses in dealing with complexity; 2) adopting an holistic approach of sustainability that enables operationalisation; 3) integrating the dynamic nature of sustainability in business management tools through the adoption of long-term thinking; 4) involving key stakeholders in the strategic planning process, in particularly employees; and, 5) promoting organisational learning as a vehicle for organisational adaptation and innovation. The lessons from this literature review have guided the development and research focus of the subsequent studies.

6.1.1.2| How are sustainability-oriented businesses developing their sustainability strategies and what are the challenges they are facing? (RQ1.2.)

The approach adopted to diagnose how organisations are designing their sustainability strategies relied on the consultation of sustainability-oriented businesses and key stakeholders of the Portuguese tourism sector to characterise these processes. This

consultation provided insights on the practices implemented by businesses on their strategic planning process for sustainability and major challenges faced throughout the process. This approach aimed at complementing the results provided by the literature review in chapter 2 and support the preparation of the experimentation phase.

The characterisation of sustainability strategy creation processes within businesses was anchored on five key topics: 1) methods and tools applied in the strategic planning process; 2) level of stakeholder involvement promoted; 3) mechanisms for integration of innovation throughout the process; 4) adoption of a focus on long-term thinking, as well as systemic approaches; 5) identification of challenges faced by organisations throughout the strategic planning process.

SOB reported the application of a diversified range of tools and methods to design their sustainability strategies, confirming the lack of standardisation in these processes (Montiel and Delgado-Ceballos, 2014). SOB contributing to the study selected the set of tools that would most likely fit their context and competences, among which are the development of scenarios, goal and target setting, and risk management practices.

Despite diversity regarding methods used, stakeholder involvement in the strategic planning process was identified as a common widespread practice in SOB. Nevertheless, the level of stakeholder involvement and the type of activities developed varied among businesses. Stakeholders are commonly recipients of information campaigns or consultation campaigns, while deeper levels of engagement, such as the development of joint projects and partnerships, are less frequently employed.

Both innovation integration and long-term thinking adoption are challenging tasks for Portuguese SOB in the tourism sector. Whereas innovation is integrated more often at an operational level, the adoption of long-term thinking is perceived as a possible constraint to business, considering fast changing trends in the tourism sector and conflicts with demand for short-term performance.

Finally, SOB mentioned multiple challenges in designing sustainability strategies, which range from internal issues - such as, creating a mindset for sustainability, balancing short-term economic targets and long-term environmental goals and gathering resources - to external factors - such as, the national regulatory framework, policies and culture in which

the business operates. Specific sectorial challenges for the tourism context were also identified, such as seasonality.

Overall, SOB reported a lack of methods and tools specifically designed to support the strategic planning process for sustainability. As the type of methods and tools used influences the outcome obtained, it was relevant to analyse the alignment of SOB strategic planning processes to weak and strong sustainability perspectives.

In most cases, strategic planning processes described by SOB rely on methods and tools aligned with a weak sustainability perspective (Vildåsen et al., 2017). However, the spectrum of approaches described was large and, in particular cases, closer to the concept of strong sustainable businesses (Upward and Jones, 2016), which implies the creation of *"positive environmental, social and economic value through their value network*". Falling outside the sustainability spectrum were SOB mentioning reactive approaches towards sustainability, which position these businesses as inert in relation to a sustainability transition (van Mossel et al., 2018).

6.1.2| Experimentation phase

The experimentation phase was designed based on a transdisciplinary research setting, comprising collaborative approaches, and focused on a sustainability transition in the Portuguese tourism sector. The TM cycle as depicted in Loorbach (2007) and chapter 1 was used as inspiration to design this research phase, leading to the development of two studies. The first study focused on the strategic activities of structuring and framing sustainability problems associated with a transition at a sectoral level, as well as on the creation of a multistakeholder shared future vision and transition pathways (chapter 4: 'Structuring sustainability problems'). The second study aimed at experimenting on the co-creation of business sustainability transition strategies, as a planning process to support business positioning in a wider sustainability transition (chapter 5: 'Co-creating sustainability transitions strategies').

While both studies were built on collaborative approaches, the particular methods applied were tailored to the goals of each study: in 'Structuring sustainability problems' a Participatory System Mapping (PSM) approach was developed and tested in the context of a

Transition Management (TM) process; while in 'Co-creating sustainability transitions strategies' a backcasting approach was adopted, comprising a visioning exercise. Also, regarding stakeholder identification and involvement, both studies adopted different procedures. In 'Structuring sustainability problems' key stakeholders in the Portuguese tourism sector were engaged, in the sequence of the diagnosis developed in 'Screening sustainability-oriented businesses'. On 'Co-creating sustainability transitions strategies', the experiment was developed with a Portuguese hotel volunteering for the study. The organisation had already been involved in the workshop conducted in the preceding study ('Structuring sustainability problems') and the co-creation process included the engagement of key collaborators from this organisation.

Moreover, in the experimentation phase, the scope of the studies developed differs substantially since 'Structuring sustainability problems' focused on a sectorial and national level, while 'Co-creating sustainability transitions strategies' aimed at addressing strategic planning at a business level. This difference in the scope is also a consequence of adopting an overall research approach inspired in the TM cycle. Therefore, strategic activities (which were identified in the 'Structuring sustainability problems' study) focused on a wider scale, providing a clear context to guide the development of the experiment at an organisational level. The results obtained in 'Structuring sustainability problems' (e.g., future vision for the sector in 2040) were used as inputs to guide the co-creation of the sustainability transition strategy with the company, and analyse the results obtained throughout this process.

The adoption of collaborative approaches in both experimentation studies resulted in the development of a methodological framework and a procedure, which provide insights on how to develop this type of processes in collaborative settings. Along with these outputs, the key findings associated with both studies developed under the experimentation phase are summarised in Figure 6.2. These key findings contributed to address the research questions defined from the onset, as explained in the following sections.

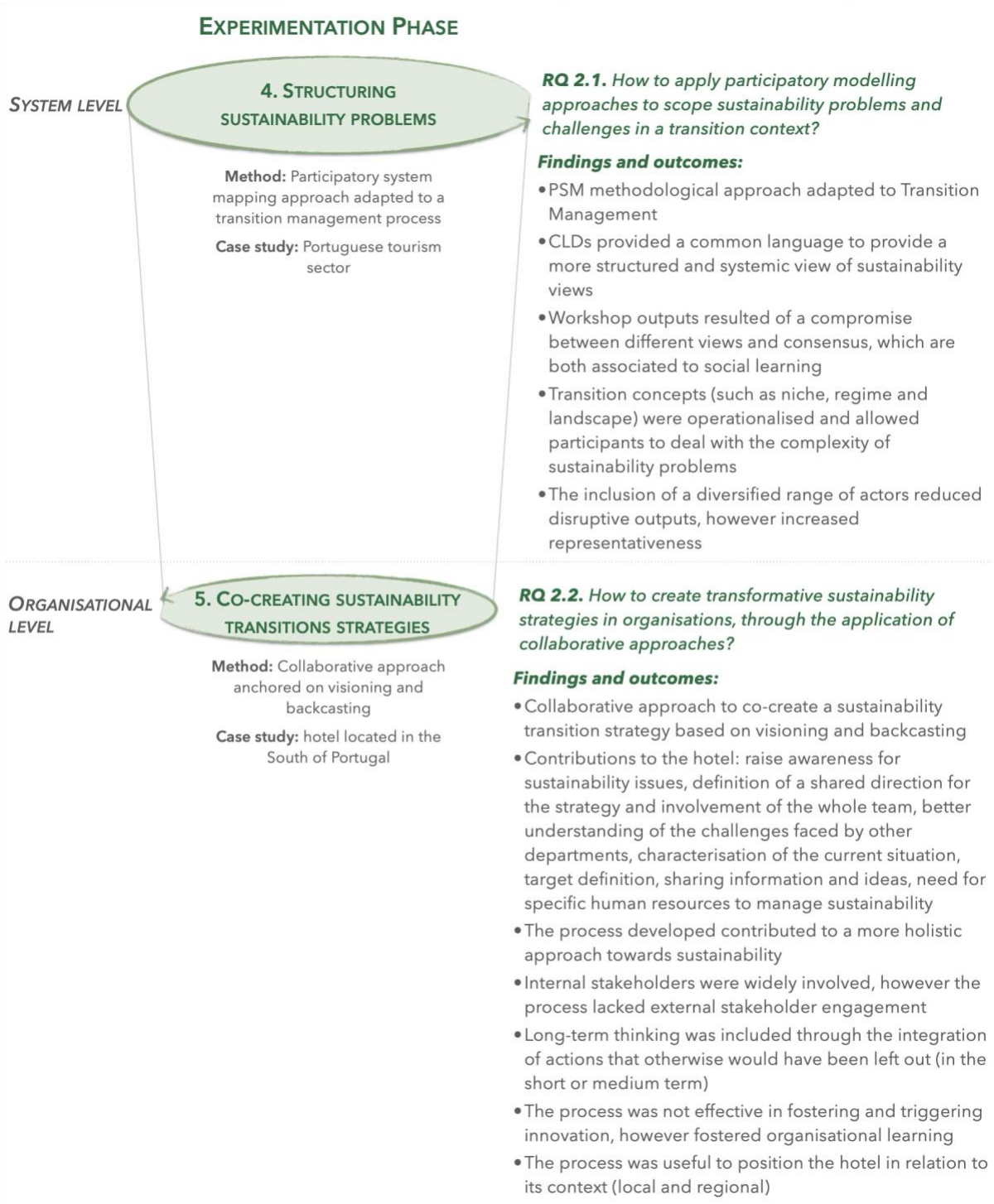

Figure 6.2 - Summary on the key findings produced during the experimentation phase

6.1.2.1| <u>How to apply participatory modelling approaches to scope sustainability problems and challenges in a transition context? (RQ2.1.)</u>

The influence of the context in business positioning is acknowledged in literature (Baumgartner and Rauter, 2017; Chang et al., 2017; van Mossel et al., 2018), thus embedding

the strategic planning process in a wider context, in which the business operates, is essential (Searcy, 2016; van Lieshout et al., 2021). Following this assumption, chapter 4 describes the application of a PSM approach, integrated in the TM cycle, to structure and frame sustainability problems and challenges in the Portuguese tourism sector.

In this case, the methodological framework proposed proved to be effective in scoping sustainability problems and challenges. Participants in the PSM workshop recognised actors involved in the whole process as representative of the sector, which is relevant to ensure that diverse perspectives on sustainability problems and challenges in the Portuguese tourism sector were considered and integrated in the scoping exercise.

The construction of CLD during the workshop allowed participants to create a common language to discuss sustainability problems and challenges, while developing a more structured and systemic perspective on these issues. The use of CLD, along with transition concepts (e.g., regime, niche and landscape) and frameworks (as the MLP), provided participants a mechanism to deal with the complexity associated with sustainability problems.

Another outcome of the participatory workshop was the achievement of a compromise between different views on the sustainability problems. The elaboration of future visions also led to the creation of consensus among participants. Both the compromise between views and consensus creation are processes associated with social learning, which is a relevant outcome.

The methodological framework developed and implemented contributed to the production of two major outputs: 1) CLDs modelling sustainability problems and challenges; and 2) future visions to 2040, supported by roadmaps. These outputs are relevant working tools for organisations steering the sustainability transition in the tourism sector in Portugal. At an organisational level, the results obtained are key inputs to the strategic planning processes, by providing businesses a shared perspective on sustainability problems and challenges in the sector and a direction for future developments.

6.1.2.2| *How to create transformative sustainability strategies in organisations, through the application of collaborative approaches? (RQ2.2.)*

This research question was addressed through the selection and development of a case study in the Portuguese tourism sector. The hotel selected was invited to collaborate in the development and application of a methodological framework, inspired in the TM framework described in Loorbach and Wijsman (2013). This hotel had been already involved in the previous study ('Structuring sustainability problems'), which was the major requirement used in case study selection.

The co-creation process developed with the hotel was inspired in the TM cycle, as suggested by Lahtinen and Yrjölä (2019), while adapting methods and tools already used by some organisations in the design of sustainability strategies, such as visioning and backcasting. A set of preparatory interviews was essential to map key stakeholders and provide initial insights on the perceptions of employees on the sustainability approach already adopted by the hotel. Outputs from the workshop developed in 'Structuring sustainability problems' were used to position this initial set of information on a sectorial and organisational perspective.

The initial workshop consisted in a visioning exercise and resulted in the co-creation of a sustainability vision for 2040 for the company, supported by the definition of a set of strategic goals. Building on these outputs, a series of backcasting workshops were subsequently organised to develop transition pathways and aspirational aims, an action plan (including performance indicators and targets), action tracks and a risk analysis. A final validation workshop supported the analysis of the outputs obtained from the collaborative process and allowed participants to include final modifications.

Along with the outputs co-created throughout the process, participants identified the following wider contributions of the collaborative approach for the hotel: raised awareness for sustainability issues; definition of a shared direction for the sustainability strategy; involvement of the whole team in sustainability management; better understanding on the challenges faced by other departments; sharing information and ideas; characterisation of the current situation; and, identification of current needs, such as human resources with technical competences on sustainability management.

Overall, the co-creation of the sustainability strategy using the proposed methodological framework, fostered organisational learning, as evidenced by the contributions perceived by participants. Building on participants' perceptions and evaluation, the process was not fully effective though in fostering and triggering specification of innovation strategies.

A holistic approach towards sustainability was possible regarding the visioning exercise, which focused on context-specific sustainability issues, instead of working with pre-defined dimensions (such as the traditional Triple Bottom Line (TBL) approach). The integration of long-term thinking in the definition of the action plan allowed more ambitious actions to be considered, regardless of the current lack of resources to implement them in the short-term. Defining a long-term action plan provided the ground to identify a coherent trajectory of actions, enabling the implementation of more forward-looking sustainability practices.

6.2 | KEY FINDINGS WITH RESPECT TO THE OVERARCHING GOAL AND RESEARCH QUESTION

The overarching question of the present thesis was "How can organisations develop a transformation process towards sustainability when embedded in the context of a wider sustainability transition?". This section discusses the key findings of the research under the light of this question.

Society has been striving for more sustainable pathways due to an increasing demand for a transition towards sustainability. This transition has been occurring at different paces, in diverse settings and levels of steering, regarding specific contexts (such as economic sectors, national or international scopes). Therefore, dynamics leading to a disruptive and broad shift in society may differ according to each context. Building on the definition of sustainability transition provided by Köhler et al. (2019), these different dynamics may be analysed as multiple sustainability transitions.

In this context of continuous co-evolution, businesses have readily available diverse approaches to deal with sustainability transitions affecting their operations. As described in chapter 1, businesses may opt to become frontrunners and lead the transition, follow frontrunners, remain inert or oppose the transition by trying to delay or prevent it (van

Mossel et al., 2018). For a business to adopt a frontrunner positioning in a sustainability transition, a transformation of its core values, business preposition and activities is required.

The current research aimed at contributing to fill the gap on how organisations can develop effective transformation processes towards sustainability, while embedded in a wider societal sustainability transition, through the development of a transdisciplinary research focused on organisational sustainability, corporate strategic management and sustainability transitions. In an initial phase, the research focused on the development of an extensive diagnosis on how organisations were performing their transformation processes towards sustainability and what gaps needed to be filled. From the literature review stood out the need to provide methodological support and guidance on the creation of sustainability transition strategies to produce actionable knowledge. The methods used and processes developed by sustainability-oriented businesses to create sustainability transition strategies become the central focus on the screening exercise. The scope of this exercise was delimited to Portuguese SOB from the tourism sector and provided an overall portrait on the practices adopted by the participants. The lack of specific methods and tools available to formulate sustainability strategies reinforced the gap already identified in the literature review.

From the diagnosis phase also emerged a set of key sustainability enabling factors, identified as cornerstone to the elaboration of a sustainability strategy capable of positioning businesses as frontrunners or aligning their approach with a strong sustainability perspective: 1) reduce or deal with complexity; 2) holistic view of sustainability; 3) long-term thinking to deal with the dynamic nature of sustainability; 4) stakeholder involvement; 5) organisational learning to foster innovation. Thus, these enabling factors were also central in the design in the second phase of the research: the experimentation phase.

In this phase, methodological frameworks built around the concepts and literature on TM were designed and tested in a collaborative setting. The implementation of the approach proposed consisted in two separated steps, which were closely interconnected: the collaborative process anchored on the methodological framework presented in ‘Structuring sustainability problems’ and the co-creation supported by the procedure proposed in ‘Co-creating sustainability transition strategies’. In the first step, key stakeholders from the

Portuguese tourism sector were invited to contribute to an exercise to structure sustainability problems faced by the Portuguese tourism sector and creation a sustainable vision for 2040.

Using the results from the first step of the experimentation phase, a second collaborative process was designed and implemented in a case study (a hotel which also participated in the previous research step). Stakeholders identified in collaboration with the hotel, participated in the co-creation of a sustainability transition strategy, on a multi-step approach, which produced a business vision for 2040, strategic goals, transition pathways and aspirational aims, as well as an action plan, action tracks and a risk analysis.

Figure 6.3 depicts the research setting adopted, as well as the knowledge flows between each phase and step of the current research. Key outputs are also summarised in the Figure, including the ultimate outcome of the research performed, which resulted from the gaps identified in the diagnosis phase, the work developed during the experimentation phase and the feedback provided by stakeholders involved throughout the whole process.

Thus, the current research proposes a process to create organisational sustainability transition strategies in collaborative settings, as an approach capable of guiding businesses in their adaptation, during a sustainability transition. The procedure developed and tested in the current research yielded five core findings, which are further explored on the following subsections: 1) the strategy must be developed while embedded in the ongoing sustainability transition; 2) sustainability requires a holistic view of the concept itself and of the environment in which the organisation operates; 3) stakeholders are key elements and must be involved throughout the process; 4) innovation and organisational learning are essential to ensure organisational flexibility and adaptation capacity; 5) long-term thinking is a core concept guiding the transition process.

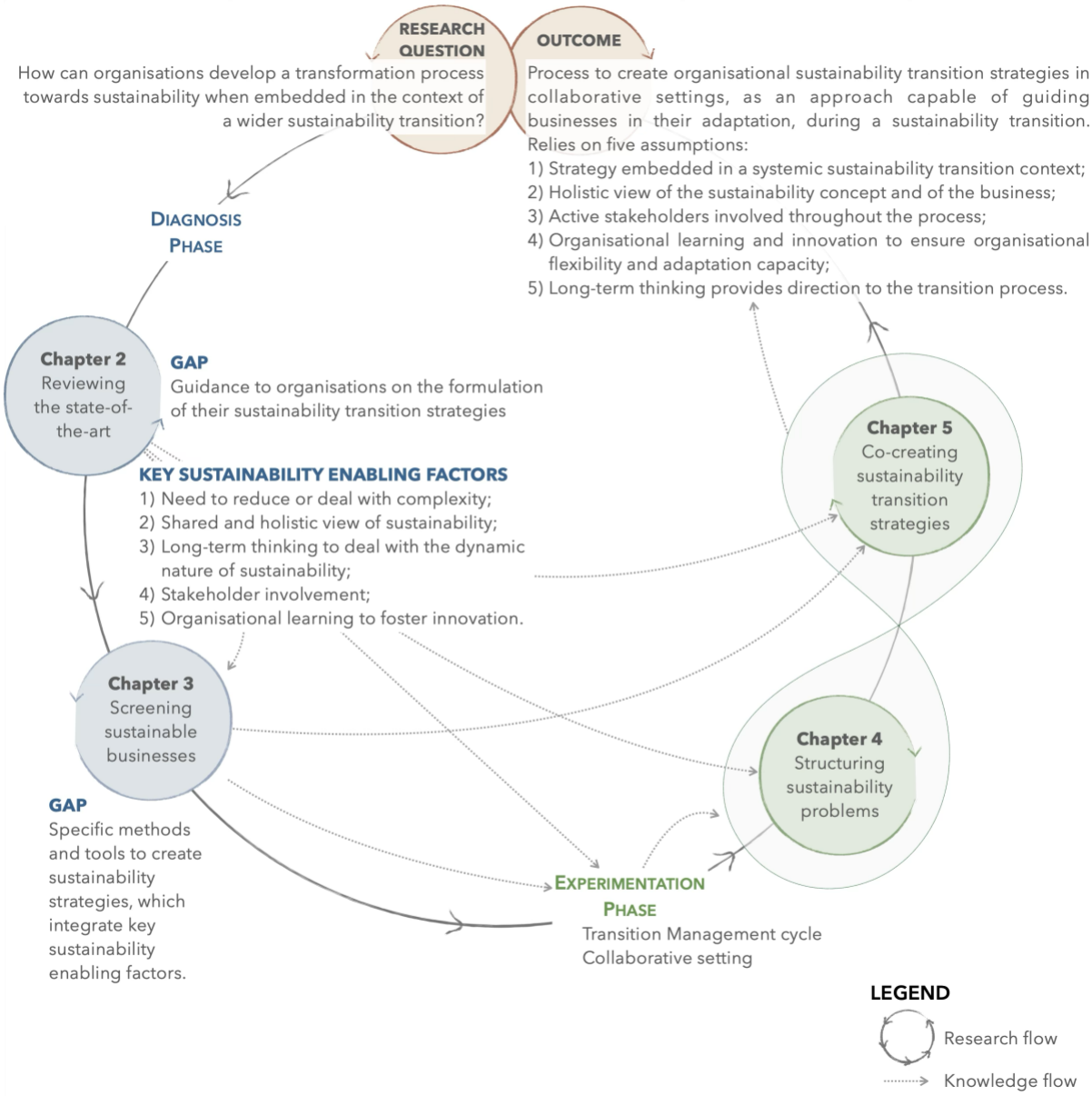

Figure 6.3 - Research overview, including major flows and outcomes

6.2.1| Contextual embeddedness of transition processes

The current research adopted TM as a framework to support the analysis of the ongoing sustainability transition in the Portuguese tourism sector. This transition has been promoted by the Portuguese tourism regulatory entity (Turismo de Portugal) through multiple initiatives. The first vision for the sector built on sustainability was presented in the strategy for tourism to 2027 (Turismo de Portugal, 2017) and reinforced by the development of an action plan for sustainability (Turismo de Portugal, 2021b, 2021a). Despite these efforts

to steer a sustainability transition in the sector, neither of these plans and strategies are anchored on TM. Thus, the development of a study scoping sustainability problems in the Portuguese tourism sector and creating visions for the future remained relevant. This study allowed to introduce and test the application of transition concepts, such as regime, niche and landscape, to the debate on sustainability in tourism, while adopting collaborative approaches where businesses, among other stakeholders, were invited to participate.

The PSM approach provided participants the opportunity and a structured method to discuss the ongoing sustainability transition in the Portuguese tourism sector, while debating implications for businesses, namely at a strategic and operational level (through themes as 'Water, energy and waste' and 'Business ethics and management'). Thus, the study contributed to promote reflections on the coevolution between sustainability management approaches adopted by businesses and their overall context, as suggested by Chang et al., (2017), Garud and Gehman (2012) and Searcy (2016).

The outputs produced in this study were also useful to feed the strategic planning process developed to a single business (in this case, the hotel selected as case study). The sustainability themes identified in 'Structuring sustainability problems' provided a starting point on the identification of relevant sustainability themes for the case study. The analysis of trends influencing the sustainability transition of the Portuguese tourism sector and the identification of key challenges contributed to define the strategic orientation for the hotel, as suggested by van Lieshout et al., (2021) and Turnheim and Sovacool (2020). Simultaneously, this alignment, if monitored, is expected to support the continuous evaluation of effects and contributions of individual businesses to the broader sectoral transition processes.

6.2.2| Holistic view of sustainability and the business environment

As a result of the transdisciplinary research setting, the studies developed in the experimentation phase were designed to solve problems and address sustainability challenges, as stated in literature (Caniglia et al., 2021; Hölscher et al., 2021; Shrivastava et al., 2013). Both studies focused on sustainability problems and challenges faced by the Portuguese tourism sector as a whole or by a specific hotel used as case study, without

compartmentalising economic, social and environmental aspects of each problem and challenge. This phenomenon-driven approach allowed a more holistic and systemic view of problems, focused on interactions between the diverse factors influencing or driving the problem instead of compartmentalising these factors. This type of approach is essential to capture and deal with the complexity and dynamic nature of sustainability problems and challenges (Hölscher et al., 2021).

As the whole experimentation phase was oriented towards sustainability issues, the outputs aimed at integrating sustainability dimensions (economic, social and environmental) intrinsically, as well as their interrelations. The elements of the sustainability transition strategy built in 'Co-creating sustainability transitions strategies' are a good example of this outcome. Starting from the future sustainability vision for 2040 and cascading down to the strategic goals defined, transition pathways and action plan, sustainability issues were approached from a holistic perspective instead of the traditional segmented approach on the economic, social and environmental dimensions. Therefore, each strategic goal and transition pathway is interconnected and has impacts in more than one of these dimensions, even in the situations where it is more oriented towards one of them.

This integrative and holistic view allows for a better understanding of each strategic goal and transition pathway, as well as the identification of possible constraints and synergies with other transition pathways. This potentially allows to define a more efficient action plan. The need for deeper interconnection between the economic, social and environmental dimensions of sustainability is supported by Montiel (2008).

The adoption of a holistic view of a business organisation is another relevant element on the methodological approach proposed, contributing to an increased efficiency. Focusing on the results from 'Co-creating sustainability transitions strategies', the involvement of internal stakeholders in the co-creation of the sustainability transition strategy contributed to raise awareness about the difficulties and challenges faced by each department, providing employees a systemic view of the business environment. This holistic view on the hotel along with improved internal communication provides ground for the joint implementation of the action plan, tackling constraints and challenges as one team. Therefore, the type of internal stakeholder involvement promoted in the process may support a more efficient implementation of the organisation's action plan.

6.2.3| Exploring methods for strong stakeholder engagement

Stakeholder involvement was identified in 'Screening sustainability-oriented businesses' as one of the most widespread practices in strategic planning processes. SOB involved in this study applied multiple methods and tools to involve stakeholders, ranging from sharing information, to consultation, development of collaborations and empowerment initiatives, as described by Brandt et al., (2013). Despite this diversity and the widespread stakeholder involvement, collaboration and empowerment practices, which represent a higher level of engagement, are less common and not described in detail by these businesses.

The current research aims at filling this gap, found in both studies performed on the diagnosis phase ('Screening sustainability-oriented businesses' and in 'Reviewing the state-of-the-art'), and in literature, such as Chang et al., (2017). Thus, the experimentation phase applied collaborative approaches, throughout the whole process, as also proposed in the TM framework (Kemp and Loorbach, 2006). The TM framework also follow a transdisciplinary research setting, in which experiments require the involvement of a wide range of participants, bringing to the process different forms of knowledge, capabilities, resources and expectations (Antikainen et al., 2017; Sengers et al., 2019; Weiland et al., 2017).

Therefore, in both studies of the experimentation phase, processes of stakeholder mapping and analysis were developed to ensure the active involvement of key stakeholders from the Portuguese tourism sector (chapter 4) and from the hotel used as case study (chapter 5). 'Structuring sustainability problems' adopted a sectorial scope and consequently, key sectorial stakeholders already engaged in the sustainability transition were involved to provide a richer analysis of the sustainability problems and challenges faced by businesses. Also, gathering a group of participants perceived as representative of the Portuguese tourism sector contributed to legitimise the results obtained through the collaborative process, as stated in transdisciplinary research literature (Nagatsu et al., 2020; Shrivastava et al., 2013). Though participants in 'Structuring sustainability problems' were not directly involved in the study 'Co-creating sustainability transitions strategies', their knowledge and perceptions were mapped and served as a guide in the co-creation of the business sustainability transition strategy through the use of the information produced.

In the ‘Co-creating sustainability transitions strategies’ study, which focused on the strategic planning process in the case study hotel, organisational stakeholders were classified according to their proximity to the business. While the initial proposal included the involvement of internal, as well as external stakeholders, only internal stakeholders (employees and subcontracted firms ensuring department management) were able to be included in the workshops organised for the co-creation of the sustainability transition strategy.

The co-creation process was designed to involve different stakeholder groups in specific phases of the process: while top and middle management were set to be engaged throughout the whole process, operational employees were planned to contribute to the co-creation of transition pathways and action plan. External stakeholders were planned to be involved in the action plan validation and implementation. The involvement of external stakeholders in strategic planning is a critical factor to promote a strong sustainability perspective in business, as implied in the concept of tri-profitable firm presented by Upward and Jones (2016).

In this case study, the involvement of external stakeholders was conditioned by two factors. The first and more relevant factor was the need to adapt the collaborative process to an online format, due to the restrictions imposed by the covid pandemic outbreak. The duration of each workshop was reduced to avoid screen fatigue, which led to an increased number of sessions and a focus on plenary sessions, instead of dividing participants into smaller groups, working in parallel (Wu et al., 2021). These settings are less favourable for a high number of participants and therefore only top and middle management were involved in the process. The second factor conditioning the involvement of external stakeholders was the organisational primary focus on internal procedures to promote the sustainability transition and then after, engaging with external stakeholders. In line with this approach, the development of trust relationships with external stakeholders was identified as a key follow-up element in the action plan, as well as on the overall sustainability transition strategy.

According to Lozano and Garcia (2020), collaboration with external stakeholders is a low driver of organisational change towards sustainability, and consequently the limited involvement of external stakeholders in the strategy co-creation would arguably have lesser

impact on the key insights derived from the process. However, feedback from participants emphasised the increased awareness about sustainability and other departments' challenges, as well as a rise in motivation and commitment in the operationalisation of sustainability. These outcomes reinforce the importance of collaborative approaches and are aligned with success factors of experimentation, defined by Antikainen et al., (2017), such as trust building and the creation of learning spaces, which will also be useful in the creation of relationships with external stakeholders in proposed follow-up stages of this work.

Table 6.1 summarises participatory moments throughout the research performed, organised by phase and study and detailing the type of stakeholders involved, as well as the number and the methods used in the participatory processes.

Table 6.1 - Summary of stakeholder involvement and participatory moments throughout the research

Phase	Study	Stakeholder Type	Number	Methods
Diagnosis	'Screening sustainability-oriented businesses'	• Public entities • Sectorial and tourism associations • Consultancy businesses • Hotels • Local accommodations • Travel agencies	25	• Semi-structured Interviews (in person, online or by telephone)
Experimentation	'Structuring sustainability problems'	• Public administration (national, regional and local entities) • Business and tourism associations • Accommodation businesses • Academics • Other businesses	44	• Semi-structured Interviews (in person, online or by telephone) • Participatory systems mapping transition workshop (in person)
	'Co-creating sustainability transitions strategies'	• Hotel's internal stakeholders, representing the following departments: maintenance, finance, food and beverage, housekeeping, sales, human resources, marketing, front office, reservations, landscaping and organic garden, real estate and SPA.	27	• Semi structured interviews (online) • Visioning and backcasting workshops (5 online workshops)

6.2.4| Innovation elements in the research and organisational transition processes

Innovation is a transversal element throughout the research, in particular in the experimentation phase. The development of a research plan on the intersection of different research fields and building on their intersections to develop new approaches to businesses sustainability transitions provides a rich ground for innovation. While the conciliation of different perspectives, approaches, methods and tools is a challenge, it also contributes to an innovative character of the research.

At the experimentation phase, innovation was integrated in the design of the collaborative processes. In 'Structuring sustainability problems', the PSM approach was adapted to a TM context, linking research on sustainability transitions to a method commonly applied in the context of EE studies (Lopes and Videira, 2015; Sedlacko et al., 2014; Videira et al., 2012). In 'Co-creating sustainability transitions strategies', a sustainability transition perspective was brought to the strategic planning process at an organisational level. These approaches are in line with the focus on change, innovation and learning of experimentation (Antikainen et al., 2017; Sengers et al., 2019; Weiland et al., 2017).

The use of an adapted PSM approach in 'Structuring sustainability problems' produced positive outputs, corroborated by participants. The feedback received from this experiment was positive, emphasising the role of the PSM approach on providing a systemic view on sustainability problems, which was useful to create future sustainability visions for 2040. Participants in the collaborative workshop mentioned that the process allowed them to reframe sustainability problems by unveiling hidden relationships between the variables identified, which is compatible with double loop learning (Kraker et al., 2011). This was to our knowledge, one of the first applications of PSM as an approach to support transition processes in the tourism sector.

At an organisational level, the collaborative approach tested in 'Co-creating sustainability transitions strategies' aimed at fostering learning and innovation within a business context. The setting designed for the discussion of transition pathways and the action plan focused on creating the conditions to explore innovative solutions, for example by prompting participants to include suggestions of best practices identified for the tourism sector. Regardless of these efforts, participants did not perceive the process as a trigger for innovation or as a facilitator of the integration of innovative initiatives in the sustainability

transition strategy (see chapter 5). Thus, the inspiration on the TM framework to design the collaborative approach was not enough to ensure the integration of system innovation at a business level, as expected in a TM process (Kemp and Loorbach, 2006), which points to the need for further research on this issue.

The collaborative approach was more successful in fostering organisational learning since along with the production of the sustainability transition strategy elements, participants reported increased awareness of difficulties faced by other departments. The process implemented allowed the identification of major gaps in the diagnosis of the hotel's current situation in relation to sustainability aspects and paved the ground for improvement in internal communication and collaboration. Organisational learning is considered a key internal element supporting businesses to navigate through transitions (Turnheim and Sovacool, 2020).

Along with organisational learning, dynamic capabilities are identified in sustainability transitions research as essential to allow businesses to adapt throughout transitions (Garud and Gehman, 2012; van Mossel et al., 2018). The methodological approach proposed in 'Co-creating sustainability transitions strategies' included the identification of key competences required to ensure the operationalisation of the sustainability transition strategy, as well as a risk analysis to ensure the capability to adapt to current and future changes in the context.

6.2.5| Adopting a long-term thinking perspective in sustainability strategic planning processes

The adoption of long-term thinking is a key element in the research development from a sustainability and corporate strategy perspectives since both concepts are anchored in long-term perspective. In the definition of OS described in chapter 1 and adopted throughout the current research, sustainability dimensions (economic, social and environmental) and their interrelations must be considered during the time dimension (Lozano, 2018b; Lozano et al., 2021). Also, the definition of a corporate strategy implies the definition of a long-term direction to guide business activities (Galbreath, 2009; Porter, 1996).

In the diagnosis phase, the relevance of long-term thinking was emphasised in literature, regarding the dynamic nature of sustainability and reinforced by the conceptual framework depicted in 'Reviewing the state-of-the-art'. In 'Screening sustainability-oriented businesses', long-term thinking stood out as the key enabling factor for sustainability less adopted in strategic planning processes developed by Portuguese SOB in the tourism sector.

As suggested by the definition of corporate strategy, companies adopting unstructured approaches to strategic management or reactive strategies towards sustainability are prone to lack long-term thinking integration. The results on 'Screening sustainability-oriented businesses' reinforce this assumption since SOB not adopting long-term thinking mentioned constraints related to organisational size (e.g., conducting to the lack of financial resources), business culture (e.g., focus on the short-term or the lack of business culture on strategic management) and local context (e.g., lack of shared vision among companies operating in the same territory).

One of the major challenges in the adoption of long-term thinking identified in the diagnosis phase was also the balance between short and long-term, in terms of goals and performance (chapter 3). This challenge is also identified as a barrier to the development of sufficiency-driven business models (Bocken and Short, 2016) and it is aligned with a key debate on the conceptualisation of strongly sustainability businesses: the profit maximisation imperative as major orientation for business strategic planning. Diverse authors argue that profit maximisation keeps business focus on short-term goals and performance, which are incompatible with a strong sustainability perspective (Nesterova, 2020; Upward and Jones, 2016; Vildåsen et al., 2017).

The methodological framework and procedure developed and tested in the experimentation phase embraced long-term thinking by integrating in their foundations the TM framework and a backcasting approach. In both cases, long-term thinking is a key element, as described by Kemp and Loorbach, (2006) in relation to TM processes and by Broman and Robèrt, (2017) and Robèrt, (2009) in the application of backcasting approaches in business strategic planning processes.

'Structuring sustainability problems' was focused on strategic activities at a sectorial level and the workshop included a backcasting exercise, with a visioning activity, which integrated the long-term perspective. Participants valued the sequence of the exercises

proposed since it allowed them to enter in the long-term mindset called for by the visioning and backcasting exercise. Therefore, the overall approach proposed encouraged systemic and long-term thinking on sustainability problems in the Portuguese tourism sector.

In 'Co-creating sustainability transitions strategies', the methodological framework included a visioning and backcasting exercise, where long-term thinking was primarily integrated through the definition of a distant time horizon (in this case 2040). As the shared sustainability vision for 2040 was created, long-term thinking was integrated in the backcasting process through the definition of aspirational aims to each transition pathway. Aspirational aims were used to support participants in the discussion of more ambitious lines of action, regardless of the current obstacles to their implementation. Within this mindset, the action plan included intermediary targets between 2021 and 2040 and more demanding actions were accommodated in the long-term horizon. Regarding the constraints identified at the current time to implement these more demanding actions, lines of action were defined to progressively create the conditions to implement them. Feedback from the participants indicated that this long-term perspective promoted the integration of actions that from a short or medium-term perspective would have been excluded. Summarising, long-term thinking was relevant to provide a direction and coherence to a more ambitious action plan.

6.3 | CONTRIBUTIONS TO RESEARCH AND PRACTICE

This research was designed in a transdisciplinary setting, including an experimentation phase, which aimed at producing actionable knowledge on corporate transitions towards sustainability. As a result of this approach, the research contributions to theory and practice are intertwined through the methodological framework and procedure proposed in both studies developed in the experimentation phase.

Thus, the major contribution of this research is a procedure to co-create sustainability transition strategies within businesses, through the integration of five key sustainability enabling factors: 1) embeddedness in the systemic transition context, 2) holistic view of sustainability and the business, 3) stakeholder involvement, 4) integration of innovation and 5) adoption of long-term thinking.

This methodological approach is inspired in TM literature and includes an initial step focused on the system level, in which systemic sustainability problems are identified and analysed. This initial step ensures the co-creation process is embedded in an ongoing and wider sustainability transition, while the second step includes the integration of the remaining key sustainability enabling factors. Narrowing the scope to the organisational level, the second step is supported by the conceptual framework resulting from the literature review performed and the insights from the screening of sustainability-oriented businesses in the diagnosis phase of the research.

The analysis of the contributions of the current research to specific theoretical gaps or to practice are analysed in more detail in the following sections.

6.3.1| Contributions to research: building bridges between research fields through a transdisciplinary setting

The major research gap in CS and strategic management literature to which the current research aims at contributing is the need to explore how can businesses create sustainability strategies (Chang et al., 2017; Engert et al., 2016; Kitsios et al., 2020; Neugebauer et al., 2016). The methodological approach to co-create sustainability transition strategies within businesses proposed provides support to businesses in the integration of CS in their operations and in dealing with the inherent complexity of sustainability problems, while filling the research gap identified by Engert et al. (2016).

The TM framework was a source of inspiration to the development of the procedure proposed, introducing a systemic perspective in business strategic planning, as suggested by Diepenmaat et al. (2020), Engert et al. (2016) and Lahtinen and Yrjölä (2019), and reinforced by Köhler et al. (2019), through the identification of the lack of literature on the intersection of sustainability transitions and strategic management research.

The methodological approach proposed builds on key sustainability enabling factors to address research gaps identified in literature. For example, the adoption of a holistic view on sustainability and the business addresses research gaps identified in Engert et al. (2016) on this issue. The active involvement of stakeholder in a co-creation mode throughout the

whole process is another key element to deal with stakeholder demand in relation to sustainability issues, as suggested by Kitsios et al. (2020).

The transdisciplinary setting in which the research was designed provided the background to address the need for: i) more empirical studies and experimentation in the integration of sustainability in businesses (Camilleri, 2014; Engert et al., 2016; Lahtinen and Yrjölä, 2019; Shrivastava et al., 2013; Vatn, 2020); ii) intersection between different research areas (Dwyer, 2018), promoting the interdisciplinarity of the research (Chang et al., 2017); and, iii) involvement of different types of actors (Shrivastava et al., 2013). Stakeholder involvement in the current research was not explicitly designed to explore alternative business governance structures, more aligned with a strong sustainability paradigm. However, the methodological approach proposed provides an initial background to further explore this research path, as suggested by Vatn (2020), through the adaptation of the stakeholder selection process.

The whole experimentation phase, with the initial study at the sectorial level and focusing on a systemic perspective on sustainability issues was key to frame the business sustainability transition strategy in the context in which the business operates, which fills the research gaps identified by Searcy (2016) and Garud and Gehman (2012).

The development of a case study in the Portuguese tourism sector allowed the current research to contribute to two ongoing debates on the sustainable tourism literature (Hall et al., 2015b; Rutty et al., 2015): 1) the need to shift to a sustainable paradigm, regarding the negative impacts caused by tourism activities; 2) the integration of sustainability in tourism businesses (Coles et al., 2015), namely hospitality. The first line of discussion focuses on a system level, while the second is oriented towards the organisational level. Building on the co-evolution theory described in Chang et al. (2017), organisations and their context tend to evolve in relation to each other. Therefore, the two ongoing debates in sustainable tourism are interlinked and are addressed in the current literature as interrelated.

The procedure developed is aligned with a group of core elements of the alternative "sustainable futures" paradigm proposed by Dwyer (2018): environmental ethic instead of anthropocentric ethic; stakeholder orientation to substitute the traditional shareholder orientation; value, which integrates external costs in the price; and, place, replacing the

common denomination of space and integrating tangible and intangible values associated with destinations.

Finally, the current research also contributed to the literature on empirical studies integrating CS in hospitality (Camilleri, 2014; González-Rodríguez et al., 2019), regarding the case study developed, which implied the development and test of a methodological framework to co-create a sustainability transition strategy in an hotel.

6.3.2| Contributions to practice

The contributions of the current research to practice target those responsible to integrate sustainability in businesses, from administration and top management to operational staff. The procedure developed and tested is a useful tool for these practitioners to guide the creation of a sustainability strategy that promotes a transformation within the business. Though the case study comprised an application of the procedure to the tourism and hospitality sectors, the insights from the testing of the procedure proposed are transferable to organisations from other sectors.

The identification and analysis of the context in which the organisation develops its activities as a key element in the creation of the sustainability transition strategy provides the required flexibility to adapt the process to different types of organisations and contexts. The methodological framework proposed in 'Structuring sustainability problems' produced positive results in scoping sustainability problems and providing background information for the creation of a shared sustainability vision. However, the operationalisation of this process may not be feasible for all types of organisations (for example, small businesses), due to lack of resources or influence to gather stakeholders on this type of exercise.

When the replication of 'Structuring sustainability problems' is not viable, practitioners may employ alternative methods. One possibility is the participation in events organised by other organisations or entities (such as regulator entities) debating sustainability problems from a perspective applicable to the organisation (for example, from a sectorial angle). In this type of event, practitioners usually can discuss with other key stakeholders and reflect on sustainability challenges, as well as on possible solutions.

Another alternative method focuses on the analysis of documentation and the creation of close relationships with relevant stakeholders for the organisation. In this case, stakeholder mapping and analysis become a key task, as well as the creation of regular interactions and trust relationships with these stakeholders. The identification of which stakeholders are critical to this analysis is an essential process to avoid a biased vision of the current and future context.

The current research also provides two other major contributions to practice: 1) a conceptual framework on organisational sustainability, allowing practitioners to use a common and complete definition of this concept (which lacks a standardised definition); 2) an inventory of strategic planning practices adopted by SOB (presented in chapter 3), that can be used as a source of inspiration and benchmark.

Additionally, the research also provides relevant contributions for organisations acting at a system level, for example being responsible for regulating or managing a specific sector. These organisations are generally capable of steering sustainability transitions, as for example regulators, sectorial Non-Governmental Organisations (NGOs) or other public entities.

In this case, the methodological framework developed and tested in 'Structuring sustainability problems' constitutes the major contribution. The framework can be used as a guidance tool in scoping sustainability problems and creating shared sustainability visions for the future. Alongside, the methodological framework provides the background to involve key stakeholders on the initial stages of transition processes and develop follow-up initiatives to promote the sustainability transition.

Still targeting entities capable of steering sustainability transitions at a system level, 'Screening sustainability-oriented businesses' provides practitioners with an overview on strategic planning processes in businesses, in this case in the tourism sector. This information may be useful to guide decision-making processes, gather best practices available for businesses engaged in sustainability transitions and define benchmarks. Also, this study identified the main challenges faced by SOB throughout strategic planning processes, which provides a background to develop support and guidance tools.

Finally, the development of the experimentation phase on the Portuguese tourism sector provides already context-embedded content to all actors of this sector. Relevant

sources of information are 'Screening sustainability-oriented businesses' and 'Structuring sustainability problems' since both studies resulted in the creation of novel information for the sustainability transition in the Portuguese tourism sector. The former includes an extensive listing of sustainability practices applied by tourism businesses in their strategic planning processes. The latter included the production of causal loop diagrams (CLDs) depicting key sustainability problems identified for the sector, which provide a system view on these problems. This in-depth information may be useful for those organisations capable of steering a sustainability transition for the sector, but also for businesses or other types of organisations operating in the sector. In the case of the latter, this information is key to defining its positioning in the sustainability transition, through the creation of a corporate strategy.

6.4 | RESEARCH LIMITATIONS AND FURTHER DEVELOPMENTS

The major limitations faced in the current research can be summarised into two major issues: the methodological choices undertaken related to the transdisciplinary nature of the research and the focus on a case study, which present advantages but also limitations; and the context in which the research was developed, where the covid pandemic outbreak took place while the experimentation phase was under development.

The transdisciplinary setting adopted in the current research, as well as the consequent focus on a case study, provides in-depth insights and contextualised results. While this methodological approach is characterised by the richness of the results obtained, the embeddedness in the context and lack of replicability does not allow the generalisation of the results. However, this characteristic offers an opportunity to develop further research with the replication of the proposed approaches in follow-up applications. Multiple replications on the application of the procedure provide the ground for learning through the comparison of different application contexts and eventually produce enough information to allow the generalisation of the results.

Thus, further research may be developed through the replication of the study in different contexts, such as other sectors and countries. Another possibility is the variation on the scope of the study, for example tackling a sustainability transition at an international level

(for example considering the European Union as a whole) or at a regional level, inside a country. Another possible research path is exploring multiple sectors, building on the assumption that actors participating in a sustainability transition may be emerging from adjacent sectors (Ruggiero et al., 2021) or that related regimes may co-evolve during a transition (Raven and Verbong, 2007).

The analysis of the results obtained through the replication of the methodological approach proposed with these variations would probably provide interesting insights on the identification of which elements from the methodological approach are applicable generally and those that are specific of each context. This possible future development would also allow to adapt the methodological approach developed and tested in the current research and establish the level of flexibility associated with this approach.

The covid pandemic outbreak interrupted the work developed in the experimentation phase, most precisely, the co-creation process developed in the study 'Co-creating sustainability transitions strategies'. Therefore, the participatory process was streamlined and adapted to be fully developed online. This reformulation, as well as constant restriction changes delayed the study, which led to a limited implementation of the procedure proposed. Thus, two strategic choices were undertaken: 1) the focus on the case study remained on the planning phase, leaving out the ultimate step of the procedure, which implied the operationalisation of the strategy developed; 2) stakeholder involvement was oriented towards internal stakeholders.

Despite these strategic choices driven by time restrictions represent limitations to the current research, provide opportunities to develop follow-up studies. A possible further development is testing the procedure, focusing on the operationalisation of sustainability transition strategies. Exploring the interrelation between strategic planning and implementation would provide useful insights to adapt the planning process and, therefore, the methodological approach proposed. The re-integration of external stakeholder engagement in the participatory process in a future study would also complement the current research and contribute to further developments on the methodological approach proposed.

Still derived from the pandemic outbreak restrictions imposed on the current research, arise the research venue related to stakeholder involvement and participation in collaborative workshops. All interviews and collaborative workshops in 'Co-creating

sustainability transitions strategies' were adapted to an online format to deal with the restrictions imposed on in-person events. While the online format was useful to better adapt activities' schedules to participants' needs, it also created barriers for participation (some participants were not comfortable with the platforms used) and conditioned the design of the participatory activities to simpler and shorter exercises. On the opposite extreme, 'Structuring sustainability problems' targeted a delimited geographical scope to prepare the PSM workshop, focusing on participants from the Lisbon region, anticipating difficulties to gather stakeholders from more distant locations. Both online and in-person formats demonstrated to have strengths and weaknesses and as further research would be relevant to explore the application of mixed formats in participatory processes, to complement each other in their strengths and weaknesses.

Expanding the boundaries of the current research scope or adjacent research fields provides insights on possible further research to develop. For example, Vatn (2020) suggested that a tricameral solution on the governance structure of companies, involving different stakeholder groups, would possibly provide the ground for a transition into a strongly sustainable business. Exploring other types of corporate governance structures, such as the one presented by Vatn (2020) represents another possibility for the future.

This research line would require an intense participation of the business administration board or owners throughout the process. Building on the findings from 'Screening sustainability-oriented businesses', this type of involvement and the adoption of innovative approaches on organisational governance structures are more common in smaller businesses or organisations. In these environments, owners typically have a closer relationship with organisational operations, employees, and other stakeholders, which potentially contributes to strengthening awareness and empathy.

The current research explores the interface between the organisation and the wider context in which it operates. As further research, it would be interesting to explore the interface between the organisation and individuals, namely through focusing on sustainable leadership, the role of dynamic capabilities in the strategic planning processes and strategy implementation, as well as the role of individuals in steering, supporting and opposing sustainability transition within businesses. These research fields were not widely integrated and analysed in the current research, however the experience in 'Co-creating sustainability

transitions strategies' hinted the importance of these themes in the co-creation of sustainability transition strategies.

Future applications of the procedure developed and tested in 'Co-creating sustainability transitions strategies' may also expand the interface with innovation, providing more in-depth integration in the procedure. To this end, a possible approach is the design of different participatory exercises for the definition of the transition pathways, building on more creative approaches according to the profile of the targeted audience.

This suggestion also opens the ground to another further research pathway focused on the application of other participatory methods to develop both parts of the experimentation phase. While the PSM, visioning and backcasting approaches have been successfully applied for most of the goals of the participatory process, other methods or exercise designs may contribute to expand the range of possible methodological approaches available for organisations aiming to transition into sustainability.

Another possible research line is the use of theoretical background from other research strands to complement and support collaborative exercises. For example, sustainable business models literature provides a wide range of frameworks supporting the development of sustainability-oriented businesses, which may also be useful to promote discussion and reflection on possible organisational transition pathways to achieve sustainability.

From a more operational perspective and reflecting on the contributions to practice, future studies may explore alternatives applications of the proposed methodological framework and procedure developed in the current research. Regarding possible constraints identified in the application of the methodological framework proposed in 'Structuring sustainability problems' by smaller businesses, it would be relevant to explore alternatives to structure and frame sustainability issues in the context in which the organisation operates, besides participating in events organised by those steering a sustainability transition.

This possible research path may be also complemented with a more in-depth integration of current legal requirements and international voluntary tools and standards available for businesses to integrate sustainability in their operations. Integrating these tools

and requirements on the procedure proposed requires additional research and may produce useful results to support businesses in their transitions.

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APPENDICES

Appendix A | RESEARCH OUTPUTS, DISSEMINATION OF THE RESEARCH AND OTHER RELATED ACTIVITIES FROM THE PHD CANDIDATE

A.1 | Articles and book chapters published

Tourais, P., Videira, N., **2019**. Innovative Approaches to Organisational Sustainability: State-of-the-art and Conceptual Framework, in: Leal Filho, W. (Ed.), Social Responsibility and Sustainability: How Businesses and Organizations Can Operate in a Sustainable and Socially Responsible Way. Springer, Cham. https://doi.org/10.1007/978-3-030-03562-4_2

Tourais, P., Videira, N., **2021**. A participatory systems mapping approach for sustainability transitions: Insights from an experience in the tourism sector in Portugal. Environ. Innov. Soc. Transitions 38, 153–168. https://doi.org/10.1016/j.eist.2021.01.002

Tourais, P., Videira, N., **2023**. Sustainability transition strategies in a business context: A co-creation process in the Portuguese hospitality sector. Corp Soc Responsib Environ Manag. https://doi.org/10.1002/csr.2588

Preziosi, M., Tourais, P., Acampora, A., Videira, N., Merli, R., **2019**. The impact of environmental practices and communication on guest behavior: examining EU-Ecolabel in Portuguese hotels. J Clean Prod 237. https://doi.org/10.1016/j.jclepro.2019.117659

A.2 | Other publications

Tourais, P., Canfora, P., Dri, M., Gaudillat, P., Antonopoulos, I., **2018**. Stakeholder needs analysis towards a new concept for the identification and promotion of Best Environmental Management Practices. Luxembourg. https://doi.org/10.2760/729598

Tourais, P., Videira, N., **2020**. Pensar a transição para a sustentabilidade no turismo: Quais os desafios no sector do alojamento? Final technical report, 20 de setembro.

Videira, N., Tourais, P., **2021**. O papel dos Sistemas de Gestão Ambiental nas transições para a sustentabilidade. Indústria e Ambiente, 127, Dossier Sistemas de Gestão Ambiental, Certificação e Auditoria, Março/Abril, 16-19.

Tourais, P., Videira, N., **2020**. Sublime 2040, Estratégia de Transição para a Sustentabilidade. Final report, 6 de maio.

A.3 | Communications in international scientific conferences

Tourais, P., Videira, N., **2018**. Organisational Sustainability Transitions: From a Literature Review Towards a Deliberative Analytical Framework. The 24th International Sustainable Development Research Society Conference, Actions for a Sustainable World: From Theory to Practice, Messina, Sicily, 13th June. (oral presentation)

Tourais, P., Videira, N., **2018**. Innovative Approaches to Organisational Sustainability: State-of-the-art and Conceptual Framework. World Symposium on Social Responsibility and Sustainability, How Businesses and Organizations Can Operate in a Sustainable and Socially Responsible Way, Edinburgh, Scotland, 29th June. (oral presentation)

Tourais, P., Videira, N., **2019**. Experimenting with transitions management for the creation of organisational sustainability strategies. The 4th Conference of the Network of Early Career Researchers in Sustainability Transitions (NEST), Transitions to Where? Shared values and visions for sustainability transitions, Lisbon, Portugal, 4th April. (oral presentation)

Tourais, P., Videira, N., **2019**. Co-creating pathways towards sustainability in organisations. The 13th International Conference of the European Society for Ecological Economics, Co-creation - Making Ecological Economics Matter, Turku, Finland, 19th June. (oral presentation)

Tourais, P., Videira, N., **2020**. A Participatory Systems Mapping approach to Transitions Management: the case of tourism sustainability in Portugal. The 11th International Sustainability Transition Conference, Governance in an Era of Change - Making Sustainability Transitions Happen, Vienna, Austria, 19th August. (online, oral abstract presentation)

Tourais, P., Videira, N., **2020**. Transição para a Sustentabilidade no turismo: criação de uma visão partilhada. Sustentabilidade na Gestão Ambiental - SGA'20, Conferência Internacional: Inovação e desafios para os países de língua official portuguesa, Lisboa, Portugal, 25th September. (online, oral presentation)

A.4 | Visiting periods in other research organisations

Visiting scientist at JRC Seville (Directorate B – Growth and Innovation, Unit B5 - Circular economy and industrial leadership) from **October 2017** to **January 2018**, working on the identification of improvement opportunities in the process of drafting the Sectorial Reference Documents (SRDs) through stakeholder analysis, which included the elaboration of a report on the work developed and the participation on the final meeting of the Technical Working Group (TWG) for the SRD for the fabricated metal products sector, in the 27th and 28th of November, 2017, in Brussels.

A.5 | Other academic and research related activities

Co-supervisor of the master dissertation developed by the student Margarida Pincha between **February 2017** and **July 2018**, resulting on the final thesis: Pincha, A., **2018**. O Rótulo Ecológico da União Europeia no Sector dos Serviços de Alojamento Turístico: Análise das Melhores Práticas e Perceções dos Stakeholders em Portugal. Faculdade de Ciências e Tecnologia - Universidade NOVA Lisboa. https://run.unl.pt/handle/10362/62926

Member of the organising committee of the 8th European System Dynamics Workshop, 'Modelling sustainability pathways: Bridging science, policy and society'. **31st May** to **2nd June**, **2017**, Lisbon

Co-supervisor of the final project course of the Environmental Engineering Master, in FCT/NOVA, between **October 2018** and **February 2019** (scholar year 2018/2019), resulting on the final work "Sustentabilidade do ciclo da alimentação na FCT/NOVA.

Member of the team planning and creating FCT/NOVA Sustainability Strategy, from **July 2018** to **October 2019**.

Member of SIT Study Abroad Review Board in the scope of the SIT Study Abroad Portugal - World Learning Inc. Programe (School for International Training, **November 2021**)

Participation on the Technical Commission evaluating requirement definition of Management Systems: Sustainability and food waste (APCER, **January 2022**)

Lecturer on the course 'Sociedade, Sustentabilidade e Transformação Digital' in FCT/NOVA in **February 2022**.

Expert evaluating proposals for the European Innovation Council (EIC) Accelerator, SME Instrument from **February 2020** to **March 2022**.

A.6 | Reviewer work for the following scientific journals

Journal of Cleaner Production

Annals of Tourism Research

A.7 | Relevant short courses and certifications taken during the PhD

Science Communication, NOVA Doctoral School course, **19th and 20th February, 2020**

Design Thinking, NOVA Doctoral School course, **27th and 28th February, 2020**

A.8 | Dissemination of research work for society

Tourais, P. and Videira, N., **2019**. Collaborative approaches for developing innovative transition pathways towards corporate sustainability, NOVA Science Day 2019 (**18th September**) at the Rectorate of Universidade NOVA de Lisboa. (poster, representing CENSE's PhD students)

Appendix B | SUPPLEMENTARY INFORMATION ON 'STRUCTURING SUSTAINABILITY PROBLEMS'

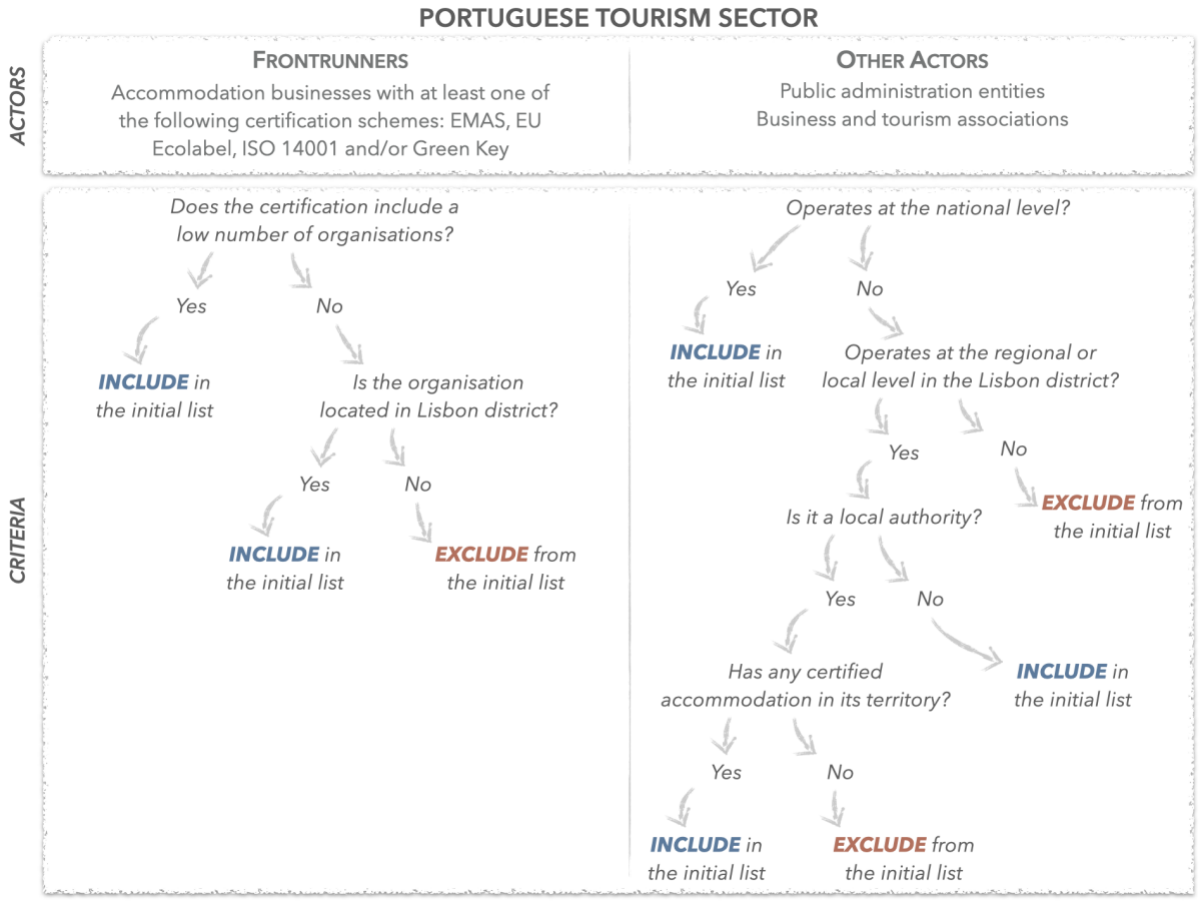


Figure B.1 - Decision tree based on formal criteria to identify stakeholders

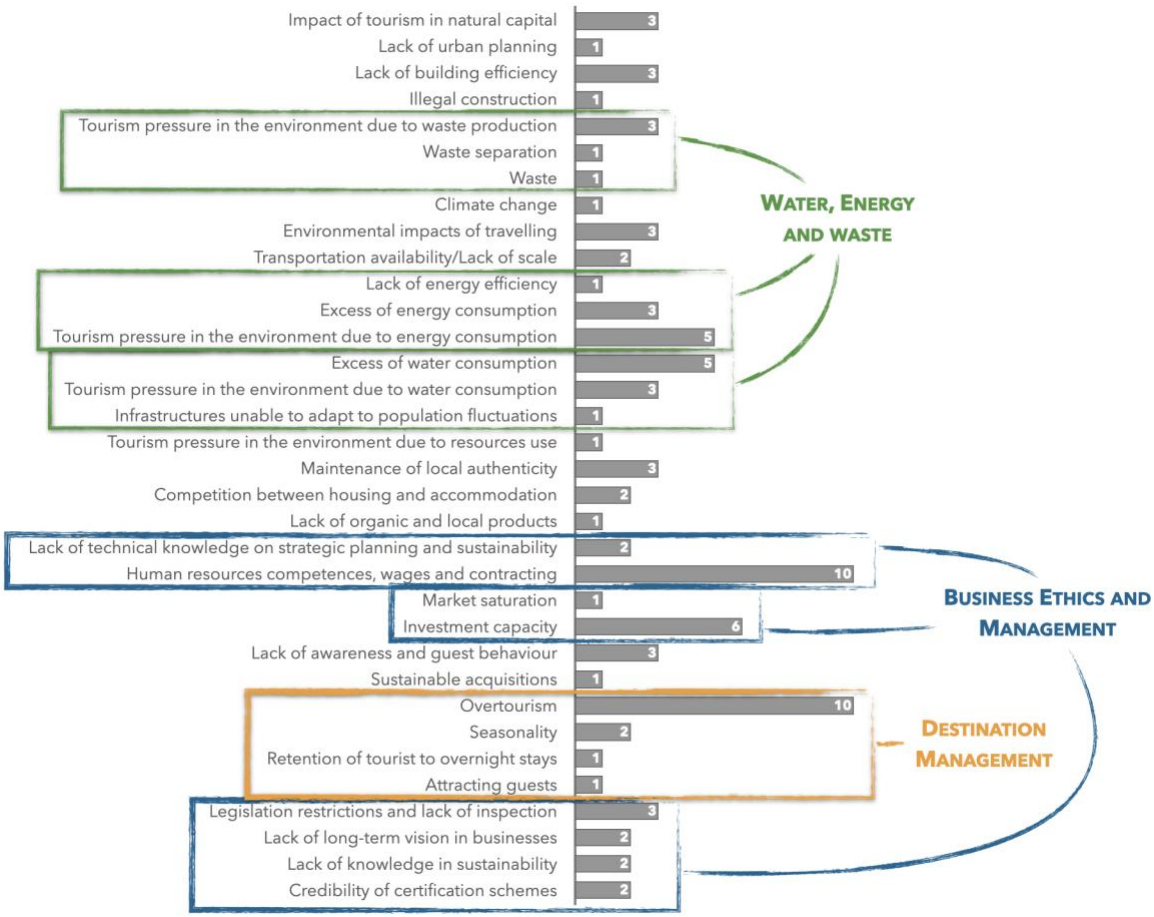


Figure B.2 - Identification of key themes and problems associated to the sustainability transition of the tourism sector

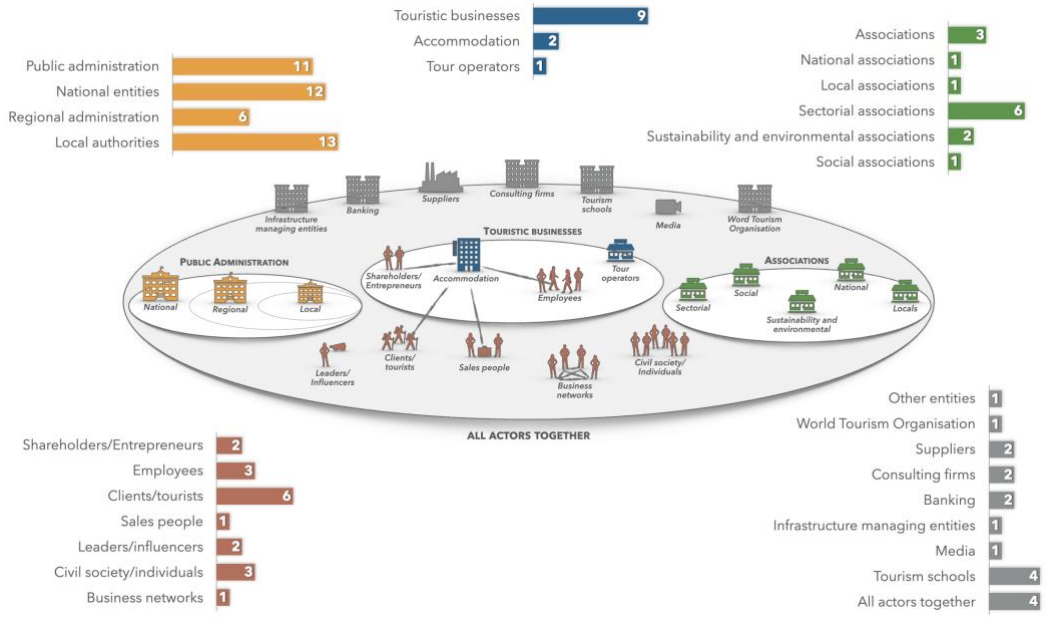


Figure B.3 - Key actors in the Portuguese tourism sector mentioned during interviews

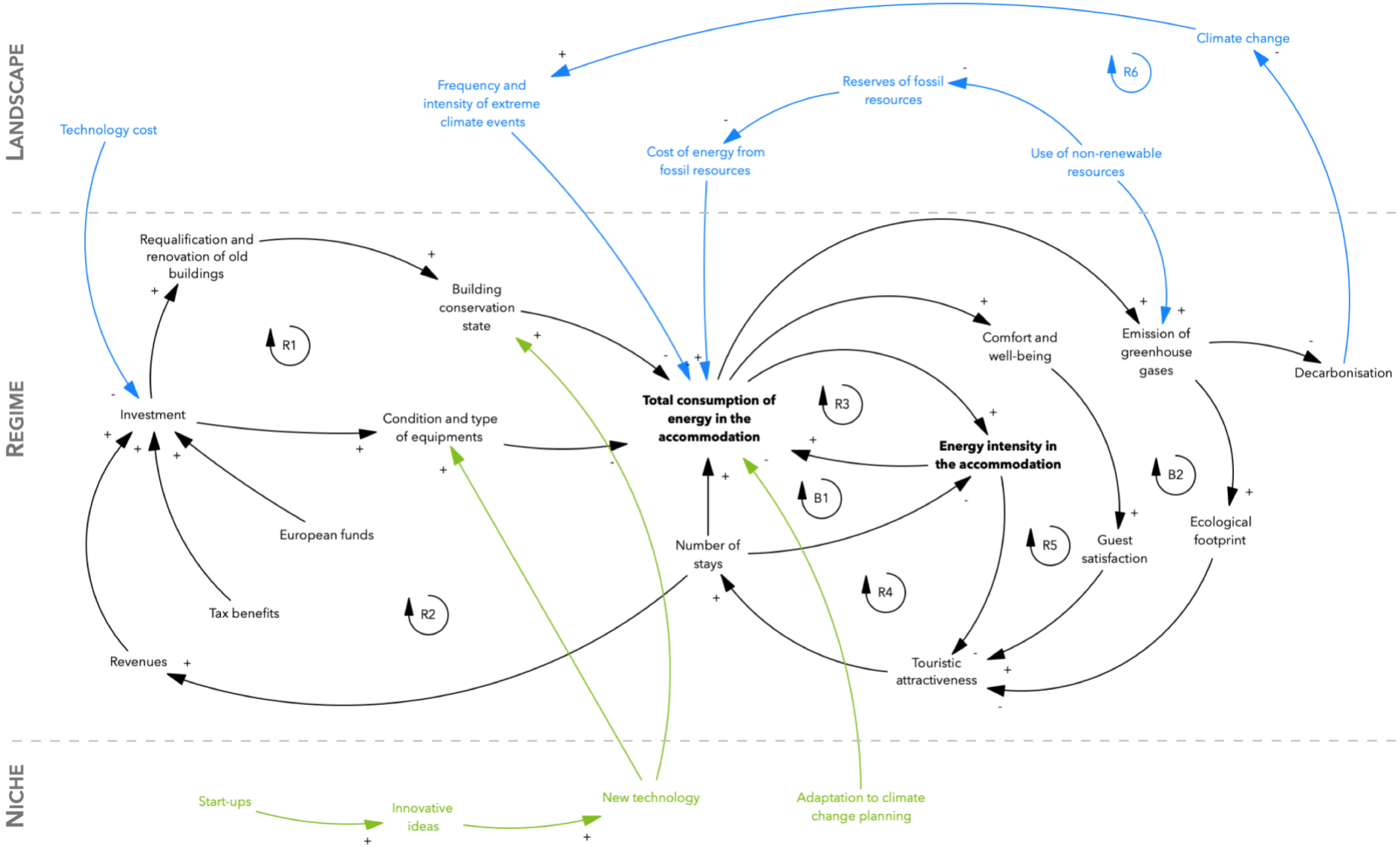
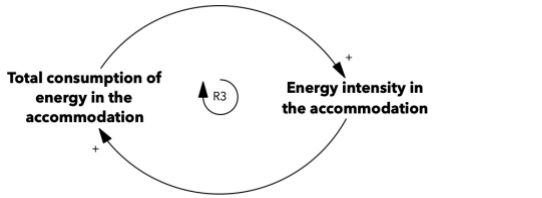


Figure B.4 - Final CLD for the theme 'Energy'

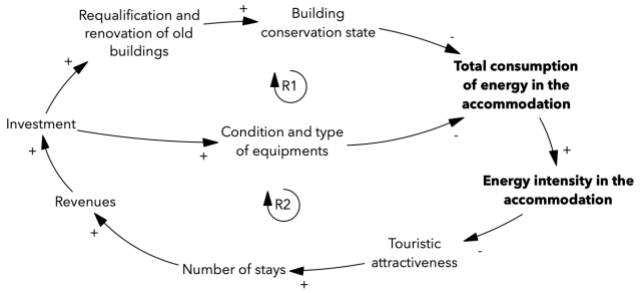
Table B.1 - Narrative and feedback of the 'Energy' CLD

Regime

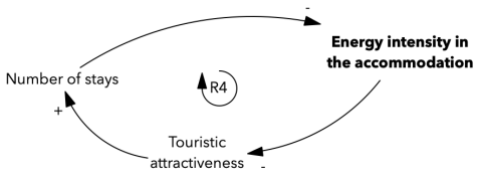
One of the core problems identified was energy intensity in accommodation, as the ratio between total consumption of energy and the number of stays. The raise in the total consumption of energy leads to an increase in the energy intensity, increasing energy consumption (R3).

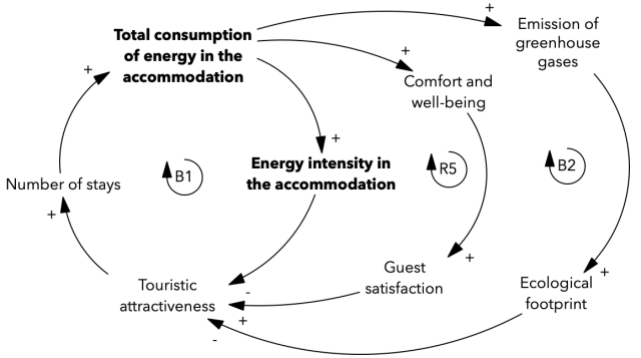
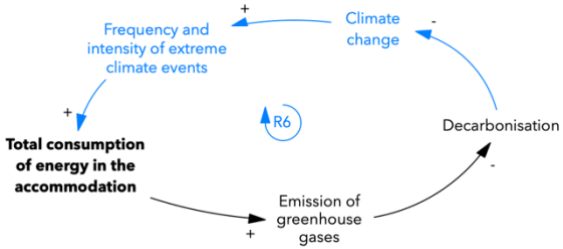


The total consumption of energy in accommodation can be reduced by two ways: improvement in the conservation state of buildings (R1) and improvement in the state and acquisition of more efficient equipment (R2). Both building requalification and renewal and equipment maintenance and update required investment. Accommodation businesses can gather funds to invest by three ways: European funds, cost reduction through tax benefits and revenue generated and reinvested in the business.



The raise on the accommodation touristic attractivity leads to an increase in the number of stays and consequent raise on generated revenue. The number of stays reduces energy intensity, increasing the accommodation touristic attractivity to guests aware of sustainability issues, which reinforces the number of stays (R4).



	On the other hand, both reducing energy intensity and ecological footprint increases the accommodation touristic attractivity, while leading to a raise on the number of stays and on the total consumption of energy. Energy intensity is directly reinforced by the raise on energy consumption (B1) and in the case of the ecological footprint is the raise on greenhouse gases emissions due to increased energy consumption that leads to a larger ecological footprint (B2). Finally, the raise on energy consumption to guarantee air conditioning of spaces to improve guest comfort and wellbeing leads to an increase in guest satisfaction and consequently to raise the accommodation touristic attractivity, reinforcing energy consumption through an increase in the number of stays (R5).	
Landscape	At the landscape level, climate change is a global trend, increasing the probability of climate extreme events, such as extended heat waves, and leading to a raise on energy consumption due to air conditioning needs, for example (R6). High levels of energy consumption lead to a raise in greenhouse gases emissions and contribute to increase the effect of climate change, reinforcing the raise on energy consumption. The use of non-renewable resources increases greenhouse gases emissions and reduces non-renewable resources reserves, increasing their cost and reducing energy consumption. The reduction on technology costs increases the investment on these technologies.	
Niche	At niche level, the higher the number of start-ups, more innovative ideas are created leading to the development of new technology. These innovations allow to improve the state and efficiency of buildings and equipment. On the other hand, the development of adaptation plans to climate change contribute to increase the accommodation resilience and avoid an increase in energy consumption due to climate change effects.	

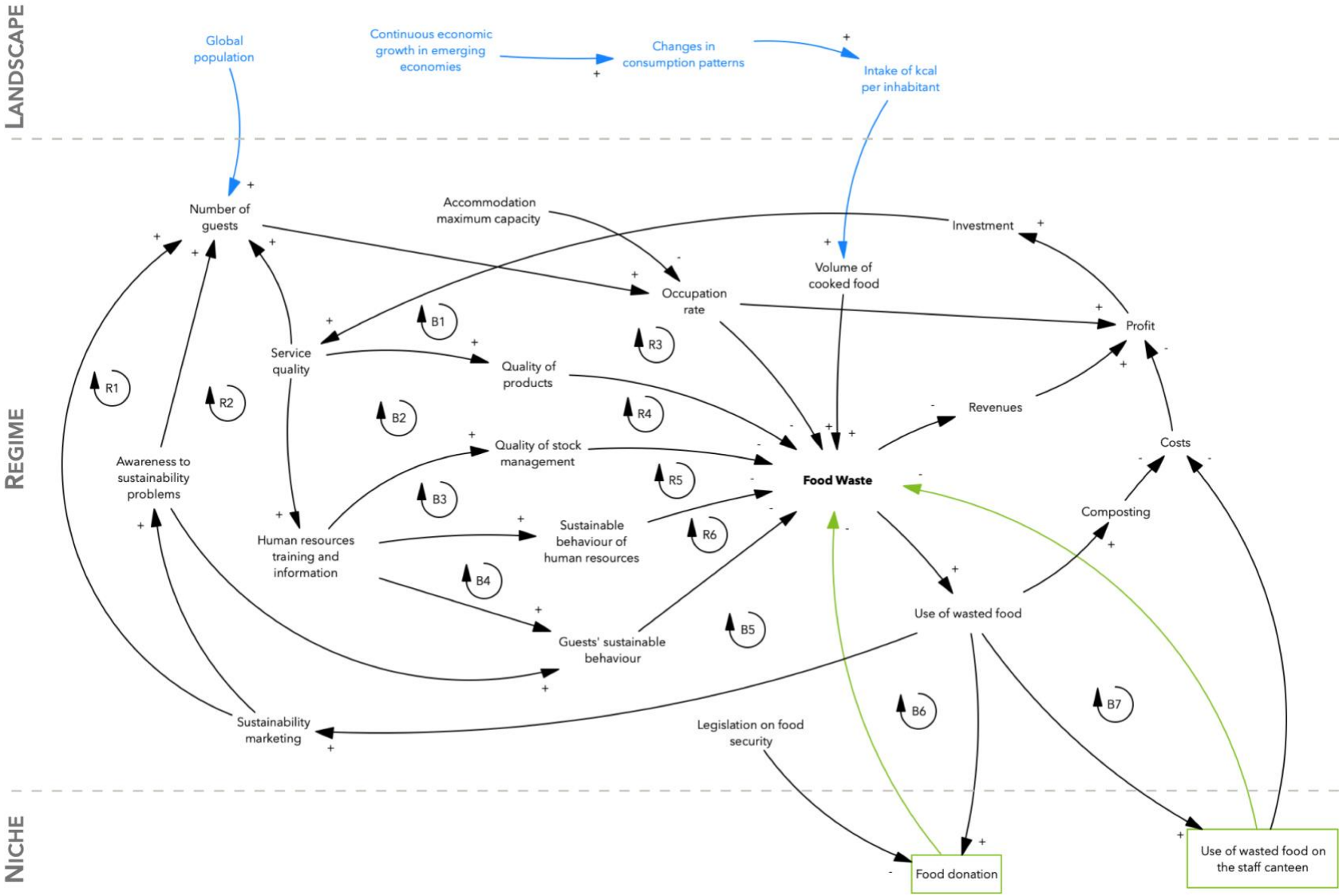


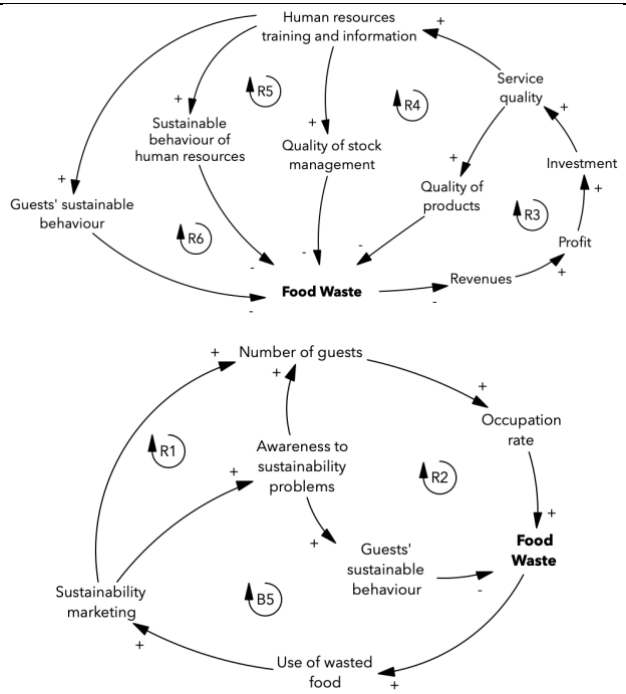
Figure B.5 - Final CLD for the theme 'Food waste'

Table B.2 - Narrative and feedback loops of the 'Food waste' CLD

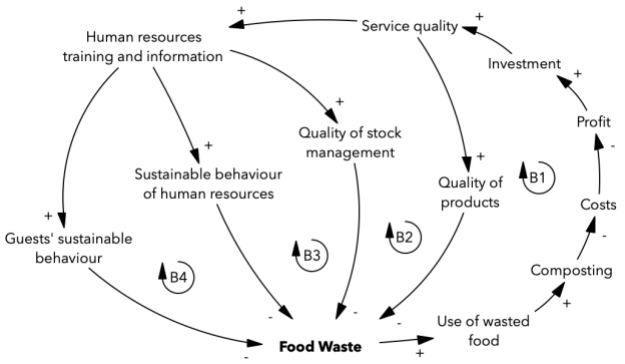
Regime

Food waste is a concern in accommodation business since it represents a revenue reduction due to lack of efficiency in resource use. Reductions on generated revenue lead to less profit and consequently less investment in improvement on service quality. Reduced service quality leads to the acquisition of low quality food products, increasing food waste and reinforcing the initial state (R3). Reduced service quality also leads to reduced training and awareness of human resources, which increases food waste in three ways: worse stock management (R4), reduced sustainability behaviour by employees (R5) and guests (R6).

To reduce food waste, accommodations increased the adoption of practices to use the wasted food, which are communicated through marketing initiatives and increase directly the number of guests (R1) or indirectly by raising the awareness of general public to sustainability issues (R2). A higher number of guests lead to a higher occupation rate and increases food waste, due to the need to assure meals to a larger number of people. The raise in awareness of the general public through sustainability marketing initiatives increase sustainable behaviours on guests, contributing to a reduction on food waste (B5).



The use of wasted food can be processed in three distinct ways: food donation to external entities, use of wasted food in the staff canteen or composting. Food donation to external entities is restricted by rigorous legal requirements of food security. On the other hand, composting and use of wasted food in the staff canteen contribute to cost reduction by reducing the need for acquiring food or compost for garden spaces and vegetable gardens. Cost reduction leads to a raise in profit and investment, which increases the service quality, raising the product quality (B1) and the level of training and awareness of human resources. A higher level of human resources training and awareness contributes to food waste in three ways: improvement of stock management (B2), increased sustainable behaviour by employees (B3) and guests (B4).

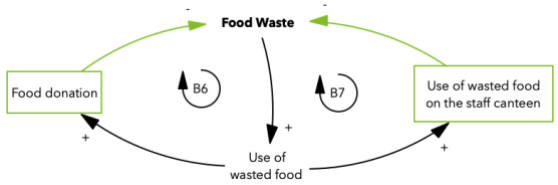


Landscape

At the landscape level, the raise of global population increases the number of guests. On the other hand, continuous growth of emergent economies changes consumption patterns in these countries, characterised by an increase in intake of kcal quantity, increasing the volume of cooked food.

Niche

At niche level, food donation (B6) and the use of wasted food in the staff canteen (B7) contribute to the reduction of food waste, reducing the use of wasted food, due to a reduction in the flow of food.



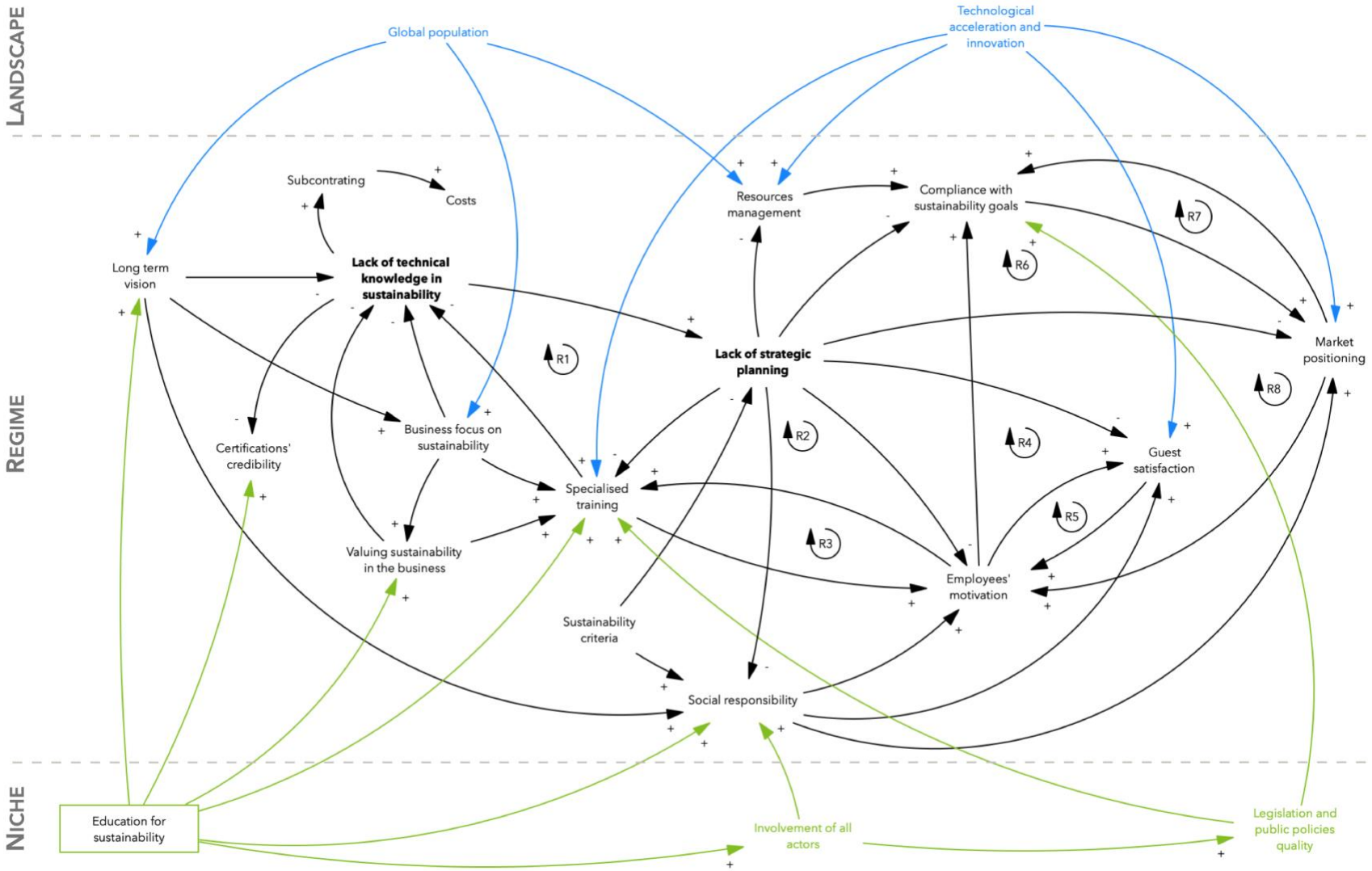
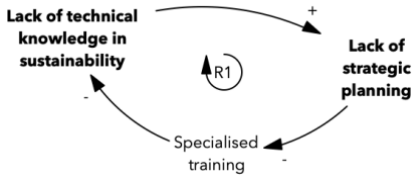


Figure B.6 - Final CLD for the theme 'Business ethics and management'

Table B.3 - Narrative and feedback loops of the 'Business ethics and management' CLD

Regime

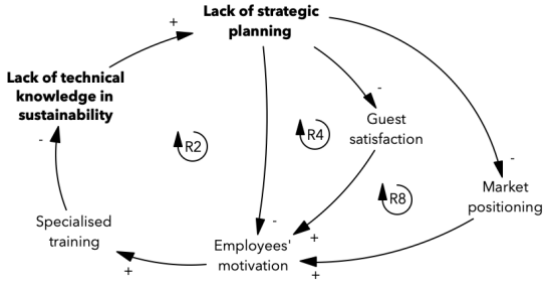
The lack of technical knowledge and strategic planning in sustainability were identified as core problems. A higher lack of technical knowledge in sustainability leads to a higher lack of strategic planning, reducing the level of specialised training, which reinforces the lack of technical knowledge (R1).

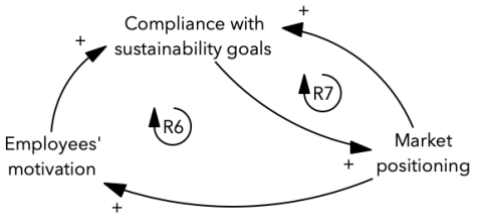


The lack of long-term thinking reduces the business focus on sustainability, leading to a reduced appreciation of sustainability in business decisions. As a consequence, specialised training in sustainability is reduced, either by lack of training of current human resources and underappreciation of sustainability competences in recruitment activities. This set of factors contribute to the lack of technical knowledge in sustainability, increasing the need to subcontracting (and consequently, costs) and reducing the credibility of existing sustainability certifications.

The lack of sustainability strategic planning reduces employees' motivation, guest satisfaction, achievement of sustainability goals and worsens resources management, company's market positioning (and consequently, external visibility) and social responsibility. The relation between specialised training and employees' motivation is reciprocal: the smaller the training, smaller the motivation, reducing employees' availability for training (R3). This type of relation is also valid between employees' motivation and guest satisfaction (R5).

The lack of employees' motivation contributes indirectly to the lack of technical knowledge and strategic planning through the lack of specialised training (R2). Lower levels employees' motivation lead to reduced guest satisfaction (R4) and worse market positioning (R8), through the lack of specialised training, technical knowledge on sustainability and strategic planning.



	The lack of employees' motivation reduces the achievement of sustainability goals, worsening the accommodation market position, leading to a decrease in employees motivation and reinforcing the initial condition (R6). A worse market position contributes to a reduction in the achievement of sustainability goals, reinforcing the worse market position (R7). Company's social responsibility decreases due to the lack of strategic planning, reducing employees' motivation, guest satisfaction and market positioning. Increasing long term thinking in the accommodation increases the investment in social responsibility, both directly and through the increase of technical knowledge and strategic planning for sustainability. The adoption of more sustainability criteria, increases social responsibility and strategic planning. 
Landscape	At the landscape level were introduced two variables: global population and technological acceleration and innovation. The raise in the global population increases the need to management natural resources, as well as an increase in long term thinking, a wider inclusion of sustainability in the core business and a better resource management. Technological acceleration and innovation increases specialised training and guest satisfaction, improving resource management and marketing positioning.
Niche	At niche level, the raise in sustainability education and training increases long term thinking, sustainability appreciation in business context, specialised training in sustainability, certification credibility, social responsibility and the involvement of all actors. The raise in stakeholder involvement improve social responsibility in companies and the quality of legislation and public policies. The increase in the quality of legislation and public policies leads to more specialised training in sustainability (to avoid the lack of technical knowledge in this area), creating the conditions to higher level of compliance with sustainability goals.

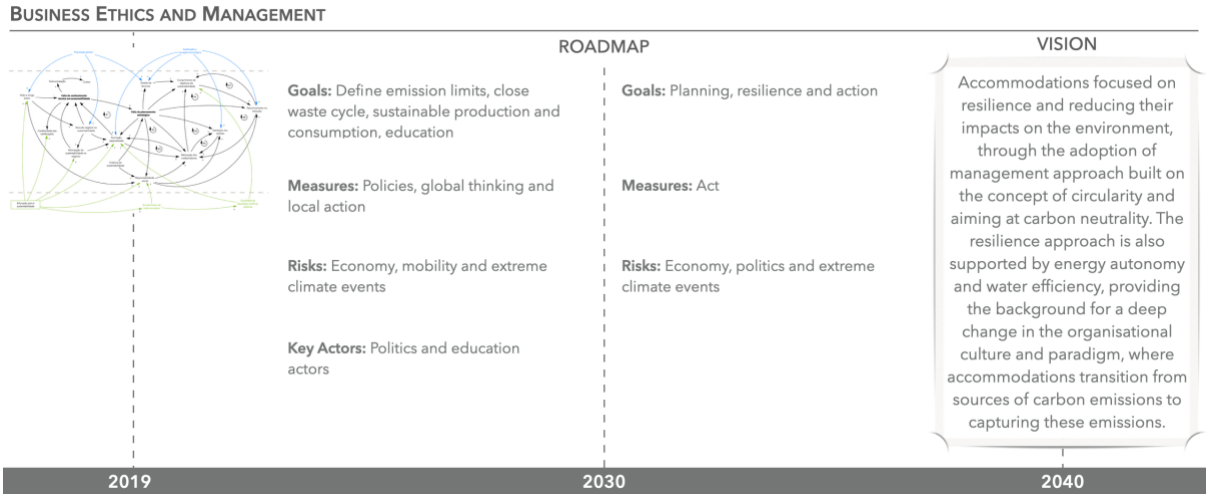


Figure B.7 - Vision and roadmap for the theme "Business ethics and management"

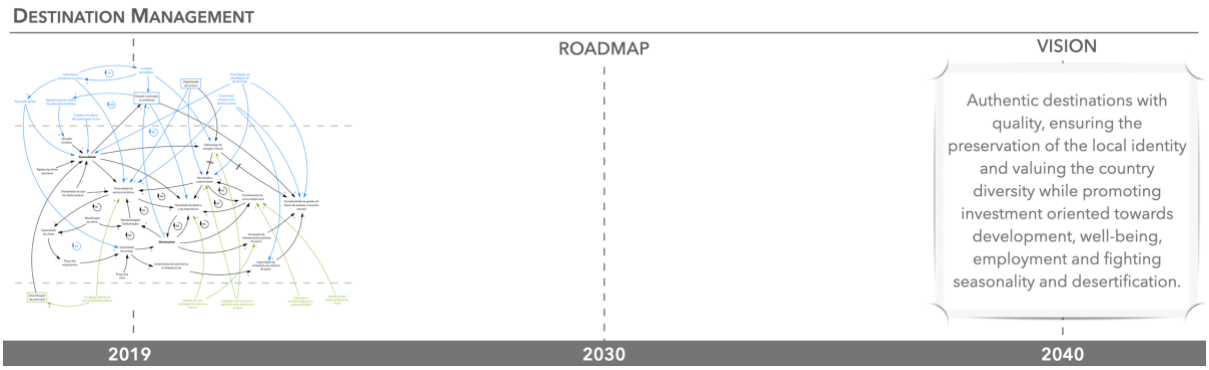


Figure B.8 - Vision and roadmap for the theme "Destination management"

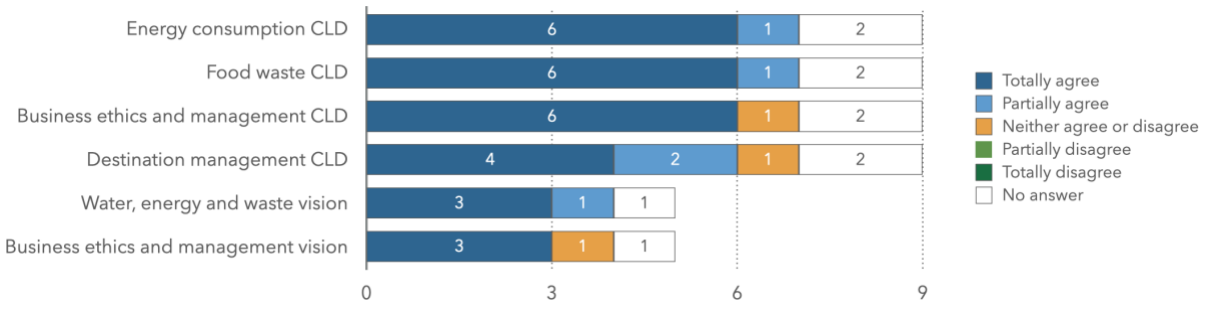


Figure B.9 - Participants' validation of the CLDs and outputs from the visioning exercise

Table B.4 - Comments on the validation of the CLDs, visions and roadmaps

Theme	Comments
Water, energy and waste	On the CLDs: • CLD was important in identification of problems, causes and solutions. • CLD provided a clearer perspective on the tools need to improve in energy efficiency in buildings.
Business ethics and management	On the CLD: • Legislation and public policies in the tourism sector hinder sustainable initiatives due to financial and bureaucratic reasons, even when promoting sustainability. • Definition of public policies to force the adoption of sustainable initiatives. • Sustainability should be promoted through education and technical training, but also through the implementation of policies and legislation supporting sustainable visions. On the vision and roadmap: • Public health and the responsiveness of the public health system should be included as a risk or uncertainty, considering the current pandemic outbreak.
Destination management	On the CLD: • Despite being summarised in only one variable destination quality and experience quality are different concepts: the former is related to infrastructures, services and available capacity, while the latter is more complex and subjective encompassing the articulation between these elements and the perception of the tourist in relation to the destination. • The decrease of overtourism resulting from overload of a resource is always negative and harmful in the medium/long term. Management of resource/product/quality should be supported by the assessment of load capacity to raise the general satisfaction level. On the vision and roadmap: • Pandemics and global scale diseases should be included as risks to tourism due to its high impact and foreseen increased frequency.

A. The group of participants in the workshop was representative of the tourism actors involved in the sustainability transition.

B. Participants worked as a group in the discussion of the sustainability themes.

C. Group discussions were constructive and contributed to problem clarification.

D. The process adopted allowed that each participant had the opportunity to contribute to the discussion.

E. The participatory modelling process supported the discussion and the analysis of themes.

F. The participatory modelling process supported the creation of a common language to discuss the problems.

G. The identification of regime, landscape and niche elements supported structuring the sustainability transition process in tourism.

H. The group achieved a consensus and a shared vision of the future to each sustainability theme discussed.

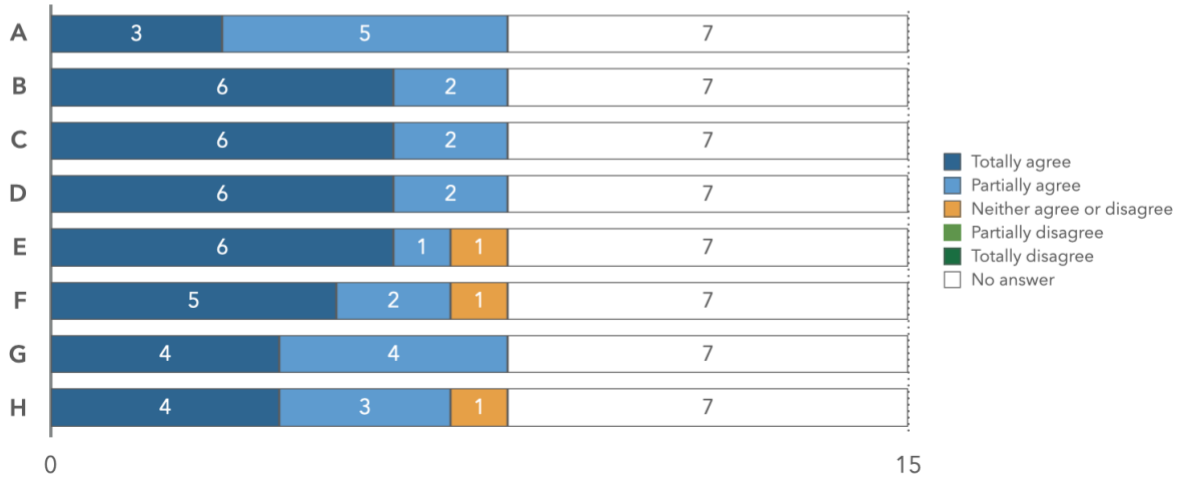


Figure B.10 - Participants' feedback on the methods and process implemented in the workshop

A. I feel that I have contributed to build the causal loop diagrams.

B. Causal loop diagrams allowed the definition of an integrated structure of the sustainability themes discussed in the workshop.

C. Causal loop diagrams are useful tools to communicate sustainability problems in the tourism sector.

D. Causal loop diagrams built during the workshop are an interesting way to communicate sustainability problems in tourism to other stakeholders.

E. I intend to use workshop results.

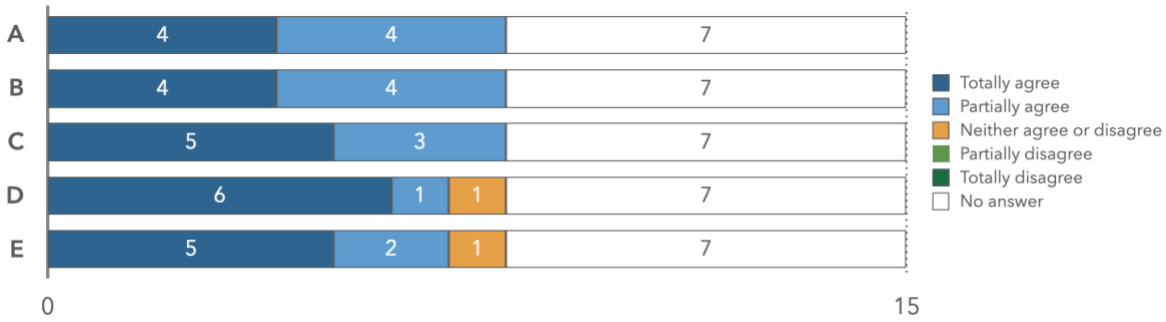


Figure B.11 - Participants' feedback on the results obtain in the workshop

Table B.5 - Participants' feedback on their capacities and perceptions after the workshop

Question	Feedback from workshop participants
How do you evaluate your capacity to assess sustainability strategies after the workshop? Did this event had an impact or not on your capacities?	*(8 answers)* • No impact (2). Due to continuous previous work on sustainability issues in the tourism sector. • In evaluation (1). • Had impact (5). On learning about CLDs. Deepening the knowledge on sustainability issues that are not discussed on the day to day routine. Understanding on the holistic view and relation between different questions to support the creation of clear and effective strategies to improve the system.
How do you evaluate your capacity to discuss sustainability issues after the workshop? Did this event had an impact or not on your capacities?	*(8 answers)* • No impact (2). Due to previous work on sustainability issues. • In evaluation (1). • Had impact (5). Improvement in tools to exchange knowledge. Deepening the knowledge. Improved understanding on knowledge gaps, possible contributions to sustainability debates and more productive, clear and receptive communication.
Did your perception on other workshop participants changed as a consequence of your participation in the workshop?	*(8 answers)* • No (2). Due to previous experiences with the other participants. • Partially (1). • Yes (5). The interaction improved the perception about other participants. In some cases a positive change, in others negative. Improved knowledge in the ways other participants think, act and consider sustainability themes.
Do you foresee future collaborations with other workshop participants?	*(8 answers)* • Yes. Collaborations and projects.

Appendix C | ADDITIONAL INFORMATION ON 'STRUCTURING SUSTAINABILITY PROBLEMS'

Figure C.1 - Sustainable futures (exercise 1): Participants selected pictures that better represented their individual vision of a sustainable hotel in 2040 and placed them in each hexagon together with a short narrative description written in a post-it. Hexagons constituted the answering space for each participant in the Miro board for this exercise allowing to visualize and integrate the answer of participants in this group.

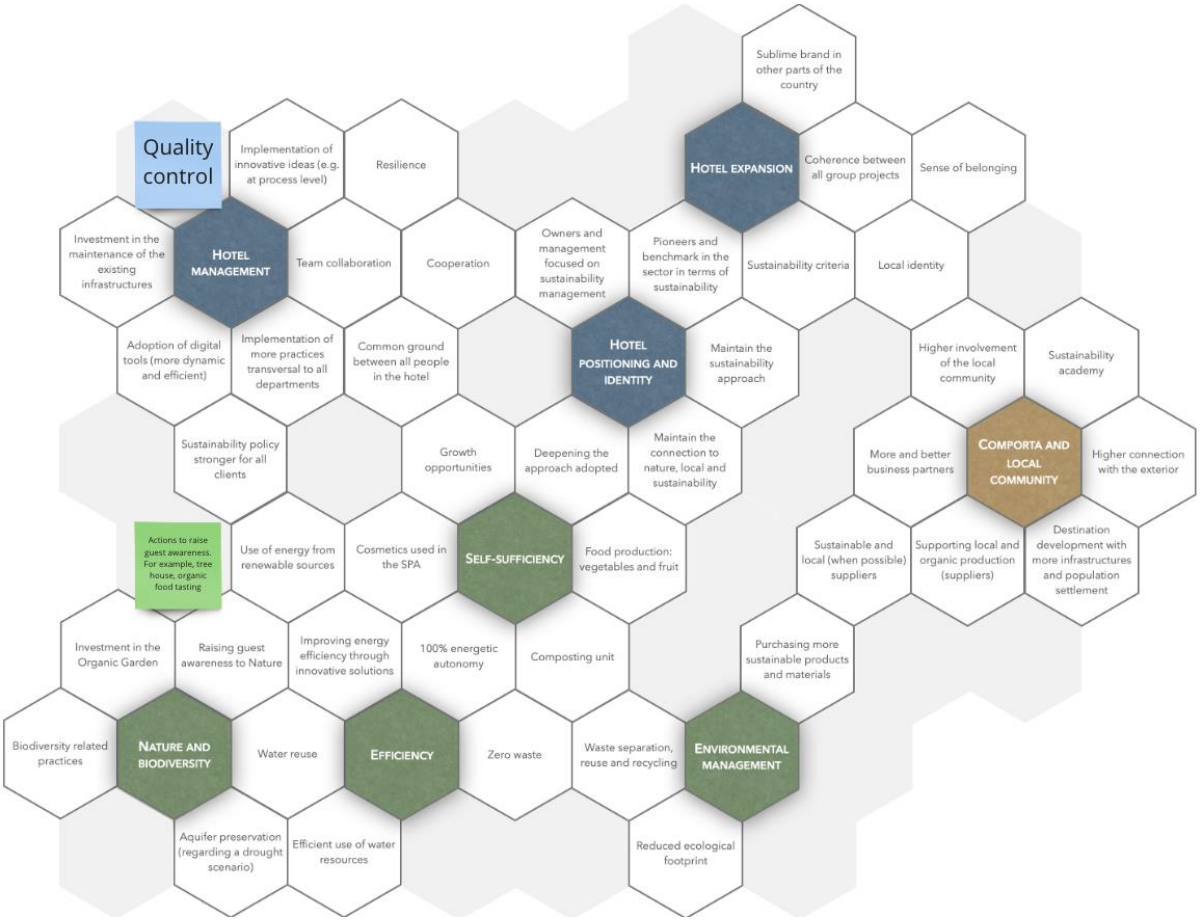


Figure C.2 - Validation of results from individual interviews (exercise 2): Participants were asked to analyse the results from the individual interviews and validate key vision elements (in coloured hexagons) and associated aspects (in white hexagons). Participants added missing associated aspects in post-its.

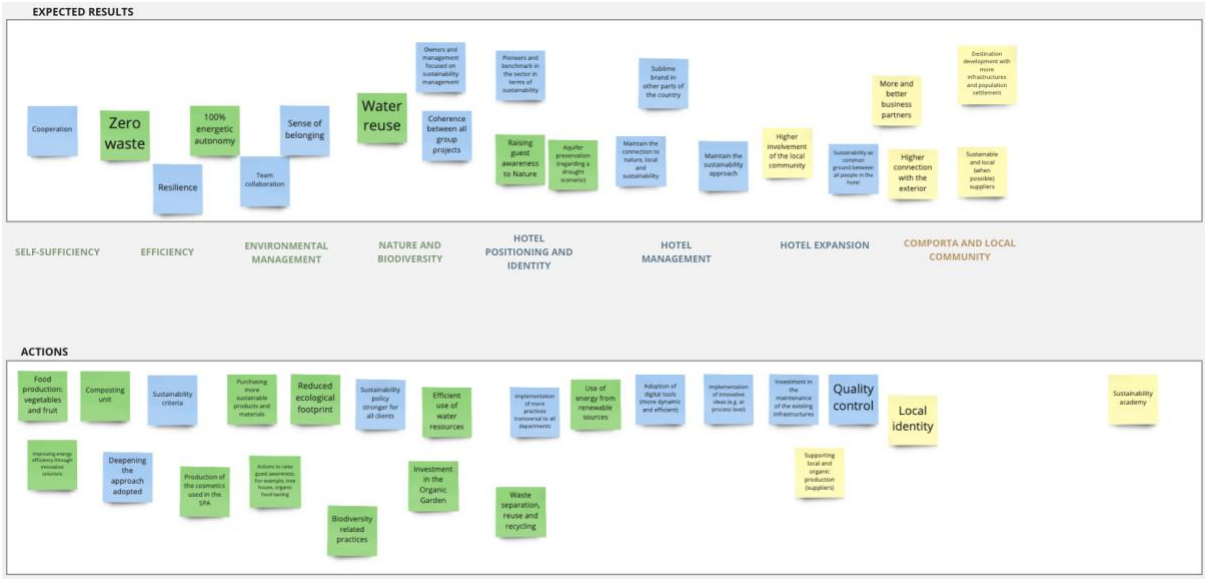


Figure C.3 - Expected results vs possible actions (exercise 3): Participants classified the aspects associated to each key vision element from the previous exercise into expected results or possible actions by repositioning post-its in the space for expected results or actions. Post-its have different colours regarding the key vision elements to which there are associated.

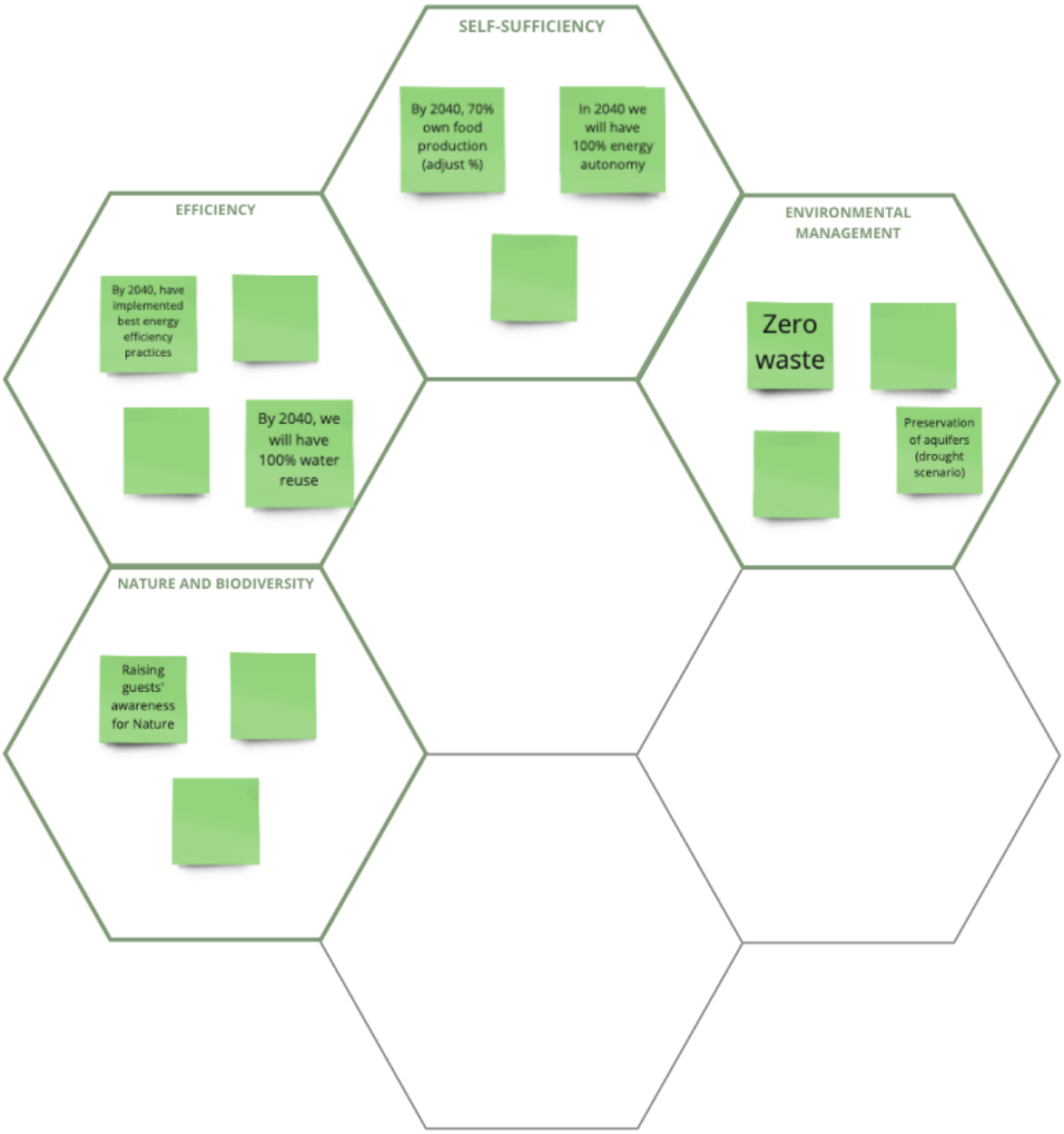


Figure C.4 - Definition of strategic goals (exercise 4): Participants were asked to write in post-its goals associated to each vision key element. In the Figure are only represented key vision elements associated to environmental aspects.

Figure C.5 - Analysis of best practices and possible actions (exercise 5): Participants were asked to position possible actions from exercise 3 (green post-its) and a set of best sustainability management practices collected in literature (orange post-its) in the axes, according to their potential to achieve the strategic goals already defined and the level of implementation on the hotel.

Appendix D | LIST OF RESEARCH TASKS

Table D.1 – List of activities developed during the experimentation phase, with detailed information on each workshop agenda

Chapter	Task
4. Structuring sustainability problems	Stakeholder identification
	Preparatory semi-structured interviews to stakeholders
	Analysis of collected information
	Workshop preparation
	Workshop 'Transition towards sustainability in tourism: What are the challenges for the accommodation sector?' (Lisbon, 6th of December 2019) • Diagnosis of sustainability in tourism through the development of causal loop diagrams: i) identification of a key problem; ii) identification of causes and consequences, as well as causal relation between them and the key problem • Identification of mega trends and initiatives influencing the transition towards sustainability: i) integration of mega trends in the causal loop diagram as landscape elements; ii) integration of initiatives and innovative solutions as niche elements; ii) identification of leverage points through a voting round. • Development of a shared vision and roadmap to sustainability in the tourism sector: i) definition of an individual vision for the sector for 2040; ii) use of individual visions to build a shared vision for the sector; iii) identification of goals, risks and uncertainties for two distinct periods (2019-2030 and 2030-2040); iv) identification of measures, tools and key actors for two distinct periods (2019-2030 and 2030-2040). • Reflection: guided discussion on the process developed during the workshop and learning outcomes.
	Digitalisation of causal loop diagrams and visions
	Questionnaire to participants (post-event evaluation and results' validation)
	Analysis of results and reflection
	Final report elaboration
	Dissemination of the final report
5. Co-creating sustainability	Single business selection (case study) and work planning
	Preparation of preliminary interviews with employees, using the results from the previous workshop

Chapter	Task
transition strategies	Preliminary interviews
	Analysis of information collected through the interviews
	Workshop preparation
	Visioning workshop (*13th January 2021*) • Sustainability vision for 2040 • Key elements of the sustainability vision • Expected results and actions to implement to each group of key sustainability visions • Definition of strategic goals for 2040 according to each key element • Identification of best sustainability practices available • Characterisation of the current situation in relation to strategic goals
	Analysis of workshop results
	Preparation of the first part of the backcasting workshop using the results from the visioning workshop
	Backcasting workshop (part I, *9th February 2021*) • Identification of indicators and targets to each transition pathway • Definition of actions to each transition pathway • Identification of the required resources to implement these actions and achieve the proposed targets
	Consolidation of the results of the workshop
	Preparation of the second part of the backcasting workshop using the results from the first workshop
	Backcasting workshop (part II, *2nd March 2021*) • Presentation of the consolidated results from the previous session • Reflection on the results obtained • Definition of a line of action and possible alternatives • Risk analysis on the line of action defined based on MLP concepts (landscape, regime and niche)
	Consolidation of the results of the workshop
	Preparation of the third part of the backcasting workshop using the results from the previous sessions
	Backcasting workshop (part III, *16th March 2021*) • Presentation of the consolidated results from the previous sessions • Discussion of aspirational versus operational targets, regarding long-term planning • Identification of required resources and needed capabilities and specific knowledge • Risk analysis

Chapter	Task
	Consolidation and analysis of workshop results
	Elaboration of a preliminary report summarising the work developed
	Preparation of the validation workshop
	Validation workshop (*28th April 2021*) • Presentation of a summarised version of the results • Voting on the results applicability according to participants opinion • Discussion of the action plan, comprising the identification of priority actions
	Analysis and consolidation of the workshop results
	Revision of the report summarising the work developed (for comments from participants)
	Preparation of the evaluation questionnaire
	Sent of the evaluation questionnaire
	Analysis of the results from the evaluation questionnaire
	Final version of the report summarising the work developed (and sent to all participants)