Stakeholders over Scorched Earth: Revisiting Post disaster Dynamics and the Natural Environment as a Stakeholder

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Abstract

The 2017 Portuguese forest fires had a devastating environmental and social impact. This research investigates how organisations managed their stakeholder relationships after the disaster; mitigated the disaster; and whether the event led to changes in the perceptions of the natural environment by decision-makers. The study employed a mixed methods approach through semi-structured interviews, the development of a scale to measure the attributes of the natural environment as a stakeholder, and a survey. Qualitative data were analysed using content analysis, while quantitative data were analysed using descriptive and inferential statistics. Findings show that organisations relied on stakeholders to return to a state of normality; the fundamental disaster mitigation actions taken were minimal; and there were insignificant changes in decision-makers' perceptions of the natural environment as a stakeholder. Concerning stakeholder relationships, organisations with solid stakeholder connections observed shorter recovery times. The recognition of the natural environment as a stakeholder was identified but lacks some attributes (namely proximity and legitimacy) to be considered a primary stakeholder, due to a psychological distance between organisation and the natural environment. Our research suggests that decision-makers can profit from education focused on natural disaster mitigation strategies and enhance their relationship with the natural environment. This thesis contributes to broadening stakeholder theory, the relationship between organisations and their natural environment, as well as the disaster management cycle. It also underscores the importance of recognising the natural environment as a stakeholder and ensuring that it is given adequate consideration in decision-making processes.

Keywords: Stakeholder theory; disaster management; natural environment; sustainability; forest fires

Resumo

Os incêndios florestais de 2017 em Portugal tiveram um impacto ambiental e social devastador. Esta pesquisa investiga como as organizações geriram as suas relações com as partes interessadas após o desastre; a gestão e mitigação do desastre; e se o evento levou a mudanças nas perceções do meio ambiente natural. O estudo utilizou uma abordagem de métodos mistos, através de entrevistas semiestruturadas, do desenvolvimento de uma escala para medir os atributos do meio ambiente natural enquanto partes interessadas e de um inquérito. Os dados qualitativos foram analisados através da análise de conteúdo, enquanto que os dados quantitativos foram analisados através de estatísticas descritivas e inferenciais. Os resultados mostram que as organizações dependeram das suas partes interessadas para regressar a um estado de normalidade; as ações fundamentais de mitigação de catástrofes tomadas foram mínimas; e as mudanças nas perceções dos decisores sobre o meio ambiente natural como parte interessada foram insignificantes. No que respeita às relações com as partes interessadas, as organizações com fortes ligações às mesmas registaram tempos de recuperação mais curtos. O reconhecimento do meio ambiente natural como parte interessada foi identificado, mas carece de alguns atributos (nomeadamente proximidade e legitimidade) para ser considerado uma parte interessada primária, devido a uma distância psicológica entre organização e o meio ambiente natural. A nossa investigação sugere que os decisores podem beneficiar de uma educação centrada em estratégias de mitigação de desastres naturais, e melhorar a sua relação com o meio ambiente natural. Esta tese contribui para o alargamento da teoria dos stakeholders, a relação entre as organizações e o seu ambiente natural, bem como o ciclo de gestão de desastres. Também sublinha a importância de reconhecer o meio ambiente natural como uma parte interessada e assegurar que lhe seja dada a devida consideração nos processos de tomada de decisão.

Palavras-chave: Teoria dos stakeholders; gestão de desastres; meio ambiente; sustentabilidade; incêndios florestais

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List of Acronyms

AIC – Akaike Information Criterion

CEO – Chief Executive Officer

CFA – Confirmatory Factor Analysis

CFO – Chief Financial Officer

CFI – Comparative Fit Index

CFO – Chief Financial Officer

CFP – Corporate Financial Performance

CSP – Corporate Social Performance

CSR – Corporate Social Responsibility

EFA – Exploratory Factor Analysis

KMO – Kaiser-Meyer-Olkin test

LLCI – Lower Limit Confidence Interval

NE – Natural Environment

NFI – Bentler-Bonett Normed Fit Index

NGO – Non-governmental organisation

RMSEA – Root Mean Square Error of Approximation

RMR – Root Mean Square Residual

SRMR – Standardised Root Mean Square Residual

TLI – Tucker-Lewis Index

ULCI – Upper Limit Confidence Interval

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Chapter I - General Introduction

1.1 Forest fires, climate change, and natural disasters

As one of the four primordial elements, fire possesses different meanings across cultures and philosophies (Jung, 1976), and it is often associated with death and rebirth. When controlled, fire is an energy source, powering energy networks. It purifies raw materials, burns excesses, eliminates deadly fungi, and many pests. Nevertheless, when out of control, fire is an agent of destruction, blindly obliterating human lives, flora and fauna, homes, and infrastructure.

In the age of uncertain weather and climatological patterns, organisations must foresee and include natural disasters or anomalies in their strategies to achieve short-, mid-, and long-term sustainability. The relationship between organisations and their natural surroundings and natural disasters raises different questions that translate into research gaps. Past research shows that consumers have limited environmental knowledge, activists are unwilling to engage in conversations with business owners, private companies disregard ecological behaviours as a competitive advantage, and refuse to pursue more than the law obliges (Fineman & Clarke, 1996). However, the environment and sustainability have become increasingly pressing topics, which may change decision-makers' mindset.

1.1.1 Portuguese Forest Fires through a Management Science perspective

Natural disasters are well-researched phenomena from different academic perspectives (e.g. Imperiale & Vanclay, 2016; Verchick, 2010). Portuguese forest fires are also widely studied, through different scientific lenses, some of which are historical analysis and evolution (Ferreira-Leite et al., 2011; Ferreira-leite & Bento-gonçalves, 2013; Lourenço, 1991; Lourenço et al., 2013), climatological (Lourenco, 1988; Pereira et al., 2005; Radovanović et al., 2019; Turco et al., 2019), and pollution analysis (Oliveira et al., 2020). From a business social studies perspective, however, to the best of our knowledge, there is scant literature approaching the topic of forest fires. As such, it is relevant to research natural disasters through managerial perspectives to understand the interconnections between management, strategy, natural disasters, and disaster management.

Portugal is a wildfire-prone country, observing an increase in forest fires in size and intensity in the last decades (Ferreira-Leite et al., 2011). Forest fires are a recurring, endogenous phenomenon in the country. Summer forest fires are prevalent

over time (Ferreira-Leite et al., 2013, 2016), as shown in Figure 1. Given the changes in climate patterns, forest fires are expected to grow in size and violence in the coming decades (Ferreira-Leite et al., 2011). Understanding how organisations cope with disastrous and catastrophic events becomes a pressing research topic. For academia and society to include a business perspective on this subject, we expect to bring to the table relevant information to all involved stakeholders.

Figure 1
Total burnt areas in Portugal > 30 hectares (years 2010 – 2020)
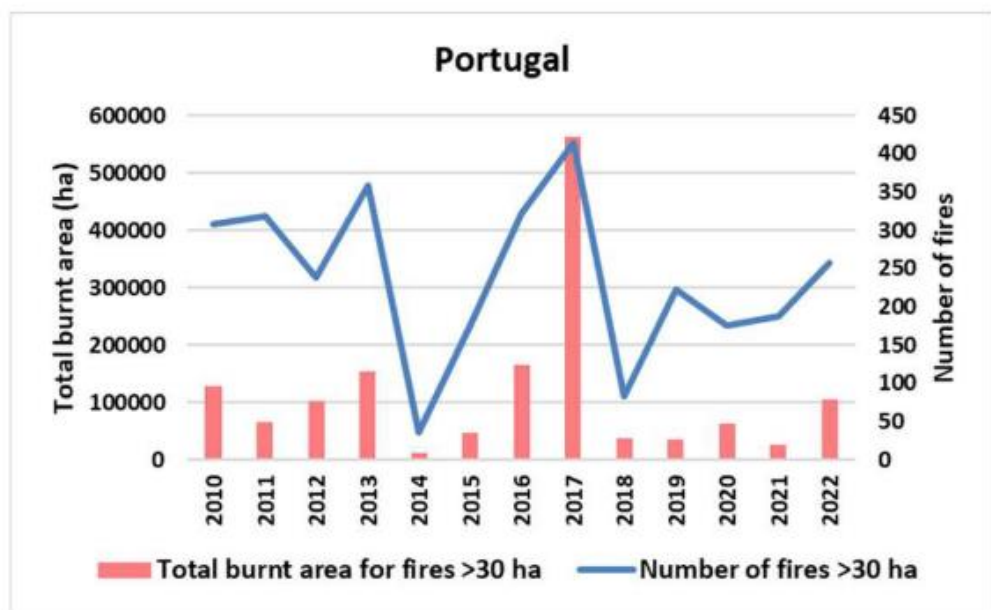
From *Advance Report on Forest Fires in Europe, Middle East and North Africa 2022*, by San-Miguel-Ayanz et al. (p.31), 2023, European Commission.

Between 1980 and 2018, 48% of the total burnt area in Southern European countries was located in mainland Portugal alone (San-Miguel-Ayanz et al., 2018). The occurrence and prevalence of these phenomena originate from an accumulation of social issues, as exemplified in Figure 3. Some of these are: desertification, ageing population, demographic exodus, micro parcels of private property, lack of management, large amounts of fuel matter in the soil, increasingly warm, long, and dry summers, and criminally motivated and negligent acts (Lourenço et al., 2012).

Figure 2

Causes for the Portuguese forest fires.
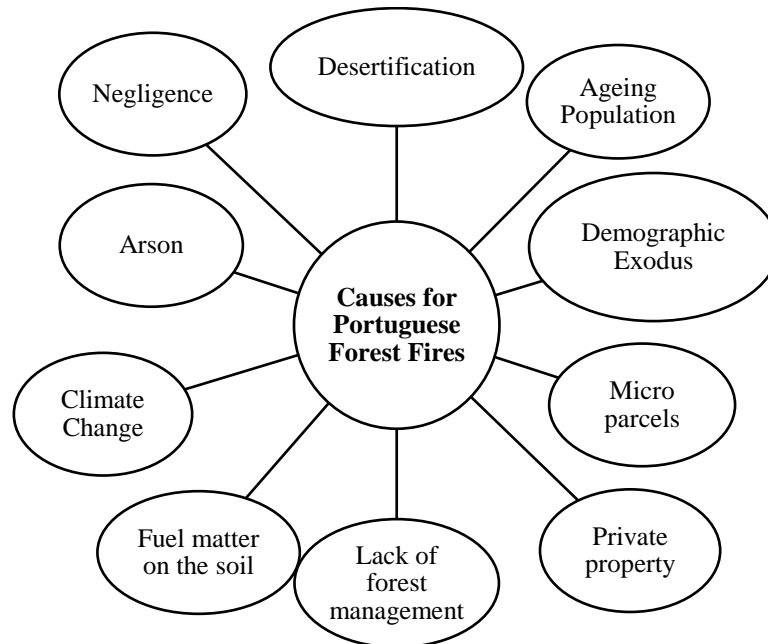
Concerning the causes of forest fires in Portugal in 2021, these were: negligence (50%), intentional (38%), rekindling (10%), and natural (2%) (Jesús San-Miguel-Ayanz et al., 2021), as indicated in Figure 4.

Other calamitous fires are recorded throughout Portuguese history – e.g., 1966: Sintra ,25 dead;1985: Armamar, 13 dead) (Ferreira-Leite et al., 2011). Yet, the 2017 fires were the deadliest, most violent, and most destructive (AR, 2017) to date. As seen in Figure 5, the 2017 forest fires were, on average, nearly twice as large as the largest fires affecting the country since 1980. Lourenço (1991) argues that these figures are primarily possible because communities and local governments adopted a generalised mindset of "let it burn" (p.31).

Figure 3

Origins of forest fires in Portugal – 2020
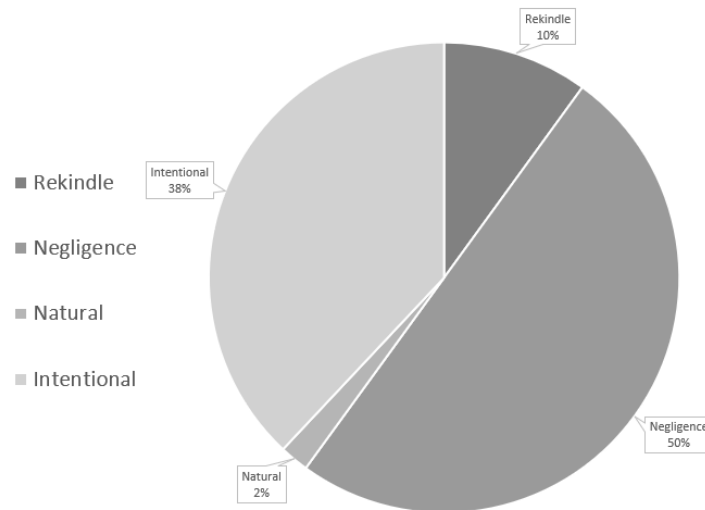
From *Forest Fires in Europe, Middle East and North Africa 2020*, by San-Miguel-Ayanz et al. (p.71), 2021, European Commission.

Figure 4

Average fire size in Portugal 1980-2020
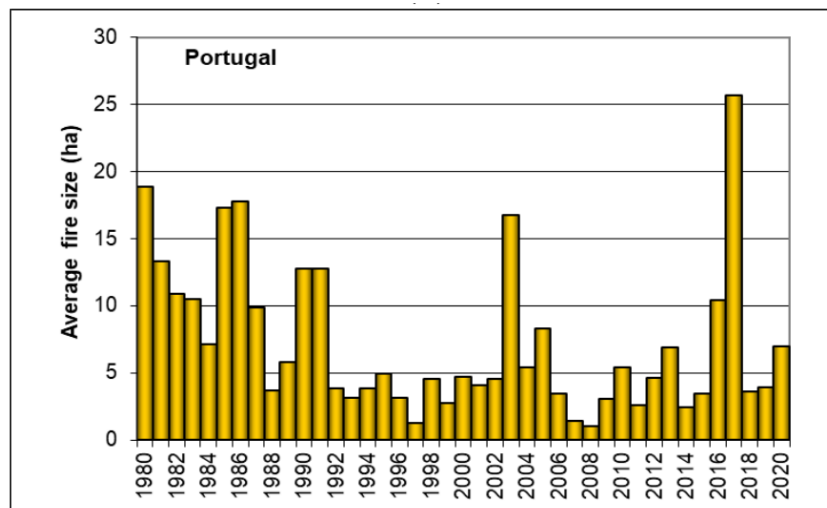
From *Forest Fires in Europe, Middle East and North Africa 2020*, by San-Miguel-Ayanz et al., (p.71), 2021, European Commission.

Damages from forest fires in Portugal may pale in comparison to other historical fires in other countries, e.g., the 1871 Peshtigo Fire, Wisconsin, USA (~1,5 million hectares, 1 700 deceased) (Ferreira-Leite et al., 2011), the 2009 Black Saturday bushfires, Victoria, Australia (450 000 hectares, 173 dead) (Whittaker et al., 2013), or the tremendous June 2023 Canadian wildfires (8 160 309 hectares)(*Wildfire Graphs*, 2023). Nevertheless, the inherent characteristics of the 2017 forest fires – the death toll, the burnt area, and the ecological and economic impacts – make it relevant for investigation through different academic lenses. Also, given the evolution of climate change patterns, such events are expected to occur more often, and with increasing impacts (O'Brien et al., 2006; Ruffault et al., 2018). Addressing the subject through a managerial perspective allows organisations to reduce risks originated by their surrounding natural environment and mitigate the negative outcomes of the subsequent forest fire.

1.1.2. The 2017 fires

The 17th of June and the 15th of October 2017 will remain in the collective memory of thousands of Portuguese for many years. These dates represent the days of two of the country's deadliest tragedies, second to the 1755 Lisbon Earthquake. Their singular characteristics make them a relevant focus of academic research. In this section, we describe the origins, consequences, and implications of this disaster to organisations and their stakeholders.

The 2017 Portuguese forest fires were the country's largest and deadliest natural disaster of its kind (Assembleia da República, 2017) at the time of the research. After monthslong droughts, higher-than-average temperatures, and the direct hit of hurricane Ophelia, the country experienced extreme winds that quickly fanned the flames through forests, farmlands, and inhabited areas (Assembleia da República, 2017; ICNF, 2017). The results of the fires were that 112 people died, thirty municipalities were affected, and 442 418 hectares were destroyed (ICNF, 2017). The disaster had an unprecedented impact on 521 companies, with losses of around €275 million, putting at stake 4500 jobs (Assembleia da República, 2017). Other sustained damages remain unaccounted for, such as wildlife destruction, human deaths indirectly related to the fires, and unregistered infrastructure damages. They

wrought destruction to organisations that develop their activities in forested areas, where the boundaries between wilderness and human activity are dim or inexistent.

Communities and organisations were severely damaged, or their activities were disrupted. Individuals and organisations scrambled for immediate support: local communities, business partners, local and central governments. The response to these calls for help was swift, prompting a nation-wide support plan to help families and organisations to rebuild homes and infrastructure.

Alongside the nationwide mobilisation of citizen groups, the Government, through an agency (CCDR-C – Coordination and Regional Development Commission of Central Portugal), developed a funding programme (REPOR – Support System for the Replacement of Competitivity and Production Capacity) to support affected companies and families, with a total of €147 million (CCDR-C, 2021). This fund targeted the investment necessary in rebuilding infrastructure, replacing destroyed equipment, and purchasing raw materials. Pleninger (2020) suggests that such programmes allow families, organisations and businesses (Large Enterprises and Small and Medium Enterprises (SMEs)) to mitigate the adverse effects of natural disasters. By rebuilding their assets and purchasing necessary machinery, organisations can swiftly return to regular activity within months. As of October 2023, some of the destroyed homes were yet to be rebuilt (*Pampilhosa Da Serra Distribui Materiais Para Reconstrução de Casas Afetadas Nos Incêndios Em 2017*, 2023). By 2019, 93% of the destroyed homes had been rebuilt and delivered to their owners, reflecting a total investment of €650 million ("Apoio Global Aos Fogos de 2017 Atinge Os 650 Milhões de Euros," 2019).

The event was extensively reported on different news outlets, home and abroad (*Dozens Die in Portugal and Spain Wildfires*, 2017; "Portugal : Le Bilan Des Incendies d'octobre s'alourdit à 45 Morts," 2017; *Portugal: Forest Fires of 2017 Caused €1bn in Damage; €244m Covered by Insurance*, 2017; "Portugal's PM Pledges Action after Deadly Wildfires," 2017; Jones, 2017), and brought momentary attention to several problems affecting Portugal's rural areas. Discussions on solutions for the issues on inherent to the forest that led to the 2017 disaster were postponed. The main priority at the time was to ensure citizens' security and wellbeing, address local societies' most pressing problems and support local businesses and organisations. The following months were dedicated to understanding what was amiss and the causes that led to the destruction.

Years later, however, the Portuguese forests still face the same issues as those leading to the 2017 disaster (*Portugal "Não Pode Esquecer o Drama" Dos Incêndios Pedrógão Grande*, 2023). The devastation uncovered organisations' frailties and poor disaster management strategies and processes to face natural disasters. In the aftermath of other large wildfires in 2022, some media outlets suggested that large forest fires also allow organisations to start anew and adapt. In them lies the opportunity to mitigate future disasters, develop new approaches, and restore the surrounding natural environment (Neves, 2022).

1.2. Why a stakeholder approach

Stakeholder theory is a management concept that emphasises the significance of considering the interests and concerns of all individuals or groups (i.e., stakeholders) affected by a company's actions and decisions (Freeman, 1984). Stakeholder literature is plenty and wide-reaching (e.g., Buchholz & Rosenthal, 2005; Carroll & Näsi, 2016). The approach has evolved significantly over time, reflecting changes in business practices, societal expectations, and corporate governance principles (Buchholz & Rosenthal, 2005; Fassin, 2009; Freeman, 1999; Freeman et al., 2010; Robert Phillips et al., 2003; Wicks et al., 1994; Wood et al., 2021). Over time, the concept evolved to recognize stakeholders' diverse and sometimes conflicting interests (Orts & Strudler, 2002; Robert Phillips et al., 2003).

Stakeholder theory holds significant importance in the business world for several reasons. Firstly, it promotes a more comprehensive understanding of a company's impact on various parties, enabling a more balanced approach to decision-making (Freeman, 1984; Mitchell et al., 1997). By considering the interests of stakeholders – beyond shareholders – businesses can avoid short-termism and focus on long-term sustainability (Freeman, 1984). Secondly, it enhances corporate accountability and ethical behaviour. When organisations prioritise the interests of all stakeholders, they are more likely to act socially responsibly, mitigating adverse effects on the environment, communities, and society at large (Freeman, 1984; Schaltegger et al., 2019).

In the contemporary business landscape, stakeholder theory continues to evolve to address emerging challenges and opportunities. From a simple concept of identifying stakeholders, it grew into a multifaceted management theory emphasising

inclusivity, responsibility, and sustainability (Wicks et al., 1994). For instance, in global challenges such as climate change and social inequality, stakeholder theory has pushed organisations to consider environmental, social, and governance (ESG) practices. As some suggest (Haigh & Griffiths, 2009), expanding the concept of stakeholders has become essential for sustainable growth and attracting responsible management. Its practical implications somewhat derive from the increasing influence of non-governmental organisations (NGOs) and activist groups on businesses and governmental organisations, which became powerful stakeholders advocating for corporate responsibility and sustainability (Mitchell et al., 1997; Wood et al., 2021).

By adopting stakeholder theory methods and strategies, organisations create value for all the groups that affect and are affected by the organisation's activities, contributing to their long-term success and societal well-being (Freeman, 1984; Freeman et al., 2010; Hart & Sharma, 2004).

We will further expand on stakeholder theory, its reach and limitations, the theoretical and empirical state of the art, and its application towards this research in the context of natural disasters.

1.2.1. Research gaps and research questions

Natural disasters can have profound impacts on societies, ecosystems, and organisations. In the aftermath of such events, effective disaster management and stakeholder relationships become critical for recovery and resilience. Despite the importance of effective disaster management in post-disaster recovery, to the best of our knowledge, there is a lack of empirical studies exploring how organisations from affected regions implemented the disaster management cycle after a natural disaster.

Understanding the specific strategies, processes, and challenges organisations face during a disaster period can provide valuable insights for future disaster response efforts. Thus, we raise our first research question, based on current disaster management approaches (Carter, 2008; Todd & Todd, 2011). We aim to explore whether organisations followed – knowingly or instinctively the presets suggested and proposed by Carter (2008) and Todd and Todd (2011). This will help us to understand if these tenets are followed by organisations in different geographies and settings.

How do organisations operationalise the disaster management cycle in response to a natural disaster?

The second identified gap relates to stakeholder theory. While this theory emphasises the significance of stakeholder relationships for organisational success (Freeman, 1984), the specific impact of these relationships in post-disaster recovery remains underexplored. Examining the role of strong stakeholder relationships can shed light on their potential benefits regarding resource mobilisation, support, and resilience-building.

Do organisations benefit from strong stakeholder relationships in the aftermath of a natural disaster?

The third research gap deals with the concept of the natural environment as a stakeholder (Driscoll & Starik, 2004; Haigh & Griffiths, 2009; Starik, 1995). This concept raises questions about how natural disasters might influence organisations' perception of the environment as a stakeholder. Addressing this gap can offer insights into the evolving relationship between organisations and the natural environment in disaster-stricken areas. Having said that, our third research question:

Is a natural disaster a trigger to change the perception of the natural environment as a stakeholder?

The factors influencing organisations' perception of the natural environment as a stakeholder require further investigation. There is a perceived psychological distance towards climate change and climatological events (Spence et al., 2012). This research gap highlights the need to explore and identify the variables that play a pivotal role in shaping organisations' views on the natural environment as a stakeholder. Understanding these variables can provide crucial insights into the drivers behind environmental stewardship efforts and sustainability practices in the aftermath of natural disasters.

> *On what attributes does the perception of the natural environment depend?*

The final identified research gap raises the question of whether decision-makers who acknowledge the natural environment as a stakeholder demonstrate different behaviours and decision-making patterns towards the natural environment (Driscoll & Starik, 2004; Haigh & Griffiths, 2009; Starik, 1995). Exploring this relationship offers valuable insights into the influence of environmental consideration on decision-making processes and sustainability-related practices in organisations located in natural disaster-stricken areas.

> *Do decision-makers who perceive the natural environment as a stakeholder act differently than those who think otherwise?*

To elaborate on these research questions, our approach is twofold: we combine stakeholder theory (Freeman, 1984), emphasising stakeholder typology (Mitchell et al., 1997), and Starik (1995) suggestion of the natural environment as a stakeholder, with disaster management strategies and management (Carter, 2008; Quarantelli, 1976; Todd & Todd, 2011). This approach will enable us to better understand the reach and limitations of stakeholder theory after a highly disruptive event, learning from successful decisions and understanding perceived limitations.

Empirically, the research is based on semi-structured interviews, a scale, and a survey. By conjugating these approaches, the research questions are answered, and the derived hypotheses tested, thus contributing to the corpus of stakeholder theory, disaster management theory, and the stance on the natural environment as a stakeholder.

This work is divided into six chapters, described as follows: the first chapter covers the theoretical landscape regarding the different theories that link organisations, their stakeholders and their environment. The second one delves into the employed methodology. The third one explores the research findings. In the fourth, we review our empirical findings, followed by the discussion in the fifth chapter. The final chapter of the thesis presents our conclusions, limitations, and suggestions for future research.

This research identified research gaps, formulated research questions, and integrated hypotheses related to the operationalisation of the disaster management cycle and stakeholder relationships following the 2017 Portuguese wildfires. Addressing these gaps, answering to the research questions, and testing the proposed hypotheses can contribute valuable insights into disaster management practices, stakeholder theory, and organisational behaviour in the context of natural disasters. Ultimately, this research may offer practical recommendations for enhancing post-disaster recovery and environmental efforts for organisations and policymakers.

Chapter II – Literature Review

2.1 Introduction to the Literature Review

This literature review chapter explores the evolving discourse surrounding stakeholder theory and disaster management, specifically focusing on the inclusion of the natural environment as a stakeholder. By examining relevant scholarly works, this review seeks to identify key themes, theoretical frameworks, and empirical evidence on the integration of the natural environment as a stakeholder within the disaster management context.

The review provides an overview of stakeholder theory and its relevance to disaster management. It then delves into the concept of the natural environment as a stakeholder, highlighting the theoretical underpinnings and different perspectives within this domain. Subsequently, the review explores the various roles and interactions of the natural environment as a stakeholder.

Ultimately, this literature review aims to contribute to understanding stakeholder theory in the context of disaster management and highlight the significance of incorporating the natural environment as a stakeholder. By examining the existing body of knowledge, this review provides insights into the challenges, opportunities, and potential synergies that arise when considering the natural environment alongside human stakeholders, fostering a more comprehensive and sustainable approach to disaster management.

2.2 – Research streams in management literature

Managerial theoretical approaches are plenty, all of which are best adapted to be research backdrops, allowing researchers to answer different research questions through different perspectives. As such, interactions between organisations and other entities are studied, described, and theorised through different academic theories. It is possible to find some the well-known research streams, namely the industry based view (M. E. Porter, 1979); resource-based view (J. B. Barney, 1986); Dynamic capabilities (Eisenhardt & Martin, 2000; Teece et al., 1997); stakeholder theory (Freeman, 1984); or the systems approach (Ackoff, 1974; Senge, 2006; von Bertalanffy, 1969). These research streams are summarised in Table 1.

Organisations are components of human-made systems, similar to natural entities (e.g., animals and plants) that belong to natural systems (von Bertalanffy,

1969). The difference between both systems is that organisations interact in human-made environments, while natural entities delve into both natural and human-made systems. In either system, all elements feed and connect to each other, becoming more than the sum of their parts (von Bertalanffy, 1969). Human-made systems are composed of intrinsic and extrinsic variables (e.g., people, institutions, businesses, and the natural environment) that affect and are affected by human interactions.

The theoretical approach that focuses on the relationships between organisations and the systems they belong to, benefitting from systems thinking through theory and practice (Elias & Cavana, 2000) is the Stakeholder theory. This organisational view is the most relevant theoretical framework for evaluating the performance of social interactions developed by organisations (Wood & Jones, 1995).

2.3. Stakeholder theory
2.3.1 Origins and applications

Defining the origins of the stakeholder theory is a challenging task, primarily due to opposing observations in academia (Freeman et al., 2010). The stakeholder concept finds its genesis in sociology, organisational behaviour, and politics of special interests (Jensen, 2001). The term "stakeholder", employed in management literature, can be traced back to 1963, in a Stanford Research Institute article (Freeman et al., 2010). Yet, the concept at the time was narrower since it was mostly focused on shareholders, the only group the organisation was exclusively dependent on. A broader view of the impact of different groups that affect and are affected by the organisation and the importance of such dynamics for the organisation was framed and presented in 1965 in Sweden (Carroll & Näsi, 2016).

In the following decade, through the 1970s, scholars and practitioners debated the implications certain groups could have in businesses and what threats and opportunities they could present to organisations (Freeman et al., 2010). In 1974, Ackoff reviewed pre-existing ideas supporting the idea that organisations operate in open system and, through their relationships with other social actors can solve social problems. Ackoff's work (1974) reinforced the need to understand and solve organisational issues through "comprehensive systems approach" (p. 19). This paved the way to understanding the value of organisations' relationships between themselves and different internal and external groups.

Table 1

Research Streams in Strategic Management Literature

		Industry-based view	*Resource-based view*	*Dynamic capabilities*	*Stakeholder theory*	*Systems approach*
Literature	*Summary*	Evaluation of the environment and subsequent analysis of possible profitability and strategy definition.	The capacity to properly allocate resources (human, physical, intangible) is a source of competitive advantage, allowing the company to thrive.	Focus on how companies' internal management and their output are related to the outside environment.	Relationships between different actors and the company, those who affect and are affected by the company.	Companies are composed of sub-systems and belong to other systems that interact with each other.
	Main authors	(Porter, 1979)	(J. Barney, 1991a; Prahalad, 1993; Wernerfelt, 1984)	(Eisenhardt & Martin, 2000; Teece, 2014; Teece et al., 1997)	(Freeman, 1984; Freeman et al., 2020)	(Senge, 2006; von Bertalanffy, 1969)
	Limitations	Insufficient attention to the institutional context (Peng et al., 2009)	Lack of managerial implications ; infinite regress; limited applicability; unachievable competitive advantage; value of resources too indeterminate; unclear resource definitions (Kraaijenbrink et al., 2010; Priem & Butler, 2001)	Unclear definitions of dynamic capabilities (Collis & Anand, 2019); vague and arbitrary (Burisch & Wohlgemuth, 2016)	Level of abstraction (Phillips, 2003); difficult operationalisation (Oubihi & Elouidani, 2016)	Too broad or complex to provide feasible solutions (Strauss, 2005); lack of a widely adopted analytic procedure (Rosen, 1991)
	Examples of literature on the Natural Environment	(Mihailova, 2020; Zalengera et al., 2014)	(Andersén, 2021)	(Haarhaus & Liening, 2020)	(Novoa et al., 2016; Shackleton et al., 2019)	(Azapagic, 2003)
Focus on strategy		Industry	Resources	Dynamic capabilities	Stakeholders	System

Adapted from Simaens (2015)

By the early 1980s, the stakeholder concept, still lacking a solid base theory, was used to understand threats and opportunities that may arise from firms' interactions with well-identified groups (Freeman, 1984; Freeman et al., 2010). Up to that point, groups considered to have achieved stakeholder status were considered permanent and immobile, only to positively influence organisations (Freeman et al., 2010). By contrast, competitors or special interest groups that could have a negative effect on the organisation were denied a stakeholder status (Freeman et al., 2010). By 1984, the nowadays widely known and accepted definition (Donaldson & Preston, 1995) was presented by Freeman, stating that stakeholders are "groups and individuals that can affect or are affected by, the accomplishment of organizational purpose" (Freeman, 1984, p. 25). This tenet is the basis for the stakeholder concept and the stakeholder theory. It proposes that strategies, more solely focus on profit-making, must take into consideration the needs and demands from of groups who have a stake in the organisation(Donaldson & Preston, 1995; Freeman, 1984; Freeman et al., 2010), thus developing market relevance and competitiveness.

This theoretical approach suggests that organisations possess ethical and moral managerial responsibilities (Phillips et al., 2003). By opposing traditional stances on the firm, this new theory suggests that stakeholders are heterogenous, independent groups encompassing a wide range of formal and informal groups, such as shareholders, labourers, unions, the State, suppliers, owners, customers, competitors, the media, employees, Special Interest Groups (SIG), or activist movements (Freeman, 1984; Mitchell et al., 1997) (Figure 5).

Departing from a shared perspective on the relationship between organisations and different groups, the definition of stakeholder, its limits, and interpretations has evolved. Since 1984, it has been employed and adapted by various scholars, from which select a few: e.g., [Stakeholders] "have an interest in the actions of an organisation and ... the ability to influence it" (Savage et al., 1991, p. 61); "interact with and give meaning and definition to the corporation" (Wicks et al., 1994, p. 483) "persons or groups with legitimate interests in procedural and/or substantive aspects of corporate activity" (Donaldson & Preston, 1995, p. 85). The definition has found such a broad audience that by 2017 Miles (2017) identified a staggering 885 definitions of the term stakeholder. These numbers suggest that the definition of stakeholder is still the target of much debate, being the focus of reviews and adaptations by the original authors (Freeman, 1999; Freeman et al., 2010, 2020).

Figure 5

Stakeholder view of the firm
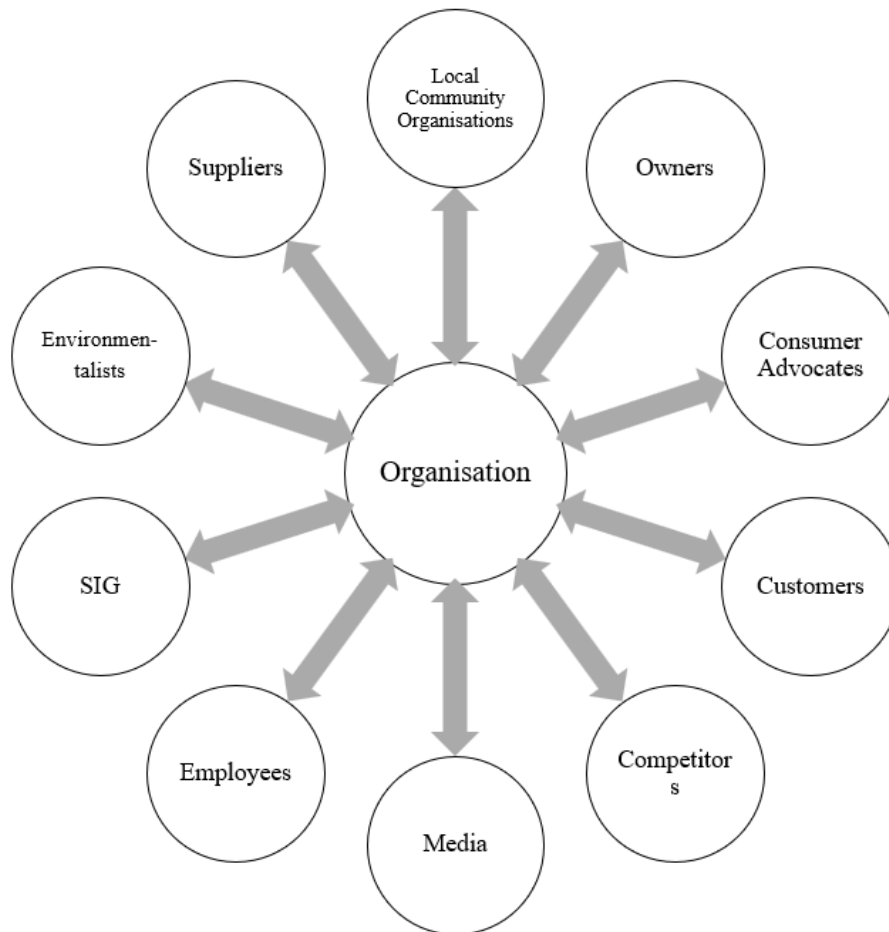
Adapted from *Strategic management: A stakeholder approach* (1st ed, p. 25), by E. Freeman, 1984, Pitman Publishing Ltd.

Given its popularity, stakeholder theory finds a disproportionate corpus of research on the corporate standpoint regarding stakeholders and their relationships with businesses (Steurer, 2006). Beyond the academic debate, the theory is versatile and universally accepted, resulting in prolific academic production based on its precepts. The empirical applications of this theory are found across institutions, industries, and contexts. For instance, in studies about fisheries (Brewer & Moon, 2015); NGOs (Burchell & Cook (2011); construction (Olander & Landin, 2005); software architecture (Smolander & Päivärinta, 2002); directors' roles in Corporate Social Responsibility (CSR) (Hung, 2011); the positive financial impact of adopting

stakeholder centred strategies (Ruf et al., 2001); create value in universities (Langrafe et al., 2020); development of corporate brands (Gregory, 2007); or research and development project management (Elias et al., 2002).

2.3.2. The importance and relevance of stakeholder theory

Some scholars support that organisations' successes are based on transactions, the industry, or the will of the shareholders (Friedman, 1970; Porter, 1979). Nevertheless, stakeholder theory levies its theoretical and empirical importance on relationships with different groups (Barney & Harrison, 2020; Freeman et al., 2020). In different degrees of importance, stakeholders' interests are considered in the strategy definition more than a by-product of shareholder interests (Kaler, 2003). At heart, stakeholder theory is a normative approach to business, dealing with the ethics of business (T. M. Jones et al., 2007), with transformational power for both decision-makers and the academy (T. M. Jones & Wicks, 1999). As Phillips (1997, p.64) suggests, "[o]f the current available models of organisational ethics, stakeholder theory is best able to account for an ethical procedure of managerial decision making". It opened the way to understanding and integrating valuable information regarding stakeholders' points of view and delivering conceptual, theoretical perspectives (Steurer, 2006).

Identifying the stakeholders is a duty decision-makers must take into consideration when defining effective corporate planning (Freeman, 1984), and it is found across different publications, e.g. the identification and classification of industry-specific stakeholders (Stretton, 2014); classification of online stakeholders (Chung et al., 2009); identification of stakeholders in the aftermath of a natural disaster (Siriwardena et al., 2009). It is noteworthy that poor stakeholder identification and wrongful allocation of resources to support relevant stakeholders may lead to negative financial outputs (Ali, 2017).

Social perspectives also contribute to the overarching profile of the theory. A feminist approach to stakeholder theory suggests that companies and individuals must bear responsibility for the actions that affect other institutions and individuals in opposition to the individualistic and traditional view of firms (Wicks et al., 1994). Opposing to highly competitive business views, a stakeholder approach should be replaced with clear communication and collective action (Wicks et al., 1994). From

an ethical point of view, decision-makers understand their strategic choices also as forms of solidarity (Wicks et al., 1994). Only this theoretical approach enables necessary changes in power structures, from centralised power and decision-making to decentralisation and empowerment of stakeholders (Wicks et al., 1994).

On the one hand, stakeholder-focused strategies allow companies to achieve performance goals, which in turn will result in competitive advantages in the market they belong to (Donaldson & Preston, 1995); on the other hand, stakeholder-driven decision-makers tend to strengthen positive actions towards their stakeholders and develop the perceived image of their corporations as a social agent, within their community (Hung, 2011). Some suggest (Savage et al., 1991) that willingness to cooperate with the organisation is positively correlated with the stakeholders' dependency on the organisation. Others argue that proper stakeholder management and a proactive stance towards stakeholders lead to positive organisational performance (El Akremi et al., 2018; Hart & Sharma, 2004), and corporate social/environmental performance is positively correlated with corporate financial performance (Orlitzky et al., 2003), and any stakeholder can become a definitive stakeholder, given the proper context or situation (Hart & Sharma, 2004; Paloviita & Luoma-aho, 2010).

2.3.3. The descriptive, instrumental, and normative aspects of stakeholder theory

Given its wide use and applications, the stakeholder theory, in its relative infancy, observed a surge in its applications and reach, sometimes providing blurry or contradictory contributions and conclusions (Donaldson & Preston, 1995; Jones & Wicks, 1999). It lacked "the philosophical sophistication of other models of business ethics" (Phillips, 1997, p.52), which is still a focus of debate (J. B. Barney & Harrison, 2020). To clarify and normalise the focus of stakeholder theory, Donaldson and Preston (1995) propose three characteristics that define it: descriptive, instrumental, and normative. This approach to stakeholders provides the basis for understanding the relationship between them while providing valuable guidelines to achieve conflicting goals between profit-making and socially-oriented actions (Hahn et al., 2018).

Firstly, the stakeholder theory assumes descriptive characteristics because "[i]t presents a model describing what the corporation is […] as a constellation of co-operative and competitive interests possessing intrinsic value." (Donaldson & Preston, 1995, p. 66). It describes reality, be it business thinking, practice or its nature (Kaler, 2003). It allows organisations to enumerate connections and interactions with their internal and external realities by measuring, identifying, and evaluating stakeholder groups while providing valuable answers and solutions to their needs and demands (Donaldson & Preston, 1995). A descriptive approach to stakeholders through CSR activities, public relations, media campaigns, and reputation building, enable the building of long term relationships with stakeholders (Ruf et al., 2001). However, some suggest that there is a lack of evidence that this approach is converted into improved corporate financial performance (Boesso et al., 2013).

Secondly, Donaldson and Preston (1995) propose the stakeholder theory's instrumental characteristic, suggesting that organisations that support their stakeholders attain competitive advantages. Summarily, the instrumental characteristic of the theory "[…] posits that certain outcomes will *if* certain behaviours are adopted" (Jones & Wicks, 1999, p. 208, emphasis in original) by establishing "a framework for examining the connections, if any, between the practice of stakeholder management and the achievement of various corporate performance goals" (Donaldson & Preston, 1995, p.67). Since stakeholder relationships are based on mutual goal accomplishment, managers can adopt an instrumental approach when managing stakeholder groups (Boesso et al., 2013). This approach can build a versatile organisation profile that may ready the company for sudden changes or crises (Orlitzky et al., 2003). Early research suggests that when focused, avoiding "generic" initiatives, and possessing instrumental characteristics, stakeholder theory brings value to the corporate performance of firms (Porter & Kramer, 2011).

Lastly, the normative aspect of stakeholder theory has been proposed from its inception (Phillips, 1997), albeit implicitly proposed by Freeman (1984). A normative theory fends off criticisms of lacking a valuable and fair basis. The idea of this theory possessing normative characteristics comprises two main ideas: "(a) stakeholders are persons or groups with legitimate interests in procedural and/or substantive aspects of corporate activity. […] (b) […] each group of stakeholders' merits consideration for its own sake and not merely because of its ability to further the interests of some other group" (Donaldson & Preston, 1995, p.67).

It seems important to clearly define and limit the definitions of stakeholders, which is explored in other research works (e.g. Miles, 2017). The normative character of stakeholder theory determines the moral standpoint of companies and institutions beyond the core value of profit-making (Donaldson & Preston, 1995). It becomes a practical guideline for the importance of the organisation within its context. It allows us to understand the social dynamics with its different actors and their involvement with the organisation. This characteristic can be summarised as follows: "[t]he normative aspect of stakeholder theory delves into the realms of philosophy, of ethics in business, and […] how managers can create ways of doing business that are both moral and workable" (Jones & Wicks, 1999, p. 206)

Stakeholder theory, given its overarching characteristics and nearly universal applications, might be misinterpreted, or misused by scholars and decision-makers. Yet, the literature offers substantial empirical and theoretical norms and cues to standardise approaches to its limits (e.g., Donaldson & Preston, 1995b; Goodpaster, 1991; Miles, 2017; Wood et al., 2021), providing it with the necessary robustness to be adopted and applied in different contexts.

2.3.4. Typifying stakeholders

For managers and researchers alike, it is necessary to correctly identify the degrees of interaction between organisations and stakeholder groups. After the *which stakeholders?* question, managers and decision-makers must identify *how* stakeholder groups affect and are affected by the organisation's activity. For this, there are different theoretical approaches to typifying stakeholders found in the literature. This step is essential, because stakeholders assume different degrees of proximity (Schons & Steinmeier, 2016) or interdependency (Frooman, 1999; Frooman & Murrell, 2005), some of which are beyond organisations' direct influence (Wood & Jones, 1995). Some stakeholder groups can be divided into a dyadic stance: primary and secondary (Savage et al., 1991). This typology suggests that primary stakeholders possess "formal, official, or contractual relationships and have a direct and necessary economic impact upon the organisation" (Savage et al., 1991, p. 62); while "Secondary stakeholders" "include those who are not directly engaged in the organisation's economic activities but are able to exert influence or are affected by the organisation."(Savage et al., 1991, p. 62).

To illustrate stakeholder typification, we refer to Savage et al.'s (1991) model, which consists of four stakeholder types based on cooperation and threat levels from stakeholder groups. These are divided as "supportive", "marginal", "non-supportive", and "mixed blessing" and can be briefly described as follows: supportive stakeholders – low threat, highly cooperative, usually are "trustees, managers, staff employees, and parent company"; marginal stakeholders – low threat, low cooperation, these are "consumer interest groups, stockholders, and professional associations for employees"; non-supportive stakeholders – high threat, low cooperation, being "competing organisations, employee unions, the federal government, and sometimes the news media"; mixed blessing stakeholders – high threat, high cooperation, which include "employees in short supply, clients or customers, and organisations with complementary products or services" (Savage et al., 1991, pp. 66-67).

Another stakeholder typification is the "normative" and "derivative" stakeholder groups (Phillips, 2003). The former stakeholder type is the focus of direct moral responsibilities, where the latter may interact positively or negatively with the organisation, but lacks the necessary importance to be the target of moral responsibilities (Phillips, 2003). Also, to operationalise the theory, Phillips et al. (2003) suggest that different treatment of stakeholders derives from meritocracy since "benefits are distributed based on the relative contribution to the company" (p. 488), and that managers' main concern is the organisation and its outputs (Phillips et al., 2003).

Other authors classify stakeholder groups through different scopes, resulting in different typologies, for instance as moral and strategic stakeholders (Goodpaster, 1991), internal, external, and distant (Sirgy, 2002), or institutional, organisational, and social (Vazquez-Brust et al., 2010), among others. We expand on different stakeholder typologies found in the literature, as per Table 2:

Table 2

Stakeholder classification typologies

Authors	*Typology of stakeholders*
Goodpaster (1991)	Moral; strategic
Savage et al. (1991)	Primary; secondary stakeholders
Mahoney (1994)	Active; passive
Clarkson (1995)	Involuntary; voluntary
Mitchell et al. (1997)	Based on the combination of attributes (power,legitimacy, and urgency)
Henriques & Sadorsky (1999)	Organisational; community; regulatory; media
Luoma & Goldstein (1999)	Primary; public
Friedman & Miles (2002)	Necessary-contingent; compatible-incompatible
Post et al. (2002)	Resource-based; industry structure-based; sociopolitical-based
Sirgy (2002)	Internal; external; distant
Phillips (2003)	Derivative; normative
Hart & Sharma (2004)	Core-fringe; peripheral
Fassin (2009)	Stakeholder; stakeholder watcher; stake keeper
Sachs & Maurer (2009)	Benefit providers; benefit receivers; risk providers; risk bearers.
Vazquez-Brust et al. (2010)	Institutional; organisational; social

To better understand stakeholder types and for a matter of clarity, we follow Mitchell et al.'s (1997) typology (Figure 6). This approach suggests that different stakeholders are typified through the use of one or the combination of two or three attributes: power, legitimacy, and urgency.

For the purpose of definition, power – transitory in nature – is the attribute related to the capacity of one stakeholder to influence the organisation's actions (Mitchell et al., 1997). Ali (2017) suggests that power, on its own, lacks the strength to be an attribute, providing the example of terrorists, that even though possess power towards the organisation, its strategy and goals, the company will refrain from developing and building a relationship beneficial to all parts involved.

Legitimacy is the interpretation by the stakeholder groups on whether the actions of companies are aligned with their values and what right they have to demand

from the organisation (Mitchell et al., 1997). A higher degree of legitimacy can be achieved through collective organisation of stakeholders, otherwise disregarded as such, because of lacking the necessary momentum to be acknowledged by the company (Ali, 2017).

Lastly, urgency relates to the fastness an action must be taken towards the stakeholders and the importance of the action is to the stakeholder (Mitchell et al., 1997).

Figure 6

Stakeholder classification typologies
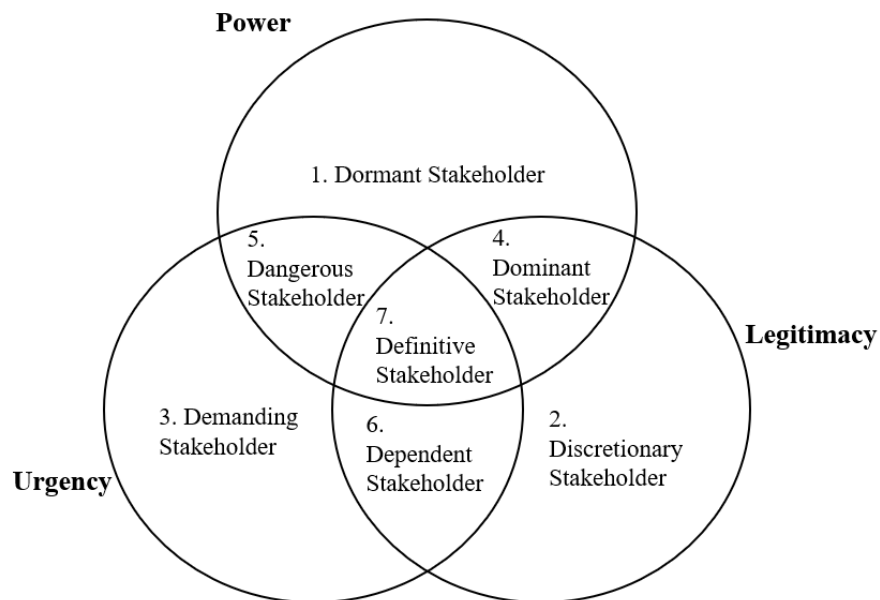
Adapted from *Toward a Theory of Stakeholder Identification and Salience* (p. 874), by R. Mitchell, B. Agle, D. Wood, 1997, Academy of Management Review

These attributes are fluid, mobile, variable, socially constructed, and unnecessarily created consciously or wilfully exercised (Mitchell et al., 1997). These characteristics allow the typification of stakeholders to be described as latent, expectant and definitive, depending on whether they have one, two, or three attributes, respectively. Latent stakeholders, those with only one attribute, can be:

dormant – have power, but lack legitimacy and urgency (e.g., ex-employees); discretionary– possess legitimacy, but lack power or urgency (e.g., institutions that are recipients of philanthropy activities); demanding – have urgency, but lack legitimacy or power (e.g., baseless protestors).

Expectant stakeholders, those with two attributes, are divided as dominant – powerful and legitimate (e.g., creditors, community leaders, representatives of owners); dependent – that are legitimate and urgent, but lack power (e.g., the communities affected by an oil spill); and dangerous – they are powerful and their claims urgent, but lack legitimacy (e.g., violent protestors).

Lastly, the definitive stakeholders possess the power, legitimacy, and urgency attributes. These can be any of the expectant stakeholders who acquire one more attribute. Mitchell et al. (1997) provide the example of shareholders (dominant) that acquired urgency when acknowledging the plummeting of their stocks' value. Wood and Jones (1995) refer to managers and decision-makers as hidden stakeholders, for they have other stakes in the performance of the company beyond financial or economic gains and losses, such as personal, professional, and social stakes, which corroborates the mutual impacts of organisation and definitive stakeholders.

To illustrate the dynamic nature of stakeholder typology, we use as an example a group of a company's retired workers. Through a given period, they were actual company workers and possessed a set of characteristics and attributes that influenced and were influenced by the company's activities. Upon retiring, this group may still be affected by the company's activities, but their attributes will be different – a retired workers' strike will have a relatively lower impact on the company's production than a strike of current workers. Their power has faded, but the company must have a degree of responsibility towards them (e.g., asbestos companies that had to support ex-workers due to lung diseases originated by their factory jobs).

This model has since been updated by other authors - e.g., Haigh and Griffiths (2009) or Driscoll and Starik (2004). The proximity attribute was added by Driscoll and Starik (2004) because "spatial distance can be as important in stakeholder interactions as is time" (p.63). The authors also suggest that "organisations that share the same physical space or are adjacent to one another often affect one another*"* (p. 63), and that physical and psychological proximity and the strength of the relation are negatively exponential (Driscoll & Starik, 2004). The

authors further explain that proximity can be more than physical: companies belonging to the same industry or value chain but located in different geographic areas may be considered proximate. Nevertheless, they fail to elaborate on how proximity affects the dynamics between the power, legitimacy, and urgency dimensions suggested by Mitchell et al. (1997).

This model was readily tested empirically and confirmed by Agle et al. (1999) at the level of CEOs thinking and business making. It has been used in academia and is recognised as one of the most consensual models to classify and explain business-stakeholder relationships (Mainardes et al., 2012). However, some studies have failed to support a positive correlation between the urgency, legitimacy and power of stakeholders and companies' financial performance (Agle et al., 1999).

2.3.5. Empirical tools for the management of stakeholders

Some authors criticise stakeholder theory due to its level of abstraction (Phillips et al., 2003) or difficult operationalisation (Oubihi & Elouidani, 2016). Although Freeman (1984) identifies a set of stakeholders, the author encourages scholars and decision-makers to find their own. Further developments in the theory and practice led to the creation of tolls that refute these stances. Decision-makers possess an array of tools to identify stakeholders, place them in different categories, and determine which activities can be developed to meet their needs and demands. Such tools may be focus groups, semi-structured interviews, interest-influence matrices, among others (Reed et al., 2009).

We will discuss three of such tools that illustrate a counterargument for the stances mentioned above as proposed by Ackermann & Eden (2001): the Star Diagram (Figure 7) and the Power/Interest grid (Figure 8).

The Star Diagram builds upon the Power/Interest grid (Ackermann & Eden, 2001). The first is the process where participants in the stakeholder identification process understand the *whys* of the power and interest bestowed unto different groups of stakeholders (Ackermann & Eden, 2001). The latter corresponds to the design of formal and informal connections between stakeholders, resulting in network relationships (Ackermann & Eden, 2001).

Figure 7

Star Diagram example

The Bases of Power

Stakeholder Actions

Support mechanisms

Available sanctions

The Player

The view of their role in their aspirations

What they see

Interpretation of Strategy

The interpretation of behaviours

The Bases of Interest
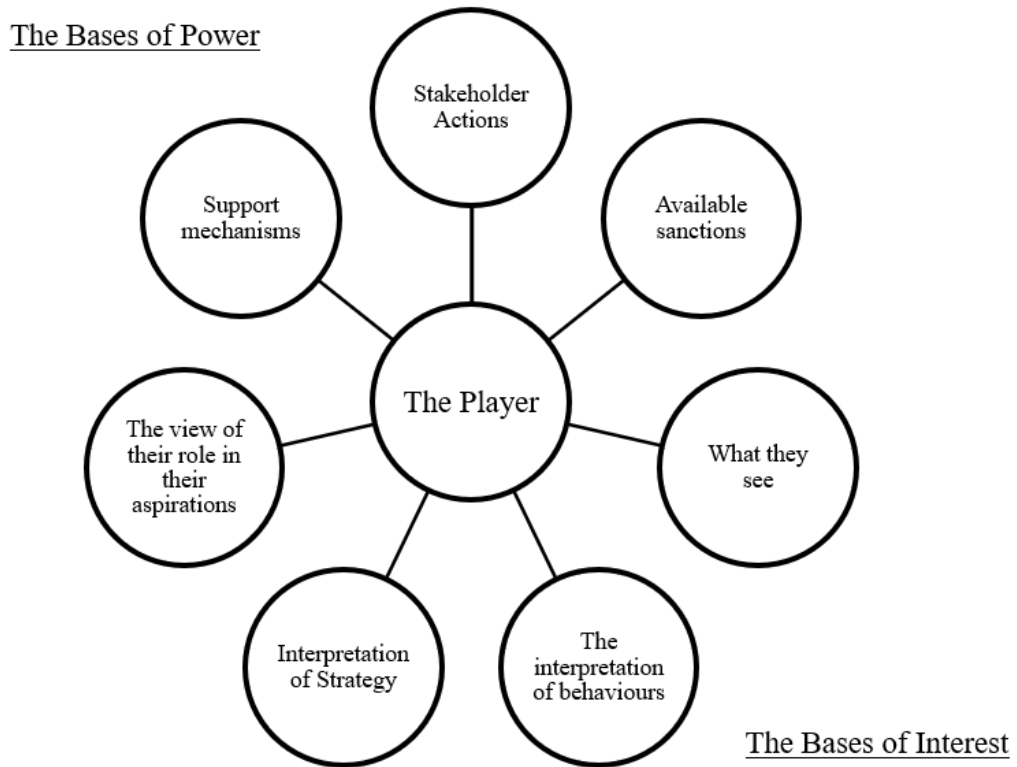
Adapted from *Stakeholders Matter: Techniques for their identification and management* (p. 10), by F. Ackermann and C. Eden, 2001, Management Science - Theory, Method and Practice

The Power/Interest grid (Figure 8) is a valuable strategic planning tool for analysing and categorising stakeholders in each context. It divides stakeholders into four distinct quadrants based on their level of power (horizontal axis) and interest (vertical axis). The top right quadrant includes stakeholders with high power and high interest (Players), who require close and active engagement. Stakeholders with high power but lower interest, necessitating careful monitoring and occasional consultation, are placed on the bottom right quadrant (Context setters). The top left quadrant (Subject) consists of stakeholders with low power but high interest, and they should be kept informed about the project's progress. Lastly, the bottom left quadrant involves stakeholders with low power and interest (Crows) requiring minimal attention. The Power/Interest grid serves as a practical framework for tailoring stakeholder engagement strategies, ensuring that resources and efforts are directed

effectively (Ackermann & Eden, 2001). This grid starts as a blank slate, requiring contributions from all parties involved in stakeholder identification (e.g., board members), allowing their effective management in a fully dynamic process (Ackermann & Eden, 2001). The authors suggest practical uses to engage with the grid (by writing the stakeholder groups on post-its and placing them into each category). It is used in different contexts, for instance, in CSR studies (Slabá, 2014), sustainable energy development (Guðlaugsson et al., 2020), higher education institutions (Langrafe et al., 2020), convention and visitors bureaus (Ford et al., 2009), marine management (Newton & Elliott, 2016), or construction projects (Newcombe, 2003; Olander & Landin, 2005; Yang et al., 2011).

Figure 8

The Power/Interest grid
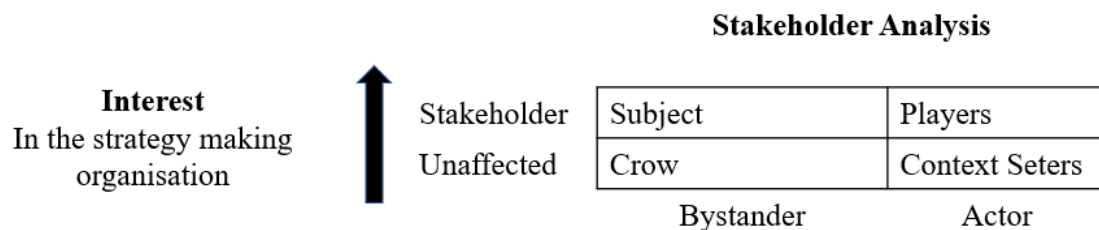
From *Stakeholders Matter: Techniques for their identification and management* (p. 7), by F. Ackermann and C. Eden, 2001, Management Science - Theory, Method and Practice

2.3.6. Limitations and criticisms of stakeholder theory

Stakeholder theory possesses its limitations and faces criticism from peer scholars, businesses, and decision-makers. Due to its breadth, application, and contestation, defining stakeholders has been contested, and it is expected to be contested in future definitions (Miles, 2017). Below, we review some of such criticisms, as well as identified limitations.

One of its criticisms lies in the theory's practicability when all stakeholder groups deserve or demand equal treatment (Gioia, 1999). Yet, Mitchell et al.'s (1997) arguments render this criticism unfounded, because different stakeholders play different roles and are object of different depths of the stakeholder approach within a

company (Mitchell et al., 1997). The instrumental characteristics of the theory help decision-makers to understand and highlight their duties towards these groups, departing from a mere description to a call to action for managers who perceive the company as a social player (Donaldson & Preston, 1995). Also, organisations, to improve their stakeholders' relationships and better fit into the systems they belong to, can use CSR actions within their scope of action (Kotler & Lee, 2005). Thus, CSR and stakeholder-related activities become a set of tools organisations can use privately, for self-regulation (Sheehy, 2014). Such actions and positive results among stakeholders can be achieved through philanthropy, cause promotions, marketing promotions, or volunteering (Kotler & Lee, 2005), which, if perceived as genuine, benefit both organisations' and brands' image (Johnson et al., 2019).

Sternberg (1996, 1997, 2001) is highly critical of the theory, pointing several issues to it: "[…] stakeholder theory is fundamentally misguided, incapable of providing better corporate governance, business performance or business conduct. Stakeholder theory is indeed intrinsically incompatible with all substantive objectives, and undermines both private property and accountability." (Sternberg, 1997, p. 3) On another article, Sternberg (1996) suggests that an applied stakeholder-centred strategy, given its complexity, renders business making impossible. Some of the author's arguments are: the theory lacks a clear, strict guidance to understand and limit the number of stakeholder groups, thus making it unworkable; the resources used to satisfy external stakeholders negatively affect organisations; a stakeholder-directed thinking may lead to betrayal from managers; too many stakeholder groups hinder businesses' performance and long-term profitability (Sternberg, 1996, 1997, 2001).

Whether the stakeholder theory belongs only to strict, traditional businesses has also been a matter of debate. Donaldson and Preston (1995) argued that this theory can only be applied to firms. Yet, empirical research has developed and is plentiful, combining the theory with NGOs, public institutions, and others (e.g. Burchell & Cook, 2011; Fontana, 2018; Grosser, 2016). Therefore, it is reasonable to assume that stakeholder theory's borders are beyond the limitations of strict business management theories.

Another criticism on the theory is its highly theoretical profile (Gioia, 1999; Oubihi & Elouidani, 2016). Stakeholder theory may be, at times, disconnected from managers' and decision-makers realities when employed "on the basis of conceptualizing,

with only minimal reference to empirical work" (Gioia, 1999, p. 230), which may endanger the operationalisation and practicability of the organisation's strategy. It also may fail to provide a specific set of rules or instructions for decision-makers to follow and to apply in their own companies, hence being too abstract for a practical usage (Jensen, 2001). These issues are fuelled by a broad usage and perceived meaning of the stakeholder term (Donaldson & Preston, 1995).

Phillips et al. (2003) propose that stakeholder theory's main objective is to distribute financial outputs. This is, in fact, a distorted and narrow view of the theory. Since its inception, stakeholder theory focused on the relationships between organisations and groups who have stakes in the company, many of which lack a financial stake, as mentioned above. Alongside financial outputs to a specific set of stakeholders, namely shareholders, the normative aspect of the theory deals with the ethics and moral stances the organisation needs to pursue to maximise its financial and social potential. Therefore, there is little ground to assume Phillips et al.'s (2003) argument as a comprehensive criticism of stakeholder theory. Also, there are positive correlations between a valuable stakeholder strategy and financial outputs (Haigh & Griffiths, 2009; Ruf et al., 2001) that suggest that a well-defined stakeholder focus strategy enables financial gains for shareholders.

Jensen (2001) criticises stakeholder theory, stating it is a remnant of socialist and communist thinking. According to the author, this theory allows political access to businesses decision-making and to decision-makers, which is against the principles of capitalism (Jensen, 2001). This argument suggests that such theory is and will be a fallacious argument used by groups to meddle in the dealings of organisations, which, instead of creating wealth and value for all stakeholders, will degrade stakeholders' quality of life (Jensen, 2001).

Positive connections between company financial performance and stakeholder management have been questioned (Sternberg, 1997). However, beyond a widespread belief that, ceteris paribus, greater concern about and action towards stakeholders results in better market performance (T. M. Jones & Wicks, 1999), there is some empirical research suggesting a positive correlation between corporate social performance (CSP) and corporate financial performance (CFP) (Ruf et al., 2001).

Empirical studies suggest that stakeholder theory is highly versatile (e.g., Adongo & Kim, 2018; Boesso & Kumar, 2009; Burchell & Cook, 2011; Elias et al., 2002; Langrafe et al., 2020; Ruf et al., 2001; Schons & Steinmeier, 2016; Tallberg et al., 2022).

Actors who affect and are affected by the organisation are as highly diverse as the organisation's individual reality. Stakeholder groups – and the importance they play in each entity's life – depend on different variables, e.g., industry, geographical location, type of business, or the social acceptance of the service or product. Also, lacking a specific set of attitudes or instructions to follow cement the universal appeal and adoption possibilities of the theory, since it can be applied in different contexts, to different organisations, in multiple scenarios, and industries. It seems difficult to reach a definite or exact set of rules to operationalise this theory.

Answering to the criticism of the theory's uselessness in an organisational context, some authors suggest (Boesso et al., 2013) that stakeholder theory, when properly applied, results in managerial success. Stakeholder theory allows organisations to attain predefined goals, as they involve groups of interest who have a genuine stake in the organisation's performance.

To counterargue Jansen's (2001) criticism, that stakeholder theory eliminates the borders between organisation and government, we note that there are well-defined limits between governmental and internal organisational decisions. In democratic countries, where many studies have been conducted (e.g., Elias et al., 2002; Guðlaugsson et al., 2020; Paloviita & Luoma-aho, 2010), the adoption of a stakeholder approach to organisational strategy is a choice taken by decision-makers.

Barney and Harrison (2020) suggest that some authors frame their research within the tenets of stakeholder theory solely because they resort to its literature and principles. Such approach falls short of the theory's real importance and reach (Barney & Harrison, 2020). At heart, such research aims to analyse different interactions with different groups (Barney & Harrison, 2020; Freeman, 1984). When researching one stakeholder group, researchers should aim at its core theoretical concept or research stream (e.g., studying employees – resort to organisational behaviour or human resources; studying customers – resort to marketing) (Barney & Harrison, 2020). Even though we focus on the natural environment in this research, we explore its role as an eventual stakeholder within the organisation's strategy after a specific moment by decision-makers. Notwithstanding, we recognise such similar research can be within the realms of business ethics, CSR, or environmental studies.

Although flawed, stakeholder theory provides decision-makers with valuable management approaches, linking organisations and surrounding entities, leading to better business performance (Freeman et al., 2010). We acknowledge all

criticisms and reflect upon them. This theory, although mature, is still in its infancy and always will be, due to its overarching characteristics. As new industries and organisations emerge, it is always necessary to understand who and how is affected by the organisation and who and how affects it and its activities.

2.3.7. The natural environment as a stakeholder

Should nature be considered a stakeholder? Since it is a pivotal part of this thesis, we present opposing arguments to this proposition.

The first consideration to be made is to define the employed term: nature or natural environment since there are discrepancies in definitions and the reach of the meaning of both terms. For instance, Starik (1995) uses the terms "nature" and "non-human nature" interchangeably. Notwithstanding, for the purpose of this research, we argue that the definition must be refined, since "nature" is a too broad concept to be included as a stakeholder, due to its omnipresence (Laine, 2010). To narrow this definition, Laine (2010) suggests that "natural environment" is the most suitable term to reflect the reach of companies' activities because "[the natural environment] is something which surrounds something else" (Laine, 2010, p. 76). For clarity, we employ the term "natural environment" for all the non-human and non-human-made elements composing an organisation's surroundings.

Considering the natural environment as a stakeholder finds its supporters in literature (Driscoll & Starik, 2004; Haigh & Griffiths, 2009; Hörisch & Schaltegger, 2019; Jacobs, 1997; Laine, 2010; Polansky, 1995; Starik, 1995) as well as opponents (Orts & Strudler, 2002; Philips & Reichart, 2000). One of the arguments supported by the latter group is that stakeholder theory is limited to humans, and including the natural environment poses either a philosophical dilemma or waters down the relevance of the theory.

Orts and Strudler (2002) argue that the discussion on how organisations should relate to the natural environment, although important and necessary for the development of future practical and academic relevance, is beyond the reach of stakeholder theory. Instead, such considerations are within the realms of business ethics studies. Previous research points to human stakeholders as the natural environment's true representatives or have significant weight on ecologic strategic decisions (Fineman & Clarke, 1996). The natural environment representatives

possess different degrees of power in the organisation. Such groups are activists, green pressure groups (e.g. environmental NGOs), and high-profile individual champions, both of which, through coercive and ethical pressure, and informed persuasion, pressure organisations to change their environmental stances (Fineman & Clarke, 1996). Another group of the natural environment representatives are legal agencies that rule companies and their environmental output, which is done through the creation, definition, application, and control (Fineman & Clarke, 1996). These groups have fiscal, financial, and legal coercion tools at their disposal (Fineman & Clarke, 1996). The third group comprises clients and consumers interested in the perks of obtaining more environmentally sustainable products; reputation concerned suppliers; banks and financial institutions that may have a financial or economic interest in adopting eco-centric strategies (Fineman & Clarke, 1996). The fourth stakeholder group are internal individual champions in organisational power roles, who will steer the necessary change to identify the business environmental issues and attain fulfilling changes. These four groups, necessary and with varying degrees of impact on the organisation's strategy, are all humans and, for the current research, we are probing the idea of the natural environment being a stakeholder on its own right.

The above definitions employ terms such as *individuals*, *groups*, and *organisations*, suggesting that stakeholder theory is exclusively homocentric. Stakeholders are perceived as human identities or groups that affect and are affected by the organisation, possess conscious will to claim rights, to vocalise concerns, and to develop a wilful relationship with businesses (Orts & Strudler, 2002).

The natural environment as a stakeholder can be pointed out as lacking the principles of the stakeholder relationships, where the parties involved consciously agree to specific concessions for mutual gains (Phillips, 1997). Furthermore, in the absence of agency or intentional action, the natural environment is represented through NGOs, governmental agencies, and other entities that are companies' legitimate stakeholders (Philips & Reichart, 2000). Another argument against the natural environment as a stakeholder deals with the physical and psychological distance between the organisation and a specific issue: "[a] machine tool manufacturer usually has no more need to consider the saving of species than a London launderette has to deal with nuclear waste." (Sternberg, 2001, p. 44).

On the other end of the discussion, some acknowledge the natural environment deserves the stakeholder status (Driscoll & Starik, 2004; Haigh &

Griffiths, 2009; Laine, 2010; Starik, 1995), for it directly affects and it is affected by businesses activities and is a variable, a component of the systems where companies work and trade. Driscoll and Starik (2004) state that "[t]he proximity of organisations to various natural environments establishes a stakeholder connection between the two, since these entities continually affect one another in the physical world" (p.65). All human interactions occur within the natural environment; and that proximity is a valid argument to acknowledge the natural environment as a stakeholder, referring to a parallel between proximity and the strength of the relationship: the closer/dependent to the natural environment, the stronger the relationship between company and natural environment (Driscoll & Starik, 2004):

> "The most obvious connection between the proposed proximity stakeholder criterion and our assertion that organisations and the natural environment interactions can be considered stakeholder relationships (especially in eco-sustainability perspectives) is the immediate local impacts produced by organisations that pollute or deplete local ecosystems, and the local impacts the natural environment, such as weather patterns, can have on organisations in or nearby affected areas." (Driscoll & Starik, 2004, p. 64)

Hence, according to some authors, the natural environment should be recognised as a stakeholder in its own right, similar to other groups, such as the "local community, the general public, future human generations, and developing countries" (Driscoll & Starik, 2004, p.56). The natural environment plays a vital role in organisations' strategies and should be considered differently from human stakeholders due to its universality and the stakeholder network it embeds, as depicted in Figure 9. Also, all stakeholders are within one or several natural systems with strong internal connections (von Bertalanffy, 1969). Changes in one system will directly affect the other, showing the intrinsic characteristics of systems' elements whose sum or aggregation results in a larger system encompassing both of them (von Bertalanffy, 1969).

Figure 9

The natural environment surrounding the stakeholder network.
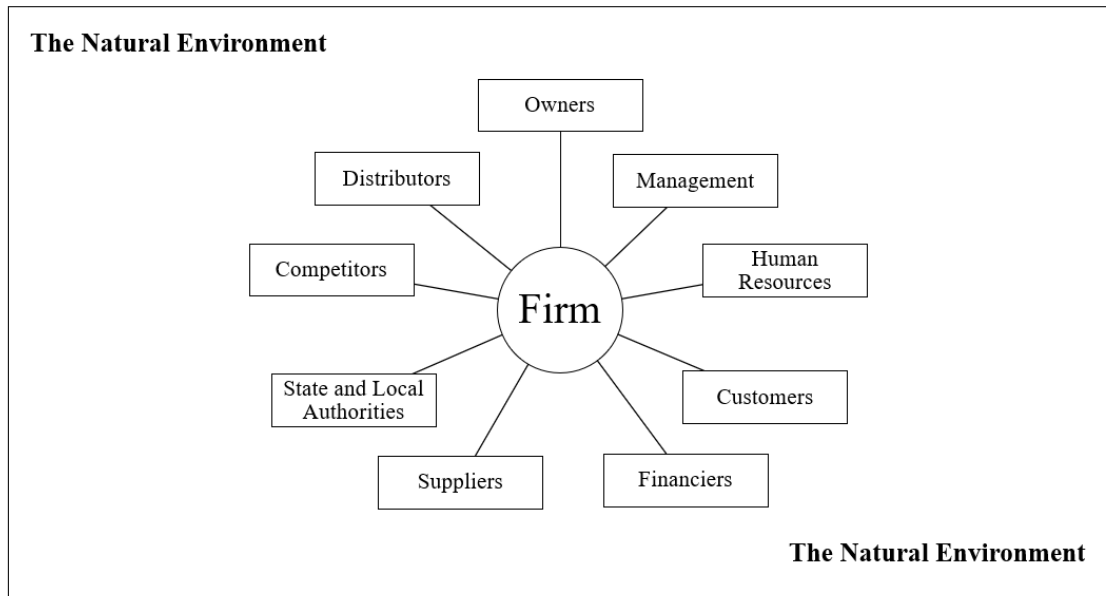
Adapted from *The Nature of Nature as a Stakeholder* (p. 75) by M. Laine, 2010, Journal of Business Ethics

Due to the increase in observed erratic climatological phenomena and natural hazards associated with climate change, Haigh and Griffiths (2009) propose that organisations should recognise and consider the natural environment a primary stakeholder. According to the authors, the natural environment possesses all attributes suggested by Mitchell et al. (1997) – power, urgency, and legitimacy – and Driscoll and Starik's (2004) Proximity.

For organisations to maximise their potential and reduce risks, the integration of the natural environment into their strategies seems to be a natural option since managing stakeholders is a way to reach strategic goals (Ackermann & Eden, 2011). Given this specific characteristic, it is beneficial for the organisation to have healthy and safe natural surroundings. The same applies to organisations that are located near rivers, seashores, or other natural disaster-prone areas. Overall, the natural environment fares relatively low in decision-makers priorities or recognition of importance (Hart & Sharma, 2004).

Before further exploring the impacts of the disaster present in this study, it is necessary to conceptualise the terms disaster and natural disaster, their implications, and how managers and decision-makers cope with such events.

2.4. Natural Disasters – concepts and definitions

Organisations can be deeply affected by their environmental surroundings and possess very limited power to intervene in natural disasters. For long-term sustainable performance, companies must pay heed to all the entities that can affect the company.

2.4.1. Defining disaster

Disasters are a commonly used term to define something *terrible*, an event that wreaked havoc in some part of the world, leading to destruction, material and immaterial losses, and human deaths. To some degree, most of the populations may identify a disaster and its characteristics. Yet, from a management perspective, it is necessary to narrow definitions to properly assess them, upon which we will base our research and findings.

The definition of disaster has evolved through the decades (Quarantelli, 1976, 1988, 1998, 2005) and depends on different approaches, subjects, points of view, and disciplines (Perry, 2018). A disaster is *something* from the *outside*, striking into communities' "beloved normality" (Dombrowsky, 1981, p. 3), taking the shape of natural or human-triggered events that cause significant deaths and destruction. This *something* is a hazard – wildfires, volcano eruptions, floods, storms, wars, epidemics, or technological incidents – and when it meets a human vulnerability – lack of anticipation, poverty, bad infrastructure, poor response, resistance and coping resources (IFRC, n.d.; McEntire, 2015; O'Brien et al., 2006; Stenchion, 2018), a disaster occurs. Only hazards directly impacting communities are considered one of the two core components of a disaster. Hazards can also occur in nature, leaving ecosystems and populations unscathed (McEntire, 2015; Stenchion, 2018). Carter (2008) summarises the characteristics of disaster definitions: "Disruption to normal patterns of life. Such disruption is usually severe and may also be sudden, unexpected, and widespread." (Carter, 2008, p. XIX). Some of these effects befall humans, through death, health hazards, and injuries. Disasters may lead to the corrosion of public infrastructure, communication networks, hospitals,

schools, among others. The effects may also lead to social demands by those who lost their homes and sources of income. Therefore, governments must provide food, medical care, and shelter (Carter, 2008).

Considering these definitions, we equate that a natural disaster is the destructive result of the clash between a hazard and a human vulnerability. In the media, catastrophes and disasters, are sometimes used interchangeably. Yet, they are different, given the scale of their impact. It seems appropriate to distinguish both definitions, keeping in mind that a disaster can have catastrophic proportions and any catastrophe is always disastrous (Quarantelli, 2000, 2005). A catastrophe has dire and disproportionate effects on the overall community and society, e.g., hindering immediate response from authorities or rescuing teams; near or absolute infrastructure destruction; inability to be supported by neighbouring communities; complete interruption of daily communal functions, where the impact is so vast that recovery is either extremely difficult or impossible in the aftermath; it will take a long time and significant resources to rebuild and recover; and the affected communities are unable to request immediate support (Quarantelli, 2005). On the other hand, a disaster's effects, although destructive, allow swift emergency response, faster rebuilding and recovery, and communities remain connected to the outside world. In both cases, the outcomes may be similar, but a catastrophe's proportions and reach are more dire and destructive (Quarantelli, 2005).

Natural disasters are mostly unpredictable, e.g., volcano eruptions, the exact impact and direction of typhoons, or the occurrence of earthquakes. Some locations are more exposed to threats than others, namely communities in the range of a volcano, houses built on riverbanks or mangroves, or settlements in mudslide-prone areas. By addressing their surrounding threats, governments, companies, and other players can activate different, independent sets of activities that may minimise and mitigate the impact of hazardous events (Quarantelli, 1988; Todd & Todd, 2011). These sets of activities are prevention systems, evacuation protocols, urban planning, or hazard-resistant building materials.

Among the rubble and the problems arising from a disaster, it is necessary to allocate the available resources to return to normality. Therefore, any disaster, regardless of its origin, cause or effects, requires a response, i.e., management. At this point, organisations distribute and manage resources to overcome the destruction and losses (IFRC, n.d.; Todd & Todd, 2011), which should aim at being an "effective application of holistic management techniques to hazards and their relationship with vulnerability"

(Stenchion, 2018, p.41). The focus is to minimise losses and destruction. Such management techniques, through sets of actions, tactics, and decisions, enable communities and institutions to overcome a disaster's nefarious outcomes (Quarantelli, 1988) and should be addressed by different stakeholders. The intervention of different groups involved in the disaster management process is a valid and necessary action for faster recovery. Oftentimes, there is a general perception that disaster management is the sole responsibility of emergency response agencies. In reality, proper and effective disaster management is transversal to different groups and institutions, for instance, central and local governments, local institutions, and businesses (Stenchion, 2018).

2.4.2. Disaster Management Cycle – an empirical tool

To address disaster management, techniques and methods have been designed to mitigate the risk and the effects of disasters in communities and institutions. One of such techniques is the Disaster Management Cycle, which shares commonalities and differences. Yet, we understand that such differences are aesthetical. The Disaster Management Cycle suggests a circular approach to disaster management and sets of actions that must be performed sequentially at different stages (Figure 10). It is often divided into three different main stages: 1) Pre-disaster and Risk Assessment; 2) Response; and 3) Recovery (Todd & Todd, 2011). Figures 10 and 11 illustrate different visual examples of the Disaster Management Cycle.

In the first phase – Pre-Disaster and Risk Assessment – organisations employ data and research to evaluate risks and vulnerabilities. This assessment informs disaster response and preparedness efforts, ensuring that resources are effectively allocated and that strategies are tailored to specific needs and risks. This phase is an important foundation for developing resilience and reducing the impact of natural disasters.

The Response Phase is the set of immediate actions portrayed by those affected by the disaster; the assessment of destruction, losses; and planning (e.g., survey affected groups and clean-up activities) (Todd & Todd, 2011). This phase implies quick actions to reduce damages and losses highly: searching for survivors; extinguishing fires; dyke reinforcement; survivor headcount; cleaning roads for emergency personnel; evacuating civilians; or requesting armed forces support (Todd & Todd, 2011).

Figure 10

Disaster management cycle
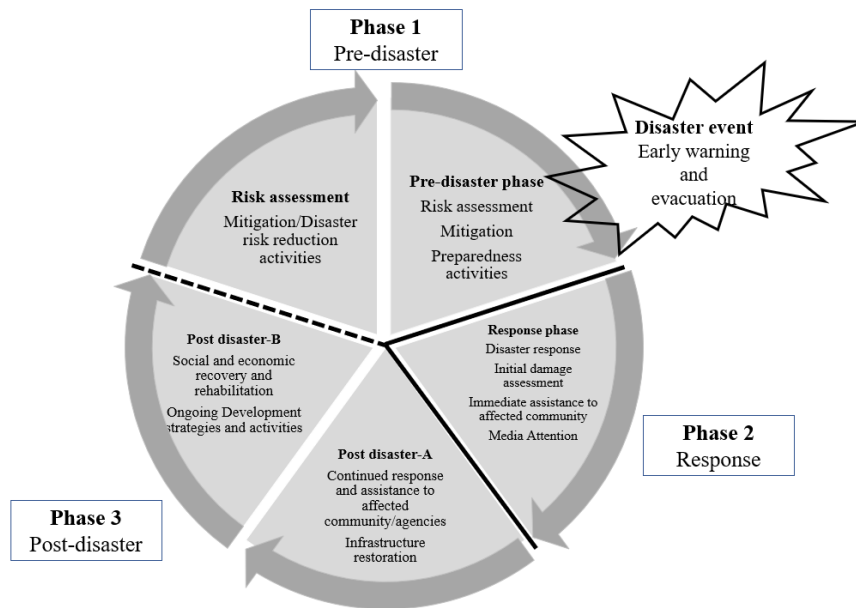
Adapted from N*atural disaster response - Lessons from Evaluations of the World Bank and Others* (p. 3), by D. Todd and H. Todd, 2011, World Bank, based on work by I. Davis, Cranfield University, Bradford

Figure 11

Basic format of the Disaster Management Cycle
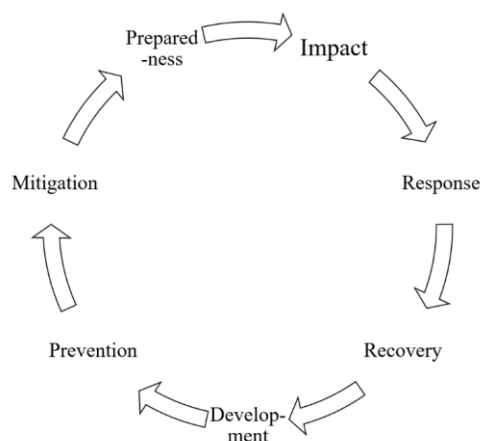
Adapted From *Disaster Management A Disaster Manager's Handbook* (p. 50), by W. N. Carter, 2008, Asian Development Bank

The purpose of the Response Phase is active in nature (as opposed to a passive stance), e.g., putting down fires or diverting flood waters; a survival purpose: evacuating survivors from army occupation or providing civilians with transportation to escape an active volcano (Todd & Todd, 2011). During this phase, entities need to inform central governments and other agencies about the disaster's characteristics and impact (Todd & Todd, 2011).

The Recovery Phase, due to the interconnection and the circularity of disaster management, is highly intertwined with the preparedness or pre-disaster phase. Built upon the Response Phase, and after intervening authorities declare over the disaster, this phase places its efforts on all activities related to rebuilding, refurnishing, and all the events and decisions to return to normality. At this point, actions, such as rebuilding infrastructure, purchasing new equipment, or defining deadlines to return to normality take place (Todd & Todd, 2011). During the recovery period, it is common for companies to rely on stakeholders and communities (Sliwinski, 2010), namely through the help of workers who actively support on the rebuilding process, creditors and investors who inject capital with the sole purpose of a quicker recovery, the State providing social funds for material purchase, or competitors who borrow old or spare equipment (Todd & Todd, 2011). One of the responses from companies in the aftermath of natural disasters is through corporate philanthropy, which "can be defined as donations of cash, cash-like resources, and in-kind materials to others" (McKnight & Linnenluecke, 2016, p. 294). With the support of all involved, namely strong governmental institutions, recovery periods tend to be shorter, and the rebuilding process more efficient (O'Brien et al., 2006). Upon construction or even during the rebuilding planning, affected entities often run internal analyses to mitigate future events, starting the Pre-disaster or preparation stage. Careful preparation for eventual future disasters will help those affected to better resist and recover from the event (Carter, 2008; Todd & Todd, 2011) and the knowledge obtained from the disaster, planning will allow the design of efficient and effective strategies that will reduce and mitigate the impact of future similar events (O'Brien et al., 2006).

This approach to disaster management envelops decision-makers, authorities, and other stakeholders to prepare, prevent, and mitigate natural disasters, as well as to react in an organised, framed fashion. By employing these methods, it is expected that organisations overcome the devastating effects natural disasters have on human lives, societies, and organisations.

We also present the Alternative Disaster Management Cycle (Figure 12), which shows minor variations, detailing different steps individually. Starting from the top clockwise, the disaster management cycle begins with the impact of the natural disaster, followed by the emergency phase (quick response to the most urgent problems – Response Phase, as per Todd and Todd (2011)). Restoration and Reconstruction follow, where decision-makers allocate resources to return to a certain level of pre-disaster normality. The next step, National Development, refers to central governments' decisions to support those affected. The Prevention stage points to communication about the possibility and the risks of the effects of natural disasters, which Mitigation follows. Mitigation is the set of activities organisations implement to mitigate the effects of further natural disasters. Preparedness, Warning, and Threat are three activities when there is a real possibility for an oncoming natural disaster. Prepared organisations and individuals can access shelters or alternative escape routes if needed. The Warning period is when national disaster management organisations release safety warnings to the population, in order to prepare for an incoming hazard. The Threat section happens when the hazard is incoming, and populations and organisations observe and expect the potential risks of the incoming disaster.

Figure 12

Alternative Format of the Disaster Management Cycle
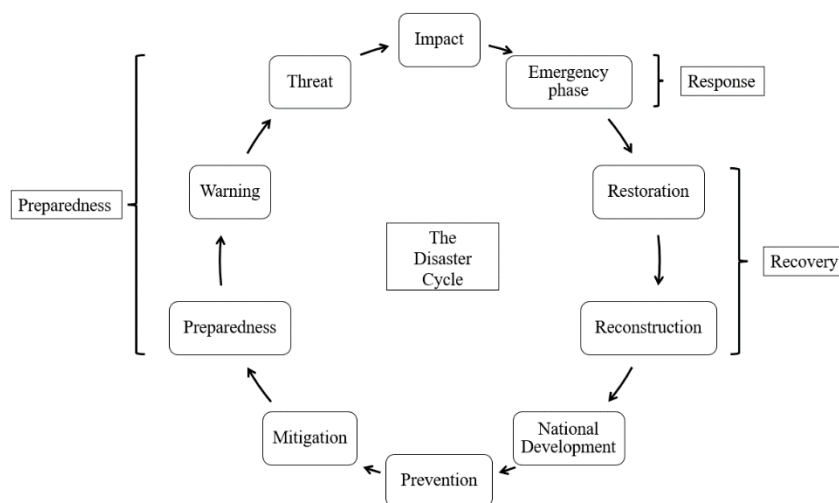
Adapted from *Disaster Management A Disaster Manager's Handbook* (p. 50), by W. N. Carter, 2008, Asian Development Bank

For a clear research direction, we draw our analysis and guide the research through Todd and Todd (2011) Disaster Management Cycle, as per Figure 10. While the other Disaster Management Cycle approaches are valid, Todd and Todd's (2011) cycle is more overarching. Many disasters (natural or human-made) are untraceable or undetectable (e.g., earthquakes), placing disaster management stages in a different order or deeming them unusable (e.g., earthquakes' effects can be mitigated but impossible to prevent or forecast. When the earthquake strikes, governmental organisations lack the time to issue warnings and populations are struck all at once).

2.5. Hypotheses

We now introduce our research hypotheses. These serve as the fundamental framework for our investigation into the dynamics of stakeholders, disaster management, and the natural environment as a stakeholder. As we engage with relevant theories and frameworks, we systematically evaluate these hypotheses, aiming to uncover the complex relationships between decision-makers' perspectives on the natural environment as a stakeholder in a post-natural disaster context.

Research Gap: The impact of a natural disaster on organisations' perception of the natural environment as a stakeholder, to the best of our knowledge, remains unexplored. This hypothesis aims to examine whether disaster-affected companies have a different perspective on the natural environment's stakeholder status compared to unaffected ones. We aim to contribute to the discussion of whether the natural environment should be a stakeholder (e.g., Orts & Strudler, 2002; Starik, 1995).

Hypothesis 1 – *The perception of the natural environment as a stakeholder is significantly different between companies affected and unaffected by a natural disaster.*

Research Gap: The relationship between the perception of the natural environment as a stakeholder and pro-sustainability attitudes warrants investigation. This hypothesis aims to explore whether disaster-affected companies with a stronger perception of the environment as a stakeholder demonstrate more pro-sustainability attitudes and practices. We guide this hypothesis according to the different types of

stakeholders proposed by Mitchell et al. (1997), that lead to different actions by organisations.

Hypothesis 2 – *The perception of the natural environment as a stakeholder positively influences pro-sustainability attitudes, especially in natural disaster-affected companies.*

Research Gap: The factors influencing organisations' perception of the natural environment as a stakeholder require further investigation. This hypothesis aims to explore whether perceptions of the environment's power, legitimacy, and urgency proximity play a role in shaping its stakeholder status. As the previous hypothesis, we base this one on Mitchel et al.'s (1997) stakeholder typology and attributes, including the proximity attribute suggested by Driscoll and Starik (2004). We aim to understand whether these attributes are viable for the natural environment' typification.

Hypothesis 3 – *The perception of the natural environment as a stakeholder depends on power; legitimacy; urgency; and proximity attributes*.

Research Gap: The influence of a natural disaster on companies' perception of the natural environment as a definitive stakeholder requires investigation. This hypothesis aims to explore whether disaster-affected companies are more likely to view the environment as a definitive stakeholder in their decision-making processes. We follow the argument posited by Haighs and Griffiths (2009), who suggest that the natural environment should be considered a primary stakeholder in the context of climate change.

Hypothesis 4 – *Companies affected by a natural disaster perceive the natural environment as a definitive stakeholder.*

For a matter of clarity, we understand that "primary" and "definitive" are terms that can be used interchangeably. Both terms refer to types of stakeholders that are crucial to the organisation's functioning, and central to the stakeholder management strategy.

The research at hand focuses on the impact of a natural disaster provoked by an erratic climatological event. It seems relevant to explore a connection between the hypotheses and empirical evidence, through the perceptions of affected organisations' decision-makers.

2.6. Summary

This chapter explored stakeholder theory, its implications, and the arguments for and against the natural environment as a stakeholder. We also introduced the concepts of the natural environment and explored the framework used in the context of natural disaster management. We laid out our arguments and chose the theoretical direction of the remainder of this thesis.

By exploring the multi-dimensional aspects of stakeholder theory, we have gained a deeper understanding of the importance of recognising the natural environment as a stakeholder in organisational decision-making processes. This chapter contributes to understanding the complexity, strengths, and weaknesses of the theory; the discussion and our stance concerning the natural environment as a stakeholder; and the definitions and approaches to disaster management.

In the following chapter, we will discuss the methodology employed in this thesis that allows us to reach valuable findings.

Chapter III – Methodology

3.1. Introduction to the methodology

Building upon the theoretical foundation established in the preceding chapters, the methodology chapter delves into the practical implementation of the research objectives. With a firm grasp of stakeholder theory, the natural environment as a stakeholder, and disaster management, this chapter takes a methodological leap to unveil the research design, data collection techniques, and analytical frameworks employed.

This chapter presents the framework and procedures employed to collect and analyse the data necessary to address the research questions and objectives. We outline the research design, data collection methods, and data analysis techniques to ensure the research's validity and rigour.

For a matter of clarity, we classify as *interviewees* the participants who answered to our qualitative interviews, and *respondents* the participants who answered to our qualitative questions quantitative surveys.

3.2. World view and choices of methods

We present an exploration of the world view that underpins the conceptual framework and theoretical lens adopted in this thesis. It delves into the philosophical and theoretical foundations that shape our understanding of reality, knowledge, and the nature of inquiry. Examining the world view serves as a critical framework for comprehending the ontological and epistemological orientations that influenced the research design, methodology, and interpretation of findings. It intends to provide a transparent foundation for the thesis objectives, research questions, and analytical framework.

The world and all the elements that compose it are more than the sum of their parts (von Bertalanffy, 1969). Human interactions are more than binary systems and dual action-reaction events. Instead, human interactions build complex phenomena observed and studied through different perspectives. In business research, where many investigations concern human perceptions, choices, and world views, these human relations are put to observation and test. The approaches used are sometimes tightly strapped to specific modus operandi, to tacit rules, within specific

borders. Everything outside these borders is sometimes considered opposites, resulting in unproductive "paradigm wars"(Kelle, 2006, p. 293).

In this research, we embrace traditionally opposing views, interpreting them as complementary. It is our understanding that combined, they provide a broader, richer, and more complex analysis of a problem. Thus, solutions emerging from such approaches are more holistic. Concerning the ontological perspective – the way researchers view the world of business and management and what is considered true (Saunders et al., 2019) – some authors oppose objectivism against constructionism (Bryman, 2012) or objectivism against subjectivism (Saunders et al., 2019). Both stances on objectivism are identical, where entities and social reality are independent of social actors (Bryman, 2012; Saunders et al., 2019). The opposing view, constructionism, or subjectivism, states that the world is socially constructed, where multiple realities depend on social actors (Bryman, 2012; Bryman & Bell, 2007; Saunders et al., 2019). In this thesis, we assume that both can be included in the same research work, because there are aspects of reality and what we perceive as true, that fall under both ontological stances. In different contexts or events, one view replaces the other. While some human behaviours are socially constructed (perceptions and attitudes, for instance), others are independent from human interpretation or socially engrained experiences (e.g., a natural disaster). Having said that, we understand that both constructivist and objectivism can share the same importance in academic research.

Concerning research approaches, Saunders et al. (2019) refers the most common two: deductive and inductive. While deductive approaches allow the researcher to deduce hypotheses after taking what is known about a given domain (Bryman & Bell, 2007), an inductive approach implies that "the researcher infers the implications of his or her findings for the theory that prompted the whole exercise" (Bryman & Bell, 2007, p. 11). We understand that neither approach delivers the intended results if employed individually. For this thesis, we collected data on a specific event, identified what and explained patterns, and contributed to updating the current theory. Nevertheless, we tested our findings through a new set of collected data to enrich our research. This is the abductive method (Saunders et al., 2019) chosen upon facing new data. We support the abductive method as the most appropriate because it brings together inductive and deductive approaches in a dynamic fashion (Suddaby, 2006).

We recognise and understand the existence of different points of view for the same problems and acknowledge researchers' different interpretations of the world. Often, these points of view are complementary, for they represent different realities (Saunders et al., 2019). We pivot on this stance and build on a world view that reconciliates different approaches to knowledge, sometimes perceived as opposite approaches. We believe that complementarity provides valuable conclusions and meaning. This stance is based on different research methods – both qualitative and quantitative –, the mixed methods (Saunders et al., 2019).

In the "research battlefield" (Kelemen & Rumens, 2012, p. 7), fuelled by strict approaches to knowledge and world views, a *third army* emerged: the mixed approach. This *army* provides researchers with various options to adopt and integrate both qualitative and quantitative data.

To tighten the gap between qualitative and quantitative methodologies, we adopted a mixed methods approach, from a set of research choices as proposed by Saunders et al., (2019), as described on Figure 13. Stemming from a pragmatic world view (Creswell, 2014; Ragab & Arisha, 2017), mixed methods methodologies provide a unique, more detailed perception of research problems, enhancing qualitative and quantitative strengths while minimising their weaknesses (Bryman, 2006; Creswell, 2014). One of its qualities lies on the strengths of qualitative and quantitative data, methods, and tools applied to one research project (Bryman, 2006, 2012; Bryman & Bell, 2007; Creswell, 2014; Miles et al., 2014). Due to their shortcomings and gaps, mixed methods provide a more complete view of the observed problems than is possible through a single approach alone (Bryman, 2012).

Since it is a more complex methodology, it can be adopted at any stage of the research (Figure 14), and may provide more robust findings (Bryman, 2006, 2012). Quantitative and qualitative methods do, indeed, have different purposes. Their outputs sometimes overlap and share commonalities, complementing each other, and allowing researchers to chain the results of one method to the next (Bryman, 2012; Ragab & Arisha, 2017). While some may suggest that qualitative and quantitative methods are leagues apart, "[m]ixed-methods can be highly appropriate, within one study" (Saunders et al., 2019, p.109).

Figure 13
Research choices
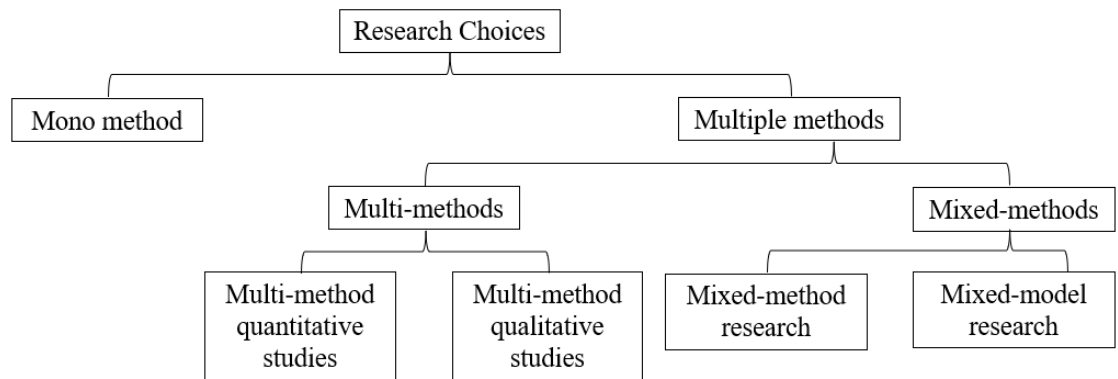
Adapted from *Research methods for business students* (5th ed., p. 152), by M. Saunders, P. Lewis, A. Thornhill, 2009, Prentice Hall.

Several approaches to the sequence are employed in mixed-methods research (Figure 14). In this research, both methodologies possess equal weight and were developed sequentially, the qualitative approach first, followed by the quantitative approach. We employed interviews at an exploratory level collect early information and data, followed by surveys to collect explanatory data (M. B. Miles et al., 2014). With this approach, it was possible to include a larger sample and test hypotheses to questions raised during the qualitative part of this thesis. From a qualitative stance, we progressed by employing quantitative data and approach, reaching conclusions that enable us to expand our inference and provide us with a broader view of the research topics, which quantitative or qualitative data alone would miss to provide (Creswell, 2014).

The sequence employed in this thesis was "exploratory sequential mixed-methods" (Creswell, 2014), where the analysis of qualitative data (understanding the respondents' views on the problem) was used to build the quantitative phase: the creation of quantitative instruments and specify the variables used in the surveys.

Even though our approach is mixed, and we resorted to quantitative and qualitative data collection techniques and analysis procedures sequentially, the data remains separate. As suggested by Saunders et al. (2019, pp. 152 - 153), "although mixed method research uses both quantitative and qualitative world views at the

research methods stage, quantitative data are analysed quantitatively and qualitative data are analysed qualitatively".

Figure 14

Classifying mixed methods research in terms of priority and sequence
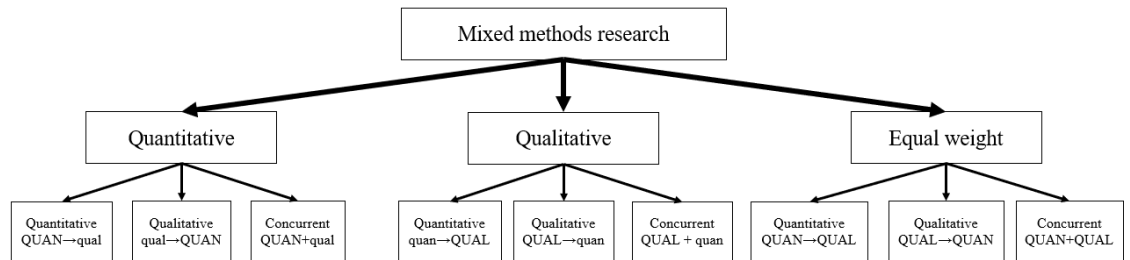
Adapted from *Social Research Methods* (4th ed., p. 632) by A. Bryman, 2012, Oxford University Press.

Note: Capitals and lower case indicate priority; arrows indicate sequence; + indicates concurrent.

Mixed-methods compensate for the strengths of one method and the limitations of the other (Miles et al., 2014). In this research, we employ quantitative data to test and explore the first findings. We triangulated our data and findings, by using different data sets or data collection methods to cross-check against earlier results and thus corroborate (or contradict) earlier data (Bryman, 2006, 2012; Creswell, 2014; Ragab & Arisha, 2017; Saunders et al., 2019). It provides credibility, allowing confirmation that conclusions from the qualitative section can be tested with quantitative tools and research (Bryman, 2012). It also allow researchers to expand our study's range, which would be more difficult if resorting to only one method (Bryman, 2006). Finally, mixed methods research "seeks elaboration, enhancement, illustration, clarification of the results from one method with the results from another" (Bryman, 2006, p.105).

Although mixed-methods research has been increasingly used by different authors, it is becoming more common and accepted in scientific research (Bryman, 2006, 2012). There are criticisms of mixed-methods approaches, stating that quantitative and qualitative approaches are mutually exclusive (Bryman, 2012). Notwithstanding, other authors suggest the opposite is true: qualitative and

quantitative methods are complementary (Ragab & Arisha, 2017). We conclude, as Saunders et al., (2019, p. 133) suggest, "qualitative and quantitative methods are compatible, and that good research design often involves mixed methods".

Overall, exploring both world views provides a solid foundation for the present thesis, which employs a mixed methodology and an abductive approach. By integrating different research methods and embracing an abductive reasoning process, this research aims to capture the complexity and richness of the phenomena under investigation. The selected world view aligns with the ontological and epistemological orientations necessary to navigate the intricacies of the research questions and generate meaningful insights. This sub-chapter's examination of the world view has situated the study within a broader intellectual context and justified the chosen research design and approach. Through the lens of this world view, the subsequent chapters and subchapters will unfold, contributing to a comprehensive understanding of the research subject and advancing knowledge in the field.

3.3. Qualitative Methodology

The trigger for this research was to understand the impact of natural disasters on organisations' relationships with their stakeholders. Built on Freeman's (1984) seminal work on stakeholder theory, Mitchell et al.'s (1997) stakeholder typology, and other relevant studies (Donaldson & Preston, 1995; Freeman, 1999; Freeman et al., 2010), we address this topic having in mind that different entities influence and are influenced by organisations' activities. We approached one of the main research questions based on post-disaster management guidelines (Quarantelli, 1976, 1988; Todd & Todd, 2011). By answering this research question, we aim to understand how some organisations acted towards influence groups in a pivotal moment. This event influenced organisations and communities which sustained considerable damages: infrastructure, equipment, raw materials, or, in extreme cases, workers and relatives.

To understand points of view and investigate beyond statistical data we required an approach that permits the analysis of perceptions, nuances, and motivations (Bryman, 2012; Miles et al., 2014). We adopted a qualitative approach, employing three main techniques: a) exploratory sessions, b) direct observation, and c) semi-structured in-depth interviews.

Firstly, we held four exploratory sessions with local government representatives and an industrial association. The purpose of these sessions was to obtain an initial, but deeper understanding of the region's business landscape, the overall impact of the disaster, the best communication channels, the personal characteristics of decision-makers. This information allowed us to understand some of the most practical and direct channels to reach out to decision makers and, in general terms, what to expect upon reaching out to them. These sessions also provided personal views and conclusions from knowledgeable actors who work with decision makers for a long time: they referred to different financial support programmes, provided examples on how different organisations were affected or how organisations supported different stakeholders during the recovery and mitigation processes. The unstructured information was insightful, for it was partially used in the design of interview protocols. Our interviewees provided us with two public access databases: one listing local companies and the other, companies directly affected by the fires that applied to an exceptional funding State programme, retrieved from the Regional Coordination and Development Committee for Central Portugal (CCDR-C)[1]. The other, a Microsoft Excel® file, gathered organisations located across twelve municipalities and four Portuguese districts. Both databases served as a guiding compass for the sampling used in the qualitative part of the research. We took loose notes during these conversations, writing the highlights of the meetings.

Observations of the burnt regions allowed an understanding of the destruction and direct analysis of reconstruction, reforestation, and other actions that may have been developed to mitigate the impact of the disaster. Observations were enriching for the research since they provided insight unobtained through interviews or surveys (Gioia et al., 2013; Lofland & Lofland, 1995). Such observations took place between October 2017 and September 2021. Details on these observations are found in Appendix C.

With this information, we decided that semi-structured interviews with open-ended questions are appropriate tools to answer some of our research questions. Such interviews reveal personal perceptions, while allowing to document decision-makers' narrative (Bauer et al., 2000; Creswell, 2014). They also allow interviewees to speak freely and unhinged, allowing the development of unknown information instead of building upon other existing concepts (Gioia et al., 2013).

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[1] https://www.ccdrc.pt/wp-content/uploads/2022/10/Ponto-de-situacao-Repor-2022-Publicitacao_V.UO12-111.pdf

To elaborate an interview protocol and address the research questions, we employed our notes from the exploratory sessions and designed eleven open-ended questions. With these, we explored a) the history of the companies concerning CSR activities (before and after the disaster); b) how the companies were affected by the 2017 forest fires; c) risk reduction of future similar issues; d) the role of the natural environment for the companies; e) the possibility of the natural environment as a stakeholder. The interview script can be found in Appendix A.

Before the interviewing process, we ran a pilot interview with a local business owner. The pilot interview allowed us to observe the script's weak points, which betterments were deemed necessary, and how comfortable the respondent was with the asked questions. To this interview, we named it "Interview 0". After the interview, we asked for feedback, and received some suggestions regarding the questions' structure, the interview length, choice of words, and other ideas that were noted and helped us refine the interview protocol.

We then proceeded to design an interview protocol, which was evaluated and approved by the Ethics Commission at Iscte, our home university (Appendix H). The interview protocol aimed at shedding light on the research questions. The interview protocol intended to provide information on organisations' profiles, their stakeholders and inherent relationships, their reaction to the disaster, and their perception of the natural environment as a stakeholder.

3.3.1. Qualitative Sampling

Of the approximately 1.3 million companies operating in Portugal, only about 1 436 are considered large (*Empresas (N.º) Por Dimensão e Forma Jurídica*, 2023), representing 0.1% of the Portuguese business structure. The databases provided in our exploratory sessions reflect this reality: 360 locally based companies, 296 (82.2%) have less than nine employees. Many of which are one-person companies, as corroborated by interviewees during the exploratory sessions. For research purposes, we considered only organisations with ten or more employees, which corresponded to 64 organisations (17%) from the databases. We understand that such organisations have a broader reach and impact on local communities. They also have access to more financial and human resources than micro-businesses, allowing more in-depth and valuable strategy-related answers.

Industry-wise, the sample is diverse, as it comprises different industries, such as automotive, pharmaceuticals, recycling, plastics, moulds, wood, livestock, wine producers, and a local baker. This sample represents the regional business diversity, leading to sampling validity (Krippendorff, 1980). It is a non-random sample (Creswell, 2014), for it was based on the provided databases and contacted based on the above-mentioned criteria.

To the previously identified and sampled 64 organisations, we employed a three-step method. Firstly, we cold-called, requesting participation and introducing the research topic and objectives. If possible, we would book a meeting and follow up. Whenever more information was requested, we would send a comprehensive email requesting a time and date for a meeting. If the organisation failed to provide us with an answer, we would follow-up with more phone calls until a meeting confirmation or denial.

From telephone and email contacts, we obtained the following results: 41% agreed to be interviewed (28); 34% were unresponsive to follow-up calls and emails (21); and 25% declined to answer (16 organisations). All sampled organisations are in twelve municipalities across four Portuguese districts: Aveiro, Coimbra, Guarda, and Viseu.

Upon receiving a positive response, we invited the decision-maker for a meeting to suggest different platforms. Due to the Covid-19 pandemic's lockdowns and restrictions (refer to Table 3), we employed various interviewing channels. While the first batch of interviews were held face-to-face, later interviews were held via telephone or video conference (using Zoom®, Skype®, or Google Meet® software). We believe the results were unaffected, and the quality was ensured in both communication processes. We failed to observe significant discrepancies in the duration of the interviews, answers' length and quality.

Answers were recorded with the interviewees' due permission and then stored in a physical hard-drive, which only the authors can access. Each audio file and correspondent transcription was listed anonymously, to prevent participants' identification.

The round of interviews came to a close when new interviews failed to provide significant, diverse and new information and reached theoretical saturation (Miles et al., 2014; Saunders et al., 2018). Also, valuable qualitative information is independent of the number of interviews (Mason, 2010). With the recordings in hand, we manually transcribed the interviews, from which we could read, understand, and categorize the texts (Miles et al., 2014).

Selecting decision-makers and managers to answer and participate in the interviews stems from the need to understand those who make decisions and their motivations. Also, given their importance and prominence in organisations, decision-makers acquire the "hidden stakeholders" status (Wood & Jones, 1995, p. 258). This stakeholder group affects and is affected by organisations' activities beyond economic or financial interests, namely social impact (Wood & Jones, 1995).

Table 3
Interviews to decision-makers – short summary

#	Industry	No. Of employees	Role	Platform	Length (hh:mm:ss)	Transcribed pages
0	Foodstuffs	82	Managing director	Online	00:37:33	-
1	Forest management	12	CEO	In-person	01:06:06	6
2	Clothes Recycling	97	Sales Director	Telephone	00:20:30	5
3	Industrial machinery	--	CEO	Telephone	00:54:49	9
4	Pharmaceuticals	740	Human Resources Director	Online	00:34:12	8
5	Poultry production	120	CEO	Online	00:24:19	3
6	Automotive Component	480	Managing Director	Online	00:23:58	4
7	Automotive Components	135	Board Member	Online	00:19:28	4
8	Household appliances	320	Technical Manager	Online	00:47:29	7
9	Metallic industrial wares	38	Board Member	Online	00:18:10	3
10	Wine	22	Managing Director	In-person	00:20:15 (excluding field visit)	5
11	Recycling	76	Board Member	In-person	00:28:32	6
12	Glassware	66	CEO	In-person	00:37:14	7
13	Bakery	32	CEO	In-person	00:58:57	4
14	Poultry	63	Technical Manager	Online	00:21:18	4
15	Clothes Recycling	92	CEO	Online	00:20:18	3
16	Wood raw materials	11	CEO	In-person	00:51:34	7
17	Processed fish	156	Human Resources Director	Online	00:41:37	8
18	Plastics	56	CEO	Online	00:21:17	4

19	Foodstuffs	34	Managing partner	Online	00:35:27	8
20	Wood	22	CEO	Telephone	00:32:19	7
21	Animal feed	34	CEO	Telephone	00:21:53	3
22	Construction	86	CEO	Online	00:23:17	4
23	Plastics	35	Vice-Director	Online	00:30:41	7
24	Metal wares	38	Commercial Director	In-person	00:40:47	8
25	Building materials	42	Financial Director	Online	00:25:37	4
26	Construction	112	Technical Manager	Online	00:58:38	8
27	Wood appliances	62	CEO	Telephone	Forbidden recording	2

3.3.2. The interview protocol

The interview consisted of ten open-ended questions and four sub-questions. They followed a semi-structured sequence, depending on the interviewees' answers. If necessary, the order of questions was changed to create a more organic and comfortable setting for the respondent.

The questions sequence started from stakeholder identification (one item) to a description of their CSR activities (one item). It was followed by the organisation's role and its relationship with the surrounding natural environment (three items). Next, one item referred to whether the natural environment should be considered a stakeholder (one item). The following five items delved into how the organisation was affected by the disaster and their response. The final three items were related to the perceived responsibility of businesses towards the natural environment.

The interviews were held in Portuguese, leading to a problem translating the term "stakeholder". The Portuguese vocabulary lacks a direct translation of the word (commonly translated to "partes interessadas"). We employed the English term as much as possible. Nevertheless, it was sometimes necessary to provide a general definition without referring to any groups perceived as stakeholders to minimise any response bias. In a few cases, the respondent was unable to grasp the concept. We then provided examples, such as "clients", "providers", and "workers". After the brief explanation, interviewees identified their stakeholders, generally providing more examples than the previously cited.

3.3.3. The interviews

To engage in dialogue, the interviews started with a broad question concerning stakeholder identification to provide insights on the organisation's history and inform about the organisation's relationship with different stakeholders. When we felt that there was enough room to start the dialogue about the disaster and the organisation's activity towards the natural environment, we would follow the script. Most interviews took less than one hour (Table 3). When we had obtained all required information, we would inform the interviewee, stop the interview and the recording. We would thank our interviewees and provide them with contact information should they want to follow-up or add more information. None of the interviewees contacted

us afterwards. Some requested to be informed about our findings and conclusions when we finish our research.

3.3.4. The Procedure and data analysis

To analyse the unstructured, raw data, we employed the Content Analysis method. This allowed us to extract meaning without manipulating the data, to understand it and transform it into valuable information (Krippendorff, 1980, 2004). To support the analysis and the creation of codes, we used MAXQDA® version 20.3. Thus, we could structure the texts to elaborate a "thinking protocol during coding" (Bauer et al., 2000, p. 147). This protocol allowed us to create categories, which are further discussed in the Findings chapter.

We used semantic procedures to extract meaningful conclusions and information, "what is said in the text". We used words and sentences to create themes and codes (Bauer et al., 2000) as follows: "stakeholder identification"; "issues"; "support"; "stakeholders that saved the company"; "out of reach actions"; "long term changes"; "immediate actions". All categories were identified a posteriori (e.g., inductive approach) while analysing the data when the provided information belongs to the universe of possible inferences (Krippendorff, 1980). New codes were created when new data, unrelated to the existing codes, was obtained.

After selecting and grouping codes, the chosen text samples allowed the interpretation of the data to create understandable and valuable information. From this analysis, we could understand and list our findings.

The integration of qualitative data collection methods proved instrumental in unravelling the intricacies of stakeholder theory, the natural environment as a stakeholder, and disaster management. We gained nuanced insights into stakeholders' beliefs, values, and decision-making processes through in-depth interviews with decision-makers and meticulous analysis of the gathered textual data. This approach facilitated a comprehensive understanding of the interplay between theory and practice, enriching our exploration of these complex domains.

3.4. Quantitative Methodology

Applying quantitative methods in this research provides a complementary perspective to the earlier qualitative exploration. By employing statistical analysis techniques and utilizing quantitative data sources, we aim to uncover broader patterns, trends, and correlations within the realm of stakeholder theory, the natural environment, and disaster management. This quantitative approach enhances the depth and robustness of our findings, offering a comprehensive understanding of the research phenomena.

Quantitative methods are widely employed in research to analyse and interpret data systematically (Bryman, 2006; Bryman & Bell, 2007; Ragab & Arisha, 2017). These methods involve the collection and analysis of data through surveys. Quantitative research seeks to quantify relationships, patterns, and trends, enabling researchers to make objective and statistically significant conclusions. Employing statistical tools, such as hypothesis testing, regression analysis, and descriptive statistics, quantitative methods provide a structured and rigorous approach to data analysis (Creswell, 2014; Saunders et al., 2019). These methods allow us to draw reliable inferences, generalise findings to a larger population, and explore complex relationships between variables. This method enables us to reach a broader sample and understand if our findings can be generalisable. Using quantitative methods in research offers valuable insights, contributing to evidence-based decision-making, advancing knowledge in various fields, and possibly testing our research hypotheses (Creswell, 2014; Saunders et al., 2019).

Quantitative research also has shortcomings, such as dividing the natural world from the measured results; measurements are done in an artificial context, which can lead to a false sense of accuracy and precision (Bryman, 2012; Bryman & Bell, 2007). Research methods may widen the gap between real life and research; analysing different variables may result in a static view of the real world that is non-representative of daily interactions (Bryman, 2012).

3.4.1. Scale development

Given the significance of the natural environment as a stakeholder, it is imperative to develop a new quantitative scale to capture decision-makers' perceptions of its importance. Existing scales may inadequately capture the nuanced dimensions of the natural environment's stakeholder status. To the best of our

knowledge, there is a literature gap concerning a scale assessing stakeholder typology following Mitchell et al.'s (1997) approach. By creating a new scale, we can effectively measure decision-makers' attitudes, beliefs, and considerations towards the natural environment, providing a more comprehensive understanding of its role in organisational decision-making processes. This scale will serve as a valuable tool for future research and decision-making practices aimed at promoting sustainable and environmentally responsible outcomes.

The SEaS – *Scale for the Environment as Stakeholder* – is essential for our research, as it provides a structured and standardised approach to measuring and quantifying the construct of the natural environment as a stakeholder and variables of interest. Scales have been developed in other contexts to measure and quantify other constructs (e.g., Sousa & Lages, 2009; Stone et al., 1995; Turker, 2009; Vicente et al., 2015). SEaS enables us to collect reliable and comparable data. This instrument also facilitates the aggregation of individual responses, allowing for statistical analysis and identifying trends and patterns at the group or organisational level (John & Benet-Martínez, 2000; Yau et al., 2007). Our scale will aid in establishing benchmarks, tracking changes over time, and comparing results across different studies. We want it to contribute to the cumulative research and the advancement of knowledge in the field of stakeholder theory, disaster management, and the natural environment as a stakeholder.

One of its main purposes is to measure the perception of the natural environment as a stakeholder, based on the three stakeholder attributes proposed by Mitchell et al. (1997): power, legitimacy, and urgency (Mitchell et al., 1997). We tested the SEaS scale empirically, with the final objective of expanding the stakeholder theory to the borders of less orthodox theoretical perspectives (Table 4).

3.4.2. Scale structural validation

3.4.2.1. Sub-study 1 – Experts' inputs

To validate the concepts, we employed peer-reviewed face validity that "might be established by asking other people whether the measure seems to be getting at the concept that is the focus of attention" (Bryman, 2012, p.171). For this purpose, we identified 63 international specialists from our references list. We selected authors

that had published relevant articles on the topics of stakeholder theory, the natural environment as a stakeholder, quantitative methods, and scale design. We individually analysed their research output and the number of peer-reviewed publications in relevant academic journals. We also prioritised the number of citations using the Google Scholar® tool.

Table 4

Scale Development Process Overview

	Scale Development Process	Sample type
I.	Construct conceptualisation Literary Review Item Generation	Academic
II.	Scale Purification Researchers' Face Validity Pilot questionnaire	Convenience
III.	Scale Assessment Survey Exploratory Factor Analysis Confirmatory Factor Analysis	Convenience and Designated Sample

Source: Adapted from (Lučić, 2020).

We contacted the researchers over emails found in published articles or their respective university/research institution websites. This process took several steps. Firstly, we sent an initial email introducing the research topics and requesting support. We would follow up with another message with the attached item list for analysis if they had agreed to help us. After receiving feedback, corrected/adapted our items per their suggestions.

We received ten responses declining participation, while others stopped replying to our emails. In one specific case, we received a reply after the scale had been tested, which was discarded.

We received proper feedback from six researchers (Joseph Bradley, Lisa Stinger, Mark Starik, Martina Linnenluecke, Samantha Miles, and Sandra Waddock).

Their feedback allowed us to rephrase, eliminate, and add new items. Peers raised questions about the validity or sequence of the survey, which was duly provided. The overall feedback was positive, and the researchers supported the importance and validity of the research and our approach. The comments and questions permitted a refinement of the tool, making it more robust and helping us to better answer the research questions and to test our hypotheses. All feedback was noted, and we individually thanked each researcher.

We drafted an original 17-item scale (Table 5) to measure power, urgency, and legitimacy, with six, five, and six questions, respectively. While fifteen were original items, two items (P6 and U4) were partially based on previous research (Adongo & Kim, 2018) concerning music festivals' stakeholder attributes. These items were adapted to the present research but maintained the overall structure of the sentence. All items aimed at covering the three attributes posited by Mitchell et al.'s (1977) stakeholder typology. All responses were based on a Likert scale with seven options that ranged from 1 – *totally disagree* to 7 – *totally agree*.

3.4.2.3. Sub-study 2 – Exploratory Factor Analysis

To gather sufficient data for our scale's exploratory factor analysis and reliability, we developed the online scale survey using the Qualtrics® platform and invited all participants via email. We resorted to an internet survey because of its potential to rapidly reach a comprehensively broad sample at a lower cost (Best et al., 2001; de Leeuw, 2018; Sammut et al., 2021). We added four demographic questions besides the initial scale items (age, sex, professional role, and academic degree).

This sub-study's sample consisted of professionals from different organisations. Resorting to professional social media networks (e.g., LinkedIn®) and personal contacts, data were gathered from individuals who could be of interest to respond to our questions. We profiled eventual interviewees and then contacted them via direct email or through LinkedIn® messaging.

Table 5

Final listing of peer-reviewed scale items.

Item code	Scale items	Attribute

P1	The natural environment has the power to directly affect the organisation's activity.	Power
P2	The relationship between the organisation and the natural environment may affect the organisation's relationships with some stakeholders.	Power
P3	The natural environment is more powerful than the majority of the organisation's stakeholders.	Power
P4	Organisations that disregard the natural environment should be fined and forced to recover the damages they provoke.	Power
P5	The possibility of an organisation being affected by a natural disaster depends only on luck.	Power
P6	I believe the natural environment is a stakeholder with authority over the organisation.	Power
U1	Every time the company faces an environmental issue, the company acts quickly to mitigate its impact.	Urgency
U2	It is important for the organisation to quickly answer to the Natural Environment's needs.	Urgency
U3	It is urgent for the organisation to preserve its environment.	Urgency
U4	It is urgent for the organisation to use natural resources in a sustainable way.	Urgency
U5	The natural environment issues are more urgent than other issues that affect the organisation.	Urgency
L1	The organisation allocates its own resources to preserve the natural environment.	Legitimacy
L2	For the organisation, the natural environment is considered relevant for its activity.	Legitimacy
L3	The organisation is environmentally responsible.	Legitimacy
L4	The organisation stopped working with some stakeholders (providers, distributors, clients, etc.) who pollute/lack an environmentally sustainable behaviour.	Legitimacy

L5	The organisation refuses products/raw materials that may be polluting.	Legitimacy
L6	The natural environment has the right to be respected by the organisation.	Legitimacy

On the one hand, we targeted decision-makers (founders, managers, owners, Chief Executive Officers (CEOs), Chief Marketing Officers (CMOs), or Chief Finance Officers (CFOs)) as per their personal LinkedIn® profiles. On the other, we resorted to our professional networks, by sending emails to key decision-makers. We also involved others in the sample through personal and social media networks. A total of 569 individuals were contacted, of whom 331 completed the 17-item scale survey (58.17% response rate). Corresponding demographic profiles are described in Table 6. On the email messages, we informed participants about the purpose and the anonymity of this survey, the importance of the study for science, and the relationship between organisations and the natural environment. Also, we provided a link to the survey to reduce communication flows between researcher and participants.

To progress with the research, we employed an Exploratory Factor Analysis (EFA) to validate the three-dimensional structure: power, legitimacy, and urgency, our latent, first order, using IBM® SPSS® 28.0.

The Kaiser-Meyer-Olkin (KMO) provided a value of 0.704, superior to 0.7, showing that the sample is adequate. The Bartlett's sphericity test showed significance at $p < 0.01$, meaning that Bartlett's H0 lacks significance and can be ignored, allowing us to conclude that the variables are correlated. Initially, we ran an EFA with all scale items, using Principal Component Analysis and Varimax rotation. This initial EFA revealed four factors instead of the conceptualized three. It also revealed two cross-loadings on items P4 and P6. Further description is in Table 7.

Table 6
Sub-study 2 sample characteristics

		Percentage
Age	18 – 30	33.65
	31 – 50	39.42
	+ 50	25.96
	Declined to answer	0.96
Sex	Male	30.77
	Female	68.27
	Decline to answer	0.96
Type of job	Employee	50.96
	Independent worker	2.68
	Student	28.85
	Employee/Student	12.50
	Independent worker/Student	0.96
	Unemployed	0.00
	Retired	1.92
	Decline to answer	1.92
Education	Basic Education	1.92
	Highschool	23.08
	Bachelor's degree	37.5
	Master's Degree	27.88
	PhD	6.73
	Decline to answer	2.88

Table 7

17-Item rotated component matrix [a]

	Component			
	1	2	3	4
L3. The organisation is environmentally responsible.	.78			
L2. For the organisation, the natural environment is considered relevant to its activity.	.78			
L5. The organisation refuses products/raw materials that may be polluting.	.76			
L4. The organisation stopped working with some stakeholders (providers, distributors, clients, etc.) who pollute/lack an environmentally sustainable behaviour.	.75			
L1. The organisation allocates its own resources to preserve the natural environment.	.70			
U1. Every time the organisation faces an environmental issue, it will quickly act to mitigate its impact.	.61			
U3. It is important for the organisation to quickly answer to the Natural Environment's needs.		.79		
U2. It is urgent the usage of natural resources in a sustainable way by the organisation.		.78		
U4. It is urgent for the organisation to preserve its natural environment.		.73		
L6. The natural environment has the right to be respected by the organisation.		.68		
P5. The possibility of an organisation being affected by a natural disaster depends only on luck.		.45		
P4. Organisations that disregard the natural environment should be fined and forced to recover the damages they provoke.		.45	.43	
P3. The natural environment is more powerful than the majority of the organisation's stakeholders.				

U5. The natural environment issues are more urgent than other issues that affect the organisation.			.64	
P6. I believe the natural environment is a stakeholder with authority over the organisation.			.55	.43
P2. The relationship between the organisation and the natural environment may affect the organisation's relationships with some stakeholders.				.87
P1. The Natural Environment has the power to directly affect the organisation's activity.				.85
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 6 iterations.				

After eliminating the items with cross-loadings (P4 and P6) on more than one factor we ran another factor analysis. This resulted in four factors and three other items with cross-loadings: a) "U1. Every time the organisation faces an environmental issue, it will quickly act to mitigate its impact."; b) U5. "The natural environment issues are more urgent than other issues that affect the organisation.", and c) P5 "The possibility of an organisation to be affected by a natural disaster depends only on luck."

Table 8

15-Item rotated component matrix [a]

	Component			
	1	2	3	4
L3. The organisation is environmentally responsible.	.79			
L2. For the organisation, the natural environment is considered relevant to its activity.	.79			
L5. The organisation refuses products/raw materials that may be polluting.	.77			
L4. The organisation stopped working with some stakeholders (providers, distributors, clients, etc.) who pollute/lack an environmentally sustainable behaviour.	.75			

L1. The organisation allocates own resources to preserve the natural environment.	.69		
U1. Every time the organisation faces an environmental issue, it will quickly act to mitigate its impact.	.59		.41
U2. It is important for the organisation to quickly answer to the Natural Environment's needs.			
U4. It is urgent for the organisation to use natural resources in a sustainable way.	.78		
U3. It is urgent for the organisation to preserve its natural environment.	.76		
L6. The natural environment has the right to be respected by the organisation.	.71		
P2. The relationship between the organisation and the natural environment may affect the organisation's relationships with some stakeholders.		.89	
P1. The Natural Environment has the power to directly affect the organisation's activity.		.88	
P3. The natural environment is more powerful than the majority of the organisation's stakeholders.			.67
P5. The possibility of an organisation being affected by a natural disaster depends only on luck.	-.44		.53
U5. The natural environment issues are more urgent than other issues that affect the organisation.	.52		.53

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Again, after eliminating the items U1, P5, and U5, a third EFA was conducted with the remaining twelve items. In the rotated component matrix, we obtained three factors (power, urgency, and legitimacy) without cross-loadings (Table 9).

Table 9

12-Item rotated component matrix[a]

	Component		
	1	2	3
L5. The organisation refuses products/raw materials that may be polluting.	.79		
L3. The organisation is environmentally responsible.	.78		
L4. The organisation stopped working with some stakeholders (providers, distributors, clients, etc.) who pollute/lack an environmentally sustainable behaviour.	.78		
L2. For the organisation, the natural environment is considered relevant to its activity.	.77		
L1. The organisation allocates its own resources to preserve the natural environment.	.69		
U2. It is important for the organisation to quickly answer to the Natural Environment's needs.		.84	
U3. It is urgent for the organisation to preserve its natural environment.		.79	
U4. It is urgent for the organisation to use natural resources in a sustainable way.		.78	
L6. The natural environment has the right to be respected by the organisation.		.71	
P3. The natural environment is more powerful than the majority of the organisation's stakeholders.		.48	
P2. The relationship between the organisation and the natural environment may affect the organisation's relationships with some stakeholders.			.89
P1. The Natural Environment has the power to directly affect the organisation's activity.			.88

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Yet, two items (L6 and P3) loaded on the factor where the urgency items converged and were consequently removed (Table 10).

Table 10

10-Item rotated component matrix[a]

	Component		
L5. The organisation refuses products/raw materials that may be polluting.	.79		
L4. The organisation stopped working with some stakeholders (providers, distributors, clients, etc.) who pollute/lack an environmentally sustainable behaviour.	.78		
L3. The organisation is environmentally responsible.	.78		
L2. For the organisation, the natural environment is considered relevant to its activity.	.77		
L1. The organisation allocates own resources to preserve the natural environment.	.69		
U2. It is important for the organisation to quickly answer to the Natural Environment's needs.		.86	
U4. It is urgent the usage of natural resources in a sustainable way by the organisation.		.85	
U3. It is urgent for the organisation to preserve its natural environment.		.84	
P2. The relationship between the organisation and the natural environment may affect the organisation's relationships with some stakeholders.			.90
P1. The Natural Environment has power to directly affect the organisation's activity.			.88

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization. [a]

a. Rotation converged in 5 iterations.

Having removed two items (P3 and L6), we observed an imbalance between the number of legitimacy items, and power and urgency items. We removed the legitimacy-related items with lower loadings (L1 and L2). Our final workable scale shows eight items, as per Table 11:

Table 11

8-Item rotated component matrix[a]

	Component		
U2. It is important for the organisation to quickly answer to the Natural Environment's needs.	.87		
U4. It is urgent the usage of natural resources in a sustainable way by the organisation.	.85		
U3. It is urgent for the organisation to preserve its natural environment.	.85		
L5. The organisation refuses products/raw materials that may be polluting.		.89	
L4. The organisation stopped working with some stakeholders (providers, distributors, clients, etc.) who pollute/lack an environmentally sustainable behaviour.		.87	
L3. The organisation is environmentally responsible.		.75	
P2. The relationship between the organisation and the natural environment may affect the organisation's relationships with some stakeholders.			.91
P1. The Natural Environment has the power to directly affect the organisation's activity.			.89

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalisation. [a]

a. Rotation converged in 4 iterations.

Upon completing this analysis, we created three pivotal variables or subscales: POWER, LEGITIMACY, and URGENCY, each holding the means of the items related to power, legitimacy, and urgency.

We calculated the Cronbach alpha for each dimension, allowing us to understand the reliability of all three dimensions separately. The results are as follows: α for power variables – .83; α for legitimacy variables – .81; α for urgency variables – .84. Kline (2000) suggests that cut-off points can go as low as 0.7, while others (Nunnally & Bernstein, 1994) suggest a cut-off of 0.5. The validity of final measures was observed on the validation of sub-samples.

3.4.2.3. Sub-study 3 - Confirmatory Factor Analysis

To assess the measurement properties of the eight observed variables (P1, P2, U2, U3, U4, L3, L4, L5) as they relate to the latent constructs, we tested a 1-factor model (Figure 15). In it, all observed variables representing the Natural Environment as a Stakeholder loaded onto a single latent factor. This basic model allowed us to examine the extent to which our data fit a unidimensional construct and consequently compare it with the theoretically driven three-factor one. We used the three indices to compare the fit of our model with a null model (Schumacker & Lomax, 2010): Bentler-Bonett Normed Fit Index (NFI), Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA), because they are often observed as the most informative to researchers (Hooper et al., 2008). The results revealed were: $\chi^2 = 130.99$; df $= 20$; TLI $= .49$; CFI $= .66$; RMSEA $= .23$; NFI $= .61$; Akaike Information Criterion (AIC) $= 178.99$; SRMR $= .15$.

To align the model more closely with our theoretical expectations, we subsequently tested a three-factor model (Figure 16), reflecting the multidimensionality of the construct. In this model we divided the observed variables into three distinct factors: power, legitimacy, and urgency. The fit indices for this model displayed a significant improvement: $\chi^2 = 27.45$; df $= 17$; TLI $= .94$, CFI $= .97$, RMSEA $= .077$; NFI $= .92$; AIC $= 81.456$; and SRMR $= .06$. Compared to the 1-factor model, this model suggests that our proposed theoretical structure is better supported.

Figure 15

One-factor model
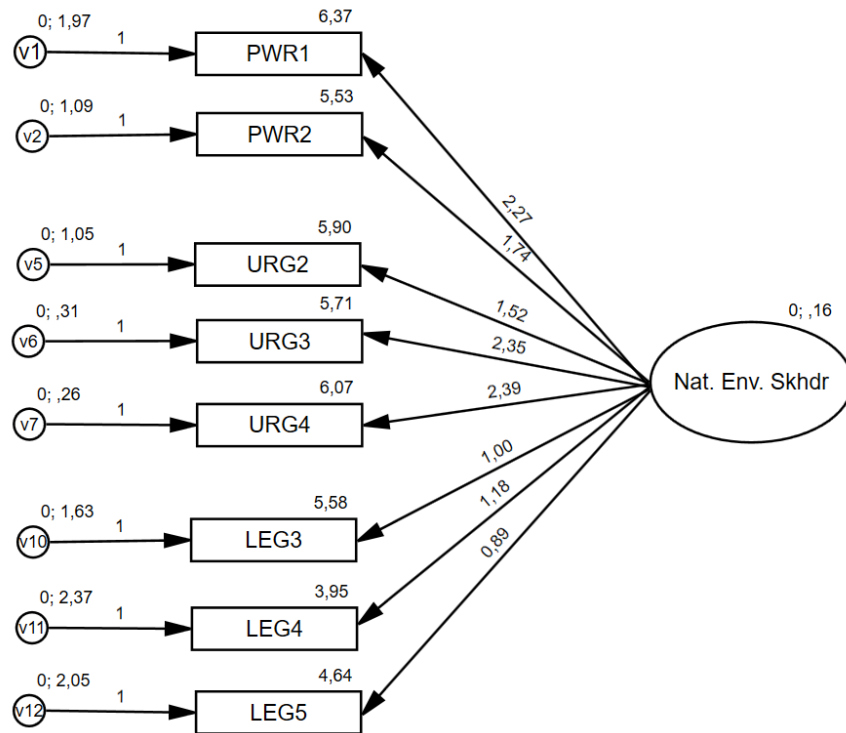
Figure 16

Three-factor model
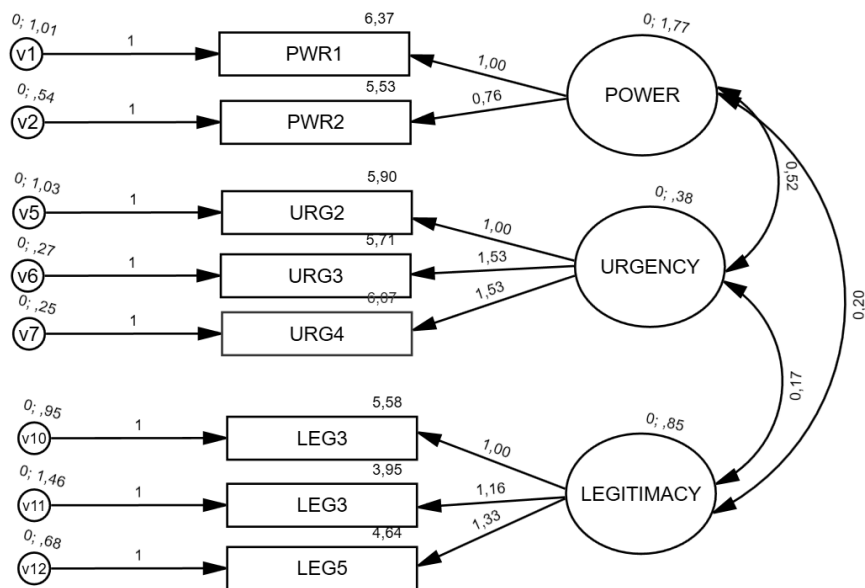
We present the development of a scale to assess the perception of the natural environment as a stakeholder. We have successfully created a reliable instrument with strong psychometric properties, a result confirmed through both exploratory factor analysis and confirmatory factor analysis. This instrument holds profound implications for organisational science, providing a valuable tool for data collection.

The sub-dimension reliability was assessed using Cronbach's alpha (Table 12). The entire set of items shows a moderate to good level of internal consistency reliability. This suggests that the eight items in the instrument generally measure the intended construct consistently and reliably.

Examining the subscales, power, urgency, and legitimacy indicate moderate to good levels of reliability for the two, three, and three items, respectively, comprising the subscales. The overall instrument and its sub-dimensions exhibit acceptable to good levels of internal consistency, with the urgency dimension demonstrating the highest reliability. These findings support the instrument's suitability for measuring the underlying constructs of power, urgency, and legitimacy, providing confidence in our tool's stability and internal consistency.

Table 12

Dimensions' Cronbach's alphas

	Reliability Statistics		
	Cronbach's Alpha	*Cronbach's Alpha Based on Standardised Items*	*N of Items*
All Items	.76	.77	8
Power	.77	.79	2
Urgency	.79	.79	3
Legitimacy	.76	.76	3

3.5. Final Survey

We developed a final quantitative survey online survey to obtain generalisable information from a sample (Creswell, 2014), as it allows to reach a broader and more representative sample of the population (Creswell, 2014). This method was chosen due to its advantages, namely lower costs, convenience for

researchers and respondents, wider reach of a dispersed sample, high data accuracy, and faster and more complete replies (Best et al., 2001; Bryman, 2012; de Leeuw, 2018; Nayak & Narayan, 2019; Sammut et al., 2021). These tools allow researchers to recognise differences in the studied group that otherwise might have been overseen. They also provide consistency when measuring values over time and through the lenses of other researchers and enable the understanding of the relationship between different concepts (Bryman, 2012). Specifically, our survey allows us to understand, along with other valuable data, whether the attitudes towards the natural environment changed in the aftermath of a natural disaster.

The survey is composed of different types of questions, namely: Likert scales, *yes/no* answers, multiple-choice questions, lists, and one open-ended-character limited question – that refers to the industry the organisation operates in. The items' diversity provides descriptive information about organisations' stakeholders, the preparedness for the disaster, the post-disaster actions, the organisations' demographic details, and valuable answers for our hypotheses. We chose the Likert Scale to assess the perceptions of decision-makers since it is a common technique to measure the intensity of feelings related to a determined issue (Bryman, 2012; Creswell, 2014). The scales are bipolar, multiple-choice, with a one-to-seven-point method of scoring [1 – *fully disagree* – 7 – *fully agree*], being the fourth position the neutral stance on the subject. The *Yes*/*No* questions are used to ask about beliefs and to identify response sets (Bryman, 2012). When answering the survey, the respondent answering *Yes* to some of the items triggers a new conditional sub-question with a list of answers. The lists with previously filled options serve as indicators or guidance for the respondents to follow. This technique allows us to funnel and reduce the random number of different answers and, in some cases, to serve as a guidance to the respondent. Both sample size and procedure are the same as found in the CFA above.

3.5.1. Survey pilot

Before running the survey with our target sample, we ran a pilot test to obtain valuable feedback from a group that is comparable to the target population (Bryman, 2012). Several acquaintances with business responsibilities or professional background answered the pilot survey. The pilot takers responded and provided

feedback on the questionnaire's structure and length, and requested further clarification on questions that may have been subject to misinterpretation and confusion. With this new information, we further adjusted the content and the order of questions, publishing and making it publicly available online.

Having corrected the first iterations, we reached a 64-item survey that followed a specific structure. It started with an introductive message, where we described the research context and purpose of the survey. In this section, we also provided our contacts should any doubts arise, or respondents have further interest in the research.

3.5.1.1. Instrument

The first survey section (14 items) focuses on how the organisation was affected by the 2017 forest fires, the degree of impact, internal changes in the organisation, and preparedness and mitigation of future similar disasters.

Table 13

Exemplary item of the survey's first section

How relevant do you consider the impact of the fires in the organisation's processes?						
Totally irrelevant	*Very Irrelevant*	*Somewhat irrelevant*	*Neutral*	*Somewhat relevant*	*Very Relevant*	*Totally Relevant*

The second section (8 items) relates to stakeholders and the relationship of the organisation and different groups and entities.

Table 14

Exemplary item of the survey's second section

Generally, the organisation's stakeholders were ready to face the 2017 forest fires.						
Totally Disagree	*Strongly Disagree*	*Somewhat Disagree*	*Neutral*	*Somewhat Agree*	*Strongly Agree*	*Totally Agree*

The third section (17 items) focuses on the relationship between the organisation, the natural environment as a stakeholder, and natural disasters, where we employed the scale items. The Cronbach's α coefficient for the 17-item assessment is 0.85. This indicates a high level of internal consistency among the items, suggesting that the items in the assessment are strongly related and measure a single underlying construct reliably (Field, 2005; P. Kline, 2000). We consider it quite good since values above 0.7 are deemed acceptable. For power, urgency, and legitimacy items, analysed separately, we obtained the following results: 0.67, 0.72, and 0.82, respectively.

Table 15

Exemplary item of the survey's third section

The Natural Environment has the power to directly affect the organisation's activity.						
Totally Disagree	*Strongly Disagree*	*Somewhat Disagree*	*Neutral*	*Somewhat Agree*	*Strongly Agree*	*Totally Agree*

The fourth section (13 items) relates to the organisation, the forest fires, and the natural environment, where we placed the items that provided data for some of our Hypotheses (Table 16).

Table 16

Exemplary item of the survey's fourth section

The Natural Environment has the power to directly affect the organisation's activity.						
Totally Disagree	*Strongly Disagree*	*Somewhat Disagree*	*Neutral*	*Somewhat Agree*	*Strongly Agree*	*Totally Agree*

The final and fifth section (10 items) includes the demographic profile of the organisations. The survey ended with a message thanking the respondent and providing our contacts for future questions or remarks.

Table 17

Exemplary item of the survey's fifth section

Number of employees		
10 – 49	50 – 100	> 100

This information was collected to contextualise the survey responses within relevant demographic categories. The comprehensive survey design ensured a robust data collection process for a thorough exploration of the research subject.

To illustrate the items focused on actions after the disaster, we choose one that sheds light on the percentage of investment in sustainable equipment twelve months after the fire ("55. In a hypothetical scale, how much did the organisation invest in environmentally sustainable equipment in the 12 months after the fires, compared to the 12 months prior?"). The answers are presented as Likert scales (Table 18). For the full item list, please refer to Appendix F.

Table 18

Variation in different investments in the 12 months after the disaster.

Option number	1	2	3	4	5	6	7
Invested percentage	*Less than - 21%*	*Between 11% and 20% less*	*Down to 10% less*	*The same*	*Up to 10% more*	*Between 11% and 20% more*	*More than 21%*

To obtain answers for both the pilot and the subsequent survey final version, we employed Qualtrics® software to disseminate the survey. One of its tools allows users to create lists and automatically send emails with a hyperlink to respondents with a personalised text. In the body of the email, participants were informed about the scope and objectives of the research while informing them about important research details: they could stop their responses at any moment; the survey was responded anonymously; the importance of their responses to the development of the research at hand; and that the research team would be available to answer any questions.

Concerning the survey response success, from the 1328 initially sent emails, 37 email addresses failed, 56 were duplicates, and 66 bounced (e.g., inexistent address, server outage, full inbox, or spam directing). Besides these failed contact attempts, two organisations informed they were founded after 2017, for which they were unavailable to answer the survey. Our final sample size was 1169 (~88% of the initial sample). Initially, we obtained 261 responses, of which 106 were valid answers, representing 8.5% of the total sample.

The contact results may suggest a low response rate, yet a few considerations must be taken. Different academic online surveys may have low response rates due to Covid-19 survey fatigue (de Koning et al., 2021) and general survey fatigue (Porter et al., 2004); low interest in the subject (Saleh & Bista, 2017); web surveys having lower response rates (Sammut et al., 2021); executive respondents provide the lowest response rates (Anseel et al., 2010); and a significant decrease in survey response (Anseel et al., 2010; S. R. Porter et al., 2004) may lead to this response rate. From a Portuguese perspective, these figures may reflect three particular instances: a) the majority of companies are located in rural areas, many of which, through analysis of their websites, may possess low digital literacy; b) Portugal is one of the European Countries with lowest Internet usage (*Digital Economy and Society Statistics - Households and Individuals*, 2023); and c) a ruling of the General Data Protection Regulation in force in Europe, forbidding sending unsolicited emails to private accounts (*How Does the GDPR Affect Email?*, n.d.). The statistical analysis shows that the number of responses to our survey is still relevant and provides us with the sample's opinions, allowing us to generalise and infer from the results to the population (Creswell, 2014).

3.5.2. Procedure

We targeted different professional contacts, broadening its reach using public access databases (Einforma – companies' directory and the REPOR database). Data were collected between July and October 2022. The sample consisted of Portuguese organisations located in the regions most affected by the forest fires. We reached out to these organisations in two ways: proximity (118 businesses) and database creation (1210 organisations). These are located in five Portuguese districts: Aveiro, Coimbra, Guarda, Leiria, and Viseu. During the first stage, we approached

organisations within our professional networks through direct emails, LinkedIn® messages, or telephone calls. For the database creation, we used a Portuguese company public directory (infoempresas - https://infoempresas.jn.pt/), refined the search by the municipality, and selected those who had an online website. Email contacts allowed a swifter, cheaper, and sometimes more direct contact. Other factors such as company size, sector, or industry were discarded to obtain a diverse sample.

We also contacted different business associations and municipal communities, as per Table 19. The purpose of these contacts was to request support from these organisations to reach out to their associate organisations, which could broaden the reach of our sampling efforts. We contacted these institutions over the telephone and followed up with emails sent directly to managing directors. The first contacts were followed by telephone contacts and new emails. None of the associations was available to support this research. CCDR-C was the only institution that provided a reply, informing that they are unable to collaborate with such research projects because of sensitive and legally protected data.

Table 19

Business-related organisations contacted for support.

Institution
CIM – Dão Lafões
CIM Coimbra
CIMRL - Comunidade intermunicipal da Região de Leiria
Comunidade Intermunicipal da Região de Aveiro
CCDR-C
NERLEI
Associação Comercial e Industrial da Marinha Grande
Associação Comercial do Distrito de Viseu
ACIBA - Associação Comercial e Industrial da Bairrada e Aguieira
Associação Empresarial de Poiares
CEFAMOL
AICEP

3.5.3. Sample

We now describe our sample considering the following factors: sector, size, and yearly Turnover. Concerning the industry sector, the sample is divided into tertiary sector (services), secondary sector (industry and transformation), and primary sector (farming and livestock). We divided organisations into three groups concerning the number of workers: small (≤10), Medium (11>99), Large (≥100). Most companies are small, as 63.11% have less than 50 employees. In terms of turnover, 6.86% have a yearly turnover lower than 50,000€, 40.20% between 50,000€ and 1.000.000€, and 52.94% above 1,000,000€. The majority (96.12%) is headquartered in Portugal. 55.34% of the companies resorted to European Union funds (QREN, FEDER, Portugal 2020, Compete 2020, Centro 2020, and others), and 58.25% have ISO (International Organisation for Standardisation) quality certificates, such as ISO 14 001 (environmental quality), ISO 50 001 (Energy management), ISO 9000 (Quality Management), and others unspecified.

Regarding geographical distribution, the sample is dispersed as follows: 56.31% are located in municipalities affected by the 2017 forest fires, while 53.69% are located in unaffected areas (58 and 45 companies, respectively). Sample demographics are described in Table 20.

Table 20

Statistical description of the survey sample.

Variable	Percentage
Sector	
Primary	6.80
Secondary	38.83
Tertiary	54.37
Number of Workers	
<10	34.95
11 – 49	28.16
50 – 100	12.62
>100	24.27

Approximate yearly turnover	
<50.000€	6.86
≥ 50.000€ - *≤1.000.000€*	40.20
>1.000.000€	52.94

3.6. Summary

The above chapter identifies the methodology applied in this thesis. We resorted to qualitative and quantitative approaches that allowed us to have a broad overview of the same research questions and hypotheses (Table 21). We employed the tools to create and develop relevant items that answer our research questions with scientific rigour. This is corroborated by the different reliability tests and analyses we ran, together with the feedback from early respondents and comments from peer researchers. Having explored the methodological stance of this thesis, we now analyse the findings.

Table 21

Research Questions, Applied Methodology, and Correspondent Hypotheses

Research Questions	Methodology	Hypothesis
How do organisations operationalise the disaster management cycle in response to a natural disaster?	Qualitative and Quantitative	--
Do organisations benefit from strong stakeholder relationships in the aftermath of a natural disaster?	Qualitative	--
Is a natural disaster a trigger to change the perception of the natural environment as a stakeholder?	Qualitative and Quantitative	*H1* – The perception of the natural environment as a stakeholder is significantly different between organisations affected and unaffected by a natural disaster. *H4* – Organisations affected by a natural disaster perceive the natural environment as a definitive stakeholder.
On what attributes does the perception of the natural environment depend?	Quantitative	*H3* – The perception of the natural environment as a stakeholder depends on the perception of its power, legitimacy, and urgency
Do decision-makers who perceive the natural	Quantitative	*H2* – The perception of the natural

environment as a stakeholder act differently than those who think otherwise?

environment as a stakeholder positively influences pro-sustainability attitudes, especially in natural disaster-affected companies.

Chapter IV – Integrated Research Findings

4.1. Introduction to the findings

This chapter presents the results of the comprehensive analysis conducted in this thesis, shedding light on the empirical outcomes and addressing the research questions and hypotheses. We now provide a detailed account of the data collected, the statistical analyses performed, and the observed trends and patterns. Results from qualitative and quantitative data collection and analysis are integrated and interpreted throughout this chapter. The findings are presented in a structured manner and organised according to the five key themes and variables explored in this thesis. Through data interpretation and examination, we aim to contribute to the current understanding and knowledge of stakeholder theory, disaster management, and the natural environment as a stakeholder. This chapter provides insights into the relationships between organisations, their stakeholders, and the natural environment, as well as disaster management. These findings are relevant, with practical implications for theory, practice, and future research. This chapter summarises key findings, and provide relevant tables, figures, and statistical information to support the presentation and facilitate a detailed understanding of our research outcomes.

This section is divided into five subsections, each corresponding to our research questions:

1. How do organisations operationalise the disaster management cycle in response to a natural disaster?

2. Do organisations benefit from strong stakeholder relationships in the aftermath of a natural disaster?

3. Is a natural disaster a trigger to change the perception of the natural environment as a stakeholder?

4. On what attributes does the perception of the natural environment depend?

5. Do decision-makers who perceive the natural environment as a stakeholder act differently than those who think otherwise?

In each subsection, contents include findings obtained through qualitative, quantitative or both methods.

4.2. How organisations operationalised the disaster management cycle in the aftermath of the 2017 Portuguese wildfires

This subsection explores the findings related to how the organisations employed their disaster management strategies based on Carter's (2008) and Todd and Todd's (2011) disaster management approaches.

The organisational network affected by the 2017 fires is comprised of local and international businesses. Five of the twenty-eight interviewed organisations are foreign businesses operating in Portugal.

We observed a discrepancy regarding the environmental sustainability or orientation between Portuguese and foreign businesses. On the one hand, Portuguese companies were keen to return to normality as soon as possible after the fires; on the other hand, international organisations were more careful in defining preventive and mitigating strategies. Such differences in the approach of these companies were observed, especially in Interviews 4 and 8. While international companies were focused on advancing technologies and breakthrough ideas to reduce their environmental footprint or optimise resources, Portuguese organisations were more reluctant to change or adapt to new systems or work approaches. The verification of the reasons behind such approaches is out of the scope of the current research; however, we encourage future research in this direction.

Quantitatively, Table 22 presents the correlation coefficients between various key variables in our study. These correlations were computed to examine the relationships among the variables of interest and to assess the strength and significance of these relationships. These correlations reveal significant relationships between certain variables. It also highlights instances where we fail to find significant relationships. These findings contribute to our understanding of the dynamics among the perceived power, legitimacy, and urgency and the other variables.

Table 22

Correlations among variables

Variable	M	SD	Power	Legitimacy	Urgency	Investment in Sustainable Processes after one year	Investment in Sustainable Equipment after one year
Power	5.94	1.33	1				
Legitimacy	4.72	1.22	0.162	1			
Urgency	5.88	0.94	0.457**	.242*	1		
Investment in Sustainable Processes after one year	3.88	1.23	-0.108	.258**	.018	1	
Investment in Sustainable Equipment after one year	3.99	1.26	-.003	.238*	.024	.794**	1
Investment in Sustainable Services after one year	3.81	1.158	.007	.194*	-.076	.756**	.847**

*The correlation is significant at the 0.01 level (2-tailed).

**The correlation is significant at the 0.05 level (2-tailed).

4.2.1. How were organisations affected

The first finding deals with the impact proper of the disaster and the response phase or "Phase 2", (Todd & Todd, 2011). According to interviewees' answers, the impact of the 2017 forest fires resulted in different issues and a wide range of unexpected effects. The physical impact on infrastructure was hard to predict because some organisations located in forested areas remained unscathed, while others in urbanised areas or within industrial compounds suffered substantial infrastructure destruction. Some organisations observed minor issues such as communication problems or production delays. Others suffered total infrastructural destruction. Given the range and degrees of destruction, we divided the interviewed organisations into "Affected" and "Unaffected" organisations (Table 23). The former sustained heavy physical damages, while the latter observed minimal disruptions.

From our field observations, interviews with local government, and informal conversations with locals, affected organisations suffered infrastructure, raw materials, finished products, and stock losses; workers' absences; delays in production lines; value chain disruptions; lack of power, water, and communications. The destruction was random since some organisations located on the edge of the forest remained intact, while highly damaged organisations located far from the forest sustained heavy damages. Some unaffected organisations remained so due to several random factors: winds changed direction, several workers remained on the premises (Interview 6), or locals helped to stop the fire (Interview 15). Given the strength of the winds, flying embers reached homes and infrastructure more than ten kilometres away from the fire front (exploratory sessions). None of the interviewed organisations referred to a developed disaster management strategy before the disaster. Affected organisations endured catastrophic losses, such as a wood producer who tried to save his raw material warehouse but had to flee the premises (Interview 16); a team from a construction business who was fighting the fire with their own means was removed from the warehouse by firemen and the police, which was then destroyed (Interview 22).

From our quantitative findings, 56.91% of surveyed organisations have infrastructures in the disaster-affected areas (against 43.69%). Concerning the effects of the natural disaster, 51.82% of the surveyed organisations were unaffected by the disaster; 13.64% were directly affected, while 34.55% indirectly affected. Directly

affected organisations observed merchandise destruction (27.27%); own infrastructure destruction (20.45%); Stocks destruction (11.36%); Raw materials destruction (11.36%); equipment destruction (20.45%); other types of losses (9.09%). Indirectly affected companies selected from a multiple choice the following order: workers' absence (20.69%); Communication shortages (19.54%); Loss of business opportunities (18.39%); power shortages (12.64%); distribution chain disruptions (8.05%); Local infrastructure destruction (5.75%); inaccessibility to own facilities (5.75%); others (9.20%). None identified human casualties. Most organisations consider that the fires affected the organisation in some way (highly irrelevant 11.65%; very irrelevant 5.83%; somewhat irrelevant 9.71%; neutral 17.48%; somewhat relevant 25.24%; very relevant 20.39%; highly relevant 9.71%).

During the recovery stage (Carter, 2008; Khan et al., 2008; Todd & Todd, 2011), when organisations prevent, mitigate, and prepare for future disasters, interviewed organisations applied some of the tenets of disaster management approaches. Some organisations acquired new fire prevention equipment – hoses, independent fire prevention systems, and fire detection alarms, e.g., "[…] we increased the forest fire security levels, installed a surveillance system and placed its control in a 24-hour surveillance central, in case of a new fire" (Interview 8). Others purchased surrounding forest areas or became more aware and more responsive to the surrounding forest maintenance (Interviews 11, 12, 17, 22, and 24).

Some unaffected organisations referred to the importance of providing workers with a safe place where they could feel that at least a part of their lives still had a sense of normality: […] "this provides a sense of security that people had lost at that moment. But the feeling that, at least, people came here, and their work was normal, and the overall activity was normal; their jobs were secured and, therefore, there was a sense of normality" (Interview 4).

4.2.1.1. Phase 1 – Pre-Disaster and Risk Assessment

As per our interview responses, organisations were unprepared to face the disaster, given its proportions, as referred by some interviewees (Interviews 1, 2, 3, 5, 7, 16, 18, 22, 24). It was expected that, at some point, a fire might reach industrial compounds and thus affect organisations. However, this disaster was unforeseen by decision-makers.

Table 23

Actions towards stakeholders reported by interviewed decision-makers

	Identified stakeholders	Pre-disaster CSR Activities	Disaster Management Cycle Activities		
			Response (Phase 2)	Post-Disaster (Phase 3)	Pre-Disaster and Risk Assessment (Phase 1)
Affected	Workers Clients Suppliers Providers Shareholders Distributors Competitors Local society State Nature	Paying salaries Deliver products on time Abide the law Sponsor local institutions Sponsor local celebrations Safety and educational courses for workers Having ISO 14001 Nature related activities	Communicate with workers about losses and companies' initial conditions Pay due salaries Deliver partial orders Secure clients Request State support Request partners' support Paid absences	Rehire workers Delivery of goods as per clients' requests Request financial support from banks and insurance companies Purchase of more efficient and modern equipment	Purchase of new fire detection and mitigation equipment Purchase and management of forest areas enclosing the facilities Informing stakeholders on the need and urgency of proper forest management
Unaffected			Provide the feeling of safe haven/normality to workers Insurance and legal support Gathering of money donations Gathering food to support families in need Paid absences	Pressure the authorities to control the surrounding forest Provided workers with information on forest management Change and adaptation of raw materials Purchase of more efficient and modern equipment	

Quantitatively, 43.69% of respondents are neutral on whether they were prepared for the natural disaster. 10.68% stated they were totally unprepared for the fires, 9.71% were very unprepared, and 5.83% were moderately unprepared. On the other hand, 13.59% considered their organisations moderately prepared to face the fires, 14.56% felt they were mostly prepared, while 1.94% considered being totally prepared. As the following figures show, the actions taken before the fires to prevent any kind of such event were lacking, minimal, or mandatorily implemented. Some organisations had installed anti-fire systems (25.81%); informed the authorities about illegal actions against the natural environment (4.30%); developed emergency escape plans (18.82%); dedicated resources to the environmental protection (4.84%); participated in environmental management activities (7.53%); promoted the preservation of the natural environment with their stakeholders (10.22%); notified the authorities to the forest issues (6.45%); failed to implement any measures (16.13); and other activities (5.91%). Data show that the two most sought activities before the fire were anti-fire equipment installation and emergency escape plans development, which are required by law. The other mitigation activities – voluntary – show substantially lower results. Organisations obeyed the law but failed to adopt a proactive stance in the preparedness for a forest fire in its whereabouts, which could affect the organisation.

To understand the impact of the disaster with some more detail, we directly asked the respondents how relevant the event was to the company's processes: 11.65% chose totally irrelevant; 5.83% highly irrelevant; 9.71% somewhat irrelevant; 17.48% neutral; 25.24% somewhat relevant; 20.39% highly relevant; and 9.71% totally relevant. Most of the respondents believe that the disaster was relevant to the organisation's processes. Similarly, 27.19% believe the disaster was irrelevant to their daily activities, against 55.34% who consider it relevant. The remainder chose the neutral answer (17.47%).

To understand the post-disaster phase activities (Phase 3), we provided two items with a list of activities taken six months after the fires, as follows: courses on environmental sustainability (3.15%); developed culture of safety and protection of employees (14.96%); financial donations to social institutions (3.94%); fire prevention courses (7.09%); donations to social institutions (goods) (7.87%); actions towards the mitigation of natural disasters (6.3%); failed to take any measure

(46.46%); other measures (10.24%). Nearly half of the organisations (both affected and unaffected) failed to adopt any activity related to the post-disaster (Phase 3) (Todd & Todd, 2011).

Given the fast recovery time employed by organisations, as observed during our observations and qualitative findings, we suggest that we can identify a pre-disaster phase (Phase 1) twelve months after the fires. We provided a list of activities, to which we received the following answers: purchase of fire prevention equipment (8.00%); courses on forest management (2.67%); purchase of forest areas (4.67%); land clearing (18,00%); denouncing illegal environmental acts (2.67%); creation of fire plans (10.67%); cooperation with entities close to the organisation (12.67%); failed to take any measure (34.00%); other activities (6.67%). Figures show that a considerable part of the surveyed organisations failed to pursue a preparedness and mitigation strategy for similar future disasters. It is noteworthy that organisations have engaged in land clearing, as it was mandated by the Central Government the following year (DRE, 2018)[2].

One of the items aimed to understand if organisations considered themselves prepared for a future forest fire similar to the 2017 one. Our findings show that 37.86% considered to be 'equally prepared'; 9.71% 'totally unprepared', 6.80% 'quite unprepared', and 10.68% 'somewhat prepared'. On the more prepared side, 15.53% of the organisations considered to be 'moderately more prepared' to face another fire, 14.56% 'more prepared', and 4.85% 'totally ready'. As per these findings, organisations remain unprepared for another similar event in 2017.

One of the items sheds light on the preparedness to face other natural disasters. Similarly, 33.98% of organisations considered to be 'equally prepared' to face another type of natural disaster; 9.71% ''totally unprepared', 6.80% 'quite unprepared', and 10.68% 'moderately unprepared'; 22.33% 'moderately better prepared'; 11.65% 'much better prepared'; and 1.94% considered themselves 'totally prepared'. These figures show that the 2017 fires had little effect on organisations' preparedness for other disasters since most answers fall within the negative side of the preparedness for future natural disasters.

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[2] https://dre.pt/dre/detalhe/decreto-lei/10-2018-114685734

4.2.1.2. Phase 2 – Response phase

In the following days, affected organisations, while assessing losses, searched different stakeholders for support, including creditors and the State. They leaned on clients', suppliers, local communities, and even competitors' goodwill. This allowed them to return to business as soon as possible (Interviews 1, 5, 6, 10, 15, 18, 20, 22, 25). Unaffected organisations focused on a socially supportive role through sharing resources and providing services normally out of their business scope – e.g., two foodstuff companies (Interviews 0 and 17) put their accountants and lawyers to the service of workers and other stakeholders to provide bureaucratic support in the application for insurance support. "[P]ersonally, while representing the company, I engaged negotiations with solicitors, lawyers, banks, and so on, so our workers could come to work and remain serene while performing their duties*"* (Interview 17). The organisations we labelled as unaffected were affected indirectly through different stakeholder groups (e.g., workers, partners, suppliers) who have lost relatives, homes, and other belongings. These organisations developed support actions, such as money and goods collection, to support families in need. Organisations focused on their stakeholder network (*Community support* and *Support to affected stakeholders*) immediately after the disaster. Table 15 explores a more comprehensive list of activities taken during all three phases.

To quantitatively assess the response phase, we provided a list of activities the organisations developed within the first two months. We obtained the following results: *communicated with all stakeholders* (10,86%); *losses analysis* (12.00%); *reforestation* (5.71%); *community support* (15.43%); *developed anti-fire systems* (6.86); *support to affected stakeholders* (10.29%); *support to other stakeholders* (8.57%); *lacked to pursue any action* (22.29%); *other activities* (8.00%). From nine options, *failed to take any action* was chosen the most, followed by *community support*.

4.2.1.3. Phase 3 – Changes and mitigation of future disasters

Following the response stage, organisations focused on fast recovery to return to a state of normality and resume their activities. Interviewed organisations suggested that the disaster was a catalyst for modernising and acquiring new, more environmentally sustainable equipment. These purchases, however, were made to

satisfy specific needs: lower energy consumption, lower raw materials usage, resource optimisation, and obtaining modern equipment with special State support (Interviews 3, 5, 14, 18).

One of the quantitative questions focused on whether organisations should have an active role in mitigating the impacts of natural disasters. The answers were cohesive: none of the surveyed organisations totally disagree nor strongly disagree with this stance, and only one responded (0.97%) 'moderately disagreed'. The remaining 92.24% agree: 20.39% moderately agree, 39.81% strongly agree; and 32.04% totally agree, showing that respondents believe organisations should have a mitigative role in disaster management. 6.80 % of respondents lack an opinion. These figures show that there is substantial room for improvement concerning the disaster management cycle for different reasons. Organisations are passive in the aftermath of the fire to prevent and mitigate the devastating effects of this phenomenon. It is possible to infer that there is some ignorance of the potential danger of future similar events and that organisations mimic the overall feeling of carelessness and disregard for the natural environment and the forest. As Lourenço (1991) puts it, the state of "let it burn" (p. 31).

The quantitative findings further corroborate earlier qualitative findings: decision-makers prioritise the return to normality; organisations focus on their main stakeholders and production; in the event of a similar disaster, organisations and some of their stakeholders are equally prepared.

We failed to find an organisation that radically changed its internal or external strategies to accommodate and mitigate future similar occurrences, such as the purchase of forest, focus on sustainable forest activities, fire mitigation, management, or training activities. None of the interviewees provided their internal or external stakeholders with educational or communication programmes or solutions regarding fire prevention, mitigation and management. Our quantitative findings support this data since one item focused on whether the disaster was a strategic turning point for the organisation. Data show that 38.83% of decision-makers lack an opinion, while 10.68% consider the fires provoked a moderate strategic change in the organisation, 8.74% strongly agree, and none fully agrees; 25.24% totally disagree; 6.80% strongly disagree; and 9.71% moderately disagree.

Concerning organisations' perceived active role in preventing and mitigating future similar disasters, interviewees were sceptical about their capabilities and

responsibilities. They recognised that single organisations lack the momentum to create meaningful changes, pointing at local and central governments as the institutions responsible and accountable for an essential change. Few organisations (Interviews 1, 6, and 8) pressured local governments for a more active and participative stance in fire prevention and response, and that the forest needs proper, sustainable management. As an example: "[t]he issue [of future fires] is dutifully identified. […] This is a situation that we constantly notify the local government, we spoke with the city councillor for the environment, with the vice-mayor" (Interview 6). Another exemplary response: "[…] I think it is the State that must be the lead actor in this role. [The State] must educate landowners" (Interview 9). Conversely, managers stated that organisations and government have different social roles: the former engages their business responsibilities; the latter, among others, engages in forest and fire management. They expect the Government, through ministries and agencies, to be responsible for forest care, firefighting, and mitigation (Interviews 2, 3, 4, 7, 8, 10, 13, 14).

When asked about plans to develop future environmental activities that may reduce, prevent or mitigate forest fires, some straightforwardly replied it is out of their organisations' strategic scope and responsibility: "[t]here are institutions responsible for [the forest and fire management] And companies must focus on their core business" (Interview 11); "The company has no vocation for such matters" (Interview 10).

Although there are examples of international exporting companies that employ hundreds of workers, the remainder of the business landscape lacks long-term strategies, focusing on daily tactics to pay creditors and provide their services and goods on time. From the interviews, we understood that many of these companies lack financial robustness and depend on State and European Union support. Our findings show that the lack of central government and nationwide policies, the resistance by landowners to change, and business size are the variables that hinder concrete, positive action towards the natural environment.

These findings were somewhat explored during the exploratory sessions. Although based on conversations to engage the research topic, they were useful for an overview of the problems concerning forest management and wildfires, and an early, general overview of the relationship between organisations and the natural environment. In these meetings, unstructured in nature, we concluded that the local

business environment is mostly composed of SMEs, many of which are family businesses that support local communities.

The observations of burnt areas were held between the fires and the writing of this work. Notes were taken (Appendix C), and informal conversations were held with locals, allowing a comprehensive understanding of the rebuilding evolution. The highly damaged compounds in October 2017 had undergone considerable rebuilding, and many changes in factories, warehouses, and other facilities were noticeable rebuilt by late 2017/early 2018.

Regarding the surrounding forests, mainly human-planted eucalyptus monoculture, the replacement of standing dead trees was incomplete as of late 2022. The forests surrounding industrial compounds were cleared of bushes and dead, burnt trees within 20 to 50-metre strips around the compounds. This measure, enforced by the Central Government at the time, was poorly received because trees were cut regardless of their age, shape, species, and importance for the ecosystem. Incidentally, much of the abandoned forest grew wildly, having now more combustible matter than before the 2017 forest fires. Regarding forest management, there are some positive results: owners cut down burnt trees and replanted their lands, thus changing the landscape. However, the overall forest landscape remains untouched – with a high prevalence of exotic species in a disorganised way. When asked about the state of the forest, locals were quick to point out that "another 2017" will be much worse given the state of the forest. In Marinha Grande, by the third quarter of 2021, much of the burnt forest had been cut, but replacement trees were still yet to be planted, as per our observations.

The 2017 natural disaster triggered little change, if any, since interviewees have difficulty in identifying changes, problems, and solutions, as well as activities that can save them in future similar events. Our findings show a state of passiveness that even the disaster is unable to change or trigger change.

4.2.2. How organisations' stakeholder relationships are affected by a natural disaster

The disaster brought changes and challenges to organisations in affected areas. Stakeholder networks may have proved to be crucial in this moment to return to normality. We explore quantitatively and qualitatively our findings on how these

organisations acted towards their stakeholders and the effects of the 2017 fires on their relationships.

4.3. Identifying stakeholders

First, when asked to identify stakeholder groups, decision-makers identified straightforward groups, such as clients, workers, providers, banks, shareholders, owners, and competitors. Some organisations specified groups related to their industries, namely the "National Authority for Medication" (Infarmed) (Interview 4), "the municipality" (Interview 8), and "insurance companies" (Interview 25). One organisation identified the "natural environment" as a stakeholder (Interview 4). The qualitative responses are described in Figure 17.

Figure 17

Identified stakeholders, % of qualitative answers from interviews
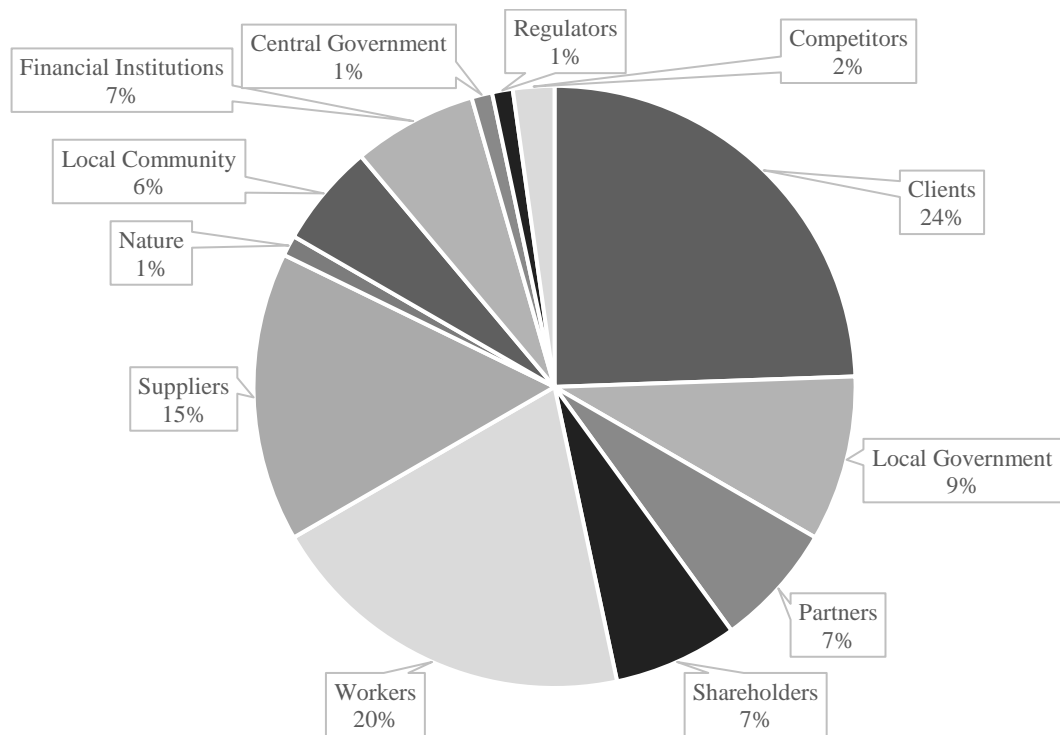
Source: own work.

Most of the interviewees recognised stakeholders' importance for the sustainability and growth of the organisation. Others brushed off the organisation's

direct responsibility towards stakeholder groups. For example, one interviewee stated, "[I]t's all financial. […] We can say that it's for the local development, for the country, but that's all bollocks; we are all in it for the same: for everyday money. It's not greed; it's to feel good in life" (Interview 12).

Quantitatively, respondents were provided with a closed list of stakeholders where they could order stakeholder groups from the most important to the least important. The list consisted of twelve entities commonly considered stakeholders (Table 21). Our findings show that 57.28% of respondents identified workers as the most important stakeholder, and 18.45% responded that clients are the most important stakeholder. The natural environment was perceived as the most important stakeholder by 6.80% of respondents, and none placed the natural environment in the last position. The stakeholders that are considered the least relevant are "Ex-workers" (33%) and "Financial entities" (33%).

The findings show that surveyed organisations place their workers as the top-tier stakeholder group (84.47% in the top-three stakeholder group), followed by clients (58.26% in the top-three stakeholder group). Another noteworthy finding is that providers and distributors fare poorly in the top three tiers: none of the respondents placed them as the most important stakeholders for the organisation (Table 21).

Ex-workers are one of the stakeholder groups considered to be the least important since workers may leave the organisation due to career choices, the end of a contract or retirement, and events that may mark the end of any organisational responsibility towards this group. The other stakeholder group selected as the least important is "Financial Entities", with 33.01% of responses placing it on the last position. During the qualitative data gathering, some interviewees (e.g., Interviews 16, 20, and 23) referred to the importance of close communication with banking and credit entities. Strong relationships with these two groups allowed quick economic recovery. Partial or total mortgage payment delays allowed decision-makers to focus on more pressing issues and fragile stakeholder groups.

4.3.1. Stakeholder relationships at work

To qualitatively understand the social impact of organisations, one open question explored activities the organisations engaged in with their communities and

stakeholders beyond their core activities. The answers were comprehensive and there was a wide understanding of how organisations should act towards the groups that affect and are affected by the organisations' activities.

Before the fires, organisations held sustainable development-related activities concerning their products, mostly due to legal and client demands. Also, some referred to the need to carefully manage their natural environment and maintain their source of raw materials to keep their natural source of raw materials (Interviews 1, 10, 16, and 20).

Concerning CSR actions before the disaster, organisations led different actions towards different stakeholders or charitable initiatives through monetary donations to social institutions and local sports clubs, sponsoring local religious celebrations, purchasing hardware and equipment for local fire departments, supporting poor families, reforesting activities, cooperation with institutions for disabled people – by hiring them to work in menial or repetitive jobs, and having quality standards and seals (e.g. ISO standards). "We provide our workers and their families with social support, what would be considered normal and natural" (Interview 8); "We have just now offered a ventilator to the local hospital[3]. And we always give something to small sports clubs. We always help, as it is possible for us" (Interview 14). Responding to academic interviews and supporting academic research was noted as a CSR activity (Interview 8), as well as paying workers' salaries (Interview 12), providing clients with quality products, and implementing ISO standards connected to the preservation of the natural environment are proof of goodwill and responsibility towards stakeholders (Interviews 1, 4, 16). Two companies that were interviewed had previously organised foresting actions with their workers (Interviews 4 and 18).

Their perceived social role, beyond organisations' activities, is reflected in their CSR activities: monetary support to institutions, sponsoring local events, and so on. Some of the examples were: "Socially wise, we support several schools […] and the local poultry festival" (Interview 5); "We provide support to the families of our employees. [An issue] our CEO cares about personally" (Interview 8). Concerning the overall relationships between organisations and stakeholders through CSR activities, affected and unaffected organisations follow similar approaches.

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[3] Interview held during the Covid-19 pandemic.

Table 24

Identification of stakeholders' importance by decision makers (1: most important – 12: least important).

	1	2	3	4	5	6	7	8	9	10	11	12
Workers	7.28	1.36	5.83	.85	.94	.91	.91	0.00	.00	0.97	1.94	0.00
The State	4.85	5.83	14.56	10.68	3.88	4.85	7.77	8.74	7.77	5.83	7.77	17.48
Providers	0.00	0.83	14.56	24.27	21.36	6.80	10.68	4.85	7.77	2.91	0.97	0.00
Clients	8.45	7.48	22.33	11.65	7.77	4.85	0.97	5.83	3.88	3.88	0.97	1.94
Nat. environ.	6.80	1.94	6.80	9.71	21.36	21.36	8.74	10.68	5.83	4.85	1.94	0.00
Ex-workers	0.97	2.62	4.85	6.80	3.88	4.85	6.80	6.80	4.85	3.88	10.68	33.01
Workers' families	0.97	8.45	10.68	4.85	6.80	9.71	11.65	17.48	4.85	4.85	4.85	4.85
Distributors	0.00	0.97	1.94	7.77	2.91	8.74	9.71	19.42	22.33	18.45	6.80	0.97
Local government	3.88	6.80	0.00	4.85	3.88	4.85	13.59	8.74	8.74	25.24	13.59	5.83
Investors	3.88	2.91	6.80	1.94	5.83	4.85	3.88	8.74	16.50	10.68	32.04	1.94
Financial entities	0.97	2.91	2.91	1.94	4.85	4.85	5.83	2.91	8.74	13.59	17.48	33.01
Local community	1.94	2.91	8.74	10.68	15.53	21.36	17.48	5.83	8.74	4.85	0.97	0.97

Source: Own work

4.3.2. Understanding the stakeholder network

To obtain a comprehensive decision-makers' knowledge of their stakeholder network through the survey, some of the items focused on organisations' closer stakeholder groups. One of the items asks if they agreed whether their stakeholders were prepared to face the 2017 fires. Answers show that 39.81% ignored if their stakeholders were prepared to sustain the disaster. Respondents who totally disagree and strongly disagree had the same percentage (13.59%), and 15.56% chose *mildly disagree*. On a positive note, 9.71% agreed that their stakeholders were moderately prepared for the 2017 fires, 7.77% answered *strongly agree*, and 0.97% *totally agree*. We also asked their opinion on whether their stakeholders were prepared to sustain other future similar disasters. Responses were as follows: 38.83% lack an opinion; 7.77% responded *totally disagree*; 7.77% *strongly disagree*; and 10.68% *mildly disagree*. On the other hand, 26.21% moderately agree that their stakeholders were prepared to face another wildfire; 7.77% strongly agree; and 0.97% completely agree.

The above data show that even if cooperating closely with different stakeholders, organisations have in-depth understanding of their stakeholder networks and their capabilities and preparedness to endure a natural disaster.

4.4. The role of stakeholders in the disaster management cycle

We now explore the findings that shed light on the role and importance of stakeholder relationships during and after the disaster. Qualitatively, our findings suggest that organisations relied on the voluntary work and benevolence of many. One example:

"We are in a small village, and when something happens, people [do something], that is the norm. It wasn't only our workers, the people who make the company, but all the people around, neighbours, the whole village gathered to help and fight the fire that was threatening us and the houses around. […] People came together to fight the fire regardless of where [it was burning], inside or outside the company" (Interview 15).

A multinational automotive company was saved by its workers. A group of workers remained in the premises, thus avoiding destruction: "[O]ur company didn't suffer any kind of problem. Why? Because there were nine heroes working in the company. Heroes that are our collaborators, who had the courage and the strength to save the company from any kind of issue" (Interview 6). Other example follow: a construction company was saved from absolute destruction by the inhabitants of a nearby village (Interview 25); a glassware company suffered very little impact because the owner drove through the fire to the facilities to mitigate the flames alone as best as he could (Interview 12).

The relationship and attitudes towards stakeholder groups prior to, during, and after the disaster led to different recovery outcomes, from which we outline two opposite examples. A highly damaged plastics company (Interview 18) relied heavily on stakeholders' understanding and shared concerns, hardships, and priorities. The board reassured clients they would receive their products that had been paid upfront; paid workers' salaries before any State support were provided, disregarding the company's own heavy losses; requested borrowed old machinery from competitors to restart production. By presenting their dire situation to a hardware provider, the board managed this provider to sell them two machines that were in transit from China, destined for a competitor. The conjunction of actions and diligent communication with stakeholders, enabling the bonds and relationships with different groups, resulted in a quick recovery, as the company was fully operational within three months. According to the interviewee, this was only possible due to their sound, strong relationships with stakeholders.

By contrast, one highly damaged organisation disregarded its stakeholder relationships (Interview 26). This organisation mainly relied on State support and internal management and observed its workers flee to competitors, some of which created their own direct competing companies. Due to mismanagement, they lost clients' interest, who searched for new suppliers, and creditors expected payments within their timeframes. The recovery was slow, and the company was unable to return to a pre-disaster status. These results may stem from a business-focused approach since the primary goal after the disaster was to return to a state of normality as soon as possible (interview 26). According to the interviewee, results and shareholders were the top priority in the aftermath of the disaster (Interview 26).

4.5. The natural disaster is a trigger to change the perception of the natural environment as a stakeholder

In this sub-chapter, we delve into the findings on whether the natural environment should be considered a stakeholder and the empirical evidence supported by the scale and the survey items developed for this specific purpose.

Some interview items specifically relate to the relationship between organisations and their natural environment. We intend to understand if a natural disaster impacts decision makers' perception of the natural environment or if merits the stakeholder status. For that, we employ qualitative items and quantitative tools in the scale and the survey.

During the interviews, we asked whether the natural environment should possess a stakeholder status. The answers were mostly positive; however, they lacked depth because of examples such as short, quick answers: "Yes, I think so" (Interview 8); "I think so" (Interview 10); "Of course. I think so. I think on a national level, of course" (Interview 20), and lacked to elaborate on these stances. When asked why, such answers were also vague, diverting into generic answers, such as "Yes, of course. Absolutely" (interview 6), "Yes, I think so" (interview 10), or "I think so. We all need the nature directly" (interview 12). Given the context and tone of the answers, we assume them as more of a social desirability bias (Chung & Monroe, 2003; Johnson & van de Vijver, 2003) than actual beliefs. From the interviews, we found an overall disbelief in organisations' social power for direction and action. We observed most inward-looking directions, where organisations tend to "stick to their business" and operate within their scope of activity. Besides that, they are only concerned about their closest stakeholders.

Quantitatively, in the list from where decision-makers could sort stakeholders by order of importance, a considerable percentage of respondents place the natural environment as a stakeholder in the middle of the list (Figure 18). In a scale from 1 to 12, where option 1 represents *the most important* and 12, *the least important*, both positions five and six hold 21.36% of responses. Such identification suggests that the natural environment plays a somewhat important role in the organisations' decisions. None of the surveyed organisations identified the natural environment as the least important stakeholder.

Figure 18

The natural environment as a stakeholder response placement
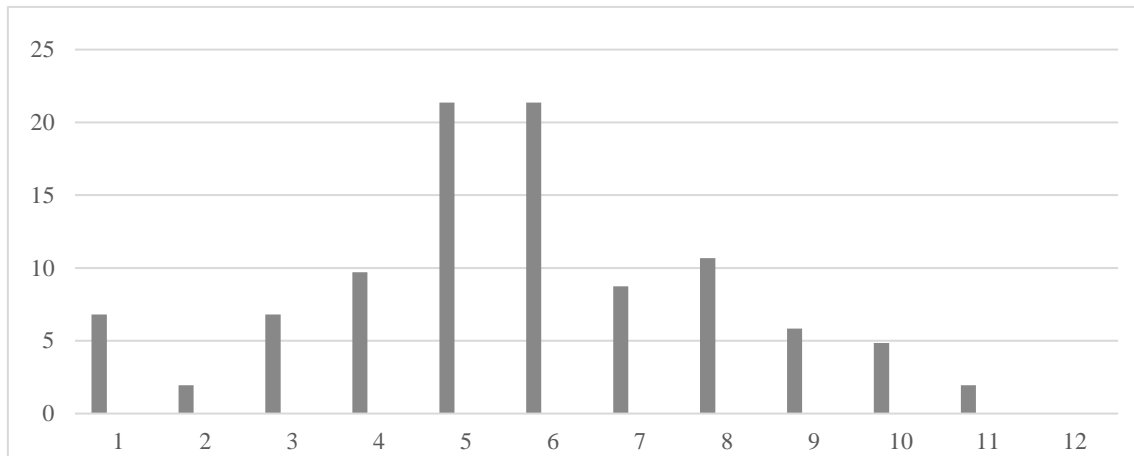
Note. Hierarchy of the natural environment as a stakeholder importance by number of answers.

Source: Own work.

Concerning environmental behaviours, organisations acquired newer, more sustainable, raw material consumption and energy through the years, depending on financial availability and regulatory changes, while recognising the positive impacts of its adoption (e.g., Interviews 11, 20, 25).

Before the fire disaster, the interviewed organisations had a distant relationship with the forest, even if they were physically located in the midst of it. "I can't see the direct connection" [between the company and the forest] (Interview 11); "This company has nothing, nothing related to the forest. We have no connection" (Interview 12); or "We don't have a close relationship with the forest" (Interview 17) – all these three organisations were located in within metres of the edge of the forest.

When directly asked whether the natural environment should be considered a stakeholder, some interviewees identified it as one, but failed referring to it when openly listing their stakeholders. They provided generally positive answers while recognising the importance of the natural environment's role in companies' daily activities and strategic success "even companies that are not connected to the forest should not disregard it at all. Just for the simple fact that the forest produces oxygen, produces firewood, raw materials for the equipment they and all of us use" (Interview 1); "The industry needs the forest, if only for oxygen production" […] "The forest,

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whether we want it or not, is a part of the industry" (Interview 13). When requested a comment, most interviewees (18) acknowledge the natural environment (and the forest, specifically) as something important and valuable that possesses inherent characteristics and, therefore, should be considered a stakeholder; however, as per their responses, the organisations' priority was to return to the pre-disaster normality, as fast as possible.

Forest and wood-related businesses recognise the value and importance of their natural environment, and the issues it faces. However, there is a direct interest in the wellbeing of their surrounding natural environment: the source of their raw materials. Interviewee 20, from a wood-related business, quickly stated that the natural environment should be considered a stakeholder and acknowledged by other companies, primarily because of ecological reasons.

Seven organisations (Interviews 9, 10, 11, 12, 21, 22, and 23) stated they have nothing to do with their natural environment, e.g. from a paper recycling company "In terms of the natural environment, we have not much to do" (Interview 11); or from a plastics company: "We are not connected with the forest, in any sense" (Interview 22 – plastics). In these two examples, companies deny any direct responsibilities towards the natural environment or consider it as a stakeholder since the former works in a sustainability-related field and see their role towards the protection of the environment as fulfilled (Interview 11). The latter's raw materials come from distant areas, as is the case of organisations that assemble or transform materials (Interview 22). According to Interviewee 22, the company's activity has an irrelevant impact on its local natural environment since their raw materials are extracted far away, and they merely transform the raw materials. This decision-maker fails to see a link between the company and the natural environment since the extractors are their providers, and it is them who need to include the natural environment in their stakeholder list. In these examples, due to either business characteristics or industry, these decision-makers believe that the surrounding natural environment is the responsibility of other organisations: the state, local governments, and landowners.

Action towards stakeholders' needs is the tenet of stakeholder theory (Freeman, 1984). One of the interview items asks interviewees how they can mitigate future forest fires by preserving their natural environment if considered a stakeholder. The interviewees raised several issues hindering any sort of appropriate action by

organisations that lead to a general lack of initiative. Decision-makers identify several hurdles organisations face to produce results. They believe organisations possess low influencing power; the local and central government strategies frustrated organisations' concerted efforts, landowners' resistance to change, and lack of human and financial resources to manage forests. They state that other stakeholders may and must take direct action and responsibility for the natural environment.

Regarding activities related to protecting and managing the natural environment, most of the interviewed organisations lacked a history of developing activities towards it. The exception lies in two organisations (Interviews 4 and 22) who had created reforestation activities with their workers before the fires as part of team building and internal marketing activities. At the time of the interviews, these two companies also failed to engage with other institutions to develop environmentally oriented activities.

Some organisations, however, do engage in other activities related to environmental sustainability, almost exclusively in their daily activities: purchased equipment and materials according to market trends and technological developments, spearheaded the adoption of international quality management systems, such as ISO 9001 or ISO 14 001 (Interviews 4, 8, and 17), carefully choosing distribution and provider partners.

Few organisations showed interest in a more participative role in solving environmental or forest issues (Interviews 1, 4, and 16), identifying lack of technical knowledge and financial and human resources limitations to pursue or dynamize valuable activities (Interviews 4 and 17). A minority of companies are willing to be the communicators of change by providing their workers and other stakeholders with sustainability and nature-related communications or courses (Interviews 9, 10, 15, and 18). They recognise their leverage within their business networks, where they may have influence, becoming a vehicle for sharing experiences and information, yet with limitations.

4.5.1. Describing the natural environment as a stakeholder

One of the items in the survey is a list where respondents could order stakeholders by degree of perceived importance. Of the surveyed organisations, 6.80% identify the natural environment as the most important. More important than

workers, clients, or investors. Such information suggests that some decision-makers identify the natural environment as a crucial organisational stakeholder. Yet, none of the respondents placed the natural environment in the last option, where the least important stakeholders are identified.

When asked if organisations are responsible for their surrounding natural environment, the answers were positively consistent, since 27.18% completely agree, 43.69% highly agree, 25.24% moderately agree, 2.91% are neutral. While only 0.97% answered *moderately disagree*, none of the respondents chose *highly disagree* or *totally disagree*. This shows that there is a substantial agreement that organisations are responsible for their natural surroundings.

One of the survey items concerns the purchase of environmentally sustainable equipment, the use of sustainable services, and the reasons to choose them. Most organisations had purchased environmentally sustainable equipment (64.08%). To better understand the motives behind these choices, one of the survey items lists some reasons for purchasing such equipment (and respective answer percentages): *environmental concerns* (30.92%), *legal demands* (17.11%), *market demands* (16.45%), *cost reduction* (13.16%). *competitive advantage* (9.21%), *long-term investment* (9.21%), and *other stakeholders' demands* (3.95%). These figures show that the main reason for equipment purchases is environmental concerns.

Another item asked respondents whether the organisation intends to purchase environmentally sustainable equipment in the future, to which 73.79% agreed. Another list item was provided, and from the possible options, we obtained the following results: *environmental concerns* (34.25%), *cost reduction* (18.78%), *competitive advantage* (12.15%), *market demands* (11.05%), *legal demands* (10.50%), and *other reasons* (2.21%). Again, answers show that the main factor for buying environmentally sustainable equipment is environmental concerns, with cost reduction being the second on the list.

Concerning activities directed towards the natural environment, where organisations engaged in activities beyond their daily responsibilities or activity focus, our figures show that 34.95% participated in environmentally related activities. When selecting *Yes*, a sub-question was triggered, providing a list with several pre-filled options from which respondents could identify different activities: *environmental education* (24.68%), *participation in volunteering projects* (20.78%), *reforestation* (18.18%), *clearing woods* (18.18%), *partnerships with NGOs*

(11.69%), and *beach cleaning* (6.49%). From these answers, nearly one-fourth of organisations that employed environmental activities provided their stakeholders with environmental education tools.

In terms of responsibility towards the natural environment, we provided a list of entities that have the responsibility towards the natural environment. Respondents identified: a) *central government* (52.43%); b) *private owners* (22.33%); c) *civil society* (11.65%); d) *local government* (8.74%); e) *law enforcement* (2.91%); and f) *private businesses* (1.94%) (Table 25). On this table, position *1* corresponds to the entity most responsible for the preservation and management of the natural environment, while *6* represents the least responsible.

4.6. Differences in the perception of the natural environment as a stakeholder

One of our research hypotheses is to understand differences in the perception of the natural environment as a stakeholder, which we posit as follows:

H1 – The perception of the natural environment as a stakeholder is significantly different between organisations affected and unaffected by a natural disaster.

To differentiate between affected and unaffected organisations, we created the TYPAFFECT variable. This item discriminated affected and unaffected organisations through two numeric attributes: *1* and *2*, respectively. This categorisation allowed us to create distinct groups for comparative analysis. With this differentiation in place, we explored and evaluated if there were significant differences between affected and unaffected organisations. These differences provided a deeper understanding of the specific impacts and implications of the natural disaster on organisations. Also, they offered insights into the contrasting experiences and outcomes between the two groups. This analysis revealed potential vulnerabilities or advantages associated with the affected and unaffected organisations and presented valuable insights for decision-making and strategies tailored to each group's specific circumstances.

Table 25

Responsibility towards the natural environment

Entity	1 %	n	2 %	n	3 %	n	4 %	n	5 %	n	6 %	n	N
Central government	52.43	54	11.65	12	9.71	10	5.83	6	11.65	12	8.74	9	103
Private owners	22.33	23	9.71	10	21.36	22	12.62	13	19.42	20	14.56	15	103
Civil Society	11.65	12	7.77	8	16.50	17	33.98	35	15.53	16	14.56	15	103
Local government	8.74	9	50.49	52	18.45	19	14.56	15	6.80	7	0.97	1	103
Law enforcement	2.91	3	5.83	6	24.27	25	16.50	17	19.42	20	31.07	32	103
Private businesses	1.94	2	14.56	15	9.71	10	16.50	17	27.18	28	30.10	31	103

Source: Own work.

With TYPAFFECT variable, we ran the non-parametric tests of independent samples – Mann-Whitney tests – that showed a lack of evidence for a significant difference between affected and unaffected companies concerning the three attributes (Power: $p = .469$, $t = -.70$; Legitimacy: $p = .877$, $t = .637$; Urgency: $p = .868$, $t = -.655$). This information suggests that we reject H1, meaning that the perception of the extent to which the natural environment as a stakeholder is similar between companies affected and unaffected by natural disasters.

4.7. Affected organisations perceive the natural environment as a primary stakeholder

We now explore the relationship between organisations' perception of the natural environment as a stakeholder and their corresponding actions. For this, we explore the results of another of our hypotheses:

H2 – The perception of the natural environment as a stakeholder positively influences pro-sustainability attitudes, especially in natural disaster-affected companies.

To test this hypothesis, we first ran a multiple regression model to investigate the relationship between the independent and the dependent variables. Our research question intends to shed light on whether the perception of the natural environment as a stakeholder positively influences pro-sustainability attitudes, through different investments, namely in environmentally sustainable equipment, services, and procedures (dependent variables). We also want to observe if there is a significant difference between affected and unaffected organisations.

Firstly, we must understand which of the three attributes influences decision-makers actions. From the results (Table 26), when taking into consideration the natural environment as a stakeholder, we observe that Legitimacy is the only dimension that possesses statistical significance, when organisations decide to increase their investments in sustainable equipment, services, or processes.

Table 26

Linear regressions between power, legitimacy and urgency and investments in processes, equipment, and services after 12 months of the disaster

		Coefficients[a]				
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
a. Dependent Variable: Investment in Sustainable Processes	Power	-.136	.101	-.140	-1.352	.179
	1 Legitimacy	.275	.101	.266	2.734	.007
	Urgency	.036	.148	.026	.244	.807
a. Dependent Variable: Investment in Sustainable Equipment	Power	.000	.105	.000	.004	.997
	1 Legitimacy	.264	.104	.249	2.535	.013
	Urgency	-.096	.154	-.066	-.627	.532
a. Dependent Variable: Investment in Sustainable Services	Power	.032	.096	.035	.336	.738
	1 Legitimacy	.206	.096	.212	2.148	.034
	Urgency	-.166	.141	-.125	-1.174	.243

Results show that only Legitimacy significantly predicts investments in sustainable processes, services, and equipment in the first twelve months after the fires.

To test the moderation of that relationship by being affected or unaffected by a natural disaster, we resorted to PROCESS © Macro for SPSS, employing Model 1. This tool provides a foundational analysis for examining simple moderation effects. It allows us to discriminate between two different groups, which in our case are affected and unaffected organisations, facilitating a deeper understanding of the dynamics between the purchase of sustainable processes, equipment, and services twelve months after the disaster, the perception of the three stakeholder attributes moderated by how organisations were affected.

In addition, we performed 1000 bootstrap resamples to assess the robustness and stability of our results. Bootstrap resampling allowed us to estimate the variability in our findings and evaluate the significance of our moderation effects.

Results show that pro-sustainability actions can be predicted by the degree to which decision-makers perceive its legitimacy as a stakeholder. Nevertheless, the statistical evidence lacks the significance to infer that natural disaster-affected and unaffected organisations purchase sustainable processes, equipment, and services in different degrees.

As per Table 27, results show that being affected or unaffected lacks the statistical significance to act as a moderator. The findings support that the more decision-the higher the perception of legitimacy, the more decision-makers will invest in sustainable services, processes, and equipment.

Table 27

The purchase of new sustainable processes, equipment, and services 12 months after the fire, moderated by the type of affected.

		Coefficient	Standard Error	t	p	LLCI	ULCI
Power	Processes	-0.04	0.20	-0.24	0.80	-0.44	.34
	Equipment	-0.15	0.20	-0.76	0.44	-0.55	0.24
	Services	-0.21	0.18	-1.15	0.25	-0.58	0.15
Legitimacy	Processes	-0.14	0.20	-0.68	0.49	-0.54	0.26
	Equipment	-0.15	0.21	-0.73	0.46	-0.57	0.26
	Services	-0.17	0.19	-0.91	0.36	-0.56	0.20
Urgency	Processes	-0.07	0.29	-0.26	0.79	-0.65	0.50
	Equipment	0.04	0.29	0.16	0.87	-0.54	0.63
	Services	0.07	0.27	0.26	0.79	-0.46	0.61

4.8. The attributes on which the perception of the natural environment depends

To test our third hypothesis *H3 –* The perception of the natural environment as a stakeholder depends on the perception of its power, legitimacy, urgency, and proximity, we explore the second-order CFA. This analysis tests the fit of our hypothesised model and examines our constructs' validity. For this purpose, we employed IBM® SPSS® AMOS Graphics® 28 and reported several goodness-of-fit indices.

However, we must note that we removed the proximity attribute at an early stage. To understand whether proximity played a role in the perception of the natural environment as a stakeholder, we created an item concerning the organisation's surroundings. This information would point towards the physical distance between the organisation and the burnt areas (i.e., within a natural/forest environment). Thus, we provided an item asking whether the organisation or its subsidiaries are located in rural, urban or peri-urban areas. From the returned answers, 72.55% of respondents referred to their organisations as being in urban areas. Yet, most of the contacted organisations are based in rural municipalities. As an example, some organisations are located in a municipality with a total population of ~3.300 inhabitants in a 128.75 Km2 area (e.g., Pedrógão Grande) (*Estatísticas Do Território*, 2023). Due to these contradicting results, we discarded proximity from the stakeholder attributes.

Concerning the CA, in the first model, the respective items load into the dimensions of power, legitimacy, and urgency. The three latent dimensions also load directly onto this higher-order latent factor (perception of the environment as a stakeholder), emphasising the overarching perception of the natural environment as a stakeholder. For the simple second-order, three-factor analysis, we obtained the model fit results explored in Table 28.

To refine the model, we iteratively added constraints between error terms based on modification indices, as long as they were conceptually meaningful. Constraints can be added to improve the fit of the CFA model to the data. They are based on modification indices, which suggest potential improvements to the model by specifying relationships between variables or error terms. By adding constraints that make theoretical sense or are supported by the data, we aimed to create a more accurate representation of the relationships between our observed variables and latent constructs. Four more models were considered in this iterative process.

These indices (Table 28) identified specific item pairs that, when correlated, improved the model fit. Based on these findings, we iteratively refined the three-factor model.

1. **Model 2:** An additional constraint was introduced between the error terms of indicators LEG3 and LEG5.
2. **Model 3:** Two additional constraints were added, one between indicators LEG3 and LEG5 and another between indicators PWR1 and PWR2.

3. **Model 4:** Three extra constraints were included between indicators 12(LEG3 and LEG5, PWR1 and PWR2, and LEG4 and LEG5.

4. **Model 5:** Finally, four additional constraints were introduced, connecting error terms for indicators LEG3 and LEG5, PWR1 and PWR2, LEG4 and LEG5, and LEG3 and LEG4.

Table 28

Confirmatory factor analysis exploring the independence of The Natural Environment as a Stakeholder from related constructs (n = 106)

	χ^2	df	TLI	RMSEA	NFI	CFI	SRMR	AIC
Model 1	131.0	20	.49	.23	.61	.63	.15	183.490
Model 2	94.0	19	.67	.19	.72	.75	.13	143.962
Model 3	61.8	18	.78	.15	.81	.86	.11	113.848
Model 4	42.8	17	.86	.12	.87	.92	.08	96.803
Model 5	25.4	16	.95	.07	.92	.97	.05	81.434

The fit statistics consistently improved throughout this process, with Model 5 ultimately demonstrating a good fit to the data. This final model aligned more closely with our theoretical framework and exhibited a superior fit to the data, reinforcing the robustness and appropriateness of our measurement model. Its five fit indices are good: NFI is acceptable (Hu & Bentler, 1998; Schreiber et al., 2006; Schumacker & Lomax, 2010); CFI reveals a good fit (> 0.90) (Schumacker & Lomax, 2010). The TLI shows a good fit, and the RMSEA an excellent fit (Hu & Bentler, 1998; MacCallum et al., 1996; Schreiber et al., 2006; Schumacker & Lomax, 2010). Other authors (Browne & Cudeck, 1992; Credé & Harms, 2015), suggest that a CFI higher than 0.90 is accepted if observed among different model fit indices. The RAMSEA can be accepted because it has been observed that smaller samples and smaller degrees of freedom erroneously may show a poor model fit (Kenny et al., 2015; Taasoobshirazi & Wang, 2016). Our chi-square (χ^2) is significant at the level of 0.05. According to the discrepancy divided by the degree of freedom (CMIN/DF), the goodness-of-fit is 1.67, which is a reasonable fit since it is below or equal to five (Marsh & Hocevar, 1985). Since we used a questionnaire with varying levels (*1 – 7*), it was difficult to understand the Root Mean Square Residual (RMR) (Kline, 2011),

which led us to adopt the Standardised Root Mean Square Residual (SRMR). The value of the SRMR is .05, which is above the cut-offs proposed by Byrne (2010) and Schumacker & Lomax (2010)(< .05), Schreiber et al. (2006) (< .80). However, SRMR can be higher with a lower number of parameters and models that use small samples (Hooper et al., 2008). Our aim in comparing these models was to identify which aligns better with the observed data. Factor analysis revealed that the eight items loaded onto three distinct factors corresponding to power, urgency, and legitimacy, which supports Mitchell et al.'s (1997) theoretical framework underlying this scale.

The second-order CFA (Figure 19) revealed the presence of a higher-order factor that summarises the shared variance between the first-order ones. This finding allows us to infer that the natural environment, despite being a non-human entity, can be evaluated as a stakeholder when applying Mitchell et al.'s (1997) typology because it is constituted by the three attributes of power, legitimacy, and urgency.

Figure 19

Second-order confirmatory factor analysis
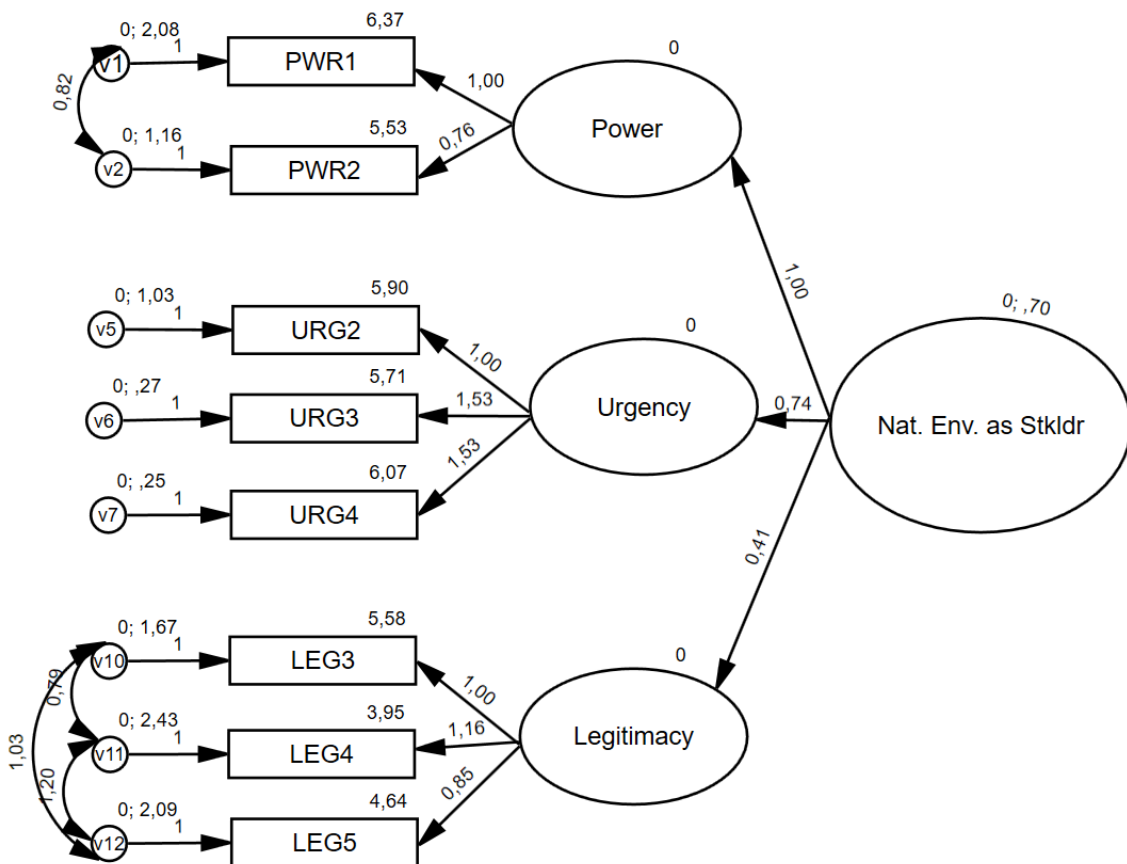
Understanding the second-order factor structure has important practical implications for our study since we focused on understanding which attributes the Natural Environment as a stakeholder depends on. Figure 19 provides a more nuanced view of the relationships among our research items. It also guides the development of interventions or strategies that target the higher-order constructs, ultimately enhancing our ability to address whether the perception of the natural environment as a stakeholder depends on the perception of its a) power; b) legitimacy; and c) urgency.

We can thus conclude that our Hypothesis *H3* – "The perception of the natural environment as a stakeholder depends on the perception of its a) power; b) legitimacy; and c) urgency" is supported.

4.9. Typifying the natural environment as a stakeholder by affected organisations

Our fourth and final hypothesis (H4) posits that organisations impacted by a natural disaster regard the natural environment as an intrinsic and definitive stakeholder. This hypothesis delves into the recognition of the environment as a crucial factor in the decision-making processes and strategic considerations of such organisations. It highlights the significance of environmental concerns in the context of stakeholder theory.

H4 – Organisations affected by a natural disaster perceive the natural environment as a definitive stakeholder.

To understand the perception of affected organisations, we first selected them from our response database. Afterwards, we calculated the average of each attribute using the power, legitimacy, and urgency variables. Results are described in Table 29.

Table 29

Average of results of each attribute variable.

Attribute	Average
Power	5.92
Legitimacy	4.79
Urgency	5.84

We used the result 3.5 as a cut-off point, where all values below show the respondents reject the natural environment as possessing such an attribute, while values above 3.5 suggest that respondents agree with the proposition. We understand that "accepting" differs from "acknowledging" and "identifying", for which we defined another cut-off point for a high level of agreement: >5.0. On 1 – 7 varying levels, this value shows a strong belief in the natural environment as a stakeholder. Legitimacy, although above the cut-off point, lacks the strength to be considered high (4.79).

Provided that our findings suggest that decision-makers of affected organisations lack the ability to attribute legitimacy to the natural environment as a stakeholder (Table 26), we reject the hypothesis that the natural environment is considered a primary stakeholder (definitive) by the companies affected by the 2017 fires. These findings oppose the stance suggested by Haigh and Griffiths (2009), about the natural environment as a definitive stakeholder, especially in the context of climate change.

4.10. Summary

This fifth chapter presented the key findings and results from the extensive data analysis conducted in this thesis. Through rigorous interpretation and examination of our qualitative and quantitative data, valuable insights have been gained, contributing to the existing body of knowledge in the fields of stakeholder theory, disaster management, and the perception of the natural environment as a stakeholder. The findings addressed our five main research questions and four hypotheses, providing evidence and support for the thesis objectives. The results expand our understanding of the impact of the 2017 forest fires. The significance of these findings underscores the importance of continued research in the dynamics between organisations, the natural environment, stakeholders, and natural disasters.

Chapter V – Discussions

The previous chapters comprehensively analysed how forest fires impacted organisations and their response to human stakeholders and the natural environment. Specific research questions were addressed, and methods were described. Now, we discuss the results in relation to the literature review and research questions, considering their implications. Several key themes emerged, providing insights into disaster impact on organisations and the natural environment's perception as a stakeholder. The discussion highlights effective approaches, influencing factors, and areas for further research. This study's contributions include identifying new dimensions in the organisation-natural environment relationship and proposing concepts for future research.

5.1. Operationalising disaster management – lessons from the 2017 Portuguese wildfires

Our research combines two literature streams: stakeholder theory and post-disaster management. While stakeholder theory delves into the relationship between the organisation and other entities (Freeman, 1984), disaster management theory develops frameworks for organisations to manage the effects of natural disasters through prevention, mitigation, and operationalisation of different variables in a disaster setting (Carter, 2008; Khan et al., 2008; Todd & Todd, 2011).

Our data shows that organisations assessed the damages and assisted the affected community during the response phase. During the post-disaster phase, the diligence for the infrastructure restoration began, while some organisations developed mitigation and preparedness activities.

Some organisations were somewhat prepared for the disaster since they possessed preventive and mitigative procedures and equipment. Nevertheless, some suffered considerable damage. From the interviews, "luck" played a factor in the destruction or the safekeeping of organisations. Most decision-makers were unable to connect the lack of preparedness to the damaging impacts. Most organisations and their stakeholders were unprepared to sustain, prevent, or mitigate a disaster with such proportions. Given that Portuguese forests burn on a regular basis and summer forest fires are an endemic issue previously identified (Lourenço, 1991, 2003; Lourenço et al., 2012, 2013; Meira Castro et al., 2020), organisations could have

foreseen this disaster, since, given time and the right climatological conditions, a wildfire with such proportions was deemed to happen.

We believe the disaster management's Phase 1 (pre-disaster) (Carter, 2008; Khan et al., 2008; Todd & Todd, 2011) had been mostly disregarded through the years preceding the disaster. Given the abundant cases of similar events, organisations could have considered the state of the forests and an exceedingly dry year as red flags for dangerous large-scale fires. Given that year's drought, organised, preventive, and mitigation actions could have been taken, which could have led to lesser consequences.

The Phase 2 (response) and Phase 3 (recovery) were comprehensive, and decision-makers acted according to what was suggested by some authors (Carter, 2008; Khan et al., 2008; Todd & Todd, 2011). This might be the most straightforward phase since organisations must return to a state of normality as soon as possible. It appears that decision-makers acted instinctively, for they were swift and fast to take decisions, select an action course while recovering infrastructure, supporting local communities, and different stakeholders. Recovery processes can be slow, taking up to ten years (Carter, 2008). Yet, five years on, after data collection and analysis, and field observations, we identify several long-haul recovery processes have yet to be started. Although organisations did recover and the scars of the disaster are barely visible if at all, the destruction wrought in surrounding forested areas is still prevalent.

Little has been done by organisations – public or private – to substantially mitigate future similar events. Organisations, through decision-makers, still lack the proactive stance to develop conscious, long-term changes in the perception and action towards the natural environment. More than thirty years on, the stance suggested by Lourenço (1991) that the Portuguese – citizens and governments – have developed a sense of carelessness towards the forest, projecting a sense of "let it burn", still holds. What has been true for governments and citizens is now observed amid organisational decision-makers.

Finally, the prevention, preparedness, and mitigation phases have been put into practice, mostly, because of the sense of "once bitten, twice shy". Some organisations developed procedures and acquired safety equipment, but with a self-preserving approach. This shows an awareness and preparedness for future events. Yet, we recommend that safety and self-preservation go beyond organisations' walls and surrounding areas. Proper mitigation and preparation must address the physical

systems in which organisations are located in. In the case of fires, sustainable disaster mitigation strategies must include the state of regional/surrounding forests. But disaster mitigation strategies must also apply to river areas, floods, earthquake-prone or tornado areas.

Inaction and passiveness are still observed among organisations, be they local private businesses, local and central authorities, or landowners. Given its impact and destruction, the disaster may have led decision-makers to learn valuable lessons about the destructive power of a natural disaster and the need to acknowledge the natural environment as a closer entity to the organisation, besides its obvious physical distance. The 2017 forest fires may have been the spark necessary to lead organisations to press for local, regional, or national changes. However, this disaster led to mostly inward changes and an opportunistic use of State funding to modernise equipment and processes. At best, some cases led to the purchase of surrounding fields or to more pressure on landowners to clear the surrounding forests where businesses operate.

Similarly to other natural disasters, as identified by Raikes et al. (2019), there are issues with responses and recovery phases due to the fragmentation of policies and legislative frameworks, as well as the accountability of the next in line. Both affected and unaffected organisations still fail to develop long-term decisions that will prevent or mitigate future natural disasters – be they fires or other natural hazards. Specific and targeted education is a solution to attain successful preventive, responsive behaviours and develop communal resilience to prepare and withstand a natural disaster (Chou et al., 2015; King, 2000; Spence et al., 2012). Some authors suggest that awareness can diminish a community's negative outcomes and vulnerabilities (Apronti et al., 2015). Different tools for the disaster risk reduction (e.g., Bernhardsdottir et al., 2016) can be adopted through different methods (formal or informal), which have proven to be effective (Tsai et al., 2015).

By informing organisations to act towards more robust disaster preparedness, it is possible to, at least, reduce the risks that these organisations may sustain. On the one hand, more information is needed on how to mitigate the impacts of forest fires; on the other, the central government must invest in special programmes that will enable the development of mitigation strategies and the adoption of mitigation behaviours. We argue that it is necessary to foster a systemic consciousness among different stakeholders who can affect and are affected by forest fires to

mitigate and prevent the nefarious impacts of future natural disasters. Since decision-makers disregard parts of the disaster management, it is necessary that academia, organisations, and governmental bodies deliver strategic, practical options to organisations. With more tools to mitigate natural disasters, organisations will be more resilient and sustainable in the face of a new natural disaster. However, it is highly recommended that when defining disaster management programmes, organisations also take other natural disasters into consideration.

We understand that a better-prepared network of decision-makers and organisations will require less financial and social support from governmental institutions in the aftermath of disasters. By minimising risks, organisations will be less dependent on emergency packages while being able to keep their production lines active, which contributes to the local social and economic environment.

5.2. *The power of organisational stakeholders in a natural disaster context*

The tenets of stakeholder relationships are based on the mutual impact of the interaction between organisations and different groups (Freeman, 1984). This stance has been greatly influential, with many authors following in its steps and adding some of their own interpretations (Barney & Harrison, 2020; Buchholz & Rosenthal, 2005; Carroll & Näsi, 2016; Mainardes et al., 2012; Sachs & Maurer, 2009; Weitzner & Deutsch, 2019). Some believe the opposite is true: organisations should focus significantly more on their core activities, than on other less important issues (Friedman, 1970). Others state stakeholder theory is flawed, lacking practical and theoretical significance (Sternberg, 1996, 1997, 2001). We conducted this research to understand the dynamics between organisations and their stakeholder groups in the aftermath of a natural disaster.

Our findings show a "natural" stance on stakeholder identification. Our samples identify some of the most common stakeholder groups, which have also been identified theoretically and empirically (e.g., Mitchell et al., 1997; Parent & Deephouse, 2007; Siriwardena et al., 2009; Stretton, 2014). Most of these stakeholder groups are in necessary relationships with organisations, and they have a close impact on the organisation. They are more active in the organisation's daily activities, e.g., clients, workers, investors, and suppliers. These "core stakeholders" have different names, such as "strategic" (Goodpaster, 1991), "primary" (Luoma & Goldstein, 1999;

Savage et al., 1991), "active" (Haveman et al., 2019), "definitive" (Mitchell et al., 1997), "organisational"(Henriques & Sadorsky, 1999), "internal"(Sirgy, 2002), or Institutional (Vazquez-Brust et al., 2010).

Although being classified under different names, the identified or prioritised stakeholder groups in our research are those with direct impact on organisations' performance and output. These possess the three stakeholder attributes: power, legitimacy, and urgency. They have a direct, close impact on the organisation and are more active in the organisation's daily activities. Other stakeholders were disregarded during the interviews or placed in lower positions in the stakeholder list. These seemed irrelevant or were completely disregarded, namely investors, local government, or ex-workers.

Due to organisations' profiles, the lines that define high- and low-proximity stakeholders (Schons & Steinmeier, 2016) are blurred, making them highly interdependent stakeholders (Frooman, 1999; Frooman & Murrell, 2005). For example, our data shows that in several organisations, many family members work in the same company, and suppliers and workers are often companies' clients and consumers. Local governments and public institutions are both clients and consumers. Given these dynamics, stakeholders may move between typologies, easily changing their distance towards the organisation. Both affected and unaffected organisations play social roles in proximity. In this context, stakeholders often know each other personally, and a sense of familiarity and responsibility towards stakeholder groups is developed. While some stakeholder groups are considered distant in other geographical areas, our research suggests that the many of the studied organisations' stakeholders live and trade in surrounding regions. Having said that, organisations engaged in practical, altruistic CSR actions towards newly created "demanding stakeholders" – lacking power and legitimacy but possessing urgency (Mitchell et al., 1997). These "Demanding stakeholders" needed support from all sources available and organisations that supported them had the chance to develop social relevance and positive image, which retains workers and clients, as some suggest (Johnson et al., 2019)

From a broader perspective, this research substantiates stakeholder theory's propositions. Organisations from a natural disaster-affected region recognise their stakeholders, even if they lack the proper terms to do it. Decision-makers perceive that their organisations have a social role beyond daily operations, abiding by the law,

and making a profit. Generally, interviewees and surveyed organisations tend to different groups in a natural fashion, be it in a caritative or altruistic way or to develop their public relations. Stakeholders, especially the "definitive" stakeholders, are ever present in organisations' strategies, even if decision-makers prioritise them in their own personal way.

Even though many of the organisations from our sample lack academic backgrounds, decision-makers rank and perceive the importance of different stakeholder groups as suggested by scholars (e.g., Mitchell et al., 1997). Thus, we contribute to the understanding of the importance of stakeholders and there are few differences between Portuguese rural organisations and other rural and/or urban organisations in other latitudes.

The 2017 wildfire response reflects or extends different common CSR strategies and activities. Organisations first supported definitive, central stakeholders, followed by other activities towards more distant stakeholder groups. Affected organisations mainly focused on "definitive stakeholders". Decision-makers acted thus because definitive stakeholders' claims were urgent and "managers have a clear and immediate mandate to attend to and give priority to that stakeholder's claim" (Mitchell et al., 1997, p. 878). On the other hand, unaffected organisations focused their actions towards "dormant stakeholders", those who lack power or a claim towards the company.

From a systemic perspective, external stakeholders (e.g., partners, providers, civil society, and local government) played central roles in the mitigation process. These groups supported affected organisations through different actions, namely borrowing equipment, helping with debris removal, deferring payments, and channelling raw materials, to name a few. Such activities helped damaged organisations to return to business within relatively short timeframes. Our results show that in the aftermath of a disaster, stakeholders do positively affect and are affected by the organisations. Business-focused approaches to disaster management, as proposed by Friedman (1970), may have dire consequences for local organisations. One practical example was observed in Interview 26, as the interviewed decision-maker insisted on the urgency of returning to business as usual, regardless. As per the response, such attitude led to the departure of many workers and clients leaving to direct competitors. This finding may support the thesis that organisations managed by decision-makers who foster their stakeholder relationships during a crisis have a

competitive advantage against others. The stakeholder theory that extends the role and purpose of the organisation finds in the Portuguese organisations affected by natural disasters solid ground to defend its tenets. Organisations do, indeed, have responsibilities – even if "only" moral – towards groups of individuals that affect and are affected by the organisation's activities. They are perceived by stakeholder groups who will repay in kind.

Concerning larger, unscathed organisations that possess more comprehensive sets of resources – human and financial – and act as beacons of normality and support to communities, results show that organisations' responsibilities have a broad reach, where stakeholder groups without direct ties to the company are too, a concern of the company (Freeman, 1984; Freeman et al., 2010). We understand that there is a positive correlation between organisation size and the support provided. For instance, the more workers in an organisation, the more money or goods are gathered in a charity activity (as seen in Interview 4). Also, the larger the organisation, the better and faster access to support services in the aftermath of the disaster. All these are beyond the organisation's activity scope. Beyond the empathy noted above, decision-makers also expect to turn these activities into a positive image for the organisation, both internal and external stakeholders.

From another perspective, organisations leaned on their stakeholders to return to a state of normality, and those with stronger and broader relationships with their stakeholders achieved that state faster. This supports the stance that a natural, positive bond between stakeholders and the organisation is a strategic capability, specifically in the aftermath of a natural disaster.

We argue that a disaster management strategy, supported by proper stakeholder management, contributes to success and fast recovery. The stakeholder theory is criticised for being vague and lacking proper results (Sternberg, 1996, 1997, 2001). This research challenges this view. Stakeholder theory can be diverse since stakeholder groups are as diverse as industries, social and industrial contexts. Therefore, organisations are expected to act in specific ways towards specific groups in specific contexts – in this research, in the aftermath of a disaster. As observed, the more attention to stakeholders is paid and the stronger the stakeholder network is, the faster organisations recover. We believe this assertion shows that stakeholder theory brings value to organisations and may be a strategic sustainability factor. We argue that different stakeholder groups may play different roles in various stages of disaster

management, e.g., workers who help mitigate damages, decision-makers who support damaged institutions, competitors who provide support, and providers who quickly replace raw materials or postpone payment dates. The activities described are decisive in the success of a well-defined disaster management strategy.

The stakeholder theory, with its flaws and criticisms, proves to be a managerial compass in a time of crisis when organisations and stakeholders alike are under extreme pressure that can be decisive for the organisations' survival. Strong stakeholder relationships had positive outcomes for all involved. This is an opportunity to understand the power and role of networks in natural disaster-affected areas. From a governmental perspective or other non-profit organisations, the 2017 forest fires may trigger the creation of a network's development programme. A supportive community and different networking organisations can foster such relationships and knowledge exchange. With such dynamics between organisations, it will be possible to create a stronger organisational community that will be more resilient to natural disasters and faster recovery periods.

The sampled organisations had little knowledge about their stakeholders' preparedness to face the disaster. Although the relationships between organisations and stakeholders are close, positive, and valuable, the subject of natural disasters is absent in their relationships. Our findings suggest that organisations lack a shared knowledge of natural disasters and their management. We argue that forest fires, and disaster management may be only a "coffee table chat" or "water cooler talk". Organisations may speak about these topics with their stakeholders, but only on a superficial, incidental level. We argue that shared knowledge and experiences could generate organisational natural disaster resilience.

5.3. Changing perceptions upon destruction – the case for the natural environment as a stakeholder

Does the natural environment have the merit and/or the characteristics of a stakeholder? Can a disaster influence the perception of the natural environment as a stakeholder? These general questions are motivated by the academic debate about whether the natural environment should possess stakeholder status. Considering the standpoint of Driscoll and Starik (2004), we suggest that the natural environment must be regarded as a stakeholder by managers and decision-makers since it possesses the characteristics of one. The fundamental principle sustaining this

approach is that stakeholder theory delves into organisations' relationships with entities that affect and are affected by their activities.

Natural disasters affect organisations, which decision-makers can prepare for by understanding the underlying issues leading to them. By possessing this knowledge, decision-makers may develop, measure, and define impactful actions to satisfy outcomes of a series of problems, while satisfying the demands of different stakeholders.

Our qualitative data suggests that many decision-makers disregard the natural environment as a stakeholder. Positive answers towards the natural environment were uttered out of politeness and social desirability than of deep-rooted feelings. The words were said but lacked to be converted into actions after the disaster or to develop changes in organisations' visions or strategies. We argue that organisations project espoused values since they refer to the importance of the natural environment, but their actions reveal otherwise, as suggested by some (Craft, 2018; Lee et al., 2013).

Also, the disaster failed to develop a closer relationship between organisations and the natural environment. Most decision-makers consider the natural environment as a stakeholder in a business-like approach to avoid fines or other financial losses resulting from poor environmental behaviour (Wood & Jones, 1995). This is a common practice since, as some suggest (Bendheim et al., 1998; Näsi et al., 1997), the natural environment as a stakeholder is of lesser importance than its human counterparts.

We initially argued that, resorting to Mitchell et al.'s (1997) stakeholder typology, the natural environment can be interpreted as a dependent stakeholder. It possesses legitimate demands that require urgent decisions, yet they "depend upon others (other stakeholders or the firm's managers) for the power necessary to carry out their will" (Mitchell et al., 1997, p.877). This proposal is substantiated in our research since the demands of the natural environment are only met through the power exerted by other stakeholders: decision-makers. The following paragraphs present a discussion of the qualitative and quantitative results.

From the qualitative data, the natural environment was considered a discretionary stakeholder. Its legitimate demands, albeit silent, lacked to provide it with power of influence and urgency. Nevertheless, given the disastrous outcomes it caused, the natural environment showed its power despite lacking autonomous,

conscious will. The decision-makers' perspective remained slightly the same regarding urgency and legitimacy after the fire. Structural changes are still done in an external-to-internal direction, showing responsiveness but lacking proactiveness and desire for change. Actions towards the natural environment were residual, superfluous, or for self-preservation – e.g., the implementation of internal fire prevention and mitigation and surveillance equipment. Again, this shows that the natural environment fares relatively low in the long list of organisations' priorities. Interviewees defended their lack of initiative due to other issues, namely their low power to influence locals, the local government, landowners, and other stakeholders that may have direct action on the natural environment. Even if in a limited way, organisations have legitimacy to engage with other stakeholders to enable preventive and mitigative actions for future disasters while fulfilling the needs of their stakeholders. This may happen due to different perceptions of the impact of natural disasters as a product of climate change. As some suggest, the lower the psychological distance, the higher the concern and action towards climate change preparedness (Spence et al., 2012). This research confirms the long psychological distance between organisations and the natural environment. This aspect contradicts the suggestion that "[p]sychologically distant things (objects, events) are those that are not present in the direct experience of reality." (Liberman et al., 2007, p. 353). However, surveyed organisations are located in rural areas, close to forests and other natural ecosystems. Psychological distance is also "determined by cultural, geographic, and economic factors" (Håkanson & Ambos, 2010, pg. 1). Some suggest (Liberman et al., 2007) that there are four types of psychological distance: temporal, spatial, social, and hypotheticality. A possible explanation for these results is the observation of two factors: temporal and social. Temporal, since it is harder to connect to events or objects far in the future or far in the past (Liberman et al., 2007); Social, because it is harder to connect to people and their feelings if they perceive reality in a different way, which is augmented, in the case of the natural world. Our data collection took place years after the event, during and after the Covid-19 pandemic, when organisations were struck by uncertainty and many hardships. The pandemic may have significantly enhanced the psychological distance between the response date and the event. Yet, the forest and the problems are still there, physically close.

It is noteworthy that the inaction or the inability to recognise the importance of the natural environment as a stakeholder goes in line with the description of the

business landscape obtained in the exploratory sessions. During these meetings, we were informed about the conservative profile of locally based organisations. Decision-makers are focused on their definitive stakeholders and daily routines. The lack financial stability and other resources hinders natural environment related activities.

Unable to identify the natural environment as a definitive stakeholder and lacking the ability to engage in direct actions towards it, we argue that power is the only natural environment's stakeholder recognised attribute. Thus, we suggest that, after the fire, the natural environment became a "dormant" stakeholder.

As per the authors,

"Dormant stakeholders have little or no interaction with the firm. However, because of their potential to acquire a second attribute, management should remain cognizant of such stakeholders, for the dynamic nature of the stakeholder-manager relationship suggests that dormant stakeholders will become more salient to managers if they acquire either urgency or legitimacy." (Mitchell et al., 1997, p. 875)

From a practical perspective, we suggest that decision-makers provide the natural environment with more attributes. This can be achieved directly through the participation of different groups within the organisation. As Mitchell et al. (1997) referred, different departments should manage different stakeholder groups, e.g., Human Resources or Public Affairs offices. The natural environment should be a stakeholder managed by the teams or departments that deal the closest with it: "stakeholders to whom managers should or do relate [to]" (Mitchell et al., 1997, p. 877). The internal groups can employ tools to analyse these relationships, namely statements, and environmental and social responsibility reports.

Based on our findings, we argue that little change was observed and that the 2017 forest fire is a weak predictor for change in organisations. We understand that years after the disaster, the natural environment could have gained a more central stakeholder status, since it has exerted coercive power. Organisations are parts of systems, and their lack of response towards the system they dwell in contributes to the negative impact of natural disasters. Provided organisations endured human and financial losses from the disaster, it could be expected that decision-makers would

adopt the natural environment as a closer stakeholder than it is perceived as. Should companies continue to ignore the destructive power of the natural environment, their long-term strategies and sustainability will remain at risk.

By identifying the natural environment's power, organisations will better mitigate future losses and safe keep assets. As suggested by some authors (e.g., Freeman, 1984; Freeman et al., 2010; Frooman, 1999), an organisation that appropriately manages its relationships with its stakeholders possesses a competitive advantage. Given the changes in climatic patterns, the rise of temperatures, destruction of ecosystems and loss of biodiversity, organisational sustainability can be developed when including the natural environment as a definitive stakeholder in the organisation's stakeholder strategy.

Portuguese decision-makers, based in the Mediterranean country with the most substantial yearly burnt areas since the 1980s, (Meira Castro et al., 2020), had the time and the opportunity to reassess their perspectives on their surrounding forests, to re-educate themselves. It could be expected that decision-makers would perceive the natural environment as a legitimate stakeholder and thus invest more resources into the mitigation of forest fires and promote such attitudes in their stakeholder ecosystem.

The 2017 forest fires were a missed opportunity to provide the natural environment with legitimacy to enable the needed changes for better disaster mitigation. As of late 2023, there is a higher risk of fire due to the wild growth of exotic (eucalyptus) and local (broom) species with highly flammable potential. This reflects the overall, continued disregard of the state of the natural environment by populations, local governments, and organisations. This is also a reflection of the Central Government's attitude towards fire prevention and mitigation.

5.4. Using SEaS (Scale for the Environment As a Stakeholder) to typify the natural environment

We developed the *SEaS*, the *Scale for the Environment as a Stakeholder,* to assess how organisations perceive the natural environment empirically. This instrument measures the natural environment as a stakeholder as a higher-order construct composed of three variables assessed individually: power, legitimacy, and urgency. The tool aims to shape the natural environment as a stakeholder typology as

a higher-order construct to obtain complementarities from the first-order constructs (Edwards, 2001).

Our scale widens the concept of stakeholders from human groups to non-human entities, which has been theoretically explored (Driscoll & Starik, 2004; Haigh & Griffiths, 2009). This assumption suggests that the natural environment should possess all stakeholder attributes and be considered a definitive stakeholder.

All three dimensions possess explanatory power on our scale. However, legitimacy is the strongest contribution to explaining the natural environment as a stakeholder. It is the perception of the natural environment being legitimate that triggers action.

The SEaS scale (Table 30) straightforwardly measures which type of stakeholder the natural environment is perceived as. By using this scale, scholars and decision-makers may better understand which attributes they provide the natural environment with. Such an approach will foster the relationship between organisations and the natural environment, providing a simpler way to define and apply practical and valuable tactics and strategies.

Table 29

The SeAS (Scale for the Environment as a Stakeholder) Scale

Attribute	Item
Urgency	It is important for the organisation to quickly answer to the natural environment's needs.
	It is urgent the usage of natural resources in a sustainable way by the organisation.
	It is urgent for the organisation to preserve its natural environment.
Legitimacy	The organisation refuses products/raw materials that may be polluting.
	The organisation stopped working with some stakeholders (providers, distributors, clients, etc.) who pollute/lack an environmentally sustainable behaviour.
	The organisation is environmentally responsible.
Power	The relationship between the organisation and the natural environment may affect the organisation's relationships with some stakeholders.

| | The Natural Environment has the power to directly affect the organisation's activity. |

The SEaS scale, albeit with its flaws, is comprehensive in its aims, given the underlying commonality among dimensions in the higher-order factor. We intend that the present theoretical framework and this scale are helpful to understand how organisations affected by natural disasters perceive the natural environment's power, legitimacy, and urgency while adapting their strategies to improve organisational sustainability strategies. This scale develops the understanding of stakeholder theory in the specific context of the natural environment and natural disasters. It contributes empirically and theoretically to the relevance of the natural environment as a stakeholder. Also, conceptualising the natural environment as a stakeholder extends the stakeholder theory, providing researchers and decision-makers with a tool to typify a non-human stakeholder.

Through its three first-order dimensions, this higher-order construct is positively related to stakeholder identification and salience. This scale supports the approach of the natural environment as a stakeholder, considering it as a distinct vision of the organisation and its surroundings, influencing its resilience and sustainability in a world where natural disasters should be taken more seriously in strategic decision-making (Haigh & Griffiths, 2009). As the stakeholder theory suggests, successful stakeholder relationships are precursors of successful strategies and long-term strategic competitiveness (Freeman, 1984; Freeman et al., 2010).

This scale enables decision-makers to better identify problems that may arise from a poor relationship with their natural environment surroundings, recognising the value a strong and proper relationship may lead to. The SEaS scale assists decision-makers, academics, and governments in understanding how they perceive the natural environment. This information leads to understanding the mitigation and preparedness for different risks, concerning organisations' natural surroundings and the possible impacts of natural disasters. By acknowledging the different attributes of the natural environment, decision-makers will properly act towards it – forest management, floods, landslides, and droughts, among others. The SEaS scale identifies the perception of the natural environment as a stakeholder and when it can become a liability, a risk, or opportunity. If the organisation's objective is to have a better relationship with its natural environment, decision-makers can focus on the

three assessed attributes and how they are associated with other performance variables.

5.4.1. Shortening the proximity attribute

One of the early stakeholder attributes to analyse in this scale was proximity, as suggested by Driscoll and Starik (2004) and further revisited by Haigh and Griffiths (2009). We assumed this attribute to be relevant since "the greater the proximity, the greater the likelihood of the development of stakeholder relationships, ceteris paribus" (Driscoll & Starik, 2004, p. 388). The 2017 forest fires were a pivotal moment that put organisations and individuals off-balance, cancelling the "ceteris paribus" status suggested by the authors (Driscoll & Starik, 2004).

Although located in rural areas, close to forests and wilderness, respondents still perceive the natural environment as something distant. We argue that the psychological distance between decision makers and the surrounding natural environment is reflected in the state of disrepair and disregard for the surrounding forests.

To shorten this distance, we suggest that sustainability and nature-related education can close the gaps between organisations, decision-makers' perspectives, and their natural environment. Through proper incentives and programmes, civil actors are expected to play a more productive role in managing, maintaining, and restoring their surrounding natural environment.

5.4.2. Empirical results – The case against Legitimacy

Stakeholders perceived to have legitimacy over the organisation are those who matter the most and are supported by the organisation because they deliver common social good (Mitchell et al., 1997). Empirically, our findings suggest that decision-makers believe that organisations must play a role in mitigating forest fires and should be responsible for their natural environment. On the other hand, however, decision-makers disagree that organisations should be accountable for the natural environment. These contradictory findings show a bystander effect – when in a situation where someone is in need, but bystanders fail to act or help (Gekoski, 2017) – social desirability, a sense of the organisation's social and practical relevance within its systems; and a disconnection between the organisation and its natural environment.

From the contradicting answers, we assume that some interviewees answered according to social pressure or a will to seem more agreeable to the interviewer or while answering the survey. Given the surge in sustainability-related topics, conversations, State programmes, global issues, and stakeholder demands, organisations might want to be perceived as prominent, knowledgeable, and active in sustainability and the development of the natural environment. Yet, these topics play a small role in strategic decisions, lacking the espousing necessary to deliver what decision-makers state. This phenomenon has been identified and studied in other contexts (e.g., Craft, 2018; Lee et al., 2013). Communicating to different stakeholders an active stance towards the natural environment when the organisation's activities results are irrelevant, the organisation may be engaging in greenwashing activities (Lyon & Montgomery, 2015).

Given the time span between the disaster and the data collection, organisations had the chance to analyse and evaluate the damages of the fires and their repercussions and integrate new mitigating strategies. One was to provide the natural environment with the legitimacy attribute. This would have pointed towards a change in the perception of the natural environment as a stakeholder. As our findings suggest, in the context of the natural environment as a stakeholder, legitimacy is the attribute that leads to action. We argue that *something* that *was there* applied its legitimate destructive power, resulting in the observed destruction. Thus, we understand that the 2017 forest fires could have provide the natural environment with the legitimacy attribute. Such mindset change could have paved the way for practical, strategic, and environmental decisions. We found, however, little evidence for such changes.

We argue that sampled organisations are generally reactive towards market and legal demands in an external to internal direction instead of being proactive (internal to external). Organisations adopt such stances because of their characteristics: size, financial, human, and natural resources, profit margins, dependence on State support, and lack of financial momentum to invest in more advanced, sustainable technologies, equipment, and processes. A possible explanation for this might be that the 2017 fires and subsequent insurance and State financial support were catalysts for change. This inconsistency may be due to an intention to reach quick results and safety instead of long-term, planned substantial

changes. Changes were side effects instead of long-term, decisive targets from managers and decision-makers.

These results reflect those of Phillips and Reichart (2000), who also found that the stakeholder natural environment exerts its legitimacy through other human stakeholder groups (e.g., State, clients, and consumers) – "While non-human, natural entities may merit moral consideration of other sorts, such entities do not merit the status of organisational stakeholder" (Philips & Reichart, 2000, p.196).

There are a few exceptions concerning the natural environment possessing all stakeholder attributes: two interviewed international organisations have long-term sustainability-related activities and strategies, and local raw material dependent companies acknowledge the natural environment's importance for their industry and their daily activities. This later perspective, however, seems to be utilitarian. Such organisations are dependent on the natural environment to maintain their businesses. The findings suggest that these organisations attribute legitimacy to the natural environment. Nevertheless, we consider them residual outliers since they represent only a fraction of the interviewed organisations.

If organisations understand they play a role in the betterment of local associations and families in need, as our evidence suggests, such organisations can extend their activities towards the betterment of the natural environment.

5.4.3. Remaining attributes: power and urgency

Proximity and legitimacy attributes have been discarded, and the implications of it being discussed, we now focus on the two remaining attributes: power and urgency.

Stakeholders possessing power can use different types of power: coercive, utilitarian, or normative (Mitchell et al., 1997), and the stakeholder must be *aware* and *conscious* of it to exert it. Regardless of the lack of an identifiable or voluntary will to inflict destruction, the natural environment possesses a relevant impact on organisational activities. It has been suggested (Savage et al., 1991, p. 61) that stakeholders need to communicate to show their "ability to influence" organisations. Only thus can they be recognised as stakeholders. What *voice* or means can the natural environment use to *communicate*, except its destructive power, through natural disasters?

This exerted power is beyond direct human understanding. We try to avoid the biases associated with anthropomorphism by providing nonhuman entities with human traits (Dacey, 2017). Yet, when substantial, damaging changes are made to ecosystems, the natural environment will react accordingly through droughts, floods, and other hazards. This is the way the natural environment exerts its coercive power.

The havoc wreaked by the 2017 fires showed the destructive power of unbridled elements. Decision-makers and other citizens alike understood the power of a nearly unstoppable force. We understand that natural disasters lack conscious will. Nevertheless, they apply their power through a combination of different factors – pressure, destruction, and extinction of species.

Our findings show that the power attribute was the main driver for the purchase of more modern, sustainable equipment, procedures, and services, in the aftermath of the disaster. Decision-makers adopted behaviours as a recognition of the destructive power, instead of the target of a stakeholders' strategic approach to the issue. By behaving thus, decision-makers reacted towards the natural environment, as they would towards human power wielding stakeholders. On the other hand, power is also exerted indirectly by other stakeholders, as representatives of the natural environment, as suggested by Philips and Reichart (2000). Clients, consumers, investors, and State demands communicated or exerted through power lead to changes in organisations.

We argue that both approaches to the natural environment as a stakeholder can coexist. We understand that there is room for the natural environment to possess its own power, while other human stakeholders (e.g., NGOs or governmental agencies) represent other forms of power towards organisations. To illustrate, workers and worker unions. Both are organisations' stakeholders, possess the power attributes, but exert it in different ways.

Finally, we delve into urgency, the third attribute suggested by Mitchell et al.'s (1997) stakeholder typology. The disaster may have triggered urgent responses from decision-makers. However, our data suggests that urgency reflects a mix of the natural disaster's effect with demands from different human stakeholders. Decision-makers only act quickly towards the preservation of the natural environment due to pressure from human stakeholder groups. In the context of the disaster, the most urgent stakeholder demands and actions were taken towards human stakeholders.

The forest fires and the natural environment issues that led to the disaster played a relatively small role in increasing the sense of urgency towards the natural environment. However, we argue that, even if residual or less relevant, urgency is observed by decision-makers. Some, albeit timid, actions have been taken in the aftermath of the natural disaster, after human urgencies were solved. Nevertheless, there is a general idea that there is an urgent need to satisfy the natural environment's needs.

With both power and urgency attributes, the natural environment becomes a dangerous stakeholder, as per Mitchell et al.'s (1997) typology. When possessing the three attributes the natural environment becomes a definitive stakeholder, an idea proposed by Haigh and Griffiths (2009). It is our understanding that if decision-makers develop a broader understanding of the natural environment and its relationship with the organisation there is room to accommodate the three attributes, and thus become a definitive stakeholder. As a definitive stakeholder, the relationship between the organisation and the natural environment will be improved. Decision-makers will properly assess, measure, and answer to the natural environment's needs. In turn, organisations will be better prepared to face and mitigate natural disasters.

5.5. Decision-makers from affected and unaffected organisations perceive the natural environment as a stakeholder differently

The argument that organisations should consider the natural environment as a primary stakeholder, proposed by Haigh and Griffiths (2009), has been previously dismissed.

Our findings show that there is a lack of evidence to support a different perception of the natural environment by affected and unaffected organisations. Also, both groups identify the power and urgency attributes but reject legitimacy. This finding is consistent with that of Lourenço (1991) and Ferreira-Leite et al. (2011): there is a generalised sense of apathy towards the forest, the natural environment, and natural resources. As stated above, to mitigate future disasters and, thus, create a competitive advantage and develop organisational sustainability, it is necessary to significantly reduce the psychological distance between the organisation, stakeholders, and their natural environment. Nevertheless, if a natural disaster lacks the power to shorten that psychological distance, what will?

The inconsistency in being affected by or being close to a natural disaster and still being unmoved by it, may be challenged with environmental and sustainability education. To curb this problem, it seems necessary to empower decision-makers to make informed choices about the organisations' future. Communication techniques have been previously suggested (Spence et al., 2012) to diminish the psychological distance to climate change. It seems that a similar approach to the natural environment as a stakeholder could have a positive impact on organisations' disaster resilience capabilities.

Different programmes can be operationalised to promote sustainable behaviours. Informing organisations of the real impact they can have directly and indirectly – through their stakeholders – in their natural environment may lead to positive outcomes. We suggest that organisations should develop educational and training programmes to change behaviours and perceptions of the surrounding natural environment. We further suggest that in some countries, organisations are bound by law to provide their workers with a yearly quota of learning and development courses. These could focus on the importance of the natural environment, sustainable behaviours, and disaster mitigation and preparedness.

5.6. Organisations and the Natural environment attributes

Decision-makers must understand that organisations are more than an employer or wealth creator. They indeed have legitimate power and influence in their systems. Since organisations identify and apply their capabilities and responsibilities in their societies, they should apply similar efforts towards the natural environment. This argument supports the idea that decision-makers should be informed or educated on organisations' social power and relevance in their communities and surroundings. Having knowledge of their influence, organisations may become more complex social actors that pave the way for more sustainable communities. Organisations by being proactive and well informed, will develop resilience to natural disasters. Through education for adaptation, organisations will properly identify their relationship with the natural environment, become more environmentally sustainable (e.g., assessing the direct environmental risks), develop a positive brand image, abide by international law, and rapidly satisfy market demands.

Relationships between businesses and stakeholders change and evolve. Some stakeholders earn attributes, others lose them, while others lose attributes at one point, to regain them later. Stakeholder typification is fluid and mobile, capable of changing and adapting at any given moment (Mitchell et al., 1997).

Our findings challenge Haigh and Griffith's (2009) proposition that the natural environment should possess the characteristics of a definitive stakeholder. This stance is further based on phenomena associated with climate change that directly affect organisations' operations. Our findings point us to the natural environment being an expectant stakeholder, "because the combination of two attributes leads the stakeholder to an active versus a passive stance, with a corresponding increase in firm responsiveness to the stakeholder's interests." (Mitchell et al., 1997, p. 876). This means that the interaction between the organisation and the stakeholder entity requires a closer engagement.

As stated above, the natural environment is a dangerous stakeholder – "will be coercive and possibly violent" (Mitchell et al., 1997, p. 877) should the organisation disregard or discredit their needs and demands. Dangerous stakeholders lack the legitimacy to make demands, per decision-makers perspective. However, their actions can result in Public Relations issues, destruction of infrastructure, affect the relationships between the organisation and other stakeholder groups, and directly affect all other organisation's stakeholders. For proper management and safeguarding of the organisations, such stakeholder type must be urgently acknowledged to mitigate future damages, destruction or other negative impacts.

From a management perspective, it is crucial to develop organisations' relationships with the natural environment. Societies, cities, and settlements observe erratic climatological patterns that become natural disasters. Considering the natural environment, a central piece in organisations' strategies is more than just ethical behaviour: it is a matter of survival. By addressing the natural environment, its power, legitimacy, and urgency, organisations can project stability, environmental and financial sustainability to other stakeholders (e.g., investors, suppliers, and clients).

By avoiding the impact of natural disasters, organisations can then employ their resources into their normal activities. Organisations that mitigate the effects of natural disasters through natural environmental oriented activities develop some immunity to damages and risks, eventually continuing their regular activities after the

natural disaster has abated. They will be less dependent on public support programmes, subsidies, or private investment to return to their normal operations.

We also suggest that, besides the physical survival of the organisation, there is, for instance, a Public Relations potential of considering the natural environment in strategic planning. In the last years, the natural environment has become a hot topic among scholars, business owners, investors, and other civil and governmental organisations. Consumers demand organisations to be more conscious of their natural environment and impact. Banking institutions demand more sustainability focused activities or strategies. Governments are pushing for environmental, social, and governance reports for accessing funds and subsidies ("Comissão Europeia Aprova 12 Novos Padrões Para Reporte ESG Das Empresas," 2023). These statements point towards a trend that the natural environment, through other stakeholders, might become a definitive stakeholder.

5.7. Summary

The discussion in this chapter has delved into the intricate dynamics between the natural environment and post-natural disaster management. Through an exploration of our data, a comprehensive understanding of the natural environment as a stakeholder by decision-makers has emerged. It has become evident that integrating the natural environment into disaster recovery efforts is both crucial and holds immense potential for enhancing organisational resilience and disaster mitigation.

Overall, the insights gained from this discussion emphasise the need for a paradigm shift in our approach to the natural environment as a stakeholder. By acknowledging and engaging the natural environment as a stakeholder, we can pave the way for more holistic and integrated strategies that foster the well-being of both human and ecological systems. The forthcoming chapters will build upon this discussion, exploring our conclusions, recommendations, and future research directions to support integrating the natural environment as a stakeholder in post-natural disaster management.

Chapter VI – Conclusion

6.1. Introduction to our conclusion

As we reach the end of this research, it is important to restate what we first aimed to investigate and recap our findings and our contributions to management science.

The study sheds light on the complex dynamics of stakeholder management in post-disaster contexts and has demonstrated the importance of considering the natural environment as a stakeholder. In this mixed-methods research, we explored the crucial issue of stakeholder management in the aftermath of a specific natural disaster and the issues organisations face regarding mitigation processes when struck by a natural disaster. Furthermore, we contributed to expanding stakeholder theory by creating a measurement tool to classify the natural environment as a stakeholder.

We believe that our theoretical approach and empirical methodology have provided novel insights into post-disaster management and stakeholder theories and practical implications for organisational science. We highlight the importance of stakeholder management in the context of natural disasters and have shown how it can facilitate a more effective and sustainable natural disaster response and how decision-makers can improve their stance towards the natural environment.

We developed an instrument that can be further used and replicated in other contexts. The *SEaS* scale is a pivotal part of this research. This instrument allowed us to identify the attributes and the typology of the natural environment as a stakeholder in the context of organisations from natural disaster-stricken regions. This greatly expands the empirical reach of stakeholder theory based on a well-proven typification methodology. This scale shows that from the stakeholder attributes explored in this thesis (power, legitimacy, urgency, and proximity), legitimacy is the trigger attribute that leads decision-makers to act.

Organisations employed some disaster management strategies to small degrees but relied on diverse stakeholder management strategies to address the needs of their stakeholders in the aftermath of the disaster. Most of these strategies were reactive in nature. Long-term planning and preparedness for future natural disasters were mostly dismissed.

Our research suggests that decision-makers attribute some stakeholder characteristics to the natural environment, specifically a "dangerous stakeholder", as per Mitchell et al.'s (1997) typology. Decision-makers still lack a proactive stance

towards the natural environment to mitigate future similar events or other types of natural disasters. Without perceiving the natural environment as having a legitimate claim over the organisation, actual tactics or strategies remain to be implemented. The reason for this inertia is that we consider different factors, namely the extent of the damage caused by the natural disaster, the type of organisation, and the cultural and social context in which the organisation operates.

The research shows that organisations recognised the importance of considering the natural environment as a stakeholder in post-disaster management, as it significantly impacts the well-being of human stakeholders and the environment itself. In addition, we identified that affected and unaffected organisations similarly classify the natural environment as a stakeholder. The findings also suggest that for organisations to adopt proactive mitigation strategies and identify the natural environment as a stakeholder, they need to provide it with legitimacy. We recommend that education may be a path to reach these results. Also, education for implementing mitigation programmes and the importance of the natural environment may help to mitigate future similar disasters.

Recognising the natural environment as a stakeholder and harnessing its potential in post-natural disaster management is an ethical imperative and a practical necessity. By adopting a comprehensive and inclusive approach, more resilient and sustainable communities that are better equipped to mitigate, adapt, and recover from the impacts of natural disasters can be built. Ultimately, integrating the natural environment as a stakeholder paves the way for a future where human well-being and ecological integrity can coexist harmoniously, ensuring a more sustainable and resilient planet for generations to come.

Effective post-disaster management requires the involvement of various stakeholders, including government agencies, local communities, non-governmental organisations, and scientific experts. By fostering dialogue, knowledge exchange, and collaboration among these diverse actors, organisations and societies can promote a holistic and integrated approach that acknowledges the complexities and interdependencies within the natural and human systems and, ultimately, prevent and mitigate natural disasters to ensure organisational and operational sustainability.

This thesis has shed light on the critical role of the natural environment as a stakeholder in post-natural disaster management. Through an in-depth examination of our data, it has become evident that neglecting the natural environment in disaster

recovery and reconstruction efforts can have profound implications for human well-being and long-term sustainability. Our findings underscore the urgent need for a paradigm shift in our approach to disaster management, one that recognises and integrates the natural environment as an active and integral stakeholder.

6.2. Limitations

While this study makes significant contributions to understanding the natural environment as a stakeholder in post-natural disaster management, it is crucial to acknowledge its limitations.

To explore our research questions, we resorted to a mixed-methods approach, employing qualitative and quantitative methods and techniques (Bryman, 2012; Creswell, 2014). The main reasons to use a mixed methodology were data triangulation, the possibility of reaching a broader audience, and the development of more robust findings (Creswell, 2014). Even though we resorted to a mixed-method approach and heterogenous samples, we understand that our methodology reveals some methodological limitations. The first being the sample size in the qualitative data collection. Our sample represents a small portion of the Portuguese business landscape, presenting a geographic limitation. Nevertheless, we curbed these issues through types and sizes of industry. Thus, our sample possesses a heterogenous reach, with inputs from different sized organisations and various industries. We believe these two characteristics make our sample strong enough to be considered applicable and valid.

Another limitation is the type of qualitatively interviewed organisations since all are pro-profit businesses – except for the exploratory sessions that were unaccounted for by our empirical and theoretical findings. It seems valuable to further the research on stakeholder groups by gathering the opinions and experiences of NGOs, local associations, local government institutions, and health and education institutions' stakeholders.

Choosing the 2017 forest fires as a natural disaster for this research poses a limitation. Different disasters impact organisations differently, triggering various responses (Quarantelli, 2000, 2005). To better understand natural disasters' impact on organisations, it seems relevant to run similar studies with decision-makers in other

geographical areas or with organisations affected by other types of natural disasters (e.g., floods, volcano eruptions, earthquakes), and analysis of eventual results.

Qualitative data gathering may have been a limitation due to the specific Covid-19 pandemic context. The research started before the pandemic, which led to changes and adaptations midway during the data gathering process. Our first interviews were face-to-face. However, due to consecutive lockdowns, restrictions, and health protection recommendations, direct, face-to-face meetings were forbidden or highly advised against. Subsequent interviews were held remotely, via telephone or videocalls. This could have hindered the research or biased the collected information, but we missed to observe significant differences in results or answers obtained face-to-face and remotely. Covid-19 may have skewed the answers since the organisations we interviewed were, at the time, engaged in different processes regarding health safety, market losses, mandatory procedures, and infected relatives or workers. These may have impacted the answers, but since the results obtained through the qualitative research were similar those of quantitative nature – the latter done considerably after the pandemic – we believe our results are reliable.

Online surveys, the tool we employed for quantitative data collection, face potential weaknesses, some of which are responses by others than the targeted sample, confidentiality breaches, and lower response rates than face-to-face surveying due to an abundance of such surveys (Nayak & Narayan, 2019). Given the similarity found in both qualitative and quantitative answers, we expect that both data sets mirror the reality of decision-makers, and this limitation might have been avoided.

Also, different survey platforms may result in different responses since minor details, such as aesthetics or the item listing, can lead to different interpretations. We believe that results are reliable since the psychological mechanisms used to answer surveys are the same when comparing Internet users and the population (Best et al., 2001), regardless of the platform. In future similar research projects, we endorse researchers to test other online and offline tools to analyse the crossed results.

The theoretical approach to the research problem and questions is based on the stakeholder theory (Freeman, 1984) and Mitchell et al.'s (1997) stakeholder typology. Other research streams may provide more in-depth results and information regarding the relationship between the natural environment and decision-making, e.g.

the industry-based view (Porter, 1979), the resource-based view (Barney, 1991), systems approach (von Bertalanffy, 1969), or the dynamic capabilities (Teece et al., 1997). On the typology side, other typologies can be explored, such as Goodpaster's (1991) moral and strategic stakeholders; Luoma and Goldstein's (1999) primary and public stakeholders; or Hart and Sharma's (2004) core-fringe, peripheral stakeholders. Studying these research questions under the compass of these typologies will allow us to broaden the findings and conclusions attained in this thesis.

Our geographical range is limited to Portugal. Although the sample is geographically dispersed and heterogeneous in many aspects, it still concerns one country with a moderately culturally cohesive society.

Further research is needed to explore specific contexts, local conditions, and socio-cultural factors that may influence the effectiveness of integrating the natural environment into disaster recovery efforts. Additionally, the long-term monitoring and evaluation of implemented strategies are necessary to assess their ecological, economical, and societal outcomes over time.

6.3. Further Research

Our research aims to contribute to discussions that have been previously opened. However, we expect that this work inspires others to pursue further research concerning the topics covered.

We suggest that given the similarities between the Portuguese forest fires and forest fires in other countries, we recommend future similar research to focus on other regions. To deepen the knowledge on forest fires specifically, some countries and regions can contribute to this literature field, namely Australia, California, Canada, France, Greece, and Spain. Thus, it will be possible to understand whether the response towards stakeholders and the disaster management process results from a Portuguese-specific reality or is transversal to other countries, peoples, and contexts.

Concerning the *SEaS* scale, we encourage other researchers to use it in other contexts, contradicting or building upon it, adding new items or new factors. Also, using the *SEaS* scale and other typologies will enrich the literature concerning

stakeholder theory and the relationship between organisations and the natural environment.

Another possibility is expanding research from the business sciences and studying the social phenomena through a sociological or environmental point of view, where the dynamics and understanding of the natural environment and its needs are tested.

Longitudinal research could further enrich the topics explored in this thesis. Yet, a natural disaster is nearly impossible to predict. Having primary data referring to a period before a disaster, and data from the same sample, after a disaster would provide a deeper insight into the perceptions of the natural environment as a stakeholder. However, given its uncertainty, it is highly improbable that answers will be obtained from the same decision-makers at such points in time.

We believe that for all the limitations stated above, there is a strong potential for exciting new research that will enrich the academic research corpus and raise relevant questions necessary for a more sustainable and prosperous future for all.

6.4. Practical Implications

This study contributes significantly to the literature on stakeholder theory, post-disaster management, and the natural environment as a stakeholder. We understand that this research has practical implications for organisations and policymakers involved in disaster management. Given our results and the current environmental and resource issues societies, organisations, and individuals face, we expect that our findings echo beyond the scientific world into the pragmatic, practical organisational world. Below, we explore and discuss the expected practical outcomes of our research.

The research can emphasise the need for organisations to incorporate environmental actions into their disaster management plans, namely identifying and assessing the vulnerabilities and risks faced by the actions of the natural environment, developing strategies to mitigate potential impacts, and integrating nature-based solutions into recovery and resilience-building efforts. As observed, there is plenty of room for improvement in risk assessment and mitigation efforts across industries.

There is potential for different connections between organisations and disaster and environmental experts. We hope to highlight the importance of

collaboration between organisations and environmental experts and engaging with relevant stakeholders such as environmental agencies, conservation organisations, and local communities. This collaboration can lead to more informed decision-making, a better understanding of systems where organisations are, and the development of effective strategies that consider the needs and values of the natural environment.

We believe the present research advocates for adopting system-based approaches in disaster management practices. This involves recognising the essential role of natural ecosystems in wildfire reduction, flood regulation, water purification, and coastal protection.

We highlight the need for education and awareness programs within organisations to promote a better understanding of the importance of the natural environment. This can include training employees on environmental considerations, fostering a culture of environmental responsibility, and raising awareness about the importance of sustainable practices in minimising the ecological impact of the organisation.

We believe that our research can drive policy and regulatory frameworks for disaster management, and the development of sustainable and resilient organisations to face the effects of natural disasters, as well as to enable the concept of the natural environment as a stakeholder. This may involve advocating for the integration of environmental considerations in disaster-related legislation, providing incentives for organisations to adopt sustainable practices, and establishing guidelines for assessing and protecting ecological systems during and after disasters.

By implementing these practical implications, organisations can better understand and address the environmental dimensions of natural disaster management. This, in turn, can contribute to more sustainable and resilient approaches that protect both human and environmental well-being in the face of future disasters.

6.5. Final remark

Since its dawn, Humankind has faced tremendous challenges. Some led to the fall of empires, while others led to developmental jumps. Now, at more than eight billion, Humankind faces new, unfathomable issues.

When starting this PhD thesis, two years after the disaster, the expectations were that perhaps things had changed, that some key, knowledgeable individuals had learnt from a quite disastrous event and had applied this knowledge. We thought that a greener, brighter tomorrow would rise from the scorched earth. Yet, our conclusions fell short from our expectations. The 2017 forest fires still are a missed opportunity for growth and development, for respect for the natural environment, and for the people who live and work in forested areas. Seeing forests, agricultural fields, rivers, and water bodies in worse conditions than those in 2017 is disheartening. The future of these regions looks bleak. May this research help, if only so slightly, to turn people's attention to such grave problems. May this research help public and private organisations strive for a better implementation of environmental strategies or programmes focused on sustainability knowledge and natural disaster mitigation. May this research be another brick on a long wall of warnings for a more sustainable future.

With rising temperatures, deforestation, ocean acidification, and continuous population growth, it is wishful thinking to expect that an event with the proportions of the 2017 forest fires (or worse) will never happen again.

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Appendices

***Appendix A** – Interview items, codes and nicknames*

Code	Nickname	Description	Expected relation with theory
Q1_QL	Stkhdr_ID	For the organisation, which are the most important stakeholders?	Stakeholder identification Stakeholder prioritisation
Q2_QL	CSR_actvty	Regarding Social Responsibility, what activities or strategies has the organisation developed?	Stakeholder management Corporate Social Responsibility Disaster Management
Q3_QL	Sstnblty	Given the context of sustainability, circular economy, and climate change, where and how can your organisation act?	Corporate Social Responsibility The Natural Environment as a Stakeholder Disaster Management
Q3.1_QL	Sstnblty_Ex	Through which examples?	Corporate Social Responsibility The Natural Environment as a Stakeholder Disaster Management
Q4_QL	Org_NE	How does the organisation live in the forest?	Disaster Management The Natural Environment as a Stakeholder
Q4.1_QL	Org_NE_Stkhdr	Some people argue that the natural environment may be considered a stakeholder. What is your opinion?	Stakeholder identification Stakeholder management The Natural Environment as a Stakeholder
Q5_QL	Fires	How was the organisation affected by the 2017 forest fires?	Disaster Management
Q6_QL	Dst_mgmt	Which activities did the organisation adopt immediately after the fires?	Disaster Management
Q7_QL	Dst_mgmt2	Which environmental/sustainable mechanisms did the organisation activate after the fires?	Disaster Management The Natural Environment as a Stakeholder
Q7.1_QL	Dst_stkhdr	How were they perceived by other stakeholders?	Disaster Management The Natural Environment as a Stakeholder Stakeholder Management
Q8_QL	Org_Forest	How do you perceive the role of your organisation in the change of forest management, where it is located?	Disaster Management The Natural Environment as a Stakeholder
Q9_QL	Org_Lim	What are the limitations of your organisation in the change of the forest reality?	Disaster Management The Natural Environment as a Stakeholder
Q10_QL	Org_fires	How can organisations contribute to the diminishing of forest fires?	Disaster Management The Natural Environment as a Stakeholder

Appendix B – Interview Guides

(Original in Portuguese)

1. For the organisation, which are the most important stakeholders?

2. Regarding social Responsibility, which actions or strategies has the organisation developed in the past?

3. Given the context of sustainability, circular Economy, and climate change, where and how can the organisation act?

3.1.- Please provide examples.

4.- How does the organisation live its relationship with the forest?

4.1- Some people argue that the forest should be considered a stakeholder. What is your opinion?

5.- How was the organisation affected by the 2017 forest fires?

6.- Which immediate actions did the organisation take after the fire?

6.1-And in the long run?

7.- Did the organisation activate Environmental/sustainable procedures after the fires? If yes, which?

7.1.- How was this perceived by other stakeholders?

8.- How do you understand the role of the organisation in the change of the forest paradigm within the surroundings it is located?

9.- What are the organisation's limitations concerning the changes in its natural environment?

10.- How can organisations contribute to the reduction of forest fires?

Questionário

1. Para a empresa, quais são as partes interessadas (stakeholders) mais importantes?

2. Em termos de responsabilidade social, que ações ou estratégias tem vindo a desenvolver a empresa?

3. Dado os contextos da sustentabilidade, economia circular, e alterações climáticas, onde e como pode a empresa atuar?

3.1. Através de que exemplos?

4. Como vive a empresa a floresta?

4.1. Algumas pessoas referem que a floresta seja também uma parte interessada. Qual a sua opinião?

5. De que maneira foi afetada a empresa pelos incêndios de 2017?

6. Que ações tomou a empresa no imediato, após o incêndio?

6.1. No longo prazo?

7. Que mecanismos ambientais/sustentáveis a empresa ativou após os incêndios?

7.1. Como foi recebida pelas partes interessadas/outros stakeholders?

8. Como vê o papel da empresa na mudança de paradigma florestal do meio em que está inserida?

9. Quais são as limitações da empresa no que respeita à alteração do paradigma florestal?

10. Como poderão as empresas contribuir para diminuição dos fogos florestais?

Appendix C – Participant consent form and information (Original in Portuguese)

The research at hand emerges with the context of a research protect at **ISCTE-IUL – Instituto Universitário de Lisboa**. The aim of this study is to understand how companies affected by the 2017 forest fires reacted towards their stakeholders.

This study is conducted by Narciso Antunes - narciso_antunes@iscte-iul.pt, that you may contact, should you have any question or need to share a comment.

Your participation in this study, that will be highly valued for it will contribute to the development of knowledge in this science domain, consists in participating in an semi-structured interview, with questions related with the forest fires issue and companies stakeholders, with an approximate duration of 45 minutes.

There are not significant risks associated with the participation in this interview.

Your participation is strictly **voluntary**: you can freely choose to participate or not. Should you choose to participate, you can interrupt your interview at any moment, without providing any justification. Besides volunteer, the participation is also **anonymous** and **confidential**.

The obtained data will be used only for statistical purposes and no answer will be analysed or reported individually. You do not need to identify yourself at any moment.

In order to obtain scientific rigour, it is advisable the recording of the interview, for future analysis by the researcher. The recording will be archived in data storage equipment – hard drive – with exclusive access by the researcher.

I accept the recording of the interview: Yes__   No__

I **declare** to have understood the objectives of what was proposed and explained by the researcher, I was given the opportunity to ask all the questions regarding this research and I have obtained clarifying answers, for which I **accept** to participate.

_____ (location), _____/_____/_____ (date)

Name:

Signature:

Original Portuguese version

CONSENTIMENTO INFORMADO

O presente estudo surge no âmbito de um projeto de investigação a decorrer no **ISCTE – Instituto Universitário de Lisboa**. O estudo tem por objetivo compreender como reagiram as empresas afectadas pelos incêndios de 2017 com os seus *stakeholders*.

O estudo é realizado por Narciso Antunes - narciso_antunes@iscte-iul.pt, que poderá contactar caso pretenda esclarecer uma dúvida ou partilhar algum comentário.

A sua participação no estudo, que será muito valorizada pois irá contribuir para o avanço do conhecimento neste domínio da ciência, consiste em participar numa entrevista semiestruturada, com perguntas relacionadas com o problema dos incêndios e dos *stakeholders* da empresa, com duração aproximada de 45 minutos.

Não existem riscos significativos expectáveis associados à participação no estudo.

A participação no estudo é estritamente **voluntária**: pode escolher livremente participar ou não participar. Se tiver escolhido participar, pode interromper a participação em qualquer momento sem ter de prestar qualquer justificação. Para além de voluntária, a participação é também **anónima** e **confidencial**.

Os dados obtidos destinam-se apenas a tratamento estatístico e nenhuma resposta será analisada ou reportada individualmente. Em nenhum momento do estudo precisa de se identificar.

Por forma à obtenção de rigor científico, é aconselhável a gravação da entrevista, para posterior análise pelo investigador. A mesma será arquivada em equipamento de armazenamento de dados – disco rígido – com acesso exclusivo por parte do investigador.

Aceito que se faça gravação da entrevista: Sim__   Não__

Declaro ter compreendido os objetivos de quanto me foi proposto e explicado pelo/a investigador/a, ter-me sido dada oportunidade de fazer todas as perguntas sobre o presente estudo e para todas elas ter obtido resposta esclarecedora, pelo que **aceito** nele participar.

_____ (local), _____/____/_____ (data)

Nome:

Assinatura:

Appendix D – *Field observations*

Date	Location	Activities	Notes	Disaster Management Phase
21-22.10.2017	Mortágua, Santa Comba Dão, Penacova, Tondela	Initial damage assessment; visit to industrial compounds; talking with locals	Stressful period; actors still assessing damages and designing alternatives to support stakeholders	Response phase – Damage assessment; assistance to the community (Todd & Todd, 2011)
16.12.2017	Mortágua, Santa Comba Dão, Penacova, Tondela	Assessment of forest damages; visit industrial areas to understand whether rebuilding had started;	Companies had cleared all rubble and damaged parts of the infrastructure; companies both fully rebuilt or in the process of rebuilding; Burnt trees still standing	Post Disaster A – Infrastructure restoration (Todd & Todd, 2011)
24.03.2018	Mortágua, Santa Comba Dão, Penacova, Tondela	Assessment of the rebuilding evolution and forest situation	Majority of companies rebuilt; Forest sprouting fast – invasive, highly combustible trees; forest around industrial compounds cleared	Post-Disaster A – Infrastructure restoration (Todd & Todd, 2011)
19.02.2018	Tondela	First exploratory session with the Municipality; Visit to the burnt areas;	Description of the fire effects on companies and society	Post Disaster B – Social and economic recovery and rehabilitation; ongoing development of strategies and activities (Todd & Todd, 2011)
23.11.2019	Marinha Grande, Leiria	Assessment of forest damages; Assessment of the forest areas around industrial compounds	Large swathes of empty forest (pine tree forest); companies fully operating; areas around industrial compounds cleared from bushes and trees	Post Disaster B (Todd & Todd, 2011)
12.2019 – 03.2020	Mortágua, Santa Comba Dão, Tondela	Interviews and observations of the industrial compounds and damaged companies	Companies were fully rebuilt and operating; the Forest is full of new, younger invasive trees; burnt trees are still standing	Post Disaster B Pre-disaster – Risk assessment; Mitigation; preparedness activities (Todd & Todd, 2011)
05.09.2021	Marinha Grande, Leiria	Visit the burnt forest areas and industrial compounds	Burnt trees still standing; large patches of land cleared from fuel matter; small to non-existent signs of forest replantation or regrowth	Post Disaster B – Social and economic recovery and rehabilitation; ongoing development of strategies and activities. Pre-disaster – Risk assessment; Mitigation; preparedness activities (Todd & Todd, 2011)
24.03.2022	Visit to the burnt areas	Burnt trees still standing; negligible reforesting actions – autochthonous trees; significant replantation of invasive species for industrial purposes (eucalyptus)		

***Appendix E** – Theoretical coding*

Code	Nickname	Question	Expected outcomes	Theoretical framework
Q1_QL	Stkhdr_ID	For the organisation, which are the most important stakeholders?	Stakeholder identification Screening for the NE as a Stakeholder	(Freeman, 1984) (Jacobs, 1997)
Q2_QL	CSR_actvty	Regarding social Responsibility, which actions or strategies has the organisation developed in the past?	Identification of CSR-related activities Screening for NE-related activities	(European Commission, 2001; Sheehy, 2014)
Q3_QL	Sstnblty	Given the context of sustainability, circular Economy, and climate change, where and how can the organisation act? Please provide examples.	Legitimacy of NE as a stakeholder	(Mitchell et al., 1997)
Q3.1_QL	Sstnblty_Ex	Please describe the relationship between the organisation and the surrounding forest.	Legitimacy of NE as a stakeholder	(Mitchell et al., 1997)
Q4_QL	Org_NE	Some people argue that the forest should be considered a stakeholder. What is your opinion?	Legitimacy of NE as a stakeholder	(Mitchell et al., 1997)
Q4.1_QL	Org_NE_Stk hdr	How was the organisation affected by the 2017 forest fires?	Identification of the disaster implications for the company Power of NE as a stakeholder	(Mitchell et al., 1997)
Q5_QL	Fires	Which immediate actions did the organisation take after the fire? And in the long run?	Identification of post-disaster management activities	(Quarantelli, 1976; Todd & Todd, 2011)
Q6_QL	Dst_mgmt	Did the organisation activate Environmental/sustainable procedures after the fires? If yes, which? How was this perceived by other stakeholders?	Post-disaster management Changes in the perception of NE as a Stakeholder	(Mitchell et al., 1997; Quarantelli, 1976)
Q7_QL	Dst_mgmt2	How do you understand the role of the organisation in the change of the forest paradigm within the surroundings it is located?	Urgency of NE as a stakeholder	(Mitchell et al., 1997)

Q7.1_QL	Dst_stkhdr	Which are the organisation's limitations concerning the changes in its natural environment?	CSR perceived limits NE as a stakeholder	(European Commission, 2001; Mitchell et al., 1997; Sheehy, 2014)
Q8_QL	Org_Forest	How can companies contribute to the reduction of forest fires?	Relationship between company and NE, through CSR	(European Commission, 2001; Jacobs, 1997)
Q9_QL	Org_Lim	Which are the organisation's limitations concerning the changes in its natural environment?	Post-disaster management Activities concerning the NE as a stakeholder	(Driscoll & Starik, 2004; Starik, 1995; Todd & Todd, 2011)
Q10_QL	Org_fires	How can organisations contribute to the reduction of forest fires?	Post-disaster management NE as a stakeholder	(Driscoll & Starik, 2004; Starik, 1995; Todd & Todd, 2011)

Appendix F – Attribute Items of the Natural Environment as a Stakeholder

Number from the original scale	Attribute	Question
1	Power	The Natural Environment has the power to directly affect the organisation's activity.
2	Power	The relationship between the organisation and the natural environment may affect the organisation's relationships with some stakeholders.
6	Power	The natural environment is more powerful than the majority of the organisation's stakeholders.
8	Urgency	It is urgent the use of natural resources in a sustainable way by the organisation.
9	Urgency	It is important for the organisation to quickly respond to the needs of the Natural Environment.
10	Urgency	It is urgent for the organisation to preserve its natural environment.
12	Legitimacy	The organisation allocates its own resources to preserve the natural environment.
13	Legitimacy	For the organisation, the natural environment is considered relevant to its activity.
14	Legitimacy	The organisation is environmentally responsible.
15	Legitimacy	The organisation stopped working with some stakeholders (providers, distributors, clients, etc.) who pollute/lack an environmentally sustainable behaviour.
16	Legitimacy	The organisation refuses products/raw materials that may be polluting.

Appendix G – *Survey to Decision-makers*

Hypothesis Number	Question	Type of answer	Reference	Theory
	Survey on the reaction of organisations to the 2017 fires			
	The present study is within the scope of a research project taking place at ISCTE - Instituto Universitário de Lisboa, carried out by the PhD student in Management, Narciso Antunes. It aims to understand how organisations reacted in the wake of the 2017 fires towards their stakeholders and their relationship with the environment. For the purpose of definition, stakeholders are all entities that affect or are affected by the organisation's activity. Wherever present, environment refers to the natural environment: air, water, land, flora, and fauna. Your participation in the study, which will contribute to the advancement of knowledge in this field of science, consists of completing this survey, which will take approximately 10 minutes. Your answers are strictly anonymous and confidential and do not include detailed or confidential company or personal information. You may complete the survey at various times and may exit, automatically returning to the same question using the same link. For any questions or additional information, you can contact the researcher directly through the email narciso_antunes@iscte-iul.pt. Thank you in advance for your time in participating in this questionnaire. Narciso Antunes			
	Part I – Organisations and the Natural Disaster			
--	1. What kind of environment is the organisation located in?	Urban/Rural	Organisation profile	--
H1	2. Does the organisation have infrastructure in one of the municipalities affected by the 2017 forest fires?	Yes/No	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)
H1, H3	3. How was the organisation affected by the forest fires? (Please select all that apply)	Multiple choice (Directly; Indirectly; Unaffected)	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)
H1, H3, H4	3.1. If directly, through: (Please select all that apply)	Multiple Choice (Loss of material goods; Infrastructure destruction; Human losses; Stocks destruction;	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)

H1, H3, H4	3.2. If indirectly: (Please select all that apply)	Raw material destruction; Equipment destruction) Multiple Choice (Loss of electricity; Loss of communications; Absence of workers; Disruption of the distribution chain; Local infrastructure destruction; Inaccessibility to facilities; Loss of business opportunities; Others)	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)
H1	4. How relevant do you consider the impact of the fires in the organisation's processes?	Likert Scale	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)
H3	5. In the first two months after the fires, which actions did the organisation take?	Multiple Choice (Communicated with all stakeholders; Analysis of damages and losses; Forest replantation; Developed anti-fire systems; Supported affected partners; Supported families and other affected entities; Didn't act in any different way; Others)	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)
H3	6. Three to six months after the fires, did the organisation adopt any of the following actions?	Multiple Choice (Courses on Environmental Sustainability; Fuelled a culture of security and protection for workers; Financial aid to social institutions; Courses in fire control; Donations to NGOs; Natural disaster mitigation actions; Did not take any measure)	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)
H3	7. Twelve months after the fires, did the organisation adopt any of the following actions?	Multiple choice (Purchase of anti-fire equipment; Courses on forest management; Acquisition of forest areas; Field clearing; Denounce illegal acts; Creation of fire plans; Cooperation with institutions close to the organisation; Did not take any action; Others)	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)
--	8. The organisation was prepared to face the 2017 forest fires.	Likert Scale	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)

--	9. Before the fires, the organisation had adopted any of the following actions?	Multiple Choice (Installed anti-fire systems; Denounced illegal actions against the natural environment; Developed emergency escape plans; Dedicated resources to environmental protection; Promoted natural environment preservation; Denounced the state of disregard for the surrounding forests; Participated in environmental management activities; Did not apply any specific activity; Others)	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)
--	10. At the moment, the organisation is prepared to face a natural disaster like the 2017 forest fires.	Likert Scale	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)
--	11. At the moment, the organisation is ready to face other types of natural disasters.	Likert Scale	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)
--	12. The 2017 forest fires were a strategic turning point in the organisation's positioning.	Likert Scale	Post-disaster Management	(Carter, 2008; Todd & Todd, 2011)

Part II – The organisation and its stakeholders

In this section, we aim to understand their individual perception regarding the preparedness of the company's stakeholders to face natural disasters and their position regarding the environment.

H3	13. Please order from the less important to the most important organisation's stakeholders (1 - the less important; 12 - the most important).	Multiple Choice (Workers; Ex-workers; State; Providers; Clients; Natural Environment; Local Community; Workers' families; Distributors; Local Government; Investors; Financial Entities)	Stakeholder Theory	(Freeman, 1984; Freeman et al., 2010; Mitchell et al., 1997)
--	14. Generally, the organisation's stakeholders were ready to face the 2017 forest fires.	Likert Scale	Post-disaster Management; Stakeholder Theory	(Carter, 2008; Freeman, 1984; Freeman et al., 2010; Mitchell et al., 1997; Todd & Todd, 2011)
--	15. At the moment, stakeholders are prepared to respond to a similar event.	Likert Scale	Post-disaster Management; Stakeholder Theory	(Carter, 2008; Freeman, 1984; Freeman et al., 2010; Mitchell et

				al., 1997; Todd & Todd, 2011)
--	16. Organisations must play an active role in mitigating the impact of natural disasters..	Likert Scale	Post-disaster Management; Stakeholder Theory	(Carter, 2008; Freeman, 1984; Freeman et al., 2010; Mitchell et al., 1997; Todd & Todd, 2011)
H2	17. The organisations are responsible for their natural environment.	Likert Scale	Post-disaster Management; Stakeholder Theory	(Carter, 2008; Freeman, 1984; Freeman et al., 2010; Mitchell et al., 1997; Todd & Todd, 2011)
H2	18. Issues related to organisations and the natural environment are an important topic.	Likert Scale	The Natural Environment as a Stakeholder Post-disaster management	(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	19. If organisations ignore their natural environment, it is expected that natural disasters will happen in the future.	Likert Scale	The Natural Environment as a Stakeholder Disaster management	(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	20. By responsibility degree, please order the entities that should be considered responsible for the natural environment.	Multiple choice (Central Government; Local Government; Security Forces; Civil Society; Land owners; Businesses)	The Natural Environment as a Stakeholder Disaster management	(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)

Part III - The organisation and its natural environment

To better understand the organisation's position on the environment and natural disasters, we identify three variables: Power, Legitimacy and Urgency.

	From this point onwards, we ask for the decision-maker's perspective on how the natural environment can affect and be affected by the organisation's activity. The answers will relate to the decision-maker's individual point of view and attitudes.			
H2	21. The Natural Environment has the power to directly affect the organisation's activity.	Likert Scale	The Natural Environment as a Stakeholder - Power	(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	22. I believe the natural environment is a stakeholder with authority over the organisation.	Likert Scale	The Natural Environment as a Stakeholder - Power	(Haigh & Griffiths, 2009; Starik, 1995)
H2	23. The relationship between the organisation and the natural environment may affect the organisation's relationships with some stakeholders.	Likert Scale	The Natural Environment as a Stakeholder - Power	(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	24. Every time the organisation faces an environmental issue, it will quickly act to mitigate its impact.	Likert Scale	The Natural Environment as a Stakeholder – Urgency	(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	25. Organisations that disregard the natural environment should be fined and forced to recover damages they provoke.	Likert Scale	The Natural Environment as a Stakeholder – Urgency	(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	26. An organisation's possibility of being affected by a natural disaster depends only on luck.	Likert Scale	The Natural Environment as a	(Carter, 2008; Haigh & Griffiths, 2009;

H2	27. It is urgent for the organisation to preserve its natural environment.	Likert Scale			Stakeholder – Legitimacy	Starik, 1995; Todd & Todd, 2011)
				The Natural Environment as a Stakeholder – Urgency		(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	28. The organisation stopped working with some stakeholders (providers, distributors, clients, etc.) who pollute/ do not have an environmentally sustainable behaviour.	Likert Scale		The Natural Environment as a Stakeholder – Legitimacy		(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	29. It is important for the organisation to quickly respond to theneeds of the Natural.	Likert Scale		The Natural Environment as a Stakeholder – Urgency		(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	30. The natural environment is more powerful than the majority of the organisation's stakeholders.	Likert Scale		The Natural Environment as a Stakeholder - Power		(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	31. For the organisation, the natural environment is considered relevant for its activity.	Likert Scale			The Natural Environment as a Stakeholder – Legitimacy	(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	32. It is urgent the use of natural resources in a sustainable way by the organisation.	Likert Scale			The Natural Environment	(Carter, 2008; Haigh & Griffiths, 2009;

			as a Stakeholder – Urgency	Starik, 1995; Todd & Todd, 2011)
H2	33. The natural environment issues are more urgent than other issues that affect the organisation.	Likert Scale	The Natural Environment as a Stakeholder – Urgency	(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	34. The organisation allocates its own resources to preserve the natural environment.	Likert Scale	The Natural Environment as a Stakeholder – Legitimacy	(Carter, 2008; Haigh & Griffiths, 2009; Starik, 1995; Todd & Todd, 2011)
H2	35. The organisation is environmentally responsible.	Likert Scale	The Natural Environment as a Stakeholder – Legitimacy	(Haigh & Griffiths, 2009; Starik, 1995)
H2	36. The organisation refuses products/raw materials that may be polluting.	Likert Scale	The Natural Environment as a Stakeholder – Legitimacy	(Haigh & Griffiths, 2009; Starik, 1995)
H2	37. The natural environment has the right to be respected by the organisation.	Likert Scale	The Natural Environment as a Stakeholder – Legitimacy	(Haigh & Griffiths, 2009; Starik, 1995)

Part IV - The company, fires and the environment
In this chapter we explore the organisation's positioning regarding the natural environment.
You should answer, taking into account the positioning of your organisation.

H3	38. The organisation used environmentally sustainable equipment before the fires.	Yes/No	Stakeholder typology - Power	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)
H3	39. If yes, the organisation acquired such equipment due to:	Likert Scale	Stakeholder typology - Power	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)
H3	40. The organisation employed environmentally sustainable services before the fires.	Yes/No	Stakeholder typology - Power	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)
H3	41. The organisation acquired environmentally sustainable equipment after the fires.	Yes/No	Stakeholder typology - Power	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)
H3	42. The organisation employed environmentally sustainable processes after the fires.	Yes/No	Stakeholder typology - Power	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)
H3	43. The organisation intends to acquire environmentally sustainable equipment in the future.	Yes/No	Stakeholder typology - Power	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)
H3	43.1 If so, the organisation will invest due to…	Multiple choice (Legal requirement; Market demand; Competitive advantage; Long-term investment; Cost reduction; Environmental concern; Other)	Stakeholder typology - Urgency	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)

H3	44. The organisation participated in environmental sustainability activities beyond its normal activities before the forest fires.	Yes/No	Stakeholder typology - Urgency	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)
H3	44.1. If yes, which?	Multiple choice (Forest plantation; Beach cleaning; participation in volunteering projects; courses in the field of the environment; Partnerships with NGOs; Support to Forest management)	Stakeholder typology - Urgency	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)
H3	45. The resources the organisation uses directly impact the natural environment.	Likert Scale	Stakeholder typology - Legitimacy	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)
H3	46. In a hypothetical percentage, how much did the organisation invest in environmentally sustainable processes?	Likert Scale	--	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)
H3	47. In a hypothetical percentage, how much did the company invest in environmentally sustainable equipment in the 12 months after the fires, compared to the 12 months before the fire?	Likert Scale	--	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)
H3	48. In a hypothetical percentage, how much did the company invest in environmentally sustainable services in the 12 months after the fires, compared to the 12 months before the fire?	Likert Scale	--	(Haigh & Griffiths, 2009; Mitchell et al., 1997; Starik, 1995)

Part V – Organisation Profile
This section is intended to obtain some statistical data of the organisation.
None of the questions require confidential data or sensitive information.

--	49. Municipality where the organisation or its infrastructures are located (select more than one, if applicable).	Multiple Choice	Organisation profile	--

--	50. The organisation's sector of activity.	Multiple Choice (Primary, Secondary, Tertiary)	Organisation profile	--
--	51. In which industry does the organisation develop its activities?	Open question	Organisation profile	--
--	52. Number of workers	Multiple Choice (<10; 10 – 49; 50 -100; >100)	Organisation profile	--
--	53. Approximate yearly turnover.	Multiple choice (Below 50.000€; 2 - Between 50.000€ and 999.999€; 3 - More than 1.000.000€)	Organisation profile	--
--	54. In the last years, has the organisation used State or EU funding?	Yes/No	Organisation profile	--
--	54.1 If yes, which?	Multiple choice (QREN; FEDER; Portugal 2020; Compete 2020; Centro 2020; Norte 2020; Other)	Organisation profile	--
--	55. The organisation has ISO quality certificates.	Yes/No	Organisation profile	--
--	55.1 If yes, which?	Multiple choice (ISO 14 001; ISO 50 001; ISO 9 000; Others)	Organisation profile	--
--	56. Location of the organisation's headquarters.	Multiple choice (Portugal; Others)	Organisation profile	--

Appendix H *– Ethics Commission Approval of the Interview protocol*

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COMISSÃO DE ÉTICA

PARECER [Final] 135/2020

Projeto *"Stakeholder theory over scorched earth - How did companies cope with stakeholders in aftermath of the 2017 fires?"*

O projeto *"Stakeholder theory over scorched earth - How did companies cope with stakeholders in aftermath of the 2017 fires?"*, submetido pelo Investigador Narciso Antunes, foi apreciado pela Comissão de Ética (CE) na reunião de 18 de dezembro de 2020.

A apreciação do projeto suscitou, porém, algumas reservas plasmadas no Parecer [Intercalar] 127/2020, em relação às quais o Investigador veio agora prestar os esclarecimentos tidos por necessários e que satisfazem os requisitos éticos exigíveis, com a nota de que as medidas destinadas a assegurar a proteção dos dados coligidos incluem a obrigatoriedade da sua destruição no prazo máximo de cinco anos após a conclusão do estudo.

Em suma, assegurados que se encontram a natureza voluntária da participação, a anonimização dos/das participantes e a confidencialidade dos dados coligidos, entende a Comissão de Ética emitir parecer favorável à realização da investigação, permitindo, desde já, o início dos trabalhos, sem prejuízo da ratificação deste parecer na próxima reunião.

Relator: Vítor Basto Fernandes

Lisboa, 28 de dezembro de 2020

O Presidente da Comissão, *Prof. Doutor Jorge Costa Santos*

A Vogal, *Prof.ª Doutora Sónia Bernardes*

O Vogal, *Prof. Doutor Vítor Basto Fernandes*

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