

# Natural disaster management in tourist destinations: a systematic literature review

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## Abstract

While tourism plays an extremely important role, both as a competitive tool and as a driver of regional development, there are nevertheless events that take place beyond the control of tourism destinations and that may jeopardise their attractiveness. Within this scope, the relationship between tourism and natural disasters has been subject to study within the framework of different fields of knowledge. However, there is a shortcoming in the analysis on the strategies and operational guidelines for the management of tourism destinations in the wake of natural disaster with this constituting the major contribution of this study. We undertook a systematic review of the literature on this theme featured in the Web of Science™ Core Collection and Scopus databases and adapting the protocol PRISMA with the keywords “Tourism” & “Disaster” & “Natural” in order to select the articles for review. The results, among others, allowed us to identify the existence of several distinct natural disasters in countries of the various continents of the world, with very compromising impacts and consequences for the attractiveness of any tourist destination. Planning, marketing, trust, cooperation and resilience are some of the strategies and guidelines implemented by the management of a tourist destination after a natural disaster.

**Keywords:** Tourism Destination, Natural Disasters, Management, Systematic Review

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## **Introduction**

Disaster is an event, whether natural or man-made, sudden or progressive, that impacts with such severity that the afflicted community has to respond by taking exceptional measures (Sahni, 2012). The physical world in which we live is subject to the inevitable threat of natural disasters, such as heat waves, fires, cyclones and hurricanes, floods, landslides, insect and animal plagues, volcanic eruptions, earthquakes, typhoons, tsunamis, droughts and so forth (Briere & Elliot, 2000; Brown, 1989). Their occurrences are random and may bring devastating consequences with unpredictable results that the tourism industry is particular susceptible to (Cioccio & Michael, 2007; Paraskevas & Altinay, 2013; Prideaux, Laws, & Faulkner, 2003). According to Clarke (2006), such disasters, their social and environmental implications for tourism are set to become more widespread and varied in the future and with Dahles and Susilowati (2015) even considering how natural disasters currently reflect a major challenge for local tourism in developing countries. This arises due to tourism, beyond the core, iconic attractions, being an industry dominated by small and medium sized companies and with the tourism environment very commonly highly dangerous in keeping with its services such as physically experiencing exotic and unusual landscapes and with their naturally volatile configurations. In such landscapes, there is inevitably one location or even region afflicted by natural events that destroy the physical underpinnings of the tourism activities and hence threatening the futures of regionally based companies. In summary, at any moment, the unexpected may become an event that affects the feasibility of businesses and damages the tourism ambience with such consequences extending into the long term, especially for rural areas where tourism features as an important contribution to local economic wellbeing (Cioccio & Michael, 2007).

To the best of our knowledge, no review has yet been made of the strategies and guidelines put in place by the management of a tourist destination following a natural disaster, which is the major contribution and overall objective of this research. As specific objectives, we intend to identify the natural disasters, the respective countries and years of publication of the studies, the methodologies used by the researchers, their impacts and consequences.

In this context, we present the following research questions (RQ):

*RQ<sub>1</sub> - What are the types of disasters and the geographical scope of the studies under review?*

*RQ<sub>2</sub> - What methodologies were applied in the studies?*

*RQ<sub>3</sub> - What are the impacts and consequences in the territory?*

*RQ<sub>4</sub> - What are the strategies and guidelines put in place by the management of a tourist destination following a natural disaster?*

As systematic reviews deploy systematic and explicit analytical methodologies to identify, select and critically evaluate the relevant research and gather and analyse the data of those studies subject to review (Higgins *et al.*, 2011), we correspondingly adopt this methodology as the most appropriate for undertaking our research project.

The article, following this brief introduction, takes on the following structure: the next section sets out a brief approach to tourism and natural disasters; before then describing the materials and method, section 4 sets out the presentation and discussion of the results and finally presenting the conclusions, limitations and future lines of research.

## **Literature Review – Tourism and Natural Disasters**

Peace, security and protection are essential conditions to the development of normal tourism activities in any country, region or destination (Cavlek, 2002). However, Breda and Costa (2006)

describe how over the course of recent decades, the tourism industry has been severely damaged by the rising lack of security whether caused by crime, terrorism, food security, health related problems and/or natural disasters.

According to Mikulić, Sprčić, Holiček, and Prebežac (2018), the natural disasters that hold the greatest impact for tourism are forest fires, floods and earthquakes and are not susceptible to accurate forecasting. A natural disaster may occur randomly (Faulkner, 2001; Faulkner & Vikulov, 2001) and may happen rapidly, without any prior warning and trigger a domino effect for local industry (Cioccio & Michael, 2007).

This type of disaster causes major human suffering alongside substantial physical and economic damage that may extend well beyond the immediate area of the disaster to impact on other areas of the country, whether temporarily or even permanently, and the general prevailing level of economic development (Bhati, Cook, Upadhayaya, & Sharma, 2016; Loayza, Olaberria, Rigolini, & Christiaensen, 2012). Sanders, Laing, and Frost (2015) add that dealing with natural disasters is thus crucial to the sustainability of many tourism destinations, especially those located in rural environments where the impacts of these disasters are frequently more severe. Given this scenario, it is vital that rural communities understand just how important it is to accelerate recovery following a natural disaster and deploying whatever tools they have available to this end. The same authors add that dealing with natural disasters therefore represents a crucial facet to the sustainability of many destinations, particularly those located in rural surroundings susceptible to more severe impacts from such catastrophes.

Implementing the sustainable development of a tourism product requires incorporating planning into tourism and the adoption of response strategies both by the community and by the business structure with few companies and tourism destinations prepared to deal with any immediate disaster and much less the long term results (Cassedy, 1991). Prideaux *et al.* (2003) add that despite the vulnerabilities of tourism to natural disasters, the industry tends only to be poorly prepared for such events and generally taking only fatalist and passive positions (Cioccio & Michael, 2007). Furthermore, there are failures in the level of awareness and fostering attitudes appropriate to planning, coupled with a lack of responsibility for dealing with this type of disaster, a lack of both financial and knowledge resources, an adversity to risk, the lack of scale of the entities involved and breakdowns in perceptions of cohesion stemming from companies being privately owned (Wang & Ritchie, 2012).

However, despite the increasingly negative impacts that such disasters have on tourism, there are research findings pointing to progress in the proactive planning existing within this industry (Drabek, 1995; Faulkner, 2001; Hystad & Keller, 2006; Ritchie, 2004).

Burnett (1998), Heath (2003), Kash and Darling (1998) and Ritchie (2004) recognise the level of preparation of companies holding competitive and advantageous positions and their capacities to react to such events and that the decisions taken prior to any crisis or disaster do enable more rapid and better organised responses providing a clear sense of direction and of particular importance when considering the challenges posed by decision making amidst the chaos of a disaster or crisis. Crisis management should be treated as a process rather than as a one-shot operation (Mansfeld, 1999).

The tourism industry has long since acted in a turbulent environment in which episodes of crises in global markets generate devastating consequences for economic success and resulting in countless losses to reputations, business viability and even threatening the survival of the industry (Preble, 1997;

Wall, 2006). The potential for such consequences should therefore represent an incentive to the industry to take planning for crises into consideration and correspondingly assisting organisations to be pro-active in efforts to control and resolve such situations as efficiently and effectively as is feasible (Preble, 1997). Furthermore, strategic management actions may alleviate some of the negative consequences and to the extent of constituting a key input to the development of any tourism destination (Mikulić *et al.*, 2018).

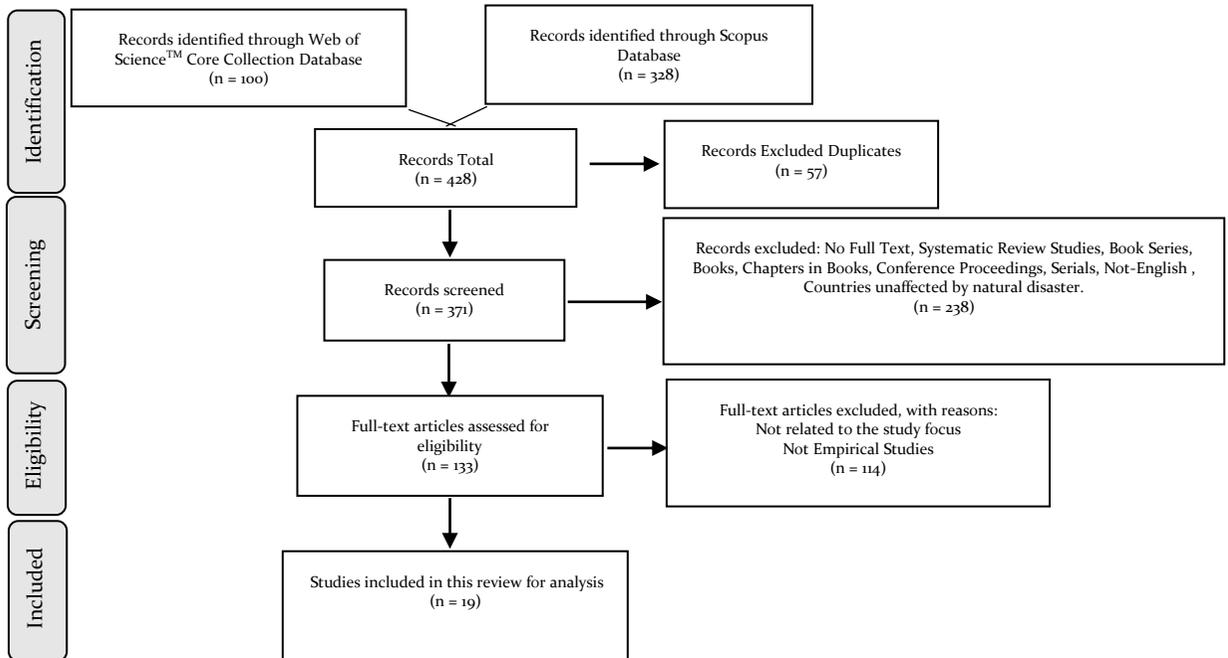
## Materials and Method

Systematic reviews represent iterative processes and their value depends greatly on the purpose and quality of the studies included. Researchers are able to modify their original review protocols during the course of implementation as is recognised by the PRISMA Statement (Preferred Reporting Items for Systematic Reviews and Meta-Analysis) (Moher, Liberati, Tetzlaff, and Altman (2009). This constitutes the method applied in this review.

Furthermore, the review covered two international databases of periodicals - Web of Science™ Core Collection and Scopus. This choice stemmed from these databases spanning a range of different fields, in particular Science and Technology, the Arts and Humanities and the Social Sciences, among others and, in conjunction, thereby broadening the research and reducing the scope for bias in the journals indexed exclusively in one database (Mongeon & Paul-Hus, 2016) and meeting the need for any research to be truly wide reaching.

This furthermore determined a set of criteria for eligibility and exclusion in order to refine the articles selected for study. The inclusion and exclusion criteria adopted matched those implemented by Schildt, Zahra, and Sillanpää (2006) and Van der Have and Rubalcaba (2016) in their studies. We should note that we excluded book series, books, chapters in books and conference proceedings because their contents are not available in the respective databases.

There were four distinct phases to the systematic review process as detailed in Figure 1. The first used and applied the general keywords "Tourism" AND "Disaster" AND "Natural" to the title, abstracts and keywords. This stage identified 428 articles published before January 24, 2019, including studies from 1985 to 2019. Careful screening resulted in the removal of 57 duplicate articles. Of the 371 articles eligible for review, we excluded a total of 238 articles as they were systematic review studies, book series, books, chapters in books, conference proceedings, serials, non-English, with their full texts unavailable and in countries unaffected by any natural disaster. The eligibility phase excluded 114 articles either because they were not empirical studies or because they were unrelated to the focus of this study. The excluded articles were extremely relevant and addressed several study perspectives on the natural disaster and tourism theme. However, they ran contrary to the focus of our very restricted analytical scope to result in a total of 19 articles that we then subjected to qualitative analysis.



Source: Adapted from Moher *et al.* (2009)

**Figure 1.** *The Study Flow Diagram*

Software EndNote 9 provided the tool that enabled the identification of the articles for analysis. This analytical study also made recourse to NVivo (version 12.0 Plus) software based on which we summarised the information contained in accordance with the research objectives.

## Results

### *Identified Thematic Focus, Geographical Scope and Years of Study*

Through analysis of the following Table 1, we may state that for the 19 articles under review, forest fires have been the natural disaster that has elicited the greatest interest among researchers with a total of 7 studies, followed by earthquakes with 5 studies, 3 on tsunamis, 2 on typhoons, 1 study on cyclonic rain and another article that approaches three natural disasters in parallel: tsunami, earthquake and nuclear accident.

The countries/regions afflicted by these natural disasters were Australia, Canada, China, US, India, New Zealand, Thailand and Japan. There are two distinct studies on Canada that deal with the same natural disaster – forest fires.

**Table 1. Identified Thematic Focus, Geographical Scope and Years of Study**

<b>Forest Fire</b>	<ul style="list-style-type: none"> <li>• Australia - Cioccioa &amp; Michael (2007); Walters &amp; Clulow (2010); Sanders et al. (2015).</li> <li>• Canadá - Hystad &amp; Keller (2006); Hystad &amp; Keller (2008).</li> <li>• Florida - Thapa, Cahyanto, Holland, and Absher (2013).</li> <li>• Thailand- Stephenson, Handmer, and Betts (2013).</li> </ul>
<b>Tsunami</b>	<ul style="list-style-type: none"> <li>• Thailand - Smith and Henderson (2008); Calgaro, Dominey-Howes, and Lloyd (2014).</li> <li>• India - Reddy (2005).</li> </ul>
<b>Earthquakes</b>	<ul style="list-style-type: none"> <li>• New Zealand - Orchiston and Higham (2016); Prayag, Fieger, and Rice (2018); Cradock-Henry, Fountain, and Buelow (2018).</li> <li>• China - Svirchev, Li, Yan, Ma, and He (2011); Tang (2016).</li> </ul>
<b>Typhoon</b>	<ul style="list-style-type: none"> <li>• China - Tsai, Tseng, Tzeng, Wu, and Day (2012); Wu, Chiu, and Chen (2018).</li> </ul>
<b>Earthquake, Tsunami, ...</b>	<ul style="list-style-type: none"> <li>• Japan - Kim and Park (2016).</li> </ul>
<b>Cyclonic Rains</b>	<ul style="list-style-type: none"> <li>• Australia - Faulkner and Vikulov (2001).</li> </ul>

### *Typology of Study Methodologies*

Table 2 systematically sets out the typology of the study methodologies applied, in accordance with the type of study, instrument and the type of analysis undertaken:

We may correspondingly detail how the majority of the studies are qualitative (12), 5 are quantitative and with 2 mixed studies. This also highlights how the majority of qualitative studies applied only content analysis and the quantitative studies only included content analysis even while the authors of the latter studies applied a great variety of quantitative statistical and econometric methods.

**Table 2.** *Type of Study of the Articles Analysed*

Type of study	Instrument	Type of Analysis	References
Quantitative	Questionnaire and Secondary Data	Descriptive Analysis	Hystad and Keller (2006)
		SEIA-Model	Stephenson, Handmer, and Betts (2013)
	Questionnaire	Descriptive Analysis, Cluster, ANOVA and Chi-square Analysis	Thapa, Cahyanto, Holland, and Absher (2013)
		Descriptive Analysis SEM	Wu, Chiu, and Chen (2018)
Secondary Data	Engle-Granger's Tests, Descriptive Analysis	Prayag, Fieger, and Rice (2018)	
Qualitative	Case Study	Content Analysis	Calgaro, Dominey-Howes, and Lloyd (2014), Sanders <i>et al.</i> (2015), Cioccio and Michael (2007), Smith and Henderson (2008), Svirchev, Li, Yan, Ma, and He (2011), Reddy (2005), Cradock-Henry, Fountain, and Buelow (2018)
	Interview	Content Analysis	Faulkner and Vikulov (2001), Orchiston and Higham (2016), Walters and Clulow (2010)
		Q-Methodology	Kim and Park (2016)
Mix	Questionnaire and Interview	Hierarchy Analysis Method	Tsai, Tseng, Tzeng, Wu, and Day (2012)
		Descriptive and Content Analysis	Hystad and Keller (2008)
	Interview and Case Study	Content Analysis	Tang (2016)

### *Impacts and Consequences*

In order to study the impacts on and the consequences for tourism destinations, we shall undertake exploratory content analysis of the various studies making up our sample. Figure 2 unveils the results of representing the 50 words with five or more letters that received the greatest number of references in articles on this subject.



With a tourism, agriculture and fishing based economy, Kaikoura immediately encountered significant logistical, economic and social challenges caused by the damage to critical infrastructures that represented lifelines to its leading industries (Cradock-Henry *et al.*, 2018).

From another perspective, Kim and Park (2016) concluded that the leakage of radiation due to a nuclear accident gets perceived by tourists as exposure to a potential risk and, consequently, resulting in a drastic drop in the number of peoples wishing to visit Japan and correspondingly impossible to forecast just how long such a trend might remain in effect for. In the study by Calgaro *et al.* (2014), a tsunami caused the loss of 8,345 human lives. In Australia, fires devastated large swathes of rural lands in the region around the city of Melbourne, killed 173 people and destroyed over 2,000 residences. These authors combined the effects on the decline of small rural towns, reflecting in a rise in unemployment, the ageing of the population, the cessation of government services and the mass exodus of the younger population to cities in search of both employment and better opportunities.

In six of the western provinces that bore the brunt of the impact of the tsunami that hit Thailand, around 2,000 of the over 5,000 casualties were tourists (Smith & Henderson, 2008). In the research findings of Orchiston and Higham (2016), a natural disaster took the lives of 185 persons and destroyed historical buildings, in particular Christchurch Cathedral, an iconic construction of importance both to the city's residents and as a tourist attraction.

Cioccio and Michael (2007) highlight how the duration of the fires over the course of three months and the intense attention that they attracted ensured that potential visitors avoided the entire region and even well after the immediate threat was long since past. There is also the damage done to the physical foundations of the regional tourism sector, in particular the loss of forest over approximately 600,000 hectares of national parks and areas of conservation and their various tourism installations and infrastructures. Svirchev *et al.* (2011) emphasise that as a consequence of the earthquake, there was the loss of almost all homes, restaurants, tourism accommodation and infrastructures and rendering much of the region temporarily uninhabitable.

Thapa *et al.* (2013), in turn, stress that the impacts of forest fires were more pronounced in terms of the role of the media given that the substitution of the destination is more probable among potential tourists based on their perceptions of risk and correspondingly warning of the need for prudence in the media's presentation of information as there is a general trend to sensationalise the effects of any crisis.

#### *Study Focus and Findings*

Finally, we sought to grasp the empirical studies reviewed and determining their respective focus and findings (Table 4).

**Table 4.** *Studies Focus and Findings*

<b>Study</b>	<b>Findings</b>
Faulkner and Vikulov (2001)	The authors consider that, within the framework of disaster management, the implications of positive and negative connotations, is that the resolution phase needs to involve the establishing of post-disaster management and a planning regime so as to positively strengthen and cancel out the negative changes caused by the disaster.
Reddy (2005)	According to the author, there is an urgent need for authorities to take into account the divergences and weaknesses in the division of power and involve the local community in discussions over post-tsunami crisis management through strengthening the tourism industry.

Hystad and Keller (2006)	They identify the clear benefits whenever there is an alteration in the mentality of tourism companies through carrying out planning for this type of disaster and providing incentives for coordination at the regional team level engaging in the development strategies for collaborative management.
Cioccio and Michael (2007)	Small scale tourism company operators require training, capacities and resources to apply preparation planning in comparison with larger organisations. On the other hand, the operators demonstrate resilience as well as confidence in their accumulated experience to manage their own recovery.
Hystad and Keller (2008)	Marketing and advertising represented important components for the recovery of tourism in Kelowna. Cooperation between the interested parties is a key factor to disaster management and hence the importance of clarifying responsibilities through every stage of a disaster.
Smith and Henderson (2008)	While less prominent and powerful than the formal industrial sector, this cannot be overlooked and plays a role in shaping the physical, and economic landscapes and the more recent social styles as well as the traditional resorts.
Walters and Clulow (2010)	The willingness of some participants to visit the region during or immediately after the fires led the authors to maintain that destinations require promotion during any crisis. The study recommends focused marketing strategies to boost destinations perceived to be in crisis.
Svirchev <i>et al.</i> (2011)	The mortality and destruction caused by the earthquake to Wenchuan requires a sustained educational process, lasting decades and constantly updated so as to be implemented by local managers and entrepreneurs. The community and the citizens in general possess the knowledge base to carefully consider the prevention of disasters, selecting the sites of construction of local homes and their construction materials.
Tsai <i>et al.</i> (2012)	With the arrival of growing numbers of tourists, given the unpredictability of natural dangers, these authors suggest that the government should approach the factors associated with natural risks in a technical tourism policy document and carry out analysis of awareness of the internal and domestic tourism on both the regional and national scales.
Stephenson <i>et al.</i> (2013)	The authors identified the lack of ecosystem service values related to the natural Australian environment and, to this end, concluding that in order to guarantee greater consistency and comparability, there is a need for generic values or measurements applicable to different types of ecosystems across all of Australia.
Thapa <i>et al.</i> (2013)	The authors form standard segments in relation to their perceived levels of risk, the level of threat from forest fires based on the various types of risk and modifications in the behaviours of travellers in specific situations of fires and the behaviours that may influence future visits to fire prone destinations.
Calgaro <i>et al.</i> (2014)	The results indicate that the vulnerability of destinations stems and perpetuates from a combination of multiple factors, both dynamic and interrelated, including geographic exposure, the special characteristics that drove the destination's development, its social structures and governance processes.
Sanders <i>et al.</i> (2015)	They conclude that an event portfolio might serve for the (re)construction of the tourism destination image, stimulating economic recovery and encouraging the return of visitors within the tourism context.
Hystad and Keller (2006)	They identify the clear benefits whenever there is an alteration in the mentality of tourism companies through carrying out planning for this type of disaster and providing incentives for coordination at the regional team level engaging in the development strategies for collaborative management.
Kim and Park (2016)	They conclude that following the nuclear accident in Japan, despite being limited to the specific region of Fukushima, international tourists may still perceive this as a risk factor involving the entire country of Japan. Therefore, there is a need to promote tourism by dividing the nation into at risk regions and safe regions.

Orchiston and Higham (2016)	<p>These authors also highlight the critical importance of management and knowledge and for the effective collaboration and communication between agencies in order to provide immediate responses to disasters as well as during the event, in the development and implementation of marketing strategies able to accelerate tourism to boost medium and long term recovery.</p> <p>This highlights the critical importance of marketing based initiatives for recovery and striving to mitigate the indirect losses of tourism beyond the immediately affected disaster zone.</p>
Tang (2016)	<p>The author concluded that there was a network of different interested parties, residents and external companies that worked together in an effort to develop beyond simple reconstruction so as to coordinate tourism following the tragedy inflicted by natural disaster.</p>
Cradock-Henry <i>et al.</i> (2018)	<p>The results identify transformation processes as part of rural recovery and requires grounding in the lived reality of local residents and in understanding the place, incorporating and building on regional social, environmental and economic characteristics.</p>
Prayag <i>et al.</i> (2018)	<p>The results hold implications for the formulation of policies in terms of fostering economic growth in areas prone to disasters. The authors propose that the best policy for seeking stable and consistent growth in the tourism industry is avoiding drastic fluctuations in the exchange rate.</p>
Wu <i>et al.</i> (2018)	<p>The results demonstrate that the majority of tourists attribute high recreational values to natural and socio-cultural resources. However, additional analysis of the tangible benefits indicates that the revenues received remain only low.</p>

## Discussion

There is a rich and comprehensive literature on tourism and natural disasters but there are few empirical studies published in peer-reviewed articles that investigate the strategies and operational guidelines proposed by the management of tourism destinations in the wake of natural disasters, which reduced our analytical scope here to 19 articles. Tourism features as one of the business sectors most sensitive to the climate and the effects of climate change feature as a growing concern in this sector (Michailidou, Vlachokostas, & Moussiopoulos, 2016), thus the importance of raising awareness by carrying out research studies that address this theme.

According to UNISDR (2015), the Asian population giants, China and India, dominate the league table of countries most affected by natural disasters. However, only six studies focus on this continent. Over the last twenty years, floods, storms, heatwaves and other weather-related events have caused the overwhelming majority (90%) of disasters (UNISDR, 2015), coinciding with the natural disasters identified.

Although we have identified studies since 1985, only after 2001 is there any attempt to study the strategies and guidelines operationalized by the management of tourist destinations after experiencing a natural disaster, thus confirming the statements of Faulkner (2001). According to this author, there are only a few case studies approaching the impacts of disasters and crises on the local tourism industry, the sector's responses or the solutions implemented by government agencies.

In turn, Hystad and Keller (2008) state that studying the impact of disasters involves increasingly required processes. This places due emphasis on the devastating impacts and consequences caused by such disasters to tourism destinations while also verifying the importance of post-disaster planning and management within the scope of mitigating the circumstances (Faulkner & Vikulov, 2001; Hystad & Keller, 2008; Prayag *et al.*, 2018; Reddy, 2005; Sanders *et al.*, 2015; Tang, 2016; Walters & Clulow,

2010; Wu *et al.*, 2018). The studies under analysis emphasize this importance across various levels, highlighting the impacts and consequences for business and the vulnerability of communities to climate hazards. According to UNISDR (2015), this facet should be an international concern even if at a time of limited financial resources and competing priorities.

This places emphasis on the importance of planning as a differential in post-disaster management (Faulkner & Vilulov, 2001) and on formal prevention documents with actions for implementation by local actors and entrepreneurs and that underpin a continuous educational process (Svirchev *et al.*, 2011). Of equal importance are, based on the experience gained in times of crisis, the implementation of risk management plans that serve as anticipatory mechanisms (Tsai *et al.*, 2012), the implementation of collaborative management strategies (Hystad & Keller, 2006). and the adoption of ecosystem prevention policies and strategies (Stephenson *et al.* 2013). Tang (2016) also considers cooperation to be a driver of development following a natural disaster and with the corresponding involvement of the entire community and stakeholders to reinvigorate the destination's tourism industry also crucial (Reddy, 2005; Cioccio & Michael, 2007).

Additionally, Cioccio & Michael (2007) state that small tourism companies require training, skills and resources to prepare for risks of this gravity and that these actors play just as important roles in tourism destinations as large companies do (Smith & Henderson, 2008). This also places emphasis on the importance of resilience and business confidence as key factors in disaster recovery (Cioccio & Michael, 2007).

Hystad and Keller (2006), Walters and Clulow (2010) and Orchiston and Higham (2016) argue that marketing and advertising play key roles in restoring the image of tourist destinations. Studying consumer behaviors is also key to managing tourist perceptions of their safety in the wake of events (Thapa *et al.*, 2013; Kim & Park, 2016). Wu *et al.* (2018), following their analysis, conclude that tourists are unlikely to pay fees to ensure the environmental sustainability of tourist destinations following natural disasters.

They also stress the importance of disaster management, green economy transformations designed to facilitate social justice and improve wellbeing alongside action demonstrating a commitment to the sustainable development of the tourism destination (Tang, 2016) alongside transformations as part of rural recovery processes grounded in the lived experiences of local residents and their understanding of the place while also incorporating and building upon regional, social, environmental and economic characteristics (Cradock-Henry *et al.*, 2018).

The findings of the studies under analysis highlight the importance of planning in post-disaster management designed to mitigate the circumstances as well as the role that marketing and advertising play in restoring the tourist destination image. The resilience and trust of companies in the tourist destination recovery as well as cooperation among the interested parties are also all key factors in the disaster management of destinations. These findings also highlight the importance of green economy transformations in order to facilitate social justice and improve well-being by demonstrating a commitment to the sustainable development of tourist destinations. We must not forget that truly competitive tourist destinations hold the potential to boost tourism spending, attracting and satisfying increasing numbers of visitors, providing memorable experiences and doing so profitably all the while improving the well-being of the destination and preserving its natural capital for future generations (Crouch, 2007).

## Conclusion

In conclusion, there are very few studies approaching the strategies and operational guidelines for tourism destination management. According to Below and Wallemacq (2018), 2017 recorded 335 natural disasters worldwide, resulting in the deaths of 9,697 persons, affecting the lives of 95.6 million people and with a total cost running to US\$ 335 billion. Hence, the importance of undertaking more research to identify the various different impacts and the response strategies for tourism destinations immediately becomes clear, both during and after disasters, in order to formulate policies that support these strategies.

We are now in a position to answer the research questions presented:

*RQ1 - What are the types of disasters and the geographical scope of the studies under review?* Forest fires was the most prevalent disaster in the studies analysed, followed by tsunamis, typhoons and cyclonic rain. The results report that the target countries of the present systematic review spanned only the continents of Australia, America and Asia. Hence, it is especially important to invest in studies on the continents of Europe and Africa, particularly Portugal and Greece that were recently afflicted by forest fires and Mozambique following Cyclone Idai, which resulted in the loss of many lives and the devastation of property. As these countries are tourist destinations par excellence, it would be important to identify just which strategies and guidelines have been or are being operationally implemented by management teams in these destinations in the wake of the aforementioned natural disasters in order to ensure their competitiveness. The findings only identify concern over studying the strategies and operational guidelines for tourism destination management at the beginning of this century and, although there has been growth in research in this field over the last decade (11), there are still very few studies on this theme.

*RQ2 - What methodologies were applied in the studies?* The methodologies applied in the studies are mostly qualitative (case studies and interviews), followed by qualitative (5) and mixed (2) methodologies. Since the type of analysis was mostly content analysis, we would recommend applying more robust statistical techniques in order to increase the reliability of the results as proposed by Cardoso, Estevão, Fernandes, & Alves (2017).

*RQ3 - What are the impacts and consequences in the territory?* The impacts and negative consequences on the businesses of tourism cluster companies and the surrounding tourist destination community clearly demonstrate the importance that strategic planning has in the management of such issues. Large-scale loss of life, damage to infrastructure and material loss are evident following any natural disaster. However, perceptions of danger and threat might be decisive factors and susceptible to undermining the image, reputation, and competitiveness of a country (Marica, 2016).

*RQ4- What are the strategies and guidelines put in place by the management of a tourist destination following a natural disaster?* We begin by referring to the importance attributed to formal planning as a form of prevention in post-disaster management. Furthermore, marketing, through promotion and advertising, plays a fundamental role in restoring the image of the tourist destination. Understanding consumer behaviors also represents a strategy considered by authors here in order to minimize tourist insecurity about the tourism destination following any disaster. Business resilience and confidence in the recovery of the tourist destination, as well as cooperation between stakeholders, are also key factors in disaster management. There is also an important emphasis on highlighting green economy transformations in order to facilitate social justice and improve well-being through demonstrating a commitment to the sustainable development of the tourist destination alongside the transformation

process as part of rural recovery based on the lived reality, understanding local residents by incorporating and building upon regional, social, environmental and economic characteristics.

The results of the articles studied serve to outline a framework for future tourism destination disaster management systems for researchers and tourism planners. The number of articles studied here constitutes the great limitation of the present work in conjunction with only considering two databases and journal articles and correspondingly excluding books, chapters in book and conferences proceedings. As the research took place in January 2019, as a future line of investigation, we would propose continuing this study in order to grasp whether the number of articles on this theme has increased and furthermore verifying if studies have targeted tourism destinations that have recently been subject to natural disasters. We also recommend comparisons of the strategies and guidelines operationalized by the management of any newly identified studies.

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