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# Adaptive Governance for Tourism Resilience Under Climate Change: A Systematic Review of the Literature (2015–2025)

## ABSTRACT

Climate change poses escalating risks to tourism destinations by undermining climate-sensitive resources, disrupting socio-economic systems, and challenging existing governance arrangements. Although social-ecological resilience and adaptive governance have become prominent concepts in tourism research, their application remains fragmented across contexts and scales. This study presents a PRISMA-guided systematic review of 30 peer-reviewed articles published between 2015 and 2025 that examine climate change adaptation in tourism destinations through these two lenses. Using qualitative thematic synthesis, the review consolidates how resilience and governance are conceptualised and operationalised across diverse destination types and regions. Three recurring patterns emerge: the widespread treatment of destinations as coupled social-ecological systems; the central role of multi-level and participatory governance in shaping adaptive responses; and the growing recognition that adaptation outcomes are closely linked to equity, power relations, and justice. At the same time, the evidence base remains uneven, with a strong focus on coastal and island destinations and limited attention to inland and urban tourism systems, adaptation failures, and long-term institutional change. Rather than proposing new models, this review synthesises existing evidence to clarify current knowledge boundaries and identify priorities for future research and policy aimed at advancing inclusive and context-sensitive climate adaptation in tourism destinations.

*Keywords: climate change adaptation; tourism destinations; social-ecological resilience; adaptive governance; systematic review*

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## INTRODUCTION

Climate change poses escalating and systemic challenges to tourism destinations worldwide. As a sector that depends heavily on climate-sensitive resources—including snow reliability, coastal and marine ecosystems, biodiversity, and stable seasonal patterns—tourism is increasingly exposed to rising temperatures, extreme weather events, sea-level rise, and ecosystem degradation. These climatic stressors generate cascading effects at the destination level, disrupting infrastructure and accessibility, reshaping visitor demand, and undermining local livelihoods and community well-being (Gössling et al., 2018; Scott et al., 2012; IPCC, 2022). From alpine resorts experiencing declining snow cover to small island destinations threatened by coastal erosion, the urgency of strengthening climate resilience in tourism destinations has become widely recognised.

In response, two interrelated concepts—social–ecological resilience and adaptive governance—have gained prominence in tourism and sustainability scholarship. Originating in ecology and later extended to sustainability science, social–ecological resilience conceptualises destinations as coupled systems capable of absorbing disturbances, adapting to change, and reorganising while maintaining essential functions (Folke, 2006; Biggs et al., 2015). Adaptive governance complements this perspective by focusing on the institutional arrangements, actor networks, and decision-making processes that enable learning, flexibility, and coordination across scales under conditions of uncertainty (Hall, 2011; Chaffin et al., 2014). Together, these perspectives provide a useful analytical lens for examining how tourism destinations respond to climate change through governance processes rather than isolated technical measures.

Despite their growing prominence, the application of social–ecological resilience and adaptive governance in tourism research remains uneven and fragmented. Existing studies are disproportionately concentrated on coastal and island destinations, Small Island Developing States, and selected mountain regions, while inland destinations, urban tourism systems, and domestic tourism economies—particularly in parts of Asia, Africa, and Latin America—remain underrepresented (Becken & Hay, 2012; Nalau et al., 2018). Here, the Global North is used as an analytical shorthand to refer primarily to high-income and OECD contexts, where governance capacity and research attention have been disproportionately concentrated (IPCC, 2022; Eriksen et al., 2021). This distinction is employed not to imply regional homogeneity or normative superiority, but to highlight systematic biases in the geographical distribution of tourism adaptation research. At the same time, the review recognises the substantial heterogeneity within Asia, encompassing advanced economies, emerging tourism destinations, and least-developed contexts characterised by markedly different governance capacities and vulnerability profiles.

Moreover, the literature tends to privilege accounts of successful adaptation initiatives, with comparatively limited attention to adaptation failures, trade-offs, and power asymmetries that shape governance outcomes (Wyborn et al., 2016; Eriksen et al., 2021). Conceptual inconsistencies further



persist, as key terms such as “resilience” and “adaptive capacity” are often employed without clear operationalisation or explicit linkage to ecological, social, or equity-related outcomes.

While a growing number of empirical and conceptual studies address climate adaptation in tourism destinations, a systematic synthesis that explicitly integrates social–ecological resilience and adaptive governance across diverse destination contexts remains lacking. In particular, previous reviews have tended to focus on climate impacts or adaptation strategies in isolation, rather than examining how governance processes shape adaptive capacity across scales and social groups. This gap limits cumulative knowledge building and constrains the translation of research insights into context-sensitive policy and practice.

To address this gap, this study conducts a PRISMA-guided 2020 systematic review of 30 peer-reviewed studies published between 2015 and 2025 that examine climate change adaptation in tourism destinations through the lenses of social–ecological resilience and adaptive governance. The review employs qualitative thematic synthesis to consolidate existing evidence, identify recurring patterns and biases in the literature, and clarify key areas of convergence and divergence. Rather than proposing new conceptual models, the aim is to synthesise existing empirical and theoretical insights to delineate current knowledge boundaries and inform future research and governance efforts aimed at enhancing climate resilience in tourism destinations.

## METHODS

This study follows the PRISMA 2020 guidelines for systematic reviews, as illustrated in Figure 1 (the PRISMA flow diagram). This standardised flowchart delineates each stage—Identification, Screening, Eligibility, and Inclusion—and reports the number of records retained and excluded at each step.

### Identification

During the identification phase, a comprehensive and systematic search was conducted across three major bibliographic databases—Web of Science, Scopus, and ScienceDirect—for literature published between 2015 and 2025. This 10-year span was selected to capture the most recent research on climate change impacts and governance in tourism destinations. The initial search identified 946 records related to the core themes of tourism research, social–ecological resilience, and adaptive governance under climate change. All retrieved records were consolidated, and 212 duplicate entries (i.e. results overlapping across databases) were removed, resulting in 734 unique records proceeding to the screening stage. The comprehensiveness of this search—spanning multiple databases and disciplines—aligns with the standards of high-quality systematic reviews in tourism and sustainable development, ensuring that the initial literature pool was broad and inclusive.

## Screening

In the screening phase, the 734 unique records underwent a systematic review of their titles and abstracts to assess relevance to the study's thematic focus. Each record was evaluated against pre-defined inclusion criteria—specifically, a focus on tourism destinations and climate change–related resilience or adaptive governance—and exclusion criteria (e.g. studies not focusing on tourism, lacking resilience or adaptation dimensions, or situated outside a social–ecological context). Through this process, 654 records were excluded for failing to meet the inclusion criteria. Common reasons for exclusion included studies addressing tourism or climate change in isolation (rather than jointly), papers examining resilience in non-tourism sectors, and conceptual articles lacking empirical or case study evidence. Following this screening process, 80 records were deemed potentially relevant and advanced to the full-text eligibility assessment. The substantial reduction at this stage reflects the specific scope of the review, with only approximately 10% of initially identified studies aligning directly with the core themes.

## Eligibility

During the eligibility phase, the remaining 80 articles underwent detailed full-text assessment to determine their adherence to the inclusion criteria. The evaluation considered whether: (1) the study explicitly addressed climate change resilience in tourism destinations; (2) it discussed or evaluated adaptive governance measures or frameworks; and (3) it provided qualitative or quantitative evidence related to tourism's social–ecological resilience. Following the full-text review, 50 articles were excluded. The most frequent reasons for exclusion included studies that, despite using relevant keywords, did not focus on climate change impacts (e.g. examining resilience to economic crises or other non-climatic disturbances), the absence of a governance or policy dimension (with a sole focus on ecological resilience), or articles classified as commentaries or opinion pieces rather than research papers meeting the review's quality and content standards. In line with PRISMA recommendations, all exclusion reasons were documented to ensure transparency. After the full-text eligibility screening, 30 studies met all criteria and were considered suitable for inclusion.

## Inclusion (Qualitative Synthesis)

Following the screening process described above, 30 articles that met all inclusion requirements were ultimately selected. Given the high conceptual complexity of the selected research topics and the heterogeneity of methodologies employed, a qualitative synthesis was conducted for these 30 articles. The included studies cover a wide range of geographical contexts and subtopics within the broader theme, providing a rich qualitative foundation for comprehensive analysis. In accordance with best practices, the findings of these studies were synthesised using a narrative approach rather than a

quantitative meta-analysis, given the qualitative nature of the evidence base. This approach enables the synthesis to distil common themes, strategies, and gaps prevalent in the literature.

Rationale for synthesis approach (SWiM). Although the review followed PRISMA 2020 guidelines for identification and screening, a quantitative meta-analysis was not methodologically appropriate for the included body of evidence. Across the 30 eligible studies, destination contexts, study designs, analytical frameworks, and outcome reporting were highly heterogeneous, and many primary studies reported qualitative or narrative findings that cannot be transformed into comparable effect sizes without introducing substantial bias. Accordingly, this study adopted a systematic review with narrative synthesis and structured the reporting of synthesis results in line with the SWiM (Synthesis Without Meta-analysis) guideline to enhance transparency, consistency, and reproducibility.

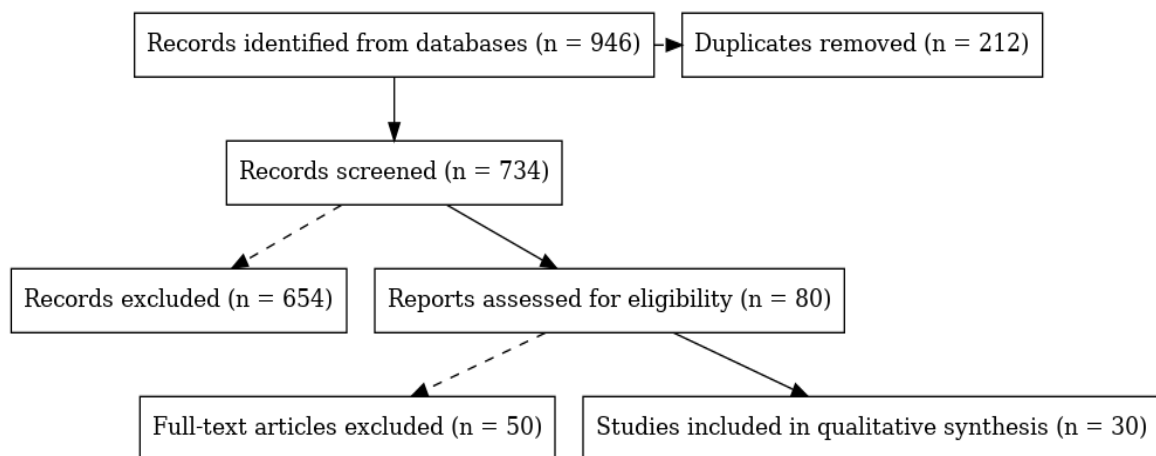
The core concepts examined in this review—social–ecological resilience, adaptive governance, community-level adaptation, and multi-level governance—are predominantly qualitative, context-dependent, and resistant to numerical standardisation. The included studies employ diverse methodological designs (e.g. case studies, interviews, policy analysis, mixed methods), rendering their findings unsuitable for conversion into comparable effect sizes. Furthermore, this review seeks to advance theory rather than produce statistical estimates; consequently, narrative and thematic synthesis represents the most rigorous approach for integrating insights across destinations concerning cross-scalar mechanisms, governance structures, and social–ecological interactions. The final sample size ( $n \approx 30$ ) further supports the use of qualitative thematic analysis, enabling conceptual depth and theoretical saturation. Braun and Clarke (2006, 2021) note that thematic analysis is most effective for datasets comprising 10 to 50 sources, balancing analytical depth with manageability. Thus, a sample size of approximately 30 achieves an optimal balance between depth, heterogeneity, and theoretical saturation within a qualitative synthesis.

These 30 articles constitute the core body of literature examining the development of resilience and adaptive governance in tourism destinations confronting climate change. They include representative empirical case studies, comparative analyses, and conceptual frameworks that collectively explore how destinations respond to climate-related disturbances, strengthen social–ecological resilience, and implement governance strategies to cope with or mitigate climate impacts.

The flow diagram (Figure 1) outlines the literature selection process for this review. Each box reports the number of records at specific stages (Identification, Screening, Eligibility, and Included), while arrows indicate the number of records excluded or removed at each respective phase. This diagram adheres to the standard PRISMA format, ensuring transparent reporting of the process leading to the final set of studies included in the analysis.

Before synthesising the substantive themes, the characteristics of the included studies were examined to provide an overview of the empirical basis of the review. As shown in Table 2, the 30 studies display a pronounced concentration on coastal and island destinations, alongside a strong geographical bias towards Europe, Small Island Developing States, and global-scale analyses.

Figure 1. PRISMA 2020 Flow Diagram Illustrating the Literature Search, Screening, Eligibility Assessment, and Inclusion Process



The qualitative synthesis draws on 30 empirical and comparative studies examining climate change adaptation and governance across a diverse range of tourism contexts. These include coastal and island destinations (e.g. Arabadzhyan et al., 2020; Wolf et al., 2021; Lam-González et al., 2022; Shakeela & Becken, 2015), mountain and alpine tourism systems (Steiger et al., 2017; Scott & McBoyle, 2007), protected areas and nature-based destinations (Jones et al., 2020; Maoela et al., 2025), community-based tourism contexts (Young et al., 2021), as well as cross-regional and global comparative analyses (Pan et al., 2024; Navarro-Drazich et al., 2023; Hoogendoorn & Fitchett, 2018). Together, these studies constitute the empirical foundation for the thematic synthesis presented below.

Table 1. Distribution of Included Studies by Destination Type and Geographical Region (n = 30)

Category	Sub-category	Number of Studies (n)	Percentage (%)
Destination Type	Coastal / Island destinations	13	43.3
	Mountain / Alpine destinations	4	13.3
	Protected areas / Nature-based tourism	5	16.7
	Urban / Regional tourism systems	3	10.0
	Conceptual / Multi-destination studies	5	16.7
	Subtotal	30	100
Geographical Coverage	Global / Multi-region	8	26.7
	Europe	7	23.3
	Small Island Developing States (SIDS)	6	20.0
	Africa	4	13.3
	Asia & Latin America	5	16.7
	Subtotal	30	100

Note: Percentages are calculated based on the total number of included studies (n = 30). Some studies classified as “Global / Multi-region” draw on multiple destination types or regions.

## RESULTS

Following SWiM reporting principles, the synthesis is organised around analytically derived themes. For each theme, we (i) define the thematic focus, (ii) summarise the supporting evidence base (including study designs and contexts), (iii) describe patterns and heterogeneity across settings, and (iv) note limitations and confidence considerations. Table 1 summarises the included studies by destination type and geographical region, while Table S1 provides detailed study-level information (author–year, location, methods, and thematic contribution).

### Impacts of Climate Change on Tourism and the Imperative for Building Resilience

**Theme definition:** Climate stressors (e.g. heat, sea-level rise, extreme events) generate cascading impacts on destination systems and motivate resilience-building. **Evidence base:** Evidence includes studies across coastal and island destinations, alpine contexts, and cross-regional syntheses, as summarised in Table 1 and Table S1. **Patterns/heterogeneity:** Impacts and response capacity vary according to hazard type, exposure, and destination dependence on climate-sensitive resources. **Confidence/limitations:** Findings are more robust where multiple studies converge; however, causal claims remain constrained by cross-sectional designs and strong context specificity.

Climate is a pivotal factor influencing tourist flows and destination appeal (Scott et al., 2019). Shifts in seasonal patterns are increasingly undermining the core attractiveness and operational foundations of tourism destinations. Winter sports resorts face mounting operational pressures due to persistently declining snowpack, while traditional “sun-and-sand” destinations encounter unseasonal rainfall or extreme heat during peak tourist seasons (Scott & McBoyle, 2007). Coastal and island tourism areas bear the most immediate and severe impacts of climate change. Rising sea levels intensify coastal erosion, directly threatening the core assets of coastal tourism, including beaches and shoreline infrastructure. Increasingly intense tropical cyclones can rapidly devastate tourism facilities such as hotels and marinas. More gradually, but no less significantly, saltwater intrusion and coral bleaching are degrading the ecological foundations that underpin marine-based tourism activities (Scott et al., 2012). At the same time, inland destinations face substantial challenges. Recurrent droughts and heatwaves not only exacerbate water scarcity but also markedly increase wildfire risks, posing direct threats to ecotourism and adventure tourism activities that depend on natural landscapes (Jones et al., 2020).

Paradoxically, the tourism sector itself contributes to climate change through high-emission activities such as air travel and cruise tourism, thereby intensifying pressure on the climate system. This self-reinforcing feedback creates a vicious cycle for tourism development and renders climate action within the sector particularly urgent (Peeters et al., 2016). Within this context, building resilience has emerged as a central objective of tourism destination management. In tourism research, “resilience” refers to the capacity of a destination—understood as a coupled human–environment (social–ecological) system—to absorb external shocks or stressors (e.g. extreme weather events or

long-term climate change), to reorganise and adapt when necessary, and to retain its core functions, structure, identity, and feedback mechanisms. Moreover, destinations may also “bounce forward” by strengthening adaptive capacity and governance in ways that better equip them to confront future challenges (Walker et al., 2004; González-Quintero et al., 2019; Calgaro et al., 2014; Della Corte & Lima, 2021). This implies a destination’s ability to withstand climate-related disturbances without catastrophic collapse of its tourism economy or irreversible losses in environmental and social value.

Existing research conceptualises tourism resilience as a multidimensional construct encompassing absorptive capacity (the ability to withstand shocks with minimal loss), adaptive capacity (the ability to learn, reorganise, and adjust under changing conditions), and transformative capacity (the ability to initiate fundamental system change when existing structures become untenable) (Walker et al., 2004; Folke et al., 2010; Calgaro et al., 2014; Lew et al., 2016). For example, a coastal destination resilient to climate threats may demonstrate absorptive capacity by withstanding cyclone damage, adaptive capacity through flexible marketing strategies that shift tourist demand seasonally, and transformative capacity by transitioning from mass tourism towards a more sustainable and climate-resilient development model. Crucially, resilience is not merely an outcome but an ongoing process, built and sustained through continuous adaptation, learning, and innovation among the stakeholders that constitute a destination’s tourism system.

### **Social–Ecological Resilience Perspectives in Tourism Research**

Theme definition: Destinations are conceptualised as coupled social–ecological systems in which resilience depends on feedbacks among ecosystems, infrastructure, livelihoods, and institutions. Evidence base: Evidence draws on both conceptual and empirical scholarship on tourism resilience across multiple destination types. Patterns/heterogeneity: Applications vary in operational definitions and indicators, resulting in differences in measurement and comparability across studies. Confidence/limitations: Conceptual coherence is relatively strong, but empirical operationalisation remains uneven and frequently under-specified.

The review identified a growing body of tourism research adopting a social–ecological resilience perspective. A dominant trend involves conceptualising tourism destinations as social–ecological systems, highlighting the interdependence between human and ecological subsystems within tourism regions (Farrell & Twining-Ward, 2004; Calgaro et al., 2014; Espiner et al., 2017; Prideaux et al., 2020). Viewed through this lens, destination resilience emerges not solely from ecological or environmental attributes but also from social structures and the dynamic interactions between social and ecological components. Factors shaping resilience include the diversity and condition of natural assets, the strength of social networks and institutions, the flexibility of local livelihoods, and the knowledge base and learning capacity of destination communities.

Applying a social–ecological resilience framework to tourism opens new analytical and planning opportunities. For example, researchers have employed the concept of the adaptive cycle—describing



phases of system growth, collapse, and reorganisation—to examine how destinations experience periods of expansion, crisis, and recovery (Calgaro, Dominey-Howes, & Lloyd, 2014). Building resilience in social–ecological systems fundamentally depends on strengthening the adaptive capacity of individuals, communities, and institutions (Folke et al., 2005; Berkes & Ross, 2013; Engle, 2011). In tourism contexts, adaptive capacity encompasses the ability of stakeholders to perceive and anticipate climate risks, to plan and implement adaptation measures collaboratively, and to reorganise business models or practices in response to changing conditions.

An empirical study by Young et al. (2021) of a nature-based tourism community in the Peruvian Andes illustrates these dynamics. While strong social bonds and cultural identity helped buffer short-term impacts from the COVID-19 pandemic, weak external organisational networks constrained the development of long-term resilience to climate risks. In this case, the establishment of broader partnerships beyond the local community was identified as essential for implementing risk management strategies and strengthening long-term climate resilience, underscoring the importance of social capital and external linkages for community-level adaptive capacity. Researchers have also proposed tourism-specific resilience assessment approaches. For instance, Alvarez, Bahja, and Fyall (2022) developed a framework for assessing destination vulnerability and resilience, emphasising that resilience can be evaluated through absorptive, adaptive, and transformative capacities. Such approaches assist in diagnosing destination strengths and weaknesses, for example, strong physical infrastructure but limited community engagement, or vice versa, and in guiding targeted interventions. Overall, the adoption of a social–ecological resilience perspective highlights the importance of systems thinking in tourism planning, recognising that building resilience to climate change requires the integrated consideration of ecological integrity, community well-being, and institutional robustness.

## **Adaptive Governance**

**Theme definition:** Adaptive governance is examined as multi-level, participatory, and learning-oriented institutional arrangements that enable adaptation under conditions of uncertainty. **Evidence base:** Evidence includes comparative case studies and governance analyses across regions and destination settings. **Patterns/heterogeneity:** Reported mechanisms vary according to institutional capacity, stakeholder power relations, and policy scale; levels of equity and the quality of participation also differ. **Confidence/limitations:** The evidence consistently supports the importance of governance for adaptation, but longitudinal evidence of institutional change remains scarce; potential publication bias and context specificity persist.

The literature reviewed further highlights adaptive governance as a critical approach to climate change adaptation in tourism destinations. Traditional governance models are predominantly top-down, often driven by higher-level governments and large corporations, with limited opportunities for meaningful community participation in decision-making processes (Tosun, 2006). These entrenched, often rigid “command-and-control” approaches tend to respond slowly to emerging threats, and

decisions taken by governments or corporate actors frequently overlook the interests of local communities, particularly more marginalised or passive stakeholders. In contrast, Akamani (2023) characterises adaptive governance as participatory, polycentric, and reflective.

Participatory governance refers to more inclusive decision-making processes that grant agency to local actors—including Indigenous and marginalised groups—regarding how tourism systems adapt. Polycentric governance denotes the distribution of authority across multiple centres (e.g. local, regional, and national governments, as well as private and community institutions), rather than a single hierarchical structure. This configuration allows for experimentation, cross-scale coordination, and institutional redundancy. Reflective governance implies that policies are treated as provisional and subject to testing; authorities actively monitor outcomes and adjust strategies based on learning and feedback. In practice, adopting adaptive governance in tourism may involve establishing multi-stakeholder platforms or committees for climate adaptation planning, fostering public–private partnerships for risk management, and institutionalising continuous feedback mechanisms (Djalante, 2012; Strickland-Munro et al., 2010). One illustrative approach is adaptive co-management, which combines the collaborative power-sharing characteristic of co-management (e.g. joint management of protected areas by communities and governments) with the iterative learning orientation of adaptive management. While the importance of adaptive governance is widely recognised, it is equally important to acknowledge its limitations. Adaptive governance is not a panacea and may fail if key enabling conditions are absent. Reed (2008) notes that participatory processes that remain superficial and lack genuine influence are unlikely to produce substantive outcomes. A clear illustration is provided by Nalau et al. (2018), who document how coastal adaptation planning in the Caribbean was dominated by hotel operators focused on protecting tourism infrastructure, while fisherfolk—whose livelihoods depend on healthy coral reef ecosystems—were systematically excluded from decision-making processes.

Recent research further underscores the relevance of adaptive governance for tourism climate resilience. In a comparative study of Arctic tourism, Hovelsrud (2021) found that despite markedly different governance regimes in Svalbard and Greenland, tourism actors in both contexts sought greater involvement in decision-making. This led the author to argue that place-based, collaborative adaptive governance is essential for addressing shared challenges in the Arctic, including sustainability pressures, climate change, and overtourism. Hovelsrud's findings suggest that as global climate change accelerates, tourism destinations will increasingly require governance systems capable of learning and adapting more rapidly than ever before.

## Research Gaps

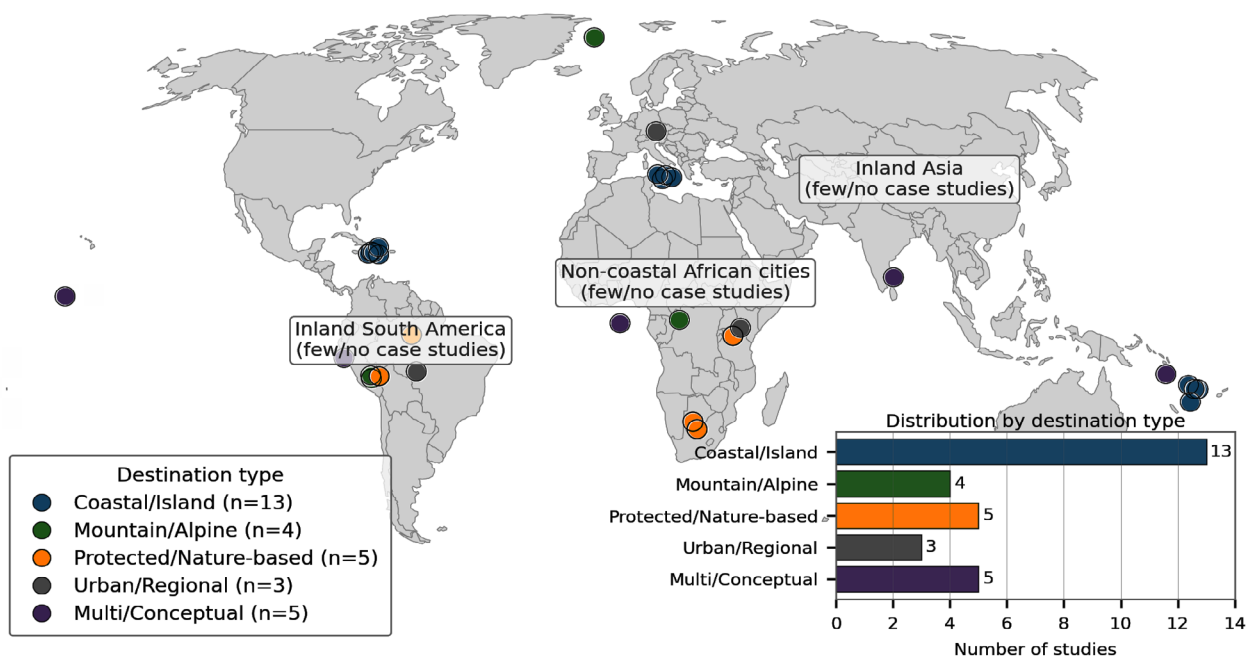
Despite substantial progress in understanding how tourism destinations respond to climate change, the synthesis reveals a number of persistent structural gaps that constrain theoretical consolidation and limit the practical applicability of existing findings. These gaps span conceptual, methodological,

spatial, and governance dimensions, collectively highlighting the need for a more rigorous, context-sensitive, and equity-oriented research agenda.

### Geographical and Contextual Bias

The current evidence base remains heavily concentrated on Small Island Developing States, iconic coastal destinations, selected mountain regions, and high-income countries in the Global North. In contrast, inland destinations, medium-sized urban tourism systems, non-coastal protected areas, and major domestic tourism economies across Asia, Africa, and Latin America remain significantly underrepresented (Arabadzhyan et al., 2020; Guo et al., 2025; Hoogendoorn & Fitchett, 2018; Lam-González et al., 2022; Maoela et al., 2025; Navarro-Drazich et al., 2023; Pan et al., 2024; Wolf et al., 2021). Consequently, prevailing theories of destination resilience and adaptive governance are disproportionately derived from “exceptional” or high-profile contexts, which undermines the transferability and adaptation of these frameworks to more common, climate-vulnerable yet less globally prominent “everyday” tourism destinations. Future research should therefore prioritise underrepresented geographical regions—particularly inland and peri-urban destinations, large domestic tourism markets, and climate-sensitive rural landscapes—to broaden the empirical foundations of resilience theory. As illustrated in Figure 2, the spatial distribution of the reviewed studies reveals a strong concentration on coastal and island destinations, with inland and urban contexts remaining markedly underrepresented.

Figure 2. Geographic Distribution of Studied Destinations



### **Conceptual Ambiguity and Under-Operationalisation of Key Constructs**

Despite the frequent invocation of concepts such as “resilience,” “adaptive governance,” and “adaptive capacity,” these terms are often employed descriptively rather than analytically. Many existing studies fail to clearly distinguish among the three core dimensions of absorptive, adaptive, and transformative capacity, nor do they sufficiently elucidate the causal mechanisms through which specific governance arrangements—such as co-management, decentralisation, or multi-level coordination—influence adaptation outcomes (Agrawal, 2008; Armitage et al., 2009; Béné et al., 2012; Brown, 2014; Duit & Galaz, 2008; Folke et al., 2010; Moser & Ekstrom, 2010; Wied et al., 2020). This has resulted in a body of literature characterised by conceptual stretching and limited operational clarity. Future research should therefore develop measurable, theoretically grounded indicators that enable systematic cross-case comparison of these constructs and link them explicitly to social–ecological outcomes.

### **Limited Integration of Climate Justice and Intra-Community Inequities**

There is an urgent need for future research to move beyond homogenised conceptions of “community” and instead adopt theoretical frameworks that integrate intersectional analysis with multidimensional conceptions of climate justice (distributive, procedural, and recognitional) (Kaijser & Kronsell, 2014; Schlosberg, 2012). This requires critical examination of how adaptation interventions (re) distribute risks and opportunities among different social groups, alongside rigorous scrutiny of power relations within decision-making processes. Without explicit attention to whose voices are heard, whose knowledge is valued, and who ultimately bears the costs of resilience-building, participatory governance risks reinforcing—rather than redressing—existing inequalities (Eriksen et al., 2021; Ziervogel et al., 2020).

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### **Inadequate Examination of Multi-Level Governance Interactions**

Although multi-level governance has become a central research topic, most existing studies are confined to analysing either local initiatives or national policy texts, failing to trace the specific cross-level interactive mechanisms, resource flows, and institutional bargaining processes that ultimately enable or constrain the implementation of adaptive governance (Adger et al., 2005; Amundsen et al., 2010; Cash et al., 2006; Duit & Galaz, 2008; Gupta et al., 2010; Urwin & Jordan, 2008; Biesbroek et al., 2010; Moser & Ekstrom, 2010). The lack of systematic analysis of how local, regional, national, and global governance tiers interact results in incomplete explanations of why adaptation succeeds in some contexts yet fails in others. Future work should employ political economy and institutional ethnography approaches to map vertical and horizontal governance linkages, funding pathways, and accountability structures.

### **Analytical and Epistemic Limitations of the Current Knowledge Base**

Current research predominantly relies on cross-sectional data, single-round interviews, or descriptive case study analyses. Longitudinal studies capable of systematically documenting the evolution of

governance mechanisms before and after climate shocks remain scarce (Bennett, 2019). Concurrently, participatory research approaches are frequently implemented in fragmented and short-term ways, often lacking sustained engagement with local power relations and institutional arrangements that shape decision-making processes (Cundill et al., 2019; Nalau et al., 2018). Future research should adopt long-term mixed-methods approaches—integrating longitudinal ethnography, social network analysis, multi-stakeholder action research, and ecosystem monitoring—to generate more dynamic and reflexively grounded scholarly insights (Cundill et al., 2019).

## CONCLUSIONS

Climate change presents profound and multidimensional challenges to tourism destinations, affecting environmental integrity, economic viability, governance capacity, and community well-being. Drawing on a PRISMA-guided qualitative synthesis of 30 peer-reviewed studies, this review examined how social-ecological resilience and adaptive governance have been applied in tourism research to address climate change adaptation. Overall, the literature demonstrates growing conceptual maturity but remains characterised by uneven geographical coverage, fragmented empirical evidence, and methodological limitations.

Across the reviewed studies, several points of convergence are evident. First, conceptualising tourism destinations as coupled social-ecological systems enables a more comprehensive understanding of cascading climate impacts and interdependencies among ecosystems, infrastructure, livelihoods, and visitor dynamics. Second, adaptive responses are consistently associated with governance arrangements that facilitate coordination, learning, and collaboration across multiple levels, linking local action with broader institutional and policy frameworks. Third, an increasing number of studies acknowledge that resilience cannot be separated from questions of equity and justice, as participation, power relations, and the distribution of costs and benefits fundamentally shape adaptation outcomes.

Despite these advances, significant gaps persist. Empirical research remains disproportionately focused on coastal and island destinations, while inland, urban, and domestic tourism systems receive comparatively little attention. Failures, trade-offs, and structural constraints in adaptation processes are underexplored, limiting understanding of why certain interventions succeed or stall. Moreover, relatively few studies integrate governance analysis with ecological indicators or adopt longitudinal and mixed-methods designs capable of capturing institutional change over time.

The forward path for research and practice therefore lies not in the proliferation of new conceptual models, but in deeper empirical engagement with diverse destination contexts and governance realities. Future studies should prioritise broader geographical coverage, systematic examination of adaptation failures and power asymmetries, and stronger methodological integration that connects governance processes with ecological and socio-economic outcomes. For policy and destination management, the synthesis underscores the importance of cross-level coordination, meaningful community participation, and iterative learning under uncertainty. As climate risks intensify, strengthening tourism resilience



is both a practical necessity and an ethical responsibility, requiring inclusive, evidence-informed, and context-responsive approaches to adaptation.

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## APPENDIX

Table S1. Evidence table of included studies (n = 30)

Author(s) & Year	Study location / context	Method	Thematic contribution
Akamani (2023)	Water governance, ecosystem-based adaptation	Conceptual & policy analysis	Adaptive governance mechanisms enabling ecosystem-based adaptation
Arabadzhyan et al. (2020)	Coastal tourism (global)	Systematic literature review	Climate impact chains linking tourism vulnerability and adaptation
Bennett (2019)	Coastal and marine tourism contexts	Political ecology analysis	Power, governance, and politics in climate adaptation
Biggs et al. (2015)	Social–ecological systems (global)	Conceptual synthesis	Principles for resilience and adaptive capacity
Della Corte & Lima (2021)	Tourism destinations	Conceptual & empirical review	Destination resilience and innovation pathways
Eriksen et al. (2021)	Climate adaptation governance	Critical review	Political dimensions of adaptation and governance
Espiner et al. (2017)	Tourism destinations	Empirical case synthesis	Operationalising resilience in tourism practice
González-Quintero et al. (2019)	Social–ecological systems	Systematic review	Measurement and operationalisation of resilience
Nalau et al. (2018)	Local adaptation governance	Comparative policy analysis	Responsibility and scale in adaptation governance
Wyborn et al. (2016)	Social–ecological systems	Conceptual & empirical synthesis	Adaptive governance and knowledge co-production
Ziervogel et al. (2020)	Urban climate adaptation	Qualitative case analysis	Power, agency, and transformation in adaptation
Gössling et al. (2018)	Global tourism	Trend analysis & review	Climate change impacts and adaptation trends in tourism
Hoogendoorn & Fitchett (2018)	Africa tourism destinations	Systematic review	Climate risks and adaptation strategies in African tourism
Hovelsrud et al. (2021)	Arctic tourism (Svalbard, Greenland)	Comparative case study	Governance responses to climate change in polar tourism
Jones et al. (2020)	Adventure tourism	Empirical analysis	Climate change implications for tourism activities
Lam-González et al. (2022)	Island tourism	Quantitative modelling	Ecosystem degradation and tourist decision-making
Lew et al. (2016)	Community tourism	Conceptual & indicator review	Community resilience and sustainability indicators
Maoela et al. (2025)	National parks (South Africa)	Survey-based empirical study	Tourist perceptions of climate change and adaptation
Navarro-Drazich et al. (2023)	South & Central America	Regional systematic review	Climate change impacts and governance challenges
Pan et al. (2024)	Global tourism research	Bibliometric & systematic review	Evolution of tourism–climate change scholarship
Guo et al. (2025)	Tourists (global)	Systematic review	Knowledge, attitudes, and practices toward climate change
Prideaux et al. (2020)	Tourism systems	Conceptual framework	Social–ecological systems approach to tourism sustainability
Scott et al. (2019)	Global tourism	Global vulnerability assessment	Tourism vulnerability to climate change
Wolf et al. (2021)	Small island states	Comparative empirical analysis	Climate impacts on island tourism development
Young et al. (2021)	Andean nature-based tourism	Qualitative case study	Community resilience, social cohesion, and adaptation

Peeters et al. (2016)	Tourism mobility	Quantitative & policy analysis	Travel behaviour, mitigation, and adaptation
Wied et al. (2020)	Complex systems	Conceptual taxonomy	Resilience concepts applicable to tourism systems
Hall, Prayag & Amore (2018)	Tourism destinations	Edited volume synthesis	Multi-level perspectives on tourism resilience
Braun & Clarke (2021)	Qualitative synthesis	Methodological guide	Thematic analysis underpinning narrative synthesis

Table S2. SWiM (Synthesis Without Meta-analysis) 9-item Checklist Mapping

SWiM item	How addressed in this review	Where to find it
1. Grouping of studies	Studies grouped by themes and contextualised by destination type and region (Table 1; Table S1).	Results; Table 1; Table S1
2. Rationale for synthesis method	Meta-analysis not feasible due to heterogeneity and predominantly qualitative/narrative outcomes; SWiM-structured narrative synthesis adopted.	Methods 2.4
3. Description of synthesis methods	Thematic synthesis reported as: theme definition; evidence base; patterns/heterogeneity; confidence/limitations.	Methods 2.4; Results
4. Criteria used to prioritise results	Themes prioritised by recurrence across studies and relevance to resilience and adaptive governance constructs.	Results (intro)
5. Investigation of heterogeneity	Differences discussed across destination contexts, governance scales, and stakeholder dynamics within each theme.	Results
6. Data presentation	Study characteristics summarised in Table 1 and Table S1; synthesis organised using SWiM principles.	Table 1; Table S1; Results
7. Assessment of certainty/confidence	Confidence considered narratively based on convergence across studies and limitations of the evidence base.	Results; Discussion
8. Reporting of protocol deviations	Any deviations from the planned approach are stated explicitly (if applicable).	Methods
9. Availability of data/materials	Search strategy, screening outcomes, and included-study table provided to support transparency.	Methods; Figure 1; Table S1

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