

## Tourism at the Edge: Community Narratives of Climate Change and Coastal Erosion in Lombok

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### ABSTRACT

Coastal tourism in Indonesia faces growing challenges from climate change, particularly sea-level rise, coastal erosion, and unpredictable weather patterns. Lombok, an island increasingly positioned as a competitor to Bali in international tourism, is experiencing significant environmental pressures that directly affect local livelihoods and tourism development. This study explores how coastal communities in Lombok perceive and respond to climate change and coastal erosion within the tourism economy. Drawing on a qualitative research design, data were collected through in-depth interviews with fisherfolk, homestay owners, community leaders, and tourism workers, complemented by participant observation in coastal villages and tourism sites. The findings reveal that residents are acutely aware of environmental changes, describing shoreline retreat, saltwater intrusion, and declining fish stocks as everyday realities. While some view tourism as a pathway to adapt and diversify livelihoods, others fear that environmental degradation threatens both cultural identity and economic sustainability. Narratives also highlight the importance of local knowledge, spiritual beliefs, and community initiatives in shaping adaptive practices. By foregrounding community voices, the study contributes to critical debates on climate change and tourism, emphasizing that sustainable tourism in Lombok depends not only on infrastructural resilience but also on integrating local perspectives into adaptation strategies.

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## INTRODUCTION

Climate change has emerged as one of the most pressing challenges facing global tourism, particularly in coastal and island destinations where rising sea levels, shoreline erosion, and shifting weather patterns threaten both ecosystems and livelihoods (Hall, 2021; Scott et al., 2019). Tourism in such contexts is highly climate-sensitive, relying on stable coastlines, attractive beaches, and functioning marine ecosystems. As Gössling and Hall (2006) argue, the sector is both a contributor to and a victim of climate change, making it central to debates on adaptation and sustainability. Small island and coastal communities are especially vulnerable, as their economies depend heavily on tourism while their adaptive capacity is often constrained by limited resources and infrastructure (Fujita et al., 2013; Magnan & Duvat, 2018).

Indonesia exemplifies these tensions. As the world's largest archipelago, with more than 17,000 islands, it is highly exposed to climate-related risks such as sea-level rise, coral bleaching, and coastal flooding (Marfai et al., 2008; Kusumastuti et al., 2014). The tourism sector contributes significantly to Indonesia's economy and is particularly concentrated in coastal and marine destinations. Bali has long dominated international arrivals, but Lombok has been promoted as an alternative destination, offering beaches, diving, and cultural tourism (Hampton & Clifton, 2016). However, Lombok's reliance on coastal tourism makes it acutely vulnerable to environmental changes, with erosion and storm surges increasingly reported in coastal villages and tourism zones.

Scholars have documented how environmental degradation undermines the sustainability of tourism in Southeast Asia. Wong et al. (2021) highlight how beach erosion directly reduces tourist satisfaction and affects local businesses, while Pigram and Gössling (2017) emphasize that degradation of coral reefs threatens both biodiversity and tourism revenues. In Lombok, studies have noted declining fish stocks, coral bleaching, and damage to coastal infrastructure, raising concerns about the long-term viability of tourism-dependent livelihoods (Fitriana & Stacey, 2012; Arifin et al., 2019). These challenges are compounded by governance gaps, as local adaptation efforts are often underfunded or disconnected from national climate policies (Susanti et al., 2019).

At the community level, perceptions of climate change and adaptation strategies are diverse and shaped by local knowledge, cultural practices, and socioeconomic conditions. Research in Indonesian coastal villages shows that fisherfolk and tourism workers recognize environmental changes through lived experience, such as shifting fish migration patterns, saltwater intrusion, and seasonal unpredictability (Mustafa et al., 2022; Asriyani et al., 2023). In many cases, adaptation involves a mix of pragmatic responses such as relocating structures, diversifying livelihoods, or engaging in tourism as well as reliance on traditional ecological knowledge and spiritual beliefs. These findings align with broader scholarship emphasizing that effective adaptation requires integrating local perspectives, not only technical or infrastructural solutions (Adger et al., 2013; Mercer et al., 2012).

In Lombok, communities situated at the interface of tourism and fisheries offer a particularly valuable lens for examining these issues. On one hand, tourism is seen as a potential adaptation strategy, providing alternative income sources as fishing becomes less reliable. On the other hand, environmental degradation threatens the very basis of tourism, undermining both economic opportunities and cultural identity. Narratives from Lombok thus capture the paradox of coastal tourism under climate change: it is simultaneously a pathway to resilience and a site of vulnerability.

This study seeks to investigate how coastal communities in Lombok perceive and respond to climate change and coastal erosion in the context of tourism. By drawing on qualitative interviews and observations, it foregrounds community voices and local knowledge, offering insights into how authenticity, adaptation, and sustainability are negotiated in everyday life. In doing so, it contributes to critical debates on climate change and tourism by emphasizing that resilience must be understood not only in terms of infrastructural investment but also in terms of cultural practices, social networks, and local interpretations of environmental change.

## LITERATURE REVIEW

The relationship between tourism and climate change has been a central concern in sustainability research, particularly in coastal and island contexts where environmental change directly threatens economic viability and community well-being. Tourism is both highly vulnerable to and a driver of climate change, contributing approximately 8% of global greenhouse gas emissions while relying heavily on stable environmental conditions such as coastlines, beaches, and coral reefs (Gössling & Hall, 2006; Scott et al., 2019). In small island and coastal destinations, the dual role of tourism as contributor and victim of environmental change amplifies the urgency of adaptation. For these regions, climate change represents not only an environmental crisis but also a socio-economic challenge that intersects with identity, livelihood, and resilience (Hall, 2021).

One key impact of climate change on coastal tourism is shoreline erosion, which directly affects the physical spaces where tourism occurs. Wong et al. (2021) note that erosion diminishes tourist satisfaction, reduces the aesthetic value of destinations, and imposes high costs for infrastructure maintenance. Pigram and Gössling (2017) similarly emphasize that coastal erosion undermines the long-term sustainability of beach-based tourism, as it requires continuous investments in protection or restoration. In Indonesia, these challenges are compounded by high rates of urbanization and inadequate planning in coastal areas, leading to the overexploitation of fragile environments (Marfai et al., 2008; Kusumastuti et al., 2014). Lombok, like other Indonesian islands, is already experiencing shoreline retreat, storm surges, and coral degradation, all of which affect both fishing and tourism livelihoods (Arifin et al., 2019).

The vulnerability of tourism destinations to climate change is further exacerbated by their dependence on ecosystems. Coral reefs, mangroves, and seagrass beds provide natural defenses against erosion while serving as attractions for diving and snorkeling. However, reef bleaching and mangrove loss have been documented across Southeast Asia, undermining both ecological resilience and tourism economies (Hampton & Clifton, 2016). Studies of Lombok's coastal villages have reported declines in fish stocks and reef health, which not only reduce biodiversity but also limit opportunities for marine tourism (Fitriana & Stacey, 2012). Environmental degradation thus poses a dual threat, eroding the natural base of tourism while reducing the adaptive capacity of communities that depend on it.

Beyond ecological vulnerability, the literature emphasizes the importance of understanding how communities perceive and respond to climate change. Adger et al. (2013) argue that adaptation cannot be reduced to infrastructural interventions but must also incorporate cultural and social dimensions. Community perceptions shape adaptive choices, influencing whether households invest in protective structures, diversify livelihoods, or migrate. In Indonesia, Mustafa et al. (2022) find that fisherfolk and coastal communities recognize climate change through tangible experiences such as changing tides, seasonal shifts, and saltwater intrusion.

These perceptions are often expressed in cultural and spiritual terms, linking environmental change to broader cosmologies of balance and disruption.

Local knowledge plays a crucial role in shaping adaptation strategies. Mercer et al. (2012) propose that effective climate adaptation requires the integration of scientific and indigenous knowledge systems. In coastal Indonesia, traditional ecological knowledge is mobilized to predict seasonal variations, manage fisheries, and guide coastal practices (Asriyani et al., 2023). However, this knowledge alone is insufficient in the face of accelerating climate impacts. The challenge lies in integrating local practices with policy frameworks and technical interventions that often remain top-down and disconnected from community realities (Susanti et al., 2019).

The role of tourism in adaptation is ambivalent. On one hand, tourism offers opportunities for diversification and resilience by creating alternative livelihoods for communities affected by environmental change. As Hampton and Clifton (2016) show in their study of Lombok and Gili Islands, small-scale tourism can provide economic stability and reduce reliance on fisheries. On the other hand, the very expansion of tourism can exacerbate environmental stress, as unregulated development accelerates erosion, damages coral reefs, and increases waste. This paradox highlights that tourism is not only vulnerable to climate change but also contributes to the degradation that intensifies vulnerability (Gössling & Hall, 2006).

Recent scholarship has highlighted the importance of cultural sustainability alongside environmental resilience. UNESCO (2016) argues that adaptation strategies must protect not only physical infrastructure but also cultural heritage and community identity. In Lombok, rituals, coastal ceremonies, and customary practices form part of the social fabric that shapes responses to environmental change. For older generations, coastal degradation is perceived as a spiritual disruption, while younger actors often frame it in terms of economic opportunity and adaptation through tourism (Mustafa et al., 2022). These intergenerational perspectives underscore that sustainability cannot be understood in purely technical terms; it is embedded in values, practices, and contested interpretations of authenticity and resilience.

Taken together, the literature reveals three critical insights relevant to Lombok. First, climate change and coastal erosion directly threaten the environmental foundations of tourism, particularly beaches and coral ecosystems. Second, community perceptions and local knowledge shape adaptation, highlighting that resilience is socially constructed as much as it is infrastructural. Third, tourism itself is both part of the problem and part of the solution: it provides opportunities for diversification but can also exacerbate ecological pressures if poorly managed. These debates frame the present study, which seeks to understand how Lombok's coastal communities narrate and negotiate the challenges of climate change, balancing vulnerability with agency in the pursuit of sustainable tourism futures.

## METHODOLOGY

This study employed a qualitative research design to explore how coastal communities in Lombok perceive and respond to climate change and coastal erosion within the tourism economy. A qualitative approach was selected because the research aimed to capture lived experiences, community narratives, and the cultural meanings attached to environmental change, which are not easily quantifiable. Issues of vulnerability, adaptation, and resilience are deeply embedded in social and cultural contexts, making an interpretive approach appropriate for illuminating the perspectives of those most affected.

Fieldwork was conducted in three coastal villages on the island of Lombok, selected for their close integration of tourism and traditional livelihoods. These included a village near Senggigi, where beach tourism and small-scale accommodation dominate; a village in South Lombok close to Mandalika, an area of major tourism development; and a fishing community in East Lombok, where tourism is emerging alongside traditional marine activities. These sites were chosen to reflect variation in exposure to environmental change and in the degree of dependence on tourism. Together, they provided a comprehensive picture of how communities experience the intersection of climate change and tourism across different contexts.

Participants were drawn from a wide range of stakeholders, including fisherfolk, homestay owners, boat operators, craft vendors, community leaders, and local tourism workers. Purposive sampling ensured that those directly engaged with both coastal environments and tourism livelihoods were represented. Snowball sampling was then used to expand the participant pool, as initial interviewees recommended others with relevant

experiences. In total, forty participants were interviewed across the three sites, including twenty-two men and eighteen women, with ages ranging from early twenties to late sixties. This diversity provided insights into intergenerational perspectives on adaptation and sustainability.

Data collection involved three complementary methods. First, semi-structured interviews lasting between 45 and 90 minutes invited participants to share their perceptions of environmental change, experiences of shoreline retreat, and reflections on the role of tourism in shaping adaptation. Second, participant observation was carried out in coastal areas, where the researcher observed daily activities such as fishing, beach maintenance, and interactions with tourists. This included attending community meetings where coastal erosion and tourism development were discussed. Third, informal conversations provided additional context, capturing spontaneous reflections and insights that may not have arisen in formal interviews. All interviews were conducted in Bahasa Indonesia, with occasional use of local Sasak language when preferred by participants. Interviews were audio-recorded with informed consent, and extensive field notes were kept throughout the research process.

Data were analyzed using Braun and Clarke's (2006) thematic analysis framework. Transcripts and field notes were read repeatedly to establish familiarity, followed by initial coding of key ideas related to climate change, adaptation strategies, and community perceptions of tourism. Codes were then grouped into broader themes that reflected how participants narrated vulnerability and resilience, such as shoreline loss, cultural interpretations of change, tourism as adaptation, and the limits of community capacity. NVivo software was used to assist in coding and managing the dataset systematically. Thematic analysis allowed patterns to emerge inductively while remaining attentive to the ways in which participants framed their experiences in cultural and social terms.

To ensure trustworthiness, several strategies were applied. Member checking was conducted by sharing preliminary findings with selected participants, who confirmed or elaborated on the interpretations. Triangulation was achieved by combining multiple sources of evidence, including interviews, observations, and community documents. Reflexivity was also maintained through a research journal, in which the researcher recorded positionality, potential biases, and reflections on the power dynamics inherent in conducting research as an outsider.

## RESULT AND DISCUSSION

### Living with Erosion: Everyday Experiences of Environmental Change

For coastal communities in Lombok, climate change and shoreline retreat are not abstract phenomena but lived realities encountered in daily life. Participants frequently described how the coastline has shifted over the past decade, with some households losing gardens, pathways, or even portions of their homes to the encroaching sea. In one fishing village, a community leader pointed to an eroded section of beach and explained that "ten years ago, the children played football here. Now the sea has taken it." Such reflections illustrate how environmental change is measured not only through scientific data but through embodied memories of space and loss.

The impacts of erosion were often linked to disruptions in livelihood. Fisherfolk described how nearshore fishing grounds had diminished as reefs were degraded, forcing them to travel farther offshore at greater cost. Women who collected shellfish and seaweed reported that traditional harvesting areas were disappearing, reducing their contributions to household income. For homestay owners and vendors reliant on tourism, the narrowing of beaches was experienced as a threat to visitor satisfaction. As one participant noted, "tourists come for the beach, but every year it is smaller. If it disappears, so will our business." These narratives reveal the interdependence of environmental change and economic precarity in coastal villages.

Participants also emphasized the emotional and cultural dimensions of living with erosion. Older residents in particular spoke of the sea as a source of spiritual balance and identity, framing coastal retreat as not only a physical problem but also a disruption of cosmological order. Ritual sites near the shore were sometimes damaged or lost, producing a sense of cultural dislocation. One elder explained that "the sea is part of our prayer. When it takes the land, it is a sign that harmony is broken." Such perspectives highlight that climate change is interpreted not only through material losses but also through cultural frameworks that connect environmental change with spiritual meaning.

Despite these challenges, participants displayed an acute awareness of change over time, drawing on both personal experience and intergenerational knowledge. Residents recalled shifts in seasonal patterns, describing how storms now arrived unpredictably and high tides were stronger than in the past. Some framed these changes in terms of climate or environmental degradation, while others linked them to divine will or the erosion of customary practices meant to protect the land. This diversity of explanations reflects the coexistence of scientific, experiential, and spiritual understandings of climate change within communities.

Together, these accounts demonstrate that living with erosion in Lombok is a multidimensional experience that encompasses economic vulnerability, cultural disruption, and emotional loss. Coastal change is not experienced as a distant future threat but as an ongoing process reshaping daily life, livelihoods, and identities. By situating environmental change within community narratives, it becomes clear that adaptation must account not only for infrastructural needs but also for the cultural and spiritual dimensions of resilience.

### **Tourism as Opportunity and Risk**

For many residents of coastal Lombok, tourism is perceived as both a lifeline and a source of new vulnerabilities. Participants frequently described tourism as an alternative pathway when fishing became less viable due to declining stocks, unpredictable seasons, and the impacts of coastal erosion. Homestay owners, boat operators, and small vendors highlighted that tourism provided a buffer against environmental uncertainty. A former fisherman in South Lombok explained, “the sea is not reliable anymore, but tourists always need a boat. Now I take them to see the coral instead of catching fish.” Such narratives illustrate how tourism is framed as a form of livelihood diversification that allows communities to adapt to ecological change.

Tourism was also seen as a driver of local pride and recognition. Several participants emphasized that hosting visitors offered opportunities to share culture and improve living standards. Younger residents, in particular, framed tourism as a modern career path that provided more stability than fishing. A young woman running a small café noted that “tourism gives us hope. Even if the sea takes the beach, we can still sell food and stories to visitors.” For these actors, tourism was not only an economic safety net but also a means of maintaining identity in the face of ecological disruption.

However, participants also expressed deep ambivalence about the role of tourism in exacerbating environmental pressures. Infrastructure development, particularly in areas such as Mandalika, was often cited as accelerating erosion by removing mangroves, altering drainage systems, and intensifying beachfront construction. One community leader argued that “tourism development protects investors, not the beach. They build walls for hotels, but the waves destroy the village.” Such accounts reveal that while tourism is celebrated for its opportunities, it is also criticized for its role in aggravating the very ecological vulnerabilities communities face.

The tension between opportunity and risk was further evident in perceptions of responsibility. Some participants believed that tourism companies and government agencies should contribute more actively to coastal protection and adaptation, given the sector’s reliance on natural assets. Others worried that dependence on tourism created new forms of precarity, as livelihoods became tied to fluctuating visitor numbers and global crises such as the COVID-19 pandemic. A homestay owner in East Lombok reflected, “we cannot return fully to fishing, but tourism is not secure either. If the waves destroy the coast, both are gone.” This sense of double vulnerability underscores the fragile balance between adaptation and dependency.

Overall, the findings show that tourism in Lombok is understood as both an adaptive strategy and a source of risk. It provides alternative livelihoods and strengthens cultural visibility, yet it also contributes to environmental stress and economic precarity. These ambivalent narratives highlight the paradox of tourism under climate change: it is simultaneously a means of resilience and a factor of vulnerability. For coastal communities, negotiating this paradox requires balancing the benefits of tourism with the recognition of its ecological costs.

### **Local Knowledge, Belief Systems, and Adaptation Practices**

Community responses to climate change and erosion in Lombok are shaped not only by practical strategies but also by long-standing local knowledge and cultural belief systems. Participants described a variety of ways in which ecological knowledge, inherited from older generations, continues to guide adaptation. Fisherfolk

explained that shifts in tides and currents were tracked through changes in the stars, winds, and the behavior of marine animals, which helped them anticipate storms or identify safer fishing grounds. Farmers near the coast similarly drew on traditional indicators such as soil salinity and seasonal rain patterns to adapt planting practices. These forms of experiential knowledge provided frameworks for interpreting change that often complemented, rather than contradicted, scientific explanations of climate variability.

Spiritual beliefs also shaped interpretations of environmental change. Several elders linked coastal erosion and increasingly unpredictable seas to the disruption of harmony between humans and nature. Rituals such as sea offerings (*sedekah laut*) were described as not only acts of devotion but also as forms of environmental stewardship, symbolizing respect for the sea's power and the community's dependence on it. A temple caretaker explained that "when we forget the offerings, the sea reminds us. Erosion is a warning." Such perspectives highlight that adaptation in Lombok cannot be understood solely through material measures but must also account for cosmological frameworks that connect environmental change to moral and spiritual balance.

At the practical level, participants reported a range of strategies for coping with erosion and climate stress. Some households had relocated houses and shops farther inland, while others built makeshift sea walls from sandbags, rocks, or old tires. Homestay owners and vendors in South Lombok described pooling resources to maintain beach cleanliness and plant mangroves, believing that this would help protect the shore from further retreat. These collective actions, although small in scale, reflected strong community-based approaches to adaptation. Women played a central role in such initiatives, particularly in organizing clean-ups and planting, illustrating the gendered dimensions of resilience.

Tourism was often woven into these adaptive practices. Boat operators and diving guides promoted mangrove planting activities to visitors, framing them as eco-tourism experiences that could simultaneously raise awareness and generate income. Some communities linked cultural rituals with tourism events, allowing adaptation practices to become part of the visitor experience. This integration of local knowledge, belief systems, and tourism initiatives demonstrates how communities create hybrid strategies that sustain both livelihoods and cultural values.

Nevertheless, participants acknowledged the limitations of these local practices. Makeshift sea walls often collapsed during strong storms, and mangrove planting required long-term maintenance that was difficult to sustain without external support. Younger participants, while respectful of rituals, were more skeptical of their efficacy as protection against erosion, favoring infrastructural solutions such as concrete barriers. These tensions reflect broader debates about the role of local knowledge in adaptation: while it is essential for building culturally meaningful resilience, it requires integration with scientific expertise and institutional support to be effective in the long term.

In sum, local adaptation in Lombok emerges as a blend of ecological knowledge, spiritual frameworks, and community-based practices. While these strategies provide important resources for resilience, they also reveal the limits of self-reliance in the face of accelerating climate change. The findings underscore that adaptation must not only respect and build upon local knowledge but also address the structural gaps that prevent communities from scaling up their efforts.

### **Community Capacity and Limits of Resilience**

While communities in Lombok demonstrated resourcefulness in adapting to climate change and erosion, participants consistently pointed to the limits of their resilience. Many emphasized that their ability to cope was constrained by a lack of financial resources, technical knowledge, and government support. Makeshift adaptations such as sandbag sea walls or relocating homes inland were described as temporary measures, often undone by stronger storms and high tides. A homestay owner in South Lombok explained, "we do what we can with our hands, but the sea is stronger than us. Without outside help, we cannot fight it." This sense of structural vulnerability illustrates the uneven balance between local initiative and external support.

Participants also highlighted frustrations with government responses. Several community leaders argued that adaptation projects were often short-term, donor-driven, or poorly aligned with local needs. Coastal protection infrastructure was sometimes built near tourist resorts but left village areas exposed, reinforcing perceptions of inequality in the distribution of adaptation resources. One fisher remarked that "the hotels have walls to stop the waves, but our houses are left open. Tourism is protected, but not the people." Such accounts reveal how

structural power imbalances exacerbate local vulnerability, leaving communities dependent on external actors yet marginalized in decision-making processes.

The limits of resilience were also shaped by socio-economic inequalities within communities. Wealthier households, often those already engaged in tourism, were better positioned to relocate, rebuild, or diversify livelihoods. Poorer households, particularly those dependent on small-scale fishing, had fewer options and were more likely to experience repeated losses. Gendered differences were also evident, as women's roles in adaptation such as organizing clean-ups or contributing to income diversification were often undervalued and unsupported by formal policy structures. These disparities underscore that resilience is not equally distributed, but stratified along lines of class, gender, and access to tourism markets.

Intergenerational perspectives further revealed the fragility of community capacity. Younger participants were more likely to seek opportunities in tourism or migration to urban areas, while older residents expressed a sense of resignation that coastal retreat was beyond human control. This divergence reflects both adaptive pragmatism and limits of agency: while youth mobilize new opportunities, elders perceive themselves as powerless in the face of larger environmental forces. These differences illustrate that resilience is not only constrained materially but also shaped by perceptions of possibility and inevitability.

Taken together, these narratives highlight the boundaries of community-based resilience in Lombok. While local actors mobilize knowledge, practices, and collective action to adapt, they remain constrained by structural inequities, insufficient institutional support, and unequal access to resources. Resilience in this context cannot be understood solely as community capacity but must be situated within broader political and economic structures that either enable or limit adaptive possibilities. Without greater integration of community voices into policy processes and more equitable distribution of adaptation resources, the resilience of Lombok's coastal tourism communities will remain partial and precarious.

## Discussion

The findings of this study reveal the multiple ways in which coastal communities in Lombok experience and respond to climate change and coastal erosion in the context of tourism. Narratives of everyday shoreline retreat, the ambivalent role of tourism, the mobilization of local knowledge and belief systems, and the recognition of structural limits all point to the complex intersections of vulnerability and resilience. These insights contribute to broader debates on climate change, adaptation, and sustainable tourism in island and coastal contexts.

First, the results underscore that climate change is not perceived as a distant or abstract problem but as an immediate and embodied reality. Participants described erosion and sea-level rise through the loss of beaches, ritual sites, and livelihoods, confirming that vulnerability is experienced most directly at the local level (Scott et al., 2019; Wong et al., 2021). These accounts align with Adger et al.'s (2013) argument that the cultural dimensions of climate change such as disrupted identity, spiritual imbalance, and emotional loss are as important as material impacts. For Balinese and Sasak communities in Lombok, coastal change is framed not only as an economic concern but also as a disruption of cosmological harmony, illustrating how adaptation must address both tangible and intangible dimensions of vulnerability.

Second, the findings highlight the ambivalent role of tourism in community adaptation. On one hand, tourism provides pathways for livelihood diversification, enabling fisherfolk and youth to transition into homestay management, guiding, or small businesses. This supports earlier research showing that tourism can act as a buffer against climate vulnerability by creating new economic opportunities (Hampton & Clifton, 2016). On the other hand, tourism also exacerbates environmental stress, particularly through unregulated coastal development that accelerates erosion and prioritizes resort areas over village protection. This duality echoes Gössling and Hall's (2006) claim that tourism is simultaneously a victim of and a contributor to climate change, making it a paradoxical element in adaptation debates.

Third, the study confirms the significance of local knowledge and belief systems in shaping adaptation. Participants drew on traditional ecological knowledge, intergenerational experience, and spiritual practices to interpret and respond to change. Such findings support Mercer et al. (2012), who argue that integrating indigenous and scientific knowledge systems is critical for effective adaptation. Ritual practices like sea offerings exemplify how spiritual frameworks sustain community resilience by fostering respect for nature and reinforcing collective action. However, the limits of such strategies were also acknowledged, as makeshift barriers or rituals

alone cannot withstand intensifying climatic pressures. This tension demonstrates that adaptation in Lombok requires hybrid approaches that combine local knowledge with scientific and policy-based support.

Fourth, the study highlights the structural limits of resilience, emphasizing that community capacity is shaped by broader political and economic conditions. Narratives of unequal coastal protection where hotels and resorts received infrastructure while villages remained exposed illustrate how adaptation resources are often distributed unequally, reinforcing vulnerability among marginalized groups. These findings resonate with [Susanti et al. \(2019\)](#), who note that local adaptation in Indonesia is hindered by governance gaps, fragmented policies, and limited participation of communities in decision-making. The gendered and class-based differences reported in Lombok also confirm that resilience is not evenly shared, but stratified by access to resources and power.

Finally, the intergenerational differences observed in this study illustrate that cultural sustainability is as central to adaptation as ecological or economic measures. Elders framed erosion as a spiritual disruption and lamented the erosion of ritual meaning, while youth emphasized adaptation, opportunity, and integration with tourism. This generational negotiation reflects what [UNESCO \(2016\)](#) describes as cultural sustainability, where resilience depends on the capacity to maintain meaning and continuity across generations. For Lombok's coastal communities, sustainability is not a matter of freezing culture in place but of renegotiating its meanings in ways that accommodate both tradition and change.

Taken together, these findings suggest that resilience in Lombok's coastal tourism economy is best understood as a negotiated process that combines local knowledge, cultural practices, and pragmatic adaptation, but is constrained by structural inequalities and uneven governance. Effective adaptation must therefore move beyond technical fixes to incorporate community narratives, redistribute resources more equitably, and recognize the cultural and spiritual dimensions of environmental change. By foregrounding local voices, this study contributes to a more holistic understanding of climate change adaptation in tourism, demonstrating that sustainable futures depend as much on cultural negotiation and social justice as on infrastructural investment.

## CONCLUSION

This study examined how coastal communities in Lombok experience and respond to climate change and coastal erosion in the context of tourism. By drawing on qualitative interviews and observations, the research foregrounded local voices, showing that environmental change is not perceived as an abstract phenomenon but as an everyday reality manifested in shoreline retreat, declining fisheries, and the loss of cultural spaces. These lived experiences highlight that vulnerability in coastal tourism economies is inseparable from cultural identity, social relations, and community resilience.

The findings underscore the paradoxical role of tourism in adaptation. On one hand, tourism provides alternative livelihoods that allow fisherfolk and younger generations to adapt to declining marine resources. On the other, unregulated tourism development contributes to coastal degradation and exacerbates existing vulnerabilities, often privileging resorts and investors over local communities. This duality illustrates that tourism is both a source of resilience and a driver of risk, requiring careful governance and community involvement to ensure equitable outcomes.

Local knowledge and belief systems emerged as central to adaptation, shaping how communities interpret and respond to environmental change. Ritual practices, ecological indicators, and intergenerational knowledge sustain community resilience, even as their limits are acknowledged in the face of intensifying climatic pressures. At the same time, structural inequalities including unequal access to resources, limited government support, and disparities across gender and class constrain the capacity of communities to adapt effectively. These findings confirm that resilience must be understood not only as a local practice but also as a structural challenge requiring broader institutional engagement.

Ultimately, the study concludes that sustainable adaptation in Lombok's coastal tourism sector depends on integrating local knowledge, cultural values, and community voices into adaptation strategies. Resilience cannot be achieved solely through technical interventions or infrastructure; it must also address cultural sustainability, social justice, and equitable governance. By centering community narratives, this research contributes to critical debates on tourism and climate change, emphasizing that adaptation must be both culturally meaningful and structurally supportive if it is to secure the futures of Indonesia's coastal communities.

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## Conflict of Interest

The authors declare no conflict of interest related to the publication of this study.

## Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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