

# ECO-TOURISM FOR CLIMATE RESILIENCE

QNDCC 2024 White Paper

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White Paper  
QNDCC  
November 17, 2024

## **ECO-TOURISM FOR CLIMATE RESILIENCE**

Prepared by Strategy Hub

### **About Earthna**

Earthna Center for a Sustainable Future (Earthna) is a non-profit policy, research, and advocacy organization, established by Qatar Foundation to promote and enable a coordinated approach to environmental, social, and economic sustainability and prosperity.

Earthna is a facilitator of sustainability efforts and action in Qatar and other hot and arid countries, focusing on sustainability frameworks, circular economies, energy transition, climate change, biodiversity and ecosystems, cities and the built environment, and education, ethics, and faith. By bringing together technical experts, academia, government and non-government organizations, businesses and civil society, Earthna fosters collaboration, innovation, and positive change.

Using their home – Education City – as a testbed, Earthna develops and trials sustainable solutions and evidence-based policies for Qatar and hot and arid regions. The organization is committed to combining modern thinking with traditional knowledge, contributing to the well-being of society by creating a legacy of sustainability within a thriving natural environment.

For more information about Earthna and to stay updated on our latest initiatives, please visit [www.earthna.qa](http://www.earthna.qa)

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PI: ETCC-2024-008



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# TABLE OF CONTENTS

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04	Executive Summary
05	Scope and Methodology
06	Impact of Climate Change on Tourism
09	Current State of Eco-Tourism
12	Role of Eco-Tourism in Promoting Climate Resilience
15	Strategic Framework for Enhancing Eco-Tourism's Role in Climate Resilience
17	Nature-Based Solutions in Eco-Tourism
20	Cultural Heritage and Eco-Tourism
22	Challenges and Opportunities for Eco-Tourism
24	Conclusion
25	Acknowledgment:
26	References

# EXECUTIVE SUMMARY



Tourism plays a pivotal role in global economic development, driving employment, cultural exchange, and growth across diverse industries. It engages a broad range of stakeholders—governments, local communities, businesses, and international organizations—working together to create meaningful visitor experiences. However, the rapid expansion of tourism also presents environmental challenges, including increased carbon emissions, habitat damage, resource depletion, and the commodification of local cultures. In addition to these pressures, tourism is increasingly vulnerable to climate change, with rising sea levels, extreme weather events, coral bleaching, and shifting seasons affecting popular destinations and travel patterns. Conversely, tourism contributes to climate change through energy-intensive activities such as transportation and the construction of infrastructure to accommodate and entertain tourists. This dual relationship—where tourism both impacts and is impacted by climate change—has driven the development of eco-tourism as a sustainable model.

Eco-tourism aims to transform tourism into a force for positive environmental change, promoting climate resilience through conservation, cultural preservation, and community engagement. It aligns with global sustainability frameworks by reducing environmental footprints and encouraging travelers to participate in conservation efforts, ensuring that tourism contributes to long-term ecological and social well-being.

Building on this premise, the Qatar National Dialogue on Climate Change (QNDC) 2024, an annual initiative co-hosted by the Earthna Center for a Sustainable Future, a member of Qatar Foundation, and the Ministry of Environment and Climate Change to address climate change and promote sustainable development, convened a panel discussion titled “Eco-Tourism – Nature-Based Solutions” to explore the potential of eco-tourism in advancing climate resilience. The panel underscored the complex relationship between tourism and sustainability, emphasizing the importance of balancing economic growth with environmental conservation and community engagement. Key themes included the current state of eco-tourism, the impact of climate change on the tourism sector, and eco-tourism’s capacity to foster resilience. The discussion also delved into nature-based solutions, integrating cultural heritage, and the opportunities and challenges inherent in developing sustainable tourism. Incorporating global and regional perspectives, with significant insights from Germany, the panel primarily focused on Qatar’s distinctive potential to lead in sustainable tourism. German expertise, highlighted due to the QNDC 2024’s collaboration with the German Embassy and the German Industry & Commerce Office in Doha, was especially valued for its global leadership in environmental sustainability, offering a benchmark for innovative practices and solutions in Eco-Tourism.

# SCOPE AND METHODOLOGY



The scope of this research analysis focuses on the topics explored in the panel session, “Eco-Tourism – Nature-Based Solutions,” held on the second day of QNDC 2024. The discussion featured esteemed panelists, including Dr. John Wong, Marine Environment Advisor at the Wildlife Development Department, Ministry of Environment and Climate Change-Qatar; Mr. Berthold Trenkel, Advisor to the Chairman, Qatar Tourism; Prof. Dr. Heinz-Dieter Quack, Head of the Competence Centre for the Green Transformation of Tourism at Ostfalia University of Applied Sciences (Germany); Dr. Hitmi Al-Hitmi, Assistant Professor in the College of Business and Economics at Qatar University;

and Ms. Bouthayna M. Baltaji, Director of Museography and Heritage Museums Development, Qatar Museums. The analysis combines insights from this panel discussion with supplementary research to strengthen key takeaways and generate actionable recommendations. The methodology incorporates preliminary academic research, on-site session notes, post-session research, and benchmarking. These findings aim to support Qatar’s sustainability goals by fostering eco-tourism initiatives and offering Qatar-specific strategies to promote conservation, community engagement, and sustainable tourism development in the region.

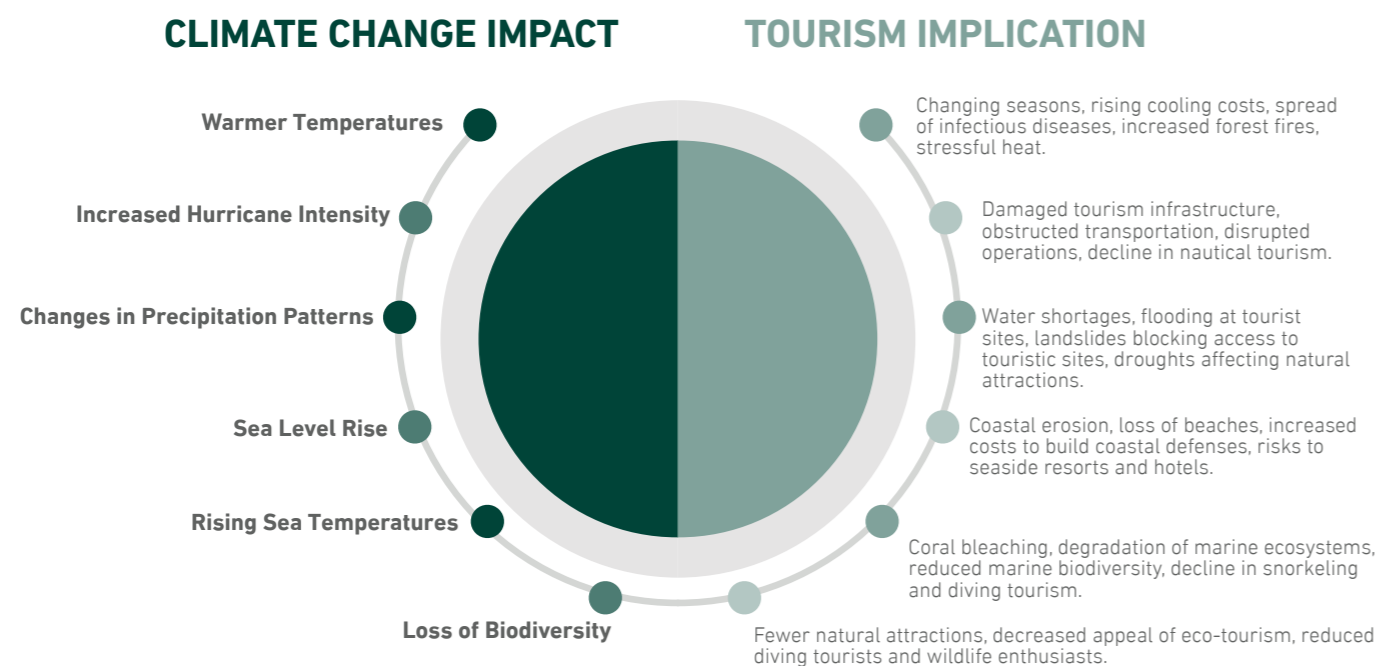
# IMPACT OF CLIMATE CHANGE ON TOURISM

Climate change presents significant challenges to the global tourism industry by altering weather patterns, degrading eco-sensitive environments, and threatening tourism infrastructure as seen in Figure 1. Travelers are increasingly shifting their preferences toward cooler destinations or locations less impacted by extreme weather events, leading to revenue losses for traditional tourist hotspots. For example, the Mediterranean region has experienced a 25% decline in foreign visitors during peak summer months due to rising temperatures, prompting measures such as tree planting and water dispensers to mitigate the effects of extreme heat.<sup>1</sup> The Alps face a similar challenge, with the Mer de Glace glacier in the French Alps rapidly melting and projected to disappear by 2050, which has led to "last-chance tourism" as visitors rush to see endangered sites.<sup>2</sup>

In the Caribbean, sea level rise, occurring nearly 10% faster than the global average, threatens coastal resorts and endangers a region that attracted over 28 million visitors in 2022.<sup>3</sup>

Tourists are now opting for cooler destinations like Norway and Sweden over traditional Mediterranean spots and prefer travel during cooler seasons.<sup>4</sup> Australia anticipates unusually hot and wet summers, prompting shifts in tourist preferences toward water-based and eco-friendly activities, leading operators to adapt by scheduling experiences during cooler times of the day.<sup>5</sup> These examples illustrate how climate change is reshaping tourism, emphasizing the need for sustainable practices and adaptive strategies to mitigate its effects.

Figure 1: Climate Change Impacts on Tourism



While climate change's impact on tourism is a global issue, like all countries, Qatar faces a set of challenges specific to its geographical and environmental characteristics. These challenges include extreme heat, a low-lying topography vulnerable to

rising sea levels, and the degradation of coral reefs and marine ecosystems. Below are some of the key climate issues affecting the world; however, these are priority areas of urgent concern for Qatar.

## MARINE ECOSYSTEM VULNERABILITIES

Across the globe, coral reefs are in decline; according to a 2020 report by the Global Coral Reef Monitoring Network (GCRMN), the world lost approximately 14% of its coral reefs between 2009 and 2018.<sup>6</sup> The decline of coral reefs worldwide has direct economic implications as coral reef tourism is estimated to generate around \$36 billion annually.<sup>7</sup> For instance, located off the coast of Australia, the Great Barrier Reef is the world's largest coral reef system, spanning over 2,300 kilometers. It has been severely impacted by climate change noted by the Australian Institute of Marine Science, 98% of the reef has experienced some form of bleaching since 1998.<sup>8</sup> This bleaching occurs when corals, stressed by warmer waters, expel the symbiotic algae that provide them with energy and vibrant colors, often resulting in coral death. The degradation of this natural wonder has economic implications, as the Great Barrier Reef supports a tourism industry valued at approximately AUD 6.4 billion per year and employs over 64,000 people.<sup>9</sup> Declining reef health has led to reduced reef tourism, directly affecting local economies dependent on this attraction.

Qatar's coral reefs, vital to marine biodiversity and coastal tourism, are under threat from rising sea temperatures and ocean acidification. Assessment of coral reefs in Qatar over time highlights that one deep offshore site still had high coral cover but was impaired compared to earlier observations, while inshore sites were dominated by dead coral rubble or bare rock, indicating severe historical degradation.<sup>10</sup> Moreover, the population of Needle Fish and Parrot Fish, which plays a crucial role in maintaining coral health, has decreased by 95% and 86% respectively, signaling the urgency for sustainable practices.<sup>11</sup> QNDCC 2024 panelist Dr. John Wong, Marine Environment Advisor at the Wildlife Development Department in the Ministry of Environment and Climate Change Qatar warned that coral bleaching and marine degradation undermines key tourism activities, such as snorkeling, diving, and whale shark tours.<sup>12</sup>



<sup>1</sup> "How Sweltering Summers Are Threatening Mediterranean Hotspots." The Times, June 21, 2024. Accessed November 10, 2024. <https://www.thetimes.com/world/europe/article/how-sweltering-summer-are-threatening-med-hotspots-bqlfz3h>  
<sup>2</sup> "In the French Alps, the Disappearing Glacier and Last-Chance Tourists." Le Monde, April 21, 2024. Accessed November 10, 2024. [https://www.lemonde.fr/en/environment/article/2024/04/21/in-the-french-alps-the-disappearing-glacier-and-last-chance-tourists\\_6027431\\_114.html](https://www.lemonde.fr/en/environment/article/2024/04/21/in-the-french-alps-the-disappearing-glacier-and-last-chance-tourists_6027431_114.html)  
<sup>3</sup> "Rising Global Temperatures Are Already Affecting the Tourism Industry - Here's How." World Economic Forum, August 14, 2024. Accessed November 10, 2024. <https://www.weforum.org/agenda/2024/08/rising-global-temperatures-tourism-impact/>  
<sup>4</sup> "Scraping Snow from Palm Trees: Climate Change Is Shaking Up European Travel." Financial Times, August 22, 2024. Accessed November 10, 2024. <https://www.ft.com/content/16abd7a4-3778-4b5b-bb57-8d7991e12952>  
<sup>5</sup> "Aussies and Tourists Changing Travel Plans Ahead of a Hot, Wet Summer." News.com.au, October 27, 2024. Accessed November 10, 2024. <https://www.news.com.au/travel/travel-updates/aussies-and-tourists-changing-travel-plans-ahead-of-a-hot-wet-summer/news-story/17ab5d9636405d6885b5b45e0ae18cc>  
<sup>6</sup> Gouezo, Malia, Verena P. Schoepf, Ray Berkelmans, Line K. Bay, Brett M. Lewis, and David J. Suggitt. "Coral Bleaching Responses to Thermal Stress Across the Pacific Ocean." Frontiers in Marine Science 6 (2019). Published September 3, 2019. <https://www.frontiersin.org/articles/10.3389/fmars.2019.00303/full>

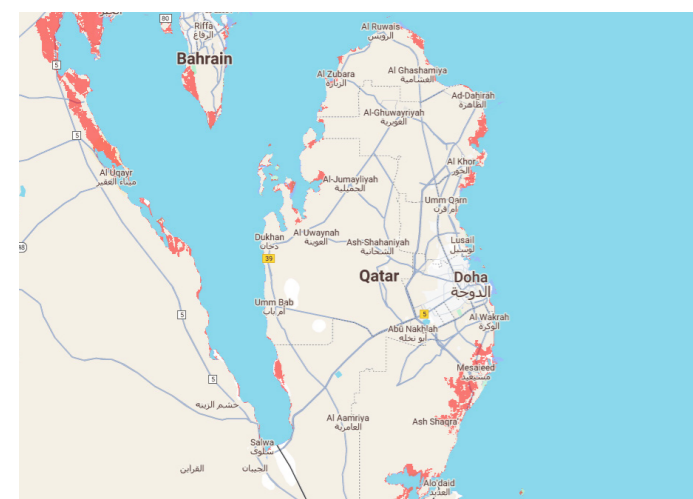
<sup>7</sup> Brumbaugh, Robert. "Healthy Coral Reefs Are Good for Tourism and Tourism Can Be Good for Reefs." World Economic Forum, June 2017. <https://www.weforum.org/agenda/2017/06/healthy-coral-reefs-are-good-for-tourism-and-tourism-can-be-good-for-reefs/>  
<sup>8</sup> Cantin, Neal, and James Gilmour. "Coral Bleaching Events." Australian Institute of Marine Science, Accessed November 10, 2024. <https://www.aims.gov.au/research-topics/gbr-monitoring/coral-bleaching>  
<sup>9</sup> Department of the Environment and Energy, Australian Government. Reef 2050 Long-Term Sustainability Plan, 2018. <https://www.dceew.gov.au/environment/marine/gbr/reef-2050>  
<sup>10</sup> Burt, John A., Emily G. Smith, Claire Warren, and Jeremy Dupont. "An Assessment of Qatar's Coral Communities in a Regional Context." Marine Pollution Bulletin 105, no. 2 (2016): 473-479. [https://www.researchgate.net/publication/282248696\\_An\\_assessment\\_of\\_Qatar\\_s\\_coral\\_communities\\_in\\_a\\_regional\\_context](https://www.researchgate.net/publication/282248696_An_assessment_of_Qatar_s_coral_communities_in_a_regional_context)  
<sup>11</sup> Convention on Biological Diversity, Qatar - National Biodiversity Strategy and Action Plan (NBSAP), 2015. Accessed October 30, 2024. <https://www.cbd.int/doc/world/qa/qa-nbsap-v2-en.pdf>  
<sup>12</sup> Wong, John remarks at the panel "Eco-Tourism - Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2nd, 2024.

## COASTAL EROSION AND FLOODING RISKS

Rising sea levels pose a growing threat to tourism infrastructure globally, with significant implications for coastal regions, small island nations, and major tourist destinations. Globally, sea levels have been rising at an average rate of about 3.3 millimeters per year, driven by climate change-induced factors.<sup>13</sup> This rise threatens critical tourism assets; beaches, resorts, and coastal heritage sites are particularly at risk, altering destination attractiveness for travelers.

In the Maldives, a country comprising 26 atolls and sitting only about 1.5 meters above sea level, even minor increases in sea levels can result in catastrophic flooding and coastal erosion. This poses a major threat to critical tourism infrastructure such as luxury resorts, beaches, and marine attractions that form the backbone of the Maldives' economy, where tourism accounts for approximately 25% of the GDP.<sup>14</sup> In Italy too, rising sea levels have worsened flooding in iconic destinations such as Venice. The city, renowned for its historic canals, has experienced an increase in both the frequency and intensity of "acqua alta" (high water) events due to a combination of sea-level rise, subsidence, and climate change. In 2019, Venice experienced its worst flooding in over 50 years, with water levels reaching 187 centimeters inundating more than 85% of the city. This event caused extensive damage to historical sites, including St. Mark's Basilica, and led to significant economic losses for businesses reliant on tourism.<sup>15</sup>

Similarly, Qatar's topography is predominantly low-lying, making it highly susceptible to impacts of sea level rise. Projections indicate that a sea level rise of less than 5 meters could inundate approximately 18.2% of Qatar's land area, adversely affecting 96% of the population residing in coastal regions.<sup>16</sup> This scenario poses significant risks to waterfront destinations, including popular tourist spots like The Doha Corniche and The Pearl-Qatar, potentially leading to increased flooding, coastal erosion, and damage to infrastructure.



<sup>13</sup> United States Environmental Protection Agency (EPA). "Climate Change Indicators: Sea Level." Accessed November 10, 2024. <https://www.epa.gov/climate-indicators/climate-change-indicators-sea-level>  
<sup>14</sup> Maldives Bureau of Statistics. Quarterly National Accounts of Maldives Q1 2024. July 2024. <https://statistics.maldives.gov.mv/wp-content/uploads/2024/07/QNA2024Q1.pdf>  
<sup>15</sup> Barry, Colleen, and Luca Bruno. "Venice Floods: Worst in 50 Years." AP News. Published November 13, 2019. <https://apnews.com/article/venice-floods-worst-50-years-italy-6d69f0b38c8445a1b8d4f0b76f0b7b6>  
<sup>16</sup> Elasha, Balgis Osman. "Climate Change, Sea Level Rise, and Sustainable Urban Adaptation in Arab Coastal Cities." Middle East Institute. February 12, 2019. Accessed November 10, 2024. <https://www.mei.edu/publications/climate-change-sea-level-rise-and-sustainable-urban-adaptation-arab-coastal-cities>  
<sup>17</sup> United States Environmental Protection Agency (EPA). "Climate Change Indicators: Heat Waves." Accessed November 10, 2024. <https://www.epa.gov/climate-indicators/climate-change-indicators-heat-waves>  
<sup>18</sup> World Economic Forum. "Temperatures, Tourism, and Climate Impact." August 2023. <https://www.weforum.org/agenda/2023/08/temperatures-tourism-and-climate-impact/>  
<sup>19</sup> Scherer, Daniel, and Jürgen Kropp. "Heat Extremes, Public Health Impacts, and Adaptation Policy in Germany." International Journal of Environmental Research and Public Health 17, no. 21 (2020): 7862. <https://www.mdpi.com/1660-4601/17/21/7862>

## MANAGING EXTREME HEAT

Rising global temperatures are significantly impacting tourism patterns worldwide. The World Meteorological Organization reports that the past decade has been the warmest on record, leading to more frequent and intense heat waves.<sup>17</sup> Escalation in extreme heat events has disrupted outdoor tourism activities, shortened tourist stays, and diminished visitor satisfaction, as recorded in Southern Europe, parts of the United States, and the Middle East.<sup>18</sup>

In Germany, rising temperatures have altered tourist behavior and affected outdoor attractions such as parks, historical sites, and cultural events. During heatwaves, cities like Berlin and Munich have experienced a decline in outdoor activities as tourists seek respite from soaring temperatures. Additionally, Germany's wine-producing regions face challenges due to changing climate conditions, affecting both vineyard productivity and wine tourism experiences. Efforts to adapt include promoting cooler-season tourism, expanding indoor attractions, and creating shaded outdoor spaces to maintain visitor comfort.<sup>19</sup>

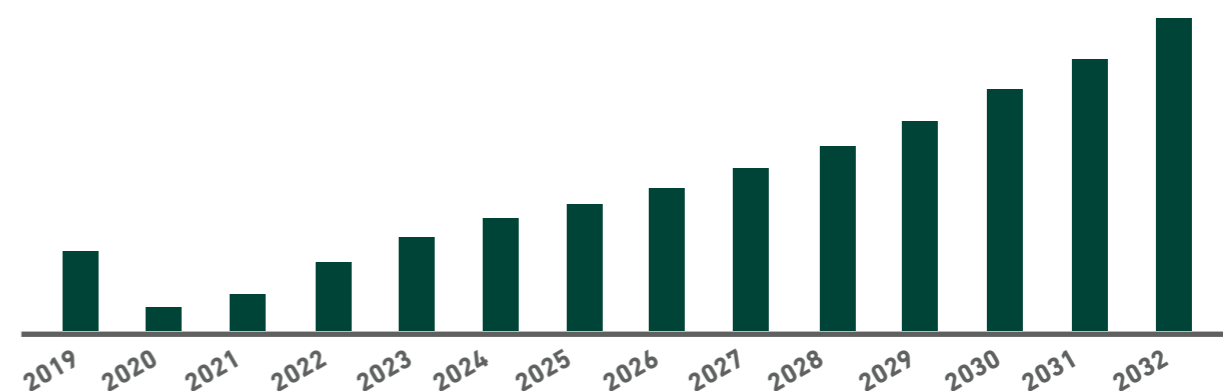
Qatar experiences some of the highest temperatures globally, with summer months often exceeding 45°C (113°F). This extreme heat is intensified by the urban heat island (UHI) effect, where urban areas like Doha become significantly warmer than their rural surroundings due to factors such as dense construction and heat-retaining infrastructure. Studies have shown that Doha's UHI effect can increase temperatures by an additional 5°C (9°F) compared to surrounding areas, creating even more challenging conditions for outdoor tourism. This can lead to shorter tourist stays, undermining ecotourism strategies such as "Fly Less, Stay Longer" which were highlighted by Mr. Berthold Trenkel during the QNDCC 2024.

Rising temperatures present another significant challenge to outdoor tourism worldwide, affecting destinations from the American Southwest to Middle Eastern countries like the UAE, Saudi Arabia, and Qatar. In Qatar, summer temperatures regularly exceed 45°C (113°F), limiting outdoor tourism activities and increasing reliance on air-conditioned spaces. Dr. Hitmi Al-Hitmi recommends expanding climate-controlled attractions and shaded outdoor areas to ensure visitor comfort during the summer months. Qatar has already begun promoting indoor cultural sites, such as the National Museum of Qatar or outdoor air conditioning in areas such as Katara Cultural Village, to encourage tourism year-round. These adaptive strategies align with global trends in sustainable tourism management, ensuring that Qatar remains a competitive tourism destination despite extreme heat conditions.

# CURRENT STATE OF ECO-TOURISM

Figure 2: Europe Eco Tourism Market Size

## EUROPE ECO TOURISM MARKET SIZE, 2019 - 2032 (USD BILLION)



Eco-tourism is emerging as a powerful tool for promoting sustainable development, offering a model that balances economic growth with environmental conservation. The global eco-tourism market, valued at USD 216.49 billion in 2023, is projected to reach USD 759.93 billion by 2032, reflecting the increasing demand for sustainable travel.<sup>21</sup> Public-private partnerships and investments in eco-friendly infrastructure are key drivers of this growth. Europe currently leads the market with a 38.87% share seen in Figure 1, while countries worldwide are adopting innovative approaches to leverage eco-tourism as both a conservation strategy and an economic driver.

Traveler behavior is also changing, reflected by Booking.com 2022 Sustainable Travel Report report which stated that 81% of travelers emphasized the importance of sustainable travel, with 73% expressing a preference for accommodations that implement sustainable practices. Additionally, 76% actively look for eco-certified options like the Green Key accreditation, reflecting a shift toward environmentally conscious decision-making in tourism.<sup>22</sup>

Global success stories demonstrate how eco-tourism can align tourism with sustainability goals. Costa Rica's rainforest preservation programs highlight how eco-tourism protects

biodiversity while fostering sustainable economic growth and creating job opportunities in local communities. For instance, the country's commitment to conservation has led to the protection of nearly 25% of its land area through national parks and reserves, directly funded by eco-friendly tourism activities.<sup>23</sup> New Zealand has similarly integrated eco-tourism with environmental protection through marine sanctuaries, safeguarding marine biodiversity while promoting responsible tourism. The Kaikōura Marine Management Area, for example, conserves whales, dolphins, seals, and seabirds, making it a leading eco-tourism destination.<sup>24</sup> Bhutan exemplifies the high-value, low-impact tourism model, ensuring that visitor activities support cultural preservation and environmental stewardship without compromising the ecological integrity of the region. The country's policy of "High Value, Low Impact" tourism aims to attract tourists who will respect Bhutan's unique culture and environment, thereby promoting sustainable development.<sup>25</sup> Similarly a notable example from Germany is the establishment of the Black Forest National Park in 2014, covering approximately 10,062 hectares. This park has been promoting sustainable tourism through eco-friendly hiking trails, renewable energy-powered accommodations, and wildlife conservation programs, thereby preserving biodiversity and supporting local economies.<sup>26</sup>

<sup>21</sup> Emmanuel, Rohinton, and Al-Khaled Al-Hemiddi. "Daytime Variation of Urban Heat Islands: The Case Study of Doha, Qatar." Climate 4, no. 2 (2016): 32. <https://www.mdpi.com/2225-1154/4/2/32>  
<sup>22</sup> Fortune Business Insights. "Ecotourism Market Size, Share & Trends." Fortune Business Insights. Accessed October 30, 2024. <https://www.fortunebusinessinsights.com/industry-reports/ecotourism-market-100748>  
<sup>23</sup> Global Sustainable Tourism Council. "Booking.com 2022 Sustainable Travel Report." GSTC. Accessed October 30, 2024. <https://www.gstcouncil.org/booking-com-2022-sustainable-travel-report/>  
<sup>24</sup> Green Circle Experience. "Ecotourism as a Tool for Conservation and Social Progress in Costa Rica." Last modified January 29, 2024. Accessed November 11, 2024. <https://www.greencircleexperience.com/blog/ecotourism-as-a-tool-for-conservation-and-social-progress-in-costa-rica>  
<sup>25</sup> Whale Watch Kaikōura. "About the Location - Kaikōura." Accessed November 11, 2024. <https://www.whalewatch.co.nz/our-story/about-kaikoura/>  
<sup>26</sup> Tourism Council of Bhutan. "Final Draft Tourism Policy." Accessed November 11, 2024. <https://www.tourism.gov.bt/pian-policies/tourism-policy>  
<sup>27</sup> Germany Travel. "Black Forest National Park." Accessed November 11, 2024. <https://www.germany.travel/en/nature-outdoor-activities/black-forest-national-park.html>

## QATAR'S ECO-TOURISM LANDSCAPE

Within the global context of sustainable tourism, Qatar is advancing eco-tourism development as a critical component of its Qatar National Tourism Sector Strategy 2030 (QNTSS). Eco-tourism plays a key role in diversifying the nation's economy, preserving its unique environment, and enhancing its global appeal as a sustainable tourist destination. This initiative is deeply rooted in Qatar's ambition to attract 5.6 million visitors annually by 2030, as outlined in the QNTSS. Specific elements of the QNTSS prioritize marine conservation, desert preservation, and cultural heritage protection. These initiatives are designed to highlight Qatar's natural and historical assets, such as its coastal ecosystems and desert landscapes, by integrating conservation efforts and tourism offerings.<sup>27</sup> These efforts are directly aligned with Qatar National Vision 2030 (QNV 2030), which emphasizes sustainable economic diversification and effective environmental management. QNV 2030 is structured around four key pillars: Economic, Social, Human, and Environmental Development. The vision includes goals to position Qatar as a preferred tourism destination for families, promote business tourism and events, and achieve a 25% reduction in emissions.<sup>28</sup> Eco-tourism plays a crucial role in supporting both the Environmental and Economic pillars by driving economic growth, preserving natural resources, and promoting a culture of environmental stewardship.

Qatar has prioritized its commitment to eco-tourism, recognizing both the growing appeal and immense potential of this sector. This strategic focus also reflects the need to address climate change vulnerabilities impacting the industry. Below is a list of Qatar's top eco-tourism destinations and opportunities.

## NATIVE FLORA: THE MANGROVES AND XEROPHYTES

Qatar's native flora spans both coastal and desert ecosystems, each offering unique opportunities for eco-tourism. Along the east coast, mangroves in Al Thakhira and Al Khor provide vital breeding grounds for fish and sanctuaries for bird species.<sup>29</sup> Mangroves attract visitors for kayaking, birdwatching, and picnics, fostering appreciation for Qatar's coastal ecology. Similarly in the deserts, xerophytes—plants adapted to survive with minimal water—play a key role in stabilizing dunes, preventing erosion, and supporting wildlife. Notable examples include *Acacia tortilis* (Umbrella Thorn Tree), *Zygophyllum qatarense* (Qatar Herb), *Haloxylon salicornicum* (Rims), and *Cistanche tubulosa* (Desert Hyacinth).<sup>30</sup> Similar to the mangroves, the rarity of these xerophytes, along with their role in preserving the desert's allure and supporting the surrounding ecosystem, attracts many tourists. Together, these ecosystems highlight Qatar's ecological diversity, drawing eco-tourists to explore and engage with the country's natural heritage.

<sup>27</sup> Qatar Tourism Authority. Qatar National Tourism Sector Strategy 2030. Accessed November 11, 2024. <https://www.visitqatar.qa/en/about-qatar/national-tourism-sector-strategy>

<sup>28</sup> Planning and Statistics Authority. "National Development Strategy 2011-2016." Accessed November 12, 2024. <https://www.psa.gov.qa/en/ndss1/Pages/default.aspx>

<sup>29</sup> Arachchige, Pavithra S., Pitumpe, Marcela Rondon, Abhishah Dutta Roy, Michael S Watt, Mollie Davies, Dhouna Querfelli, Ewane Basil Ewane, et al. "Current Status of Mangrove Conservation Efforts in Qatar: A Review." *Regional Studies in Marine Science* 79 (2024). <https://www.sciencedirect.com/science/article/pii/S235248523001234>

<sup>30</sup> Abdullah, Meshal, et al. "Characterizing the Dynamics of Climate and Native Desert Plants in Qatar." *Journal of Arid Environments* 225 (2024): 105274. <https://doi.org/10.1016/j.jaridenv.2024.105274>

## NATIVE FAUNA: UNIQUE LAND SPECIES

Qatar's eco-tourism strategy emphasizes the conservation of native wildlife, which enriches the country's ecological diversity and provides immersive experiences for visitors. While not unique to Qatar the Arabian oryx (*Oryx leucoryx*), a symbol of national resilience, was successfully reintroduced into protected reserves like the Al Reem Biosphere Reserve.<sup>31</sup> Other notable species include the Sand Gazelle (*Gazella Marica*) and the Spiny-Tailed Lizard (*Uromastix aegyptia*), which thrive in Qatar's arid desert environment, benefit from Qatar's conservation efforts, such as habitat restoration projects, environmental regulations to prevent habitat destruction, and public awareness campaigns that engage local communities in wildlife protection. These initiatives offer tourists unique opportunities to observe them in their natural settings as well as learn about conservation efforts, enhancing Qatar's appeal as a destination for nature enthusiasts.

Figure 3: Qatar Tourism Goals



## MARINE ECOSYSTEMS: CORAL REEFS, SEAGRASS BEDS AND MARINE ANIMALS

Table 1: Marine Species in Qatar

Number of Marine Species	
379	Species of Invertebrates
29	Species of Birds
136	Species of Fish
15	Species of Reptile
402	Species of Flora
3	Species of Mammals (Adapted from Abushama et. al. 2002)

Qatar's coral reefs and seagrass beds are essential elements of its marine environment, supporting fisheries and serving as key habitats for shrimp, fish, and oysters. These ecosystems host over 955 species as seen in Table 1 and contribute to ecological stability while offering valuable opportunities for eco-tourism.<sup>32</sup> Qatar's marine tourism offerings are expanding to include activities such as whale shark tours near Al Shaheen, dolphin watching tours in the waters surrounding Al Wakrah, and reef-friendly diving expeditions. These activities allow visitors to engage with Qatar's vibrant marine biodiversity while promoting sustainable tourism practices.

## DESERT ECOSYSTEMS: SAND DUNES AND MIGRATING LANDSCAPES

Qatar's deserts offer diverse landscapes that provide thrilling experiences, showcasing the beauty of arid ecosystems shaped by shifting sands and winds. The Sealine region, known for its migrating dunes (Al Nigyan), is a popular destination for desert safaris, camel riding, and sandboarding. Other key desert attractions include Khor Al Adaid (Inland Sea), where the desert meets the sea in a dramatic natural setting, and Zekreet and the Ras Abrouq Peninsula, known for their distinctive limestone formations.<sup>33</sup> These areas attract eco-tourists interested in exploring Qatar's unique desert terrain, providing memorable experiences that highlight the country's natural heritage.

<sup>31</sup> Al-Dous, Eman, et al. "Protecting the Arabian Oryx by Genome Sequencing." *Qatar Foundation Annual Research Forum Proceedings*, 2012. [https://www.researchgate.net/publication/270704013\\_Protecting\\_the\\_Arabian\\_oryx\\_by\\_genome\\_sequencing](https://www.researchgate.net/publication/270704013_Protecting_the_Arabian_oryx_by_genome_sequencing)

<sup>32</sup> Convention on Biological Diversity. Qatar - National Biodiversity Strategy and Action Plan (NBSAP). 2015. Accessed October 30, 2024. <https://www.cbd.int/doc/world/qa/qa-nbsap-v2-en.pdf>

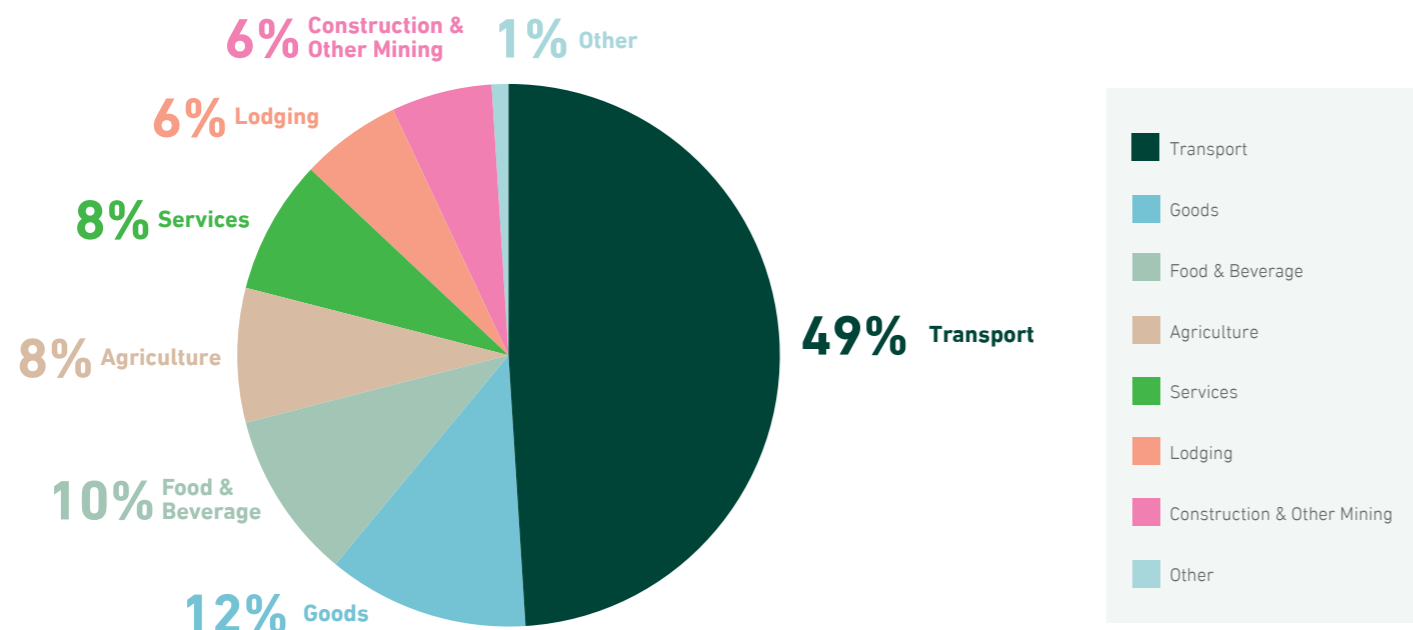
<sup>33</sup> Gomeseria, Ronald. "Desert Landscape to a Sustainable Environment." *University of the Philippines (Open University); University of the Philippines Los Baños; Polytechnic University of the Philippines; Atlantic International University*, January 3, 2020. [https://www.researchgate.net/publication/356296978\\_Desert\\_Landscape\\_to\\_a\\_Sustainable\\_Environment](https://www.researchgate.net/publication/356296978_Desert_Landscape_to_a_Sustainable_Environment)

# ROLE OF ECO-TOURISM IN PROMOTING CLIMATE RESILIENCE

Eco-tourism plays a pivotal role in advancing climate resilience, serving as a tool for environmental conservation, sustainable tourism development, community engagement, and consumer awareness. As climate change intensifies, the tourism industry faces growing challenges. Tourism is a significant contributor to global carbon emissions, accounting for approximately 8% of total emissions, with various sectors such as transportation,

accommodation, and activities playing major roles.<sup>34</sup> As seen in the figure 2, these sectors contribute to carbon emissions at different levels, with transportation being the largest source. Eco-tourism paves a way where these emissions can be limited while also protecting biodiversity, raising awareness about climate change, and promoting sustainable practices among both tourists and local communities.

Figure 5: Carbon Footprint of Global Tourism



## ECOSYSTEM RESTORATION AND CARBON SEQUESTRATION

Ecosystem restoration is integral to eco-tourism's role in climate resilience. Mangrove ecosystems, for example, sequester up to four times more carbon than terrestrial forests, making them vital for climate mitigation efforts.

Qatar integrates ecosystem restoration into eco-tourism through mangrove conservation in areas like Al Thakhira, which serve as both biodiversity sanctuaries and natural carbon sinks by absorbing atmospheric CO<sub>2</sub>.<sup>35</sup> Similar restoration efforts, coral

reef restoration programs have also been of a major priority to Qatar as mentioned allow tourists to participate in hands-on snorkeling tours, raising awareness about marine biodiversity while promoting carbon mitigation. For instance, the Ministry of Environment and Climate Change completed the first phase in October 2024, surveying 17 sites and identifying 40 species of hard coral and five soft coral species. The initiative focuses on relocating coral from donor areas with thriving ecosystems to reception sites needing restoration.<sup>36</sup>



## ECO-FRIENDLY TOURISM INFRASTRUCTURE

Across the globe, the tourism industry is increasingly focusing on developing eco-friendly infrastructure to meet growing environmental standards set both internationally and locally. These standards are imposed on various agents within the tourism industry and driven by consumers who are becoming more environmentally conscious and aware. Hotels and resorts are adopting energy-efficient building designs, integrating renewable energy sources like solar and wind power, and utilizing smart technologies to monitor energy use. Many tourism facilities employ water recycling systems, rainwater harvesting, and sustainable waste management practices to reduce environmental impact. Additionally, eco-label certifications such as Green Key, LEED, and EarthCheck are becoming standard benchmarks for measuring the sustainability of hospitality services.<sup>37</sup> These initiatives minimize the carbon footprint of tourism operations whilst enhancing the appeal of destinations by meeting the rising demand for sustainable travel experiences as highlighted by Booking.com 2022 Sustainable Travel Report.<sup>38</sup>

Qatar's tourism infrastructure reflects this global shift towards sustainability by promoting eco-friendly practices within the hospitality sector. Seven, 5 Star hotels, including Warwick Doha, Alwadi Hotel MGallery, and Radisson Blu Doha, have already earned the prestigious Green Key eco-label, the world's leading certification for hotels and tourism facilities. This designation is awarded based on compliance with a stringent set of criteria for environmental management, raising environmental awareness, and promoting social responsibility, as recognized by the Global Sustainable Tourism Council (GSTC).<sup>39</sup> Additionally, 15 more hotels are currently in the process of obtaining this certification.<sup>40</sup> Examples of such are seen in hotels like Sheraton Grand Doha Resort & Convention Hotel, which has adopted seawater cooling systems, significantly reducing the need for traditional energy-intensive cooling, which helps lower greenhouse gas emissions.<sup>41</sup>

<sup>34</sup> World Economic Forum, "Tourism Is Responsible for a Staggering 8% of Global Greenhouse Emissions," World Economic Forum, May 29, 2018, <https://www.weforum.org/agenda/2018/05/tourism-greenhouse-gas-emissions/>  
<sup>35</sup> Arachchige, Pavithra S., Plümpe, Marcela Rondon, Abhilash Dutta Roy, Michael S Watt, Mollie Davies, Dhouna Querfelli, Ewane Basil Ewane, et al. "Current Status of Mangrove Conservation Efforts in Qatar: A Review." *Regional Studies in Marine Science* 79 (2024) <https://doi.org/10.1016/j.rsma.2024.102131>  
<sup>36</sup> Qatar News Agency, "Environment Ministry Accomplishes First Phase of Coral Reef Protection and Restoration Program," October 29, 2024, <https://www.qna.org.qa/en/News-Area/News/2024-10/29/environment-ministry-completes-first-phase-of-coral-reef-protection>  
<sup>37</sup> Al-Tale, Haider M., and Hanan A. Al-Saedi. 2023. "The Importance of the Quality and Sustainability of Tourism Services." *Journal of Tourism and Hospitality Research* 8 (5): 25-45. [https://www.researchgate.net/publication/356296978\\_Desert\\_Landscape\\_to\\_a\\_Sustainable\\_Environment](https://www.researchgate.net/publication/356296978_Desert_Landscape_to_a_Sustainable_Environment)

<sup>38</sup> Global Sustainable Tourism Council, "Booking.com 2022 Sustainable Travel Report," GSTC, Accessed October 30, 2024, <https://www.gstcouncil.org/booking-com-2022-sustainable-travel-report/>  
<sup>39</sup> Alwadi Hotel Doha - MGallery Collection, "Alwadi Hotel MGallery Awarded Green Key Certification," Accessed November 11, 2024, <https://www.alwadihoteldoha.com/mgallery-news/alwadi-hotel-mgallery-awarded-green-key-certification/>  
<sup>40</sup> Cochrane, Logan, and Reem Al-Hababi, eds. *Sustainable Qatar: Social, Political and Environmental Perspectives*. Gulf Studies, vol. 9. Md Mizanur Rahman, Series Editor. Doha: Gulf Studies Center, College of Arts and Sciences, Qatar University, 2023. [https://www.researchgate.net/publication/365703508\\_Sustainable\\_Qatar\\_Social\\_Political\\_and\\_Environmental\\_Perspectives](https://www.researchgate.net/publication/365703508_Sustainable_Qatar_Social_Political_and_Environmental_Perspectives)  
<sup>41</sup> Green Key Global, "Sheraton Doha's Man-Made Lagoon for Cooling," Accessed November 11, 2024, <https://www.greenkeyglobal.com/stories-news-1/2020/11/29/sheraton-dohas-man-made-lagoon-for-cooling>



## COMMUNITY ENGAGEMENT

Eco-tourism fosters meaningful community engagement by involving local stakeholders in decision-making, creating employment opportunities, and promoting environmental stewardship. By engaging local populations, tourism initiatives can better align with community needs and values, supporting sustainable development and cultural preservation.

### CASE STUDY: NUNAVUT IN CANADA

A notable example of this can be found in Canada, where the Inuit communities of Nunavut offer immersive eco-tourism experiences, including dog-sledding expeditions, hunting and fishing tours, and cultural storytelling sessions. Through community engagement that leverages local knowledge and traditional practices, visitors develop a deeper connection to the environment and an appreciation for Arctic life. Supported by the Indigenous Tourism Association of Canada (ITAC), these initiatives highlight the impacts of climate change while promoting sustainable tourism and traditional ecological knowledge. In doing so, they empower Inuit communities economically, preserve cultural heritage, and strengthen global climate resilience efforts.

In Qatar the Turtle Conservation Project engages local communities through monitoring efforts and nest protection, ensuring safe hatching and fostering environmental stewardship. Fuwairit Beach in Qatar serves as a critical nesting site for the hawksbill turtle, a critically endangered species essential for coral reef health. Each spring, the Ministry of Environment closes off the beach, which hosts approximately 30% of Qatar’s sea turtle nests, to protect nesting turtles. Later in the summer months, once the hatchlings are ready, guests may witness the memorable sight of baby turtles scurrying down to the water—a unique opportunity for wildlife enthusiasts and photographers.<sup>42</sup> Similarly the Ministry emphasizes community engagement called “Visit Programs”, particularly school students and children, to raise awareness and foster a connection with environmental preservation of such sites.<sup>43</sup>

### CONSUMER AWARENESS AND DRIVING BEHAVIORAL CHANGES

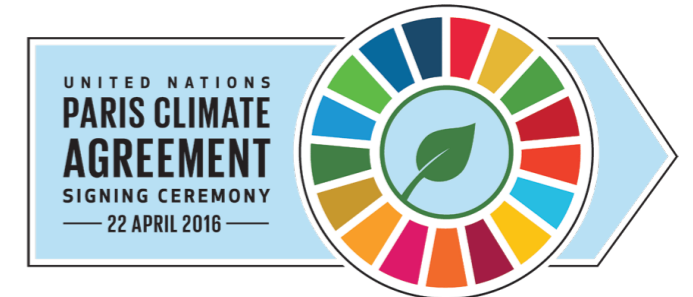
Globally, the push toward sustainable tourism is growing as consumers increasingly demand eco-friendly tourism. Such awareness most notably created through social media platforms such as Instagram, TikTok, and YouTube allow eco-conscious travelers to share experiences from sustainable destinations, promoting green practices through engaging content. Campaigns like #SustainableTravel and #LeaveNoTrace create viral movements, encouraging collective environmental commitment. A 2023 report by Phocuswright revealed that over half of all leisure travelers use social media platforms to aid in their trip-



related decisions. This trend is particularly pronounced among younger travelers, with 81% of those under 35 utilizing social media for travel planning, compared to only 14% of those aged 55 and older.<sup>44</sup>

Qatar’s eco-tourism initiatives emphasize educating residents on sustainable travel practices, contributing to a noticeable behavioral shift toward environmentally conscious habits.<sup>45</sup> Qatar Sustainability Week, an annual national campaign, plays a role in promoting these values by bringing together public and private organizations, as well as local communities, to participate in sustainability-focused activities.<sup>46</sup> A key aspect of Qatar Sustainability Week, known as “Travel with Purpose,” highlights collaborations with prominent hotels such as Hilton and Salwa Beach Resort. These partnerships organize impactful initiatives, including tree-planting events and beach clean-up activities, which engage participants in hands-on environmental conservation efforts.<sup>47</sup> Such activities educate and inspire participants to adopt sustainable behaviors as well as emphasize the importance of collective action in protecting natural resources and preserving Qatar’s environment. The cumulative effect of these initiatives is a growing public awareness and adoption of sustainable travel behaviors, reflecting Qatar’s broader efforts to align tourism with environmental stewardship and responsible consumption.

# STRATEGIC FRAMEWORK FOR ENHANCING ECO-TOURISM’S ROLE IN CLIMATE RESILIENCE



As the world grapples with the dual challenges of climate change and environmental degradation, eco-tourism has emerged as a vital pathway for fostering sustainable development. By aligning tourism growth with environmental stewardship, eco-tourism promotes the conservation of ecosystems and builds the resilience of communities and economies facing climate risks. In Qatar, where the interplay between rapid urbanization, environmental vulnerability, and global tourism presents unique challenges, developing a comprehensive eco-tourism strategy is both an opportunity and a responsibility. With its abundant natural resources—including marine ecosystems, desert landscapes, and biodiversity reserves—Qatar is well-positioned to leverage eco-tourism to achieve national and global climate adaptation goals.

Qatar’s eco-tourism ambitions align with a series of national strategies, policies, and frameworks aimed at promoting sustainable development. The QNV 2030 provides a broad

blueprint, emphasizing economic diversification, environmental stewardship, and cultural preservation. The Qatar National Environment and Climate Strategy (QNE) furthers these goals by setting specific targets for biodiversity protection, sustainable resource management, and climate adaptation.<sup>48</sup> Additionally, the QNTSS 2030 promotes tourism as a driver of sustainable economic growth, with a focus on attracting eco-conscious travelers and developing tourism infrastructure that aligns with conservation principles. These frameworks, together with Qatar’s commitment to international agreements such as the Paris Agreement and the Convention on Biological Diversity (CBD), guide the country’s efforts to foster a tourism sector that supports both environmental preservation and climate resilience.

<sup>42</sup> Visit Qatar. “Hawksbill Turtle Spotting in Qatar.” Accessed November 11, 2024. <https://www.visitqatar.qa/intl-en/things-to-do/adventures/wildlife/hawksbill-turtle-spotting>

<sup>43</sup> Ministry of Environment and Climate Change. “Visit Program.” Accessed November 11, 2024. <https://www.mecc.gov.qa/en/visit-program>

<sup>44</sup> Phocuswright. “Under the Influence: Social Media’s Role in Trip Planning.” Accessed November 11, 2024. <https://www.phocuswright.com/Travel-Research/Technology-Innovation/Under-the-Influence-Social-Medias-Impact-on-Trip-Planning>

<sup>45</sup> UNESCO. Towards Environmentally Friendly Tourism in Arabian Biosphere Reserves. 2008. <https://unesdoc.unesco.org/ark:/48223/pf0000186460>

<sup>46</sup> Earthna Center for a Sustainable Future. “Qatar Sustainability Week (QSWeek).” Accessed November 12, 2024. <https://www.earthna.qa/qatar-sustainability-week>

<sup>47</sup> Qatar Sustainability Week. “Events.” Accessed November 11, 2024. <https://www.qatarsustainabilityweek.com/events>

<sup>48</sup> Hawkamah Institute for Corporate Governance. Qatar National Environment and Climate Strategy. Accessed November 11, 2024. <https://www.hawkamah.org/exclusive-publications/attachment/Qatar%20National%20Environment%20and%20Climate%20Strategy.pdf>



Convention on Biological Diversity



Qatar actively works to align its eco-tourism initiatives with international standards and frameworks, ensuring that its development strategy reflects global commitments to sustainability. Eco-tourism destinations need to maintain high levels of transparency and accountability through sustainability certification systems. The country is increasingly integrating best practices promoted by organizations such as the United Nations World Tourism Organization (UNWTO) and the Global Sustainable Tourism Council (GSTC), which emphasize environmental conservation, responsible tourism, and community engagement.<sup>49</sup> Additionally, Qatar employs ISO 14001 standards for environmental management, helping organizations minimize environmental impact, comply with regulations, and achieve continuous improvement. This process includes workshops, gap analysis, and comprehensive training to ensure effective implementation. By adopting ISO 14001, Qatar's eco-tourism sector benefits from improved business processes and stronger environmental impact control.<sup>50</sup> Qatar's eco-tourism efforts also align with its broader adherence to frameworks like the Convention on Biological Diversity (CBD) and the 2030 Agenda for Sustainable Development, reinforcing its commitment to both environmental preservation and sustainable growth.<sup>51</sup> These standards serve as benchmarks to promote transparency, accountability, and long-term resilience within Qatar's tourism sector. As Mr. Trenkel noted in QNDCC 2024, establishing sustainability guidelines will enhance Qatar's credibility and attract eco-conscious travelers. By adopting these models and aligning with international frameworks, Qatar ensures that its eco-tourism sector contributes meaningfully to both global and national sustainability goals, strengthening its position as a leader in responsible tourism development.

Public-Private Partnerships (PPPs) are collaborative arrangements between government entities and private sector organizations, aimed at achieving common goals through the pooling of resources, expertise, and risk-sharing. In the context of eco-tourism, PPPs are crucial as they combine public oversight and strategic direction with private innovation, investment, and operational efficiency. This synergy can create sustainable tourism projects that balance economic development with environmental preservation, while also engaging local communities. PPPs play a key role in eco-tourism by fostering inclusive economic growth, protecting ecosystems, and enhancing the visitor experience. Government bodies often provide regulatory support and strategic vision, while private partners bring financial capital, technical expertise, and market access. Together, they can create tourism experiences that generate revenue for conservation projects, empower local communities through job creation and skills development, and promote the sustainable use of natural and cultural resources.

A prime example of this is seen in Kenya, PPPs have played a pivotal role in developing eco-tourism within wildlife conservancies like the Maasai Mara Conservancies, where private tourism operators work with local Maasai communities. Through revenue-sharing models, Maasai landowners receive financial benefits while contributing to wildlife conservation, anti-poaching measures, and habitat restoration. This collaborative approach enhances economic resilience for local populations and strengthens the health of the ecosystem.<sup>52</sup>

# NATURE-BASED SOLUTIONS IN ECO-TOURISM



Nature-based Solutions (NbS) are approaches that use natural processes and ecosystems to address societal challenges including climate change. Rooted in the idea of working with nature rather than against it, NbS emphasize the restoration, protection, and sustainable management of ecosystems to achieve both environmental and socio-economic benefits. The concept of NbS emerged prominently during the late 20th and early 21st centuries, gaining traction as an alternative to purely engineered or technological solutions to environmental issues. The term was officially introduced by the World Bank in 2008 pioneered by the International Union for Conservation of Nature (IUCN).<sup>53</sup> It was further championed by global organizations and initiatives, using IUCN Global Standard for Nature-based Solutions as an integral part of international strategies for climate adaptation and sustainable development.<sup>54</sup>

NbS include a wide range of interventions such as reforestation, wetland restoration, green infrastructure in urban areas, and coral reef restoration. These approaches are recognized for their ability to provide multiple co-benefits: capturing carbon to combat climate change, protecting against extreme weather events like floods, supporting biodiversity, and promoting human well-being. In the context of tourism, NbS offer opportunities for developing sustainable tourism practices by leveraging natural ecosystems to enhance visitor experiences while preserving and restoring the environment. This aligns with key objectives of sustainable development frameworks, such as Qatar National Vision 2030, by balancing economic growth with environmental stewardship.

<sup>49</sup> Zawya, "Mandarin Oriental, Doha Earns GSTC Certification, Leading Sustainability in Qatar," Zawya, September 19, 2024. <https://www.zawya.com/en/press-release/mandarin-oriental-doha-earns-gstc-certification-leading-sustainability-in-qatar-xyz123>

<sup>50</sup> IQS International, "ISO 14001 Environmental Management (EMS)," Accessed November 12, 2024. <https://www.iqs-uk.com/iso-14001-environmental-management/>

<sup>51</sup> Convention on Biological Diversity, Convention on Biological Diversity: A Key to Achieving the Sustainable Development Goals, Secretariat of the Convention on Biological Diversity, 2020. <https://www.cbd.int/doc/publications/cbd-sdgs-booklet-en.pdf>

<sup>52</sup> Maasai Mara Wildlife Conservancies Association, Conservancy Report 2014. Accessed November 11, 2024. <https://www.enature.qa/en/nature-reserves/>

<sup>53</sup> Sowińska-Swierkosz, Barbara, and Joan Garcia, "What are Nature-based Solutions (NbS)? Setting Core Ideas for Concept Clarification," Nature-Based Solutions, vol. 2, 2022, 100009. ISSN 2772-4115. <https://doi.org/10.1016/j.nbsj.2022.100009>

<sup>54</sup> International Union for Conservation of Nature (IUCN), "Nature-based Solutions," Accessed November 12, 2024. <https://www.iucn.org/our-work/nature-based-solutions>

Figure 6: Map - Protected Areas in Qatar

IMPORTANCE



Conservation areas are intended to reverse environmental decline by protecting endangered species, shielding various land and ocean ecosystems from exploitation, and modifying economic sectors to be more sustainable.

AMBITION



Land conservation areas more than 25% of Qatar terrestrial territory.



Marine conservation areas in line with Global Biodiversity framework post 2020.

STATUS QUO

- Land conservation areas
- Marine conservation areas



Table 2: Protected Areas in Qatar

PROTECTED AREA NAME	TERRESTRIAL AREA (KM2)	% OF TOTAL LAND AREA OF QATAR	MARINE PROTECTED AREA (KM2)
AL REEM	1154.1	9.97	0
AL WUSAIL	34.73	0.3	0
SUNAI	3.91	0.03	0
UMM ALAMAD	5.72	0.05	0
UMM QARN	24.71	0.21	0
AL RAFA	53.33	0.46	0
AL SHAHANIYA	0.79	0.01	0
AL ERAIQ	54.76	0.47	0
AL MASHABIYA	4.76	0.04	0
DHAKHIRA	293.6	0.99	179.14
KHOR AL ADAID	1833.2	11.15	542.04
<b>TOTAL AREA</b>	<b>3463.61</b>	<b>23.68</b>	<b>721.18</b>

Qatar has established several protected areas as seen in Table 2 and Figure 5 that contribute significantly to eco-tourism by safeguarding unique ecosystems and offering visitors enriching natural experiences:

- **Al Sheehaniya Reserve:** Situated 45 kilometers from Doha, this reserve, established in 1979, spans 12 square kilometers and is home to the Arabian Oryx and other endangered species, giving visitors an opportunity to witness wildlife conservation in action.
- **Al Mashabiya Reserve:** Covering around 54 square kilometers in southwest Qatar, this reserve, opened in 1997, focuses on the conservation of Arabian Oryx, gazelles, and other species, offering a firsthand look at successful wildlife resettlement efforts.
- **Al Thakhira Reserve:** Located in northeast Qatar, this reserve, declared a natural reserve in 2006, features a marine section with mangrove forests and a small island, making it a prime destination for bird watching and eco-friendly kayaking experiences.
- **Al Reem Reserve:** Covering about 16% of Qatar's total land, this reserve in the northwest is known for its unique calcareous formations and diverse wildlife, offering eco-tourists an insight into Qatar's rich desert ecosystem.

• **Khor Al Adaid Reserve:** Often referred to as the "Inland Sea," this reserve, designated in 2007, showcases a rare phenomenon where the sea extends deep into the desert. It offers visitors breathtaking landscapes and a chance to explore a unique blend of marine and desert environments.<sup>55</sup>

These protected areas preserve Qatar's natural assets and serve as key attractions for eco-tourism, providing sustainable travel experiences that promote environmental awareness. Further efforts could include developing guided eco-trails through desert trails to showcase its unique topology, expanding mangrove restoration projects along Qatar's coastline to enhance biodiversity and coastal protection, and promoting sustainable marine tourism activities such as snorkeling, kayaking, and whale shark watching in areas like Khor Al Adaid. Additionally, hosting targeted eco-tourism workshops to educate guides and operators on sustainable practices and investing in carbon offset initiatives tied to tourist activities, such as tree-planting programs within reserves, can bolster Qatar's status as a leader in nature-based tourism. By incorporating NbS into its tourism strategy, Qatar strengthens its appeal to environmentally conscious visitors while protecting its ecosystems for future generations.



<sup>55</sup> Qatar e-Nature. "Nature Reserves." Accessed November 11, 2024. <https://www.enature.qa/en/nature-reserves/>

# CULTURAL HERITAGE AND ECO-TOURISM

Cultural heritage and eco-tourism are deeply interconnected, offering opportunities to promote sustainable tourism while preserving local traditions and historical landmarks. Integrating cultural heritage into eco-tourism is essential as it preserves unique traditions, fosters community involvement, and creates local economic opportunities. By linking culture with eco-tourism, destinations offer richer, authentic experiences while reducing the need for new tourist attractions that could increase carbon emissions, ultimately promoting sustainable, inclusive tourism. Qatar has taken significant steps to embed cultural heritage into its eco-tourism strategy, showcasing its forts, archaeological

sites, and traditional practices as part of a sustainable tourism model. By linking tourism with its heritage, Qatar aligns its tourism strategy with QNV 2030, aiming to promote a balance between tradition and modernity.

Incorporating traditional knowledge systems into tourism promotes sustainable tourism practices. The following examples illustrate how incorporating traditional knowledge systems into eco-tourism can promote sustainable tourism practices by drawing on historical methods of resource management and environmental adaptation:



- Qatar's ancient water harvesting techniques serve as practical examples of sustainable resource management in arid climates, demonstrating how early communities optimized limited water resources. By showcasing these practices through eco-tourism tours in areas such as the Water Awareness Museum in Kahramaa Park.<sup>54</sup> This way, visitors gain a deeper understanding of water conservation strategies that remain relevant today in the face of climate challenges.<sup>57</sup>

- Maritime heritage and traditional fishing methods provide lessons in sustainable fisheries management, emphasizing practices that balanced marine resource use with long-term conservation. Incorporating these techniques into marine tourism experiences, such as snorkeling, fishing or dolphin-watching tours, fosters a deeper appreciation for the relationship between local culture and marine conservation efforts.<sup>58</sup> This was further reinforced by Dr. Wong in QNDCC 2024 on eco-tourism as an agent to strengthen the connection between local communities and marine ecosystems, fostering sustainable tourism practices.<sup>59</sup>

- Desert living practices exemplify how early communities adapted to harsh environments through sustainable land-use techniques. Tours in Sealine and Al Nigyan can highlight how these

communities built resilient lifestyles by conserving vegetation and managing natural resources, offering valuable lessons for modern sustainable tourism.<sup>60</sup>

Cultural heritage sites play a pivotal role in community-based tourism by channeling tourism revenue into the preservation of historical landmarks. This sustainable approach safeguards Qatar's rich cultural heritage and ensures that the benefits of tourism are shared with local communities, promoting employment and economic growth. Ms. Bouthayna Baltaji emphasized in the QNDCC 2024 the critical need for equitable distribution of tourism revenues, ensuring they are reinvested into local communities to support long-term environmental and economic development.

Listed below are key cultural heritage sites in Qatar that contribute to sustainable tourism by fostering a deeper connection with visitors, showcasing the nation's historical legacy, and ensuring the longevity of infrastructure. This model enables the generation of tourism revenue without the need for investments in high-carbon-emission activities, reinforcing Qatar's commitment to sustainable development.

## KEY CULTURAL HERITAGE SITES AND FORTS IN QATAR

**1. Al Zubarah Fort:** Al Zubarah Fort, a UNESCO World Heritage Site, offers an immersive glimpse into Qatar's past.<sup>61</sup> Visitors learn about ancient water management systems and the significance of the fort as a center for pearl trading. Its integration into eco-tourism promotes both cultural preservation and environmental sustainability.

**2. Murwab Fort and Al Wajba Fort:** These forts represent Qatar's architectural evolution and military history.<sup>62</sup> They offer visitors guided tours and exhibitions that highlight traditional craftsmanship and defensive strategies, fostering a deeper appreciation for Qatar's strategic past.

**3. Umm Salal Muhammad Fort and Al Rakayat Fort:** These forts reflect Qatar's rural and defensive heritage, providing insight into the lifestyles of early settlers.<sup>63</sup> They are also platforms for educational tourism, promoting sustainable conservation by involving local communities in preservation efforts.

**4. Katara Cultural Village:** Katara Cultural Village serves as a hub for eco-friendly events and cultural experiences, blending modern sustainability practices with traditional Qatari arts. Ms. Bouthayna Baltaji emphasizes that Katara encourages visitors to engage with local traditions while promoting environmental awareness, making it a central element in Qatar's eco-tourism strategy.<sup>64</sup>

**5. Al Shaqab:** Al Shaqab is a state-of-the-art equestrian center that celebrates Qatar's rich equestrian heritage while promoting sustainable practices.<sup>65</sup> It offers visitors a unique tourism experience through guided tours, horse shows, and educational programs on horse breeding, training, and care. By blending tradition with innovation, Al Shaqab enhances cultural appreciation within Qatar's tourism sector.



<sup>54</sup> Water Museums Network. "Kahramaa Water Awareness Park." Accessed November 11, 2024. <https://www.watermuseums.net/network/kahramaa-water-awareness-park/>

<sup>55</sup> Water Harvesting in the Middle East. Water Harvesting in the Middle East. Accessed November 11, 2024. [https://www.researchgate.net/publication/292725885\\_Water-harvesting\\_experience\\_in\\_the\\_Arab\\_region](https://www.researchgate.net/publication/292725885_Water-harvesting_experience_in_the_Arab_region)

<sup>56</sup> Visit Qatar. "Fishing in Qatar." Accessed November 11, 2024. <https://www.visitqatar.qa/en/it/en/things-to-do/activities/fishing>

<sup>57</sup> Wong, John. Remarks at the panel "Eco-Tourism - Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2nd, 2024.

<sup>58</sup> The Peninsula Qatar. "Qatar Tourism Enhances Desert Experiences for Residents and International Visitors." December 21, 2023. <https://thepeninsulaqatar.com/article/21/12/2023/qatar-tourism-enhances-desert-experiences-for-residents-and-international-visitors>

<sup>61</sup> Qatar Museums. "Al Zubarah." Qatar Museums. Accessed October 30, 2024. <https://www.qm.org.qa/en/visit/al-zubarah-archaeological-site/>

<sup>62</sup> Qatar Museums. "Murwab Archaeological Site." Qatar Museums. Accessed October 30, 2024. <https://www.qm.org.qa/en/visit/murwab-archaeological-site/>

<sup>63</sup> Qatar Museums. "Umm Salal Muhammad Fort and Al Rakayat Fort." Qatar Museums. Accessed October 30, 2024. <https://www.qm.org.qa/en/visit/umm-salal-mohammed-fort/>

<sup>64</sup> Baltaji, Bouthayna M. Remarks on the panel "Eco-Tourism - Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2, 2024.

<sup>65</sup> Al Shaqab. "Al Shaqab Revives Equestrian Heritage at Darb Al Saai." Published December 14, 2023. <https://www.alshaqab.com/media/news/al-shaqab-revives-equestrian-heritage-darb-al-saai>

# CHALLENGES AND OPPORTUNITIES FOR ECO-TOURISM

## CHALLENGES IN ECO-TOURISM

While eco-tourism offers significant opportunities for sustainable development, it also presents challenges that must be addressed to ensure long-term viability. Unregulated tourism can lead to environmental degradation, undermining the natural habitats that attract visitors in the first place. Additionally, over-tourism can strain natural resources and diminish the quality of visitor experiences. Qatar's tourism sector also faces external pressures,

such as the impacts of climate change, which threaten biodiversity and ecosystem stability. Ensuring accessibility, attracting investment, and balancing economic growth with conservation are critical to achieving sustainable tourism. This section explores the key challenges Qatar must navigate to maintain eco-tourism growth while safeguarding its environment and cultural heritage.

<p><b>1</b></p>	<p><b>2</b></p>	<p><b>3</b></p>
<p><b>Environmental Degradation and Habitat Loss</b></p> <p>Poorly managed tourism can result in habitat destruction and pollution, undermining the ecosystems that attract visitors. Protecting eco-sensitive areas such as Al Reem Biosphere Reserve requires robust visitor management systems. Dr. John Wong stressed the importance of environmental stewardship to ensure tourism growth does not compromise natural resources.<sup>66</sup></p>	<p><b>Over-Tourism and Resource Strain</b></p> <p>Over-tourism can lead to crowding and overuse of natural resources, reducing the quality of visitor experiences. Qatar's hotel-based visitor dispersion model, as noted by Mr. Berthold Trenkel, helps distribute tourists across multiple sites, mitigating the environmental strain seen in other popular destinations like Barcelona.<sup>67</sup> However, continued growth necessitates careful monitoring to prevent negative impacts.</p>	<p><b>Impact of Climate Change on Eco-Tourism Sites</b></p> <p>Rising sea levels, coral bleaching, and extreme heat pose significant challenges to eco-tourism. Dr. Hitmi Al-Hitmi emphasizes the need for adaptive measures—such as promoting indoor cultural experiences during summer months and investing in climate-controlled environments—to sustain tourism year-round.<sup>68</sup></p>
<p><b>4</b></p>	<p><b>5</b></p>	<p><b>6</b></p>
<p><b>Accessibility and Visitor Engagement Challenges</b></p> <p>Limited awareness and accessibility hinder Qatar's eco-tourism potential. Ms. Bouthayna Baltaji stresses the importance of improved marketing strategies and international partnerships to attract eco-conscious travelers and promote Qatar's unique offerings.<sup>69</sup></p>	<p><b>Attracting Investment and Ensuring Financial Viability</b></p> <p>Securing private investment in eco-tourism projects remains a challenge. Ms. Bouthayna Baltaji suggests that developing local economic models to support eco-tourism infrastructure and heritage sites is essential for financial sustainability.<sup>70</sup></p>	<p><b>Balancing Conservation with Economic Growth</b></p> <p>Aligning economic growth with environmental conservation requires a delicate balance. Prof. Dr. Heinz-Dieter Quack emphasizes that stakeholders must adopt strategies that ensure tourism growth does not undermine natural ecosystems.<sup>71</sup></p>

## OPPORTUNITIES IN ECO-TOURISM

Eco-tourism is gaining prominence worldwide as travelers increasingly seek meaningful, sustainable travel experiences. This shift towards low-impact tourism offers unique opportunities for countries like Qatar to position themselves as leaders in eco-tourism. Beyond promoting environmental consciousness, eco-tourism aligns with national priorities for sustainability, climate resilience, and economic diversification.

By integrating nature-based solutions, cultural heritage, and community involvement, Qatar can create an eco-tourism model that offers both environmental and economic benefits. This following explores key opportunities within Qatar's eco-tourism sector, focusing on sustainable experiences, climate resilience, community empowerment, and resource-efficient practices, all enhanced by smart technology.



### 1. Unique, Low-Impact Tourism Experiences:

The demand for exclusive eco-tourism activities continues to grow as travelers seek immersive experiences that minimize environmental impact. Dr. Hitmi Al-Hitmi highlights that creating "bucket-list" experiences in Qatar, such as whale shark tours and desert safaris, can position the country as a leading eco-tourism destination.<sup>72</sup> These offerings also foster emotional connections with nature, encouraging visitors to become environmental advocates after their trip.

### 2. Climate Resilience through Nature-Based Solutions (NbS):

Eco-tourism can advance nature-based solutions that mitigate climate impacts. Qatar's mangrove restoration projects exemplify how tourism can support biodiversity while enhancing coastal protection. Globally, NbS initiatives—such as wetland conservation in Germany—demonstrate that tourism can contribute to carbon sequestration and climate resilience.

### 3. Leveraging Cultural Heritage for Sustainable Tourism:

Ms. Bouthayna Baltaji emphasized that integrating cultural practices into eco-tourism adds value to visitor experiences while promoting sustainable tourism.<sup>73</sup> Qatar's Al Zubarah Archaeological Site offers unique insights into traditional desert living, creating an opportunity to link historical practices with climate adaptation strategies.

### 4. Community Empowerment and Economic Diversification:

Involving local communities in eco-tourism initiatives fosters environmental stewardship and creates sustainable livelihoods. Ms. Bouthayna Baltaji<sup>74</sup> noted that distributing the economic

benefits of tourism equitably ensures long-term sustainability by encouraging community engagement in conservation efforts.

### 5. Circular Economy and Resource Efficiency in Tourism:

Circular economy principles—such as the coastal trash room project—help reduce waste while generating revenue through eco-friendly initiatives. As Ms. Bouthayna Baltaji explained, such practices support sustainable tourism while addressing environmental challenges.<sup>75</sup>

### 6. Technology-Enhanced Visitor Engagement:

Qatar uses smart visitor management systems to monitor tourist movements and reduce environmental disturbances. Digital platforms enrich visitor experiences by offering virtual tours and real-time updates on ecosystem conservation efforts, ensuring tourism remains sustainable even during peak seasons.

### 7. Funding Research and Development for Sustainable Tourism:

Investing in research can drive innovative solutions to challenges in Qatar's eco-tourism sector. Supporting studies and innovations on ecosystem restoration, cultural preservation, and climate resilience ensures data-driven improvements while protecting natural and cultural assets.

### 8. GCC Cooperation for Unique Experiences:

Collaborative eco-tourism initiatives within the GCC can create a network of unique GCC experiences, encouraging tourists to explore multiple destinations and extend their stays. This synergy promotes regional unity, economic growth, and positions the GCC as a distinctive eco-tourism hub.

<sup>66</sup> Baltaji, Bouthayna M. Remarks on the panel "Eco-Tourism – Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2, 2024.

<sup>67</sup> Trenkel, Berthold remarks on the panel "Eco-Tourism – Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2nd, 2024.

<sup>68</sup> Al-Hitmi, Hitmi remarks on the panel "Eco-Tourism – Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2nd, 2024.

<sup>69</sup> Baltaji, Bouthayna M. Remarks on the panel "Eco-Tourism – Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2, 2024.

<sup>70</sup> Baltaji, Bouthayna M. Remarks on the panel "Eco-Tourism – Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2, 2024.

<sup>71</sup> Quack, Heinz-Dieter remarks on the panel "Eco-Tourism – Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2nd, 2024.

<sup>72</sup> Al-Hitmi, Hitmi remarks on the panel "Eco-Tourism – Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2nd, 2024.

<sup>73</sup> Baltaji, Bouthayna M. Remarks on the panel "Eco-Tourism – Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2, 2024.

<sup>74</sup> Baltaji, Bouthayna M. Remarks on the panel "Eco-Tourism – Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2, 2024.

<sup>75</sup> Baltaji, Bouthayna M. Remarks on the panel "Eco-Tourism – Nature-Based Solutions." Qatar National Dialogue for Climate Change, Doha, Qatar, October 2, 2024.

# CONCLUSION

Eco-tourism presents a promising model for balancing economic growth with environmental conservation, yet it comes with a set of significant challenges that must be addressed to ensure its long-term viability. Qatar, like many other destinations, faces the impacts of climate change, environmental degradation, and the need to balance tourism growth with conservation efforts. Rising sea levels, coral bleaching, and extreme temperatures threaten critical tourism assets, such as coral reefs and coastal ecosystems, while desert ecosystems are increasingly vulnerable to changing climatic conditions. Additionally, Qatar must manage the growing demand for tourism while maintaining a commitment to sustainability, which requires careful resource management, waste reduction, and climate-resilient infrastructure.

To mitigate these challenges, Qatar must focus on adaptive strategies, such as enhancing climate-controlled attractions and promoting cultural experiences that highlight the country's unique heritage. Emphasizing NbS will also be crucial. Coastal ecosystems, including mangroves and coral reefs, act as natural buffers against climate-related risks while also supporting biodiversity conservation. Similarly, desert ecosystems offer opportunities for sustainable eco-tourism activities that showcase Qatar's arid landscapes and native species, such as the Arabian oryx and sand gazelle. The integration of circular economy principles—such as resource efficiency and waste minimization—will be key to reducing eco-tourism's environmental footprint.

Despite these challenges, Qatar is uniquely positioned to capitalize on the opportunities eco-tourism offers, thanks to its strategic alignment with international frameworks like the Paris Agreement, CBD, and the SDGs. Through national initiatives such as the QNV 2030, the National Environment and Climate Change Strategy (NECCS), and the QNTSS, Qatar is firmly committed to eco-tourism as a central pillar of sustainable growth.

By building on global best practices, Qatar has developed innovative eco-tourism initiatives that emphasize marine conservation, desert preservation, and community engagement. Activities such as coral reef restoration, mangrove planting, and whale shark tours offer visitors enriching, environmentally conscious experiences. They also promote climate awareness and environmental stewardship. PPPs have played an instrumental role in accelerating these initiatives by facilitating the exchange of expertise and resources, enabling the development of sustainable tourism infrastructure aligned with conservation goals.

Qatar's rich cultural heritage further enhances its eco-tourism strategy, offering visitors immersive experiences that foster emotional connections with local traditions, architecture, and history. The preservation of iconic landmarks like Al Zubarah Fort and the promotion of traditional practices, such as fishing, demonstrate the harmony between cultural continuity and sustainable tourism. These efforts contribute to the long-term preservation of cultural assets while ensuring that tourism revenues benefit local communities through reinvestment in preservation and conservation efforts.

Looking ahead, Qatar has the potential to become a global leader in eco-tourism by addressing the challenges outlined above and leveraging its unique ecological and cultural assets. Achieving this goal requires robust strategy development focused on climate-resilient infrastructure, community engagement, and innovative visitor management systems. By developing strategic frameworks, Qatar can ensure eco-tourism growth is guided by sustainable principles that balance conservation with economic development. Additionally, fostering synergy with GCC countries, learning from nations with similar environmental challenges, and collaborating with partners across the Global South will enable Qatar to share knowledge, draw from successful experiences, and strengthen its eco-tourism offerings.

Qatar's eco-tourism initiatives—driven by conservation, collaboration, and cultural preservation—demonstrate the powerful role tourism can play in enhancing climate resilience and promoting sustainability. By continuing to align tourism growth with environmental goals, engaging in strategic partnerships, and learning from regional and global examples, Qatar will safeguard its natural and cultural heritage and foster economic diversification and community development. Through innovative strategy development and commitment, Qatar can ensure that its tourism sector remains resilient and beneficial to both the environment and local communities.

# ACKNOWLEDGMENT

The Ministry of Environment and Climate Change and Earthna extend their heartfelt gratitude to the German Embassy in Doha and the German Industry & Commerce Office Qatar (AHK Qatar) for their invaluable collaboration in making the 2024 QNDCC a success.

We are especially grateful to Qatar National Bank (QNB) Group as our Strategic Partner, DHL Express as our Logistics Partner, and the Al-Attiyah Foundation as our Knowledge Partner. Their support was integral to the success of this year's Dialogue.

Our deepest appreciation goes to the QNDCC event speakers, panelists, moderators, organizers, volunteers, and interns, whose efforts were pivotal in shaping this impactful event.

Finally, we thank the Strategy Hub team for their significant contributions to the development of this report and to Earthna and their leadership for their support.



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