

The Conflict Between Overtourism and Sustainable Tourism: A Comparative Analysis of Algeria and Spain Under Environmental and Social Pressures

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Abstract

This study aims to analyze the relationship between tourism development and environmental sustainability in Algeria and Spain in light of the growing environmental and social pressures on tourist destinations. It is based on the assumption that the Spanish experience—having witnessed high levels of environmental and social pressure as a result of overtourism—represents a model from which Algeria can benefit in order to avoid following the same trajectory during the development of its tourism sector. The research adopts a descriptive–analytical comparative approach, relying on international data and a critical review of specialized literature. The findings show that achieving sustainability in Algerian tourism requires open, participatory, and transparent governance, the development of mechanisms for regular monitoring of pressures on natural resources and local populations, as well as the adoption of proactive, data-driven policies, thereby ensuring a balance between economic growth, environmental protection, and quality of life.

Keywords: Overtourism, Sustainable Tourism, Environmental Pressures, Social Pressures, Governance, Spain, Algeria.

Introduction

Many countries seek to strengthen their tourism industries by leveraging their assets and adopting strategic plans that ensure the continuity of growth and enable them to confront challenges that hinder sustainability, such as economic and social instability, stagnation, and issues of environmental sustainability. Given the fundamental interconnection between tourism and the environment, this sector has significant potential to support local communities and generate positive environmental change. This importance has increased in the aftermath of the pressures caused by the global COVID-19 pandemic, making the separation between tourism growth and environmental sustainability impossible (Baloch et al., 2022).

The tourism sector experienced a remarkable recovery after the pandemic. The World Tourism Organization (UNWTO, 2024) indicated that the number of international arrivals reached approximately 1.4 billion tourists in 2024, an increase of about 11% compared to 2023, with projections rising to 1.8 billion tourists by 2030. Similarly, the World Travel and Tourism Council (WTTC, 2024) reported that the sector's contribution to global GDP amounted to about 9.5% in 2023, increasing to around 10% in 2024, and expected to reach 11.6% by 2030. However, this growth has been accompanied by a sharp escalation in environmental and social pressures in many leading tourist destinations, such as overcrowding, environmental degradation, traffic congestion, declining quality of life, as well as threats to local identity and culture (Koens et al., 2018; Seraphin et al., 2018; Wang et al., 2020).

The phenomenon of overtourism represents one of the most prominent manifestations of the imbalance between tourism activity and the carrying capacity of destinations. It leads to pressures that result in declining community satisfaction and the rise of rejection sentiments toward intensive tourism activities among local residents (Balliu & Zbucea, 2025). These negative impacts can be clearly observed when examining the Spanish experience, as one of the most notable cases in which continuous tourism expansion reflects the magnitude of pressures exerted on ecological and social systems. Rapid growth in tourism

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activity has led to tangible imbalances in coastal ecosystems and increased pressure on water resources and the local climate, highlighting the limits of destinations' carrying capacity (Sánchez-Teba et al., 2019; Campos et al., 2023; Arimany-Serrat & Gomez-Guillen, 2024).

In this context, Blázquez-Salom et al. (2023) presented an analytical approach explaining how unbalanced tourism growth patterns generate similar structural effects across Spanish destinations as a result of excessive reliance on mono-activity tourism. This dependence makes destinations more vulnerable to environmental and social shocks and underscores the need to restructure the tourism system toward an integrative sustainability model that balances economic competitiveness, the well-being of local populations, and environmental resilience.

As for Algeria, the situation still lacks sufficient research clarity due to the limited number of studies addressing the relationship between tourism growth and environmental and social pressures. Despite Algeria's possession of diverse natural and cultural tourism assets, tourism policies continue to focus on expanding tourism activity without being accompanied by precise mechanisms for managing sustainability and assessing environmental impacts.

In light of the lack of accurate quantitative data on resource consumption, carbon emissions, or the effects of tourism congestion on local ecosystems, the need emerges to draw on comparative experiences—particularly the Spanish experience, which is considered a prominent model in managing the transition from overtourism to sustainable tourism. This makes Spain a proactive reference that can be used to avoid the pitfalls of overtourism in emerging tourism contexts seeking to achieve a balance between development and sustainability. Based on this premise, the research problem is defined by the following central question:

How can Algeria, in the context of limited accurate quantitative data, benefit from the Spanish experience in adapting to the environmental and social impacts of overtourism in order to formulate a proactive approach toward a national model of sustainable tourism that balances the requirements of economic development with the preservation of ecosystems?

Literature Review

From Overtourism to Sustainable Tourism: A Lifeline for Tourist Destinations

Overtourism

In recent years, research interest in the phenomenon of overtourism has increased significantly in an effort to examine its various dimensions and analyze its economic, social, and environmental impacts, as it has evolved into a threat to the sustainability of tourist destinations and a growing source of concern within local communities (Milano et al., 2019; Almeida-García et al., 2021; Gorji et al., 2025). Overtourism is understood as the excessive impact of tourism activity on a destination, or parts of it, leading to a deterioration in the quality of life of local residents and/or damage to the quality of visitors' experiences. Peeters et al. (2018) further deepen this concept by describing overtourism as a condition in which the impact of tourism activity, at certain times and in specific locations, exceeds the destination's physical, environmental, social, economic, psychological, and/or political capacities, thereby threatening its sustainability.

Agyeiwaah (2020) argues that definitions of overtourism are still influenced by media discourse and emphasizes that the concept should encompass three main aspects: tourism operating beyond its sustainable capacity; representing irresponsible and unsustainable forms of tourism; and generating impacts that exceed the physical, environmental, social, economic, psychological, political, and institutional capacities of destinations. On the other hand, many studies agree on a set of factors underlying the emergence of overtourism, such as ease of cross-border travel, the increase in cruise tourism, technological developments enabling virtual tours and online booking, the spread of electronic review platforms and convenient travel applications, customized tourism products, successful promotional campaigns, excessive destination

marketing, as well as the positive image of destinations entrenched in tourists' perceptions (Seraphin & Gowreesunkar, 2017; Gowreesunkar & Seraphin, 2019).

As long as there is no consensus on the nature of the problem, conditions are unlikely to improve; tourism markets will continue to grow, and technology will likely persist in facilitating travel and reducing its cost (Dodds & Butler, 2019). The issue of overtourism does not lie solely in the number of tourists, but rather in the intertwined economic, social, and environmental impacts (Celata & Romano, 2022; Blázquez-Salom et al., 2023). Intense tourism flows lead to competition between residents and visitors over spaces, services, and resources, accompanied by congestion, pollution, rising living costs, and declining quality of life, all of which threaten destination sustainability (Peeters et al., 2018; Dodds & Butler, 2019; Agyeiwaah, 2020; Drápela, 2023).

Overtourism also contributes to the erosion of cultural identity and changes in social values due to differences in tourists' values and behaviors (Peeters et al., 2018; Gowreesunkar & Seraphin, 2019). As a result, negative perceptions toward tourists emerge among residents, accompanied by growing feelings of "tourism-phobia" and the rise of anti-tourism movements (Zerva et al., 2019; Gowreesunkar & Seraphin, 2019; Ramos & Mundet, 2021), which in turn negatively affect the destination's image among visitors. This situation reflects not only a planning crisis or weak resource management, but also a deeper imbalance in the philosophy of tourism development itself, which has long equated success with quantitative growth indicators rather than experience quality or resource sustainability. Hence arises the need to transition toward a more sustainable model that balances tourism returns with environmental and social carrying capacities.

Sustainable Tourism

Over the past decades, sustainable tourism has become a central focus in tourism studies and a broad research field that has attracted increasing and continuous attention from numerous scholars (McMinn, 1997; Butler, 1999; Janusza & Bajdor, 2013; Butowski, 2021; Akinci & Öksüz, 2022). Research in this area has been characterized by diverse themes and methodologies, as well as wide application across various geographical contexts, with nearly half of the studies published in the past five years, reflecting growing research momentum on the topic (Guo, Jiang, & Li, 2019).

The concept of sustainable tourism emerged as a direct response to the negative impacts of traditional tourism development patterns (Canavan, 2014). It did not gain its status as an official and widely recognized reference until 2005, when sustainable tourism was defined as "tourism that takes full account of its current and future economic, social, and environmental impacts, addressing the needs of visitors, the industry, the environment, and host communities" (UNEP & UNWTO, 2005). Capucho, Leitão, and Alves (2025) argue that the dynamic nature of this concept, its multidimensionality, and its linkage to sustainable practices have contributed to enhanced environmental protection, improved community well-being, economic benefits, and the preservation of cultural heritage.

Sustainable tourism is based on three interrelated dimensions—economic, environmental, and socio-cultural—which are expected to operate within an integrated framework that balances growth requirements with resource protection (Streimikiene et al., 2021; Punzo et al., 2022; Capucho et al., 2025). However, Mihalic (2020) notes that approaches seeking to achieve this balance through a narrow or superficial focus on the three pillars of sustainability alone have often failed to achieve their objectives, leading to the emergence of unsustainable tourism practices accompanied by excessive growth and tourism congestion in many destinations. This highlights the need to reassess the application of sustainable tourism principles in contexts of decline rather than growth (Canavan, 2014).

Despite decades of academic and practical debate on sustainable tourism, the challenge remains that, although it appears in principle to be a sound and applicable goal, it is difficult to achieve in practice (McMinn, 1997; Mihalic, 2016). This is due to the multiplicity of actors and conflicting interests accompanying tourism planning and implementation processes, making the establishment of sustainable tourism foundations dependent on institutional coordination and effective consensus among stakeholders

(Guo et al., 2019). Such coordination ensures balance among economic, social, cultural, and environmental dimensions, preserves natural resources, and enhances local community well-being, thereby contributing to the long-term attractiveness and sustainability of tourist destinations.

To overcome these challenges, Mihalic (2016) emphasized that implementing the Sustainable Responsible Tourism (SRT) model requires linking the theoretical concept of sustainability with responsible practical actions to ensure effective execution of the sustainability agenda. Mihalic (2016) presents this model as an integrated framework for a more comprehensive understanding of overtourism, focusing on quality of life and considering the current and future economic, social, cultural, and natural impacts of tourism, while responsibly engaging all destination stakeholders, including host communities, the tourism sector, visitors, and the social and political environment.

Destination carrying capacity is considered one of the fundamental mechanisms for achieving tourism sustainability and an important component of sustainable tourism development, as its measurement enables the identification of destination use limits and the regulation of constraints on tourist flows (Jovicic, 2014; Vandarakis et al., 2023). However, its quantitative measurement is not an easy task; the literature points to a scarcity of applied examples and the absence of a unified or agreed-upon methodology that would allow for comparable results (Candia, Pirlone, & Spadaro, 2018). Therefore, it is essential to develop practical tools for measuring tourism sustainability through a broad set of indicators, thereby enabling policymakers to assess existing instruments and design new policies aligned with sustainable development goals (Punzo, Trunfio, Castellano, & Buonocore, 2022). Accordingly, the effectiveness of governance responses depends on the adoption of comprehensive, proactive policies that account for the specificities of the local environment, rather than merely ad hoc measures (Gorji et al., 2025).

Methodology

The study adopted a descriptive–analytical approach with a comparative orientation, aiming to understand the environmental and social pressures resulting from tourism activity in both Algeria and Spain, and to analyze the mechanisms for adapting to these pressures. The two cases were selected to represent different models of tourism development: Algeria as an emerging destination, and Spain as a mature destination that has faced the challenges of overtourism. The analysis relied on reliable secondary data issued by international organizations such as the World Tourism Organization (UNWTO), the Organisation for Economic Co-operation and Development (OECD), and the World Travel and Tourism Council (WTTC), in addition to reports from United Nations programs. The study employed a combination of qualitative and quantitative analysis to assess a set of environmental indicators (water and energy consumption, carbon footprint, and waste management) and social indicators (resident satisfaction, perceptions of tourism impacts, and levels of social equity). Despite the limited availability of data in the Algerian case, the comparative method enabled the extrapolation of lessons learned from the Spanish experience to the local context, allowing for the identification of gaps in environmental governance and the anticipation of possible solutions for building a national strategy for sustainable tourism.

Comparative Analysis Between the Cases of Spain and Algeria

Spain: A Model for the Transition from Overtourism to Sustainable Tourism

Tourism constitutes one of the main pillars of the Spanish economy, with the country ranking among the world's leading tourist destinations in terms of international visitor flows. According to a report by the National Statistics Institute (INE, 2025), the sector has maintained its growth trajectory, with Spain receiving approximately 66.8 million international tourists by August 2025, recording an increase of 3.9% compared to the same period of the previous year. In this context, estimates by the World Travel and Tourism Council (WTTC, 2025) project that the total number of tourists will reach 97 million by the end of the year. In terms of financial performance, total tourism expenditure amounted to €92.4 billion by August, with expectations that international tourist spending will reach €113.2 billion by year-end, at an annual growth rate of 5.7%.

Tourism and Environmental and Social Pressures in Spain

Shifts in tourism transport patterns in Spain reveal a clear imbalance in the distribution of tourist flows across different modes of transport. According to data from the Spanish National Statistics Institute (INE, 2025), air transport continues to dominate tourist flows, receiving around 8.6 million out of 11.25 million international tourists in August, with a growth rate of 4.85%. However, this dominance raises increasing environmental concerns, as air transport is considered the largest source of the tourism carbon footprint in Spain (Campos et al., 2023). In contrast, rail transport recorded a notable growth of 49.87%, compared to 23.47% for maritime transport, while road transport declined by 7.34%. This reflects a structural imbalance in tourism mobility patterns that threatens destination sustainability.

Barcelona represents a clear example of the intensity of environmental impacts from tourism activity in major Spanish cities. The carbon footprint of tourism in the city is estimated at approximately 9.6 million tons of CO₂eq annually, equivalent to 96.9 kg per visitor per day (Rico et al., 2019). Tourist accommodation constitutes the primary source of emissions, accounting for 75.6%, due to energy consumption for heating, air conditioning, restaurants, swimming pools, and laundry services. Florido-Benítez (2024) further confirms that Spain faces increasing risks related to long-term water security, for both local residents and tourists alike, necessitating the adoption of more integrative and sustainable policies.

Consequently, the strength of tourism in Spain is no longer measured solely by the number of visitors—despite the significant contribution of these figures to the national economy—but rather by the urgent need for a deeper vision that redefines tourism within a framework based on quality, competitiveness, innovation, resource sustainability, and social value (López-Sánchez & Pulido-Fernández, 2014; Moreno-Izquierdo et al., 2018). Nevertheless, this desired transition toward a sustainable model faces major challenges.

A study by Almeida-García et al. (2023) revealed profound impacts of unmanaged tourism growth in the historic center of Málaga. Since 2013, the area has experienced marked population displacement due to the intensive expansion of tourist apartments. The resident population declined by 10.1% (1,559 inhabitants), reaching 13,874 residents in 2018, as a result of rising real estate pressures and living costs. The study also showed an excessive concentration of tourism supply within an area not exceeding 1.1 km², which accounts for 39.6% of the city's establishments, including 46 hotels (11,843 beds), 1,085 tourist apartments, and approximately 500 restaurants and cafés, while receiving 1.4 million overnight tourists and 44.4 million visitors in 2019. This has exacerbated urban displacement manifested in rising housing prices and the decline of traditional commercial activities and cultural heritage, transforming the historic center into a predominantly tourist-oriented space at the expense of local residence and community stability.

In recent years, feelings and manifestations of public opposition to tourism activities have expanded significantly, becoming a defining feature of the social landscape in a growing number of Spanish cities. Barcelona is among the most prominent examples of this phenomenon. After decades of rapid tourism growth, signs of what is now termed “tourism-phobia” have emerged (González-Reverté, 2022; Ramos & Mundet, 2021), expressing social rejection of overtourism due to destinations exceeding their carrying capacity and the deterioration of residents' quality of life. Similarly, the area of Alcúdia on the island of Mallorca represents another case reflecting the consequences of overtourism: approximately 65% of its residents believe that the destination suffers from excessive overcrowding, negatively affecting their perceptions of quality of life, while 15% report growing feelings of social withdrawal, and 35% support reducing tourism activity during peak seasons (García-Buades, García-Sastre, & Alemany-Hormaeche, 2022).

The persistence of tourism pressures in Spanish destinations has reshaped local residents' concept of quality of life, posing a threat to social cohesion and weakening their sense of belonging (Sánchez-Teba et al., 2019; García-Buades et al., 2022). However, this damage cannot be attributed solely to large numbers of tourists. The island of Lanzarote, located in the eastern part of the Canary Islands archipelago and covering approximately 846 square kilometers, offers an illustrative model of the intersection between tourism pressures and demographic change. Rapid growth in the local population has contributed to ecosystem

degradation, indicating that environmental harm is linked not only to tourist flows but also to local population density and declining awareness of the island's limits and carrying capacity (Carballo, León, & Carballo, 2019).

Another major negative outcome of overtourism is the decline in the aesthetic value of Spanish coastlines, particularly in Catalonia. An evaluation of 54 coastal sites showed that most Catalonian coastal areas were classified in the lowest categories of scenic quality (Class V), primarily due to unplanned urban and tourism expansion (Iglesias, Anfuso, Uterga, Arenas, & Williams, 2018).

Governance of Sustainable Tourism in Spain

In response to mounting environmental challenges, sustainable tourism governance has emerged as a key focus in Spain's Mediterranean regions, particularly Catalonia, the Balearic Islands, and Valencia. These regions have adopted proactive environmental policies, including the imposition of environmental tourism taxes, the activation of monitoring systems for water and energy consumption in accommodation facilities, and the establishment of carrying capacity limits during peak periods (Candia, Pirlone, & Spadaro, 2018). Studies emphasize that the effectiveness of these policies depends on the level of coordination among local actors and the extent to which environmental considerations are integrated into tourism planning and marketing.

In this context, the Spanish government is implementing the Sustainable Tourism Strategy: Vision 2030, which aims to strengthen social, economic, environmental, and territorial sustainability through a participatory approach involving the state, regions, and the private sector. The strategy seeks to transform tourism growth into qualitative and sustainable growth that preserves the sector's competitiveness and profitability, while ensuring fairness in the distribution of benefits and burdens between residents and visitors. Sánchez-Teba et al. (2019) highlight the necessity of incorporating local residents' well-being as a core element of sustainable tourism policies to balance the interests of host communities and visitors. García-Buades et al. (2022) further show that effective destination management and responsible tourist behavior are decisive factors in mitigating the negative social impacts of overtourism.

Spain has adopted a distinctive and innovative approach to making tourism more sustainable and environmentally friendly, grounded in a national vision for achieving carbon neutrality by 2050. It has implemented a wide range of environmental solutions and initiatives that combine energy transition with the redesign of tourism mobility and accommodation patterns. Key examples include:

- *Integration Of Renewable Energy and Recycling in Tourism Practices.*

The Spanish government has launched extensive reforms to promote clean energy consumption in tourism, including accelerating the integration of solar panels, wind turbines, and wave energy in tourism facilities, enforcing regulations requiring recycling, the use of local and seasonal products, and reducing waste generation, including plastic waste reduction policies, according to the SEGITTUR report (2022). A leading practical example is the Iberdrola–RIU agreement, which supplies 27 hotels with 100% green energy annually, enabling sustainable service for more than 11,000 rooms and avoiding the emission of 30,000 tons of CO₂—equivalent to planting approximately 300,000 trees—according to an Iberdrola statement (2022).

- *Green Infrastructure and the “Greenways” Project.*

This project is among the most successful field initiatives for repurposing abandoned infrastructure to serve eco-tourism. Spain has rehabilitated more than 2,500 km of disused railway lines into green trails for walking and cycling, aimed at improving access to natural spaces, reducing pressure on coastal destinations, and promoting sustainable mobility and eco-friendly recreational activities (García-Mayor et al., 2020). This initiative reflects what González-Reverté (2022) describes as a shift from quantitative tourism growth toward a qualitative model based on restoring balance between human activity and nature.

- *Low-Emission Transport as the Core of the Green Transition.*

Spain has adopted a comprehensive strategy to expand the use of electric trains powered by renewable energy, alongside incentive programs encouraging a shift from private vehicles and air travel to rail transport. This reduces the carbon footprint and supports the green transition in domestic mobility. Data published by Renfe (2025) indicate that more than 90% of the kilometers traveled by its trains are powered by electricity from renewable sources, reflecting sustained institutional commitment to environmental transformation. Campos et al. (2023) corroborate this trend, noting that reliance on rail transport has increased to approximately 49.87%, indicating a tangible shift toward less environmentally harmful mobility alternatives and contributing effectively to reducing the carbon footprint of domestic travel.

- *Real Estate Sustainability and Smart Hotels.*

The Spanish tourism real estate sector is moving toward more energy-efficient hotels through thermal insulation and smart systems for controlling lighting, heating, ventilation, and air conditioning, thereby reducing energy and water consumption and enhancing resource efficiency. For example, the Serras Barcelona Hotel implemented an integrated automation system using KNX technology to control all hotel rooms and common areas, along with smart management of HVAC systems, featuring touch panels for real-time consumption monitoring and preventive technical alerts (KNX Today, 2024). The *Ruta de Hoteles Eficientes* report issued by ITH & MITECO (2023) further confirms that a number of hotels in Madrid have adopted similar technologies, including smart control systems and real-time energy monitoring, reflecting a growing trend toward integrating sustainable building principles and energy efficiency within the Spanish hospitality sector.

Tourism in Algeria Between Development Ambitions and Environmental and Social Pressures

Algeria has pursued a national path toward sustainable development within the framework of the United Nations 2015 Agenda, through the National Action Plan for Sustainable Consumption and Production, which aims to achieve the 17 Sustainable Development Goals. In this context, Algeria launched in 2008 the Master Plan for Tourism Development (*SDAT 2025*) within the National Spatial Planning Scheme (*SNAT 2030*), with the objective of entrenching an authentic and sustainable tourism model that achieves a balance between social equity, economic efficiency, and environmental protection by 2030 (Ghidouche & Ghidouche, 2019). However, this ambition faces a set of environmental and social challenges that reveal the fragility of the national tourism system. These challenges are particularly evident in areas experiencing high tourism density during the summer season. For example, unregulated tourism activity has contributed to increased encroachment on sand dunes and coastal vegetation cover, leading to beach erosion and a decline in their natural capacity to protect against marine abrasion.

The case of Mostaganem Province provides a relevant illustration. It is considered one of the preferred destinations for domestic and foreign tourists due to its diverse natural, cultural, and historical assets. The province features a coastline extending approximately 124 kilometers, with 59 beaches open to visitors during the 2025 season. Findings from an early study by Taïbi (2016) indicate that Mostaganem alone receives nearly 11 million tourists annually. Amid a severe shortage of basic tourism structures and facilities, numerous large investment projects were launched, many of which were not adequately assessed in terms of environmental and spatial feasibility. New accommodation facilities were established in pristine areas and in close proximity to the coastline, including on sand dunes, in clear violation of the law protecting coastal areas, which prohibits construction within 300 meters of the shore. This has increased the vulnerability of coastal systems and exposed them to visible and physical degradation.

The Sablette tourist site on Mostaganem's western coast represents a vivid example. The area experiences significant overcrowding and rising levels of visual pollution due to unregulated urban sprawl among sand dunes. Sanitation problems further exacerbate the situation given the shortage of wastewater treatment

plants, intensifying environmental pressures on the local coastal system. A study by Mankou-Haddadi et al. (2021) confirms that coastal tourism activities in Algeria constitute one of the main sources of marine pollution. The Béjaïa area recorded the highest density of seabed litter in the Mediterranean, reaching approximately 58,998 items per hectare, with plastics accounting for about 88%. The study indicates that most of this waste originates from human activities of a recreational and tourism nature during the summer season, in addition to weak waste-management systems in coastal cities and the absence of effective environmental monitoring regimes.

These findings highlight a fundamental environmental impact of overtourism and growing pressures on coastal and marine systems, leading to declining coastal environmental quality and threatening the sustainability of tourist destinations. Ghidouche & Ghidouche (2019) further argue that Algeria's continued adoption of a quantity-driven tourism development model in coastal areas—coupled with weak adoption of sustainable, community-based approaches—will increase the fragility of these regions, accompanied by an expansion of “tourism-phobia” and the negative impacts of overtourism.

Tipaza provides another illustrative case. It is a distinctive destination combining rich cultural heritage with unique natural diversity, yet it is witnessing accelerated degradation of coastal ecosystems due to unregulated urban expansion and intense seasonal tourism pressure during peak periods. Khettab & Chabbi-Chemrouk (2017) show that such transformations have also been accompanied by the formation of negative resident awareness toward tourism and tourists, attributed mainly to overcrowding, traffic, and inappropriate behaviors by some visitors, including appearance and dress.

From another angle, Chebli et al. (2024) offer important insight into a key driver of overtourism dynamics: irresponsible tourist behaviors observed in Tassili n'Ajjer National Park in the Sahara, such as littering, damaging natural sites, and failure to respect environmental guidelines. These behaviors constitute early manifestations of excessive tourism pressure on ecosystems. High visitor density during peak periods leads to a marked increase in such behaviors, resulting in the degradation of natural resources and violations of the region's cultural and historical heritage, alongside rising tensions between visitors and local residents and growing difficulties in managing tourism activities within protected areas.

Results and Discussion

Given the geographical and environmental interconnectedness among Mediterranean countries, Algeria's coasts face worrying indicators similar to those observed on Spanish coasts—and these may become more severe in the near future. Concerning signs have begun to emerge, such as declining coastal landscape quality, decreasing ecological diversity, increasing risks related to marine organisms ingesting microplastic particles, accumulation of waste, and sanitation problems. This foreshadows degradation of Algeria's coastal areas, particularly in high-tourism-density regions such as Mostaganem, Tipaza, Béjaïa, and Oran.

Similar to what occurred in the Balearic Islands—located between the northern current flowing toward the Balearic Basin in the northwestern Mediterranean and the Mediterranean Strait of Algiers linking it to the Algerian Basin to the south—Algeria's coasts constitute a shared environmental unit that exhibits cross-border pollution transport characteristics and transboundary environmental pressures (Compa et al., 2022). In other words, the repercussions of pollution and overtourism in one area may naturally extend to the other.

In addition, weak waste-management mechanisms in many Algerian coastal municipalities exacerbate environmental pressures during peak tourism seasons, especially with the informal spread of private accommodation rentals during the summer. Limited wastewater-treatment infrastructure and the absence of effective solid-waste management programs amplify tourism's environmental footprint. Moreover, private road transport remains the most commonly used mode among domestic tourists, increasing pressure on ecosystems and worsening air pollution levels—particularly in coastal areas during the summer—while its effects persist throughout the year. By contrast, Spain relies more heavily on rail transport and continually seeks to expand its share within the tourism transport system, encouraging it as a less polluting and more environmentally sustainable option.

An analysis of the development of recreational fishing tourism within the “Taza” Marine Protected Area project in Jijel Province (Guedri et al., 2025) suggests that Algeria can replicate Spanish experiences that pioneered such models as a mechanism to reduce the impacts of coastal overtourism, which has generated severe environmental pressures in destinations such as Mallorca and Barcelona. Nevertheless, comparison between the Algerian and Spanish contexts reveals a clear divergence in the level of tourism-system responsiveness to environmental pressures. Yildirim et al. (2021) showed that tourism contributes to increased carbon emissions in low-income countries such as Algeria due to weak environmental policies and the absence of a shift toward sustainable tourism, while it contributes to emission reductions in developed countries such as Spain through stricter environmental standards and more effective green strategies. This conclusion reinforces the importance of firmly embedding the environmental dimension within Algerian tourism policies through participatory and institutional approaches inspired by sustainable European experiences.

Furthermore, environmental awareness among tourism actors and local communities is still emerging, which limits the effectiveness of the limited environmental initiatives launched over the past decade—particularly in ecologically sensitive coastal areas such as Tipaza, Annaba, and Mostaganem—amid the absence of a regular environmental monitoring system and a shortage of accurate data enabling the tracking of key indicators required for evidence-based measures to reduce the negative effects of overtourism and strengthen coastal-system sustainability.

Algerian tourist destinations remain at an early stage in integrating sustainability principles into their policies and development plans. Although official discourse has adopted the concept of “sustainable tourism,” the reality reveals limited implementation, primarily due to weak coordination between central and local bodies and the absence of an integrated environmental and tourism database. In this regard, Mankou-Haddadi et al. (2021) emphasize Algeria’s need to adopt integrated environmental management that moves beyond a quantity-oriented logic toward a quality-oriented logic focusing on added value, balancing the use of environmental, social, and economic resources within a responsible environmental approach that reduces pollution and preserves the attractiveness of natural sites.

In the same vein, the importance of strengthening community-based ecotourism in Algeria is highlighted. This approach is based on involving local residents in sustainable tourism management and activating environmental awareness, as an alternative pathway to reduce these pressures and ensure a balance between tourism attractiveness and the preservation of environmental and social systems (Ghidouche & Ghidouche, 2019; Chebli et al., 2024). It also helps shape tourist behavior through environmental education, legislation, and community participation, thereby enhancing the quality of the tourism experience and reducing manifestations of tourism-phobia.

Conclusion

What can be strongly affirmed is that the Spanish experience offers a promising model that can be adapted to the Algerian context—particularly through developing a preventive sustainability model based on early monitoring of environmental and social pressures and integrating sustainability standards into urban and tourism planning from its earliest stages. Its importance also lies in activating local governance by involving local communities in the management of coastal resources, adopting innovative financing mechanisms such as a “Green Fund for Sustainable Tourism,” and environmental taxes directed toward financing coastal protection projects, alongside legislation obliging hotels to apply energy-efficiency standards and reuse greywater.

Spain’s experience also provides an innovation ecosystem that could be replicated, such as hotels’ adoption of solar panels and biomass, the use of geothermal heating and cooling systems in coastal resorts, and smart energy-management applications that monitor consumption in real time—enhancing efficiency and reducing the carbon footprint. Based on this, Algeria appears to need an open, participatory, transparent, and effective governance model capable of ensuring coordination and cooperation among all stakeholders (Pulido-Fernández & Pulido-Fernández, 2019).

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