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The Undesired Impacts of Overtourism in the Island of Crete, Greece

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Abstract

The concept of overtourism has been appeared recently indicating that several popular tourism destinations host too many tourists having harmful impacts on them. The island of Crete, Greece consists of a popular global tourist destination hosting more than five mil. Of tourist every year while their number increases constantly. The undesired environmental, economic and social impacts of overtourism in Crete have been studied. The number of tourists, the number of overnight staying, the average days of staying, the tourism density and the tourism intensity have been evaluated. It has been found that the number of visitors in 2023 were 6,327,366 while they stayed in the island on average 5.43 days. The tourism density has been estimated at 4,120 bed-nights/km² while the tourism intensity at 55.63

bed-nights/resident. These values are higher than the EU and global average while the seasonality of tourism in the island intensifies the problem. It should be mentioned that the tourism infrastructure in Crete is gathered on the north coastline increasing the overcrowding in the main cities which are also located in the same area. The results indicate that the tourism industry in Crete is at high risk of overtourism and appropriate measures and policies are required for mitigating and preventing its undesired impacts. The study might be useful to local stakeholders of the tourism industry as well as to municipal and regional authorities who can intervene to protect the prosperous tourism industry in the island.

Keywords: Causes, Crete-Greece, Impacts, Overtourism, Tourism Density, Tourism Intensity

1. Introduction

Tourism industry nowadays grows rapidly worldwide. The island of Crete, Greece located in eastern Mediterranean basin is a popular global tourism destination hosting more than 5 mil. of tourists every year^[3]. Overtourism is a recent phenomenon which creates many undesired and harmful impacts in several popular tourism destinations threatening their tourism industry^[2, 3, 4, 5]. The growing number of visitors in Crete every year increase the pressures on the local societies, the historical and archeological monuments and the sensitive natural ecosystems of the island^[6, 7, 8]. Overtourism in Crete has many undesired environmental, economic and social impacts threatening the tourism industry and the prosperity of the local residents^[9, 10].

The aim of the current work is to study the impacts of overtourism in the island of Crete, Greece.

The structure of the text is as follows: After the literature survey a short description of the tourism industry in Crete and a preliminary evaluation of overtourism in the island are mentioned. In the following section the undesired impacts of overtourism in Crete are analyzed. The text ends with the discussion of the findings, the conclusions drawn and the citation of the references used.

The present work covers a gap regarding the impacts of overtourism in Crete while it is innovative since there are limited published studies on this issue focused on Crete. It could be useful to all stakeholders of the local tourism industry as well as to policy makers and to local authorities who should develop appropriate policies to mitigate and prevent the harmful impacts of overtourism in the island and its flourishing tourism industry.

2. Literature survey

The negative environmental, social and cultural impacts of overtourism in popular tourism destinations mainly in Mediterranean region have been studied^[2]. The author stated that overtourism increases water consumption, air pollution and and the production of wastes. The impacts are similar in nature despite the different locations. It also has negative effects in

the fragile natural ecosystems at various destinations. She also mentioned that overtourism increases the local food prices and the rentals of houses. Additionally, it causes housing shortages in destination areas. The overtourism, its implications and perspectives have been studied ^[3]. The authors stated that the development of new technologies and the low-cost airlines have increased the number of tourists worldwide who are expected to be around 2 billion by 2030 leading to growth in emerging and underdeveloped regions. They also mentioned that the increased number of tourists in several popular destinations have undesired and harmful environmental, social and cultural impacts. The sustainability of overtourism has been studied ^[11]. The author has developed a multidisciplinary approach of tourism including: a) the economic environment, b) the socio-political environment, and c) the ecological environment. She stated that the concept of under-tourism has not been studied extensively like the issue of overtourism. She also mentioned that, in general, overtourism means unsustainable tourism. Additionally, she analyzed the concepts of tourism capacity in a tourism destination, of tourismphobia, and of responsible tourism. The phenomenon of overtourism has been reviewed ^[4]. The authors stated that overtourism is the result of many parameters which together create a “tourism storm” in several destinations. They also mentioned that historically tourism industry is poorly managed while there are many difficulties in mitigating and preventing overtourism in the near future. The overtourism and tourismphobia have been studied ^[5]. The authors reviewing the existing literature stated that the concepts of overtourism and tourismphobia have emerged in the last few years. The concepts of overtourism and tourismphobia are usually associated with how tourism affects the spatial patterns, especially in urban areas. They also mentioned that many tourism destinations located in Europe express their concerns with the pressures caused by excess tourism in urban areas and cities. The concept of overtourism has been studied ^[6]. An old definition of tourism was mentioning that *“tourism will bring the greatest possible benefit to all the participants – travelers, the host population and the tourist business, without causing intolerable ecological and social damage”*. The author stated that *“overtourism describes destinations where locals and tourists feel that there are too many visitors and the quality of life of the locals and the quality of experience by the tourists has been deteriorated unacceptably”*. He also mentioned that there are many causes of overtourism in several destinations while the public authorities play an important role in managing tourism. The impacts of overtourism at city level have been examined ^[12]. The authors stated that the concept of overtourism is multidimensional and complex. They also mentioned that overtourism is not well conceptualized while its impacts are diverse, complex and multifaced. They believe that the concept of overtourism is related with the poor management of the negative tourism impacts. The overtourism in Europe has been analyzed ^[7]. The authors stated the most important indicators for measuring overtourism while a common set of indicators cannot be defined because of the complex causes and effects of overtourism. They also mentioned the multidimensional causes and the multiple economic, social and environmental impacts of overtourism analyzing the concept of carrying capacity in tourism destinations. Avoiding overtourism

requires custom-made policies in cooperation between destinations' stakeholders and policymakers. The problem of overtourism has been analyzed ^[13]. It is mentioned that tourism has many benefits beyond simple economic growth. There are several solutions to cope with overtourism which is a seasonal problem for a small number of destinations. There are ways to better manage tourism by promoting more off-season travel, limiting numbers where possible and having greater regulation within the industry. Encouraging more sustainable travel and finding solutions to reduce friction between residents and tourists could also have positive impacts. Promoting alternative, less-visited spots to redirect travelers may also offer some benefits. The prevention of overtourism has been analyzed ^[14]. Communities in popular destinations worldwide have expressed concerns over excess tourism on their doorstep. It is stated that radical measures have been taken in few destinations such as Venice, Barcelona and Amsterdam to cope with overtourism. The solutions to this problem must be tailor-made to the unique destination including its better management. Tourism degrowth is a remedy to overtourism although the local tourism stakeholders will not accept it easily. The economic performance of the tourism industry in Crete has been analyzed ^[8]. The authors stated that only half of the hotels in Crete use economic indicators to assess their performance. They also mentioned that their operating cost is in the range of 10-33 €/bed-night while their breakeven occupancy rate is at 38%. Their research clearly showed that large capacity hotels make systematic use of indicators as a management tool, set business goals, and methodically evaluate their performance. The overtourism in the island of Crete has been studied ^[9]. The author estimated the tourism density at 2,941 bed-nights per km² and the and tourism intensity at 38.6 bed-nights per resident in 2016. He also mentioned that the island of Crete is an overcrowded tourism destination while its tourism density and tourism intensity are above the EU and global average. The mitigation and compensation of CO₂ emissions due to international tourism in Crete have been studied ^[10]. The author stated that the majority of visitors to Crete arrive by aircrafts often from long distances. He estimated the carbon intensity of the Cretan tourism industry at 0.562 kgCO₂/€ which is in the same range of values reported for other EU countries. The phenomenon of overtourism has been studied ^[15]. The negative impacts of tourism are related with seasonally rising prices, decrease in service quality, longer queues, heavy pressure on carrying capacity, congestion, intensive traffic jam et cetera. The authors examined whether there is a consensus among tourism stakeholders regarding the definition of overtourism and its positive and negative impacts. They analyzed the answers of questionnaires from 54 participants. All of them agreed regarding the definition of overtourism while they emphasized the terms *“carrying capacity”* and *“decrease in quality of life”*. Some of the participants mentioned that overtourism might not be a problem since it generates higher incomes at destinations. The visitor-resident relations in destinations characterized by overtourism have been studied ^[16]. The authors stated that while almost all tourism destinations seek to increase the flow of tourists less attention is paid in balancing the relation among visitors and residents which is necessary to promote sustainable tourism. They also mentioned that policy makers should try to avoid deterioration of the tourists-residents' relations exceeding

the destination's social carrying capacity in order to make tourism more sustainable. Developing "resilience in tourism" and "exploring sustainable degrowth" are potential strategies for long-term tourism growth. The overtourism in European cities has been analyzed^[17]. The author stated that overtourism is always a matter of perceptions being a relative rather than an absolute phenomenon. Too many visitors in the same place may have negative economic, social and physical effects. He also mentioned that an answer to overtourism is the dispersal of tourists both in space and in time. Other strategies coping with overtourism are related with better understanding of the carrying capacity of cities, the flows of visitors and the behavior of different types of tourists. A digital response system for overtourism mitigation in Dubrovnik, Croatia has been studied^[18]. The authors stated that successful responses to overtourism are related with the tourism carrying capacity of cities. They also mentioned that the use of modern technologies including measuring and monitoring tourist flows and the carrying capacity in cities can assist in the minimization of the negative effects of overtourism. The better allocation and management of public space, public facilities, and public infrastructure between inhabitants and visitors is necessary for the sustainability of these desirable destinations. The development of innovative and sustainable practices in tourism in Algrave, Portugal has been described^[19]. The authors stated that Algrave region has promoted tourism sustainability based on three pillars, environmental, economic and social. The region has improved the water management and has developed sustainable agricultural practices supporting the cultivation of carob tree. They also mentioned that Algrave tries to promote tourism all over the year and to redevelop the sea front focusing on urban planning. By adopting sustainable tourism practices, the Algarve region has protected and preserved its natural assets, which benefits the environment and attracts tourists who seek eco-friendly destinations. The reasons and the consequences of overtourism in contemporary cities have been investigated^[20]. Overtourism is often observable in the urban environment due to the rapid growth of the popularity of city tourism. The author stated that the growing number of tourists, the availability of cheap flights and mistakes in cities' management contribute to overtourism. Additional causes of overtourism are the high popularity of city tourism and the shift from 3S (Sea, Sun and Sand) tourism to 3E (Education, Experience and Entertainment) tourism.

3. The tourism Industry in Crete

Crete, the largest island in Greece, is a key destination for global tourism, attracting millions of visitors annually. Its tourism industry is vital to both the local and national economies, offering a blend of rich cultural history, breathtaking landscapes, and diverse recreational opportunities. One of the major draws of Crete is its extensive history. The island is home to some of the world's most significant archaeological sites, including the ancient Minoan civilization's palace of Knossos, which dates back to 1900 BC. This deep connection to the past, combined with picturesque Venetian harbors and Byzantine monasteries, offers visitors a unique cultural experience that sets Crete apart from other destinations. Crete also boasts a diverse and stunning natural environment. Its coastline stretches over 1,000 kilometers, offering an array of pristine beaches, crystal-clear waters, and dramatic cliffs. The interior of the

island, with its rugged mountain ranges and gorges such as Samaria, provides excellent opportunities for hiking and eco-tourism. This variety of landscapes allows Crete to cater to all types of tourists, from those seeking relaxation by the sea to adventure enthusiasts. The island's tourism industry has also embraced sustainable tourism. Many local businesses promote eco-friendly practices, such as using locally sourced food, reducing plastic use, and supporting small, family-owned hotels and restaurants. This trend towards sustainability helps preserve the island's natural beauty and ensures that future generations of tourists can enjoy Crete's offerings. However, despite its success, Crete faces challenges in managing the growing number of tourists while protecting its fragile environment and local culture. Over-tourism, particularly in the peak summer months, can strain local resources and impact the island's ecosystems. The tourism industry in Crete plays a critical role in the island's development. Balancing growth with sustainability is key to ensuring that Crete remains a world-class destination for the near future. The tourism accommodations in Crete are presented in Table 1.

Table 1: Tourism accommodations in Crete (2021)

Number of hotels	1,644
Number of rooms	98,547
Number of beds	193,928
Beds/km ²	23.26
Beds/resident	0.31
%, accommodations in Crete to accommodations in Greece	22.1%

Source: ^[8, 1], own estimations

4. Evaluating overtourism in Crete

The overtourism in Crete is evaluated and assessed estimating the tourism density and tourism intensity in the previous years. Due to Covid-19 pandemic data from 2020 and 2021 are not included. The increasing number of tourists in 2022 indicates that the tourism industry in Crete has recovered from the pandemic in 2022 earlier than in other tourism destinations. The estimated values are higher than the EU and global average presented in Table 2.

Table 2: Overview of tourism density and tourism intensity in EU NUTS 2 regions

	Tourism density (bed-nights/km ²)	Tourism intensity (bed-nights/inhabitant)
Global average	181.8	3.31
Global min	6.4	0.00013
Global max	725,900	26.65
EU 28 average	629.3	5.77
EU28 min	26.1	0.34
EU28 max	37,300	70,73

Source: ^[7]

It should be noted that the tourism infrastructure in Crete is unequally developed on the north coastline of the island while the inland and the south coastline are poorly developed. However, in our estimations the total residents and the total surface of the island have been used. The majority of visitors in Crete are arriving with aircrafts often from long distances while less of them are arriving by sea boats and cruise ships. The number of Airbnb beds are increasing every year in Crete competing the conventional hotel accommodations. Although fifty years ago agriculture was the main source of income in Crete nowadays tourism

industry generates more than 50% of the regional income in the island. The causes of overtourism are presented in Table 3. The tourism density and the tourism intensity in Crete are presented in Table 4 while the change of tourism density and intensity over time in Table 5.

The most relevant indicators for assessing overtourism are:

1. Tourism density (bed-nights per km²) and tourism intensity (bed-nights per resident),
2. The share of Airbnb bed capacity of the combined Airbnb and booking.com bed capacity,
3. The share of tourism in regional Gross Domestic Product (GDP),
4. Air travel intensity (arrivals by air divided by number of residents) and
5. Closeness to airport, cruise ports and UNESCO World Heritage Sites.

Table 3: Causes of overtourism

1	The accessibility and affordability of travel
2	The traditional policy focusing on promoting the number of tourists
3	Increase in international arrivals
4	The urbanization pressure
5	The gentrification and the increasing prices in city centers and new neighborhoods
6	The proliferation of unregulated tourist accommodation
7	The concentration of large groups of tourists
8	The decreasing cost of travelling
9	The sharing economy platforms
10	The fact that the use of public spaces is free for tourists
11	The strong seasonality
12	The reduced cost and travel time for transportation

Source: [7]

Table 4: Tourism density and intensity in Crete

Surface of Crete	8,336 Km ²
Residents in Crete (Census 2021)	617,360 residents
Arrivals in Crete in 2023	6,327,366 tourists
%, arrivals in Crete to arrivals in Greece in 2023	17.7 %
%, increase in arrivals 2023/2022	7.2%
Overnight staying in Crete in 2023	34,342,891 (bed-nights)
%, overnight staying in Crete to overnight staying in Greece in 2023	23.3 %
%, increase in overnight staying 2023/2022	7.2%
Average days of staying in Crete in 2023	5.43 days
Tourism density in 2023	4,120 (bed-nights/km ²)
Tourism intensity in 2023	55.63 (bed-nights/resident)

Source: Own estimations, [1, 21, 22]

Table 5: Change of tourism density and intensity over time in Crete

Year	Arrivals	Overnight staying (days)	Tourism density (bed-nights/km ²)	Tourism intensity (bed-nights/resident)
2016	4,902,194		3,013	36.80
2019	5,033,786	5.56	3,354	45.29
2022	5,905,137	5.42	3,842	51.87
2023	6,327,366	5.43	4,120	55.63

Source: [8, 9, 21, 22, 1]

5. The Undesired Impacts of Overtourism in Crete, Greece

Crete, the largest and most populous of the Greek islands, is

renowned for its stunning landscapes, rich history, and unique culture. From ancient archaeological sites like the Palace of Knossos to picturesque beaches such as Elafonissi and Balos, Crete attracts millions of tourists each year. Tourism is an essential part of the island's economy, providing jobs and income to thousands of residents. However, the rapid growth in the number of visitors over the past few decades has brought with it a range of challenges, many of which can be attributed to overtourism.

Overtourism in Crete, as in many other global destinations, has led to environmental degradation, disruptions in local communities, and the commodification of cultural heritage, among other negative effects. This essay explores these undesired impacts, drawing attention to the urgent need for more sustainable tourism practices on the island.

5.1 Environmental Degradation

One of the most significant and visible effects of overtourism in Crete is environmental degradation. The island's diverse ecosystems, which include coastal areas, mountains, gorges, and forests, have been severely impacted by the uncontrolled influx of tourists.

Crete's beaches are among the island's most popular attractions, yet they are also some of the most vulnerable to the pressures of overtourism. Famous beaches such as Elafonissi, Falasarna and Balos are visited by thousands of tourists each day during the summer months. This constant flow of visitors has caused significant wear and tear on the natural environment. Sand dunes and coastal vegetation are often trampled, and the beach ecosystems are disrupted. In some areas, littering has become a serious problem, with plastic waste and other forms of pollution damaging marine life and tarnishing the island's pristine landscapes.

The island's famous gorges, such as the Samaria Gorge, which is a major hiking destination, are also suffering from overuse. Excessive foot traffic leads to erosion, which in turn can disrupt the flora and fauna that thrive in these areas. The Samaria Gorge, for example, sees thousands of hikers each year, and the constant presence of tourists has led to the deterioration of the trails, threatening the biodiversity of this protected area. While tourism authorities have attempted to manage the number of visitors by imposing entrance fees and limiting the hours of access, the damage caused by overtourism remains a growing concern.

Crete's water resources are also under increasing strain due to overtourism. The island's arid climate means that water is a precious commodity, especially during the hot summer months when tourist numbers peak. The increased demand for water from hotels, resorts, and restaurants has put pressure on the island's water supply, leading to over-extraction of groundwater. This has caused problems such as water shortages for local residents and desertification in some areas. Furthermore, waste generated by the tourism industry, including untreated sewage and chemical runoff from agricultural practices catering to tourism demands, threatens Crete's rivers, lakes, and coastal waters, resulting in long-term ecological damage.

5.2 Negative Impacts on Local Communities

While tourism is a crucial economic driver for Crete, overtourism has had a range of undesired effects on local communities, particularly in terms of housing affordability, quality of life, and the erosion of traditional lifestyles.

In recent years, the rapid growth of short-term rental platforms like Airbnb has dramatically altered the housing

market in Crete's popular tourist areas. As more property owners convert their homes into vacation rentals, local residents are finding it increasingly difficult to afford housing. This phenomenon is especially prevalent in cities like Chania and Heraklion, where the influx of tourists has driven up rent prices and property values, making it nearly impossible for young Cretans to buy or rent homes in their own communities. This is leading to the gradual displacement of local residents from their traditional neighborhoods, as tourist accommodations take precedence over long-term housing.

The shift towards a tourism-oriented economy has also changed the fabric of local communities. Many Cretans, particularly in tourist-heavy areas, now rely on tourism for their livelihoods, which has led to the development of businesses and services that primarily cater to tourists rather than locals. This can result in the commercialization of local culture, where traditional businesses, such as family-owned tavernas and craft shops, are replaced by souvenir stores and fast-food chains aimed at meeting the demands of mass tourism. As a result, the island's traditional way of life is under threat, with younger generations being drawn into the tourism sector rather than preserving their cultural heritage and traditional occupations such as farming and fishing.

The influx of tourists also puts immense pressure on local infrastructure. During the peak tourist season, roads, public transportation, and other essential services are often overwhelmed by the sheer number of visitors. Traffic congestion is a major issue, particularly in urban centers like Chania and Heraklion, where narrow streets and limited parking exacerbate the problem. Locals often find themselves competing with tourists for space on public transport or even for access to local beaches and recreational areas, which can cause resentment and frustration.

5.3 Cultural Heritage at Risk

Crete is home to a rich cultural and historical heritage that dates back thousands of years. The island's archaeological sites, including the famous Palace of Knossos, are major tourist attractions, drawing visitors from around the world who are eager to explore the remnants of the ancient Minoan civilization. However, overtourism threatens the preservation of these invaluable cultural assets.

The Palace of Knossos, which is one of Greece's most visited archaeological sites, is particularly vulnerable to the effects of overtourism. The large number of tourists visiting the site each day contributes to the wear and tear of the ancient structures, some of which are already in a fragile state. While efforts have been made to manage visitor numbers and implement preservation measures, the site remains at risk of deterioration due to the sheer volume of traffic it receives. Additionally, overcrowding at the site diminishes the visitor experience, as large tour groups make it difficult to fully appreciate the historical significance of the ruins.

The commodification of Crete's cultural heritage is another undesired impact of overtourism. Traditional Cretan music, dance, and crafts are often presented to tourists in a way that prioritizes entertainment over authenticity. Local traditions are sometimes adapted or altered to suit the expectations of tourists, which can result in a loss of cultural integrity. For example, traditional Cretan festivals and ceremonies, which were once intimate community events, are now often staged for the benefit of tourists, losing their original meaning and

significance. This commercialization of culture not only undermines the authenticity of the Cretan experience but also threatens the preservation of the island's intangible cultural heritage.

5.4 Addressing the Challenges of Overtourism

While the negative impacts of overtourism in Crete are clear, there are several measures that can be taken to mitigate its effects and promote more sustainable tourism practices.

One solution is to implement visitor management strategies that regulate the flow of tourists to popular destinations. For example, limiting the number of visitors allowed at key sites such as the Palace of Knossos or the Samaria Gorge could help reduce the environmental and cultural impact of overtourism. In some cases, introducing entrance fees or requiring tourists to book their visits in advance could help manage the number of visitors and generate funds for conservation efforts.

Another approach is to promote alternative destinations within Crete. While certain areas of the island, such as Chania and Heraklion, are heavily impacted by tourism, there are many lesser-known regions that could benefit from increased tourist traffic. By encouraging visitors to explore more remote areas, tourism authorities can help alleviate the pressure on overcrowded sites while supporting local communities that have not yet reaped the economic benefits of tourism.

Sustainable tourism initiatives that prioritize the environment and local culture should also be encouraged. Hotels and resorts can adopt eco-friendly practices, such as reducing water usage, minimizing waste, and using renewable energy sources. Additionally, promoting cultural tourism that focuses on authentic experiences rather than mass consumption can help preserve Crete's unique cultural heritage. The impacts of overtourism in Crete are presented in Table 6.

Table 6: Impacts of overtourism in Crete

Environmental	Overcrowding of infrastructure facilities and activities
	Overcrowding at attractions (natural, historical, et cetera)
	Strong contribution on pollution
	Damage to natural, historical, architectural sites
	Visual pollution
	High tourism-generated investments in tourism infrastructure
Economic	Inflation or/and reduction in availability of goods and services
	Degradation of commercial infrastructure
	Degradation of destination image
	Economic dependence on tourism
	Crowd-ness leading to a reduction of accessibility
	Increase of house rentals
Social	Increase in food prices
	Marginalization of residents
	Problems related to uncivilized behavior and increased crime and violence
	Touristification of former residential neighborhoods
	Degradation of social infrastructure and facilities
	High possibility of misunderstanding
	Modification of several events and activities due to commercial interest
	Weakening of cultural traditions and values
	Decrease of the quality of life for the residents

	Lower quality of experience of tourists
	Increase of traffic congestion and lack of spaces for car parks particularly in the main cities
	Lack of houses for rent

Source: ^[7], Own estimations

6. Discussion

The undesired impacts of overtourism in the island of Crete, Greece have been examined. The causes of overtourism and its assessment based on tourism density and tourism intensity have been analyzed. It should be mentioned that the tourism infrastructure in Crete is gathered in the north coastline of the island where the main cities are located while the inland and the south coastline are underdeveloped. The evaluation of tourism density and tourism intensity was based on the total surface and population of Crete. Using the surface and the population of the north beach front, instead of the whole island, tourism density and tourism intensity are going to be significantly higher than the values estimated in the present work. For better assessment of overtourism in Crete estimation of more parameters is required as it is indicated in section 4. The fact of the increasing number of visitors in Crete every year, the seasonality of the local tourism product, the high values of tourism density and intensity and the brand name of the tourism destination worldwide indicates that development of appropriate measures and policies are required to prevent and mitigate the negative aspects of tourism in the island in the near future.

The limitations of our work are related with: a) the lack of estimation of other tourism-related indicators, and b) the estimation of the tourism density and intensity using the surface and the population of the island instead of the north coastline where the most of tourism infrastructure and activities are gathered.

Further research should be focused on: a) Estimation of other tourism related indexes in Crete, b) Estimation of tourism density and intensity based on data from the north coastline, and c) Investigation of the combined impacts of climate crisis and overtourism on tourism industry in the island.

7. Conclusions

Overtourism in Crete presents a complex set of challenges that have far-reaching consequences for the island's environment, local communities, and cultural heritage. While tourism remains a vital part of Crete's economy, the negative impacts of unchecked growth highlight the need for more sustainable practices.

The causes of overtourism are complex and multifaced comprising: The reduced cost and travel time for transportation, the accessibility and affordability of traveling, the growing middle class worldwide who can afford travelling, et cetera. Overtourism in Crete is favored from the seasonality of the tourism product during seven months annually.

The tourist arrivals in Crete in 2023 were 6,327,366 while the number of visitors is growing energy year. The tourism density in the island of Crete in 2023 was 4,120 bed-nights/km² while the tourism intensity 55.63 bed-nights/resident. These values are significantly higher than the average EU and global values.

The impacts of overtourism are environmental, economic and social. It threatens the fragile natural ecosystems in the

island and overconsume the natural resources, it deteriorates the historical monuments, it might reduce the tourism-related income, it decreases the quality of life of the local residents and the quality of experiences of tourists, it increases the local inflation increasing the food prices and the house rentals et cetera.

By implementing visitor management strategies, promoting alternative destinations, improve the management of the local renewable energy resources and embracing eco-friendly tourism practices, Crete can mitigate the adverse effects of overtourism and ensure that its natural beauty, rich culture, and historical heritage are preserved for future generations.

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