Enhancing Remote Area Tourism through Sustainable Maritime Infrastructure Development

George Alexandrakis[1[0000-0003-3690-3159]], Vassiliki Metheniti[1[0000-0003-2154-5563]], Antonios Parasyris[1[0000-0001-9498-7245]], Georgios V. Kozyrakis[1[0000-0002-5896-6102]], Nikolaos A. Kampanis[1[0000-0001-6231-7730]], Kyriakos Lampropoulos, Anastasia Vythoulka and Antonia Moropoulou

[1]Coastal & Marine Research Laboratory (CMRL), Institute of Applied and Computational Mathematics (IACM), Foundation for Research and Technology-Hellas (FORTH), Nik. Plastira 100, Iraklion 700 13, Heraklion, Greece
[2]School of Chemical Engineering, National Technical University of Athens (NTUA), 9 Iroon Polytechniou Str., 15780 Athens, GREECE
alexandrakis@iacm.forth.gr

Abstract. This paper examines the impacts of maritime infrastructure development across four distinct Greek regions—Northern Evia, Eastern Mani, Kassos, Kastelorizo and Nafpaktos—with a focus on the interplay between economic growth, cultural preservation, and environmental sustainability. Through a comprehensive analysis incorporating case studies and comparative assessments, the research identifies the significant economic benefits and increased tourist accessibility resulting from enhanced maritime facilities. However, it also highlights the accompanying challenges, including environmental risks and the complexities of integrating modern infrastructure within culturally rich and ecologically sensitive areas. The findings demonstrate that while maritime infrastructure projects can substantially boost local economies and improve connectivity, they necessitate a balanced approach that prioritizes sustainable practices and robust community engagement. The paper advocates for the adoption of Maritime Spatial Planning (MSP) as a critical tool for achieving these goals, emphasizing the importance of multi-stakeholder collaboration in ensuring that development efforts align with both local and regional sustainability objectives.

The study contributes to the broader discourse on sustainable development in coastal regions, offering insights and recommendations that are applicable to similar maritime environments facing the dual challenges of economic development and environmental stewardship. By highlighting the need for an integrated approach that respects cultural heritage and natural landscapes, this research provides a blueprint for future infrastructure projects aiming to harmonize economic benefits with long-term sustainability.

Keywords: Maritime Infrastructure, Economic Development, Cultural Preservation, Environmental Sustainability, Coastal Management, Community Engagement, Ecological Impact

1 Introduction

Tourism serves as a crucial economic driver for remote regions, particularly those endowed with unique natural and cultural assets. Greece, with its extensive coastline, numerous islands, and rich historical legacy, presents a plethora of opportunities for maritime infrastructure development aimed at enhancing tourism. These infrastructural developments can include the construction and enhancement of ports, marinas, and other coastal facilities that facilitate access and improve amenities for tourists. However, the challenge lies in implementing these developments in a manner that promotes economic growth while preserving the integrity of the natural environment and local cultures [1-5]. Sustainable development is essential to ensure that the expansion of tourism infrastructure contributes positively to local communities and ecosystems, rather than undermining them. This necessity is highlighted by the growing global emphasis on sustainability in response to climate change and environmental degradation, which threatens the very assets that make many of these regions attractive to tourists [6]. Furthermore, the cultural heritage of locales, particularly in a country as historically rich as Greece, must be preserved to maintain the authenticity and attractivity of tourist experiences. Unsustainable practices risk causing irreversible harm, leading to a decline in tourism appeal and economic benefits [7,8].

This work explores the complex balance required between the development of maritime infrastructure and sustainable tourism practices with focus in remote areas. It aims to outline strategies that can accommodate growth and development objectives while ensuring the long-term preservation of environmental quality and cultural heritage. Through an examination of various case studies across Greek coastal regions, this study discusses the implementation of Maritime Spatial Planning (MSP) and other integrative approaches as essential tools for achieving these goals [9].

This research underscores the importance of a comprehensive approach to planning and development in environmentally sensitive areas, considering ecological limitations, stakeholder interests, and opportunities for sustainable economic growth [10]. The goal is to provide a road map for other regions facing similar challenges, illustrating how thoughtful planning and community involvement can lead to infrastructure developments that are both economically beneficial and environmentally sustainable [11].

2 Case Study Areas

The study focuses on Northern Evia (38.5236° N, 23.8585° E), Eastern Mani (36.6556° N, 22.4530° E), Kassos (35.4160° N, 26.9225° E), Kastelorizo (36.1495° N, 29.5934° E) and Nafpaktos (38.3930° N, 21.8349° E), areas that demonstrate Greece's diverse coastal environments and are characterized by unique challenges and opportunities but also have difficult connectivity with the mainland. Northern Evia is recognized for its natural beauty and diverse landscapes, ranging from dense forests to beaches. However, the region has recently faced significant environmental challenges, including severe wildfires that have devastated large areas, impacting both the local ecosystem and the economy [12]. These events necessitate a focused approach to

rebuilding and enhancing infrastructure in a way that supports both recovery and sustainable development, ensuring resilience against future environmental threats.

Eastern Mani is a region that features numerous archaeological sites and rough landscape but attracts limited tourism. The development here requires a sensitive approach that honors the area's cultural and natural heritage, integrating sustainable practices that minimize environmental impact while enhancing visitor experiences [13].

Kassos lies at the southeastern edge of the Aegean Sea, serving as a strategic maritime access point that links the Greek mainland with the Dodecanese islands. Its location makes it an ideal candidate for the development of maritime infrastructure aimed at boosting tourism. Potential developments include improving port facilities to accommodate cruise ships and leisure vessels, which could significantly boost the local economy by increasing tourism [14].

Nafpaktos offers a blend of historical and modern attractions, with its well-preserved medieval castle and modern leisure facilities. Located at the crucial navigational entry to the Gulf of Corinth, its strategic significance extends beyond tourism, encompassing trade and maritime transport. The development strategy for Nafpaktos involves developing port facilities to better serve tourist ships and enhancing the waterfront to improve the overall quality of visitor experiences, thus integrating its rich historical context with the needs of contemporary tourism [15].

Located on the easternmost point of Greece, near the Turkish coast, Kastelorizo is an island that poses unique challenges and opportunities for maritime infrastructure development. Its remote location and small size make accessibility a critical issue, which is compounded by its strategic geopolitical significance and the need to preserve its rich historical and cultural heritage. The island's tourism potential is largely unexploited, with the local economy heavily reliant on limited tourism activities. Developing maritime infrastructure in Kastelorizo could significantly enhance its connectivity with the broader Dodecanese Island group and the mainland, potentially opening new avenues for sustainable tourism. This would involve constructing facilities that can accommodate small to medium-sized vessels, improving the ferry connections with Rhodes and the Turkish mainland, and ensuring that these developments are sensitive to the island’s delicate ecological balance and the preservation of its cultural assets. Improvements in Kastelorizo's maritime infrastructure must be carefully planned to avoid disrupting the island's unique environment and small-community dynamics. Projects here should aim not only to increase tourist numbers but also to improve the quality of life for residents, providing them with better access to services and goods from the mainland. The approach to infrastructure development in Kastelorizo should therefore emphasize sustainability and community involvement, ensuring that any economic benefits are balanced with environmental stewardship and cultural preservation.

These study areas highlight the diverse potentials and specific needs of different coastal regions in Greece, each requiring tailored approaches to infrastructure development that align with broader sustainability and tourism development goals. Location of the study areas and their connection to the nearest port infrastructure are presented in figure 1.

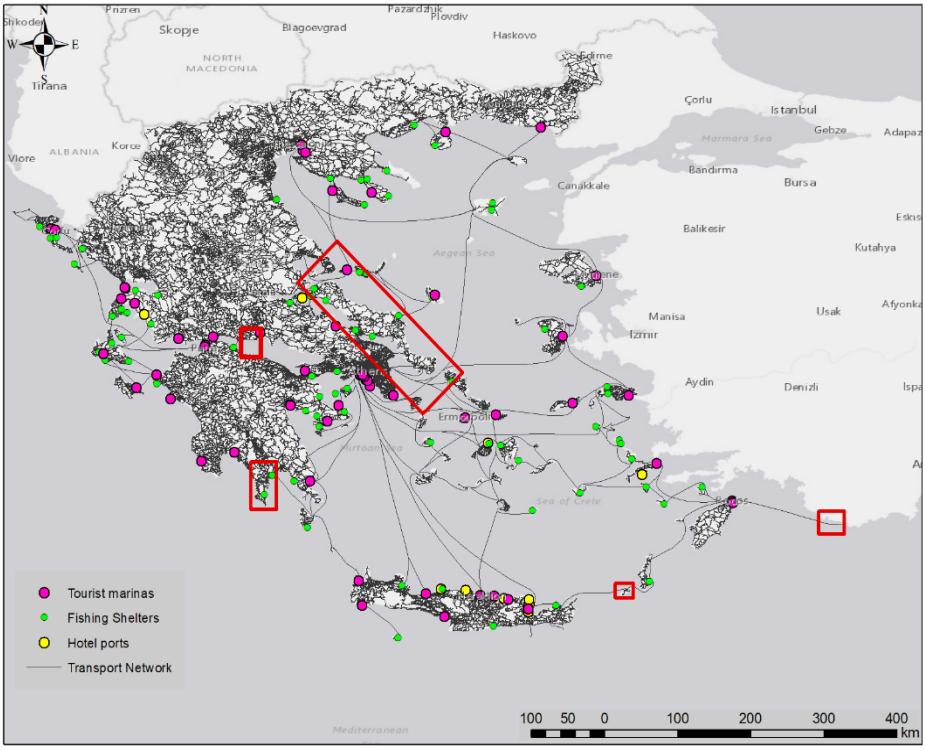

Fig. 1. Geographic location of the 5 study areas: Northern Evia (38.5236° N, 23.8585° E), Eastern Mani (36.6556° N, 22.4530° E), Kassos (35.4160° N, 26.9225° E), Kastelorizo (36.1495° N, 29.5934° E) and Nafpaktos (38.3930° N, 21.8349° E), (Authors own production)

3 Methodology

The methodology employed in this study is multifaceted, combining Maritime Spatial Planning, stakeholder interviews, analysis of local economic data, and environmental impact assessments to ensure a comprehensive approach to understanding the dynamics of maritime infrastructure development in coastal tourism.

Maritime Spatial Planning is a crucial tool used to manage the use of marine areas effectively. It helps in organizing the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives. For this study, Maritime Spatial Planning frameworks are applied to ensure that proposed developments in infrastructure are optimally located to minimize environmental impacts while maximizing economic benefits. This planning is instrumental in resolving conflicts among different users of the sea and promoting the sustainable use of marine resources [16]. Engaging with local stakeholders, including government officials, business owners, community leaders, and environmental groups, provides critical insights into the local perceptions and expectations regarding tourism development and maritime infrastructure. These interviews helped to gather qualitative data on the social and

economic impacts of existing and proposed infrastructure projects [17,18]. Stakeholder feedback is vital for validating Maritime Spatial Planning findings and integrating local knowledge and concerns into development plans. Economic data analysis involves evaluating the current economic impact of tourism and projecting the potential effects of new or upgraded infrastructure [19,20]. This quantitative method assesses metrics such as employment rates, business revenues, and tourism numbers. Data is collected from various sources, including local tourism boards, port authorities, and regional economic reports, to establish a baseline against which the impacts of infrastructure improvements can be measured [21,22].

Environmental Impact Assessments principles for each proposed project were considered to assess that any potential negative impacts on the environment are identified and addressed before project approval. This process involves assessing the likely environmental impacts of the infrastructure projects, considering everything from biodiversity to water quality and landscape integrity.

Detailed case studies from the selected regions (Northern Evia, Eastern Mani, Kassos, Kastelorizo and Nafpaktos) provide empirical evidence of the impacts of maritime infrastructure on local tourism. These case studies involve on-site surveys, GIS mapping, and the collection of visitor feedback to analyze the specific outcomes of infrastructure projects and their alignment with sustainable tourism goals. This comprehensive methodology allows the study to address the multifaceted challenges of developing maritime in sensitive coastal areas, ensuring that economic development objectives are met without compromising the sustainability of the environments and communities involved [23,24].

4 Results

The development of maritime infrastructure has demonstrated diverse impacts across the selected study areas, reflecting both the potential benefits and the complexities involved in balancing economic development with environmental and cultural sustainability.

4.1 Northern Evia

In Northern Evia (fig. 2), the diverse impacts of maritime infrastructure development across Northern Evia illustrate both the potential benefits and the complexities of balancing economic advancement with environmental and cultural sustainability. Initiatives in Northern Evia have primarily targeted the restoration of the rural economy, significantly impacted by recent severe wildfires. Plans are underway to enhance harbor functionality to support increased tourism and local trade, which are crucial for revitalizing the local economy. Future plans must focus on expanding port facilities, including docking areas and modern maritime equipment installation. These improvements are designed to facilitate easier access for tourists and streamline the transport of local products, with preliminary results already indicating an upturn in visitor numbers during the tourist season. Such improvements suggest that continued infrastructure development could sustainably drive economic growth. Moreover, alongside physical

infrastructure improvements, there is a pressing need for significant investments in environmental recovery programs. These programs will aim to restore the natural landscapes damaged by wildfires, enhancing the region's aesthetic appeal and supporting its biodiversity—key elements in attracting eco-conscious tourists.

Community engagement has been and will continue to be a cornerstone of the development process. The local community's active participation in planning and implementing new maritime projects has been vital in ensuring that these initiatives align with regional needs and values. This collaborative approach provides residents with opportunities for employment and business growth, closely tied to increased tourism and trade activities. However, despite these positive strides, the region faces ongoing challenges, particularly in managing the environmental impacts of increased maritime activities. Concerns about potential environmental degradation, such as water pollution and adverse effects on local fishing zones, necessitate continuous monitoring and adaptive management strategies.

In summary, the strategic development plans for Northern Evia focus on creating a robust framework for maritime infrastructure that not only supports economic recovery and growth but also prioritizes environmental preservation and community involvement. By maintaining this balance, Northern Evia can continue to build a sustainable tourism industry that contributes positively to the region's economic and environmental health. Future planning will ensure that the gains made are not only preserved but also expanded upon, with a keen focus on sustainable practices and inclusive growth.

Fig. 2. Northen Evia current and proposed port infrastructures

4.2 Eastern Mani

Eastern Mani's (fig. 3) maritime infrastructure is particularly designed to leverage its historical sites and natural landscapes to draw more visitors while preserving the region's distinctive attributes. Future initiatives will continue to expand and upgrade ports and marinas, significantly boosting access for yachts and small cruise ships and thereby increasing tourist influx to the region. These efforts aim to sustain the local economy by boosting sectors such as accommodation, dining, and local crafts, making Eastern Mani an increasingly attractive destination for eco and cultural tourism.

Eastern Mani will focus on preserving its cultural heritage amidst infrastructure changes. Efforts include restoring historical sites and organizing cultural festivals to enrich visitor experiences and safeguard the region's identity, ensuring tourism development complements the area's history and culture. Future enhancements must prioritize environmental sustainability, using green technologies and practices to reduce ecological impacts. Construction projects should focus on Nature Based Solutions and eco-friendly materials to minimize the environmental footprint, while improved water management will prevent overburdening local resources due to tourism. As tourism grows, Eastern Mani's economy will diversify from fishing and small-scale agriculture to a stronger service sector, leading to more jobs and better living standards. However, challenges remain, such as balancing tourism with preserving tranquility and nature, and investing in infrastructure to meet tourist expectations and environmental standards. Developing maritime infrastructure in Eastern Mani can boost tourism and the local economy, while respecting cultural and natural heritage. Success depends on community engagement, managing environmental impacts, and integrating tourism into the regional economy and culture. [25].

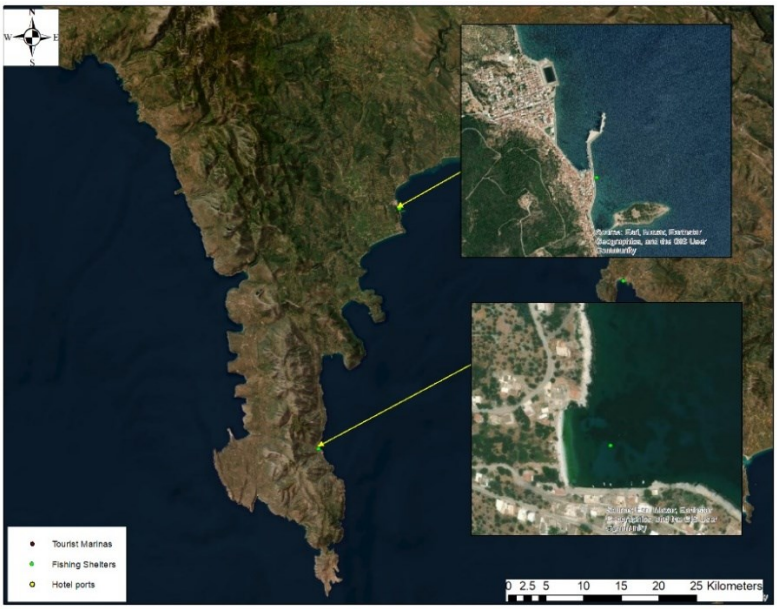

Fig. 3. East Mani current and proposed port infrastructures

4.3 Kassos

Kassos's (fig. 4) improvements in maritime infrastructure aim to optimize its role as a maritime access point in the southeastern Aegean. The improvements focus on expanding the port facilities and services to accommodate increasing tourist and commercial traffic. This development provides insights into both the benefits and challenges faced by the island, shaping future planning initiatives. Future developments plan to upgrade Kassos's port facilities, expand docking spaces, and enhance navigational aids. These upgrades are expected to boost the island's accessibility, increasing ferry services and private yachts frequency and capacity, enhancing connectivity with neighboring islands and the mainland. Improvements in maritime infrastructure are projected to drive economic growth in Kassos, mainly through tourism. Local businesses, particularly in hospitality and crafts, are likely to see revenue increases due to higher tourist arrivals. Additionally, port developments will facilitate the export of local products like honey and herbs, benefiting the agricultural sector and diversifying the economy. Plans include promoting eco-friendly tours and cultural exhibitions to educate visitors and integrate them into conservation efforts, ensuring developments do not compromise Kassos’s cultural identity or environmental conditions. Monitoring and adaptive management strategies will be necessary to maintain ecological balance and cultural integrity. Community involvement in planning and implementing maritime projects is prioritized, ensuring developments align with residents' needs and expectations, fostering ownership and commitment to project success. Despite positive developments, challenges include managing infrastructure maintenance and addressing potential overreliance on tourism, which could make the economy vulnerable to fluctuations in tourist numbers. Increased traffic raises concerns about environmental degradation, particularly marine pollution and its impact on marine biodiversity. Improvements in Kassos's maritime infrastructure are set to provide economic opportunities and improve residents' quality of life. However, careful planning and management are necessary to ensure sustainable growth and preserve natural and cultural resources for future generations. Success will depend on a balanced approach incorporating economic development, environmental sustainability, and community involvement.

Fig. 4. Kasos Isl. current and proposed port infrastructures

4.4 Kastelorizo

In Kastelorizo (fig. 5) proposed improvement in maritime infrastructure includes the extension of the main pier and upgrades to mooring systems, which aim to significantly increase the island's capacity to accommodate ferries and small cruise ships, as today the ability of the port is limited by inadequate space and depth restrictions. These future improvements are expected to attract a greater number of visitors, providing a substantial boost to local businesses, particularly in the hospitality and retail sectors. Moreover, the upgraded port infrastructure is intended to strengthen Kastelorizo's maritime connections with Rhodes and the Turkish mainland, improving both the mobility of residents and the transport of essential goods and services. Additional development projects are proposed to further improve maritime accessibility by expanding facilities to accommodate a broader range of vessels, thereby integrating the island more fully into regional maritime routes and enhancing its role as a key access point in the southeastern Mediterranean. The anticipated increase in maritime traffic will likely yield positive economic impacts, encouraging longer stays and fostering new business opportunities across tourism-related sectors. These developments are also envisioned to diversify the local economy and enhance the island's economic resilience in the long term. However, this growth brings with it several environmental challenges, with most notably the potential for increased marine pollution and disruption to Kastelorizo's fragile marine ecosystems. As such, future development plans will incorporate robust environmental

protection measures, including advanced waste management systems and stricter regulations on boat traffic, to mitigate adverse effects and ensure the protection of the natural environment. Equally important is the preservation of Kastelorizo's cultural identity amid growing tourism. Planned initiatives will focus on promoting cultural tourism that highlights and respects the island's unique heritage, ensuring that development efforts complement, rather than compromise, local traditions and values. Continued community involvement will be a central pillar of all future infrastructure projects. Residents will be actively engaged in both planning and implementation processes, ensuring that development aligns with community priorities and fosters a collective commitment to sustainable growth. Given the complexity of these planned improvements, a system of ongoing monitoring and adaptive management will be essential to address emerging challenges proactively. This approach will help sustain the long-term benefits of development, maintaining a careful balance between economic advancement, environmental protection, and cultural preservation. Overall, the proposed enhancements to Kastelorizo's maritime infrastructure provide a forward-looking framework for sustainable development. By prioritizing environmental safeguards, cultural integrity, and community inclusion, the island can pursue meaningful growth while preserving the qualities that make it a unique and valuable part of the Mediterranean landscape.

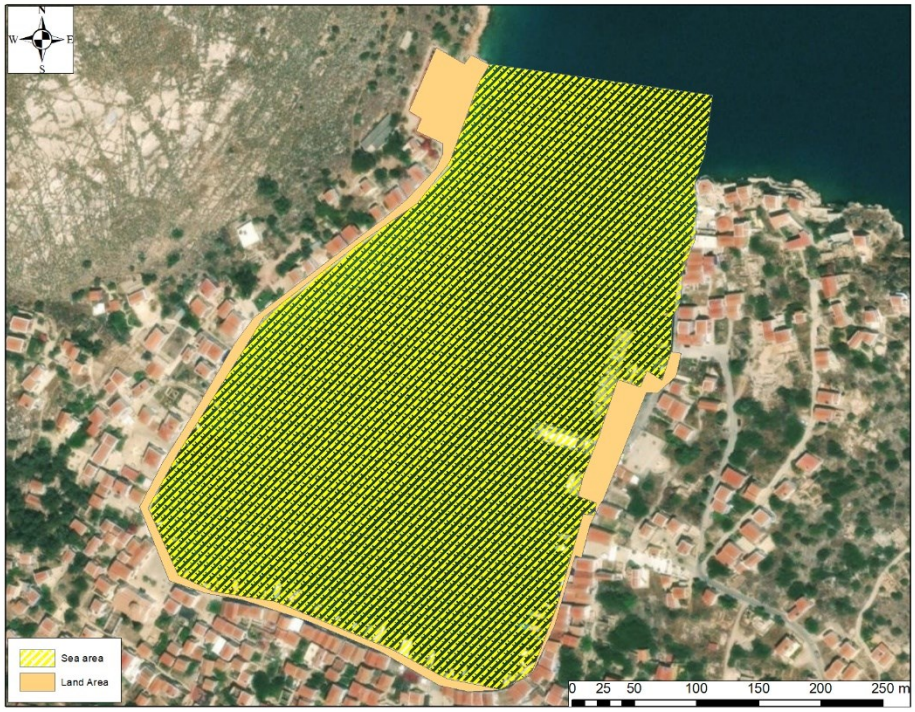

Fig. 5. Kasteloriso current and proposed port infrastructures

4.5 Nafpaktos

The proposed strategic development of maritime infrastructure in Nafpaktos (Fig. 6) is centered on the planned upgrading of port facilities and the revitalization of the waterfront. These future interventions aim to seamlessly merge modern tourist amenities with the town's rich historical heritage. While implementation is forthcoming, the plans are anticipated to significantly influence local tourism, economic activity, and community well-being. As such, they offer a forward-looking model for coastal towns seeking to balance cultural preservation with contemporary development needs. Planned improvements to Nafpaktos's port facilities include the renovation of historic piers and the creation of visitor-oriented public spaces, such as waterfront promenades and recreational areas. These enhancements are expected to elevate the town's appeal as a premier tourist destination by improving accessibility and enriching the overall visitor experience, particularly during the high season when both domestic and international tourist flows peak. In parallel, the proposed infrastructure projects are expected to stimulate local economic growth. By attracting more visitors and encouraging longer stays, the upgrades aim to benefit a broad spectrum of local businesses, especially in the hospitality, food service, and retail sectors. In addition, the modernization of port infrastructure is intended to improve the efficiency of traditional sectors such as fishing and small-scale maritime trade, thus extending the economic benefits beyond tourism. Importantly, the development strategy places a strong emphasis on cultural and historical preservation. Nafpaktos, known for its significance as an ancient and medieval naval center, is home to iconic landmarks such as the Venetian harbor and the hilltop castle. Future projects plan to more fully integrate these heritage assets into the tourism experience—ensuring their conservation while also enhancing visitor education and engagement with the town's historical identity.

Environmental sustainability is also a key pillar of the proposed plans. With the expected growth in tourism and maritime traffic, new waste management systems and environmentally responsible boating practices will be introduced to minimize ecological impacts. These initiatives aim to safeguard the marine and coastal environment, reinforcing the town's long-term viability as a sustainable tourist destination. Community engagement will remain central to the planning and implementation of these projects. The involvement of residents in decision-making processes is viewed as essential to ensuring that development aligns with community values and priorities. Nevertheless, future challenges must be addressed—particularly those related to balancing modern infrastructure needs with heritage preservation, and to reducing the town's dependence on seasonal tourism. For this reason, future strategies will also focus on diversifying the local economy to support year-round livelihoods and promote greater economic resilience. The ongoing and future development of maritime infrastructure in Nafpaktos is set to further enhance its tourism prospects and economic status, while continuing to respect its historical and environmental context. Success will hinge on the town's ability to maintain these balances and adapt to emerging challenges, fostering sustainable growth and enhancing community well-being [26].

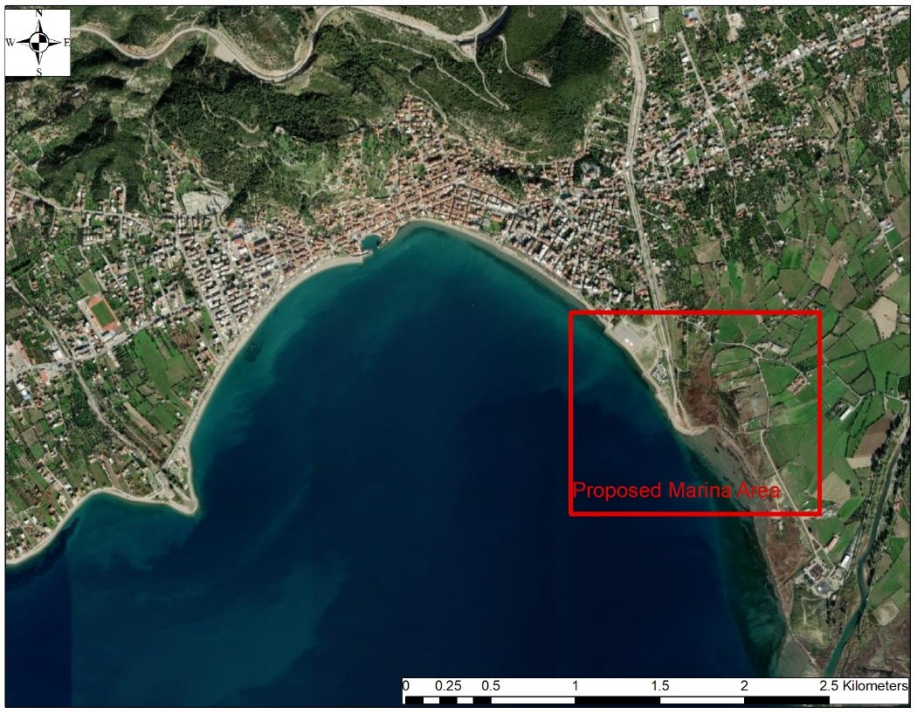

Fig. 6. Nafpaktos proposed port infrastructures

The following table (table 1) presents a comparative overview of strategic maritime infrastructure developments, highlighting their multifaceted impacts. This comparative analysis serves to underscore the diverse yet interconnected benefits of well-planned coastal infrastructure interventions, offering insights into regional development strategies that balance modernization with preservation.

Table 1: Overview of strategic maritime infrastructure developments and impacts

	Accessibility	**Economic Impact**	**Cultural and Environmental Sustainability**	**Community Engagement**
Northern Evia	Improved ports boost trade	Increased local business revenue	Wildfire recovery and environmental programs	Strong community planning participation
Eastern Mani	New piers increase visitor capacity	Boost in local economy from tourism	Cultural site preservation and sustainable practices	Active local cultural preservation
Kassos	Port upgrades enhance connectivity	Tourism boosts the local economy	Tourist education and conservation integration	Community involved in planning
Nafpaktos	Pier renovations increase tourist access	Economic growth from enhanced tourism	Historical preservation is integrated with tourism	Community decision-making involvement
Kastelorizo	Main pier extension increases docking	Visitors increase boosts economy	Cultural identity and environmental protection efforts	Community involved in project implementation

5 Discussion

The strategic enhancements in maritime infrastructure across Greece offer valuable insights into the complex interplay between economic development, cultural preservation, and environmental sustainability. Each region, distinct in its characteristics and challenges, has showcased the potential of maritime infrastructure to significantly boost local economies and enhance tourist access. However, these initiatives have also underscored the need for a balanced approach that prioritizes long-term sustainability and considers local community needs.

The economic advantages from improved accessibility and enhanced tourist facilities are evident, with all regions experiencing increased visitor numbers and a subsequent rise in local business revenues. However, these economic benefits come with environmental challenges. For instance, Northern Evia and Kassos have implemented stringent measures to manage the rise in marine traffic and mitigate ecological degradation. This necessitates continuous environmental monitoring and the integration of sustainable practices into all maritime development projects to ensure ecological health.

Regions such as Eastern Mani and Nafpaktos have demonstrated how infrastructure development can be harmoniously aligned with cultural heritage preservation. By enhancing the tourist experience and maintaining regional identities, these areas attract visitors seeking depth in culture and history, while also fostering local pride and cultural continuity.

The active participation of local communities in the planning and execution of infrastructure projects has been instrumental in aligning developments with local values and needs. This involvement is crucial for the success and acceptance of projects, increasing the likelihood that they will deliver tangible benefits to the communities.

Reliance on tourism, while providing significant economic input, introduces risks associated with sustainability. Seasonal tourism fluctuations can cause economic instability, as observed in Kassos and Nafpaktos. To combat these challenges, a strategic approach is needed—one that not only seeks immediate economic benefits but also fosters the creation of resilient infrastructures capable of supporting sustainable tourism. This includes diversifying the economic base to reduce dependence on seasonal tourism and ensure stability throughout the year. To address these multifaceted challenges, future development plans must focus on creating infrastructures that support sustainable tourism without compromising the environmental and cultural integrity of the regions. This involves developing comprehensive strategies that include risk management, environmental conservation, and the promotion of cultural tourism as integral components of regional development plans.

6 Conclusion

The case studies from Northern Evia, Eastern Mani, Kassos, and Nafpaktos collectively demonstrate that while maritime infrastructure can significantly boost regional economies and enhance tourist accessibility, it requires careful planning, widespread community engagement, and a firm commitment to sustainability principles. Moving forward, it will be essential for these regions to continue refining their approaches to development, ensuring that they can achieve economic growth without sacrificing their environmental integrity or cultural heritage.

This paper highlights the delicate balance required between advancing maritime infrastructure and preserving sustainability across various Greek coastal regions. The insights from the case studies not only underscore the economic advantages that well-designed infrastructure projects can bring but also reinforce the necessity of addressing the environmental and socio-cultural dimensions that such developments entail.

Adoption of Maritime Spatial Planning has proven effective as a strategic approach to coordinating multiple uses of the marine environment while protecting ecological values. It should be adopted as a standard practice for planning and executing infrastructure projects in sensitive coastal areas [27]. By doing so, planners and developers can anticipate and mitigate potential conflicts between economic development and environmental conservation, ensuring that infrastructure projects are both sustainable and beneficial to marine ecosystems.

The involvement of local communities in the planning process is crucial. This approach ensures that developments not only reflect the needs and values of those directly affected but also enhances community support for projects. Engaging communities early in the planning stages through transparent dialogues and participatory decision-making processes helps align development objectives with local aspirations and can prevent conflicts and delays later [28]. Additionally, this engagement facilitates the sharing of local knowledge, which can be invaluable in tailoring projects to suit specific environmental and cultural contexts.

To sustainably leverage the natural and historical assets of coastal areas, prioritizing ecotourism and cultural tourism is essential. These forms of tourism emphasize conservation, education, low impact travel, and respect for local cultures and traditions. By focusing on these areas, regions like Northern Evia, Eastern Mani, Kassos, and Nafpaktos can enhance their appeal to tourists seeking authentic and enriching experiences while minimizing environmental impacts and promoting local cultures [29]. Such strategies not only contribute to the preservation of the regions' unique attributes but also ensure that tourism contributes positively to local economies without degrading the resources upon which it depends.

Key recommendations should include conducting comprehensive Environmental Impact Assessments. Future projects should include detailed EIAs that go beyond regulatory compliance to genuinely assess and plan for the long-term sustainability of tourism-related infrastructure. Additionally, the implementation of continuous monitoring and evaluation will establish mechanisms for the ongoing monitoring of the environmental and social impacts of infrastructure projects is vital. This allows for adaptive management strategies that can respond to unanticipated changes or negative impacts.

By enhancing the regulatory frameworks that govern infrastructure development in coastal and marine areas can provide a more robust basis for ensuring that all developments adhere to the highest standards of environmental and cultural sustainability.

By adopting these practices, coastal regions can develop maritime infrastructure that not only boosts their economies but also preserves their environmental integrity and cultural heritage for future generations.

Acknowledgment

This project was conducted within AEI research project framework in which Prof. Em. Antonia Moropoulou served as Coordinator and Scientific Responsible of the project, representing NTUA, and Nikolaos Kampanis served as Scientific Responsible of FORTH's contribution to the project. This research has been co-financed by the European Regional Development Fund of the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE (project code: T2EDK- 01278)

References

1. Mejjad, N., Rossi, A., Pavel, A. B., et al. (2022). The coastal tourism industry in the Mediterranean: A critical review of the socio-economic and environmental pressures & impacts. Tourism Management Perspectives, 44, 101007
2. Lolos, S., Palaios, P., & Papapetrou, E. (2023). Tourism-led growth asymmetries in Greece: Evidence from quantile regression analysis. Portuguese Economic Journal, 22(1), 125–148
3. Iliopoulou-Georgudaki, J., Kantzoura, V., & Kartali, M. (2016). Sustainable tourism management and development of a Greek coastal municipality. International Journal of Sustainable Development & World Ecology, 23(5), 433–447
4. Diakomihalis, M. N. (2007). Greek maritime tourism: Evolution, structures and prospects. Research in Transportation Economics, 21, 419–455
5. Carreño, A., Lloret, J., & Mateo, M. A. (2021). Environmental impacts of increasing leisure boating activity in the Mediterranean. Ocean & Coastal Management, 209, 105604
6. Soder, Michael, and Stefanie Peer. 2018. The potential role of employers in promoting sustainable mobility in rural areas: Evidence from Eastern Austira. International Journal of Sustainable Transportation 12: 541–51
7. Bowitz, E., & Ibenholt, K. (2009). Economic impacts of cultural heritage – Research and perspectives. Journal of Cultural Heritage, 10(1), 1–8
8. Poria, Y., Butler, R., & Airey, D. (2003). The core of heritage tourism. Annals of Tourism Research, 30(1), 238–254
9. Batista, M.D.G.; Couto, G.; Castanho, R.A.; Sousa, Á.; Pimentel, P.; Carvalho, C. The Rural and Nature Tourism Development Potential in Islands. Sustainability 2022, 14, 5289
10. López, E., Baeza, A., & Sánchez, A. (2011). Coastal planning and climate change adaptation in the Mediterranean. Ocean & Coastal Management, 54(12), 938–945
11. Mateoc-Sîrb, N.; Albu, S.; Rujescu, C.; Ciolac, R.; T, igan, E.; Brînzan, O.; Manescu, C.; Mateoc, T.; Milin, I.A. Sustainable Tourism Development in the Protected Areas of Maramures,, Romania: Destinations with High Authenticity. Sustainability 2022, 14, 1763
12. ABA, F. ., & ADANLAWO, E. F. . (2024). The Potential Role of Ecotourism in Sustainable Development: A Systematic Review. Journal of Ecohumanism, 3(4), 3356–3367. https://doi.org/10.62754/joe.v3i4.3852
13. Terkenli, T.S.; Georgoula, V. Tourism and Cultural Sustainability: Views and Prospects from Cyclades, Greece. Sustainability 2022, 14, 307. https://doi.org/10.3390/su14010307
14. Helgadóttir, G.; Einarsdóttir, A.V.; Burns, G.L.; Gunnarsdóttir, G.Þ.; Matthíasdóttir, J.M.E. Social sustainability of tourism in Iceland: A qualitative inquiry. Scand. J. Hosp. Tour. 2019, 19, 404–421
15. Weng, L.; He, B.; Liu, L.; Li, C.; Zhang, X. Sustainability Assessment of Cultural Heritage Tourism: Case Study of Pingyao Ancient City in China. Sustainability 2019, 11, 1392
16. Terkenli, T.S.; Bellas, M.L.; Dudley-Jenkins, L. Tourism impacts on local life: Sociocultural continuity and change in Crete. Aegean Geogr. J. 2017, 16, 37–52
17. Waligo, V. M., Clarke, J., & Hawkins, R. (2013). Implementing sustainable tourism: A multi-stakeholder involvement management framework. Tourism Management, 36, 342–353
18. Graci, S. R., & Dodds, R. (2010). Sustainable tourism in island destinations. Earthscan.

19. Jones, P. J. S., Lieberknecht, L. M., & Qiu, W. (2016). Marine spatial planning in reality: Introduction to case studies and discussion of findings. Marine Policy, 71, 256–264
20. Papatheochari, T., & Kyvelou, S. (2018). Maritime spatial planning and blue growth: Divergences and synergies in Greece. Marine Policy, 94, 139–147
21. Dwyer, L., Forsyth, P., & Spurr, R. (2004). Evaluating tourism's economic effects: New and old approaches. Tourism Management, 25(3), 307–317
22. Lolos, S., Palaios, P., & Papapetrou, E. (2023). Tourism-led growth asymmetries in Greece: Evidence from quantile regression analysis. Portuguese Economic Journal, 22(1), 125–148
23. Kyvelou, S., Ierapetritis, D., & Pafi, M. (2021). Sustainable governance of maritime spatial planning in Greece. Sustainability, 13(2), 1–23
24. Gratziou, M., & Paraskeva, C. (2020). Coastal tourism, spatial planning and local development: Case study evidence from Greece. Tourismos: An International Multidisciplinary Journal of Tourism, 15(1), 199–220
25. Timothy, D.J.; Boyd, S.W. Heritage Tourism, 1st ed.; Prentice Hall: New York, NY, USA, 2003
26. D'Hauteserre, A.-M. Cultural tourism in the French Pacific. Shima 2017, 11, 1–24
27. Du Cros, H.; McKercher, B. Cultural Tourism; Routledge: Oxfordshire, UK, 2020
28. ICOMOS. International Charter for Cultural Heritage Tourism 2021: Reinforcing Cultural Heritage Protection and Community Resilience through Responsible and Sustainable Tourism Management; ICOMOS International Committee on Cultural Tourism: Paris, France, 2021
29. Prosser, R. Societal Change and the Growth in Alternative Tourism. In Ecotourism: A Sustainable Option? Cater, E., Lowman, G., Eds.; John Wiley: Chichester, UK, 1994; pp. 19–37