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White Paper on Sustainable Tourism

Small Islands as Hubs for Climate Resilience and Sustainable Tourism in the Mediterranean

By Dialogue4Tourism

Institutional dialogue on Sustainable Tourism and Governance in the Euro-MED area

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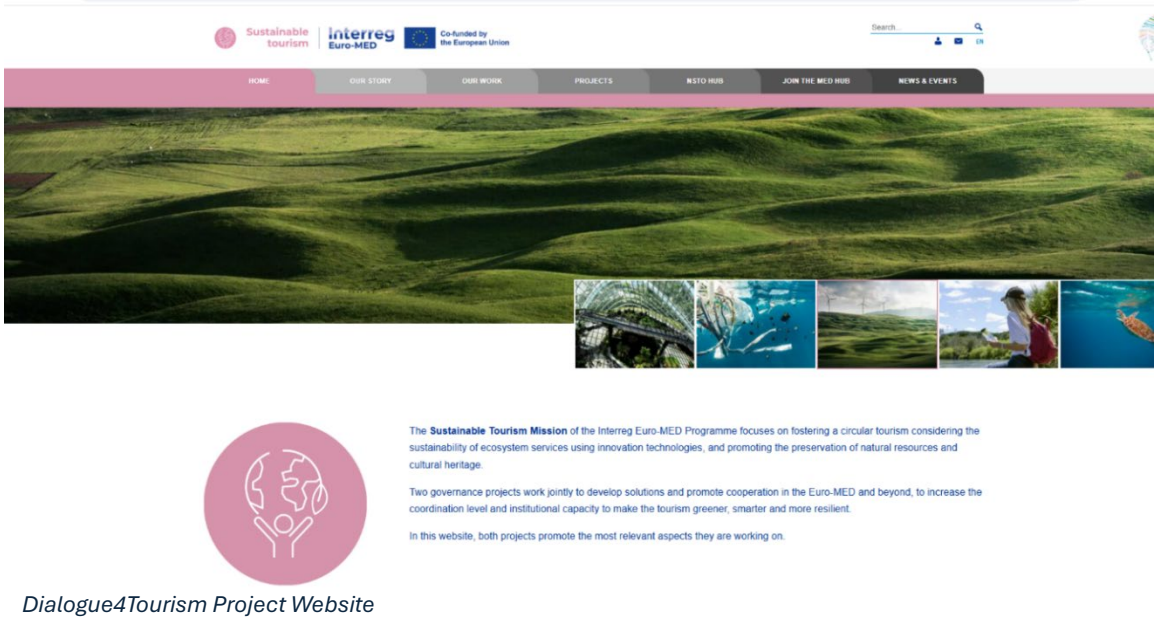
Credit

This document has been developed by the Interreg Euro-MED Dialogue4Tourism Project of the Sustainable Tourism Mission under the Interreg Euro-MED Programme 2021–2027, as part of its advocacy activities and in collaboration with the Interreg Euro-MED Community4Tourism Project (MED Cluster of Climate Change Adaptation). This comprehensive White Paper explores the critical intersection of tourism and climate adaptation in the Euro-Mediterranean (Euro-MED) region, with a particular focus on islands as living laboratories and hubs for climate resilience and sustainable tourism transformation. Drawing on the **Interreg Euro-MED Sustainable Tourism Thematic Project's results and challenges**, and a series of case studies—including innovative nature-based and heritage-driven actions— this paper presents actionable strategies and collaborative frameworks to guide the transition toward a low-impact, climate-adapted tourism model. It serves as a key resource for policymakers, tourism stakeholders, and local authorities committed to ensuring that the Mediterranean's islands and coastal destinations lead the way toward a sustainable and resilient future for tourism.



Dialogue4Tourism Project Website

The Interreg Euro-MED Programme supports cooperation across 14 Mediterranean countries, funding projects that address shared challenges with a focus on sustainability, resilience, and smarter development. With €294 million for 2021–2027, the Programme unites public, private, and civil society partners to create a greener, climate-neutral region while enhancing governance and improving quality of life.

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Executive summary

The Mediterranean region is facing an unprecedented convergence of challenges, from accelerating climate impacts to ecosystem degradation, compounded by socio-economic vulnerabilities that threaten both natural and human systems. Nowhere are these challenges more acute than on the region's small islands.

Often perceived as peripheral or isolated, small Mediterranean islands are in fact microcosms of global sustainability challenges. They are disproportionately exposed to climate-related threats such as sea-level rise, coastal erosion, heatwaves, water scarcity, and biodiversity loss. At the same time, they face structural disadvantages, including limited access to resources, dependence on fossil fuels, vulnerability to seasonal economic cycles, and the pressure of high-volume tourism. Yet, these very constraints position islands as ideal testbeds for pioneering, integrated approaches to sustainability.

The Island Model positions islands as **living laboratories** for sustainability, leveraging their geographic isolation and resource constraints to pilot integrated, holistic solutions in energy self-sufficiency, circular economy, sustainable tourism and ecosystem resilience. This model focuses on matching islands' specific needs with innovative solutions, mobilising multi-stakeholder networks (public authorities, businesses, academia and citizens), and promoting sector-agnostic frameworks that are replicable beyond island contexts. Key components of the model include:

- Strategic road-maps to transition islands toward **100 % renewable energy systems** and decarbonization.
- Cross-cutting nexus-based approaches (water-energy-food-ecosystems) and circular-economy practices adapted to the island scale.
- Capacity-building, business model development, funding-identification and knowledge-sharing to ensure scalability and local ownership.

In essence, the Island Model frames islands not just as recipients of sustainability solutions, but as proactive, replicable platforms for innovation, where targeted actions in tourism, infrastructure, energy and governance converge to yield resilient, circular and climate-adaptive island systems.

This White Paper introduces the concept of **small islands as hubs for climate resilience and sustainable tourism**; a strategic vision aligned with the Interreg Euro-MED Programme and its Sustainable Tourism Mission. By leveraging their manageable scale, cohesive communities, and direct dependence on natural systems, islands can lead the way in demonstrating how holistic, nature-based, and low-carbon solutions can be deployed to build climate resilience while preserving cultural and ecological heritage.

White Paper on Sustainable Tourism Governance

Through a review of best practices and transferable models from these Thematic Projects and policy recommendations mainly from the Interreg Euro-MED Dialogue4Tourism Project, this document aims to support multi-level stakeholders in scaling up climate-resilient in sustainable tourism in the Mediterranean and beyond.

This is a complementary document for the first White Paper, developed by the Interreg Euro-MED Dialogue4Tourism project to be consulted HERE. This White Paper explores the critical intersection of tourism and climate adaptation in the Euro-Med region, offering a detailed, narrative-driven analysis of the challenges, strategies, and collaborative frameworks necessary to ensure a sustainable and resilient future for the sector.

Drawing on extensive research, case studies for addressing these challenges; with a special focus on the Thematic Projects of the Sustainable Tourism Mission, and actionable policy recommendations, it serves as a vital resource for policymakers, tourism stakeholders, and local authorities committed to addressing the impacts of climate change on one of the region's most vital economic engines.

This paper presents a range of good practices implemented across several Mediterranean islands involved in the Thematic Projects of the Interreg Euro-MED Sustainable Tourism Mission. These islands are the following: Italy (**Sardinia, Ponza, Salina, Pantelleria, Sicily, Linosa, Lampedusa, Lipari, Capraia, Tavolara** and **Palmaria**), Greece (**Crete, Rhodes, Halki, Skiathos, Tilos, Milos, Mykonos** and **Koufonisi**), Malta (**Malta** and **Gozo**), Spain (**Formentera, Menorca** in the Balearic Islands, and **Tenerife, Gran Canaria** and **Fuerteventura** in the Canary Islands), France (**Porquerolles**, the Lérins Islands—**Saint Honorat** and **Sainte Marguerite**—**Corsica**, **Lavezzi**, **Port-Cros** and **Levant**), Tunisia (**Kerkennah**), Croatia (**Vis**) and **Cyprus**. Together, these island contexts illustrate a wide spectrum of challenges and good practices related to sustainable tourism development in Mediterranean island environments.

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Introduction

Introduction

This White Paper explores the critical intersection of **tourism and climate adaptation** in the Euro-Mediterranean (Euro-MED) region, positioning **islands as pivotal hubs for climate resilience and sustainable tourism transformation**. It offers a detailed, narrative-driven analysis of the challenges, strategies, and collaborative frameworks required to ensure a sustainable and resilient future for the sector. Drawing on extensive research, diverse case studies, and actionable policy recommendations, it serves as a key resource for policymakers, tourism stakeholders, and local authorities committed to addressing the impacts of climate change on one of the region's most important economic and cultural assets.

1. Purpose and objectives

Mediterranean islands stand out as microcosms of the region's broader challenges and opportunities. Characterized by their geographic isolation, limited natural resources, and strong dependence on tourism, these islands are particularly exposed to climate-related risks such as coastal erosion, water scarcity, biodiversity loss, and energy vulnerability. At the same time, their manageable scale, rich cultural heritage, and close-knit communities make them ideal laboratories for testing innovative, nature-based, and circular solutions.

Cyprus

By harnessing their potential as living laboratories, islands can pilot integrated approaches that combine nature-based solutions, renewable energy, circular economy practices, and community-driven governance models. These examples can then inform broader Euro-Med strategies, turning islands into hubs of climate resilience and sustainability that inspire transformation across the entire region.

2. Key challenges and recommendations

Tourism in the Euro-Mediterranean islands is increasingly confronted by pressing climate-related threats, with recent data underscoring the urgency of coordinated action. **Islands, as tourism-dependent economies with limited natural resources and fragile ecosystems, are among the most exposed territories** to the combined impacts of sea-level rise, coastal erosion, water scarcity, and biodiversity loss. Projections indicate that Greek island beaches under the high emissions scenario by 2100, researchers project that around 57 % of island beaches may retreat by 50 % or more of their current width, and 23 % could retreat by 100 %, particularly where tourism assets currently face the shoreline.

In the Malta island context, the past years have marked a worrying shift: 2024 was officially the third driest year on record with just 285 mm of rainfall; about 260 mm below the 30-year average. Every single month that year recorded below-normal precipitation, amplifying impacts on agriculture, water resources and ecosystem resilience.

On Lipari, the surge in tourism has intensified pressures on waste-management systems, leading to visible litter, plastic pollution and abandoned dumps that diminish the island's scenic appeal and environmental health. Studies in the broader Aeolian Islands archipelago report widespread plastic pellet contamination in coastal sediments, highlighting how even subtle forms of waste degrade marine habitats. When waste is left unmanaged, especially during peak visitor periods, it undermines the pristine natural environment that draws tourists, erodes the destination's reputation, and increases clean-up costs that may ultimately shift onto the local economy and community.

Lipari

Islands across the Euro-Mediterranean region are uniquely positioned at the forefront of climate-change adaptation, serving as real-life testbeds for innovative approaches to sustainable tourism and resource management. A range of coordinated initiatives, such as the Observatory on Tourism for Islands Economy (OTIE) island-working group, the EU-funded RESIsles project, the Island for Islands Initiative and the EU's adaptation-tool portals for islands; are driving adaptation and resilience efforts. These initiatives help embed climate-risk assessments into planning, scale up nature-based and circular-economy practices (water reuse and zero-waste operations), and strengthen multi-level governance and digital monitoring tools that empower islands as hubs of climate resilience and sustainable tourism transformation for the wider region

3. Strategic importance

In the case of the Maltese Islands, tourism plays a significant but sometimes overstated role in the economy. According to a 2025 OECD report, tourism directly contributed around **10.2% of GDP** in 2023. Meanwhile, accounting for the gross value added (GVA) of tourism-related activities in 2024 suggests a contribution of approximately **7.2% to 9.8%** of Malta's economy across a full year, rising seasonally toward 10-15% during peak months. In Greece, the tourism sector contributed €28.5 billion, equivalent to approximately 13 % of GDP in 2023.

According to a report by Initiative PIM (focusing on Mediterranean islands), for insular regions tourism's share of GDP can fall in the 15-30 % range, and in some cases even up to around 50 %.

Islands in the Euro-Mediterranean region, with their geographic isolation, finite natural resources and heavy reliance on tourism, are uniquely exposed to climate risks. Aligning adaptation efforts with overarching frameworks such as the Mediterranean Strategy for Sustainable Development (MSSD 2016-2025) which emphasises addressing climate change and transitioning to a green and blue economy, and the European Green Deal (for example via the Clean Energy for EU Islands Initiative), which explicitly recognises the role of islands in the clean-energy transition ensures that the tourism sector not only contributes to climate-neutral objectives but also preserves its competitiveness by shifting toward sustainable, resilient and locally-adapted models.

Gozo Island. Francesco Luise

4. Methodology and approach

This section outlines the methodological framework behind the white paper, presenting a rigorous, evidence-based approach to exploring tourism and climate adaptation in the Euro-Mediterranean region. It describes how the research combined literature reviews, climate-data analysis, case studies and stakeholder engagement to produce robust insights. Aligned with the missions of the Interreg Euro-MED Programme, the approach emphasises collaboration, innovation and transferability to support actionable recommendations for policymakers and tourism stakeholders.

This section provides an examination of how tourism-dependent islands in the Euro-Mediterranean region confront the dual challenge of climate change adaptation and economic resilience. By situating global frameworks such as the Paris Agreement and the United Nations World Tourism Organization (UNWTO) Sustainable Development Goals alongside European strategies like the European Green Deal and the Interreg Euro-MED Programme, must align with broader policy directions. In the Mediterranean basin, where tourism contributes roughly 10-15% of GDP and islands feature some of the world's highest tourism intensities, projections suggest that without adaptation tourist arrivals could decline by 5-10% in coastal regions by 2100. These insights set the scene for exploring how global and regional actors can together address the unique vulnerabilities of island tourism systems and build more resilient, context-sensitive strategies.

State of the art - Islands' challenges and ecosystem

The islands are primarily characterized by a physical 'disconnection' from the mainland, there is a common understanding that many of the challenges faced by these territories are due to permanent conditionalities, such as the dependence on maritime and air transport, energy and water supply, the dependence to the mainland in terms of regulations, and the issue of waste management.

Depending on its size, location, and resources, every island faces a unique set of difficulties. However, most of the islands worldwide tend to have similar problems. The islands are facing several challenges, that we can expose on 4 categories.

Environmental vulnerability

Islands are defined by severe environmental challenges due to their limited size, isolation, and fragile environments. Climate change, weather-related catastrophes, and the unsustainable use of natural resources escalate environmental degradation. Urbanization and tourism development drive deforestation and pollution at an increased pace.

Climate change

The Mediterranean region is experiencing a 20% faster global warming rate, putting pressure on ecosystems, vulnerable economies, and coastal zones. Sea level rise, water scarcity, extreme weather events, and rising temperatures are just a few of the many interrelated climate risks that affect ecosystems and societies in the Mediterranean islands.

Biodiversity loss

The decline of Mediterranean biodiversity is primarily driven by human-induced factors, including climate change, coastal infrastructure development, resource overexploitation, tourism, and industrial activities. To protect the islands' future, immediate conservation measures are required. Two important policies that must be supported in the area are the enforcement of effective legal frameworks and the sustainable management of resources exploitation, particularly overfishing, hunting, and non-sustainable agriculture.

Waste

Waste management on islands poses unique and amplified challenges compared with mainland destinations: limited land and disposal capacity, large seasonal fluctuations in visitor-generated waste, and high costs of transporting waste to the mainland all strain island systems.

The necessity of shipping waste off-island not only increases financial and carbon costs but also undermines ecosystem health and the tourism appeal of pristine landscapes.

Embracing a circular-economy approach; the “Reduce, Reuse, recycle” roadmap; offers islands a strategic path to sustainability by valorising waste (e.g., waste-to-energy, resource recovery) and reducing shipping burdens.

Inadequate waste management directly affects socio-economic resilience: littered beaches, litter-driven ecosystem degradation and limited infrastructure discourage visitors, damage livelihoods, and harm community well-being.

Overall, island-specific strategies, such as banning certain high-waste imports, boosting onsite recycling, and investing in tailored infrastructure; are essential to protect both tourism assets and local environments.

Economic constraints

Islands face economic limitations because of geographical isolation, small markets, and few industries. Poor natural resources and expensive imports increase the cost of living, while tourism generates seasonal employment instability. Lack of economic diversification leads to over reliance on import and foreign investments, exposing islands to world market volatility. Constraints of infrastructure and limited indigenous populations limit economies of scale

Limited resources

The mediterranean’ islands often face economic challenges due to their geographic isolation and limited natural resources, which also affect other sectors. Many islands depend on imported food, fuel, and raw materials, which drives up prices, because they lack enough freshwater, agricultural land, or energy sources. A small population means fewer customers, which hinders the expansion and investment of local companies. Islands that rely heavily on tourism or a small number of important industries are more susceptible to global events (such as pandemics), natural disasters, and economic downturns.

Energy

Most of the islands in the world, rely on fossil energy resources or supply, ignoring their huge potential on renewables energies. This dependence leads to high energy costs, economic risks, energy security risks and environmental concerns.

Fuel transportation to islands increases the cost of electricity, making it expensive for residents and businesses, while the global oil & gas prices create economic uncertainty. In addition, islands are highly vulnerable to supply disruption by extreme weather, politics, or global supply chain interruption. The environmental impact is also vast in terms of contributing to air pollution and climate change, an issue of particular importance for islands at risk due to sea level rise.

To reduce dependence on fossil fuels, the islands are turning to renewable energy sources such as Solar, wind, hydropower energies. The Bioenergy; Produced from organic waste; on islands reduce the dependence on energy and in the meantime reducing the amounts of waste which are often shipped to the mainland with high costs.

A shift to renewables, in addition to lowering the cost of energy as well as enhancing energy security, also tends to lower environmental risks associated with the utilization of fossil fuels by fostering solutions to accelerate islands' decarbonisation while producing significant savings and socio-economic benefits.

Water

Water supply is extremely important for islands, both economically and environmentally, islands face serious water issues due first to their geographical isolation and limited freshwater availability, and second the increasing demand of local populations and the tourism sector, where many islands still depend on water transport from the mainland by ships, with high costs and emissions.

Moreover, climate change plays a significant role in water shortages, as rising temperatures, prolonged droughts, and unpredictable rainfall patterns exacerbate water scarcity. Additionally, over-reliance on desalination and groundwater extraction; both of which come with high financial and environmental costs; further intensifies the issue.

Existing measures such as desalination, rainwater collection and recycling can address water shortages. However, they introduce deficiencies in infrastructure performance, climate resilience, and comprehensive management of water. Old pipes result in huge water losses and tourist flows put immense pressure on resources that are seasonally limited and typically without proper protection.

Mediterranean Island must expand rainwater and wastewater harvesting, diversify supplies through sustainable desalination powered by renewable energy, upgrade infrastructure to limit losses, and become more wildlife-friendly and demanding in terms of water efficiency on tourist facilities as measures to face such challenges. There will be a requirement for regional cooperation and Integrated Water Resource Management (IWRM) to gain long-term water security and promote islands' water independence.

Lack of infrastructure

A lot of islands are lacking sufficient infrastructure which poses a significant problem in many aspects of a person's daily routine and the economy. A lot of islands progress lacking transportation infrastructure, leading to barriers in mobility for people who live in rural regions or need to utilize basic services. Inadequate roadways resulted in having limited public transport available and the reliance on boats or small airports create a further sense of community isolation which renders places expensive and time consuming to deliver goods and

services to. Compounding the problem are the insufficient healthcare facilities which result in small or rural islands not having the necessary potpourri of medical specialists and treatment centres for the islanders forcing them to embark on long journeys out of the island for medical help. Equally, there are less infantile education facilities which leads to lack of schooling, lower literacy levels, limited chances for gaining higher education, creating unskilled workers with the economy lacking growth which in turn makes the islands more dependent on other countries. The islands cannot attract businesses, and lacking development further deepens the stagnation, economic and social problems on the island which leads to significant infrastructure investment deficiency.

Tourism-based economy

The islands' economy typically relies on tourism; the sector uses about 50% of the total electric energy consumption. Nowadays, many of the islands are dependent on fossil fuel supplies and this causes an annual loss of about 10% of GDP, as well as significant damage to the environment and the ecosystem. Islands are independent in terms of electricity production, water supply and waste management. However, not all of them have built renewable energy plants, water and waste facilities, and this requires a further effort by the government to adapt the legislative framework. A strong effort must be rapidly made to achieve the 2030 targets set by the islands' governments concerning an improvement in Renewable Energy Sources (RES) penetration and a huge reduction in single-use plastics consumption.

Renewable energy

The tourism sector is clearly the first incomes resources for several islands; however, it is a challenge itself. Tourism generates jobs, creates local infrastructure, helps preserve heritage sites, and fosters cultural exchange. Unfortunately, the industry is also the cause of serious negative environmental and social impacts.

Islands as a disconnected territories depend on air and sea transport, which are highly polluting (14.4% and 13.5% respectively) and expensive, this leads us to talk about cruise ships (floating hotels). The cruise industry has an even heavier carbon footprint per passenger (12.7millions passengers in 2023), this shows that cruise ship passenger generates more the amount of carbon dioxide as someone who flies and rents a hotel for the same amount of time, adding the different touristic activities and attractions proposed by the tourism operators, like the Scuba diving, which damage the coral reefs, and the marine biodiversity.

As mentioned above, the tourism generates positive economic impacts for local communities, but in the meantime, it also has adverse effects on local areas, for certain extremely popular sites, it is no longer a matter of expanding tourism, but of limiting it. The word 'overtourism' was coined in recent years to describe the issue of tourist destinations getting overcrowded with a rising number of visitors.

Dependence to the mainland

The dependence of islands on decision-making varies according to their political status, economic relations, and strategic importance. In Europe, most of the islands are politically related to a mainland state, limiting their political, economic and social autonomy. Even partially autonomous islands or group (region) of islands, remain subject to central government policy. Such dependence may last for centuries, where this dependence may go on without end, especially when economic, military, or geopolitical interests are involved.

Administrative delays are among the key issues of such dependence; they are typically caused by distance from the central government or bureaucratic sophistication. Islands are often in the back when it is getting public policies and finances, whenever critical decisions are made by a mainland government. This amplifies local challenges, such as resource access, tourism regulation, or conservation. Furthermore, a centralized government is often disconnected from island realities, with policies being inappropriate for local needs.

Lokrum island, Dubrovnik (Croatia)

In addition, the bureaucratic systems obstruct economic development, discouraging investment and rendering administrative processes heavy and long for businesses and citizens, what accentuates the isolation of the island communities and reinforces their usual reliance on the mainland.

Social and cultural issues

Islands face unique social and cultural challenges due to isolation, small populations, and external pressures. Limited access to education, healthcare, and employment can lead to social inequalities and emigration, destabilizing local economies and draining traditional knowledge. Rapid tourism-led development threatens indigenous cultures, while high living costs increase social disparities. Balancing economic growth with cultural and environmental conservation is challenging.

Isolation

Geographic isolation refers to the degree in which a place is separated from other places and is one of the most critical problems faced by island societies, creating more social, economic, and technological problems. Because of their unique location, so many of these islands cannot fully enjoy some of the basic services that any community should be able to benefit from, such as healthcare, education, and transportation. This distance from the mainland creates an obstacle to the timely, and in some situations, not so timely medical attention, higher educational

pursuits, and other auxiliary services that are more readily available in other regions. The already mentioned lack of transport facilities, with rare and expensive flights and ferry services, exacerbates the situation, making traveling not only expensive, but also overly complicated. Therefore, so many island people are forced to make painful decisions of remaining in their homeland with scanty opportunities or migrating to the seaboard, hoping to enjoy a better standard of living.

Geographic separation has its own social impacts, one of which is social isolation. Several small island communities do possess cohesive social networks, yet their separation can be a source of social isolation, at least among the youth who have limited physical and social activities to partake in. A lack of employment and modern leisure opportunities contributes to social alienation and is a challenge for island children and young people.

Economic isolation also plays a crucial role in limiting growth and development. Many islands rely heavily on imports for essential goods, leading to higher costs for food, fuel, and medical supplies. Businesses on islands may struggle to compete with mainland counterparts due to higher transportation costs, limited workforce availability, and restricted access to markets. Additionally, unreliable internet connectivity in some remote areas can further isolate island communities by restricting access to digital education, remote work opportunities, and global commerce.

Fishing boats in Lipari. Francesco Luise

Population declines

The migration triggered especially by the youth's search for better economic opportunities, education, and living conditions, is the principal reason for the population decline phenomenon in most of the islands.

Islands' economies are geographically disadvantaged and lack diversity in employment options as they depend solely on tourism, fishing, and subsistence agriculture which do not guarantee good long-lasting jobs. Consequently, young people tend to migrate to cities or developed countries in hope of better job opportunities, increased pay, and professional advancement. This constant mobility over time contributes to an aging population which is more pronounced among the working population and negatively influences the island's economy and society.

With a continuous decline in population, an increasing gap in young skilled workers becomes evident in the region. In the absence of most young adults, many industries, especially healthcare, education, and technical services, face a severe shortage when it comes to supplying skilled workers. Not only does this brain drain make the population grow weaker, but it prevents new firms from entering the market, which stagnates economic development. In a similar fashion, the decline in the working population leads to reduced tax income which, in the absence of adequate public services, infrastructure, and social care, makes it impossible to keep up these things. Eventually this becomes a basis for worsened health, lower educational and social welfare over time.

Cultural preservation

Islands are home of rich and diversified cultures, which are frequently influenced by distinct historical factors, isolation, and indigenous customs over many centuries. However, in recent years, globalization, immigration, and tourism have increasingly threatened these cultural identities, raising concerns about the extinction of indigenous languages, customs, and ways of living. With modernization and its attendant economic opportunities and technology, island societies need to fight the battle of balancing progress with conservation of their heritage and identity.

Globalization poses a significant threat to cultural preservation, as it leads young generations to adopt global trends and dominant languages, potentially causing the disappearance of indigenous languages and cultural traditions in music, dance, and narration, ultimately resulting in the loss of valuable knowledge passed down through generations.

While tourism is a major economic driver for islands, it can also contribute to cultural dilution. The demand for cultural experiences often leads to the commodification of traditions, where music, performances, and crafts are adapted to meet tourist expectations rather than being practiced as authentic, living traditions. The traditional practices can be performed exclusively for tourists and not as a part of normal life. The deep cultural significance of these traditions can be lost in the long run, making them mere attractions rather than lived traditions.

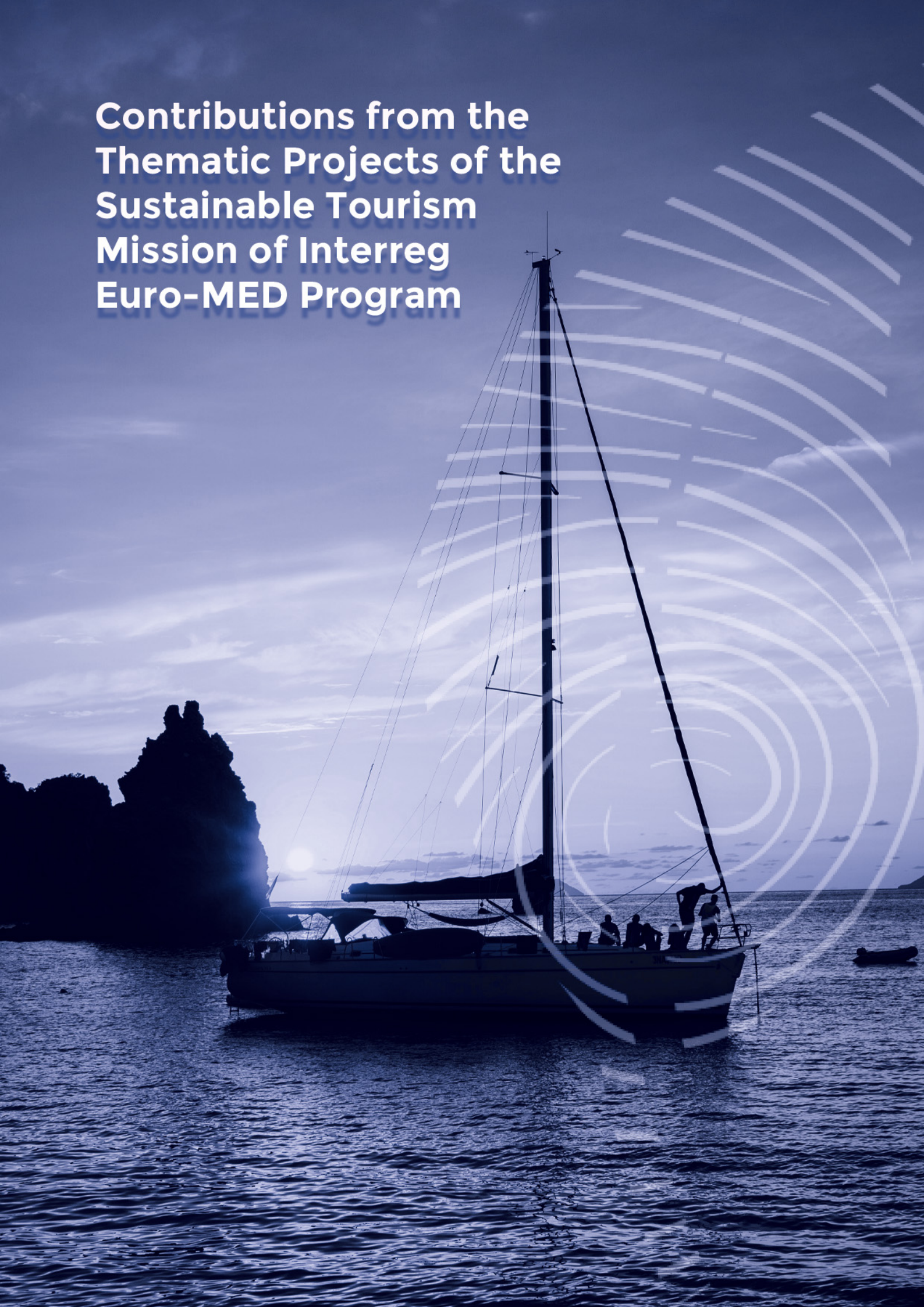
Health and wellbeing

Health and wellness in many islands are often compromised by inadequate healthcare infrastructures, low densities of specialized medical staff, and challenges in accessing higher levels of care. Most of the islands, particularly small islands, lack well-equipped hospitals and specialty treatment centres, and islanders must travel long distances or even off the island to access medical care, which is both time-consuming and costly. This issue is also contributed to by the limited number of medical practitioners, thereby making it difficult to provide regular and comprehensive medical services. Islands also face significant threats to public health because their remoteness and lack of adequate resources can compromise responses to health crises such as pandemics, disease outbreaks, or natural disasters. Poor health infrastructure can lead to delays in vaccine distribution, shortages of essential drugs, and difficulties in implementing large-scale public health campaigns. It is exacerbated by geographical remoteness, inadequate medical infrastructure, and scarce resources, making investment in

health infrastructure, expanding telemedicine coverage, and developing improved emergency response systems a necessity for islands to deliver better health outcomes for their citizens.

The analysis highlights the unique challenges of islands, specifically their physical, economic, social, and environmental vulnerabilities. The difficulties are caused by geographical remoteness, dependency on foreign resources, and a scarcity of infrastructure, which is a challenge in the implementation of circular economy (CE) solutions. A prominent gap in existing research is the focus on cities rather than islands, even though they have individualistic needs. Among the most important issues are environmental risks like climate change, loss of biodiversity, and waste management that must be solved right away through sustainable policies. Economically, islands experience resource scarcity, fossil fuel dependence, inadequate infrastructure development, and excessive tourism reliance, making them highly vulnerable to global disruptions. Socially, remoteness and abandonment erode the local community, while attempts at cultural preservation are eroded by globalization and tourism. Moreover, inefficient healthcare infrastructure and public health risks enhance such challenges, affecting overall wellbeing.

Contributions from the Thematic Projects of the Sustainable Tourism Mission of Interreg Euro-MED Program



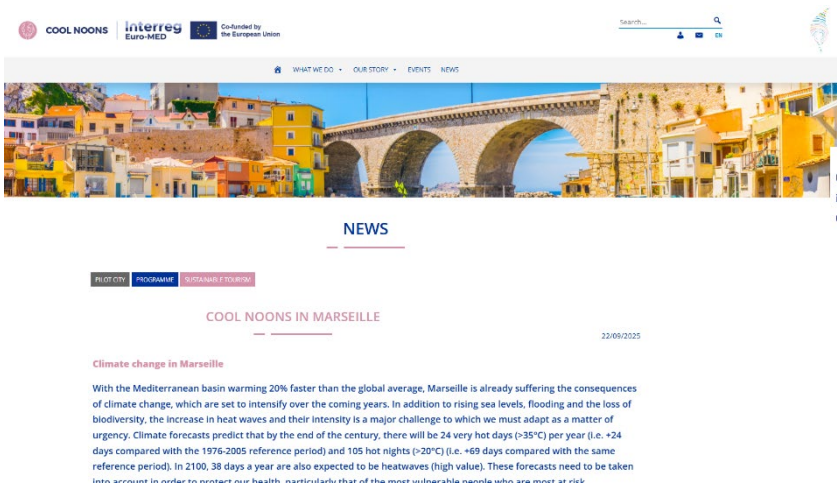
Contributions from the Thematic Projects of the Sustainable Tourism Mission of Interreg Euro-MED Program for addressing these challenges in MED islands. Best practices

1- Interreg Euro-MED COOL NOONS Project: Promoting climate change adaptation in urban settings while renewing the tourism offer in 5 pilot Mediterranean cities, during the hottest hours of the day

Challenges addressed on islands: **Environmental vulnerability** – improving urban resilience in Mediterranean cities by introducing green and water-cooled areas, mitigating the effects of extreme heat in urban environments, **Climate change** – addressing rising temperatures and heatwaves in cities, promoting adaptation strategies for both residents and tourists during the hottest hours of the day, **Tourism-based economy** – rethinking urban tourism routes and promoting shaded, cooled paths, enhancing the tourism offer while reducing climate-related risks for visitors, **Social and cultural issues** – engaging citizens through co-design workshops, fostering community involvement in urban planning and sustainable tourism solutions, **Health and wellbeing** – prioritizing thermal comfort, public health, and quality of life for residents and tourists by providing cooler, safer urban spaces during extreme heat events.

Developing of "cool paths" in islands in the area of the Budva riviera (Montenegro).

The Identification, mapping and promotion of COOL NOONS Paths Project brings together five Mediterranean pilot cities, Budva (Montenegro), Dubrovnik (Croatia), Imola (Italy), Lisbon (Portugal) and Marseille (France), to rethink urban tourism in the face of climate change by focusing on the hottest hours of the day. The cities are mapping and developing "cool paths": routes linking green, shaded or water-cooled areas and less-explored neighbourhoods, based on thermal-comfort data, design-thinking workshops and citizen co-design.



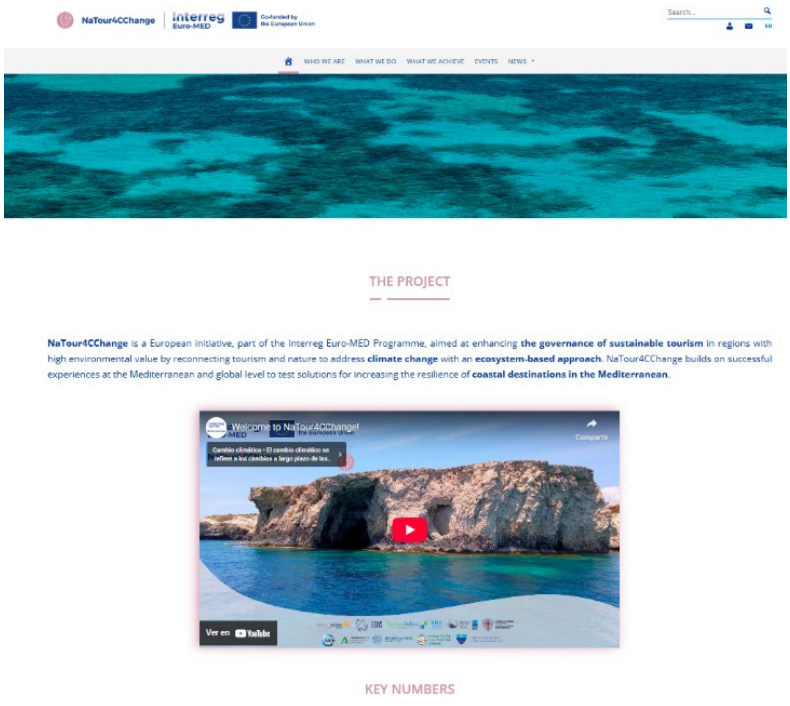
COOL NOONS project website

The aim is to improve the experience for both visitors and residents, pilot a variety of solutions like vegetated surfaces, water installations and light-coloured pavements, and assess their potential for replication across the Mediterranean region.

Learn more on the COOL NOONS project website.

2- Interreg Euro-MED NaTour4CChange Project: Governing sustainable tourism in territories with high environmental value

Challenges addressed on islands: **Environmental vulnerability** – strengthening the resilience of Mediterranean coastal tourism areas with high environmental value by promoting nature-based solutions and sustainable land and resource management, **Climate change,** focusing on climate adaptation and mitigation, helping regions assess tourism-related climate risks and integrate them into actionable strategies, **Tourism-based economy** – addressing the pressures of tourism on vulnerable environments by aligning economic activities with sustainable and climate-resilient practices, **Social and cultural issues** – engaging public and private stakeholders, fostering cooperative governance, participatory decision-making, and locally adapted tourism climate action plans.



NaTour4CChange project website

Engagement of policy level in Sardinia (Italy) and Crete (Greece) for the development of regional strategies and tourism climate action plans

The NaTour4CChange project "Governing sustainable tourism in territories with high environmental value: reconnecting tourism and nature for addressing the climate crisis with an eco-system-based approach" aims to strengthen climate adaptation and mitigation in Mediterranean coastal tourism destinations by building common methods, supporting regions to assess tourism-related climate priorities, and implementing cooperative governance to translate those priorities into action. Across six pilot destinations, the project will evaluate nature-based solutions (NbS), develop regional strategies and tourism climate action plans, and engage public and private stakeholders, such as authorities in Andalusia, **Sardinia, Crete** and Bosnia-Herzegovina, to ensure solutions are feasible, context-specific and scalable.

Learn more on the NaTour4CChange project website.

3- Interreg Euro-MED AQUAMAN AQUAtic systems' evaluation for the Mitigation of wAter scarcity in mediterranean islaNds and coastal tourist destinations under severe pressure Project: A Smart Response to Water Scarcity in the Mediterranean

Challenges addressed on islands: **Water** – targeting water scarcity by promoting non-conventional water sources (rainwater, stormwater, treated wastewater), reducing consumption in tourism, and optimizing distribution systems, **Environmental vulnerability**, addressing environmental pressures from climate change and overuse of freshwater, improving resilience of islands and coastal areas through sustainable water management and nature-based solutions, **Tourism-based economy** – mitigating the water demands of tourism-heavy destinations by implementing strategies to balance tourist needs with local water availability, **Limited resources** – maximizing the use of scarce freshwater resources, integrating holistic resource management and cross-sectoral strategies for sustainable water use, **Social and cultural issues** – engaging local authorities, communities, and stakeholders through training, knowledge sharing, and policy advice, fostering local capacity for sustainable water management.

Water Scarcity Living Labs in Rhodes (Greece), Malta, Canary Islands (Spain), Porquerolles (Francia) and Ponza (Italy)

The Mediterranean faces severe water scarcity due to climate change and high demand from tourism and agriculture. The AQUAMAN project brings together partners from six countries to help island and coastal destinations adopt smarter water management, focusing on non-conventional sources like rainwater, stormwater and treated wastewater, and optimising usage during peak tourist seasons.

The AQUAMAN project tackles acute water-scarcity challenges in the Mediterranean's islands and coastal tourist destinations by promoting non-conventional water sources (such as rainwater, stormwater and treated wastewater), reducing usage especially in tourism—and optimizing distribution systems. Complementary policy recommendations from initiatives like HYDROUSA and ISOS+ help remove barriers to circular water systems in small-island contexts. Ultimately, the project seeks to balance the needs of tourism, agriculture and local populations, while conserving precious freshwater supplies and sustaining the Mediterranean's unique environment for future generations.

AQUAMAN Transferable Solutions catalogue

AQUAMAN also focuses on sharing knowledge, training, and policy advice so that communities can manage water better on their own. By connecting different regions around the Mediterranean, the project encourages cooperation, shared learning, and long-term water conservation for everyone.

"The Blue Horizons: Innovative water solutions for tourism and climate-resilient regions", a document produced by the Interreg Euro-MED AQUAMAN Project serves as a comprehensive and strategic repository designed to advance sustainable water management in Mediterranean regions, particularly in tourism-driven and climate-vulnerable territories. It consolidates a portfolio of "ready-to-use" and adaptable solutions comprising technical interventions, holistic resource management plans, and, with a strong focus on policy recommendations aimed at overcoming institutional, regulatory, and societal barriers.

Its primary purpose is to enable the valorization of non-conventional water sources, the reduction of water consumption, and the minimization of distribution losses through integrated, site-specific strategies. By aligning innovative technologies with supportive governance frameworks, the catalogue facilitates both immediate implementation and long-term policy transformation.

A key feature is its extensive section on nature-based and hybrid interventions, including constructed wetlands for wastewater treatment and reuse (from the projects HYDROUSA and CARDIMED, Horizon Programme), rainwater harvesting systems for agriculture and residential use (HYDROUSA and CARDIMED, Horizon Programme), and green roofs for stormwater management and urban cooling (Interreg Italia-Malta). These solutions deliver technical efficiency and environmental co-benefits, such as biodiversity enhancement, carbon sequestration, and improved climate resilience.

The document contains another section devoted to the Holistic Resource Management Plans, which provide structured approaches to water scarcity mitigation and cross-sectoral resource governance based on the WEFE Nexus principles. These plans create a framework for local authorities and stakeholders to manage water resources in a balanced and sustainable manner.

However, what sets this catalogue apart is its strong policy dimension. It includes carefully crafted policy recommendations derived from tools such as the White Paper on Governance and Climate Adaptation by Dialogue4Tourism Project (Interreg Euro-MED Program) or towards a zero-impact island.

Learn more on the AQUAMAN project website, and read The Blue Horizons: Innovative water solutions for tourism and climate-resilient regions.

Good practice

Gozo (Malta): Data-driven island transition, public-private partnership for sustainability

Gozo has actively partnered with the Greening the Islands Foundation (partner of the Interreg Euro-MED Dialogue4Tourism Project and Associated Partner Interreg Euro-MED AQUAMAN Project) through its GTI Observatory (in collaboration with the Network of Sustainable Tourism Observatories NSTO of Dialogue4Tourism Project), using the indexed assessments in energy, water, waste, mobility and the environment to inform its sustainability roadmap. This collaboration, formalized via a framework agreement in October 2022, ensures that GTI's monitoring data and multisectoral stakeholder findings feed directly into Gozo's regional development policies and investment priorities.

Gozo Island. Francesco Luise

GTI has assessed Gozo across key sectors "Energy, Water, Waste, Environment and Mobility" and the monitoring data emerging from this assessment offers a strong foundation for local policy and sustainability action.

By generating measurable insights, GTI's index supports decision-makers in identifying priority areas for investment, shaping targeted campaigns (waste-reduction, water-conservation) that create new business opportunities and jobs, and crafting a clear roadmap rooted in both technical metrics and community feedback.

For instance, strengthening regulations for energy communities and self-consumption, advancing renewable-energy adoption with battery storage, expanding desalination and rainwater harvesting for water security, promoting the circular economy through the "three Rs" (Reduce, Reuse, Recycle) in waste, and upgrading mobility with micro-mobility, bike-sharing and green maritime links are all critical steps. Monitoring reveals where Gozo must intensify efforts; whether in infrastructure, policy or stakeholder engagement; and enables alignment of investments with the island's carrying capacity and sustainability goals. The resulting data-driven strategy helps transform Gozo from a traditional tourism destination into a resilient, inclusive and regenerative island model.

Learn more: https://greeningtheislands.org/greening-the-islands-unveils-the-global-index-report-for-gozo/

Good practice

Crete (Greece): When hotels on Mediterranean islands deploy smart-technology systems for monitoring and sustainability

The 5-star Euphoria Resort in Chania, Crete, implemented an advanced building automation system based on the KNX protocol (more than 8 000 KNX devices across 287 rooms and resort facilities) in 2017 in collaboration with system integrator Vlassakis Advanced Solution and visualization platform ComfortClick.

Chania, Crete

This system integrates lighting, sockets, blinds/shades, HVAC and occupancy sensors, enabling real-time monitoring of room status (occupancy, lights, temperature, sockets) and automatic power-down of non-essential systems when a room is empty.

In addition to the KNX automation, the resort's sustainability strategy incorporates solar-panel installation (400 kWh + per year) and A+ energy-class buildings, with a fully functional BMS (Building Management System) that tracks energy production and consumption daily.

Although a precise figure of 25 % reduction in power demand is not publicly confirmed in the case-study sources, the resort reports significant energy-efficiency gains from its automation and solar systems. By aligning hotel operations with smart building technology, guest comfort is maintained while resource consumption is optimized, offering a model that other tourism facilities on islands may replicate to reduce environmental impact, cut operational costs and support sustainable tourism.

Learn more: www.euphoriaresort.gr/wp-content/uploads/2023/10/SR-2023_EUPHORIA-RESORT-1.pdf

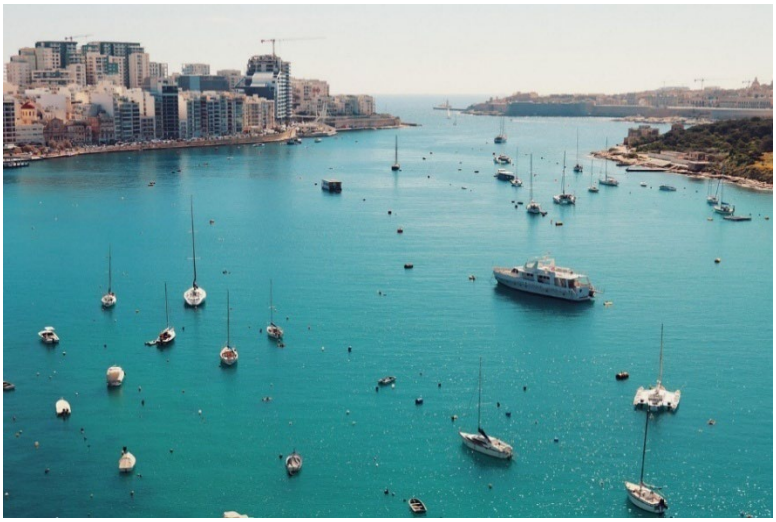
Good practice

Malta's water challenge: Semi-arid limits, tourism pressures and resilience through innovation

The Maltese Islands face significant water-scarcity challenges due to their semi-arid climate, very limited natural freshwater resources, and high population density; they have the lowest natural freshwater availability per capita in the EU.

Rainfall has been steadily declining, with the 2023-24 hydrological year officially classified as "arid," signalling deepening drought conditions.

To address these issues, Malta is implementing a multifaceted strategy: enhancing water-supply resilience via seawater desalination and wastewater reuse, improving network efficiency (leakage reducing the Infrastructure Leakage Index to about 1.8), and rolling out policy and infrastructure investments through its €310 million 2023–2033 National Investment Plan for water and wastewater services.



Malta

Key solutions that may be replicated elsewhere include deploying non-conventional water sources (desalination, treated wastewater, rainwater harvesting), aggressive demand management and leakage control, and strong policy frameworks aligned with climate adaptation and efficient resource use.

Learn more: *Energy and Water Agency - EWA*, partner of the Interreg Euro-MED AQUAMAN Project.

Good practice (collected in the transferable solution catalogue of AQUAMAN Project).

Kerkennah (Tunisia) "No More Plastic": From island innovation to global impact

The "No More Plastic in Kerkennah" initiative (2024-25) on Tunisia's Kerkennah Islands is a pilot project funded under the REMEDIES Horizon Europe programme, aiming to drastically reduce single-use plastics in the island community. By installing rainwater harvesting and reverse-osmosis purification systems in schools and public spaces, the project provides safe drinking water without relying on bottled plastic containers. It also replaces plastic bags with locally produced kraft-paper alternatives, revives traditional crafts to avoid plastic fishing gear, and builds community awareness around circular water and waste practices.

Kerkennah Islands

"No More Plastic in Kerkennah" exemplifies how a small island community can be the **testing ground and proof of concept** for integrated technical, behavioural and cultural interventions

aimed at plastic-reduction, water-resilience and sustainable tourism and local development. If successful, it holds promise for replication to other Mediterranean islands and coastal zones facing similar environmental-tourism-infrastructure pressures.

Learn more:
https://smilo-program.org/wp content/uploads/2021/09/SMILO_RA_2019_GB_FINAL_2.pdf

Other good practices on capacity building in Greece - Rhodos: Creating the first holistic sustainable tourism destination

The initiative now known as **The Rhodes Co-Lab Sustainable Destination** (officially launched on 20 January 2022) represents a groundbreaking alliance between TUI Group, the TUI Care Foundation, the South Aegean Region and the Municipality of Rhodes, all collaborating to transform the island of Rhodes into the world's first truly holistic sustainable tourism destination. Embracing a three-pillar framework (Environment, Society & Heritage, Economy & Tourism) the project articulates bold, measurable ambitions: achieving climate neutrality by 2030; phasing out fossil fuels and drastically reducing the dependency on single-use plastics; increasing local agricultural and aquaculture production; boosting employment and skill-development within the hospitality sector; and making the island fully accessible for persons with disabilities by 2025.

With an investment envelope of approximately €250 million, the initiative is designed not only to deliver tangible benefits for visitors and the local community, by enhancing environmental resilience, preserving cultural heritage and expanding inclusive economic opportunities, but also to serve as a blueprint for sustainable tourism destinations worldwide.

Outcomes

- The initiative has established **concrete targets**: climate-neutrality by 2030, the elimination of single-use plastics by 2027, full accessibility for persons with disabilities by 2025, and a 50 % increase in local agricultural production.
- Early pilot actions are already underway: for example, the reduction of service-cars for tour-guides in favour of e-bikes on Rhodes (reducing the number of cars from over 100 to 60).

Island of Rhodes

- The programme has strong institutional support, with a defined budget of approximately **€250 million**, supported by public-private partnership among the TUI Group, the TUI Care Foundation, the region, and local government.

Lessons learned

- **Holistic and multi-pillar approach is crucial**:

- Addressing environment, society/heritage, and economy/tourism simultaneously creates a more resilient, inclusive transformation rather than isolated interventions.
- **Early pilot projects help build momentum and credibility**: The e-bike transition illustrates how relatively small operational changes can signal commitment and demonstrate progress in sustainability.
- **Public-private partnership and clear governance matter**: The success of the initiative depends on integrating tourism industry actors, local authorities, and community stakeholders under shared targets, backed by funding and clear timelines.

Learn more: The Rhodes Co-Lab Sustainable Destination

4- Interreg Euro-MED Recircle MED: Promote sustainable tourism in Mediterranean coastal areas by integrating blue and circular economy principles

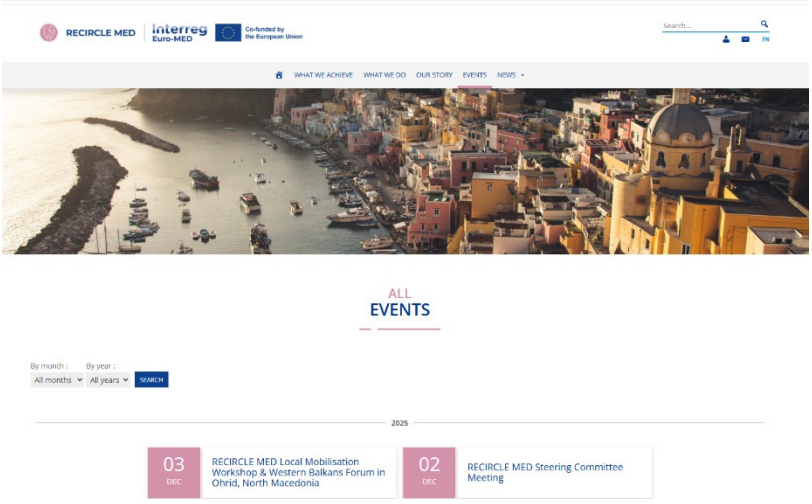
Challenges addressed on Islands: **Waste** – waste management in Mediterranean coastal areas by implementing circular economy strategies to reduce, reuse, and recover resources in tourism-heavy destinations, **Tourism-based economy** – addressing pressures from tourism on local resources, promoting sustainable tourism practices and resource-efficient business models, **Economic constraint** – transferring tested circular economy methodologies, the project helps local SMEs and municipalities create economic opportunities and reduce costs, **limited resources** – optimizes the use of scarce local resources, including materials and energy, through circular economy practices, **Water** – incorporating sustainable water management solutions, improving efficiency in water use for both tourism and local communities, **Social and cultural issues** – engaging stakeholders, municipalities, and communities, supporting local involvement, knowledge transfer, and policy integration for sustainable tourism.

Receiving destination: Cefalu island together with coastal areas from Bulgaria, North Macedonia and Montenegro

The Recircle MED project targets Mediterranean coastal-tourism destinations that lack the capacity to independently make the transition to circular and blue-economy models.

It builds on prior initiatives such as INCIRCLE (Interreg VB Mediterranean 2014-2020) and REBOOT MED (EMFAF program) to transfer tested methodologies and tools into local action plans focusing on issues like waste, water management and tourism-resource efficiency.

Structured around three core work packages —Design (developing the blueprint and transfer methodology), Transfer (local implementation and stakeholder training) and Offset (visibility, policy integration and scaling)—the project emphasizes cross-border cooperation and stakeholder engagement (including municipalities, universities, chambers of commerce and SMEs).



Recircle MED project website

Ultimately, Recircle MED aims to embed circular-blue tourism practices into regional policy frameworks, increase destination resilience and foster sustainable growth in sensitive Mediterranean coastal zones.

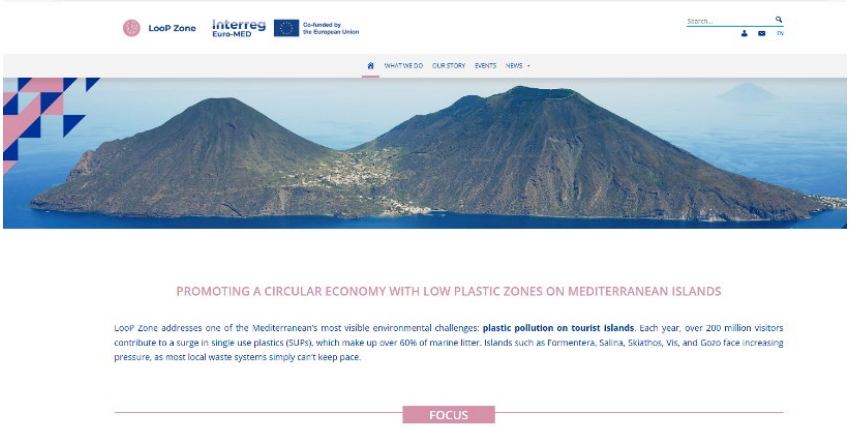
Learn more on the Recircle MED project website.

5- Interreg Euro-MED LooP Zone Project

Challenges addressed on islands: **Waste** – targets the plastic waste crisis on small Mediterranean tourist islands, implementing strategies to reduce and phase out single-use plastics in the HORECA sector, **Tourism-based economy** – addresses tourism-related pressures on waste management by integrating hotels, restaurants, and catering businesses into sustainable practices, **Economic constraint** – promoting circular business models and innovation labs, the project creates new value chains and economic opportunities around SUP-free products, **Social and cultural issues** – engages local communities, businesses, and municipalities, raising awareness, providing tools for behavior change, and strengthening policy frameworks to support sustainable practices, **Isolation** – creating a regional island network and sharing digital platforms and best practices, the project reduces the isolation of small islands and facilitates transnational collaboration.

The **LooP Zone project** addresses one of the Mediterranean region's most pressing environmental challenges: the plastic waste crisis affecting small tourist islands. Formentera (Spain), Salina (Italy), Skiathos (Greece), Vis (Croatia) and Gozo (Malta) are experiencing increasing pressure from tourism-related waste generation, while local waste management systems often struggle to cope effectively.

The project aims to establish **"Low Plastic Zones"** in which municipalities, tourism businesses, and local innovators collaborate to prevent and phase out single-use plastic (SUP) products in the HORECA sector (Hotels, Restaurants, and Catering). Participating stakeholders will receive tools to assess their plastic footprint, implement sustainable and reusable alternatives and supports the creation of new value chains for SUP-free products through innovation labs and circular business models, while strengthening local policy frameworks to align with national and EU-level regulations.



LooP Zone project website

The **LooP Zone model**, built on a three-pillar approach encompassing **policy, business support, and innovation**, will be tested at local level, made accessible through a digital platform, and scaled up across the Mediterranean via a regional island network.

Learn more: https://loopzone.interreg-euro-med.eu/

6- Interreg Euro-MED Waterise Project

Challenges addressed on islands: **Water** – sustainable water management through natural wastewater treatment, rainwater harvesting and atmospheric water production, **Tourism-based economy** – targets islands affected by overtourism, ensuring that water use in tourist areas is sustainable and does not compromise local communities or ecosystems, **Environmental vulnerability** – implementing low-impact, eco-innovative solutions, the project reduces stress on fragile island ecosystems and preserves natural resources, **climate change** – promoting climate change adaptation and disaster risk prevention, fostering resilience in water management and tourism supply chains, **Social and cultural issues** – community engagement, local knowledge integration, and the Water-House Label protocol, the project encourages local participation, awareness, and sustainable practices in island tourism.

Good practice

Pantelleria: Remote island, sustainable vision

Pantelleria is a volcanic island located between Sicily and Tunisia, with approximately 80 % of its territory designated as the protected **Parco Nazionale Isola di Pantelleria**, which safeguards its unique natural and cultural heritage. On the island, community-driven sustainable practices are central to the tourism model: traditional water-harvesting systems in "dammusi" houses, low-impact viticulture and agriculture, and coordinated beach and seabed clean-ups by residents and visitors help preserve the fragile environment. A modern waste-management system featuring kerb-side collection, Radio-Frequency Identification (RFID) bins and high-quality recycling has been introduced since 2015, significantly reducing landfill dependency.

Pantelleria

Educational campaigns in schools and a "plastic-free" initiative have helped minimize single-use plastics, while the island's participation in the Clean Energy for EU Islands and the WIMBY Project reflect a strong commitment to community-based decision-making in renewable-energy development. Together, these efforts illustrate how residents, local businesses and public authorities can align environmental stewardship,

cultural heritage and tourism-based economic benefits to build a resilient and sustainable island destination.

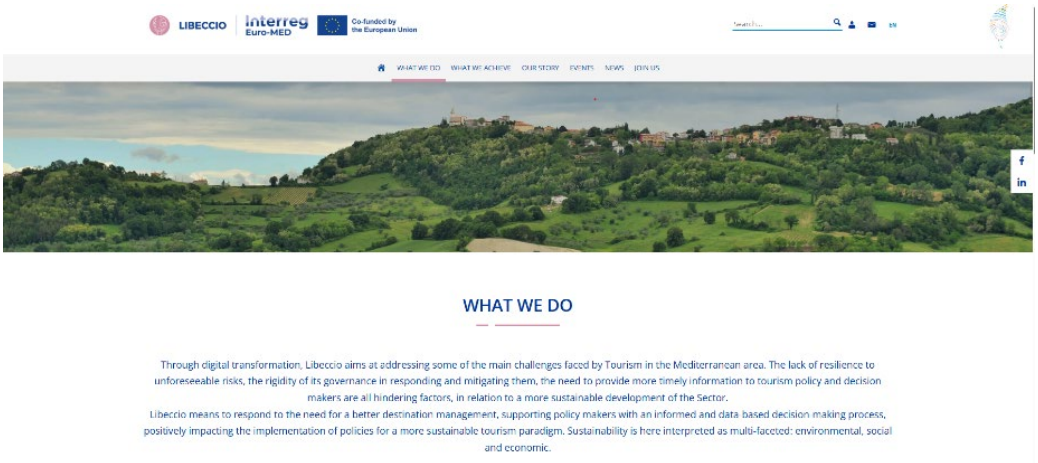
Learn more: Parco Nazionale Isola di Pantelleria

7- Interreg Euro-MED LIBECCIO Project

Challenges addressed on islands: **Tourism-based economy** – improving destination management and sustainable tourism by supporting policymakers with data-driven tools to optimize tourism flows and reduce pressures on destinations, **Economic constraints** enhancing governance and decision-making, helping increase efficiency and resilience of the tourism sector, indirectly supporting economic sustainability, **Social and cultural issues** –promoting multi-faceted sustainability, addressing social and environmental aspects of tourism, and aims to reduce negative impacts on local communities, **Lack of infrastructure** – strengthening digital infrastructure through the development of advanced decision-support systems (DMSS), enabling timely, informed decisions for tourism management.

Through digital transformation, Libeccio aims at addressing some of the main challenges faced by Tourism in the Mediterranean area. The lack of resilience to unforeseeable risks, the rigidity of its governance in responding and mitigating them, the need to provide more timely information to tourism policy and decision makers are all hindering factors, in relation to a more sustainable development of the Sector.
Libeccio means to respond to the need for a better destination management, supporting policy makers with an informed and data-based decision-making process, positively impacting the implementation of policies for a more sustainable tourism paradigm. Sustainability is here interpreted as multi-faceted: environmental, social and economic.

Libeccio capitalizes on a series of previous project experiences, in particular the Innoxenia project, in turn followed up by Innoxenia Plus (Adrion Programme 2014-2020 and 2021-2027).



LIBECCIO project webpage.

Innoxenia developed a web platform called TIDDS (Tourism Innovation Decision Support System), which can be seen as a less sophisticated version of the DMSS.

To know more: LIBECCIO website

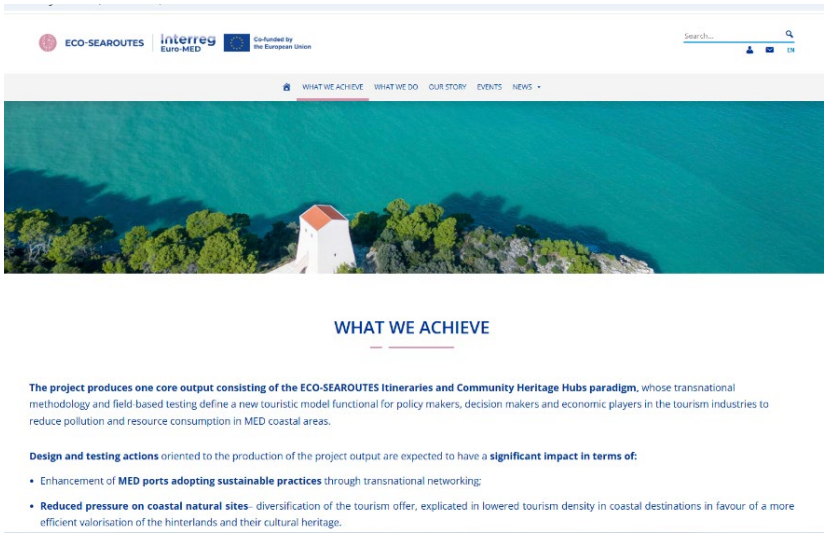
8- Interreg Euro-MED EcoSeaRoutes Project

Challenges addressed on islands: **tourism-based economy** (by addressing mass tourism and seasonal pressure), **environmental vulnerability / biodiversity loss** (by protecting natural coastal sites), **over-tourism** (by redistributing tourism flows to less crowded areas), **limited resources / infrastructure** (implicitly, by improving management and interconnections of MED ports), **cultural preservation** (through Community Heritage Hubs and local itineraries)

The project *ECOSEAROUTES – Eco-nautical sea routes* aims to promote sustainable routes to reduce pressure on Mediterranean coastal areas. It develops new solutions to reduce pressure of mass tourism and re-distribute tourism flows on natural coastal areas, improving the management and interconnections of MED touristic ports and their neighboring.

The main outputs of the project are:

1. Setup of a MED-wide eco-nautical route connecting touristic ports committed to a shared sustainability standard



ECO-SEAROUTES Project

2. Establishment of local tourist itineraries aimed to encourage visits to the hinterland of coastal destinations, co-designed through participative methodologies
3. Valorisation of the developed itineraries through the collaborative setup one Community Heritage Hub for each targeted territory;

The project involves as partners the islands on different scales: an archipelago of small islands (Ionian Islands) and three big islands (Corse, Cyprus and Balearic) linked by a common challenge of touristic pressure that they are already addressing with different strategies and methods and that, thanks to the project, will address testing some common strategies, specifically involving the ports and marinas.

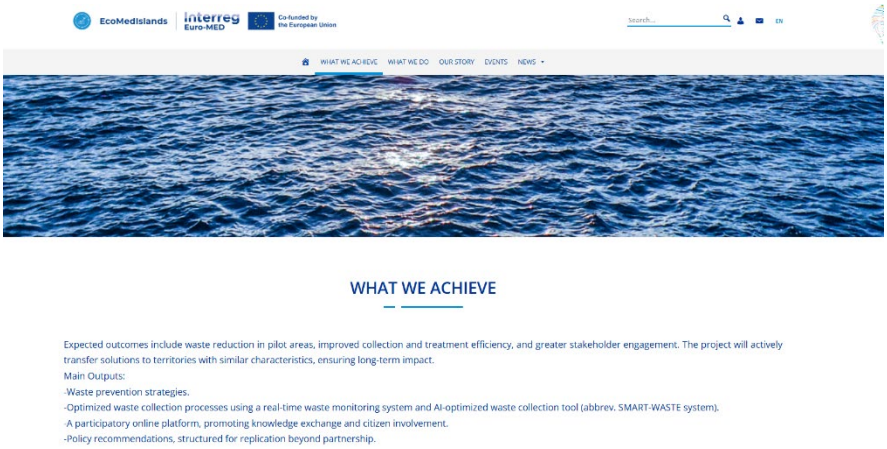
To know more: https://eco-searoutes.interreg-euro-med.eu/

Contributions from other Interreg Euro-MED Missions

Contributions from other Interreg Euro-MED Missions for addressing these challenges in MED islands

1- Interreg Euro-MED EcoMedIslands: Circular solutions for sustainable waste management in Med Islands. Interreg Euro-MED Innovative Sustainable Economy Mission.

Challenges addressed on islands: **Waste** – circular waste management solutions, real-time waste tracking with IoT sensors, AI-optimised collection routes, and measures to reduce, reuse, and recycle waste at source, **Economic constraint** – reduction of operational costs for island municipalities by optimising collection systems, lowering transport needs, and improving efficiency through digital and circular-economy solutions, **Limited resources** –cutting waste generation, increasing reuse and recycling, and optimising logistics, reduces pressure on scarce land, materials, and financial resources typical of island contexts, **Environmental vulnerability** – Improved waste management lowers pollution risks, protects fragile island ecosystems, and reduces emissions from waste collection and transport, **Isolation** – fostering transnational cooperation, peer-to-peer learning, and transfer mechanisms that connect Mediterranean islands with other European and non-EU island regions.



EcoMedIslands project webpage.

Islands in Croatia, Cyprus, Greece, Italy and Malta will evaluate real-time waste tracking with IoT sensors and AI-optimized collection routes

As part of the Interreg Euro-MED Innovative Sustainable Economy mission, EcoMedIslands provides innovative solutions to optimize Mediterranean islands waste management. How? By rolling out a circular economic strategy in pilot areas, cutting waste at the source and boosting reuse and recycling. Islands in Croatia, Cyprus, Greece, Italy and Malta will evaluate real-time waste tracking with IoT sensors and AI-optimized collection routes. The expected output: less waste, fewer trucks, lower emissions.

The EcoMedIslands project will actively cooperate with other Euro-MED co-funded and governance initiatives, facilitate ongoing exchanges on circular economy practices, and record all collaborative synergies. It incorporates hybrid transfer workshops and site visits at pilot

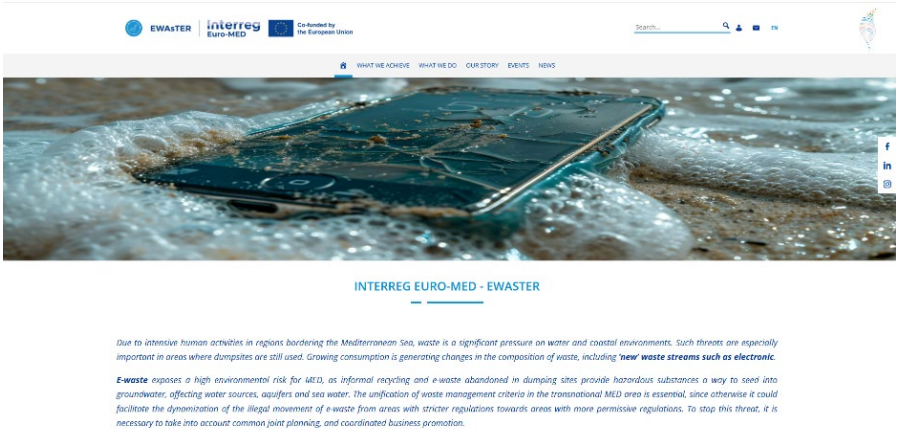
island locations, complemented by peer-to-peer learning, a defined Transfer Plan and a full Transfer Toolkit. To ensure lasting policy integration, the project engages stakeholders at local, regional, national and EU levels—leveraging networks to widen its scope to Outermost Regions, Baltic Sea islands and non-EU partners—and culminates in a hybrid Policy Symposium, a Policy Paper and a Final Policy Workshop with EU stakeholders.

Read about the Project website and project kick-off.

2- Interreg Euro-MED E-Waster Project. (Interreg Euro-MED Innovative Sustainable Economy Mission).

Challenges addressed on islands: **Waste** – Mediterranean Methodology for Waste Prevention and Management, pilot actions on e-waste reuse, eco-renting schemes, and the development of local action plans, **Economic constraint** – innovative business models that create economic value from e-waste, reduce disposal costs, and support local circular-economy opportunities, **Limited resources** – reuse, repair, eco-renting, and waste prevention, the project reduces pressure on raw materials and extends product lifecycles, **Social and cultural issues** – awareness campaigns, educational activities in schools, behaviour-change initiatives, and the social inclusion of at-risk individuals in e-waste reuse activities.

The eWAsTER project has developed the *Mediterranean Methodology for Waste Prevention and Management*, a handbook that compiles best practices for reducing e-waste across three perspectives: innovative business models, public authority interventions and public awareness and behaviour change activities.



E-Waster Project Website

The consortium is also creating a Self-Assessment Tool that will allow other regions to identify their current performance levels and receive tailored recommendations on suitable best practices and intervention measures.

In parallel, three pilot tests are underway. One supports businesses in integrating at-risk individuals who can contribute to e-waste reuse and value creation. Another promotes eco-renting schemes within regional and municipal authorities. The third focuses on engaging schools and raising awareness among young students. Finally, each partner region is preparing

a Local Action Plan, to be validated at local or regional level by the project's end. These plans will translate the project's findings into concrete actions tailored to regional needs

To know more: eWAsTER project Webpage

Contributions from other Programs

Contributions from other Programs for addressing these challenges in MED islands

1- Interreg Maritimo IT-FR Maritime ISOS Sustainable islands: Cooperation in the heart of the mediterranean for preserving and promoting islands' heritage

Challenges addressed on islands: **Environmental vulnerability** – protection and sustainable management of fragile island ecosystems, **Biodiversity loss** – conservation actions and sustainable use of natural resources, **Waste** – waste separation, innovative waste management solutions, and circular-economy approaches, **Energy** – pilot actions on renewable energy adapted to small islands, **Tourism-based economy** – promoting sustainable, regulated tourism that protects heritage assets, **Dependence to the mainland** – increasing local self-sufficiency in energy and waste management and strengthening island governance, **Isolation** – creation of a transnational Franco-Italian island network, **Cultural preservation** – protection, promotion, and sustainable use of cultural heritage.

The "ISOS" project – Sustainable Islands – aims to create a network of French and Italian islands, pilot territories committed to preserving their natural and cultural heritage: the Lérins Islands (Alpes-Maritimes), the Hyères Islands archipelago (Port-Cros, Porquerolles, Le Levant - Var), and the Lavezzi Islands archipelago (Corsica) for France, the island of Capraia (Tuscany), the island of Tavolara (Sardinia) and the island of Palmaria (Liguria) for Italy.

These small islands have a unique cultural and natural heritage; however, they are also fragile because of the challenges posed by a mainly seasonal, maritime tourism. They face significant seasonal population variations and have common heritage degradation issues, in addition to waste management and energy supply not fit for environmental quality. The islands belonging to the partnership, wish to engage in this strategic integrated project to preserve their assets and jointly develop a "sustainable island" approach. They will rely on the incipient international Small Sustainable Islands initiative; the Maritime cooperation area will be perfect to experiment with this new brand. Therefore, the project ISOS - Sustainable Islands intends to:

- Create a network of French and Italian islands engaging the preservation of their natural and cultural heritage featuring technical workshops, conferences, expert mobilisation, a calendar or a series of initiatives.
- Implement practical pilot actions together with local operators to obtain better management of natural resources with innovative solutions suitable for small islands (renewable energy, waste separation and heritage promotion).

ISOS Sustainable Islands webpage

The spread of this network on the Maritime scale and the planned investments will lead to the "sustainable islands" certification of the project islands, due to their having built together sustainable strategies for the protection of natural and cultural heritage and the benefit of their populations.

Learn more on the ISOS project website.

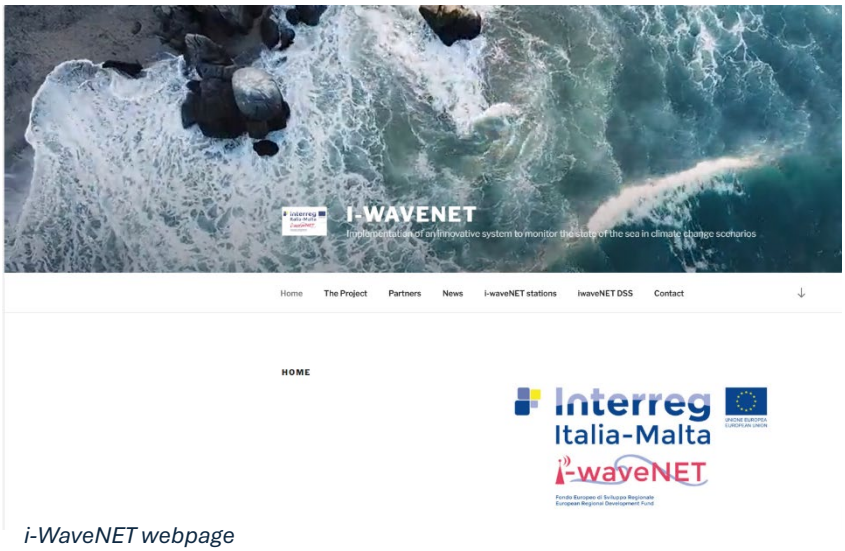
2- Interreg Italia-Malta i-WaveNET: Implementation of an innovative system for monitoring sea level under climate change scenarios

Challenges addressed on islands: **Environmental vulnerability** – understanding of coastal and marine dynamics in highly exposed areas, capacity to anticipate and mitigate coastal risks linked to extreme sea conditions, **Climate change** – monitoring sea-level rise, wave patterns, and extreme events under future climate scenarios to support risk mitigation strategies, **Water** – marine state observation, water-related challenges affecting coastal zones, flooding risks, and maritime safety, **Lack of infrastructure** – coastal monitoring infrastructure through the installation and integration of advanced observation technologies and a shared Decision Support System for authorities.

The project aims to create an innovative network of sea state observation based on the integration of different technologies, such as HF-radar, seismic sensors, sea level sensors, wave buoys, weather stations.

Thanks to the project, the existing network of weather sensors and HF-Radar systems will be integrated with new installations at strategic points in the cross-border area.

The data from the installation of the new instruments will be compared and made homogeneous to develop a Decisions Supporting System (DSS).



i-WaveNET webpage

This system will allow stakeholders (local and national authorities) to take the strategic decisions necessary for the mitigation of coastal risk linked to potentially catastrophic extreme events in the Area of the Strait of Sicily.

Learn more on the i-WaveNET project website.

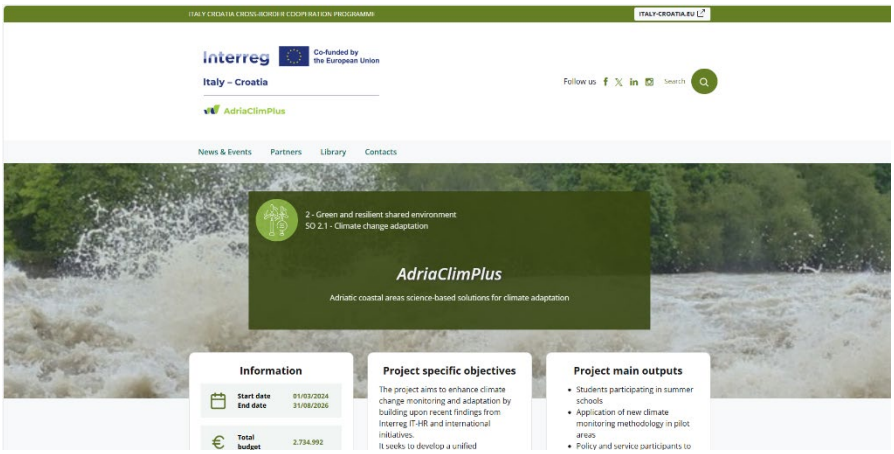
3- Interreg Italy-Croatia AdriaClimPlus: Adriatic coastal areas science-based solutions for climate adaptation

Challenges addressed on islands: **Environmental vulnerability** – high exposure of Adriatic coastal areas to sea-level rise, erosion, and extreme weather, strengthening resilience of fragile coastal systems, **Climate change** – climate impact monitoring, downscaling models, and the development of science-based climate adaptation strategies, biological and ecosystem monitoring and testing adaptation measures, protection of coastal and marine ecosystems threatened by climate change, **Water** – challenges such as sea-level rise, coastal flooding, and marine dynamics affecting coastal zones, **Lack of infrastructure** – monitoring, modeling, and decision-support infrastructure necessary for climate adaptation planning at local and regional scales, **Cultural preservation** – safeguard cultural heritage in coastal areas that is increasingly at risk from climate-driven impacts.

The project is tackling the pressing challenges posed by climate change within the IT-HR Programme area, which encompasses both the Italian and Croatian sides of the Adriatic Sea. The region faces significant threats such as sea-level rise, coastal erosion, and extreme weather events that endanger its rich cultural and natural heritage.

Building upon previous national and international initiatives, AdriaClimPlus aims to significantly enhance the region's capacity to monitor and understand climate impacts on coastal areas. This includes advancing meteo-ocean physical, chemical, biological, and ecosystem monitoring to better grasp the complex interactions driving climate change effects along the Adriatic coast. Key to the project is the development and refinement of climate downscaling modeling tools tailored to the specific coastal dynamics of the Adriatic basin. These tools will enable stakeholders to simulate and predict climate scenarios with greater accuracy, facilitating informed decision-making for climate adaptation strategies.

AdriaClimPlus will foster collaboration among stakeholders, including researchers, policymakers, and practitioners from both sides of the Adriatic. By consolidating protocols and best practices, the project aims to establish a cohesive framework for climate adaptation planning that spans regional and basin scales. The project will focus on seven pilot areas, two in Croatia and five in Italy, test and implement adaptation strategies tailored to local conditions. Through targeted activities such as information events, summer schools, and training courses, AdriaClimPlus will engage with local communities and stakeholders.

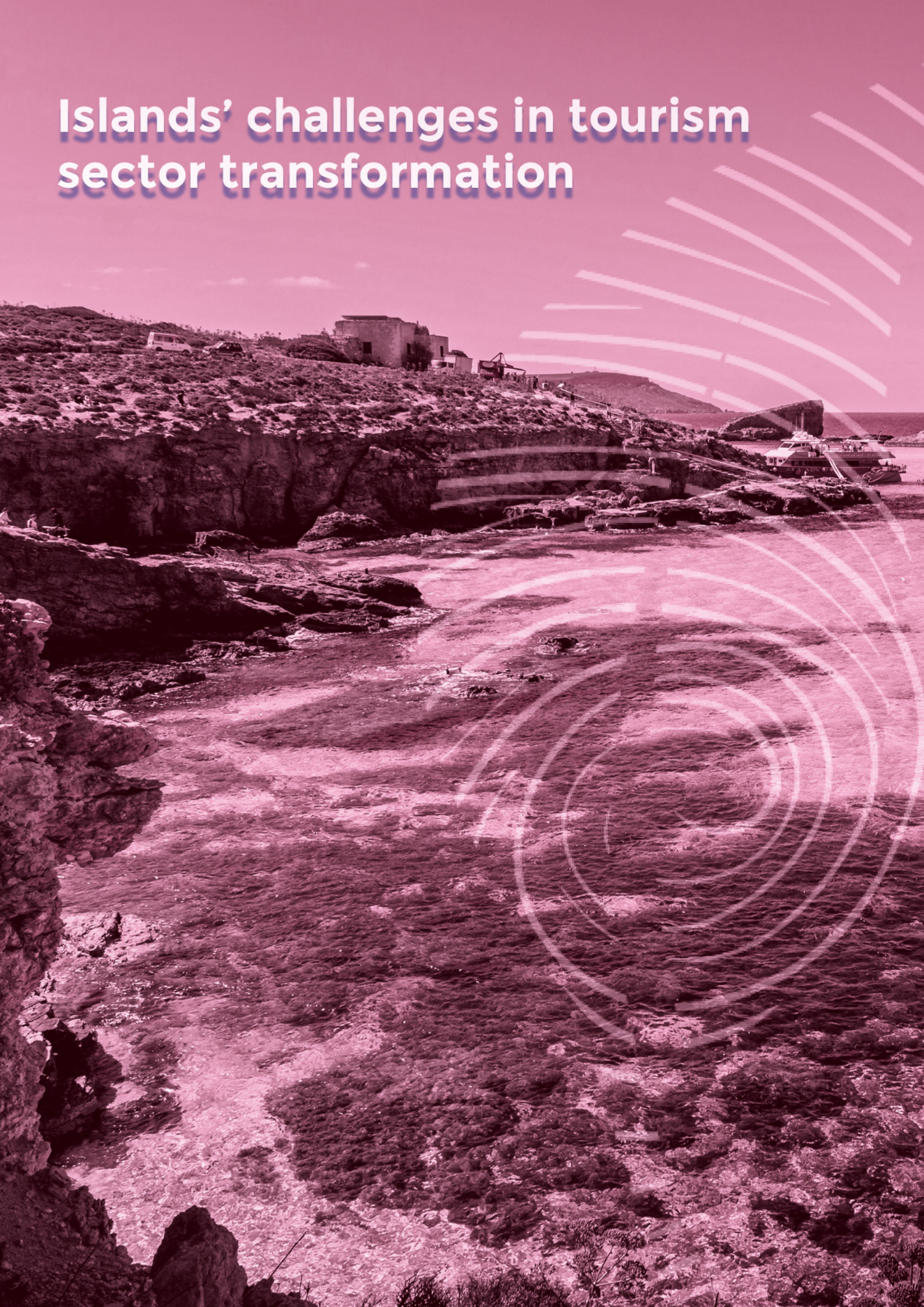


AdriaClimPlus project webpage

These efforts will not only raise awareness about the impacts of climate change but also promote the adoption of resilient practices to safeguard local economies and ecosystems.

Learn more on the AdriaClimPlus project website.

Islands' challenges in tourism sector transformation



Islands' challenges in tourism sector transformation

Islands have finite land, limited resources, high exposure (to climate, external shocks) and often economies heavily dependent on tourism. So, the challenges are amplified. The need to transform tourism into something more resilient, sustainable and community-driven is especially critical in island contexts, not just business as usual.

Environmental & resource management

Islands often face very tight environmental constraints: they have limited land, finite fresh-water resources, and very sensitive ecosystems, large numbers of visitors in short periods push up water consumption, waste generation, energy use and transport demands, which can quickly exceed local infrastructure capacity (for example, studies show that up to 80 % of marine litter on some Mediterranean island beaches is linked to tourism in the high season).

Crucially, the environmental quality is often the main asset islands have for tourism; when that degrades, the tourism product itself is undermined.

Coastal erosion

Key issues to monitor:

- Freshwater supply vs tourist peak demand (water stress, desalination reliance)
- Waste generation and disposal (especially single use plastics, tourist season waste spikes)
- Coastal erosion, marine pollution (from boats/cruise ships), habitat loss

- Energy use and carbon footprint of tourism infrastructure (accommodation, transport)
- Carrying capacity of beaches, marine environments (how many visitors can environment sustain)
-

Socio economic impacts & community wellbeing

Tourism can drive economic growth, but the benefits are not always shared fairly: local communities may end up feeling excluded or squeezed out, as rising rents, seasonal jobs and the erosion of their local identity creep in. Islands normally have small populations and resident-oriented infrastructures, so when visitor numbers surge, public services, transport, housing and daily life can get strained and the quality of life for residents may drop. Truly sustainable tourism means **ensuring local community participation**, offering local employment and enterprise opportunities, and preserving cultural identity, rather than replacing it with purely tourism-driven uses.

Key issues to monitor:

- Ratio of tourist numbers to resident population (tourist intensity)
- Employment type: how many jobs are local, year-round vs seasonal, external labour?
- Housing & rental market are locals being displaced by holiday let
- Local business participation: number/percent of accommodation, restaurants, services locally owned
- Community perceptions: quality of life, service strain, cultural integrity

Governance, planning & diversification of tourism models

Because islands face tight geographic and infrastructural limits, tourism governance must be proactive in implementing zoning rules, managing visitor flows, upgrading infrastructure and diversifying tourism offerings. Over-dependence on sun-and-sea mass tourism leaves them vulnerable to climate, economic or health shocks. Without robust planning that integrates environmental, social and economic goals (a triple bottom line), the resulting pressure on nature and communities can undermine long-term sustainability.

Key issues to monitor:

- Visit seasonality: proportion of tourism in peak vs off peak; efforts to extend season or diversify product (eco-tourism, culture, nature)
- Visitor management: caps, zoning, regulations (especially in sensitive areas), infrastructure capacity vs demand
- Diversification of tourism offerings: moving beyond sun & sea to culture, nature, sports, local experience
- Policy tools: taxes, visitor fees, investment in local infrastructure, regulation of short-term rentals
- Multi stakeholder governance: inclusion of local community, business, environment/culture agencies in decision making.

Adaptation to climate change & resilience

Mediterranean islands are growing increasingly vulnerable to climate change; rising sea levels threaten beaches and coastal infrastructure, while extreme heat, droughts and storms compound resource scarcity and environmental stress. Resilience in the tourism sector means adapting by upgrading infrastructure, diversifying offerings beyond peak sun-and-sea seasons, and guarding natural assets, so tourism supports rather than undermines adaptation.

Key issues to monitor:

- Beach/natural area degradation rates, coastal infrastructure vulnerability
- Resource resilience: water, energy, waste systems under climate stress
- Diversification from climate sensitive tourism models (sun & sea) to more resilient ones
- Risk management: disaster preparedness, early warnings, insurance, adaptation of tourism operations

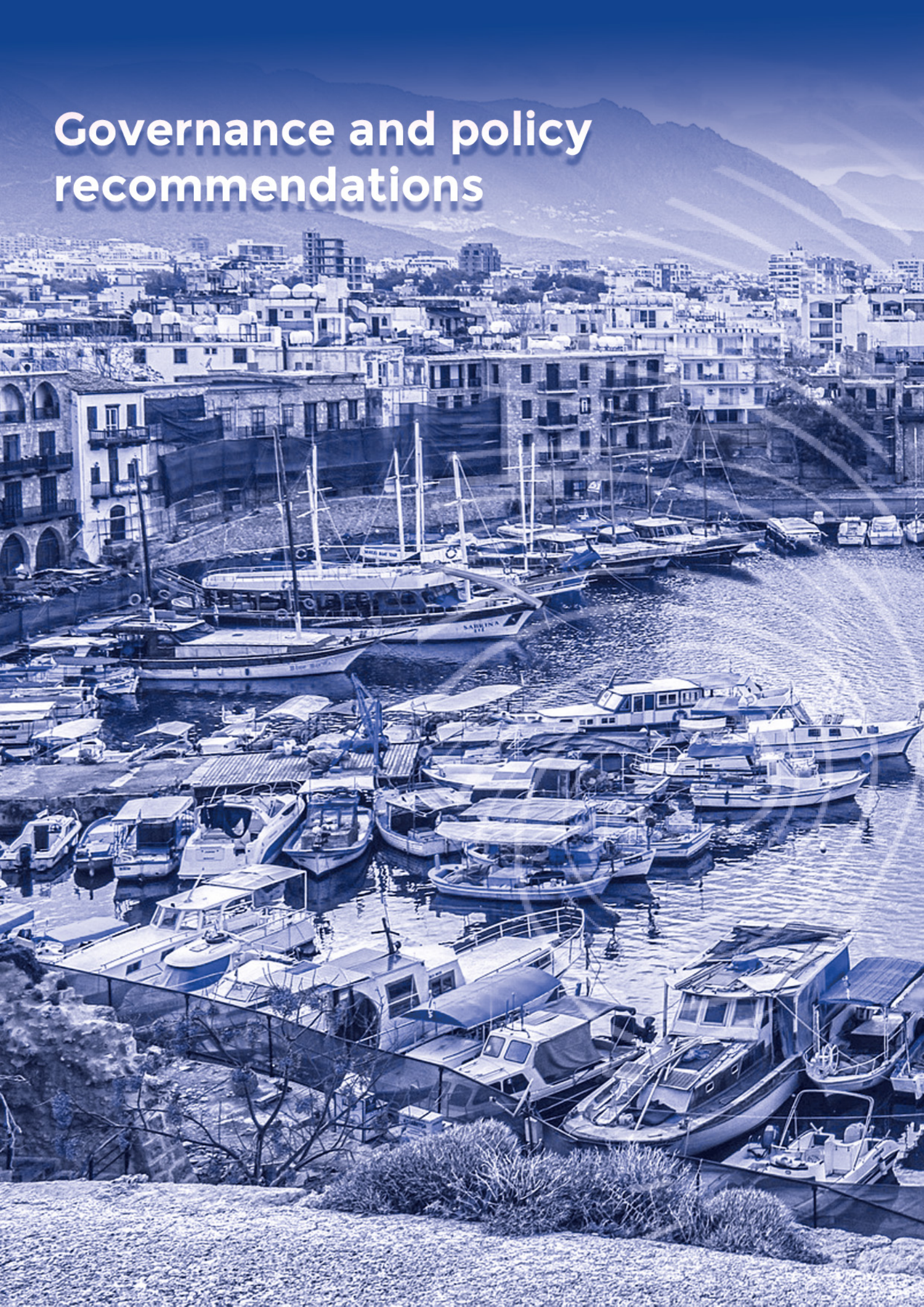
Value chains & local enterprise integration

For tourism to truly benefit island communities, more of its economic value needs to stay local, through locally owned accommodation, locally sourced food and crafts, and local service providers rather than foreign chains. Embracing circular-economy practices, such as reducing waste, sourcing materials and food locally, and improving energy efficiency, is becoming increasingly important in resource-constrained island settings. Strong local value chains not only boost local resilience but also enhance community benefits, ensuring tourism support rather than undermines the island's economy and environment.

Key issues to monitor:

- Percentage of tourist spend that goes to local enterprises
- Local sourcing of food, materials in tourism operations
- Adoption of circular economy practices (waste, water reuse, energy) in tourism sector
- Development of new tourism products linked to local culture, nature, identity

Governance and policy recommendations



Governance and policy recommendations

In the Mediterranean-island context, where rising temperatures, dwindling water supplies and eroding coastlines are already reshaping tourism economies, the sector, long a pillar of island livelihoods, is confronting unprecedented risks. Robust governance and forward-thinking policy are vital to help these destinations adapt and remain resilient. This section presents key recommendations for different stakeholders, drawing on research, data and case studies from the Euro-Med region with a view to developing a strong action framework that aligns with major regional agendas like the European Green Deal and the Mediterranean Strategy for Sustainable Development (MSSD 2016-2025).

Local and regional authorities

Local and regional authorities on Mediterranean islands serve as the frontline in adapting tourism to climate change, using their intimate understanding of local ecosystems and community dynamics to design targeted, site-specific measures.

They translate high-level national/regional policy frameworks like the European Green Deal and the Mediterranean Strategy for Sustainable Development (MSSD 2016-2025) and local stakeholders into practical policies and programmes, and their effectiveness depends on access to funding, technical capacity and multi-level cooperation.

Tilos, a small Aegean island, has become a model for community-led sustainable tourism and climate resilience. Under the local authority's leadership, the island has embraced a zero-waste vision and established a local energy community that uses solar and wind power, enabling residents to dramatically reduce electricity bills and tourism-related impacts the landmark renewable-energy project had a total cost of about €13.7 million, of which approximately €11 million was funded by the EU's Horizon 2020 programme.

Core recommendations: Mainstream climate risk and inter-sectoral nexus into spatial planning and licensing processes, through mandated development of Local Climate Adaptation Plans (LCAPs) that integrate sustainable energy, water, waste, food and mobility targets into local tourism zoning and infrastructure permitting.

Livadia, Tilos

National governments

National governments play a pivotal role in aligning tourism strategies with climate-objectives by legislating, funding and fostering inter-regional coordination, turning local pilot initiatives into a cohesive national response.

An example of national-level action in island adaptation is the GR-eco Islands Initiative in Greece, launched by the national government to steer Greek islands toward sustainability and climate resilience. The initiative targets non-interconnected and remote islands with interventions across energy transition, water and waste management, tourism-green infrastructure and digitalisation. It is embedded within the national climate policy framework (Law 4936/2022) and aligns with Greece's National Adaptation Strategy, mobilising over €150 million in public resources with further investment potential up to at least €3.8 billion for 2025-2032.

Core recommendations: Establish enabling regulatory frameworks, guarantees and predictable, long-term competitive market schemes such as Power Purchase Agreements (PPAs) or Contracts for Difference (CfDs) to de-risk project development, and introduce dedicated fiscal incentives and blended finance mechanisms to attract private investment into islands' transitions. Enhance international cooperation to ensure transitions feed into a regional strategy.

Destination Management Organizations (DMOs)

According to United Nations World Tourism Organization (UNWTO), DMOs have shifted from purely marketing-oriented entities to strategic bodies that coordinate destination development, governance, stakeholder engagement and sustainability efforts**.**

Within the Recovery & Resilience Plan Greece 2.0 plan (RRF-funded), one specific line for "Destination management" is allocated approximately €18.45 million for the establishment and operation of Local/Regional Destination Management and Promotion Organisations and Sustainable Tourism Development Observatories. This initiative falls under Action 1 "Tourism Development" of Greece's tourism investment programme, which allocates a total of about €321 million for sub-projects including DMOs, port upgrades, accessibility improvements and other tourism infrastructure.

These plans aim to enhance destination governance and coordination, deploy data systems and sustainability indicators, and provide local authorities with technical support for developing diversified, modern tourism products aligned with green and blue economy goals.

Core recommendations: Foster DMOs' evolution beyond marketing to active sustainability management, through mandated implementation of demand-side control tools and sustainability key performance indicators (KPIs) that track environmental footprint and social equity, to guide promotion and certification.

SMEs and tourism businesses

SMEs and tourism Businesses are the backbone of island tourism economies, representing many businesses in sectors such as hospitality, transport, gastronomy, and local crafts. Their close connection to local communities and environments enables them to deliver authentic experiences while supporting cultural preservation and job creation. On islands where

economic diversity is limited, SMEs play a critical role in maintaining livelihoods and ensuring year-round economic stability.

To support tourism SMEs, Cyprus introduced a fiscal incentive scheme (approved by the European Commission on 14 February 2022 under State-aid case SA.63127) to support private investment in early-stage, innovative SMEs, as part of the country's Recovery & Resilience Plan (RRP) under the Recovery & Resilience Facility (RRF).

Kyrenia, Cyprus.

Under the scheme, investors (natural persons or companies) injecting capital into certified innovative SMEs may claim an income tax relief of up to 30 % of the invested amount, subject to caps: the deduction may not exceed 50 % of the investor's taxable income each year, is capped at €150,000 per year, and at €750,000 over five years. The scheme was designed to run until 31 December 2023. It was judged by the Commission to be necessary and appropriate for fostering Cyprus's under-developed venture capital market, and the aid was deemed proportionate thanks to the built-in caps and protections.

Core recommendations: Introduce green performance incentive schemes, offering tax credits, reduced fees, or fast-track permits to businesses that meet targets for water efficiency, waste reduction, and energy self-consumption, including participating in energy communities and prioritizing local supply chains such as for sourcing food and services.

Cross-border initiatives

Mediterranean islands often struggle to secure adequate financing for climate adaptation and sustainable tourism because of multiple interlinked challenges. They typically face limited financial capacity and high dependence on the mainland, which reduce their ability to shore up investment in resilient infrastructure or innovation.

The MedFund is a non-profit environmental trust fund established in 2015 by France, Monaco and Tunisia (with the support of the Prince Albert II of Monaco Foundation) to mobilise private, philanthropic and multilateral funding for marine protected areas (MPAs) in the Mediterranean.

It aims to reach a capital of €30 million to provide long-term sustainable financing for around 20 MPAs covering 7,000 km² by 2025. The fund supports island regions and coastal zones by strengthening ecosystem resilience and enabling conservation-based tourism and climate-adaptation measures in under-funded marine areas.

Core recommendations: Establish dedicated financing mechanism for island resilience that combine EU/multilateral grants with highly concessional support, specifically structured to cover the early stages of the energy transition (planning, feasibility, preliminary analysis, regulatory reviews, etc.), and crucial infrastructure such as power grids and energy storage, with a view to catalyse private capital.

Private sector investors

Private investment is crucial for Mediterranean islands because it brings in essential capital, expertise and innovation to upgrade infrastructure that small and remote destinations often cannot develop with public funds alone.

On the island of Milos, the infrastructure investor installed a seawater reverse-osmosis desalination plant producing up to 4,500 m³ per day, powered by an 850-kW wind turbine. The construction cost was approximately €6 million. This investment supports the island's sustainability by securing reliable potable water supply year-round (including during peak tourist season), reducing dependence on water transported via tanker ships, and aligning with renewable-energy use to minimize carbon footprint and strengthen local resource resilience.

Core recommendations: Consider islands as high-potential markets for pilot projects and replicable, integrated technological and nature-based solutions. Apply Multi-Benefit Analysis in tender applications/project proposals shifting focus from profit-only to include socio-economic, environmental, and resilience returns.

Milos Island, Greece

Researchers and data-driven policies

Research has become a foundational pillar for designing and implementing effective tourism policies in Mediterranean island destinations. For example, a 2024 study (university of Palermo and University of Catania) analysed tourism seasonality across Mediterranean islands between 2008-2018 using statistical indicators to reveal how extreme seasonal peaks and troughs pose serious sustainability risks.

For the island of Sardinia, the average seasonality indicates that peak (July and August) periods saw nearly 46 times more overnights than the lowest months. he studies highlighted that islands with extreme seasonality are prone to employment instability, infrastructure overload during peaks, and underutilization in off-seasons, underscoring the need for tailored policy responses and diversified demand.

The study's data-driven outcomes support tailored policy recommendations in places like Sardinia and Sicily: diversifying tourism beyond summer, improving infrastructure to manage peaks, and designing local governance strategies that buffer the extremes of demand. This section to further reformulated with the support of contributing external institutions but not longer.

Coast of Sardinia

Core recommendations: Formalize the link between science and government by creating formal science-policy interfaces and standardized data reporting platforms across Mediterranean islands, to ensure researchers and local authorities share real time, comparable metrics on environmental load and climate impact for science-based decision-making.

Regional Management Authorities (RMAs)

Regional Management Authorities (RMAs) are essential intermediaries linking national tourism strategies with local implementation. They develop, coordinate, and monitor medium- and long-term tourism policies, adapting national objectives to regional contexts and ensuring that tourism development aligns with environmental protection, cultural heritage, and community well-being. RMAs manage regional funding, guide infrastructure and innovation projects, and coordinate responses to crises such as natural disasters, pandemics, or overtourism.

Effective sustainable tourism governance depends on coordinated action across scales. At the local level, Destination Management Organizations (DMOs) work directly with municipalities, SMEs, and communities to shape tourism products and collect visitor data. RMAs harmonize these local initiatives, ensuring they align with broader regional strategies and providing guidance through funding, capacity building, and joint planning. National authorities set overarching goals and provide resources, while RMAs translate these into regional strategies and feed territorial insights back into national planning. Internationally, RMAs and DMOs represent their destinations, participate in EU cooperation projects, and align with global frameworks such as UNWTO, OECD, and the EU Sustainable Tourism Strategy. Their engagement in initiatives like the Glasgow Declaration on Climate Action in Tourism strengthens climate-aligned governance and positions regions as active contributors to global sustainability goals.

Core recommendations: emphasize empowering RMAs to translate national tourism goals into region-specific, sustainable policies, enhance coordination with DMOs and national authorities, build capacity and provide guidance, promote data-driven planning,

align with EU and global frameworks, foster international collaboration, and develop adaptive strategies for crisis resilience and long-term sustainable tourism.

Local task forces and regional coordination units (RCUs)

The NaTour4CChange project offers a practical demonstration of how Mediterranean regions and small islands can become catalysts for climate resilience and sustainable tourism through coordinated governance and the strategic use of Nature-based Solutions (NbS). The project demonstrates how inter-departmental and multi-stakeholder governance structures can accelerate climate-resilient and sustainable tourism development. Participating territories— ranging from larger islands such as Sardinia and Crete to smaller island destinations like Koufonisi and coastal protected areas such as Capo Carbonara, Dugi Otok, and Cabo de Gata Natural Park— have tested new approaches to align their climate and tourism agendas and to move towards an integrated, ecosystem-based approach.

Across five partner regions (Andalusia, Zadar County, Neretva Canton, Crete, Sardinia,), the project established Regional Coordination Units (RCUs), formally mandated, cross-sectoral task forces designed to harmonize climate, tourism, and territorial policies.

An RCU brings together key public departments such as tourism, environment, climate change, civil protection, agriculture, and transport, while ensuring active participation from private stakeholders, academia, protected area managers, and civil society organizations. Its mandate is to develop a coherent Regional Tourism Climate Strategy/Plan, oversee pilot sites where Nature-based Solutions (NbS) are tested, and ensure inclusive, multi-level coordination consistent with EU and national frameworks. While each region adapts the RCU model to its institutional structure, all units follow a shared methodology, common templates (engagement letters etc.), and a co-creation approach that ensures continuity beyond the project's lifetime.

Coast in Cabo de Gata, Almería

This approach has proven particularly relevant in insular regions where climate change impacts (coastal erosion, water scarcity, heatwaves, extreme weather) directly threaten tourism assets, local livelihoods, and natural heritage. The RCUs can build their strategies and plans on tools co-developed within the Interreg Euro-MED Sustainable Tourism Mission, notably:

- The Blueprint for Tourism Climate Action Plans, developed with NECSTouR, the Travel Foundation, and CPMR-IMC, providing a clear methodology for regional and local authorities.

- The Toolkit for Climate Action in Tourism, adapted to the realities of Mediterranean regions to help authorities define objectives, prioritize actions, and monitor progress with context-appropriate indicators.

Sardinia's RCU integrates the departments of environment, tourism, agriculture, and transport, working through regular bi-monthly meetings. The unit coordinates NbS testing in the Marine Protected Area of Capo Carbonara, ensuring that interventions such as dune and habitat restoration are aligned with regional climate adaptation, tourism, and coastal management strategies. This approach strengthens multi-sectoral collaboration and improves coherence across existing plans.

The Cretan RCU brings together the Departments of Environment, Tourism, and Civil Protection of Crete Region, with pilot activities located in Ori Zakrou and Koufonisi Island. A designated RCU coordinator facilitates information flow between departments, organizes regular stakeholder meetings, and ensures alignment between regional planning and on-the-ground NbS interventions. This model enhances coordination between regional authorities and island destinations, helping integrate climate data, water scarcity concerns, and tourism development needs.

Agriculture in Crete

The RCU model provides a replicable governance mechanism for Mediterranean regions and islands seeking to institutionalize integrated climate–tourism planning. The establishment of RCUs creates regional durable governance structures that bridge administrative silos and connect tourism, environment, and climate policy, opening cooperation between departments previously operating independently. Participatory approaches via workshops empower local communities, increasing ownership of climate adaptation efforts. Training and shared tools strengthen local authorities' capacity to plan, manage, and monitor tourism climate actions.

By formalizing cross-sectoral collaboration and embedding NbS within strategic frameworks, RCUs enable territories to transition more effectively toward resilient, low-carbon, and nature-positive tourism development.

Core recommendations: emphasize establishing Regional Coordination Units (RCUs) to harmonize climate, tourism, and territorial policies through multi-level, participatory governance. By integrating Nature-based Solutions, aligning strategies with EU and national frameworks, enhancing multi-sectoral coordination, and building local capacity, RCUs create a replicable model for resilient, low-carbon, and nature-positive tourism planning across Mediterranean regions and islands.

Implementation roadmap for sustainable island's model

Implementation roadmap for sustainable island's model

This integrated framework for island sustainability and resilience focuses on strengthening natural, social, and economic systems while transitioning to low-carbon, resource-efficient, and climate-resilient pathways. It combines adaptive resource and infrastructure management, nature and biodiversity conservation, circular economy practices, diversified and community-centered tourism, and active stakeholder engagement. By leveraging governance, finance, digital monitoring, and smart systems, the approach ensures local communities benefit equitably, cultural heritage is preserved, and islands can thrive sustainably in the face of climate, environmental, and socio-economic challenges.

Resource & infrastructure resilience

Focuses on strengthening and adapting critical physical systems to ensure reliable, efficient, and sustainable delivery service. By integrating innovative water, energy, waste, and transport solutions, this approach aims to enhance resource security, support the transition to renewable energy, promote circular waste management, and enable resilient, future-ready infrastructure capable of meeting both current and long-term demands.

- Roll out non-conventional water sources (desalination, treated wastewater reuse, rainwater harvesting), building on existing framework.
- Accelerate renewable energy deployment (solar PV, floating offshore wind) via the national energy policy.
- Begin smart waste collection pilot (organic waste capture, multi-sort recovery).
- Expand infrastructure: full-scale reuse plants, smart grid/storage, waste-to-energy plant
- Upgrade transport infrastructure for e-mobility (EV charging, shared mobility).
- Achieve high efficiency and resilience levels: e>50% renewables in energy mix, near-zero fossil-fuel dependence, year-round reliable water supply with minimal leakage.
- Fully closed-loop waste economy: high recycling/composting, minimal landfilling.

Nature & environment conservation

Focuses on safeguarding island ecosystems, marine, coastal, and terrestrial, while enhancing biodiversity and resilience through nature-based solutions. By mapping sensitive habitats, implementing pilot restoration projects, integrating NbS into infrastructure, and strengthening protected areas, this approach ensures the long-term health of ecosystems and sustainable tourism, while maintaining essential ecosystem services and respecting environmental carrying capacities.

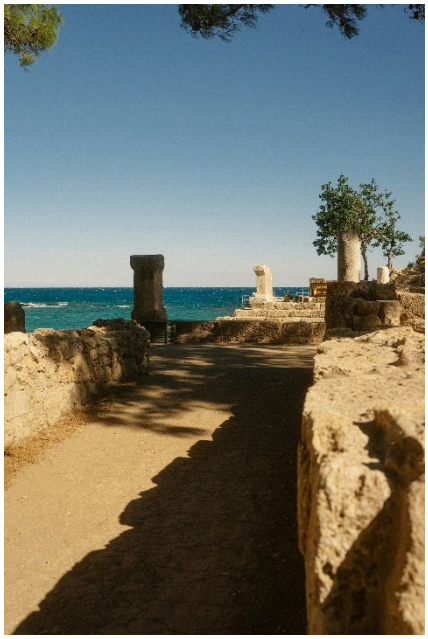
- Map and prioritise sensitive habitats (coastal, marine, endemic species) for protection.

- Launch pilot nature-based solutions (NbS): dune restoration, wetlands, coastal green infrastructure.
- Integrate NbS across infrastructure projects (water, transport, tourism).
- Strengthen marine protected areas and restoration programmes.
- Monitor ecosystem health, biodiversity, ecosystem-service flows; ensure tourism infrastructure respects carrying capacity.

Socio-economic inclusion & local value chains

To ensure that tourism, agriculture, fisheries, crafts, and services are rooted in the local community, generating broad-based benefits. By promoting local enterprise, training in green and sustainable jobs, supporting social-enterprise models, and embedding community-focused investment clauses, this approach strengthens employment, sustains cultural heritage, and maximizes the local share of tourism and economic value.

- Develop local enterprise programmes linking tourism, agriculture, crafts; prioritise local sourcing.
- Launch training programmes for sustainable hospitality, green jobs in energy/waste sectors.
- Establish social-enterprise models in circular economy field (reuse hubs, local repair/maintenance).
- Embed community benefit clauses in tourism investments.
- Ensure high year-round employment in green sectors; local share of tourism value sustained; cultural heritage protected.



Governance partnership & Financial and tourism models

Strengthening governance and multi-stakeholder collaboration requires establishing destination governance platforms that bring together local authorities, businesses, and communities to coordinate actions and share responsibilities. These collaborative structures should ensure that local tourism and sustainability strategies align with broader EU frameworks, such as the European Green Deal and the Clean Energy for EU Islands Initiative, to foster coherence, mobilize resources, and accelerate the transition toward resilient and low-carbon destinations.

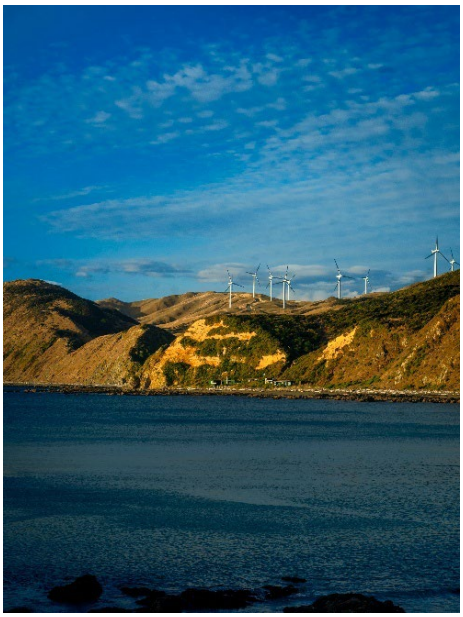
- Establish destination governance platforms involving local authorities, businesses, and communities.
- Align local strategies with EU frameworks such as the European Green Deal and Clean Energy for EU Islands Initiative.
- Establish multi-stakeholder destination-governance forum (government, industry, community, NGOs) for island sustainability.
- Secure financing: green bonds, EU funds, public-private partnerships.
- Deploy blended-finance models for major infrastructure (renewables, waste, water).
- Monitor new governance arrangements with transparent reporting.

- Long-term financing mechanisms in place (green/blue bonds), replicable governance model across islands.

Digitalisation, monitoring & smart systems

Leveraging digital tools, data analytics, smart infrastructure, and monitoring frameworks enables adaptive management and evidence-based decision-making by supporting real-time tracking of energy use, water consumption, waste generation, and visitor flows. Investing in these digital monitoring and smart solutions enhances the efficiency of resource management, while transparent digital platforms help communicate sustainability performance and actively engage visitors, staff, and partners in ongoing environmental initiatives.

- Deploy data-driven systems for resource monitoring (energy, water, waste) and visitor flow management.
- Use digital platforms to enhance transparency and engage stakeholders in sustainability efforts.
- Deploy sensor networks and data platforms across energy, water, waste, mobility; launch pilot smart city solutions in key localities.
- Develop dashboards and open-data portals for transparency and stakeholder engagement.
- Scale up digital systems island-wide; integrate visitor-flow management, smart mobility, predictive maintenance.
- Build capability: training data/analytics for public officials.
- Fully integrated “smart island” platform informing real-time decision making; resilient infrastructure driven by digital insights.



Adaptation & climate change

Integrating climate risk into tourism planning involves conducting comprehensive assessments how climate-related threats may impact tourism infrastructure and natural assets, providing a foundation for informed decision-making. These insights should then guide the inclusion of adaptation measures, such as coastal protection, heat-resilient facilities, and water-saving technologies; within destination management plans to strengthen resilience, safeguard visitor experiences, and ensure the long-term sustainability of tourism development.

of

-Embed adaptation measures (coastal protection, heat-resilient facilities, water-saving technologies) into destination management plans.

- Conduct climate-risk assessment for islands (water, sea level, tourism, infrastructure).
- Develop adaptation plan and integrate into infrastructure investment.
- Implement adaptation measures: flood protection, heat-resilient tourism infrastructure, disaster-preparedness systems.
- Set measurable GHG-reduction targets and monitoring.

- Achieve climate-resilient island status: adaptation measures mainstreamed across sectors; progress towards decarbonisation.

Community engagement & culture

Focuses on actively involving island residents and stakeholders in sustainability efforts while preserving cultural heritage and local identity. Through public education, participatory workshops, heritage-based tourism, and citizen science initiatives, this approach fosters strong community ownership, ensuring that cultural values are integrated into economic development and long-term sustainability pathways.

- Launch public-education campaigns: sustainability, circular economy, water conservation.
- Facilitate community workshops to co-design local sustainability projects.
- Embed cultural heritage protection in tourism and sustainability programmes; promote heritage-based tourism.
- Encourage citizen science and community monitoring.
- Strong local ownership of sustainability initiatives; culture and identity preserved and integrated into economic model.

Diversify tourism models

Diversifying tourism models involves reducing reliance on mass tourism by promoting alternative offerings such as eco-tourism, cultural heritage experiences, and off-season travel that distribute visitor pressure more evenly throughout the year. At the same time, developing strong local value chains ensures that tourism directly benefits island communities, supports local businesses, and helps preserve cultural identity, creating a more resilient and community-centered tourism economy.

- Reduce dependence on mass tourism by promoting eco-tourism, cultural heritage experiences, and off-season travel.
- Develop local value chains to ensure tourism benefits island communities and preserves cultural identity.
- Promote eco-tourism, cultural heritage experiences, and off-season travel to reduce dependence on mass tourism and spread visitor flows more evenly.
- Develop and strengthen local value chains so that tourism revenue supports island communities, local businesses, and the preservation of cultural identity.
- Encourage small-scale, community-led tourism initiatives that provide authentic experiences while keeping economic benefits local.
- Support local producers, artisans, and service providers by integrating their products into tourism offerings (local food, crafts, guided tours).
- Diversify accommodation options toward sustainable models such as eco-lodges, agritourism stays, and heritage guesthouses.

- Promote year-round thematic tourism, such as wellness, nature-based activities, gastronomy, and creative tourism, to attract different visitor segments.
- Foster partnerships between tourism operators and local communities to co-create experiences that reflect cultural traditions and local knowledge.
- Invest in training and capacity-building to help local entrepreneurs develop market-ready, sustainable tourism products.

Promote circular economy and resource efficiency

Promoting a circular economy and resource efficiency in tourism requires implementing zero-waste strategies and phasing out single-use plastics across operations to minimize environmental impact. These efforts should be complemented by measures that encourage water reuse and rainwater harvesting, particularly during peak tourist seasons when demand is highest. At the same time, supporting the adoption of renewable energy solutions for hotels, ports, and transport systems strengthens energy security, reduces emissions, and helps build a more sustainable and resilient tourism sector.

- Implement zero-waste strategies and reduce single-use plastics in tourism operations.
- Encourage water reuse and rainwater harvesting, especially during peak tourist seasons.
- Support renewable energy adoption for hotels, ports, and transport systems.
- Encourage hotels and tourism businesses to adopt circular procurement practices, choosing reusable, recyclable, or biodegradable materials.
- Promote food waste reduction programs, including composting, smart inventory management, and partnerships with local food redistribution initiatives.
- Introduce resource-efficiency certification or incentives for businesses that meet high sustainability standards.
- Support investment in energy-efficient technologies such as LED lighting, smart HVAC systems, and building insulation upgrades.
- Expand infrastructure for recycling and composting within tourism hotspots to manage increased seasonal waste.
- Encourage sustainable mobility options, such as electric shuttle services, cycling infrastructure, and pedestrian-friendly routes, to reduce fuel consumption and emissions.

Advocacy & communication strategies for tourism-climate adaptation

Advocacy & communication strategies for tourism-climate adaptation in Mediterranean Islands

Island's beauty and economy rely on climate-resilient nature, culture and infrastructure. By acting now, we protect our beaches, secure the visitor experience, and sustain local livelihoods. This is not simply a cost of adaptation; it is a shared opportunity.

As a visitor, resident or business, the choices matter: the hotel you select, the tour you take, the water you conserve; all play a role in how resilient our island becomes. In this chapter we showcase early successes and local champions for a positive actionable journey toward a sustainable future.

Stakeholders & audiences

Residents & local communities; including youth, **tourism-sector workers** and local businesses; along with **tourists** (both international and domestic), **tourism businesses & service providers** (hotels, tour-operators, restaurants), **destination marketing organisations** & **municipalities, media** & **influencers** (especially in travel and social media), and **policy-makers** and **funders** (local/regional government, tourism boards, European/Interreg programmes) all play essential roles in sustainable tourism and climate-change adaptation for Mediterranean islands. Engaging these diverse stakeholder groups supports **inclusive decision-making**, **aligns tourism development with local interests and infrastructure capacity**, **leverages business and visitor behaviour** for positive outcomes, creates effective communication channels, and **helps secure the policies**, funding and partnerships needed for long-term resilience and sustainable destination management.

Channels & tools

On-site tools such as info-panels, visitor-experience apps and guided tours connect visitors directly to the island's adaptation efforts, making the link between behaviour and outcomes. Partnership campaigns—with hotels, resorts and local businesses—can introduce co-branded "resilient island" badges or certifications that cascade change through the tourism supply-chain. Educational workshops for residents, guide-training for tourism staff and modules focused on climate-adaptation practices build capacity and local ownership. Storytelling, using local voices and testimonials about successful ecosystem or infrastructure interventions, adds authenticity and appeal. Finally, publishing monitoring data (such as resource-use metrics, visitor-behaviour trends and adaptation-project indicators) creates feedback loops and transparency that strengthen trust and credibility among all stakeholders.

Island of Lipari. Francesco Luise

Digital platforms and **social media** offer a powerful way for Mediterranean islands to share their adaptation journeys: Instagram, Facebook and other social media can highlight visual stories of nature restoration and community action, filling a gap in destination-level climate-communication.

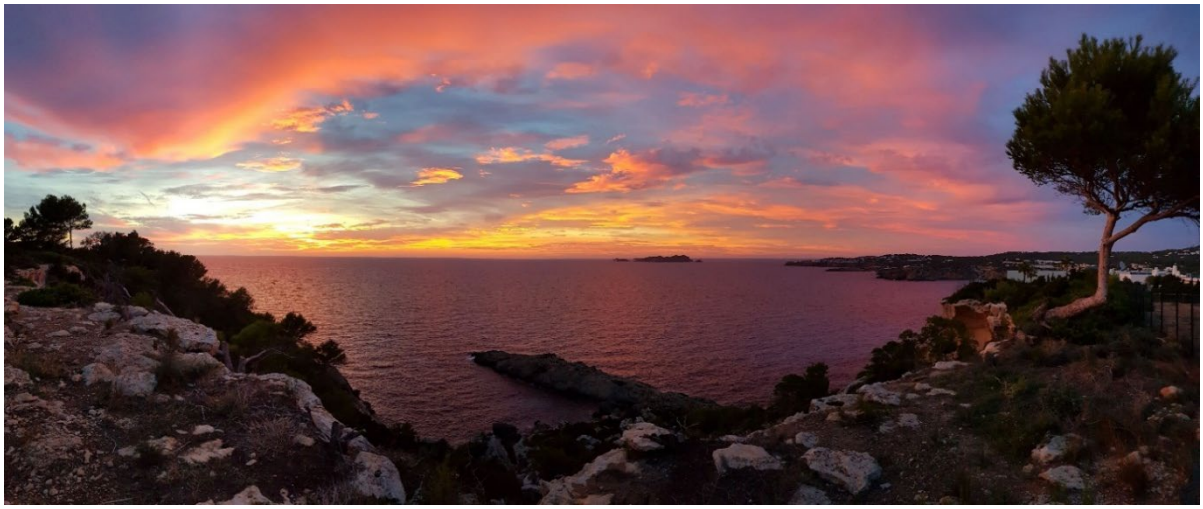
Practical approach for implementation

Developing effective communication and advocacy for tourism–climate adaptation in Mediterranean islands begins with auditing existing messages from DMOs, businesses and communities to identify gaps around adaptation themes. A tailored communication plan should align with tourism-season cycles, ensuring that resilience remains visible year-round. Themed campaigns such as *"Resilient Island 2030"* supported by hotels, restaurants and visitor engagement tools, can unify local partners under a shared brand. Training tourism staff and businesses to integrate adaptation messages into daily interactions strengthens credibility and reach, while interactive digital tools can help visitors understand how their behaviour supports resilience. Highlighting visible successes; like dune restoration or smart water systems; keeps messaging tangible and inspiring. Off-season periods can be leveraged for awareness campaigns and capacity building, while collaborations with influencers and media amplify visibility. Continuous monitoring of engagement, awareness and participation allows communication strategies to evolve dynamically and maintain long-term impact.

Conclusion

Conclusion

As this White Paper has illustrated, small islands in the Mediterranean are no longer passive participants in the face of climate change and tourism pressures, they are emerging as dynamic, resilient hubs of innovation for sustainable tourism and climate adaptation. Leveraging a distinctive “Island Model,” these territories are demonstrating a holistic transition: from fossil-reliant systems to renewable energy-based infrastructure, from linear waste streams to circular economies, and from reactive policy responses to proactive governance and community-driven engagement. Their success is not simply about survival; it is about evolution, regeneration and demonstrating pathways that are scalable, replicable and courageous.



Ibiza. Balearic Islands. Francesco Luise

This transformation is supported and amplified by a constellation of European and international frameworks. The Clean Energy for EU Islands initiative, launched by the European Commission in 2017, provides a long-term platform for inhabited European islands to chart decarbonisation roadmaps, achieve renewable energy independence and exchange best practices. Moreover, under its “30 Renewable Islands for 2030” call, the EU is now selecting specific islands as pilots to accelerate their transition.

On the global stage, the United Nations Environment Programme (UNEP) and its partners are supporting Small Island Developing States (SIDS) through integrated programmes addressing waste, chemicals, marine protection and climate resilience. The EU’s Council Conclusions on SIDS acknowledge the disproportionate vulnerability of islands and reinforce the need for targeted support through global partnerships, green financing and adaptation frameworks.

Together these frameworks affirm that islands are not just geographic curiosities, they are front-line laboratories for climate action and sustainable tourism innovation. Through the chapters of this paper, from the current state of island ecosystems to case studies of best practice, to governance and policy recommendations, implementation roadmaps and

communication strategies, we draw a vivid picture of how islands can lead. The call is clear: island stakeholders, national and regional governments, tourism operators, financing bodies and communities must join forces. With measurable goals, dedicated resources, robust governance and spirited communication, Mediterranean islands can become exemplar destinations; places where heritage and nature flourish hand-in-hand with resilience and

Appendices

Glossary

AIPF - Aeolian Islands Preservation Fund
BSRN - Baseline Surface Radiation Network
CE – Circular Economy
CfDs - Contracts for Difference
CSTI - Cyprus Sustainable Tourism Initiative
DMO - Destination Management Organisation
DMP – Destination Management Plan
DSS - Decisions Supporting System
ENEA - Italian National Agency for New Technologies, Energy and Sustainable Economic Development
EU – European union
EV – Electric Vehicles
GHG - Greenhouse Gas
GDP – Gross Domestic Product
GSTC - Global Sustainable Tourism Council
GTI – Greening the Islands foundation
GVA - Gross value added
HVAC – Heating, Ventilation and Air Conditioning
ICOS - Integrated carbon Observation System
IWRM - Integrated Water Resource Management
KNX - open, international standard (ISO/IEC 14543) for home and building automation
KPIs – Key Performance Indicators
LCAPs - Local Climate Adaptation Plans
LED - Light Emitting Diode
MED – Mediterranean
MPAs - marine protected areas
MSSD - Mediterranean Strategy for Sustainable Development
NbS - Nature-based solutions
NFZs - No-Fishing zones
NGO – N0-profit Organisation
OECD – Organisation for Economic Co-operation and Development
OTIE - Observatory on Tourism for Islands Economy
PM - Particulate Matter
PNRR - Italy's National Recovery and Resilience Plan
PPAs – Power Purchase Agreements
PV – Photovoltaic
SIDS - Small Island Developing States
SMEs – Small and Medium Entreprises
SO2 - Sulphur oxides
SUMA - Shared Use Mobility Agency
RCUs - Regional Coordination Units
RES – Renewable Energy Sources
RFID - Radio-Frequency Identification
RMA – Regional Management Authorities
RRF- Recovery & Resilience Facility
RRP- Recovery & Resilience Plan
UNWTO - United Nations World Tourism Organization
UNESCO – United Nations Educational, Scientific and Cultural Organization
WEFE Nexus – Water Energy Food and Ecosystem
WRMC – World Radiation Monitoring Center

Reference documents

- Alejandro González Domingo, Jérémie Fosse and Raquel Santos Lacueva, 2018, The Integration of Sustainability in the Tourism Policies of the Major European Cities
- Claudio Mantero, 2023, Sustainable, Smart and Safe mobility at the core of sustainable tourism in six European islands
- Community4Tourism. (2023). Blueprint for tourism climate action plans: A guide for regional authorities and destination management
- Cristina Andolina, Geraldina Signa, Agostino Tomasello, Antonio Mazzola and Salvatrice Vizzini, 2020, Environmental effects of tourism and its seasonality on Mediterranean islands: the contribution of the Interreg MED BLUEISLANDS project to build up an approach towards sustainable tourism
- Evanthie Michalena and Yiannis Tripanagnostopoulos, 2009, Contribution of the solar energy in the sustainable tourism development of the Mediterranean islands
- Evanthie Michalena, Jeremy Hills and Jean-Paul Amat, 2009, Developing sustainable tourism, using a multicriteria analysis on renewable energy in Mediterranean Islands
- German cooperation, report 2021, The *Potential Study – PTX Tunisia (2021)*
- Giovanni Ruggieri and Marco Platania - Islands' Tourism Seasonality: A Data Analysis of Mediterranean Islands' Tourism Comparing Seasonality Indicators (2008–2018)
- Giovanni Ruggieri and Patrizia Calò, 2022, Tourism Dynamics and Sustainability: A Comparative Analysis between Mediterranean Islands—Evidence for Post-COVID-19 Strategies
- GTI Observatory Global Index, Gozo report 2022
- GTI Observatory report 2022, Integrated sustainability for islands self-sufficiency
- Heinrich Böll Foundation for Plastic ATLAS, report MENA region 2020
- IEA (International Energy Agency) – Wind Annual Report (2009)
- Roberto Roson and Martina Sartori, 2012, Climate Change, Tourism and Water Resources in the Mediterranean: a General Equilibrium Analysis, IEFE - The Center for Research on Energy and Environmental, Economics and Policy at Bocconi University
- UNEP 2016 – Mediterranean Strategy for Sustainable Development 2016-2025
- Joe Dignan and Louisa Barker (European Islands and Global Best Practices), 2022, Creating a Smart and Sustainable Island Strategy

- Scholz & Friends Agenda Berlin GmbH for DG Grow of the EU commission, 2024, Leading examples of sustainable tourism practices in Europe, from the 2024 European Green Pioneer of Smart Tourism competition.
- Hotel Energy Solutions, 2011, Successful EET Integration in SME Hotels, Best practices guide: successful energy efficiency technologies integration in SME hotels
- V. Castellani, S. Sala, University of Milano Bicocca, Department of Environmental Science, 2011, Sustainable performance index for tourism policy development
- SMILO, Report 2019, Small islands organisation
- Sustainable islands (observatory on smaller Italian islands), report 2021, ENERGY, WATER, MOBILITY, CIRCULAR ECONOMY, SUSTAINABLE TOURISM. Challenges for small islands and best practices from the world
- TOPOSOPHY Ltd for the European Travel Commission, 2021, Encouraging sustainable tourism practices
- Sustainable tourism Community – Interreg MED, 2022, State of play of tourism in the Mediterranean: A Roadmap for a Greener, Inclusive & Resilient Tourism in the Mediterranean

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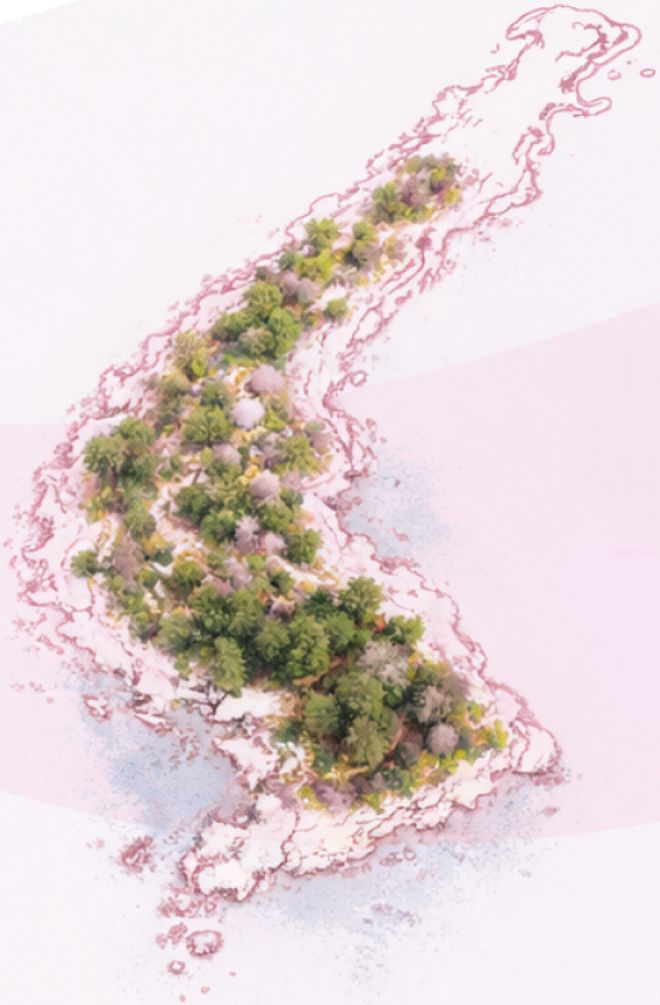

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