



Research & Monitoring Centre
for Coastal & Maritime Tourism
in the Eastern Mediterranean

COASTAL & MARITIME TOURISM • EASTERN MEDITERRANEAN

Executive Summary

FINAL PROPOSAL FOR THE METHODOLOGICAL FRAMEWORK

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Independent, evidence-based research and monitoring to advance sustainable coastal and maritime tourism across the Eastern Mediterranean.

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HELLENIC REPUBLIC
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Greece 2.0
NATIONAL RECOVERY AND RESILIENCE PLAN



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Final Proposal for the Methodological Framework

1 Purpose of the Methodological Framework

The final proposal for the methodological framework represents the final stage in the development and consolidation of the Observatory's methodological framework. It builds on the initial Draft Methodological Framework set out in D1.3 and incorporates the results of the pilot applications, consultations with relevant stakeholders and the detailed assessment of the available data sources.

Its purpose is not simply to produce a list of indicators, but to establish a system that can operate on a recurring basis, support comparisons between destinations and inform public policy planning.

The framework treats coastal and maritime tourism as two closely connected, but distinct, fields. It sets out common spatial and conceptual assumptions, organises a revised indicator system, provides guidance on data collection and validation, and includes three primary surveys covering residents, local businesses and visitors.

For the Observatory's initial operation, a core set of 36 indicators (Tier 1) is proposed. These cover tourism flows, seasonality, employment, entrepreneurship, social and cultural impacts, environmental pressures and key aspects of governance.

The final proposal for the methodological framework provides a mature and coherent basis for launching the Observatory. Its methodological value lies in its clear spatial basis, its alignment with international frameworks, the distinction it makes between coastal and maritime tourism and, above all, the classification of indicators according to their actual readiness for implementation. The framework recognises that a complete picture of sustainability cannot be produced from administrative data alone and therefore integrates primary research as an essential component.

The main weakness does not lie in the design of the indicators, but in the fragmentation of data sources, the use of different classifications and the lack of stable access procedures. Unless these issues are addressed, even a sound methodological framework will continue to produce fragmented information. By contrast, formalised data flows, standardisation and central quality control can turn a limited initial core into a reliable system that can be expanded gradually.

2 Scope and Methodological Basis

2.1 Spatial Basis for Measurement

Comparable results require a clear and stable geographical unit of reference. As there is no single internationally accepted physiographic definition of the coastal zone, the framework adopts Eurostat's administrative typology. Coastal areas are defined as municipalities that either border the coastline or have at least 50% of their surface area within ten kilometres of it. This makes it possible to link the data to the LAU and NUTS administrative levels and to collect them in a more systematic and comparable manner.

Functional and ecological definitions of the coastal zone remain useful for interpreting the results, but they do not form the primary unit of measurement. The main spatial reference remains

administrative, so that official statistical and administrative data can be used. Where pressures occur at a smaller scale, such as on beaches, in ports or within specific zones, supplementary geospatial analysis may be applied.

2.2 Definition of Coastal and Maritime Tourism

For the purposes of the framework, coastal tourism is understood as the full range of tourism and leisure activities that are functionally linked to beaches and coastal areas. The definition is deliberately broad, covering both recreational activities on the coast and the services and infrastructure that support them. Measurement is not limited to a single sector; instead, it considers a range of activities with varying degrees of connection to tourism.

For maritime tourism, the legally established definitions set out in Law 4582/2018 are adopted. The scope includes, in particular, cruise tourism, yachting, maritime and coastal leisure activities, and recreational diving tourism. This distinction has practical importance, as each form operates differently and requires different data for its measurement. Cruise tourism, for example, requires data on passengers, ship calls and port revenues, while yachting requires data on marinas, berthing and vessel movements.

2.3 Theoretical Framework

The initial Methodological Framework for the Observatory for Coastal and Maritime Tourism was developed following a review of international and European approaches to measuring tourism sustainability. The aim was to establish a framework that could respond to the particular conditions of Mediterranean coastal and island destinations and to the requirements of a destination-level monitoring system.

The framework draws its core logic from the Statistical Framework for Measuring the Sustainability of Tourism and the European Tourism Indicator System. From the former, it adopts the integration of economic, social and environmental dimensions and the emphasis on official statistical and administrative data. From the latter, it takes the destination-management approach, the involvement of local stakeholders and the need to link indicators to specific decisions.

The final proposal does not, however, transfer these international systems unchanged. It adapts them to the conditions of Mediterranean island and coastal destinations, where strong seasonality, limited infrastructure, cruise activity, maritime mobility and a high dependence on tourism create specific monitoring needs.

3 Pilot Applications and Consultation Process

The framework was updated through three pilot applications in Corfu, Rhodes and Dubrovnik. These destinations were selected because they combine intense tourism activity with a strong coastal and maritime dimension, while differing in their organization, geography and operating conditions. The pilot process examined whether the original indicators could be calculated using real data, whether the sources were stable and whether the same definitions could be applied in different national and local settings.

The process included mapping administrative and statistical sources, trial data collection and processing, testing calculation methods and consulting local authorities, ports, infrastructure

providers and potential users of the results. It also examined whether data gaps could be filled through primary research, particularly on social acceptance, visitor behavior and business practices.

The basic architecture of the original framework was confirmed. The four dimensions - economy, society and culture, environment, and governance - were considered appropriate for measuring sustainability. The pilot applications nevertheless showed that several indicators were, in practice, individual metrics, relied on unavailable data or could not be updated at regular intervals. In some cases, the sources were available only at regional or national level and did not allow reliable allocation to the municipality/LAU level.

Significant differences were also identified in the classification of economic activities, the distinction between tourism and non-tourism use, the time resolution of the data and the completeness of time series. Comparability between destinations depends not only on whether a variable exists, but also on whether it is interpreted consistently. Typical example includes the recording of cruise passengers, the distinction between transit and homeporting, and the use of common business activity codes (NACE) for maritime tourism activities.

The consultation led to seven practical directions. Priority was given to indicators that can be produced consistently and repeated each year. Individual metrics were combined into more meaningful composite indicators. Cruise tourism, yachting and other maritime activities were given more distinct coverage, while the role of primary surveys was strengthened. Issues such as gender and the age profile of tourism workers were also incorporated more clearly. Finally, greater emphasis was placed on data sources and quality control.

4 Revised Indicator System

4.1 Rationale for the Revision and Indicator Maturity Levels

The original system was revised in four main ways: some indicators were retained, others were modified, several metrics were merged and new indicators were added. Indicators with a clear purpose and adequate sources were kept. Where definitions or calculation methods were unclear, they were revised. Metrics that provided limited information on their own were combined into more meaningful indicators. New topics were also introduced, including maritime mobility, specific forms of tourism, and social or environmental impacts that had not been covered sufficiently.

The new register contains a total of 168 indicators: 77 for coastal tourism and 87 for maritime tourism. Of these, 58 fall under the economic dimension, 43 under the social and cultural dimension, 54 under the environmental dimension and 13 under governance.

Tier 1 indicators have a clear definition and can be calculated using data that already exist or can be collected systematically. They form the Observatory's immediate core. Tier 2 indicators are sufficiently developed, but require new data-sharing agreements, specialized processing or primary research. Tier 3 indicators are useful for future development, but still require methodological, technical or organizational preparation.

The Methodological Framework includes 36 Tier 1 indicators, 90 Tier 2 indicators and 42 Tier 3 indicators. The classification does not indicate how important an indicator is in theoretical terms. It shows how ready it is for systematic use. A Tier 3 indicator may therefore be highly relevant to policy, while not yet being suitable for calculation on the Observatory's platform.

The 36 Tier 1 indicators comprise 18 economic, 6 social and cultural, 9 environmental and 3 governance indicators. They cover key issues such as dependence on visitors, average length of stay, seasonality, occupancy, tourism pressure, cruise activity, employment, entrepreneurship, environmental certification, the protection of natural resources and the existence of strategic and spatial plans.

Tier 1 provides the minimum common basis for launching the Observatory. Its consistent application will build experience and partnerships, allowing selected Tier 2 indicators to move gradually into Tier 1 once a clear and stable data source has been established.

4.2 Economic Dimension and Measurement of Tourism Flows

The economic dimension is the largest thematic pillar of the system, as it captures both the scale of tourism activity and the destination's level of dependence on tourism. The main indicators are not limited to the absolute number of arrivals or overnight stays. They relate demand to the permanent population, accommodation capacity and its distribution over time, so that the actual pressure placed on local infrastructure and services can be identified.

Dependence on tourism visitors is measured by relating overnight stays to the permanent population. Average length of stay reflects demand patterns and directly affects local consumption, pressure on infrastructure and management needs. Seasonality is examined both for tourism as a whole and specifically for cruise tourism, since the concentration of large flows within a short period can place substantial pressure on local infrastructure and services.

Cruise tourism is monitored separately because it operates differently from other tourism flows. The indicators examine passenger numbers and seasonality, pressure in relation to the resident population and port revenue per passenger.

For yachting and other maritime activities, the system examines the use of tourist ports, vessel movements and participation in specific activities. It also provides for indicators covering day cruises, fishing tourism and diving tourism. These indicators are useful for the development of the sector but often remain in Tier 2 or Tier 3 because the relevant activities are not yet recorded in a consistent and systematic way.

Employment is examined both across the tourism industries as a whole and within the more specialized activities of coastal and maritime tourism. The system places emphasis on seasonality, full- and part-time employment, the age profile of workers and the participation of women.

Entrepreneurship is examined through business start-ups and operation, the proportion of sole proprietorships and changes in the relevant business activity codes (NACE). As several sectors serve both tourists and residents, the results require careful interpretation. The framework therefore proposes stable classifications and clear assumptions.

The Tourism Satellite Account is also an important tool for obtaining a fuller picture of tourism's economic contribution, as it links tourism demand to production, employment and the value added generated by the individual sectors.

4.3 Social, Environmental and Governance Dimensions

The social and cultural dimension examines the relationship between tourism and residents' quality of life, the functioning of public space, access to services and the preservation of local identity. Administrative sources can capture certain demographic or cultural measures, but they are not sufficient to assess social acceptance, perceptions of pressure or the fair distribution of benefits. Primary surveys of residents, businesses and visitors are therefore a core part of the framework.

Monitoring cultural sites and visitor numbers makes it possible to assess the relationship between tourism and cultural heritage and to identify periods or locations under high pressure. The framework also highlights issues such as worker accommodation, accessibility and working conditions. Not all of these are sufficiently mature for immediate inclusion in Tier 1, but they should be addressed through targeted future actions.

The environmental dimension covers resource consumption, waste and wastewater management, the condition of natural areas, environmental certification and the resilience of infrastructure. The new approach does not rely solely on consumption per overnight stay but seeks to estimate the additional pressure created during the tourism season. This is more useful for management but requires better time-resolution data and cooperation with water, energy and waste-management providers.

The immediate core includes indicators on waste management, protected areas, Blue Flag awards, preventive vegetation clearance, storm-drain cleaning and recognized environmental certifications held by businesses. These indicators combine environmental performance, risk prevention and organizational preparedness.

The governance dimension contains fewer indicators, but it is critical to the operation of the system. The existence of an approved sustainable tourism strategy is included in the Tier 1 core because it shows whether the destination has an institutional framework for using the data. Later tiers include information on partnerships, participation and the adequacy of plans or facilities.

5 Data System and Quality Assurance

The Observatory requires a combination of official statistics, administrative registers, infrastructure data and primary research. The main data providers in Greece include the Hellenic Statistical Authority (ELSTAT), the Ministry of Labor and the ERGANI information system, the General Commercial Registry (GEMI) and Chambers of Commerce, the Bank of Greece, port authorities and marinas, the Ministry of Maritime Affairs, municipal water and sewerage utilities (DEYAs), solid waste management bodies (FODSAs), energy providers, environmental authorities and local authorities.

For most indicators, the minimum spatial level required is the municipality/LAU. Where activity is highly concentrated, supplementary information is needed for ports, beaches, protected areas or specific infrastructure. Monthly data are particularly important for arrivals, overnight stays, cruise tourism, resource consumption and waste management, because annual figures conceal seasonal peaks.

As noted above, the Methodological Framework includes indicators for monitoring both coastal and maritime tourism. The pilot application showed that some of the required data were available and

could be used immediately, while in other cases coverage was partial or could not be achieved within the project timeframe. This finding highlights the Observatory's main operational challenge: a considerable amount of data exists, but it is not always readily available. Failure to obtain data may reflect limited time, institutional delays or the absence of a standardized access procedure. Permanent data-sharing agreements are therefore required, rather than ad hoc requests during each operating cycle of the Observatory.

Data quality must also be safeguarded at every stage of collection. Definitions, business activity codes (NACE), units and calculation methods must remain consistent. Each dataset should be accompanied by metadata on the source, reference period, spatial level, gaps, revisions and degree of reliability. Economic variables require a common price basis and deflation, while geospatial variables require up-to-date boundaries and clear spatial matching.

Before indicators are published, standardized checks should be carried out for completeness, consistency, outliers and changes over time. The process should document corrections and retain a revision history. Particular care is needed where different sources use similar terms with different meanings, such as visitors, passengers, arrivals, ship calls and accommodation capacity.

The technical infrastructure should include a common data dictionary, a source register, automated checks and tiered access rights. The reliability of the Observatory will depend more on these processes than on the visual design of the final dashboard.

6 Primary Research Framework

6.1 Resident Survey

The resident survey is primarily intended to measure social acceptance of tourism and its effects on everyday life. The reference population consists of permanent residents aged 18 and over. The survey examines perceptions of economic benefits, pressure on infrastructure and public spaces, traffic, housing, the environment, quality of life and the effectiveness of local management.

The survey is proposed to be carried out annually, preferably after the peak season, so that responses are based on recent experience. Data may be collected through a mixed method combining face-to-face, telephone and online interviews. Sampling should be stratified by geographical area and key demographic characteristics. The questionnaire should retain a stable common core, with limited scope for local adaptation.

6.2 Local Business Survey

The business survey covers establishments directly or indirectly linked to tourism and records economic impact, seasonality, workforce needs, resilience and sustainability practices. Particular areas of interest include recruitment difficulties, operating period, dependence on specific markets, the use of environmental certification and the provision of information to customers on sustainability initiatives.

The survey is proposed to be conducted annually after the main tourism season, through face-to-face or online completion and in cooperation with Chambers of Commerce, professional associations and DMMOs. Sampling should take account of sector, size, geographical location and degree of dependence on tourism. For large business populations, an indicative sample of

approximately 400 completed questionnaires per destination is suggested, with adjustments for smaller populations.

6.3 Visitor Survey

The visitor survey records visitor profiles, behavior, satisfaction, environmental awareness, intention to return and willingness to recommend the destination. Data collection should take place during the tourism season and cover different locations, including entry points, accommodation establishments, beaches and sites of cultural or natural interest. The distribution of the sample should take account of the timing of the visit, nationality, type of accommodation and main travel motivation.

As with the business survey, an indicative sample of approximately 400 completed questionnaires per destination is proposed, providing a 95% confidence level and an approximate margin of error of $\pm 5\%$, with proportional allocation across the main strata. The resulting indicators include satisfaction, the proportion of repeat visitors, awareness of sustainable practices and perceptions of the destination as sustainable.

6.4 Common Specifications

All three surveys should use standardized scales, mainly closed questions and a five-point Likert scale, with a limited number of open-ended questions. A pilot test should be carried out before each new cycle, together with interviewer training, monitoring of response rates and checks on representativeness. Central coordination is necessary to ensure that local adaptations do not undermine comparability.

6.5 Alternative Survey Implementation Models

The deliverable considers two main models for implementing the surveys and operating the system. Under the first, both the methodology and operational implementation are managed centrally. This model provides a high degree of consistency and strong comparability but requires greater central administrative and financial capacity and makes less use of local networks.

Under the second model, survey design, questionnaires, specifications and quality control remain centrally managed, while operational support is provided by local Destination Management and Marketing Organizations. DMMOs facilitate access to businesses and stakeholders, support fieldwork and collect supplementary local data. Chambers of Commerce can also play a key supporting role, particularly in the business survey and in validating registers.

A hybrid model is considered the most appropriate direction, with the Ministry or the Observatory owning the methodology, platform, metadata and quality procedures. Central data providers should feed the system through permanent agreements, while DMMOs, local authorities and Chambers of Commerce act as certified local partners for access, primary data collection and interpretation of results.