LAB OBJECTIVES

# Introduction to the Methodological Model for Monitoring the Sustainable Development of Coastal and Maritime Tourism

- **Purpose: introduction** to the logic, structure and purpose
of the methodological model for the observatory of coastal and maritime tourism in the Mediterranean.
- **Objective:** understanding the transformation of the theoretical framework of sustainability into a practical measurement and policy support system.
- **Methodology: analysis** of the structure of the standard, monitoring indicators and the role of the observatory in decision-making.

# Unit 4:

# From Theory to Practice

# From Methodology to Application


### 1. Data Sources

Identifying and selecting appropriate reference data.

### 2. Data Collection

Collection of primary and secondary data.

### 3. Quality control

Accuracy verification and data cleansing.

### 4. Calculation of indicators

Data processing to produce measurable quantities.

### 5. Dashboard

Visualization of findings for easy reading.

### 6. Decision making

Documented strategy and policy formulation.

Objective: producing comparable results for planning sustainable tourism policies.

# Spatial and Temporal Dimension of Data

The comparability of the results assumes that all data are accompanied by a clear spatial and temporal reference. For this reason, each record entered in the Observatory must correspond to a specific geographical unit and a specific time period.

1

### Spatial Analysis

Using LAU level (Municipality) as a base, with special provisions for maritime tourism (tourist ports).

In cases where data are not available at LAU level, data at NUTS 3 (Regional Unit) or NUTS 2 (Region) level may be used, provided this is explicitly recorded and documented in the relevant record.

2

### Time Periodicity

Depending on the indicator, data may be collected:

- on a monthly basis,
- on a quarterly basis,
- on an annual basis,
- or at longer intervals in the case of static information (e.g. percentage of protected areas within tourist destinations),

To ensure the quality of the results, the mixing of different spatial or temporal levels is systematically avoided.

# Data Source Ecosystem

The Observatory's indicators are based on a multi-layered ecosystem of data sources. The use of multiple sources allows covering the economic, social, environmental and institutional dimensions of sustainable tourism development, while ensuring the repeatability and updating of indicators.

### OFFICIAL STATISTICS

Data collection from agencies such as ELSTAT and EUROSTAT.

### ADMINISTRATIVE REGISTERS

Data collection
through systems such as ERGANI and GEMI.

### INSTITUTIONAL BODIES

Collection of data from Ministries, the Bank of Greece (BoG) and other institutional bodies (e.g. OFYPEKA).

### INFRASTRUCTURE BODIES

Collection of data from infrastructure management bodies such as tourist ports and DEWA.

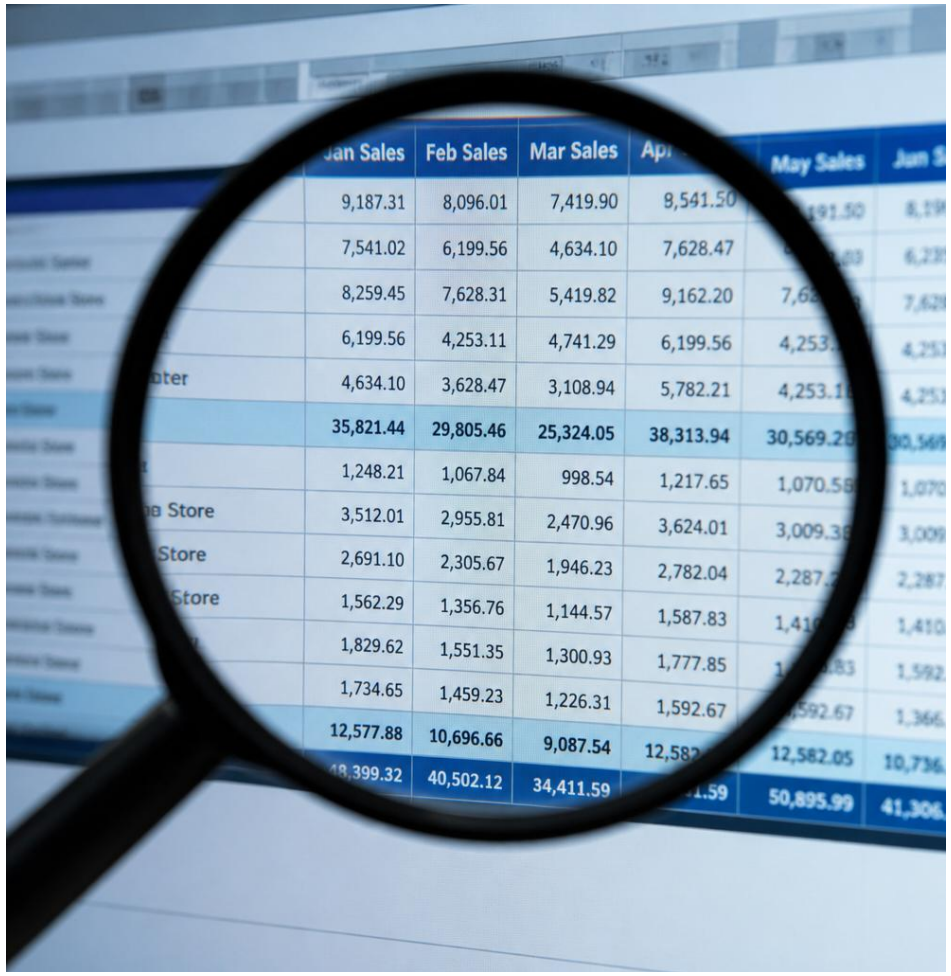
### PRIMARY RESEARCH

Targeted data collection (surveys of residents, visitors and businesses) to meet specific analysis needs.

Regardless of the origin of the data, it should be ensured that the process of its collection and production is adequately documented and can be repeated in the same way in the future.

# Management of Incomplete or Unavailable Data

During the data collection and recording process it is possible that some information is not available for a specific destination, time period or subject area.




- Systematic recording and full documentation of all identified data gaps.

*Example: There are no employment figures available by gender for a specific Municipality or year. The absence is recorded in the data log and the reason for the absence is documented.*

- Assumptions without an empirical basis are avoided to ensure the accuracy of the results.

*Example: The accommodation occupancy of a destination is not arbitrarily estimated based on neighboring areas or previous years.*

- Use formal regressions or predictive models only after full methodological documentation.

*Example: Use of ELSTAT population estimates when there are no definitive census data for the year under review.*

- Lack of data acts as a means to identify areas that require new field investigations.

*Example: The absence of data on resident or visitor satisfaction leads to the design of a primary questionnaire survey by the Observatory.*

# Quality Control and Data Validation

The quality of the indicators directly depends on the quality of the data entered into the system. For this reason, a control procedure is applied before the finalization of each data collection cycle.

The check includes:

### SPATIAL AND TEMPORAL CONSEQUENCE

Each record must correspond to a specific spatial unit and a specific reference time period.

### CODING COMPLIANCE

Users should only use the codings and classifications included in the system reference tables.

### DOCUMENTATION OF ORIGIN

Each entry should be fully documented as to the source of the data.

### METHODOLOGICAL LIMITATIONS

It is necessary to record the assumptions that affect the interpretation of the indicators. Especially in cases where provisional figures, estimates, revised data etc. have been used.

# Reference Tables and Common Classifications

Reference Tables form the basis of standardization of all data collected and processed by the Observatory. Through common codings and predefined values it is ensured that the same terms, the same categories and the same geographical units are used in a uniform way by all operators and users of the system.

The use of reference tables is mandatory in all data collection sheets and is a basic condition for the comparability of results between different regions, time periods and countries.

*Reference data — read-only. Do not edit. Re-download the template to refresh.*

| Code | Name | Level | Parent Code | Country Code |
|---|---|---|---|---|
| EL320020472( | Artaion | LAU | EL541 | GR |
| EL320021042 | Ziros | LAU | EL541 | GR |
| EL320022182 | Nikolaos Skoufas | LAU | EL541 | GR |
| EL420020232( | Almyros | LAU | EL613 | GR |
| EL520020492( | Archanes - Asterousia | LAU | EL431 | GR |
| EL520020692( | Gortyna | LAU | EL431 | GR |
| EL520021982 | Minoa Pediadas | LAU | EL431 | GR |
| EL620020192( | Alexandreia | LAU | EL521 | GR |
| EL720020372( | Andritsaina - Krestena | LAU | EL633 | GR |
| EL720021082 | Ilida | LAU | EL633 | GR |
| EL9005 | Marathon | LAU | EL305 | GR |
| EL9006 | Markopoulo Mesogaias | LAU | EL305 | GR |
| EL9011 | Lavreotiki | LAU | EL305 | GR |
| EL9012 | Rafina - Pikermi | LAU | EL305 | GR |
| EL9013 | Oropos | LAU | EL305 | GR |
| EL9014 | Spata - Artemida | LAU | EL305 | GR |
| EL9015 | Saronikos | LAU | EL305 | GR |
| EL9101 | Piraeus | LAU | EL307 | GR |
| EL9102 | Alimos | LAU | EL304 | GR |
| EL9103 | Vari - Voula - Vouliagmeni | LAU | EL305 | GR |
| EL9104 | Aspropyrgos | LAU | EL306 | GR |

### Geographical Classifications

- Countries
- Regions
- Municipalities
- Ports / tourist ports

### Demographic Classifications

- Sex
- Age Groups

### Financial & Business Classifications

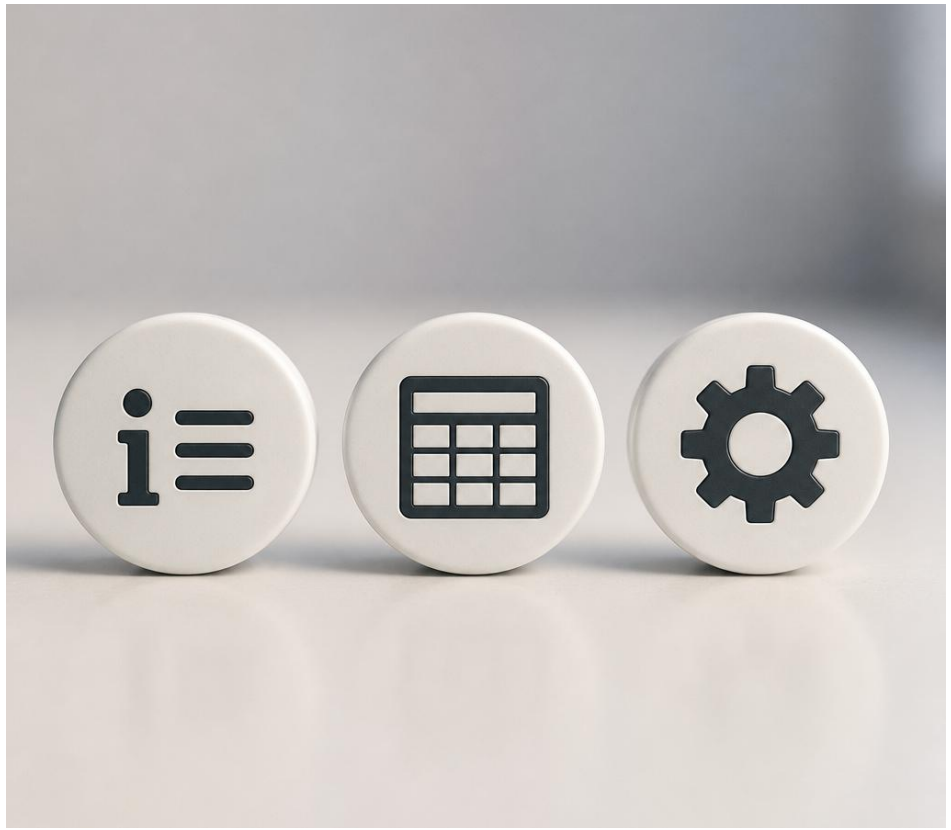
- KAD of activities
- Legal forms of business

### Tourist Classifications

- Accommodation types
- Origin of visitors
- Categories of tourist activities

# Indicator Completion Tables

A separate worksheet with specific fields and entry rules has been created for each indicator.



### 1. COMPLETION OF METADATA

Documentary information on the type of indicator, the frequency of data collection, the required variables, and the source and methodology of data collection

### 2. COMPLETION OF DATA

Users enter the required primary data according to the indicator specifications, using the approved codes and common classifications of the Observatory.

### 3. AUTOMATIC CALCULATION

Users enter data – the system automatically calculates the indicators.

Users enter data – the system automatically calculates the indicators.

# Indicator Completion Tables: Example (Dependence on Tourist Visitors)

**C-1.1.1 Dependence on tourism**

**Priority: CORE | Period_Code: YYYY · YYYY-QN · YYYY-MM**

*Comparative assessment of tourism intensity across destinations and longitudinal monitoring of the local economy's dependence on tourism.*

**Data Source and Methodology (required when sheet contains data):**

Source: ELSTAT – Tourist Accommodation Statistics & Population Census. Municipality-level annual overnight stays and permanent population (2023). Data collected at LAU level and processed according to Eurostat Tourism Statistics methodology. Indicator calculated automatically as Total Overnights / Population.

| Spatial_Code | Period_Code | Total_Overnights | Population |
|---|---|---|---|
| EL9236 | 2023 | 137711 | 65243 |
| EL9235 | 2023 | 23087 | 11867 |
| EL9239 | 2023 | 309018 | 71751 |
| EL9240 | 2023 | 40267 | 2596 |
| EL9234 | 2023 | 1113264 | 13104 |
| EL9231 | 2023 | 301993 | 66376 |
| EL9232 | 2023 | 36896 | 20311 |
| EL9233 | 2023 | 57961 | 29508 |
| EL9201 | 2023 | 2272309 | 319045 |
| EL9207 | 2023 | 49521 | 19755 |
| EL9204 | 2023 | 112776 | 45561 |
| EL9205 | 2023 | 163203 | 55358 |
| EL9211 | 2023 | 920296 | 82892 |

At the top of the worksheet is indicator documentation information, which is used to describe the methodology and document the data collected.

Fill in the following fields:

- **Spatial_Code:** Contains the code of the spatial unit to which the data refers. The code must correspond to a valid record of the REF_GEOGRAPHY table and be used consistently across all reporting periods.
- **Period_Code:** Contains the reference period of the data. YYYY format is used for this indicator
- **Total_Overnights:** Contains the total number of overnights spent in the specific spatial unit during the reporting period.
- **Permanent_Residents:** Includes the permanent population of the spatial unit. The value is derived from the latest available official census or other approved population source.

# Organization of the Data Collection Process

The operation of the Observatory is based on a standardized framework of cooperation between the management body and the data providers. For each indicator, the required sources, data fields, codings, the spatial and temporal level of collection, as well as the responsibilities of each involved body are defined.

## BASIC ROLES & RESPONSIBILITIES

### Observatory Management Body

- Collection coordination
- Providing instructions
- Receipt and control of data

### Data Providers

- Data collection and submission
- Documentation of sources and methodology

### Results Users

- Interpretation and use of indicators

## RECORD OF DATA REQUIRED

Define sources & standardize fields

*Πίνακας 3: Προδιαγραφή συλλογής δεδομένων για τους δείκτες παράκτιου τουρισμού*

| Κωδικός Δείκτη | Δείκτης | Δεδομένα που απαιτούνται | Πρόσθετα απαιτούμενα πεδία | Τυποποίηση / Επιτρεπόμενες τιμές | Ελάχιστο χωρικό επίπεδο | Ελάχιστο χρονικό επίπεδο | Φορέας | Υφιστάμενα δεδομένα | Κενό δεδομένων / Απαιτούμενη συλλογή |
|---|---|---|---|---|---|---|---|---|---|
| 1.1.1 | Εξάρτηση από τουριστικούς επισκέπτες | Διανυκτερεύσεις, μόνιμος πληθυσμός | – | – | LAU (Δήμος) | Ετήσιο | ΕΛΣΤΑΤ | ΝΑΙ | – |
| 1.1.2 | Μέση διάρκεια παραμονής | Αφίξεις, διανυκτερεύσεις | – | – | LAU (Δήμος) | Ετήσιο | ΕΛΣΤΑΤ | ΝΑΙ | – |
| 1.1.4 | Εποχικότητα | Μηνιαίες διανυκτερεύσεις | – | – | LAU (Δήμος) | Μηνιαίο | ΕΛΣΤΑΤ | ΜΕΡΙΚΩΣ | Απαιτούνται μηνιαία στοιχεία σε επίπεδο Δήμου |
| 1.2.1 | Τουριστική απασχόληση | Απασχολούμενοι σε τουριστικούς κλάδους | ΚΑΔ δραστηριότητας | NACE Rev.2 / NACE Rev.2.1 | LAU (Δήμος) | Μηνιαίο ή Ετήσιο | ΕΡΓΑΝΗ | ΟΧΙ | Απαιτείται πρόσβαση σε στοιχεία ΕΡΓΑΝΗ |
| 1.2.2 | Ηλικιακή διάρθρωση απασχολουμένων | Απασχολούμενοι ανά ηλικιακή ομάδα | Ηλικιακή ομάδα | 15-24, 25-34, 35-44, 45-54, 55-64, 65+ | LAU (Δήμος) | Ετήσιο | ΕΡΓΑΝΗ | ΟΧΙ | Απαιτείται ηλικιακή ανάλυση |
| 1.2.5 | Εποχικότητα απασχόλησης | Προσλήψεις και αποχωρήσεις | ΚΑΔ δραστηριότητας | NACE Rev.2 / NACE Rev.2.1 | LAU (Δήμος) | Μηνιαίο | ΕΡΓΑΝΗ | ΟΧΙ | Απαιτούνται στοιχεία προσλήψεων |

Clear roles and common specifications ensure reliable data.

# Primary Research in Support of the Observatory

## SURVEY OF RESIDENTS

**Objective:** To capture the social acceptance of tourism and its effects on the daily life of the inhabitants.

**It supports indicators on:**

- Social acceptance of tourism
- Residents' satisfaction with tourism development
- Perceived pressure on infrastructure and public spaces
- Participation and information for tourism planning

## VISITORS SURVEY

**Objective:** To monitor the experience, satisfaction and perception of visitors about the sustainability of the destination.

**It supports indicators on:**

- Guest experience and satisfaction
- Rate of repeat visitors
- Environmental awareness of visitors
- Recognizability of destination as sustainable
- Update on sustainable tourism actions

## BUSINESS RESEARCH

**Objective:** The recording of the operating conditions of businesses and their contribution to sustainable tourism development.

**It supports indicators on:**

- Perception of tourism businesses
- Employment conditions and staff availability
- Implementation of sustainability practices
- Participation in local initiatives and networks
- Business environment needs and challenges

Complete research planning (methodology, sampling, questionnaires) has been done to support the future operation of the Observatory.

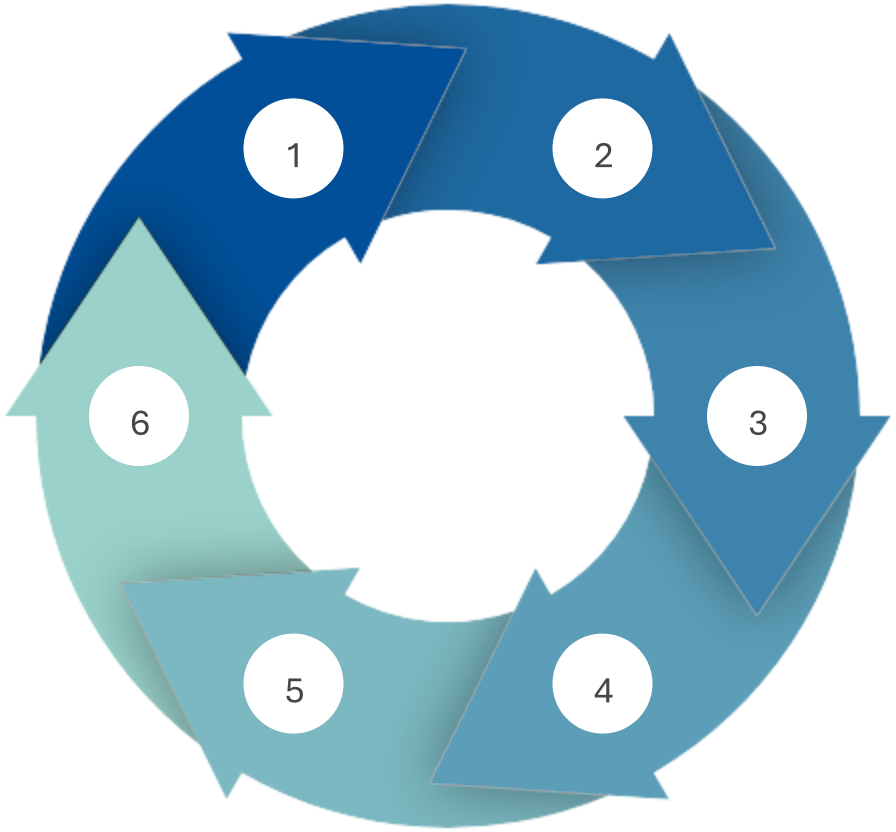
# Annual Data Collection and Submission Cycle

The collection of data is organized in an annual cycle, which is repeated on a constant basis:

1 **SEND TEMPLATES**
Preparation and distribution of the necessary collection standards approved by the Observatory's management body.

2 **DATA AGGREGATION**
Registration of the data by the competent providers.

3 **SUBMISSION OF FILES**
Registration of the data in the central system of the Observatory




4 **QUALITY CONTROL**
Initial check of receipt by the Observatory's management body and verification of the validity of the data.

5 **CORRECTIONS**
Resubmission in cases where discrepancies are found.

6 **CALCULATION OF INDICATORS**
Final processing and production of the results.

The schedule must be fully aligned with the availability of data sources.

# Data Quality Control

### COMPLETENESS

Confirmation that all mandatory fields have been completed for each registration.

*For example, in an indicator that requires spatial unit, reporting year, variable value, and data source, the absence of any of these fields makes the record incomplete. In these cases, completion or documentation of the deficiency is requested.*

### CODIFICATIONS

Confirmation that the values used in the fields with predefined categories correspond to values in the reference tables.

For *example, if the gender field must take values from the REF_GEOGRAPHY table, any different entry is considered incompatible.*

### SPATIAL/TIME CONSEQUENCE

Examination of whether the variables used for an indicator refer to the same spatial unit and reference period, unless the indicator methodology provides otherwise.

*For example, if an indicator is calculated at the Municipality level, the individual variables feeding it should not come from different spatial levels*

### LOGICAL CONSEQUENCE – EXTREME VALUES

It involves verifying that prices are reasonable in relation to the type of indicator & identifying prices that deviate significantly from previous periods or from comparable destinations.

For *example, numeric fields such as arrivals, overnight stays, population, number of businesses or waste quantities cannot have negative values.*

The quality of the indicators directly depends on the quality of the data collected.