Deliverable 3.1.1: *Diagnosis - State of the art on collection and management of tourism data*

Date: 20/10/20

WP3 STUDYING

Activity 3.1

"Data management and organisation: Towards Common Standards and Tools"

Requested by:

Developed by:

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All project partners have contributed to the report by filling in the template for their respective countries (see Annex 1).

BEST MED project partners:

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1 Introduction

1.1 BEST MED - (Beyond European Sustainable Tourism MED Path)

BEST MED project is being implemented in nine Mediterranean countries (Spain, Portugal, France, Italy, Croatia, Slovenia, Greece and Montenegro) with the general objective of enhancing Mediterranean Governance, being the main challenges to fight against seasonality and lack of effective cooperation among main tourism actors, including the citizen active participation on the policies design. It aims to have a new integrated and sustainable tourism planning approach, to contribute to the mitigation of seasonality in the MED area, through the connection between coastal and inland regions, such as a path-route method. A testing phase will allow to build a joint model that will be transferred and capitalised, as well as a toolkit and updates set of data indicators.

BEST MED will follow a strategy of previous approaches and outputs, testing an updated toolkit of data and indicators, contributing to the design of a new Green model (MED S&C Path- Sustainable Path & Cultural Routes Model), focusing on integration of tourism planning into wider development strategies, together with mobilizing key players both at local and specifically at transnational level, creating synergies across MED countries and promoting the awareness of the MED area. More information about the project here.

1.2 Working Package 3 "Studying phase"

The objective of the Working Package 3 is to develop a framework of knowledge about main project goals through:

- Base information for a network of tourism observatories
- Information needed to develop a MED Sustainable Path and Cultural Routes Model (MED S&C Path) on the example of the Mitomed+ project "Green Beach Model", and of other MED projects

The study will examine existing methodological approaches on tourism data and tourism observatories and analyse previous experiences on tourism data knowledge, finding gaps and needs in data collection management and pinpointing the main results and suggestions from the previous MED projects, to develop adequate policies.

Within WP3, Activity 3.1 "*Data management and organisation: Towards Common Standards and Tools*" aims to establish base information for developing institutional background of data management as a Mediterranean Network of national and regional Tourism Observatories, expanding cooperation of existing observatories for developing institutional background of data management.

To this end, **Deliverable 3.1.1** analyses the state of the art of collection and management of tourism data systems and methods. The analysis covers five themes:

1) Official Statistics data
2) Open and Big Data
3) Sustainable Tourism Indicators
4) Tourism Observatories
5) EU funded projects

In this report, main attention is given to the first four categories while the EU funded projects are analysed in detail in the study for Deliverable 3.1.2.

The report is organized as follows. Firstly, we will explain the methodology used to gather the information from the different Mediterranean countries. Secondly, we will briefly describe the main initiatives to measure tourism sustainability at European and global level. A detailed analysis of each country will follow, describing their data collection and management systems, including the above-mentioned themes. In this study, we cover the countries who are partners of the BEST MED project, as well as Mediterranean countries included in the IPA Cross border cooperation, and those Mediterranean countries outside cooperation area but within ENI CBC MED programme. Finally, we will briefly describe some of the existing Mediterranean Tourism Observatories.

As a result of this analysis, we individuate gaps and needs and suggest common solutions to improve data knowledge and management at European and Mediterranean level.

2 Methodology

To conduct the research, a technical data sheet called *"Template for Data gathering"* has been prepared, containing a list of categories useful for monitoring the information available from each country involved in the project. In particular, the information included in the template concerns: the availability of tourism data, the institutions collecting data, the territorial scale of the information collected, the frequency of observation, the availability of historical series, the link to the database, the accessibility of the data, among others.

This template for data gathering has been sent to each partner of BEST MED, who were responsible for identifying the official structures, observatories or centres present in their area (regional and national level) that deal with the collection of data on tourism, in order to fill out the template.

For those countries not present in the partnership and those countries of the southern shore of the Mediterranean, CAST has performed the compilation of the templates, through desk research from official statistical offices, national tourism offices, EUROSTAT, OECD and UNWTO databases, and literature review on the main reports and academic papers on the topic. Desk research has been performed as well to write the section on international tourism sustainability measuring initiatives, to provide a general context of the topic at global and European level.

To complement the desk research, CAST has conducted interviews with relevant stakeholders, mainly from the academic sector, activating the relationships and collaborations in place with the universities of the UNESCO / UNITWIN network "Culture, Tourism, Development".

In total, there are 20 templates:

- **9 partner countries:** Spain, Italy, France, Portugal, Slovenia, Croatia, Montenegro, Greece and Malta
- **4 countries belonging to the IPA cross border cooperation:** Albania, Bosnia and Herzegovina, Cyprus and Gibraltar
- **7 countries belonging to the ENI CBC programme:** Algeria, Tunisia, Egypt, Jordan, Lebanon, Israel and Palestine

The template for data gathering (included in Annex 1) is organized in four main sections:

- **Official Statistics:** including national, regional and municipal level. Here are included tourism observatories as well as tourism research centres.
- **Open and Big Data**: initiatives implementing open and big data sources to collect tourism data.
- **Sustainable Tourism Indicators (STI):** initiatives at national and local level, being public or private.
- **EU funded projects:** dealing mainly with data collection and management.

The final section of the template allows to include key stakeholders that could be contacted for further information on data collection and management in each country.

3   International Sustainable Tourism Measuring initiatives

In this section, some of the most important worldwide initiatives on measuring and monitoring sustainable tourism will be briefly discussed, comprising initiatives from UNWTO, European Union and Global Sustainable Tourism Council.

3.1   Sustainable Tourism Indicators (STIs)

UNWTO defines indicators of sustainable tourism as "the set of measures that provide the necessary information to better understand the links between the impact of tourism on the cultural and natural setting in which this takes place and on which it is strongly dependent" (as cited in Lozano-Oyola, Blancas, González, & Caballero, 2012, p.660).

United Nations Environment Program (UNEP) & UNWTO (2005) in their guide for policy makers, have identified five criteria for the selection of indicators, to ensure its instrumental use: relevance of the indicator, feasibility of obtaining and analysing the data, reliability of the information, clarity and ease of understanding and finally comparability over time and across regions. These are generally agreed by most authors and initiatives as the main ones, however there are many other criteria, such as cost-effectiveness, limit in number, policy relevance, timeliness, participatory approach, among many others (Miller & Twining-Ward, 2005).

Among the typical policy functions of indicators suggested by UNEP and UNWTO (2005) are: baseline assessment of conditions and needs; setting of targets for policies and actions; assessment of actions; evaluation, review, and modification of policies. Castellani and Sala (2010) highlight the importance of linking indicator selection to policy targets and priorities, and also to official statistical data systems, so as to improve data availability (Miller & Twining-Ward, 2005).

3.2   UNWTO Measuring Initiatives

The UNWTO is the UN tourism-specialized agency since 2003, in charge of promoting the sustainable development of the industry worldwide. It has 158-member countries, 6 associate members and 500 affiliate members representing the private sector, academia and other tourism associations and authorities (UNWTO, 2019). The organization fulfils an important role building capacity and raising awareness on the role of tourism as a tool for sustainable development. They hold numerous worldwide events, launch campaigns and release publications on market trends and successful management of tourism.

The organization has been working on developing indicators to better manage tourism at destination level since 1992, under the premise that the information on economic, social, and environmental issues allow policy makers and tourism managers to make informed policies and strategies.

3.2.1 Indicators of Sustainable Development for Tourism Destinations

Among these initiatives, the 2004's guidebook on **"Indicators of Sustainable Development for Tourism Destinations"**, is the most comprehensive guide with a list of over 700 indicators organized in 50 common issues. From the list of over 700 indicators, UNWTO provides a selection of 12 "Baseline Issues" with 29 related baseline indicators (Table 1), that should be the minimum that all destinations should aspire to measure. Moreover, the guidebook defines the procedure that should be followed to develop and implement indicators (Table 3), linking them with the planning process where they exist, or using them as catalysts if no plan or strategy is in place (UNWTO, 2004).

Table 1. Baseline issues and indicators. Source: UNWTO (2004)

Baseline Issue	Suggested baseline indicators
Local satisfaction with tourism	➢ Local satisfaction level with tourism (questionnaire)
Effects of tourism on communities	➢ Ratio of tourists to locals (average and peak period/days) ➢ % who believes that tourism has helped bring new services or infrastructure (questionnaire-based) ➢ Number and capacity of social services available to the community (% which are attributable to tourism)
Sustaining tourist satisfaction	➢ Level of satisfaction by visitors (questionnaire-based) ➢ Perception of value for money (questionnaire-based) ➢ Percentage of return visitors
Tourism seasonality	➢ Tourist arrivals by month or quarter (distribution throughout the year) ➢ Occupancy rates for licensed (official) accommodation by month (peak periods relative to low season) and % of all occupancy in peak quarter or month) ➢ % of business establishments open all year ➢ Number and % of tourist industry jobs which are permanent or full-year (compared to temporary jobs)
Economic benefits of tourism	➢ Number of local people (and ratio of men to women) employed in tourism (also ratio of tourism employment to total employment) ➢ Revenues generated by tourism as % of total revenues generated in the community
Energy management	➢ Per capita consumption of energy from all sources (overall, and by tourist sector – per person day) ➢ Percentage of businesses participating in energy conservation programs, or applying energy saving policy and techniques ➢ % of energy consumption from renewable resources (at destinations, establishments)

Water availability and conservation	➤ Water use: (total volume consumed and litres per tourist per day) ➤ Water saving (% reduced, recaptured or recycled)
Drinking water quality	➤ Percentage of tourism establishments with water treated to international potable standards ➤ Frequency of water-borne diseases: number/percentage of visitors reporting water-borne illnesses during their stay
Sewage treatment (wastewater management)	➤ Percentage of sewage from site receiving treatment (to primary, secondary, tertiary levels) ➤ Percentage of tourism establishments (or accommodation) on treatment system(s)
Solid waste management (garbage)	➤ Waste volume produced by the destination (tonnes) (by month) ➤ Volume of waste recycled (m3) / Total volume of waste (m3) (specify by different types) ➤ Quantity of waste strewn in public areas (garbage counts)
Development control	➤ Existence of a land use or development planning process, including tourism ➤ % of area subject to control (density, design, etc.)
Controlling use intensity	➤ Total number of tourist arrivals (mean, monthly, peak periods) ➤ Number of tourists per square metre of the site (e.g., at beaches, attractions), per square kilometre of the destination, - mean number/peak period average

3.2.2 International Network of Sustainable Tourism Observatories – INSTO

The network was launched in 2004 as a way to accelerate the transition of destinations to sustainable practices, through the holistic monitoring of tourism' impacts. It proposes a participatory approach to measure, monitor and manage information that can be useful for policy makers, tourism managers and relevant stakeholders to formulate sustainable tourism policies and strategies (UNWTO INSTO, 2020). The basic premise is "measure to better manage".

As of today, the network counts with 31 tourism observatories around the world: nine in China, one in Greece, one in Mexico, one in Brazil, five in Indonesia, one in Croatia, two in the United States, one in New Zealand, one in Italy, one in Panama, one in Guatemala, one in Argentina, one in Australia, one in Canada, three in Portugal, and the last to join from Spain, bringing a total of two observatories in Spain. They are all located in different types of destinations (coastal, mountain, tropical, etc.). As a comparison, at the end of 2018 there were 22 observatories, showing that the network is growing fast.

The members need to follow certain requirements to be part of the network. One of them is the commitment to monitor nine mandatory issue areas: tourism seasonality, employment, destination economic benefits, governance, local satisfaction, energy management, water

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management, waste water (sewage) management, and solid waste management. Nevertheless, members are free to choose the specific indicators to be used, as long as they respond to the issue areas. Another requirement is adopting a participatory approach, which includes raising awareness among local actors, identifying facilitators and forming a stakeholder working group, to guarantee the lasting commitment to monitoring (UNWTO INSTO, 2020).

The network encourages members to constantly innovate in the data collection process, incorporating new sources, such as big and open data.

3.2.3 Measuring Sustainable Tourism (MST) – Towards a Statistical Framework

This is the latest endeavour of UNWTO, launched in 2015 with the support of the UN Statistics Division (UNSD), to further advance the measuring of tourism sustainability.

The [initiative](#) aims to develop a statistical framework combining two UN accounting frameworks: The Tourism Satellite Account (TSA) and the System of Environmental Economic Accounting (SEEA), integrating tourism with other economic, social and environmental information to report on key indicators. In this way, the Statistical Framework for MST (SF-MST) provides a common language and structure to organize already existing information, and support monitoring programmes, such as the Sustainable Development Goals (SDG) and INSTO (UNWTO Statistics, 2018). In this regard, tourism has the potential to contribute to the achievement of all the 17 SDGs and has been specifically mentioned in 3 of them: goal 8 (target 8.9, related to sustainable economic growth and employment), goal 12 (target 12.b, sustainable consumption and production patterns) and goal 14 (target 14.7, conservation and sustainable use of the oceans) (UNWTO, 2015).

Nevertheless, it is argued that *"there is as yet no standardized basis for the collection of relevant information at national level (…), especially relevant since much of the policy direction and resource allocation, is decided at national rather than local level"* (UNWTO Statistics and Tourism Satellite Account Programme, 2016, p. 4). Thus, it is considered insufficient to only measure tourism impacts at local level and the MST initiative aims at filling that gap, aggregating measurement from local level to regional (sub-national level), national level and finally global level, addressing this way global challenges such as climate change.

With regards to other existing measuring initiatives, it is stated that *"an extensive set of indicators has been proposed in relation to sustainable tourism, but they have not been selected or developed in the context of a statistical framework. The ambition of the MST initiative is to enable indicators to be derived from the statistical framework and hence have a firm base for ongoing measurement and comparison, for the assessment of data quality and for appropriate co-ordination of collection activities"* (UNWTO Statistics and Tourism Satellite Account Programme, 2016, p. 14).
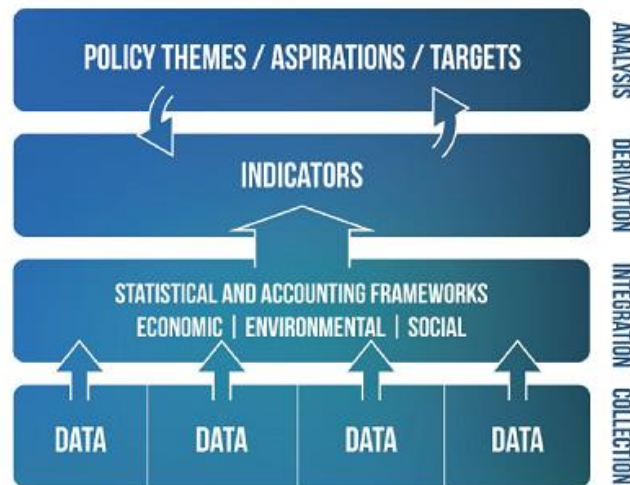
Figure 1 Overall structure of the SF-MST. Source: UNWTO (2017)

The MST initiative is conducted through a collaboration between UNWTO and the UN Statistics Division (UNSD), together with the UN Committee of Experts on Environmental-Economic Accounting (UNCEEA), the WTO Committee on Statistics and Tourism Satellite Accounts and the WTO Committee on Tourism and Sustainability. Moreover, a Working Group with experts has been created to support the work (UNWTO Statistics and Tourism Satellite Account Programme, 2016). 7 steps have been identified to develop the statistical framework.

1. Initial framing of sustainable tourism for measurement purposes.
2. Assess relevant statistical guidance and frameworks.
3. Assess country experiences.
4. Describe key measurement challenges.
5. Engage with users and clarifying requirements.
6. Develop country pilot studies.
7. Draft a statistical framework for sustainable tourism.

In June 2017, on the occasion of the 6th International Conference on Tourism Statistics in Manila, the preliminary draft of the SF-MST has been presented. Eleven countries have conducted pilot activities to test the implementation of the MST framework: Austria, Canada, Fiji, Germany, Italy, Mexico, Netherlands, Philippines, Saudi Arabia, Sweden and Thailand. There is a study prepared by UNWTO highlighting the main results of the pilot experiences and policy implications.

3.3   Global Sustainable Tourism Council (GSTC)

The GSTC is a non-for profit, non-governmental organization, that was formed in 2007 as a Partnership for Global Sustainable Tourism Criteria and became the Global Sustainable Tourism Council in 2010. It is a virtual organization, with a secretariat, different working groups and representatives in several countries. It offers different levels of memberships, for destinations, businesses, non-for-profit organizations and individual tourism professionals. Its main activities involve:

- Providing the minimum criteria for destinations and service providers to develop the tourism industry sustainably.
- Recognition and accreditation of sustainable tourism certification bodies
- Awareness raising for the general public and education for tourism professionals, through its training program.
- Market access for sustainable tourism products and services.
- The GSTC provides the basic guidelines to unify the concept of sustainable tourism worldwide and acts as the accreditation body for certifications and labels, ensuring they meet the minimum criteria, based on reliable processes. GSTC does not certify directly tourism providers or destinations.

3.3.1   GSTC Criteria

The GSTC Criteria is composed of two sets: The Industry Criteria (GSTC-I) for the private sector (hotels and tour operators) and the Destination Criteria (GSTC-D) for public policy makers and destination managers (Global Sustainable Tourism Council, 2018). For the purpose of the present study, the focus is on the Destination Criteria, which was released in November 2013 and it is meant to be revised after five years.

The criteria express what needs to be achieved, not how to achieve it; they are accompanied by a number of suggested performance indicators, which in fact act more as explanation of each criterion than as real indicators. It is clearly stated in the document that destinations need to develop further tools (i.e. indicators) to measure compliance with the criteria.

The Criteria and Indicators were based on existing international monitoring initiatives, such as the previously described UNWTO sustainable tourism indicators for destinations, and more than 40 other accepted principles and guidelines (Global Sustainable Tourism Council, 2018). Moreover, before being officially released, they were subject to two consultation periods among tourism experts and were field-tested in a number of destinations. The GSTC Destination Criteria is divided in 4 sections with 41 criteria in total (Table 4):

- Demonstrate effective sustainable management: 14 criteria.
- Maximize economic benefits to the host community and minimize negative impacts: 9 criteria.
- Maximize benefits to communities, visitors and culture; minimize negative impacts: 6 criteria.
- Maximize benefits to the environment and minimize negative impacts: 12 criteria.

However, "monitoring impacts is not an end in itself". Instead, one important purpose of the criteria is to "offer governmental, non-governmental, and private sector programs a starting point for developing sustainable tourism requirements" (Global Sustainable Tourism Council, 2018, p. 2). The GSTC Criteria need to be complemented with a system of concrete indicators to measure to what degree the criteria are being complied to. This need is highlighted in several of the criteria, where it is expected that the destination has a system in place which is

consistent with the GSTC and addresses the different environmental, economic and socio-cultural issues.

3.4 EUROSTAT

EUROSTAT is the statistical office of the European Union and produces European statistics in collaboration with National Statistics institutes (NSIs) from the members' countries. This partnership is known as the European Statistical System (ESS) and it includes the European Economic Area /EEA) countries and Switzerland. With regards to tourism, EUROSTAT collects data related to:

- Capacity and occupancy of tourist establishments: capacity relates to number of establishments and number of available beds, while occupancy refers to occupancy rate at accommodation establishments and number of overnight stays.
- Tourism trips, regarding number of tourists and tourism trips made.

In the past, EUROSTAT has launched certain initiatives related to the development of sustainable tourism indicators, such as the study commissioned in 2004 to Statistics Sweden, to develop a set of 20 core indicators for sustainable tourism. The indicators followed the DPSIR framework (Driving forces, pressure, state, impact and response) and were meant to be useful at national, regional and local levels in EU countries.

Lately, EUROSTAT has launched several initiatives related to Big Data, one of the main ones being ESSnet Big Data project, launched in March 2016, which consist of a set of pilot by national statistics offices, in order to test the feasibility of incorporating these new data sources to complement official statistics. One of the task forces of ESSnet is the "Inventory of big data sources related to tourism statistics" which includes:

1. Web scraping: Internet portals related to offers of the accommodation base, transport, traffic flow in local communication, admission tickets, meteorological data, communications on epidemiological threats and natural disasters,
2. External data administrators: data on water consumption, waste production, energy meters, use and prices of parking meters and car parks, car traffic, data from store transactions, payment cards, mobile data operators etc.
3. Source characteristics including: variable identification, variable taxonomy, variable possible mappings with our statistical variables, variable ontology (relationships and hierarchies' description).

The ESSnet project is still active and its outcomes deserves to be further investigated, especially those related to tourism statistics.

3.5 European Tourism Indicator System - ETIS

The European Tourism Indicator System (ETIS) was launched by the European Commission on the 22nd February 2013 as a voluntary management tool aimed at helping destinations to

measure and monitor the impacts of tourism in a holistic way, allowing them to make informed decisions to develop tourism. Its monitoring results are based on self-assessment, data collection and analysis by the destinations themselves. (European Union, 2016).

ETIS aims at encouraging the harmonization of indicators in the tourism sector. The long-term ambition of the European Commission is that "the system will serve as a guide to policy makers and other destination stakeholders for the improved management of tourism destinations across Europe" (University of Surrey, 2012a, p. 3).

The first set of indicators (from February 2013) was composed of 27 core indicators and 40 optional indicators, subdivided in 4 categories: destination management, economic value, social and cultural impact and environmental impact. Each category addresses specific sustainability issues and a certain number of indicators that respond to each issue, providing an assessment of the level of sustainability in the destination. The current set of indicators (from March 2016) is still divided into the same 4 categories, however the amount and content of the indicators have been revised, being now 43 core indicators and a set of supplementary indicators, to be used according to the specific characteristics of the destination: coastal, maritime, cultural routes, etc.

Core indicators are those indicators common to most destinations, present in the main indicators systems and that represent the essential information needed to monitor performance over time. It is important to highlight that the system is flexible, and destinations can choose a certain number of indicators, according to their needs and specific sustainability issues. They do not need to apply the 43 core indicators.

Destinations benefit from the system in many ways: analysing the data collected and setting priority areas for action, designing long-term tourism strategies, improving destination management with the involvement of stakeholders and benchmarking, and sharing best practices with other European destinations.

The set of core and supplementary indicators are included in the toolkit, and the supporting documents to collect data are available online in the EC website. These supporting documents include: the destination dataset (an Excel file where to collect all the data), the destination profile, the templates of invitation letters for stakeholders, as well as the surveys' templates (visitors, businesses, destination management and residents).

Each destination needs to have a "local coordinator" who will usually be part of the local Destination Management Organization (DMO) or tourism office and will be responsible for the coordination of the stakeholders and the planning of the steps to take.

The implementation guide includes the following seven steps:

1. Raise awareness: Let all stakeholders in the destination know about the decision to implement ETIS, so that everyone can be involved and collaborate. It is crucial to obtain the local political support as well and include them in the stakeholders group.

2. Create a destination profile: a brief overview with the main characteristics of the destination, including location, boundaries, tourist attractions, etc.

3. Form a stakeholder working group (SWG): this is a key aspect in the success of implementing the system. A group of highly-committed stakeholders should be formed, including public authorities, tourism authorities, business associations, utilities' companies, academia, NGO's and local residents. It is advisable that the group is no larger than 15, 20 members in order to facilitate coordination. The group will be guided by the local destination coordinator, who will establish responsibilities and set deadlines for data collection. A first meeting to present the project should be organized, explaining the aims, activities to perform and responsibilities to be shared.

4. Establish roles and responsibilities: among the stakeholders in the group, so that each one is in charge of collecting part of the data needed to populate the indicators. Clearly, the type of data to be collected will be related to the role of each stakeholder. The division of responsibilities should be done during the first group meeting.

5. Collect and record data: the tool to do this is the destination dataset, an excel file where the information collected by the stakeholders will be combined, in order to have a clear picture of the destination's performance. When data is not readily available, surveys can be conducted in order to collect them.

6. Analyse the results: once the dataset is completed, the SWG can analyse the results, identifying key priority areas, setting targets and planning the actions to achieve them.

7. Enable ongoing development and continuous improvement: it is important to continue using the system, collecting data periodically and re-assessing priorities. Since the costs to carry on the system might be an issue, it is important to find possible funding sources.

3.5.1 Set of Core Indicators

Table 2. ETIS Core Indicators

Section A: Destination management		
Criteria	**Indicator reference#**	**ETIS core indicators**
A.1 Sustainable tourism public policy	**A.1.1**	Percentage of tourism enterprises/establishments in the destination using a voluntary certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility
A.2 Customer satisfaction	**A.2.1**	Percentage of tourists and same-day visitors that are satisfied with their overall experience in the destination
	A.2.2	Percentage of repeat/return visitors (within 5 years)

Section B: Economic value		
Criteria	**Indicator reference#**	**ETIS core indicators**
B.1 Tourism flow (volume and value) at destination	**B.1.1**	Number of tourist nights per month
	B.1.2	Number of same-day visitors per month
	B.1.3	Relative contribution of tourism to the destination's economy (% GDP)
	B.1.4	Daily spending per overnight tourist
	B.1.5	Daily spending per same-day visitors
B.2 Tourism enterprise(s) performance	**B.2.1**	Average length of stay of tourists (nights)
	B.2.2	Occupancy rate in commercial accommodation per month and average for the year
B.3 Quantity and quality of employment	**B.3.1**	Direct tourism employment as percentage of total employment in the destination
	B.3.2	Percentage of jobs in tourism that are seasonal
B.4 Tourism supply chain	**B.4.1**	Percentage of locally produced food, drinks, goods and services sourced by the destination's tourism enterprises

Section C: Social and cultural impact		
Criteria	**Indicator reference#**	**ETIS core indicators**
C.1 Community/social impact	**C.1.1**	Number of tourists/visitors per 100 residents
	C.1.2	Percentage of residents who are satisfied with tourism in the destination (per month/season)
	C.1.3	Number of beds available in commercial accommodation establishments per 100 residents
	C.1.4	Number of second homes per 100 homes
C.2 Health and safety	**C.2.1**	Percentage of tourists who register a complaint with the police
C.3 Gender equality	**C.3.1**	Percentage of men and women employed in the tourism sector

	C.3.2	Percentage of tourism enterprises where the general manager position is held by a woman
C.4 Inclusion/accessibility	C.4.1	Percentage of rooms in commercial accommodation establishments accessible for people with disabilities
	C.4.2	Percentage of commercial accommodation establishments participating in recognized accessibility information schemes
	C.4.3	Percentage of public transport that is accessible to people with disabilities and specific access requirements
	C.4.4	Percentage of tourist attractions that are accessible to people with disabilities and/or participating in recognized accessibility information schemes
C.5 Protecting and enhancing cultural heritage, local identity and assets	C.5.1	Percentage of residents that are satisfied with the impacts of tourism on the destination's identity
	C.5.2	Percentage of the destination's events that are focused on traditional/local culture and heritage

Section D: Environmental impact		
Criteria	**Indicator reference#**	**ETIS core indicators**
D.1 Reducing transport impact	D.1.1	Percentage of tourists and same-day visitors using different modes of transport to arrive at the destination
	D.1.2	Percentage of tourists and same-day visitors using local/soft mobility/public transport services to get around the destination
	D.1.3	Average travel (km) by tourists and same-day visitors from home to the destination
	D.1.4	Average carbon footprint of tourists and same-day visitors travelling from home to the destination
D.2 Climate change	D.2.1	Percentage of tourism enterprises involved in climate change mitigation schemes — such as: CO_2 offset, low energy systems, etc.— and 'adaptation' responses and actions
	D.2.2	Percentage of tourism accommodation and attraction infrastructure located in 'vulnerable zones'
D.3 Solid waste management	D.3.1	Waste production per tourist night compared to general population waste production per person (kg)
	D.3.2	Percentage of tourism enterprises separating different types of waste
	D.3.3	Percentage of total waste recycled per tourist compared to total waste recycled per resident per year
D.4 Sewage treatment	D.4.1	Percentage of sewage from the destination treated to at least secondary level prior to discharge
D.5 Water management	D.5.1	Water consumption per tourist night compared to general population water consumption per resident night
	D.5.2	Percentage of tourism enterprises taking actions to reduce water consumption

	D.5.3	Percentage of tourism enterprises using recycled water
D.6 Energy usage	D.6.1	Energy consumption per tourist night compared to general population energy consumption per resident night
	D.6.2	Percentage of tourism enterprises that take actions to reduce energy consumption
	D.6.3	Percentage of annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year
D.7 Landscape and biodiversity protection	D.7.1	Percentage of local enterprises in the tourism sector actively supporting protection, conservation and management of local biodiversity and landscapes

3.5.2   Supplementary Indicators

The following indicative list of supplementary indicators has to be considered as a starting point and as an example of specific indicators which have already been tested and can be tailored for a specific type of destination or for other needs. Therefore, the current list can be further enriched with additional indicators in the future, once they have been implemented by destinations.

Table 3. ETIS Supplementary Indicators

Maritime and coastal tourism
Passengers and ports
Number of incoming and outgoing passengers per port per month
Number of berths and moorings for recreational boating
Water quality
Level of pollution in seawater per 100 ml (faecal coliforms, campylobacter)
Beaches
Percentage of beaches awarded the Blue Flag
Area and volume of sand nourishment
Total km of free beaches relative to total km of beaches
Percentage of beaches accessible to all
Number of days per year the beach/shore is closed due to contamination

Accessible tourism
Sustainable tourism policy
Percentage of the destination with an accessible tourism strategy/action plan, with agreed monitoring, development control and evaluation arrangement
Equality/accessibility
Percentage of commercial accommodation with rooms accessible to people with disabilities and/or participating in recognized accessibility information schemes
Does the destination have an identified accessibility management office or person available to the public?
Percentage of businesses that have a budget for accessibility improvements

Transnational cultural routes
Destination management survey
Is your destination part of a cultural route certified by the Council of Europe?
If yes, is there any policy in place for the cultural route's visibility?
If yes, does the local community participate in this policy?
Do cultural/tourist events linked to the cultural route take place in your destination?
Is the logo of the cultural route of the Council of Europe present on the documents or visible in tourist offices?
Percentage of tourist offers available in your destination highlighting the theme of the cultural route
Enterprise survey
Is your enterprise located along a cultural route certified by the Council of Europe?
If yes, are the products of your enterprise linked within the theme/activities of the cultural route?
If yes, is the communication on your enterprise/products mentioning the links with the cultural route?
Is the cultural route promoting/making visible your enterprise/products?
Resident survey
Benefits for the community from the cultural route involving my destination
Is the community informed about the cultural route?
Is the local community involved in the actions organized within the framework of the cultural route's activities?
Are there benefits for me from the cultural route involving my destination?
Percentage of residents satisfied with their involvement and their influence in the planning and development of the cultural route
Percentage of residents who have positive or negative views on the impact of the cultural route on my destination's identity
Effect of the cultural route on the distinctiveness and local identity, culture, and heritage of the destination
Effect of the cultural route on the quality of life in the destination
Percentage of residents who have positive views on the impact of the cultural route on tourism
Effect of the cultural route on cultural and tourism offers of the destination

3.6   Other initiatives from the European Commission

The European Commission has long committed itself to promoting sustainable development of tourism in Europe. A number of initiatives have been put in place to facilitate sound environmental, social, cultural, and economic management for businesses and destinations. These include:

- The EU eco-management and audit scheme (EMAS) and the EU Ecolabel,
- The Tourism and Environment Reporting Mechanism (TOUERM),
- The Corporate Social Responsibility initiatives (CSR).

EMAS is a tool developed by the Commission allowing actors in the tourism sector to improve their environmental performance and promote the quality of their services. This voluntary tool and certification scheme aims to help its users to achieve enhanced performance. Registered organizations also gain credibility and transparency thanks to a verification of performance and the validation of external communication (the EMAS environmental statement) by a third-party verifier. The European Commission, in consultation with EU Member States and other 9 stakeholders, has developed sectoral reference documents (SRDs).

The objective of SRDs is to provide additional guidance and inspiration to organizations aiming to improve and communicate their performance. The SRD for the tourism sector covers best environmental management practices within organizations in the tourism sector that provide accommodation, food, and beverage services, manage tourism destinations or provide travel, accommodation or activities for tourism (travel agents and tour operators).

The EU Ecolabel is a voluntary label of environmental excellence of the European Union. It helps consumers identify products and services that have a reduced environmental impact throughout their life cycle, from the extraction of raw material through to production, use and disposal. The EU Ecolabel is recognized throughout Europe. TOUERM, developed by the European Environment Agency, is based on the use of indicators.

These indicators are policy relevant, feasible and regularly updated in order to be able to reflect both environmental impacts (baseline and threshold) and sustainability trends at a European scale. Some of the indicators may also address specific geographical contexts, such as coastal zones, rural areas, and urban areas. Some relevant information deriving from destinations might also be included if relevant.

In its 2011 Communication on Corporate Social Responsibility, the European Commission defined CSR as 'the responsibility of enterprises for their impacts on society'. According to the communication, enterprises should have a process in place that integrates social, ethical, environmental, human rights and consumer concerns in their core business. By definition, CSR is a cross-cutting issue relevant to a variety of European policies including enterprise and industrial policy, social affairs, employment, corporate governance and company law; environment, consumer affairs and trade; development, external relations, human rights, justice, home affairs, research, education and training.

Enterprises are important stakeholders in the destination and sustainable destination management by adopting a more responsible business model, and the integration of CSR by companies plays a strategic role. Moreover, it must be said that CSR is increasingly seen as an integral part of competitiveness and brand loyalty, since nowadays enterprises are faced with stronger pressure from stakeholders and consumers regarding their responsibility. Since the start of the 2000s, the European Commission has actively supported the development of CSR and the Europe 2020 strategy identified it as a contributor to inclusive growth. At the same

time, 10 CSR maintains its voluntary nature and is seen as complementary with EU and Member States legislation.

In addition to the above, several private organizations representing the tourism industry or destinations have established monitoring tools and certification schemes in the area of sustainable tourism. As an example, the Network of European Regions for Sustainable and Competitive Tourism (NECSTouR) has since 2007 been committed to implementing the 10 principles of the agenda for a sustainable and competitive European tourism. In addition, Europarc (the Federation of European protected areas) has created and disseminated the European Charter for Sustainable Tourism in Protected Areas, a practical management tool for ensuring that tourism contributes to a balanced economic, social, and environmental development of protected areas in Europe.

Since 1993, the European network for sustainable tourism development, Ecotrans, has been helping to make tourism more sustainable through the sharing of experience and know-how with its members as well as through global networking, supporting, and contributing to joint projects and its DestiNet portal. DestiNet is managed by Ecotrans as an UN-registered Partnership for Sustainable Development to support the sustainable development goals 2030.

The 'Green Travel Maps' on DestiNet provide transparency on sustainable tourism certification worldwide and help destinations and their businesses to monitor, manage and market their green tourism offer. A summary of private initiatives and a (non-exhaustive) guide to the existing labels can be found in the booklet A guide through the tourism label jungle. It was edited by the Working Group on Tourism and Development, Bread for the World, Tourism Watch and Naturefriends International.

3.7   Virtual Tourism Observatory

The European Commission's Virtual Tourism Observatory (VTO) aims to support policy makers and businesses develop better strategies for a more competitive European tourism sector (EC, 2020). The Virtual Tourism Observatory provides access to a broad collection of information, data, and analysis on current trends in the tourism sector. It includes the latest available figures on the sector's trends and volumes, economic and environmental impact, and the origin and profile of tourists (EC, 2020).

- Country Profiles: The country profiles offer a snapshot view of key tourism indicators for the European Union and each of its member countries. A user-friendly interface allows the user to personalise the analysis, benchmark two or more countries, and download economic indicators and tourism data (EC, 2020).
- Tourism statistics illustrated: Statistics Illustrated is a powerful visualisation tool that displays monthly and annual data on tourist flows, accommodation capacity, occupancy, expenditure and other data on the trips of EU residents. The tool lets the user visualise data as maps, tables or graphs. The dynamic dashboards help users in the comparative analysis and evaluation of tourism trends. This tool has been

developed by the Directorate-General (DG) for Internal Market, Industry, Entrepreneurship and SMEs, and Eurostat (EC, 2020).

- Eurobarometer surveys: The European Union is a major source market for destinations as many Europeans travel in the EU and worldwide. Flash Eurobarometer surveys reveal preferences and attitudes of Europeans towards tourism. The Eurobarometer surveys offer a portrait of the current situation and the outlook for the upcoming year (EC, 2020).

- Studies and Reports: The Observatory is also a repository for reports, studies and papers relevant for tourism policy makers and businesses. A user-friendly tool allows users to search the extensive library by country, theme or year of publication. This section offers access to all relevant publications of DG Internal Market, Industry, Entrepreneurship and SMEs, and the Commission, as well as to a wide range of works published by other institutions, international organisations, member states and academia (EC, 2020).

- More data sources: A useful collection of links to national and international organisations and observatories providing facts and figures on the tourism sector in Europe and worldwide (EC, 2020).

4 Big Data

As a result of the accelerated development in computer science and internet technologies, a vast quantity of unstructured and structured data is currently being generated and stored, prompting the arrival of the big data era. Despite the application and extensive use of big data in various sectors, its definition is still a contentious issue. The most accepted definition of big data involves its three main characteristics, usually referred to as the "3Vs" of big data: volume, velocity, and variety (Li et al., 2018). In these characteristics also lie the advantages of these new data sources over traditional methods of knowledge generation in tourism. Big data are generally comprehensive (large *volume*), quickly accessible (*velocity*), and come from a multitude of different sources (structured, semi-structured and unstructured, *variety*).

4.1 Sources of Big Data in Tourism

Within the context of tourism, big data are considered a secondary source, as they are often generated for a technical purpose other than tourism, such as mobile data or social media information, for example. In this sense, big data can be collected and re-analysed for tourism research purposes (Reif & Schmücker, 2020). As shown in Fig. 2, big data sources for tourism can therefore be classified into five areas, depending on how the data are generated: communication systems, world wide web, business process generated data, sensors, and crowd sourcing (Demunter, 2017).
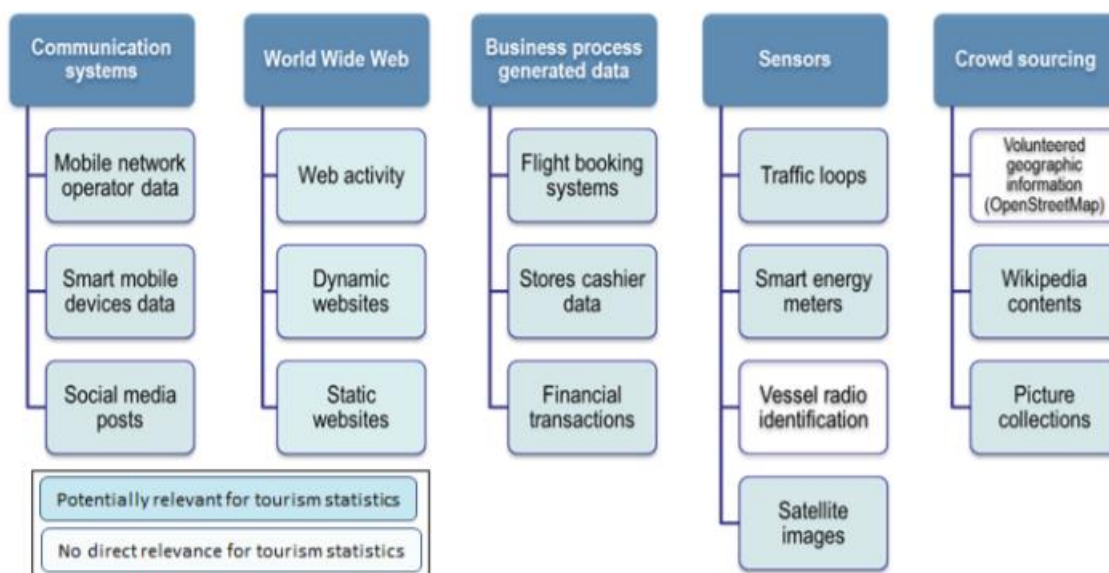
Figure 2 - Taxonomy of Big Data sources relevant for tourism. Tourism statistics: Early adopters of big data? (p. 9), by C. Demunter, 2017.

First, big data sources concerning communication systems are related to mobile positioning data produced by mobile network operators and intelligent mobile devices, as well as information generated from social media posts. The second group focuses on the internet as

a source of big data, including information from search engines and page views (for instance Google Trends data and Wikipedia page views), dynamic websites (TripAdvisor, Booking.com, and Airbnb, for example), and static websites which include constant information such as the location of tourist establishments, the number of rooms, etc.

Business process generated data refers to the constant stream of data produced through regular business processes, in particular, flight booking systems such as Amadeus can be used to complement tourism demand surveys; store cashiers data can be implemented as a proxy for tourism seasonality considering the variations in turnover; and sources of financial transactions involve using payment card data to measure monetary information related to tourism, however, this particular type of data source has yet to be widely implemented due to security concerns.

Another important source of big data is related to the use of sensors to monitor people's movements, land use, energy consumption, and so forth. Given the characteristics of this specific type of data source, sensor-generated data has a significant potential for measuring sustainable tourism indicators. And finally, crowdsourcing refers to user-generated content relevant for tourism statistics. For example, geo-location data available in images published online by tourists, and page views and geo-location data from Wikipedia articles on tourist destinations.

Currently, tourism statistics are mostly compiled by using surveys as the main data sources, as advised by the UNWTO's international recommendations for tourism statistics, and EUROSTAT's methodological manual for tourism statistics. However, the new sources of big data described above represent a possibility to improve and enrich the existing system of tourism statistics. And as such, the major goal is to transform the tourism statistics system into a data factory that uses a wide range of input sources to serve several output needs simultaneously (Demunter, 2017).

4.2 ESSnet Big Data Project

Within the European Statistical System (ESS), several initiatives have been developed concerning the application of big data in official tourism statistics. Namely, the adoption of the Scheveningen Memorandum, which calls for an action plan in relation to big data and official statistics, and the subsequent creation of task forces on big data within EUROSTAT and the ESS. Further initiatives consist mainly of pilot projects to develop in-house technological expertise. Nonetheless, the most ambitious initiative so far is undoubtedly the European Statistical System's ESSnet Big Data project. ESSnet is a project launched by EUROSTAT in 2016 with the aim studying the potential of big data sources to produce official statistics. These pilot projects include web scraping (for company characteristics and job vacancies), smart meters, mobile phone data and AIS data (automated tracking of ships) (Demunter, 2017).

One of the focal points of the ESSnet Big Data project is centred on innovative tourism statistics. Specifically, the Work Package J (WPJ) of ESSnet Big Data aims to resolve the need for a conceptual framework in tourism big data by creating a smart Tourism Information System. In this way, the system seeks to incorporate innovative statistical techniques to integrate multiple big data, administrative, and statistical sources related to tourism. The WPJ is currently being undertaken by the following institutions: GUS (Statistics Poland), NSI (Statistics Bulgaria), ELSTAT (Statistics Greece), HSL (Hesse Statistical Office, Germany), ISTAT (Statistics Italy), CBS (Statistics Netherlands), INE (Statistics Portugal) and NSI (Statistics Slovakia). So far, the WPJ has been able to present preliminary results concerning the potential inventory of data sources and web scraping procedures to be implemented, as well as an overview of the methods related to the combination and spatiotemporal disaggregation of data from different sources (EUROSTAT, 2020).

Furthermore, the WPJ has established the following series of tasks to be conducted during the duration of the project, as explained by EUROSTAT (2020):

1. Inventory of big data sources related to tourism statistics: Containing information collected with web scraping techniques regarding accommodation establishments, transport, traffic flow in local communication, admission tickets, meteorological data, communications on epidemiological threats and natural disasters, etc. As well as external data such as water consumption, waste production, energy meters, parking, traffic, store transactions, payment cards, mobile data, and so forth.

2. Examining availability, legal aspects and the quality of the new identified data sources used in the project.

3. Developing a methodology for combining and disaggregating data from various sources: Data on "Expenditure by categories" and "Average expenditure per trip" by country will be estimated by implementing innovative statistical methods, to later be compared with existing statistics in an effort to test their accuracy.

4. Flash estimates in the field of tourism: Flash estimates refer to readily available data without the usual long delay observed in official tourism statistics. In this sense, the project will integrate big data sources with sample surveys to determine future movements of tourists and their expenses.

5. Use of big data sources and developed methodology to improve the quality of data in various statistical areas: The estimated data will be employed to verify the size of tourist traffic according to travel directions, means of transport, types of accommodation, and tourist expenditure aggregates. Additionally, the Tourism Information System will serve as a basis to improve the existing Tourism Satellite Accounts.

6. Summary, problems encountered plus future perspectives: Description of challenges and recommendations on legal aspects, availability and sustainability, methodology, quality, and technical requirements to support the implementation of big data in tourism.

Overall, the implementation of big data in the tourism sector is still at an early stage. However, its clear potential to supplement tourism statistics has been widely recognised, as

demonstrated by the current EU initiatives to develop methodologies for the integration of big data sources into official statistics. As previously stated, the ideal solution is to transform the current state of tourism statistics into a system that incorporates a wide range of both traditional tourism survey data, as well as big data sources.

Despite the acknowledgement of the opportunities offered by Big Data in the tourism context, the exploitation of data for value creation is still in its infancy. As a matter of fact, there is still little research on how tourism stakeholders can use the vast amount of data generated by tourists in their travel experiences for a more effective value creation process at the destination (Vecchio et al., 2018).

Big data can be a great help to the tourism destinations, allowing to support the decision-making process and improve how the tourism industry operates. Tourism operators are highly focused on the usage of advanced technologies to transform data collected and aggregated through physical infrastructures and social connections into on-site experiences and new business models for efficiency and value creation at the tourism destinations.

4.3 Big Data European Initiatives

Name	Website	Type of org.	Country	Geographical scale	Brief Description	Data collected
SEGITTUR	https://www.segittur.es/	Public	ESP	National	Its aim is to improve the innovation of the tourism sector in Spain, considering both the private and the public sector. Thanks to the technology development, Segittur allows the development, modernization, and maintenance of tourism industries. They use data to boost competitiveness, quality, and sustainability in all areas.	Segittur takes care of digital promotion of tourism, intelligent tourism destinations, internationalisation, and environmental issues.
Municipality of Gandia	https://alter-eco.interreg-med.eu/fileadmin/user_upload/Sites/Sustainable_Tourism/Projects/ALTER_ECO/D4.2.2_Good_Practice_-_Monitoring_influx_of_people_at_Gandia_beach.pdf	Public	ESP	Municipal	Monitoring influx of people at Gandia beach to deal with overcrowding at tourist sites	Monitoring of the number of people at five points of Gandia beach. Data were collected on the number of people per hour, day, and month at the five points indicated by the Council, as well as data on mobility between these points

KIDO Dynamics	https://destinosinteligentes.app/	Private	CHE	International	The aim is to gather big data and other statistical data to allow destinations to be informed at all times and to be as efficient as possible to attract tourists.	We can find data about destinations, hotels, and tour operators. It is possible to find information about the number of tourists in a destination (daily), their place of origin and the number of nights spent. moreover, it is possible to know the degree of concentration of the tourists in a specific area of the destination. by doing so, tourists can live a better experience in the destination.
Travel Appeal	https://www.travelappeal.com/	Private	ITA	International	Assist the Travel Industry manage online data, generating relevant information to create a better business providing enhanced experiences for travellers	Travel Appeal uses technologies such as Intelligent Insights; Predictive Analysis; Image & Video Recognition; and Semantic Analysis. Dashboards for tourism services providers, with data on reputation, prices, competitors, overview of the destination, etc.
Visit Piemonte Observatory Big Data 4 Tourism	https://www.visitpiemonte-dmo.org/big-data-4-tourism/	Public	ITA	National	To make information available to the entities belonging to the tourism sector to improve it.	It collects data from mobile phones, tracking the presence of individuals in the territory in real time.
European Data Portal	https://www.europeandataportal.eu/en	Public	EU	European and International	The European Data Portal harvests the metadata of Public Sector Information available on public data portals across European countries. Information regarding the provision of data and the benefits of re-using data is also included. Its aim is to improved	It is possible to find the full collection of the outputs of the research that the project has developed since its inception, up to the most recent reports and the renown Open Data Maturity landscaping exercise we perform yearly. We can find country insights; open data impact and maturity and use cases. This

					efficiency of public administrations, economic growth in the private sector to wider social welfare.	latter part of the portal contains use cases from both publishers and re-users of open data.
Turismo Big Data	https://turismobigdata.isnart.it/#/home	Private	ITA	National	The aim is to understand which factors influence tourism, analyse the technological instruments used by the Italian population in the tourism sector and create new opportunities.	We can find information concerning the tourism sector directly, such as hospitality structures, restauration and so on; but also, information about transportation infrastructures (airports, cruises, etc.); cultural resources and entertainment.
Open Government Data Portal	https://data.gov.il/dataset?tags=%D7%AA%D7%99%D7%99%D7%A8%D7%95%D7%AA	Public	ISR	National	The Israeli government has developed an open data initiative which also contains tourism statistics. Data are collected from different official sources such as the Ministry of Tourism, Ministry of Foreign Affairs, Ministry of Agriculture and Rural Development, Government ICT Authority, and different municipalities. Only available in Hebrew.	
National Open Data Portal	https://web.archive.org/web/20200814080323/https://data.gov.cy/?language=en	Public	CYP	National	The Ministry of Finance has developed a National Open Data Portal where it compiles data from multiple institutions related to Agriculture, Fisheries, Forestry and Food, Education, Culture and Sport; Justice, Legal System and Public Safety; Economy and Finance; Energy; Environment; Government and Public	Little tourism data is currently available.

					Sector; Health; Population, Society and Employment; Science and Technology; Regions, Cities and Zoning; and Transport.	
Municipality of Tirana Open Data	https://open data.tirana.al /search/field _topic/turiz mi-dhe-kultura-33	Public	ALB	National	Contains data about cultural tourism in Tirana from different sources such as the Municipality of Tirana, the Institute of Statistics, and the Parks and Recreation Agency.	Specifically, the portal contains information regarding the number of tourists visiting the Tourist Information Office, number of tourists visiting specific attractions in Tirana, cultural activities, activities carried out by different public organizations, number of sports and heritage sites, among others. It also contains important environmental indicators compiled from different government agencies.
Portugal Tourism Board	https://www .google.com/ url?sa=D&q= https://trave lbi.turismode portugal.pt/e n-us/Pages/Ho me.aspx&ust =160304088 0000000&us g=AOvVaw2n qW4Fg6Ost-Bio7YS5DVh &hl=it	Public	POR	Regional and National	This platform provides tourist information datasets. Access to data is free, with the intention of enhancing its reuse for the creation of services that add value to the content made available.	The portal contains statistical data and research publications regarding the following themes: Accommodation, Cities and Urban Tourism, Consumer Behaviour, Cultural Tourism, Employment in Tourism, Events, International Tourism, Market Trends, Medical Tourism, MICE, Sustainability, Tour Operators, and Training. Data are compiled from several official sources such as Turismo de Portugal, INE – Statistics Portugal, ABAE – European Blue Flag Association, Bank of Portugal, DGEC – General Directorate for Energy and

						Geology, and ICCA – International Congress and Convention Association.
DATAtourisme	https://www.datatourisme.gouv.fr/	Public	FRA	National	DATAtourisme is a national scheme run by the Directorate General for Enterprises, in partnership with the Tourisme and Territoires network, and co-constructed with the networks of French tourist offices and regional tourism committees. It aims to facilitate access to public tourist information data through a national Open Data platform.	DATAtourisme device is a data aggregation platform, capable of bringing together data from various local public databases ("tourist information networks and systems"), as well as standardizing, and making them available in Open Data via a single access point. The portal collects data from more than 40 different official tourist databases. The DATAtourisme platform disseminates data relating to the identification and description of points of interest and events of a "tourist" nature, divided into 4 main categories: ● Festivals and events: cultural events (concerts, exhibitions, festivals, etc.), social events (carnival, traditional festivals, etc.), commercial events (markets, fairs, etc.), sporting events (competitions, demonstrations, etc.). ● Places: cultural sites (museum, civil building, etc.), natural sites (lake, cliff, viewpoint, etc.), restaurants, accommodation, transport (car park, railway station, public transport station, etc.), shops, practical services (service points for camper vans, bicycle hire, etc.).

						● Products: visits, training courses, tourist activities. ● Itineraries: routes made up of several stages.
Région Île-de-France Open Data Portal	https://data.iledefrance.fr/explore/?sort=modified&refine.theme=Sport+-+tourisme+-+loisirs	Public	FRA	Regional	The aim of this portal is to deliver public information in order to reach transparency. For this reason, information is shared with the population, including researchers, associations, and other public entities.	Some available data are: ● List of animal parks in Ile-de-France: zoos, aquariums, educational farms, etc. ● Public events in Île-de-France (via Open Agenda) ● Bike paths in the Seine-Saint-Denis department ● Belvederes in the Île-de-France region ● Regional Nature Reserves Île-de-France Region 2018 ● Map of tourist offices and tourist information centres ● Capacity of municipalities in tourist accommodation in 2017 ● Permanent base of facilities 2016: tourism transport

| Open Data portal of Croatia | http://data.gov.hr/data/search?q=turizam | Public | HRV | National | The Open Data Portal of the Republic of Croatia (only available in Croatian) is a data node repository for the collection, categorization and distribution of open public sector data. The portal contains official tourism data from a variety of different sources such as the Central Bureau of Statistics, Ministry of Tourism, Croatian National Tourist Board, City of Zagreb, City Virovitica, and City of Pula. | Some of the available data are the following: ● Directory of tourist entities located in the City of Pula, data on arrivals and overnight stays in tourist facilities. ● Tourist arrivals and overnight stays in commercial accommodation and domestic/outbound tourism. ● Grants to encourage the development of tourism in the City of Zagreb. ● Natural parks data. ● Number of facilities and guests by years and types of accommodation. |
| Innoxenia | https://innoxenia.adrioninterreg.eu/ | Public-Private | EL ITA HRV BiH SLO | European | Interreg Adrion project which aims to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfers and better elaboration of tourism strategies, policies, and investments in the Adriatic – Ionian area. | A Tourism Innovation Observatory will provide a platform for modelling ADRION innovative tourism, equipped with a Tourism Innovation Decision Support System providing the ability to evaluate the impact of potential interventions on the competitiveness and sustainability of tourism destinations, structures and services. |

Smart Destination	http://interreg-maritime.eu/it/web/smartdestination/progetto	Public-Private	ITA FRA	Transnational	SMART DESTINATION aims to support and relaunch the competitiveness of the transnational tourism supply chains by launching a process of integration of information flows and databases currently available to the public-private system with the territorial tourism offer.	The project has developed a software SDK (software development kit: https://gitlab.com/sd-team1/smart-destination). This kit allows partners to make applications (web, desktop or mobile) interoperable with a cross border database that contains all the tourist information of the regions Partners (Liguria, Toscana, Piemonte and PACA)
Mabrian Technologies	https://mabrian.com/	Private		International	Mabrian has developed a Business Intelligence platform focused exclusively on the tourism sector. It simultaneously combines several information sources to perform a multivariable analysis from social networks, opinion forums, data of expenditures on flights and accommodation	Transactional data (capacity, prices, bookings, spend) and Behavioural data (searches, social media, mobile data, reviews). Artificial Intelligence and Machine Learning applied to tourist Big Data, allow our algorithms to understand and predict behaviour patterns on a global scale. Natural Language Processing techniques (NLP) extract the perceptions and sentiment of the comments expressed on Social Media.

5 State of the art of tourism data collection and management in project partner countries

5.1 Croatia

Name of Country	Croatia
1. Official Statistics	**National Level**
Institutions collecting data	Tourism data are collected by the **Croatian Bureau of Statistics** (CBS) and the **Ministry of Tourism and Sport**.
Main data collected	The **CBS** collects the following data related to the tourism sector: • Tourist arrivals and nights in commercial accommodation establishments, by country of residence, age, and gender. • Tourism in seaside towns and municipalities. • Tourist activity of Croatian population, such as number of trips with overnight stays, number of nights, and tourism expenditure. This information is classified according to the county of permanent residence, level of education, age, gender, number of household members, main purpose of the trip, main means of transport, type of destination, accommodation and expenditure categories. Moreover, there are publications, databases, and statistical reports available about the following topics: • Trade and other services, foreign trade in goods and tourism. • Non-commercial tourism activity. • Non-profit tourism activity. • Capacity and turnover of ports. • Tourism in seaside resorts and municipalities. • Tourism Satellite Account for the Republic of Croatia. The CBS also publishes data concerning environmental indicators, for instance: • Utilisation of Water and Protection of Waters from Pollution in Industry. • Collection, Purification and Distribution of Water. • Public Sewage System. • Air Emissions Accounts.

	• Economic Material Flow Accounts.
	• Environmental taxes and charges.
	• Environmental Protection Expenditure Accounts (EPEA).
	• Environmental Goods and Services Sector Accounts (EGSS).
	The data available from the **Ministry of Tourism and Sport** include basic indicators of tourism development, accommodation capacities, tourist traffic, nautical tourism, commercial turnover of tourists, border crossing, number of cruises of foreign vessels, number of people employed in hotels and restaurants, and travel related revenues.
Geographical scale	National, regional, and municipal.
Frequency of data collection	Data concerning *tourist arrivals and nights in commercial accommodation establishments* are gathered monthly. While data about *the tourism activity of the Croatian population* are gathered annually.
Data accessibility	Free of access.
Link to database	https://www.dzs.hr/PXWeb/Menu.aspx?px_language=en&px_type=PX&px_db=Turizam
	Regional Level
Institutions and data collected	Regional Tourist boards.
	Municipal Level
Institutions and data collected	Municipal Tourist boards.
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	The **Institute for Tourism** is the only scientific public institute in Croatia specializing in research and consultancy services in tourism. Its expertise is based on scientific work, permanent research activities and the continuous education of its multidisciplinary team. The institute's activities are governed by an integrated approach to tourism development and management, which takes into account the development aspects of a company or a tourist destination, as well as the national tourism policies. The Institute for Tourism works together with tourism industry players with whom it shares a common goal – to achieve a higher level of competitiveness for Croatian tourism.

In an effort to establish and enforce Croatia as a sustainable tourism |

	destination, with sustainability based on clearly defined and measurable indicators, the Institute for Tourism and Ministry of Tourism of Republic of Croatia, established **CROSTO – Croatian Sustainable Tourism Observatory** – in 2016. CROSTO is part of UNWTO International Network of Sustainable Tourism Observatories (INSTO), which was created in 2004 with the main objective to support the continuous improvement of sustainability and resilience in the tourism sector through systematic, timely and regular monitoring of tourism performance and impact and to connect dedicated destinations in order to better understand destination-wide resource use and foster the responsible management of tourism. Through regular and timely monitoring of sustainable tourism in the Adriatic Croatia, the observatory helps to raise awareness of the possible positive and negative impacts of tourism development in the region.
3. Open Big Data	
Institutions/ Organizations collecting data	**Faculty of Tourism and Hospitality Management, Opatija, Croatia.**
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	**Faculty of Tourism and Hospitality Management, Opatija, Croatia** has a project named *Benchmarking of hotels, camps, marinas, hostels, spas and special hospitals*. The goal of the Benchmarking project is to collect business data online and compare the achieved results with the average of the competition. **Open Data portal of Croatia** The Open Data Portal of the Republic of Croatia (only available in Croatian) is a data node repository for the collection, categorization and distribution of open public sector data. The portal contains official tourism data from a variety of different sources such as the Central Bureau of Statistics, Ministry of Tourism, Croatian National Tourist Board, City of Zagreb, City Virovitica, and City of Pula. Some of the available data are the following: • Directory of tourist entities located in the City of Pula, data on arrivals and overnight stays in tourist facilities. • Tourist arrivals and overnight stays in commercial accommodation and domestic/outbound tourism. • Grants to encourage the development of tourism in the City of Zagreb. • Natural parks data. • Number of facilities and guests by years and types of accommodation. Croatia is also a partner in the InnoXenia - Innovation in Tourism in the Adriatic-Ionian Macroregion project, which aims to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfer and better elaboration of tourism strategies, policies and investments in the Adriatic – Ionian area.

Link to database	http://www.hotel-benchmarking.com/ http://data.gov.hr/data/search?q=turizam https://www.innoxenia.eu/
4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	Guidelines and practices for the management and measurement of sustainable tourism development indicators have been developed as part of the CROSTO project.
Experience with ETIS indicators	Yes. CROSTO adopts the European Tourism Indicator System (ETIS) for sustainable destination management, which was developed by the European Commission. The ETIS indicators that were used cover all the mandatory sustainability issues selected by the UNWTO. Along with measuring and monitoring tourism sustainability on a regional level, CROSTO also promotes the application of ETIS among local communities all over Croatia.
Data accessibility	Free of access.
Link to database	http://www.crosto.hr/hr/podrucja-mjerenja/
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**SMARTMED - Empower Mediterranean for SMART Tourism** SMARTMED is one of the two PANORAMED's Strategic Projects (Axis 4) on Coastal and Maritime Tourism, funded by the Interreg MED Programme and led by the **Ministry of Tourism of Croatia**. Its main aim is to promote the Mediterranean area as an attractive, smart and inclusive destination, empowering the public and private actors of the tourism sector. In order to do this, SMARTMED intends to build a structured and enhanced cooperation among multi-level stakeholders that will contribute to develop and deliver integrated tourism policies and innovative solutions for smart MED destinations. This will be done through the development of a new transferrable and sustainable SMART Tourism business model, supported by a permanent collaborative platform for cross-sectorial cooperation and joint actions, strengthening the capacities of all stakeholders in tourism

	business and policy-making to reinforce the competitiveness and the attractiveness of Med destinations.
	Croatian Chamber of Economy is a project partner of the SMARTMED project.
	InnoXenia - Innovation in Tourism in the Adriatic-Ionian Macro region - Interreg ADRION programme
	Croatia participated in the InnoXenia project through the Institution for development of competence, innovation and specialization of Zadar County. The aim of this project was to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfer and better elaboration of tourism strategies, policies and investments in the Adriatic – Ionian area.
6. Contacts for further information	
	Croatian National Tourist Board
	Institute of Tourism
	Hotel Benchmarking
	Faculty of Tourism and Hospitality Management
	dr.sc. DUBRAVKA VLAŠIĆ
	Faculty of Tourism and Hospitality Management, Opatija, Croatia
	Naselje Ika, Primorska 42, p.p. 97 51410 Opatija Hrvatska Tel. 385 51 294 881 Fax. 385 51 292 945 E-mail: dvlasic@fthm.hr

5.2 France

Name of Country	France	
1. Official Statistics	**National Level**	
Institutions collecting data	The National Institute of Statistics (INSEE) of France is in charge of collecting and aggregating the main tourism statistics of the country. France Tourism Development Agency (Atout France).	
Main data collected	The main data collection is carried out at the level of the 18 French Regions (13 in metropolitan France and 5 in overseas territories) and is then aggregated at national level by the INSEE. In addition, the INSEE carries out 2 national surveys in metropolitan France only: SDT (monitoring of tourist demand) which concerns domestic tourism and EVE (survey of foreign visitors) which concerns incoming tourism. INSEE collects the following data: Dimension of the tourism industry (number of hotels and similar accommodation facilities; number of holiday and other short stay accommodation; camping grounds, recreational vehicle parks and trailer parks; average dimension of accommodation facilities in number of beds;). Tourism flows (number of arrivals both domestic and international, average length of stay, data about daily visitors, distribution of domestic and international tourists by type of accommodation facility). Other data collected (socio-cultural variables such as employment; tourism density over local population; number of cultural tourism attraction; economic variables such as tourism expenditure; tourism contribution to GDP; occupancy rates, etc.; environmental variables: energy consumption; water consumption, waste management, etc.) Atout France deals with tourist investment information by collecting data at national level and by publishing each year a "tourist investment dashboard".	
Geographical scale	Data are collected at the local level (communities of communes or urban areas/conurbations), at the departmental level, at the regional level, and at the national level.	
Frequency of data collection	Data are collected annually at all 4 levels, and occasionally a month-to-month collection is carried out to provide seasonal trends, especially at the local and regional level.	
Data accessibility	INSEE data are free of access.	

	Payment is required for accessing data published by Atout France.
Link to database	https://www.insee.fr/fr/statistiques/4277906?sommaire=4318291
	Regional Level
Institutions and data collected	Regional tourism committees and departmental tourism committees collect data that are then aggregated by the INSEE.
	Municipal Level
Institutions and data collected	Tourism Offices collect data that are then aggregated by the INSEE.
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	France maintains the following regional tourism observatories: **Aquitaine Tourism Observatory** **Auvergne Tourism Observatory** **Observatoire Régional du Tourisme Grand Est** The regional observatory, attached to the Agence Régionale du Tourisme du Grand Est, is in charge of measuring tourist activity and informing local stakeholders and professionals. It processes data at regional level, but also for the five destinations of Alsace, Lorraine, Champagne, the Ardennes, and the Vosges. **Franche-Comté Regional Tourism Observatory** **French Riviera Tourism Observatory**
3. Open Big Data	
Institutions/ Organizations collecting data	**DATAtourisme** DATAtourisme is a national scheme run by the Directorate General for Enterprises, in partnership with the Tourisme & Territoires network, and co-constructed with the networks of French tourist offices and regional tourism committees. It aims to facilitate access to public tourist information data through a national Open Data platform. DATAtourisme device is a data aggregation platform, capable of bringing together data from various local public databases ("tourist information networks and systems"), as well as standardizing, and making them available in Open Data via

a single access point. The portal collects data from more than 40 different official tourist databases.

Région Île-de-France Open Data Portal

Contains tourism data from different official sources from the Île-de-France region, for instance Région Île-de-France; L'Institut Paris Region; Comité régional du tourisme; Agence des espaces verts d'Île de France (AEV); Ministère de l'économie, de l'industrie et du numérique, among others. Some available data are:

- List of animal parks in Ile-de-France: zoos, aquariums, educational farms, etc.
- Public events in Île-de-France (via Open Agenda)
- Bike paths in the Seine-Saint-Denis department
- Belvederes in the Île-de-France region
- Regional Nature Reserves Île-de-France Region 2018
- Map of tourist offices and tourist information centres
- Capacity of municipalities in tourist accommodation in 2017
- Permanent base of facilities 2016: tourism transport

France is also a partner in the ongoing Interreg MED HERIT-DATA project, which aims at developing a tourism and heritage big data platform.

Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	The DATAtourisme platform disseminates data relating to the identification and description of points of interest and events of a "tourist" nature, divided into 4 main categories: - Festivals and events: cultural events (concerts, exhibitions, festivals, etc.), social events (carnival, traditional festivals, etc.), commercial events (markets, fairs, etc.), sporting events (competitions, demonstrations, etc.). - Places: cultural sites (museum, civil building, etc.), natural sites (lake, cliff, viewpoint, etc.), restaurants, accommodation, transport (car park, railway station, public transport station, etc.), shops, practical services (service points for camper vans, bicycle hire, etc.). - Products: visits, training courses, tourist activities. - Itineraries: routes made up of several stages. The DATAtourisme platform was commissioned in December 2017 and it has been implemented gradually, since each territory retains control over its data and decides at its own pace to open up its tourist information that it wishes to broadcast in Open Data on the national platform.

Link to database	https://www.datatourisme.gouv.fr/
4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	The Ministry of the Environment, Energy and Marine Affairs, in Charge of International Relations on Climate Change published a report where it aimed to measure France's tourism intensity at a local level. The report measured local tourism intensity by implementing several indicators such as: • Accommodation capacity in 2016(in millions of tourist beds). • Accommodation capacity per municipality in 2016(in tourist beds). • Tourism intensity rate in 2016(in number of tourist beds per 100 inhabitants). • Tourist density in 2016(in number of tourist beds per km²). • Volume of drinking water extracted per capita in 2013 (in m3). • Average electricity consumption per capita in 2014 (in MWh). • Average gas consumption per capita in 2014 (in MWh). • Share of protected areas in relation to the area of municipalities in 2016 (in %). • Share of tourism establishments holding an Ecolabel in 2016 (in %).
Experience with ETIS indicators	Yes. France (Broceliande) participated in the second pilot testing phase for the implementations of ETIS.
Data accessibility	N/A
Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**Interreg MED Programme relevant past projects:** **MITOMED+ - Models of Integrated Tourism in the MEDiterranean Plus**

MITOMED+ was an Interreg MED multi-module project combining Testing and Capitalisation (M2 + M3). It followed on from the MITOMED project (MED Maritime Programme), which aimed to promote an integrated management of maritime and coastal (M&C) tourism by enhancing knowledge of data, products and services using a set of indicators based on the NECSTouR model. MITOMED+ built on and developed the results achieved, with a view to enhancing the coordination of strategies between the territories at transnational level and the development of M&C tourism through cooperation and joint planning between the regions. The main goal of the project was to make maritime and coastal tourism more sustainable and more responsible, by improving local and regional strategies and policy actions and by coordinating them within a transnational MED network.

CO-EVOLVE - Promoting the co-evolution of human activities and natural systems for the development of sustainable coastal and maritime tourism

CO-EVOLVE was an Interreg MED modular project belonging to thematic community 3.1 (Sustainable Tourism). It aimed to analyse and promote the "co-evolution" of human activities and natural systems in coastal zones where tourism is an important activity, to enable the development of sustainable tourism based on the principles of Integrated Coastal Zone Management (ICZM) and Maritime Spatial Planning (MSP). The project gathered an analysis of threats and opportunities relating to sustainable tourism in the Mediterranean, and local case studies of seven representative pilot areas. The goal was to demonstrate – through pilot actions – the added value and the effectiveness of a planning process based on the principles of ICZM and MSP.

Currently, the methodology developed by CO-EVOLVE is being used in another project (ENI-CBC-MED funded), part of a wider project/initiative called "MedCoast4BlueGrowth") - Co-Evolve4BG – that aims to extend CO-EVOLVE main actions towards the South & East Mediterranean through the integration of new pilot areas. The CPMR is associated partner of this ENI-CBC-MED project.

Interreg MED Programme relevant ongoing projects:

HERIT-DATA - Innovative solutions to better manage tourism flows impact on cultural and natural heritage sites through technologies and big data

HERIT-DATA is an Interreg MED modular project belonging to thematic community 3.1 (Sustainable Tourism). It aims to measure and reduce the impact of mass tourism-related human activities on old cities and sites of particular cultural heritage or

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archaeological interest, including UNESCO World Heritage Sites. The project plans to develop a sustainable and responsible tourism management towards cultural heritage in Mediterranean regions, in particular by taking advantage of technology and innovation in management tools (Smart Cities), as well as other policy and social measures. A series of knowledge and solutions (Models, Strategy, Artificial Intelligence tool and App, etc.) in line with the current sectoral changes and characteristics of smart destinations will be developed, tested, and transferred. This includes a platform capable of collecting data from selected sources and analyse the impact of tourism on heritage destinations. The results will also contribute to decision-making processes. The project consortium consists of organisations, companies, technology centres, as well as local and regional public authorities from Italy, Spain, Croatia, France and Portugal, including four IMC member Regions i.e. Tuscany, Valencia, Occitanie and Western Greece.

SMARTMED - Empower Mediterranean for SMART Tourism

SMARTMED is one of the two PANORAMED's Strategic Projects (Axis 4) on Coastal and Maritime Tourism, funded by the Interreg MED Programme and led by the Ministry of Tourism of Croatia. Its main aim is to promote the Mediterranean area as an attractive, smart and inclusive destination, empowering the public and private actors of the tourism sector. In order to do this, SMARTMED intends to build a structured and enhanced cooperation among multi-level stakeholders that will contribute to develop and deliver integrated tourism policies and innovative solutions for smart MED destinations. This will be done through the development of a new transferrable and sustainable SMART Tourism business model, supported by a permanent collaborative platform for cross-sectorial cooperation and joint actions, strengthening the capacities of all stakeholders in tourism business and policy-making to reinforce the competitiveness and the attractiveness of Med destinations.

WINTERMED - Winter Islands Network for all year-round Tourism ExpeRience in the MEDiterranean

WINTER MED is an Interreg MED modular project belonging to thematic community 3.1 – Sustainable Tourism. The project will last from November 2019 to June 2022 (36 months) and gathers a consortium of various organisations / institutions with recognised experience in EU projects and tourism in insular areas led by ANCI Toscana. It aims to promote the transition from the current overexploitation of insular tourist destinations during the summer to an alternative, sustainable, all-year round use of these territories, by delivering a transnational strategy and the tools for changing and upgrading one of the key sectors of the Mediterranean area. The project is built on the potential of

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capitalisation, especially of the past Sustainable Tourism Community, BleuTourMed (CO-EVOLVE; MITOMED+; ALTER ECO etc.): analysing, assembling, adapting and testing available tools and methodologies to deliver a transnational strategy for the development of all-year round sustainable and responsible tourism in Mediterranean island destinations. The partners co-construct integrated solutions to common challenges, focusing on the common interests, beyond and besides the dimensions usually associated to the competition between destinations in a global market. From this objective and approach stems the holistic intervention aligned and contributing to ICZM and MSP in the area. The final transnational strategy provides the tools for and the demonstration of the benefits of policy learning and evidence-based decision-making.

[DestiMED+](#) - Ecotourism in Mediterranean Destinations: From Monitoring and Planning to Promotion and Policy Support

DestiMED+ is a Modular Project led by Lazio Region, which belongs to the Sustainable Tourism community of the Interreg MED Programme. It is the next step on an already successful journey to promote integrated planning in Mediterranean coastal tourism, specifically focusing on Protected Areas. The objective of DestiMED Plus, which builds on the successes of the previous MEET and DestiMED projects is to improve levels of integration between regional tourism and conservation policies in Mediterranean protected areas by putting in practice an integrated approach for the joint creation of ecotourism itineraries. Participating protected areas and local tourism sector intend to test DestiMED PLUS approach in nine pilot actions around the Mediterranean, representative of the nine administrations partners of the initiative: Andalusia, Catalonia, Sardinia, Crete, Corsica, Lazio, South Aegean, Croatia and Albania. Pilot actions will be implemented for the development of nine unique, protected area based, ecotourism itineraries which are aligned with the DestiMED PLUS standard. The sustainability impact of all ecotourism itineraries will be assessed by expanding the DestiMED's Ecological Footprint approach and integrating it with a specific methodology for measuring socio-economic and governance indicators. In addition to regional administrations, the project partnership is completed by organizations experienced in conservation and tourism, including, IUCN Med, WWF Med, Vic University, the Institute of Tourism in Croatia and the CPMR. Thirteen project associates from the region and beyond, including Morocco, Tunisia and USA, will be supporting and providing input to the development of the project as well as support the adoption and dissemination of project results. By the end of the project, the goal will be the setup of a Mediterranean Ecotourism Consortium (MEC) at regional scale, which will apply an integrated approach to ecotourism policy development, merging conservation,

	sustainability, and economic perspectives whilst also, advocating for further involvement of ecosystem-based planning processes.
Other projects	**CEETO - Central Europe Eco-Tourism: tools for nature protection (Interreg Central Europe Programme)** The project aimed to implement an innovative governance system for tourism management, based on a participatory planning approach and on the principles of the European Charter for Sustainable Tourism in Protected Areas. Other projects belonging to the Interreg Sustainable Tourism Community have produced interesting results related to tourism data and management, that could be found through the "Search the MED", a multi-source repository of sources regarding the sustainability of tourism and with particular emphasis on the Mediterranean region.
6. Contacts for further information	
	N/A

5.3   Greece

Name of Country	Greece
1. Official Statistics	**National Level**
Institutions collecting data	Tourism data are collected by the Hellenic Statistical Authority **ELSTAT** and the **Bank of Greece** The **Ministry of Tourism** processes secondary data collected by these institutions.
Main data collected	ELSTAT provides information on tourism indexes (turnover index in accommodation and Food service activities sector), receipts, and visits to museums and archaeological sites, movement of passengers, goods and mobile units in the Greek Ports, arrivals and overnight stays at hotels and camping accommodation, and data on arrivals and overnight stays in short stay accommodations. ELSTAT also publishes the tourist profile of outbound and domestic tourists (Vacation Survey). The Bank of Greece conducts a monthly sample survey at the country's major entry/exit points (Border Survey), for the purpose of collecting information to estimate travel expenditure. The Border Survey in fact comprises two separate surveys: • 'Travel Receipts Survey' aimed at estimating the travel expenditure of non-residents during their stay in Greece. • 'Travel Payments Survey' aimed at estimating the travel expenditure of Greek residents during their travels abroad. Data collected are generally related to international tourism (inbound travel flows, receipts by trip purpose, cruise passengers, cruise receipts, cruise total overnight stays, overnight stays, average length of stay) and travel payments, for instance: **Travel receipts - key figures:** • Receipts by purpose of travel • Receipts by country of origin • Number of inbound travellers in Greece by country of origin • Non-residents' overnight stays in Greece by country of origin • Non-residents' expenditure per journey in Greece by country of origin

	• Non-residents' expenditure per overnight stay in Greece by country of origin • Non-residents' average duration of stay in Greece by country of origin **Travel payments - key figures:** • Payments by purpose of travel • Payments by destination country • Number of outbound travellers abroad by destination country • Residents' overnight stays abroad by destination country • Payments by purpose of travel • Payments by destination country • Number of outbound travellers abroad by destination country • Residents' overnight stays abroad by destination country • Residents' expenditure per journey abroad by destination country • Residents' expenditure per overnight stay abroad by destination country • Residents' average duration of stay abroad by destination country **Travel receipts by region - key figures:** • Travel receipts by region for main countries of origin • Visits by region for main countries of origin • Overnight stays by region for main countries of origin • Expenditure per visit by region for main countries of origin • Expenditure per overnight stay by region for main countries of origin • Average length of stay by region for main countries of origin
Geographical scale	Data are available at a national and regional scale.
Frequency of data collection	Data issued by the Bank of Greece are generally collected on a yearly or quarterly basis. Data related to international tourism receipts and arrivals (national level) are published monthly. ELSTAT data are published quarterly and yearly.
Data accessibility	Free of access.

Link to database	https://www.statistics.gr/en/statistics/ind
	Regional Level
Institutions and data collected	
	Municipal Level
Institutions and data collected	**Athens Development and Destination Management Agency** ADDMA in collaboration with research institutes produces studies and surveys monitoring perceptions, international competition and Athens' overall performance as a destination. ADDMA is currently investing considerable resources in this direction by setting up a Destination Intelligence System.
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	**Institute of the Greek Tourism Confederation (INSETE)** The Institute of the Greek Tourism Confederation (INSETE) is a Civil Non-Profit Company, established in early 2013, initiated by SETE (Greek Tourism Confederation) that gathers and processes tourism data. INSETE has the role of monitoring and providing documentation and information on the tourism sector. INSETE's main publications are: • Statistics: Statistical bulletins, Shopping Profiles, Incoming Tourism Statistics. • Studies: Shopping - Products, Human resources, Greek Tourism, Institutional Framework & Tourism Policy, Economy. • Business Intelligence: The contribution of tourism to the Greek economy, Inbound tourism, Incoming tourism - data by Region, Inbound tourism - Cruise, Air and road arrivals, Outbound tourism. **Research Institute for Tourism** The **Research Institute for Tourism** is a non-profit organization founded in July 1996 with the initiative of the Hellenic Chamber of Hoteliers and of other tourism agents, with the main objective to study the tourism sector in Greece. The Research Institute for Tourism issues 4 monographs a year at the series Studies that deal with vital tourism and economic matters. It also issues a biannual review for the Greek Economy and Tourism, which is sent to hotel owners and other entrepreneurs of the tourism sector, to government agents and institutions, to banks, to national and international tourism organizations, to public libraries and to university foundations. The Research Institute for

Tourism also publishes studies of specific interest at the series Special Editions.

Athens Development and Destination Management Agency (ADDMA)

ADDMA in collaboration with research institutes produces studies and surveys monitoring perceptions, international competition, and Athens' overall performance as a destination. ADDMA is currently investing considerable resources in this direction by setting up a Destination Intelligence System.

There are currently two ongoing projects for the creation of new tourism observatories:

- **National Observatory for Sustainable Tourism Development**: An initiative of the Greek Tourism Ministry still in the development phase. Current ongoing actions have been the following: Gather information for the development of an indicator system on sustainable tourism; Submit a proposal for the development of a registration and information system based on secondary data and indicators including key tourism figures; Gather tourism and other data for the analysis of trends on a local, regional, national and international level, that will enable timely decision-making for the management and promotion of Greece as a destination on a national and regional level; Draw up a plan for the identification of areas that fulfil the criteria for the establishment of observatories based on the methodology of the World Tourism Organization (UNWTO); and submit proposals and guidelines for the development of information systems that will facilitate sustainable tourism development and the transformation of the country's tourism destinations.

- **Athens Tourism Observatory**: An recent initiative of the Athens Development & Destinations Management Agency (ADDMA), the project aims to develop a platform for the collection of information and data on the preferences, choices and commercial habits of individual travellers, with the purpose of analysing the impact of tourism in Greece's economy and recommending new tourism policies.

3. Open Big Data	
Institutions/ Organizations collecting data	At the moment there are no established big data repositories, but Greece is a partner in the ongoing Interreg **MED HERIT-DATA** project, which aims at developing a tourism and heritage big data platform.

	Greece is also the lead partner in the **InnoXenia - Innovation in Tourism in the Adriatic-Ionian Macroregion** project, which aims to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfer and better elaboration of tourism strategies, policies and investments in the Adriatic – Ionian area.
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	Innoxenia: Information on prices, reputation, tourist flows, innovation and best practices.
Link to database	https://www.innoxenia.eu/
4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	Several Greek destinations completed pilot tests for the implementation of ETIS, such as Kos Island, Lemnos Island, Rethymno, Municipality of Messini, Minoa Pediadas, Municipality of Rhodes, and Paranesti Municipality.
Experience with ETIS indicators	Yes.
Data accessibility	N/A
Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**InnoXenia - Innovation in Tourism in the Adriatic-Ionian Macroregion - Interreg ADRION programme**
	Lead partner is the Region of Western Greece. The aim of this project was to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfers and better elaboration of tourism strategies, policies, and investments in the Adriatic – Ionian area.
	HERIT-DATA - Innovative Solutions to Better Manage Tourism Flows Impact on Cultural and Natural Heritage Sites Through Technologies and Big Data
	HERIT-DATA project aims to reduce the impact of tourism activities on cultural heritage, by taking advantage of technology and data exploitation. The project will focus especially on old

	towns and sites of particular archaeological and cultural interest, including UNESCO World Heritage Sites. HERIT-DATA partners will develop, test and transfer a series of tools to collect, generate, integrate, analyse information and transform it into behaviour changes. The results will also contribute to improve decision-making processes run by public administration & tourism or heritage managing bodies.
6. **Contacts for further information**	
	N/A

5.4   Italy

Name of Country	Italy	
1. Official Statistics	**National Level**	
Institutions collecting data	Tourism data are collected by the National Bureau of Statistics ISTAT, and by the Bank of Italy.	
Main data collected	**ISTAT** provides information on the tourism industry and tourism related industry; as for the tourism industry, data collected regards tourism supply (accommodations, museum, etc.), tourism demand (flows, expenditure, motivation, etc.) and a large amount of related information allowing to calculate tourism indicators. The main tourism surveys are: Household consumption expenditure Trips and holidays Museums Accommodation and tourism flows **Bank of Italy** collects information on international tourism (flows, expenditure, satisfaction).	
Geographical scale	Data are mostly available at a national and regional scale; some information (accommodation data, for instance) is also available at the municipality level.	
Frequency of data collection	Data on tourism accommodation are observed yearly; tourism flows are recorded monthly. Time series of tourism flows and supply are available, at both national and regional levels.	
Data accessibility	Free of access.	
Link to database	https://www.istat.it/it/dati-analisi-e-prodotti/banche-dati https://www.bancaditalia.it/statistiche/tematiche/rapporti-estero/turismo-internazionale/distribuzione-microdati/index.html	
	Regional Level	
Institutions and data collected	• Valle d'Aosta: Osservatorio turistico della Valle d'Aosta - Analisi sul turismo valdostano	

It deals with the measurement of tourism phenomena, concerning the displacements, the tracking of flows and the activities performed by professionals of the tourism sector.

- Piemonte: Piemonte Dati Turismo

Thanks to the Regional Observatory it is possible to analyse in a dynamic way the statistical data concerning tourists' flows.

- Liguria: Regione Liguria

The data available allows both the public and private sector to be updated on the progress of the sector and to be aware of the correct decisions to make, concerning programming and corporate strategies. It is possible to find data about tourism satisfaction, investments in the sector, international tourism and provisional scenarios.

- Lombardia: Regione Lombardia, PoliS Lombardia and ROSS1000

Through the management of tourism data, it is possible to identify the hospitality structures and to measure the tourism flows.

- Trentino – Alto Adige: ISPAT

ISPAT allows the analysis of tourism, but also considers industry, agriculture, fishing, transport, and other services. For what concerns the tourism sector, it is possible to find information about tourism expenses, tourism flows, seasonal tourism and the propensity to digital innovation in the hospitality branch.

- Veneto: Regione del Veneto

The Regional Statistic System takes care of data concerning the tourism movements considering the whole region and the single provinces, data for each municipality and comparisons with other regions. It is also possible to find information concerning population, GDP, transport, foreign exchanges, education and so on.

- Friuli – Venezia Giulia: Regione Autonoma Friuli Venezia Giulia

In this link we can find information about the development of tourism policies, data about flows and expenses on hospitality branches, events and catering.

- Emilia Romagna: Regione Emilia Romagna and Unioncamere Emilia Romagna

Regione Emilia Romagna shares statistical data about tourism movements, the detection of tourism demand and hospitality offer. Today, it is considered as an intermediate of detection for ISTAT. Thanks to the app TURISMO5 it is cheaper, quicker and easier to share this kind of information. Unioncamere Emilia Romagna shows data concerning tourism (financial statements,

expenditure on destinations, events, etc.), but also agriculture and international relations.

- Toscana: Regione Toscana

The regional database of statistics makes available information about the movements of clients in the tourism (arrivals and departures) and the hospitality sectors.

- Umbria: Regione Umbria

Here we can find statistical tables that analyse data about the demand and supply of tourism, at a regional level, and data referring to the region and state of origin of tourists.

- Marche: Regione Marche

In this section we can find data regarding tourism flows (arrivals, Italian tourists and foreign tourists) and the accommodation capacity (number of structures and typology, number of available beds, rooms, etc.).

- Lazio: RADAR of Regione Lazio

This information system provides information about tourism flows.

- Abruzzo: Regione Abruzzo

The regional observatory of tourism shares statistical data about arrivals and tourism attendances and accommodation capacity of the available structures. This year we can also find data concerning the impact that Covid-19 had on tourism.

- Molise: Regione Molise

From this webpage, we can find information about the tourism flows, tourists' satisfaction and the number of Italian tourists in the region. We can find information divided by destination or interests.

- Campania: Rilevatore Turistico Regionale of Regione Campania

The region of Campania has collected information concerning the tourism flows in order to ease the communication system among the hospitality structures and the tourism offices.

- Puglia: Agenzia Regionale del Turismo PUGLIAPROMOZIONE of Regione Puglia

In this section it is possible to find quantitative data concerning accommodation, tourism flows and significant tourism areas.

- Basilicata: APT Basilicata

APT Basilicata has elaborated a Statistic Information Tourism System (SIST) where it is possible to obtain, generate, elaborate and manage relevant data linked to the tourism sector.

- Calabria: Osservatorio Turistico and ROSS 1000

	The regional statistical observatory constantly monitors the development of the tourism sector. It performs activities of gathering, elaborating, analysing, spreading and storage of statistical tourism information, such as the tourism flows.
	• Sicilia: Osservatorio Turistico Regione Siciliana
	The region gathers and analyses the information regarding the accommodation capacity and the tourism flows.
	• Sardegna: SIRED
	SIRED is an information system of gathering and elaborating data concerning accommodation capacity and tourism flows.
	Every regional office provides annual reports in order to measure and compare the current movements, expenditures and activities of the current year with the previous ones. In some cases, monthly reports are available.
	Municipal Level
Institutions and data collected	• Rimini: Comune di Rimini The official webpage of the city of Rimini shares data concerning the tourism demand and supply. There are tables concerning accommodation capacity (analysed and compared by type and classification). There is also data about the nationality of the tourists (Italian and international). • Bologna: IPERBOLE, rete civica of Comune di Bologna It is possible to find information concerning the tourism flows, such as the number of tourists that arrive in the city of Bologna, the number of Italian tourists and the number of international tourists.
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	• Center for Advanced Studies in Tourism: ALMA MATER STUDIORUM, University of Bologna. The Centre of Advanced Studies in Tourism (CAST) has its location in Rimini and its goal is to coordinate and strengthen research, dissemination, and lifelong learning in the field of tourism. CAST is a member of European Universities Network of Knowledge (EUNeK) and HECTOR Project (Heritage and Cultural Tourism Open Resources). • CISET: Ca' Foscari University of Venice. The University takes care of research and consultancy services, working along with national and international partners. CISET has been involved in the development of ETIS – The European Tourism Indicator Systems, which is a

	management, information and monitoring tool based on 43 core indicators. Moreover, the University has been involved in the international project concerning Cultural Routes. • ENIT: Agenzia Nazionale del Turismo. • Here we can find insights and information concerning tourism. This year, it is possible to find the monitoring of the tourism situation, influenced by COVID-19.
3. Open Big Data	
Institutions/ Organizations collecting data	• Travel Appeal: Private travel data company that uses technologies such as Intelligent Insights; Predictive Analysis; Image & Video Recognition; and Semantic Analysis. Assist the Travel Industry manage online data, generating relevant information to create a better business providing enhanced experiences for travellers • Italy is also a partner in the **InnoXenia** - Innovation in Tourism in the Adriatic-Ionian Macroregion project, which aims to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfer and better elaboration of tourism strategies, policies and investments in the Adriatic – Ionian area.
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	Travel Appeal: Travel Appeal uses technologies such as Intelligent Insights; Predictive Analysis; Image & Video Recognition; and Semantic Analysis. Dashboards for tourism services providers, with data on reputation, prices, competitors, overview of the destination, etc. Innoxenia: Information on prices, reputation, tourist flows, innovation and best practices
Link to database	https://www.travelappeal.com/ https://www.innoxenia.eu/
4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	Several tourism indicators are collected through ISTAT, the Italian National Statistical Office (see above section). ISTAT also has the task of constructing the statistical information necessary for monitoring the 2030 Agenda for Italy. More specific sustainable tourism indicators are collected at destination level in some destinations that have participated in

	the ETIS pilot experience (South Sardinia, Montecatini Terme, Abano Terme, Rimini, Union of municipalities of the Valle del Giovenzano district, etc.). However, not all these destinations are still actively collecting the indicators. Other destinations started to collect indicators thanks to participation in EU funded projects, such as MitoMED Plus.
Experience with ETIS indicators	Yes. Only a few destinations are still actively using ETIS indicators, such as South Sardinia through the coordination of the University of Cagliari. Other destinations are testing indicators that are based on ETIS but have been modified to fit particular needs (such as the MitoMED Plus set of 33 indicators for Maritime and Coastal destinations).
Data accessibility	Data on ETIS indicators and MitoMED Plus indicators is not freely available, as for instance the platform created on the MitoMED Plus project requires a Username and Password that is granted to participants of the project. The same with the data collected by University of Cagliari.
Link to database	https://mitomedplus.andalucia.org/mitomedplus/index.html
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**InnoXenia** - Innovation in Tourism in the Adriatic-Ionian Macroregion Interreg ADRION programme 2018-01-01 – 2020-03-31 The aim of this project was to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfer and better elaboration of tourism strategies, policies, and investments in the Adriatic – Ionian area. **MITOMED PLUS:** (Tuscany region involved). Models of Integrated Tourism in the MEDiterranean Plus 36 months. February 2017 – January 2020. Follow up of the previous MITOMED project (MED Maritime), which has been working to promote the integrated management of Maritime and Coastal tourism by improving the knowledge of data, products, services through a set of indicators based on the NECSTouR model. MITOMED+ takes further results aiming to improve the coordination of strategies between territories at transnational level regarding the development of the M&C tourism through cooperation and joint planning between regions. Main outputs:

- The Tourism Data Indicators Toolkit and Manual of Transfer of Best Practices to learn more about the development, implementation and use of sustainable tourism indicators.
- The Green Beach Model Toolkit to make better informed decisions about managing beaches in a sustainable way.
- The MITOMED+ M&C Tourism Management Model to assure the tourism sustainability and gain competitive advantage, increasing the benefits tourism brings to the territory and the local community.
- The Memorandum of Understanding to ensure the continuity of the transnational and multi-stakeholder dynamic of cooperation initiated by the MITOMED+ project.

CO-EVOLVE: (Emilia Romagna and Veneto regions involved). Promoting the co-evolution of human activities and natural systems for the development of sustainable coastal and maritime tourism. 36 months. September 2016 – August 2019.

CO-EVOLVE aims at analysing and promoting the co-evolution of human activities and natural systems in touristic coastal areas, allowing sustainable development of touristic activities based on the principles of ICZM/MSP. CO-EVOLVE couples a presently unavailable analysis at MED scale of threats and enabling factors for sustainable tourism with local studies on representative Pilot Areas, to demonstrate through pilot actions the feasibility and effectiveness of an ICZM/MSP-based planning process.

HERIT-DATA: (Tuscany region lead partner) Sustainable Heritage Management towards Mass Tourism Impact thanks to a holistic use of Big and Open Data. 48 months. February 2018 – January 2022.

The project aims to reduce the impact of human activities (tourism-related ones) on cultural heritage, with a special focus on two kinds of cultural destinations that can benefit from and be affected by mass tourism. In that framework, HERIT-DATA plans to develop sustainable and responsible tourism management towards cultural heritage MED regions, in particular by taking advantage of technology and innovation in management tools (Smart Cities), as well as other policy and social measures. The project will develop, test and transfer a series of knowledge and solutions in line with the current sectoral changes and characteristics of smart destinations, able to collect, generate, integrate and analyse information and transform it into behaviour changes, according to ICZM recommendations. The results will also contribute to decision-making processes from a holistic perspective and for all stakeholders: planners, visitors, local stakeholders and host citizens.

	SHAPE TOURISM: Ca' Foscari University of Venice - Department of Economics Lead partner) New shape and drives for the tourism sector: supporting decisions, integrating plans and ensuring sustainability. 18 months. May 2016 – February 2018. Aims at improving the tourism knowledge framework providing analysis and operational tools to pinpoint an integrated methodology in order to shape and drive tourism sustainable growth, particularly for cultural destinations. To do so, the project focuses on few but useful indicators and develops a set of tools, notably the Smart Integrated Tourism Data System (SITDS). The SITDS (an observatory based on Big Data accompanied by future scenarios elaboration, mega trends analysis and sample surveys) uses innovative statistical sources directly from the Internet/Mobile phone by accelerating the construction of sustainability indicators, attractiveness and tourism competitiveness.
6. Contacts for further information	
	Mara Manente, CISET, Ca' Foscari University of Venice https://www.unive.it/pag/18630/ ciset@unive.it Maria Luisa Mativi, Tuscany Region https://www.regione.toscana.it/ mitomed@regione.toscana.it Emilio Becheri, New Mercury Tourism Consulting Coordinator National Tourism Report www.turistica.it Davide Bruno, Settore "Sistemi informativi e tecnologie della conoscenza", Tuscany Region (LP of HERIT-DATA): phone: 055/4383649 e-mail: davide.bruno@regione.toscana.it

5.5   Malta

Name of Country	Malta	
1. Official Statistics	**National Level**	
Institutions collecting data	Tourism data are collected by the **National Statistics Office** of Malta. Further information is available from the **Ministry for Tourism**, and the **Malta Tourism Authority (MTA)**.	
Main data collected	The following tourism data are available from the National Statistics Office: total inbound tourists, total outbound tourists, total nights, and total expenditure. Inbound tourism trips are collected from an ongoing frontier national survey known as Tourstat. Tourist air departures are collected through a continuous survey carried out at the departure lounge of the Malta International Airport. A two-stage sampling design is used to collect air passengers. In the first stage alternate days and nights are selected. In the second stage, within each shift, a sample of passengers is selected systematically. Every crossing passenger is counted and respondents are selected using a pre-defined interval of 1.20 for air. Tourist sea departures data is supplemented by administrative data provided by ferry operators. Tourstat measures the number of tourist trips carried out during a reference period. Tourist trips differ from the number of tourists such that the same person can undertake more than one trip during a reference period. The National Statistics Office also publishes a series of environmental indicators that could be considered relevant in relation to sustainable tourism. For instance: domestic material extraction, total waste generation, municipal waste generation, public water production, and urban wastewater generation. At a regional level, the Tourism and Education Statistics Unit of the National Statistics Office collects the following data for the Malta, Gozo, and Comino islands: • Domestic and inbound tourists by region. • Nights spent by domestic and inbound tourists by region. • Inbound tourists by itinerary, region, and year. • Total nights spent by type of accommodation by region. • Total and average expenditure by region.	

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Domestic same-day visits and overnight stays within the same region of origin, such as day trips to Gozo and Comino region and weekend breaks in Malta region by Malta residents are not included in the data. Domestic tourism excludes individuals aged 0 to 14 years. Regional flows of inbound tourism exclude same-day visits across regions and classify trips into two components: single centre destination and twin centre destination.

Ministry for Tourism

The Ministry is responsible for: Formulating long-term tourism policies based on a suitable, sustainable framework; Effectively delivering tourism policies; and Monitoring its implementation at national level. The Ministry also publishes analytical reports such as "The Contribution of the Tourism Industry to the Maltese Economy".

Malta Tourism Authority (MTA)

The MTA is Malta's main brand promoter and works to promote Malta as a tourism destination. Its mission also includes licensing, monitoring and control of accommodation and catering establishments, travel agencies, incoming tourism agencies and destination management companies, tourist guides and organised excursion operators. The MTA also has a Research Unit that produces reports (Gozo Profile - 2019, Tourism Expenditure Survey - 2019, English Language Travel Market in Malta - 2019, Diving Profile - 2019) and compiles international studies about Malta's tourism sector.

Geographical scale	Data are available at a national and regional level.
Frequency of data collection	Data are observed yearly.
Data accessibility	Free of access.
Link to database	https://nso.gov.mt/Home/SELECTED_INDICATORS/Pages/Sub-Selected-Indicators/Tourism.aspx
Regional Level	
Institutions and data collected	N/A
Municipal Level	
Institutions and data collected	N/A

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2. Tourism Observatories and Research Centres	
Institutions and type of data collected	**The Foundation for Tourism Zone Development** The Foundation for Tourism Zone Development works to continuously assess, monitor, manage and preserve Malta's tourism zones. **Institute for Tourism, Travel and Culture (ITTC)** The Institute for Tourism, Travel and Culture (ITTC) was established in 2010 at the University of Malta. The ITTC offers a range of tourism and culture courses at undergraduate and postgraduate level, and has a number of Ph.D. students completing related research. The ITTC is also involved in a range of EU funded research projects, working closely with local tourism and culture stakeholders and several European universities. **The Institute of Tourism Studies (ITS)** The ITS is an institution of higher education that provides quality learning to achieve excellence in tourism. It focuses its resources on the development of inclusive academic and vocational programmes.
3. Open Big Data	
Institutions/ Organizations collecting data	At the moment there are no established big data repositories, but the government is working on a digital tourism platform which will incorporate tourism data and it will also generate analytics and reports. **Malta Digital Tourism Platform** Malta's Ministry for Tourism and the Malta Tourism Authority are currently developing a platform to help tourists obtain information which can be useful during their stay in Malta, as well as *to gather tourism data which can be used to implement marketing strategies*. The platform will include a **Tourism Insights with Analytics & Reports** section. The project is supported by ERDF funds.
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	N/A

Link to database	N/A
4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	The ECO certification is the national scheme for ensuring the environmental, socioeconomic, and cultural sustainability of hotels on the Maltese Islands and has been recognised by the Global Sustainable Tourism Council as fully reflecting the GSTC criteria. The scheme was launched in 2002. The scheme covers environmental, social, cultural, economic, quality and health & safety aspects. Third party audits are carried out every two years to ensure that the hotels are meeting the requirements of the scheme. The main areas covered by the current criteria are: Sustainability management systems; Waste management; Purchasing; Control of chemicals; Energy; Water; Air quality; Noise; Building and green areas; Local culture & national surroundings; and Communication with customers.
Experience with ETIS indicators	Yes. Malta's current tourism policy sets out a list of economic, environmental and social targets that are specifically addressed at achieving sustainability goals. Although the Tourism Policy currently in place advocates sustainability, ETIS are not currently being used. The implementation of ETIS for enhancing sustainable tourism practices in Malta was examined in a research carried out by the Institute for Tourism, Travel and Culture (ITTC) of the University of Malta. The research focuses on how to build up the local group, as well as on the forms in which ETIS may be discussed and applied at a local level.
Data accessibility	N/A
Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**INCIRCLE - Support INsular and low density areas in the transition towards a more CIRCuLar tourism Economy** (Programme 2014 - 2020 INTERREG VB Mediterranean)

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Project co-financed by the European Regional Development Fund

	INCIRCLE aims to support insular and scarcely inhabited MED areas to meet the increasing environmental challenges caused by tourist activities by promoting the application of circular economy principles in the tourism sector. INCIRCLE's mission is to enhance the sustainability and attractiveness of MED touristic insular and low-density areas through Circular Tourism, preserving the quality and availability of natural resources as well as improving the quality of life of residents & tourists. Some of the projects expected outputs are the creation of a *knowledge platform, and the development of circular tourism indicators*. **ToStoDEM - Towards Sustainable Tourism Development Models in the Euro Mediterranean region** The research project deals with sustainable tourism development models in the Euro Mediterranean region, specifically for the islands of Malta and Sardinia. The methodological framework is based on a qualitative approach, which adopts qualitative and quantitative methods (mixed methods), such as interviews with key informants and stakeholders, and surveys. The proposed research project is expected to renew the knowledge about the topic of sustainable tourism, identify the strengths and weaknesses of the tourism system in Malta and Sardinia, provide recommendations for improving sustainable tourism policy and practices in the two chosen areas, share the results among tourism stakeholders, both private and public organisations.
6. Contacts for further information	
	N/A

5.6   Montenegro

Name of Country	Montenegro	
1. Official Statistics	**National Level**	
Institutions collecting data	Tourism data are collected by the Statistical Office of Montenegro (MONSTAT). Additional information is collected by the Ministry of Interior, Ministry of Sustainable Development and Tourism, and the National Tourism Organization.	
Main data collected	The following data are collected by MONSTAT: • Accommodation statistics • Overnight stays of domestic and foreign tourists in individual accommodation • Arrivals of domestic and foreign tourists in individual accommodation • Overnight stays of domestic and foreign tourists in collective accommodation • Arrivals of domestic and foreign tourists in collective accommodation • Data on traffic of foreign yachts and other vessels intended for leisure, sport and recreation • Foreign visitors who entered country in yachts and other vessels • Tourism Satellite Account: A Tourism Satellite Account was developed in 2009 as part of a pilot study compiling data from MONSTAT and balance of payment data from the Central Bank of Montenegro. Other used data sources are the following: Monthly report on arrivals and overnight stays of tourists in accommodation facilities; Results of survey Interviewing Tourists in Montenegro 2009 (National tourist Organisation, Ministry of Sustainable Development and Tourism of Montenegro and GTZ- Deutsche Gesellschaft für Technische Zusammenarbeit), Household Budget Survey (HBS) – regular survey of Statistical Office of Montenegro, Miscellaneous (data of airports Podgorica and Tivat, etc.), Trips of household members – pilot survey of the Statistical Office of Montenegro.	

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	Data are collected annually through a statistical survey on tourist arrivals and overnight stays, results of the survey are used to create a tourism policy and strategy for the development of tourism, as well as the fulfilment of requests for information from domestic and foreign users. MONSTAT uses the following data sources: hotel guest books, administrative databases (Local Tourism Organizations, Ministry of Interior, Ministry of Sustainable Development and Tourism, National Tourism Organization, Secretariats of Municipalities) and statistical sources and records.
Geographical scale	Most data are available at a national level. Accommodation data are available by municipalities.
Frequency of data collection	Data are collected yearly.
Data accessibility	Free of access.
Link to database	https://www.monstat.org/eng/page.php?id=43&pageid=43
	Regional Level
Institutions and data collected	N/A
	Municipal Level
Institutions and data collected	Local Tourism Organizations, and Secretariats of Municipalities.
2. **Tourism Observatories and Research Centres**	
Institutions and type of data collected	Centre for Sustainable Tourism Initiatives - Montenegro Tourism Development The Centre for Sustainable Tourism Initiatives is a non-government, non-profit organization working on the development of the tourism products in Montenegro, engaging the principles of responsible and sustainable tourism. CSTI was founded in 2006 with the support of the United States Agency for International Development (USAID) and CHF International, as part of their Community Revitalisation through Democratic Action - Economy (CRDA-E) program. The Centre carries out tourism development projects, and also publishes reports such as "The Experience of Tourists in Northern and Southern Montenegro", a survey to better understand the needs and motivations of tourists in Montenegro in order to improve the marketing and service provision of tourism stakeholders in the North.

3. Open Big Data	
Institutions/ Organizations collecting data	N/A
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	N/A
Link to database	N/A
4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	According to Montenegro's National Strategy for Sustainable Development, developed by the Ministry of Sustainable Development and Tourism, one of the strategic goals is to establish a system for monitoring national sustainable development, including monitoring of sustainable development goals implementation. The NSSD introduces a set of relevant national indicators derived from the sustainable development indicators set by the Statistical Commission of the UN. The Ministry of Sustainable Development and Tourism has fully implemented some of the following indicators:

• Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage.

• Proportion of urban solid waste regularly collected and with adequate final discharge out of total urban solid waste generated.

• Number of parties to international multilateral environmental agreements on hazardous waste, and other chemicals.

• Number of sustainable tourism strategies or policies and implemented action plans with agreed monitoring and evaluation tools.

• Number of countries with mechanisms in place to enhance policy coherence of sustainable development.

• Dollar value of all resources made available to strengthen statistical capacity in developing countries.

Additionally, one of the objectives of Montenegro's Tourism Development Strategy is to establish and operate information and quality management systems. The Tourism Development |

	Strategy recommends the implementation of suitable indicators, setting up and processing databases and analysing the relevant data and information tourism development, respecting sustainable development principles. A qualitative information system is also required to ensure proper risk management to address critical external factors such as climate change, carriage costs and target group pattern changes regarding travel, food price, etc.
Experience with ETIS indicators	Yes. The Tourism Board of Podgorica, Montenegro's capital, carried out an initiative to implement the European Tourism Indicator System (ETIS) in 2006, and it is currently a member of a working group for ETIS, which includes monitoring and continuous reporting on tourism indicators during 2020.
Data accessibility	Data are not publicly available.
Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	FOST INNO: Fostering tourism innovation system in Adriatic-Ionian Region Project FOST INNO aims to contribute to the long-term growth of tourism in the Adriatic Ionian region through innovations in capacity building. The overall objective of the project is to improve and ensure long term competitiveness of the Adriatic-Ionian area by enhancing innovation capacity in sustainable tourism. Hence, the main project intervention objective is to change current practise of insufficient incentives for innovations in sustainable tourism through main project outputs and deliverables: developed strategy for fostering innovations in sustainable tourism in Adriatic-Ionian area, established networking structure and increased knowledge transfer between business, users, academia and institutional stakeholders through Adriatic-Ionian Tourism Innovation Centre. This project aims to create a long-term knowledge transfer related to the innovation in sustainable tourism development in order to contribute to solving tourism issues that are common for all partner countries involved. Montenegro is part of the **Interreg IPA CBC Italy-Albania-Montenegro Programme**, co-funded by the European Union and managed by Puglia Region, Italy. The objective is to promote economic growth and to intensify cooperation in the low Adriatic area, by implementing joint actions between national and

	regional institutional and non-profit actors and by fostering smart, inclusive, and sustainable development. **OPEN TOURISM - Cross-border cooperation network for an open-to-innovation tourism** OPEN TOURISM aims to reinforce cross border public-private cooperation, in order to promote local heritage and favour economic and social development. An innovative strategy will be implemented, based on a new concept of tourism, focusing on a deeper relationship between visitors and local communities. An integrated territorial marketing strategy will boost the attractiveness of natural and cultural assets, while innovative products and services will be released to enhance excellences, provide information and offer high quality, customized and off-season tourist services. **NEST - Networking for Smart Tourism Development** NEST aims to sustain socio-economic growth in the Programme area, by empowering the small and medium tourism enterprises with innovative approaches, tools and strategies, that leverage digital technologies and networking. NEST will favour the creation of an 'Interreg smart destination' strategic model, by adopting collaborative and user-driven innovation tools, inspired by the Living Lab Approach. The main expected results are the development of a Smart Tourism Destination Action Plan, and the creation of cross border experiential paths valorising natural and cultural assets as well as landscapes, traditions, folks and crafts.
6. Contacts for further information	
	• Statistical Office of Montenegro • National tourism organization of Montenegro • Local tourism organizations • Ministry of Sustainable Development and Tourism

5.7 Portugal

Name of Country	Portugal
1. Official Statistics	**National Level**
Institutions collecting data	Tourism data are collected by the National Bureau of Statistics (INE), and Portugal Tourism Board.
Main data collected	**Tourism data:** • Accommodation statistics (hotels, local accommodation, and rural/lodging tourism): Nº of establishments; Nº of rooms; Nº of beds; Nº of overnight stays; Nº of guests; Receipts; Hotel occupancy rate; Average Daily expenditure. • Number of tourists and excursionists. • Productivity in tourism sector. • Tourism intensity index. • Direct employment in tourism sector. • Nº of employees in tourism sector by gender. • Qualified Direct employment in tourism sector. • Seasonal employment. • Average wages in tourism sector. • Seasonality rate. • Travel survey of residents. • Nº of tourist arrivals by transport modes. • Tourism contribution to GDP. **Cultural data:** • Nº of museums. • Nº of visitors of museums. • Expenditures on cultural and creative activities (€) of municipalities. **Environmental data related to tourism:** • Energy daily consume by tourists. • Percentage of tourism enterprises that use measures to reduce energy consumption. • Water daily consume by tourists.

	• Percentage of tourism enterprises that use measures to reduce water consumption. • Percentage of tourism enterprises that use measures to use recycled water. • Daily waste production by tourists. • Percentage of tourist that use different modes of transport to reach the destination. • Percentage of tourist that use public transports to reach the destination.
Geographical scale	Data are generally available at national and regional level; some information (accommodation) are also available at the municipality level.
Frequency of data collection	Data on tourism accommodation observed on a monthly basis as well as the tourism flows. INE has published time series since 2009 (on-line search engine) and a metadata base for the older years (some data was uploaded from scan).
Data accessibility	All data is free access both in INE website and Portugal Tourism Board website.
Link to database	https://www.ine.pt https://travelbi.turismodeportugal.pt/en-us/Pages/Home.aspx
	Regional Level
Institutions and data collected	N/A The official statistical data in Portugal is all collected by INE in national, regional and municipality level, being spread through different websites, like Portugal Tourism Board, Regional Tourism Boards and other national public or private enterprises.
	Municipal Level
Institutions and data collected	N/A The official statistical data in Portugal is all collected by INE in national, regional and municipality level, being spread through different websites, like Portugal Tourism Board, Regional Tourism Boards and other national public or private enterprises.
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	Currently there is a Tourism Observatory that is working in full time, the Lisbon Tourism Observatory. There are several others being launched (Algarve; Azores and Alentejo).

3. Open Big Data	
Institutions/ Organizations collecting data	Portugal Tourism Board
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	Data are collected on a national and regional level on a yearly or monthly basis. The portal contains statistical data and research publications regarding the following themes: Accommodation, Cities and Urban Tourism, Consumer Behaviour, Cultural Tourism, Employment in Tourism, Events, International Tourism, Market Trends, Medical Tourism, MICE, Sustainability, Tour Operators, and Training. Data are compiled from several official sources such as Turismo de Portugal, INE – Statistics Portugal, ABAE – European Blue Flag Association, Bank of Portugal, DGEC - General Directorate for Energy and Geology, and ICCA - International Congress and Convention Association.
Link to database	https://dadosabertos.turismodeportugal.pt/
4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	Portugal's Tourism Strategy 2027 has sustainability as a guiding principle and defines ambitious goals and targets to be reached in the three dimensions of sustainability: • Economic: overnight stays and revenues from international tourism. • Social: qualification of the workforce of the sector, seasonality and residents' satisfaction with the process of tourism development. • Environmental: efficient management of water, energy and waste Turismo de Portugal developed a set of sustainability monitoring indicators, based on recommendations from international organizations (OMT, Eurostat), in order to evaluate the performance of Portugal as a Tourist Destination in the three dimensions of sustainability. For instance: • Water in Bathing Areas with Good/Excellent Quality • Percentage of Seasonal Jobs • Accommodation Stab. Accessible for Guests with Special Needs • Environmental Spending per Resident

	• Tourism Employment by Education Level • Tourism Density • Energy Consumption and Emissions in Tourism • Tourism Employment by Gender • Tourism Intensity • Accommodation Estab. with an Environmental Certification • Accommodation Estab. Open Year Round • Number of Beds Available per 1000 Residents • Accommodation Estab. with Objectives to Reduce Water Consumption • Average Length of Stay • Percentage of Returning Tourists to Portugal • Accommodation Estab. with Objectives to Reduce Energy Consumption.
Experience with ETIS indicators	Yes. The current system of indicators was developed using the following sources: • Tourism Strategy 2027, Turismo de Portugal, 2016. • European Tourism System of Indicators for Sustainable Management at Destination Level (ETIS). • Indicators of Sustainable Development for Tourism Destinations - UNWTO.
Data accessibility	Free of access.
Link to database	https://travelbi.turismodeportugal.pt/en-US/pages/sustentabilidade.aspx
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**BODAH - Big and Open Data for the development of new processes towards Atlantic heritage management** BODAH aims at improving cooperation, joint planning and at better managing conflicting interests to improve the management of two kinds of cultural destinations that can benefit and be affected by tourism and the pressure of local citizens: Old-historical city centres and Sites of particular cultural or heritage interest. The project plans to take advantage of technology and innovation in management tools (Smart Cities), in particular, through the collection of existing - and generation of complementary - data (Big Data, Open Data, Internet of the Things, data provided through existing sensors, local systems or

cameras, etc.). One of the key objectives is to develop new solutions to address social and public needs, contributing to create new alternative offers adapted to the interests of visitors to better distribute their crowd flows, as well as redistribute impacts (both, environmental and economic ones) on heritage sites, cities and monuments.

At the moment UAlg is participating in other interesting projects:

SusTowns - Enhancing SUStainable tourism attraction in small fascinating med TOWNS.

Description: The charm of the Mediterranean space resides also in the fascinating small towns which have increasingly become tourist destinations for large numbers of visitors, favouring both the development and growth of its territories. Thanks to press campaigns, fashions and youth trends, such tourist flows are gaining ever more ground. However, Mediterranean fascinating small towns are subject to the decline in fashion and notoriety by tourists. In addition, these towns are at risk of intensive exploitation of their territories and may become over-equipped with infrastructures and services whenever their tourist attraction decreases. The project aims to intervene at the peak of the growing curve of tourist flows, making sure that these towns maintain the highest tourist The charm of the Mediterranean space resides also in the fascinating small towns which have increasingly become tourist destinations for large numbers of visitors, favouring both the development and growth of its territories. Thanks to press campaigns, fashions and youth trends, such tourist flows are gaining ever more ground. However, Mediterranean fascinating small towns are subject to the decline in fashion and notoriety by tourists. In addition, these towns are at risk of intensive exploitation of their territories and may become over-equipped with infrastructures and services whenever their tourist attraction decreases. The project aims to intervene at the peak of the growing curve of tourist flows, making sure that these towns maintain the highest tourist.

Partners: Lazio Region Association of Cities and Municipalities - ANCI LAZIO (Lead Partner) (Italy); MUSOL Foundation (Spain); BSC, Business Support Centre, Kranj (Slovenia); Development Agency of Eastern Thessaloniki's Local Authorities – Center for the Development of Human Resources and the Support of Local Economy (Greece); Association of Albanian Municipalities (Albania); The Most Beautiful Villages of Italy (Italia); Federación Aragonesa de Municipios Comarcas y Provincias (Spain); Island Development Agency Ltd (Croatia); University of Algarve (Portugal) and Make it Better, Association for Innovation & Social Economy (Portugal).

	ATLAS - **The Association for Tourism and Leisure Education Cultural Tourism Research Project (CTRP)** **Description:** The ATLAS Cultural Tourism Project has been conducting research on the relationship between culture and tourism since 1991, and therefore is the longest-standing ATLAS research group. The CTRP has over the past 20 years undertaken nearly 40,000 visitor surveys and produced a number of publications, most of which can be found in the ATLAS publication list. The aim of the study is to find out more about visitors to cultural events and attractions, their motivations, activities and impressions. The UAlg/CinTurs team will be responsible for conducting the project at the Algarve, Portugal's region. **Partners:** Association for Tourism and Leisure Education and Research (ATLAS) (Lead Partner) (The Netherlands); University of Algarve (Portugal) **iHERITAGE - ICT Mediterranean platform for UNESCO cultural heritage. Description:** The goal of the application is to develop augmented reality technologies, virtual reality and mobile applications that enable the improvement of the experience of visiting the cultural heritage recognized by UNESCO. In the case of the Algarve, the actions to be developed through the University of Algarve will have as a heritage element the Mediterranean Diet. **Partners:** Regione Siciliana - Assessorato del Turismo, dello Sport e dello Spettacolo (Lead Partner) (Italy); Confederation of Egyptian European Business Associations (Egypt); Association of the Mediterranean Chambers of Commerce and Industry – ASCAME (Spain); Jordan Society for Scientific Research, Entrepreneurship and Creativity – JSSREC (Jordan); General Department of Antiquities of Jordan (DOA) (Jordan); Lebanese American University (Lebanon); University of Algarve (Portugal); Andalusian Public Foundation El Legado Andalusi (Spain) and University of Palermo (Italy). UAlg participates as well on other national and international projects related to tourism mainly focused on the Algarve.
6. Contacts for further information	
	Fernando Perna, IMPACTUR, University of the Algarve, Portugal https://ciitt.ualg.pt/z-gb-index.htm Elidérico Viegas, AHETA – Association of Hotels and Tourism

| | Accommodation of the Algarve
http://94.126.169.141/~ahetapt/wp/ultimos-dados/ |

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5.8   Slovenia

Name of Country	Slovenia	
1. Official Statistics	**National Level**	
Institutions collecting data	[Statistical Office of the Republic of Slovenia](#) [Slovenian Tourist Board](#)	
Main data collected	Accommodation statistics, foreign tourists in Slovenia, foreign travellers leaving Slovenia at the border crossings with Croatia, Slovenian travel agencies, tourist travels of domestic population.	
Geographical scale	The lowest scale is municipalities. And the highest scale is of course national statistical data.	
Frequency of data collection	Data are collected either monthly, on three months or yearly.	
Data accessibility	Free of access.	
Link to database	https://pxweb.stat.si/SiStatDb/pxweb/en/20_Ekonomsko/	
	Regional Level	
Institutions and data collected	Some DMOs also collect tourism data, but mainly the Statistical Office of the Republic of Slovenia is in charge of collecting tourism data.	
	Municipal Level	
Institutions and data collected	Some Departments for Tourism, which are the right hand of the public sector on the municipality level, also collect tourism data, but mainly the Statistical Office of the Republic of Slovenia is in charge of collecting tourism data.	
2. Tourism Observatories and Research Centres		
Institutions and type of data collected	[Mediterranean Institute for Research in Tourism (MIRT)](#) MIRT was established in 2009 as part of the University of Primorska, Faculty of Tourism Studies - Turistica, with the purpose to become the leading science and research institute in the field of tourism in Slovenia and a wider international area. Turistica and MIRT strive towards the establishment of modern research methods and the increase of development and knowledge transfer to the tourism economy and other knowledge users. The institute carries out research concerning:	

	• tourism enterprises and destinations (operation and marketing),
	• the tourism market, products and services, and recognition of new trends,
	• effects of the tourism offer on the environment,
	• creation of new tourism offer (local, regional and national planning of tourism),
	• measurement of tourist and employee satisfaction, and success of operation,
	• quality of tourism offer.
3. Open Big Data	
Institutions/ Organizations collecting data	At the moment there are no established big data repositories, but as part of the Tourism 4.0 project, Slovenia aims to develop a tool called FLOWS. FLOWS is one of the four pillars of Tourism 4.0. It will enable GDPR compliant advanced analyses and forecasts of tourist movements based on anonymised data from a multitude of different sources (traffic counters, data from mobile operators, freely accessible Wi-Fi networks, tourist tax, vignettes sold, water and energy consumption, waste, social media posts, etc.). A simple user interface will display traffic flows: excessive traffic loads, seasonal deviations, entrances / exits to destination, movement within the destination, etc. It will be possible to display the analyses in the selected time interval (year, month, week, day), forecasts based on historical data, weighted by special parameters (weekend, weather, national or holiday in other countries, etc.). Slovenia is also a partner in the **InnoXenia** - Innovation in Tourism in the Adriatic-Ionian Macroregion project, which aims to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfer and better elaboration of tourism strategies, policies and investments in the Adriatic – Ionian area.
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	Traffic counters, data from mobile operators, freely accessible Wi-Fi networks, tourist tax, vignettes sold, water and energy consumption, waste, social media posts, etc. Innoxenia: Information on prices, reputation, tourist flows, innovation and best practices.
Link to database	https://tourism4-0.org/flows/ https://www.innoxenia.eu/

4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	The Research Department of the Slovenian Tourist Board is collecting data on sustainable tourism indicators in relation directly to the Green Scheme label. The Green Scheme label is a way to get the municipalities involved, the municipalities self-report in order to get the certification.
Experience with ETIS indicators	Yes. Under the green scheme, the tourism board has been implementing the European Tourism Indicator System (ETIS) since 2015 and uses the criteria of the Global Sustainable Tourism Council (GSTC) to set up a holistic certification scheme that takes into account Slovenia's national characteristics of the level of destinations and tourism providers.
Data accessibility	Free of access.
Link to database	https://www.slovenia.info/en/business/green-scheme-of-slovenian-tourism
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**Tourism 4.0** The Tourism 4.0 Research Project is the biggest R&D public funded project in the field of tourism in Slovenia (co-financed by the Ministry of Education, Science and Sport of Slovenia, and the EU European Regional Development Fund). It aims to unlock the innovation potential in tourism by enabling collaboration between all stakeholders of the smart tourism ecosystem. Its goal is to build a collaborative tourism ecosystem centred around the local community enabling data driven strategic planning and boosting positive impact of tourism. The main purpose of the project is to build a collaborative Tourism 4.0 platform, a disruptive technological solution built on trust and exchange of data between all tourism stakeholders for sprouting a new generation of tourist applications, services and processes while respecting the user's data privacy. **InnoXenia - Innovation in Tourism in the Adriatic-Ionian Macroregion - Interreg ADRION programme** Slovenia participated in the InnoXenia project through RDA Green Karst. The aim of this project was to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfer and better

	elaboration of tourism strategies, policies and investments in the Adriatic – Ionian area. **Amazing AoE - Responsible Green Destination Amazon of Europe** UNESCO Transboundary Biosphere Reserve Mura Drava Danube (TBR MDD) is connecting 12 protected areas and uniting 5 countries along 3 rivers into a first world pentalateral biosphere reserve. The area known as Amazon of Europe (AoE) represents the largest and most preserved free-flowing river system in Central Europe. Project aim is to enhance sustainable economic growth and tourism development based on distinctive natural and cultural heritage, which will result in a collaboration network of key actors and enabling environment for high-quality tourism, responding to limited resources of ecosystems.
6. Contacts for further information	
	• Statistical Office of the Republic of Slovenia • Slovenian Tourist Board • Faculty of Tourism, University of Maribor

5.9   Spain

Name of Country	Spain
1. Official Statistics	**National Level**
Institutions collecting data	National Institute of Statistics (INE) of Spain.
	Instituto de Estudios Turísticos of the National Tourism Government.
Main data collected	The National Institute for Statistics (INE) periodically provides tourism information at country level related to tourist movements at borders, movements of tourists residing in the country, tourism expenditures, occupancy levels in different types of accommodation (hotels, camping, flats and rural tourism). The main tourism surveys are:
	International Tourism
	National Tourism (Residents)
	Tourism Expenditure
	Hotels: occupancy, price index and profitability indicators
	Campings: occupancy rate and price index
	Tourist Apartments: occupancy rate and price index
	Rural Tourism Accommodation: occupancy rate and price index
	Hostels: occupancy rate
	Employment
	Tourism Satellite Account (2018)
Geographical scale	Data are generally available at national and regional detail. There is also information at local level for the most relevant destinations.
Frequency of data collection	Data on tourism accommodation are observed yearly and monthly, tourism flows are recorded monthly.
Data accessibility	Free of access
Link to database	INE
	Regional Level
Institutions and data collected	**Andalusia**: Instituto de Estadística y Cartografía de Andalucía and
	Public Enterprise for Management of Tourism and Sports of Andalusia: The Andalusian Tourist Situation Survey is a quarterly

statistical operation which provides information on the tourist demand generated in Andalusia.

Aragón: Government of Aragón (Instituto Aragonés de Estadística). Statistical information on tourism in Aragon, occupation, capacity, infrastructures.

Asturias: Sistema de Información Túristica de Asturias (SITA).

Baleares: Consejería de Modelo Económico, Turismo y Trabajo. Agencia de Turismo de las Islas Baleares.

Canarias: Instituto Canario de Estadísticias (ISTAC).

Cantabria: Instituto Cántabro de Estadística (ICANE). There is a specific section on tourism regional data called: "Coyuntura Turística Hotelera".

Castilla La Mancha: Fundación Impulsa CLM (public foundation of the Government of Castilla La Mancha).

Castilla León: Consejería de Cultura y Turismo. Dirección General de Turismo. There is a specific section on tourism regional data called: "Boletin de Coyuntura Turística" (data collected monthly).

Cataluña: Instituto de Estadística de Cataluña (IDESCAT).

Extremadura: Observatorio de Turismo de Extremadura.

Galicia: Turismo de Galicia (Government of Galicia Region).

La Rioja: Government of La Rioja.

Madrid: Turismo de Madrid (Regional Government of Madrid).

Murcia: Instituto de Turismo de la Región de Murcia (Government of Murcia).

Navarra: Observatorio Turístico de Navarra (Government of Navarra).

País Vasco: Observatorio Turístico de Euskadi (Government of Basque Country).

Valencia: Turisme Comunitat Valenciana (Government of Comunidad Valenciana).

Every regional office provides annual reports to measure and compare the current movements, expenditures and activities of the current year with the previous ones. In some cases, monthly reports are available

Municipal Level	
Institutions and data collected	Some Patronatos de Turismo (provincial DMOs) and local DMOs also collect tourism data, but local tourism data is usually collected by the National Statistics Institute, and the previously mentioned regional statistical stakeholders.

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2. Tourism Observatories and Research Centres	
Institutions and type of data collected	Many, and difficult to name all of them: Malaga University, Alicante University, Gerona University, Instituto Andaluz de Investigación e Innovación en Turismo (Iatur), Instituto de investigación en turismo de Catalunya – IRTUCA, multiple local destination observatories.
3. Open Big Data	
Institutions/ Organizations collecting data	**SEGITTUR** (Sociedad Estatal para la Gestión de la Innovación y las Tecnologías Turísticas). This public institution belonging to the Secretary of State for Tourism has developed its Tourism Intelligence System (SIT). **Smartravel**. It's a Spanish startup that, through a technology that combines Big Data and Machine Learning techniques, has designed a system capable of providing live guides from different cities for airlines, chains, hotel companies, travel agencies and tourism entities. **AndaluciaSmartData**: is a project developed by Public Enterprise for Management of Tourism and Sports of Andalusia, the public enterprise from Andalusia Regional Government. It is a business intelligence tool integrating big data and traditional official data. Almost every local DMO has a big data initiative, but most are "one-time" pilot experience.
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	• Dashboard dedicated to detecting recovery after COVID-19. flights Recovery: Searches on a daily basis and travel date. Skyscanner. Data provider: Forwardkey. • Regulated accommodation, demand and supply. • Airb&b information through AirDNA provider. • Air traffic: official information. • Cruises: official information. • Bus traffic: big data through Movelia provider. • Platform for the management of tourist resources and distribution of tourist content that makes more than 20,000 tourist resources available to users and tour operators from a wide range of tourist categories in the 8 provinces. • Sentiment Analysis (big data): source Twitter, Youtube and RSS. • Google trends: Module for tracking key terms related to the destination from Google Trends.
Link to database	https://smartdata.andalucia.org/

4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	Several destinations have started to collect indicators thanks to participation in EU funded projects, such as Mitomed+.
Experience with ETIS indicators	Yes. Several destinations are testing indicators that are based on ETIS but have been modified to fit particular needs (such as the Mitomed Plus set of 33 indicators for Maritime and Coastal destinations).
Data accessibility	**Data on ETIS indicators and Mitomed Plus indicators are free** but under registration: the platform created on the Mitomed Plus project requires a Username and Password that is granted to participants of the project.
Link to database	https://mitomedplus.andalucia.org/mitomedplus/index.html
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**MITOMED PLUS:** (Andalusia region involved) Models of Integrated Tourism in the MEDiterranean Plus 36 months. February 2017 – January 2020. Follow up of the previous MITOMED project (MED Maritime), which has been working to promote the integrated management of Maritime and Coastal tourism by improving the knowledge of data, products, services through a set of indicators based on the NECSTouR model. MITOMED+ takes further results aiming to improve the coordination of strategies between territories at transnational level regarding the development of the M&C tourism through cooperation and joint planning between regions. Main outputs: • The Tourism Data Indicators Toolkit and Manual of Transfer of Best Practices to learn more about the development, implementation and use of sustainable tourism indicators. • The Green Beach Model Toolkit to make better informed decisions about managing beaches in a sustainable way. • The MITOMED+ M&C Tourism Management Model to assure the tourism sustainability and gain competitive advantage, increasing the benefits tourism brings to the territory and the local community.

- The Memorandum of Understanding to ensure the continuity of the transnational and multi-stakeholder dynamic of cooperation initiated by the MITOMED+ project.

CO-EVOLVE: (ValenciaPort Foundation is involved)

Promoting the co-evolution of human activities and natural systems for the development of sustainable coastal and maritime tourism. 36 months. September 2016 – August 2019

CO-EVOLVE aims at analysing and promoting the co-evolution of human activities and natural systems in touristic coastal areas, allowing sustainable development of touristic activities based on the principles of ICZM/MSP. CO- EVOLVE couples a presently unavailable analysis at MED scale of threats and enabling factors for sustainable tourism with local studies on representative Pilot Areas, to demonstrate through pilot actions the feasibility and effectiveness of an ICZM/MSP-based planning process.

HERIT-DATA: (Valencia Region is partner)

Sustainable Heritage Management towards Mass Tourism Impact thanks to a holistic use of Big and Open Data. 48 months. February 2018 – January 2022

The project aims to reduce the impact of human activities (tourism-related ones) on cultural heritage, with a special focus on two kinds of cultural destinations that can benefit from and be affected by mass tourism. In that framework, HERIT-DATA plans to develop of a sustainable and responsible tourism management towards cultural heritage MED regions, in particular by taking advantage of technology and innovation in management tools (Smart Cities), as well as other policy and social measures. The project will develop, test and transfer a series of knowledge and solutions in line with the current sectoral changes and characteristics of smart destinations, able to collect, generate, integrate and analyse information and transform it into behaviour changes, according to ICZM recommendations. The results will also contribute to decision-making processes from a holistic perspective and for all stakeholders: planners, visitors, local stakeholders and host citizens.

SHAPE TOURISM: University of Málaga - Department of Economics is partner) New shape and drives for the tourism sector: supporting decision, integra- ting plans and ensuring sustainability. 18 months. May 2016 – February 2018

Aims at improving the tourism knowledge framework providing analysis and operational tools to pinpoint an integrated methodology in order to shape and drive tourism sustainable

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	growth, particularly for cultural destinations. To do so, the project focuses on few but useful indicators and develops a set of tools, notably the Smart Integrated Tourism Data System (SITDS). The SITDS (an observatory based on Big Data accompanied by future scenarios elaboration, mega trends analysis and sample surveys) uses innovative statistical sources directly from the Internet/Mobile phone by accelerating the construction of sustainability indicators, attractiveness and tourism competitiveness.
6. Contacts for further information	
	Public Enterprise for Management of Tourism and Sports of Andalusia (associated partner of Best MED) Spanish National Statistical Institute

6 State of the art of tourism data collection and management in MED countries and IPA cross-border cooperation

6.1 Albania

Name of Country	Albania
1. Official Statistics	**National Level**
Institutions collecting data	Tourism data are collected by the **Official Statistic Agency INSTAT**, and additional information is gathered by the **Ministry of Tourism**.
Main data collected	INSTAT provides information concerning: Tourist movements (Arrivals and departures, considering both local Albanian people and foreign citizens), means of transport (sea, land, air and border points), purpose of the trip, and accommodation establishments. Moreover, it is possible to find yearly and monthly publications concerning the movement of citizens. There is also information concerning Environment and Energy. Although the data are not directly referred to tourism, it is important to take this information into consideration, for instance: • bacteriological pollution of seawater in beach; • vehicles by fuel type; • urban and inert solid waste; • content of some air pollution in urban areas; • vehicles by year of production The **National Agency of Protected Areas (AKZM)** collects data regarding the number of domestic and international tourists that visit natural protected areas in Albania at a municipal and national level. The **Ministry of Tourism and Environment** compiles and analyses tourism data from INSTAT and AKZM in the form of monthly and annual reports (only available in Albanian).

Geographical scale	Data are available at a national, regional, and municipal scale.
Frequency of data collection	Data about tourist movements are collected monthly, while data concerning accommodation establishments are collected annually.
Data accessibility	Free of access.
Link to database	http://www.instat.gov.al/en/themes/industry-trade-and-services/tourism/#tab1
	Regional Level
Institutions and data collected	N/A
	Municipal Level
Institutions and data collected	Every municipality in each city of Albania has in its structure the Department of Tourism which also collects relevant tourism data.
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	N/A
3. Open Big Data	
Institutions/ Organizations collecting data	**Municipality of Tirana**
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	**Municipality of Tirana Open Data** Contains data about cultural tourism in Tirana from different sources such as the Municipality of Tirana, the Institute of Statistics, and the Parks and Recreation Agency. Specifically, the portal contains information regarding the number of tourists visiting the Tourist Information Office, number of tourists visiting specific attractions in Tirana, cultural activities, activities carried out by different public organizations, number of sports and heritage sites, among others. It also contains important environmental indicators compiled from different government agencies. Albania is also a partner in the **Innoxenia** - Innovation in Tourism in the Adriatic-Ionian Macroregion project, which aims to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfer

	and better elaboration of tourism strategies, policies and investments in the Adriatic – Ionian area.
Link to database	https://opendata.tirana.al/search/field_topic/turizmi-dhe-kultura-33 https://www.innoxenia.eu/
4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	According to Albania's **National Strategy for Sustainable Tourism Development (2019-2023)** a set of indicators (reference, output, and performance) has been implemented, specifically measuring the following dimensions: Economic Outputs, Promotion of Public and Private Investments, Reorientation of Promotion towards Tourism Potentials, Support for the Management of Destinations, Reorientation of Promotion towards Tourism Potentials, and Support for the Management of Destinations. **Authentic Albania Quality Mark** The Authentic Quality Mark program was first implemented in Croatia, and more recently in south-east Europe, Albania and FYR Macedonia. USAID's Rritje Albania ("Grow Albania") project launched the industry's first quality certification system for hotels and guesthouses: The Authentic Albania Quality Mark. Authentic Albania quality mark includes responsible tourism criteria, and it encourages tourism businesses to adopt and implement relevant global sustainable tourism criteria (GSTC). These are a set of 37 voluntary standards representing the minimum that any tourism business should aspire to reach in order to protect and sustain the world natural and cultural resources, whilst ensuring tourism meets its potential as a tool for poverty alleviation. The 37 criteria have four main themes: effective sustainability planning; maximizing social and economic benefits for the local community; enhancing cultural heritage; Reducing negative impacts to the environment.
Experience with ETIS indicators	No.
Data accessibility	Not publicly available.
Link to database	N/A

5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**CBSTD - Capacity building for sustainable tourism development LIFE06** The overall objective of the project was to incorporate sustainability into tourism development, focusing on non-coastal tourism. The CBSTD project generated Albania's first Carrying Capacity Assessment (CCA) Report on a tourist area - Durres Bay. The Italian partner, the Institute of Methodologies for Environmental Analysis (IMAA/CNS), provided guidance based on CCA and Advanced Local Energy Planning (ALEP) techniques. From this, an Operating Manual to evaluate the impact of anthropogenic activities on the territory was developed and the first report carried out by the University of Tirana. The project used CCA assessment to identify policy objectives, with actions and indicators, for sustainable tourism development, and a description of four tourism development scenarios. **Innoxenia - Innovation in Tourism in the Adriatic-Ionian Macroregion - Interreg ADRION programme** Albania participated in the InnoXenia project through the Albanian Development Fund. The aim of this project was to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfer and better elaboration of tourism strategies, policies and investments in the Adriatic – Ionian area. **IPA 2017 Action Programme for Albania - EU support to a tourism-led model for Local Economic Development** Main activities under this action include, a comprehensive tourism sector analysis, support collaborative initiatives for integrated tourism product/service development, support the establishment of tools for better data collection and adoption of international standards and best practices. Regarding the improved tourism standards and data in line with international best practice, the following activities will be carried out: 1. Undertake gap analysis, identify the needs and prepare and implement a roadmap for adoption of international tourism standards (i.e. certification by self-regulatory organizations, developing new grading, classification/accreditation systems). 2. Develop national standards for Tourism Information Centres (TICs) and tourist information services through Municipalities and DMOs, in line with international standards where appropriate.

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	3. Support to the establishment and implementation of ETIS tools to enhance data collecting of tourist destinations and tourism planning.
6. Contacts for further information	
	N/A

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6.2   Bosnia Herzegovina

Name of Country	Bosnia Herzegovina
1. Official Statistics	National Level
Institutions collecting data	There are three statistical institutions in Bosnia and Herzegovina. In line with the Law on Statistics, the competent authority at a national level is the Agency for Statistics of Bosnia and Herzegovina (BHAS), and for the entity level the Institute for Statistics of Federation of Bosnia and Herzegovina (FIS), and Institute for Statistics of Republika Srpska (RSIS). The Central Bank of BiH (CBBiH) is responsible for monetary statistics, the balance of payment and other financial statistics in BiH. The Ministry of Foreign Trade and Economic Relations is responsible for: Defining policy general principles; Coordinating activities and harmonizing plans of the Entity authorities and institutions at the international level. However, this institution does not have much power. At the entities level, there is the Ministry of Environment and Tourism from the Federation of Bosnia and Herzegovina and the Ministry for Trade and Tourism from the Republika Srpska. Tourism is also a political matter in the country and there is not much cooperation between these Ministries. USAID has a project to create the satellite account in Bosnia and Herzegovina, but no concrete actions have been taken yet.
Main data collected	The **Agency for Statistics of Bosnia and Herzegovina** collects monthly data on: • Tourists arrivals (domestic and foreign) • Tourists nights by country of origin of tourists • Number of available beds in different types of accommodation (hotels, campings, apartments) Sources and methods of data collection: Data on turnover of tourists (number of tourist arrivals and tourist nights) are collected from regular monthly reports (TU-11 form). Reports are usually made on the basis of reception records in guest

	books, entities and their parts engaged in organising and arranging of tourists.
	The **Institute for Statistics of Republika Srpska** collects data on tourist arrivals and overnight stays. The data is collected monthly on a yearly basis and they also publish a Tourism Bulletin. Source of data is the monthly report on tourists and nights (TU-11) for data on turnover of guests in facilities for accommodation and accommodation capacities.
	The **Institute for Statistics of Federation of BiH** also collects data on tourists arrivals (domestic and foreign), overnight stays by tourist origin and type of accommodation, and occupancy rate in tourist accommodation. Data are collected monthly on a yearly basis and the sources of data is the monthly indicators of accommodation statistics (Form TU-11). Only economic indicators are collected, no indicators regarding the social and environmental impacts of tourism.
	Data collected from these institutions are not harmonised, therefore it is not possible to obtain common figures. Nevertheless, the systems are improving compared to 5 or 10 years ago, since now they are able to collect more data.
	An additional challenge is the grey economy in tourism, accommodation which are not registered and so on, therefore the official figures are smaller than the actual numbers.
Geographical scale	Data are available at national level and as explained before it is performed by 3 different institutions.
Frequency of data collection	Data are collected every month on a yearly basis. They produce some reports monthly and quarterly and some thematic reports.
Data accessibility	Free of access.
Link to database	**Agency for Statistics of Bosnia and Herzegovina** **Institute for Statistics of Republika Srpska** **Institute for Statistics of Federation of BiH**
	Regional Level
Institutions and data collected	The Institute for Statistics of Federation of Bosnia and Herzegovina (FIS), and Institute for Statistics of Republika Srpska (RSIS).
	Municipal Level

Institutions and data collected	N/A
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	N/A
3. Open Big Data	
Institutions/ Organizations collecting data	There are some individual, ad hoc initiatives, thanks to projects that are implemented, but no long-term systems to use Big Data on tourism. Bosnia and Herzegovina is a partner in the Innoxenia - Innovation in Tourism in the Adriatic-Ionian Macroregion project, which aims to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfer and better elaboration of tourism strategies, policies and investments in the Adriatic – Ionian area.
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	InnoXenia: Information on prices, reputation, tourist flows, innovation and best practices.
Link to database	https://www.innoxenia.eu/
4. Sustainable tourism indicators (STI)	
STI initiatives	No.
Brief description of initiatives	No, the narrative in tourism is still only focusing on numbers of arrivals as a measure of tourism success. They are not collecting data on the social and environmental impacts of tourism.
Experience with ETIS indicators	No.
Data accessibility	N/A
Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**Innoxenia - Innovation in Tourism in the Adriatic-Ionian Macroregion - Interreg ADRION programme**

	Bosnia and Herzegovina participated in the InnoXenia project through the City of Mostar. The aim of this project was to establish an innovative tourism platform that would enable stakeholder networking in the destination, knowledge transfer and better elaboration of tourism strategies, policies and investments in the Adriatic – Ionian area.
6. Contacts for further information	
	The Agency for Statistics of Bosnia and Herzegovina
Notes	Bosnia and Herzegovina central government's power is highly limited, as the country is largely decentralized and comprises two autonomous entities: The Federation of Bosnia and Herzegovina and Republika Srpska, with a third unit, the Brčko District, governed under local government. The Federation of Bosnia and Herzegovina consists of 10 autonomous cantons with their own governments. Republika Srpska is relatively centralised, although it is split into 2nd-level administrative units—municipalities, or opštine—of which there are 64. This complicated political situation influences the statistical system, including tourism statistics.

6.3 Cyprus

Name of Country	Cyprus
1. Official Statistics	**National Level**
Institutions collecting data	Tourism data are primarily collected by the **National Statistics Office CYSTAT** which is the competent authority responsible for the compilation and the publication of most of the official statistical data in Cyprus. **Cyprus Tourism Organization – CTO (Deputy Ministry of Tourism):** The CTO uses CYSTAT data to publish other studies on sustainable tourism, cycling routes, and rural tourism. For these kinds of reports, they collect some primary data. The Deputy Ministry of Tourism also assigns the categories of hotels/ accommodation and has data on the number of hotels/ accommodations.
Main data collected	CYSTAT provides the following information on the tourism industry through annual reports: the movement of travellers, tourist flows, revenue from tourism, and movement of permanent residents. Additional available type of data relates to: • Types of businesses (following the EUROSTAT taxonomy): hotels, restaurants, creative industries. • Employment: labour survey. • Energy consumption: per industry (also private sources of information on energy consumption). • Environmental indicators: waste generation and treatment at municipal level, environmental protection and resource management expenditure in the public sector, environmental protection expenditures in industrial enterprises.
Geographical scale	Data are available at a national level.
Frequency of data collection	Residents of Cyprus travelling abroad, and Tourist Arrivals are recorded monthly. Revenue from Tourism and Movement of Travelers are available every three months. The rest of the data are recorded annually.

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Data accessibility	Most of the data are free of access.
Link to database	CYSTAT
	Regional Level
Institutions and data collected	N/A
	Municipal Level
Institutions and data collected	N/A
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	**CCEIA, Cyprus Center for European and International Affairs - Cyprus** The Cyprus Center for European and International Affairs, which is affiliated with the University of Nicosia, is an independent, non-profit making organization, whose mission is to advance multidisciplinary, scholarly and policy oriented research, provide advisory services and promote open debate with the objective of addressing problems and challenges at the national, regional, European and international level. The CCEIA routinely publishes books, articles, policy reports, and journals mostly relating to geopolitical and international relations topics. But as Med Regions are the most important destination in Europe, and Cyprus economy is substantially based on tourism, they developed many studies in sustainable tourism in the past, that now can be bettered with the Integrated Coastal Zone Management (ICZM) and Maritime Spatial Planning (MSP) approach. And they have also participated in EU tourism projects such as SHAPETOURISM and ROOMS2VET. **CHA (Cyprus Hotel Association)** CHA is a member of Hotrec Hospitality Europe, WTO and other international associations representing 4 to 5 stars hotels. It gathers information concerning tourism flows (tourist arrivals to Cyprus) and Revenue from Tourism. Its aim is to promote and upgrade the Cyprus tourism, of the hotel establishments in Cyprus and of the professional level of the hoteliers. **Hiraclitus Research Centre** Research centre of the Cyprus University of Technology. The Centre is part of UNESCO UNITWIN Network, and they are currently collecting tourism data.

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	Other tourism organizations:
	• ACTE: Association of Tourism Enterprises.
	• Cypriot Agrotourism Company: rural tourism.
	• CSTI Cyprus Sustainable tourism initiative: An independent, non-profit organisation registered in the Republic of Cyprus. Established in 2006 with the aim to promote the development of a sustainable approach to tourism in Cyprus. They have had initiatives like minimum sustainable standards for the Cyprus Hotel Industry and Greening Cyprus Beaches.
3. Open Big Data	
Institutions/ Organizations collecting data	The **Heraclitus Research Centre** is currently in discussion with the Deputy of Tourism to have funding to conduct research every year and complement traditional data sources.
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	**MITOS Platform** Heraclitus Research centre: big data analytics, **MITOS platform**, native navigator, massive learning, visual experience. Could be interesting for BEST MED. Association with mountain bikes association, data collection of routes with go pro cameras. Mitos application is a dynamic free e-tourist guide developed by "Heraclitus" Research Center of the Cyprus University of Technology. The purpose is to collect and distribute information and suggestions to the demanding visitors who want to explore the beauties of Cyprus.
Link to database	
4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	**MITOMED+** One of the main actions of MITOMED+ project includes the observation and monitoring of tourism data indicators, which can be accessed through the MITOMED+ portal. In the case of Cyprus, sustainable tourism indicators have been developed for three particular districts: Larnaca, Limassol, and Paphos. Some of the available indicators are: • Percentage of the destination area that is designated for protection • Percentage of the destination area under a biodiversity protection plan (%)

- Solid urban waste produced by destination in tons per person per day (relation between low and high season)

- Volume of solid urban waste recycled (relation between low and high season)

- Water consumption in litres per person per day (relation between low and high season)

- Energy consumption (KWh) per person per day (relation between low and high season)

- Number of blue flags, EMAS, ISO 14001 and other national environmental certifications Percentage of sand nourished

- Percentage of coastline Km of free access beaches relative to total lineal Km of beaches Water quality in tourist harbour's/marinas (ppm)

- Percentage of beaches accessible to all: mobility and sensorial disabilities (%)

Water, Energy and Waste project

The Cyprus Sustainable Tourism Initiative (CSTI) collaborates with organisations and stakeholders of the tourism industry in Cyprus and abroad to develop sustainable projects. The CSTI worked with Hotel Associations to engage the hotel industry and help implement simple changes which conserve energy and water. The project began with sustainability audits to develop a Greener Accommodations tool. Then, in partnership with 106 hotels the Sustainable Accommodations toolkit was implemented. As a result, 67 hotels achieved a 10% drop in water consumption, and a 1% reduction in energy used.

[SHAPETOURISM](): The Cyprus Centre for European and International Affairs participates as a project partner in the "SHAPETOURISM- NEW SHAPE AND DRIVES FOR THE TOURISM SECTOR: SUPPORTING DECISION, INTEGRATING PLANS AND ENSURING SUSTAINABILITY" project. Shapetourism improves the tourism knowledge framework, providing analysis and operational tools to shape and drive tourism sustainable growth, particularly for Cultural Destinations. The project supports policymakers and private operators to achieve attractiveness, growth, sustainability, taking into account the major challenges of global competition. The main output of the projects is the *Shapetourism Observatory*, comprising a Smart Tourism Data System, and containing data related to reputation, attractiveness, competitiveness, sustainability, and carrying capacity.

Experience with ETIS indicators	No.
Data accessibility	Free of access.
Link to database	https://mitomedplus.andalucia.org/mitomedplus/index.html
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**MITOMED+** One of the main actions of MITOMED+ project include the observation and monitoring of tourism data indicators to measure the sustainability of tourism activities and their economic, social and environmental outcomes and impacts in several M&C tourism destinations. This action includes the development of a system of indicators and of an online common open platform that will gather the data with the purpose to help local and regional policy makers monitor social and environmental impacts of maritime and coastal tourism, and benchmark with other M&C tourism destinations. MITOMED+ involves in this action maritime and coastal tourism destinations from 5 partners regions (Tuscany, Andalusia, Istria, Catalunya, and Cyprus) that are testing the indicators system with the aim to measure the sustainability level and plan development policies for improving the overall social and environmental impacts of tourism activities. **Water, Energy and Waste project** The Cyprus Sustainable Tourism Initiative (CSTI) collaborates with organisations and stakeholders of the tourism industry in Cyprus and abroad to develop sustainable projects. The CSTI worked with Hotel Associations to engage the hotel industry and help implement simple changes which conserve energy and water. The project began with sustainability audits to develop a Greener Accommodations tool. Then, in partnership with 106 hotels the Sustainable Accommodations toolkit was implemented. As a result, 67 hotels achieved a 10% drop in water consumption, and a 1% reduction in energy used. The Heraclitus Research Centre is involved in several EU funded projects. Strategic projects working on sustainable tourism and data collection. Currently 2 Horizon projects, mainly on cultural tourism and digitalization.
6. Contacts for further information	

Deputy of Tourism

Heraclitus Research Centre

National Statistical Office

6.4   Gibraltar

Name of Country	Gibraltar	
1. Official Statistics	**National Level**	
Institutions collecting data	Tourism data are collected by the HM Government of Gibraltar.	
Main data collected	The HM Government of Gibraltar collects data concerning: • Tourist Movements: Air Arrivals/Departures, UK scheduled flights for seat used, Land frontier visitor arrivals, Private motor vehicles arriving via land frontier, Number of coaches arriving via land frontier, Yacht arrivals by month and year, Total number of cruise liner arrivals by month and year, Total Number of cruise passengers arrivals by month and year • Coach Park: Coach park revenue, Number of coach and passenger arrivals at the coach park • Conferences: Conferences • Museums: Museum Visitors • Tourists: Total number of tourist information queries by year and month, Breakdown of total number of tourist information queries by month • Upper Rock Nature Reserve: Upper Rock Nature Reserve visitors & Revenue per ticket type expressed Through the National Statistics Office, it is possible to also find information about other sectors, besides tourism, that are considered important too. For example Culture, Health, Education, Employment, and Water.	
Geographical scale	Data are available at a national scale.	
Frequency of data collection	Data are observed by year and month.	
Data accessibility	Free of access.	
Link to database	https://www.gibraltar.gov.gi/statistics/statistics-topic-area/2020/tourism	
	Regional Level	
Institutions and data collected	N/A	
	Municipal Level	

Institutions and data collected	N/A
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	The **University of Gibraltar** has two research institutes, the Institute for Gibraltar and Mediterranean Studies, and the Institute of Life and Earth Sciences which are vital branches to the research community of the University, providing support and expert knowledge at a number of our associate campuses, including the Garrison Library, the Gibraltar Museum, and the Gibraltar Botanic Gardens. Even if tourism itself is not considered, we can find information about nature and environment; culture; business and many others. These sectors can be important to consider as they can influence the tourism sector.
3. Open Big Data	
Institutions/ Organizations collecting data	Currently there are no tourism big data repositories being developed in Gibraltar.
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	N/A
Link to database	N/A
4. Sustainable tourism indicators (STI)	
STI initiatives	No.
Brief description of initiatives	
Experience with ETIS indicators	No.
Data accessibility	N/A
Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	N/A

6. Contacts for further information	
	N/A
Notes	Gibraltar is a British Overseas Territory bordering Spain. It only has a surface area of 6.7 km2, and due to its small size and proximity to Spain, around 90% of its visitors are day-trippers. Gibraltar is considered to be underprovided in terms of tourist services, especially accommodation, and because of Gibraltar's particular characteristics there are not many initiatives to collect tourism data.

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7.1 Algeria

Name of Country	Algeria
1. Official Statistics	**National Level**
Institutions collecting data	Tourism data can be found on ONS (Office National des Statistiques): http://www.ons.dz/ The National Office of Statistics is the Algerian ministry charged with the collection and publication of statistics related to the economy, population, and society of Algeria at national and local levels. Its head office is in Algiers. The first source of tourism data collected by the ONS comes from the police stations at the county borders. From there the arrivals are categorized following three criteria: foreigners (international arrivals), residents and Algerians living outside the country. Those who access a local accommodation (hotel or other form of official accommodation) have to fill in a questionnaire. The data collected by hotel owners are transmitted monthly to the regional administration Direction du Tourisme et de L'artisanat de la Ouilaya and later reach the national statistics office.
Main data collected	Data available: • the Movement in Frontiers (Visitors arrivals from abroad per country of origin, per objective of trip and nationals' departures in frontiers per country). • the Structure and Hotel Movements (Distribution of Hotels Capacity; Arrivals and Nights Distribution in Touristic Establishments; Non-Residents' Arrivals in Touristic Establishments). • Investments and Tourism Agencies (Distribution of Development Projects)
Geographical scale	Data are available at the ouilaya (department) level and at the regional level. Some data could be also found at the level of specific tourism development area regions, in particular data concerning planning and territorial development for tourism functions, as well as environment protection.
Frequency of data collection	Data are collected monthly
Data accessibility	Data are free of access
Link to database	*http://www.ons.dz/spip.php?article2584*

	Regional Level
Institutions and data collected	Data are collected by the departmental Direction du tourisme et de l'artisanat de la ouilaya. There are 48 departments at the national level, which are in charge with data collection, tourism promotion and planning. Local interventions are done in cooperation with municipalities, but the main responsibilities rely on the departmental directions for tourism, which are representing the ministry at the local level.
	Municipal Level
Institutions and data collected	N/A
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	N/A
3. Open Big Data	
Institutions/ Organizations collecting data	N/A
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	N/A
Link to database	N/A
4. Sustainable tourism indicators (STI)	
STI initiatives	NO
Brief description of initiatives	
Experience with ETIS indicators	NO
Data accessibility	
Link to database	
5. EU funded projects on tourism data collection	

Project details (programme, scope, main outputs, website)	N/A
6. Contacts for further information	

7.2   Egypt

Name of Country	Egypt	
1. Official Statistics	**National Level**	
Institutions collecting data	Tourism data are collected by: **Central Agency for Public Mobilization and Statistics(CAPMAS)** **Ministry of Tourism and Antiquities** **Central Bank of Egypt**	
Main data collected	The Central Agency for Public Mobilization and Statistics publishes a Statistical Yearbook, which contains the following tourism data: • Tourists distribution, by country groups. • Tourists distribution by arrival method (air, land, sea). • Hotel capacity. • Occupancy percentage of hotels. • Development of hotels, resorts and floating hotels numbers. Also, data provided by CAPMAS, the Ministry of Tourism and Antiquities, Central Bank of Egypt to the UNWTO contains information related to the number of employees by tourism industries, number of jobs by status in employment, and macroeconomic indicators related to international tourism (inbound and outbound tourism expenditure over GDP, tourism balance over GDP, inbound and outbound tourism expenditure over exports and imports of goods, among others).	
Geographical scale	Data are mostly available at a national level. Only hotel occupancy data are available for some selected regions (Cairo, South Sinai, Luxor, Red Sea, Aswan, Alexandria, and Giza).	
Frequency of data collection	Data are observed yearly.	
Data accessibility	Free of access.	
Link to database	CAPMAS	
	Regional Level	
Institutions and data collected	N/A	

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	Municipal Level
Institutions and data collected	N/A
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	**Egyptian Center for Economic Studies (ECES)** The ECES publishes an annual report called Egypt's Economic Profile and Statistics, which includes and analyses tourism data such as tourism share of GDP, tourism revenues, targeted versus real achieved GDP growth, and tourism projects.
3. Open Big Data	
Institutions/ Organizations collecting data	Currently there are no tourism big data repositories being developed in Egypt.
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	N/A
Link to database	N/A
4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	According to Egypt's current "Tourism Reform Program", one of Egypt's goals towards sustainable tourism development is to be recognized as a responsible destination with environmental and social sensitivities to meet future demand on green tourism products and services. For this purpose, "green performance indicators" have been developed to measure progress and to support promotional efforts. **Green Star Hotel Certification Program** The Green Star Hotel (GSH) is a national green certification and capacity-building program managed by the Egyptian Hotel Association (EHA) under the patronage of the Egyptian Ministry of Tourism. The GSH program offers an opportunity for hotels operating in Egypt to be internationally recognized for raising their environmental performance and social standards while reducing their operational costs. A team of certified local and international experts guide interested hotels through a sequence of training and information support sessions leading to field

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	audits to ensure compliance with the program standards prior to granting the GSH certification. The following aspects are evaluated: • Design, architecture, and surroundings. • Guest information. • Environmental management. • Housekeeping. • Sustainable management. • Training and instructions. • Energy. • Water. • Waste. • Food and beverage/Kitchen. • Gardening and beach area.
Experience with ETIS indicators	No.
Data accessibility	Not publicly available.
Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	No previous EU funded projects on tourism data collection have taken place in Egypt. Additional projects: **USAID Sustainable Investment in Tourism in Egypt (SITE)** USAID's purpose was to conserve, preserve and promote more effective management of Egypt's cultural heritage resources, with the aim of enhancing cultural tourism potential while also providing job opportunities for communities affected by the decrease in tourism. For this purpose, USAID used a mixed methods approach, which enabled the triangulation of qualitative and quantitative data, thereby strengthening the validity, reliability, and integrity of the observed findings. Data collection involved extensive desk research of partner outputs and independent sources, together with an agreed program of key informant interviews (KIIs) in all project locations. In this way, data were collected to assess the management of cultural heritage resources and its economic impact.
6. Contacts for further information	

	N/A
Notes	Most of the international tourism projects in which Egypt has participated in cooperation with the EU or USAID are usually related to the preservation of historical and cultural heritage.

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7.3   Israel

Name of Country	Israel
1. Official Statistics	**National Level**
Institutions collecting data	In Israel there is a dual operation for what concerns tourism data gathering. Tourism data are collected by: Central Bureau of Statistics Ministry of Tourism: The Ministry of Tourism is an economic ministry; whose primary aim is to increase economic activity. The ministry is responsible for the planning, development, and marketing policies in the tourism industry. Through this research institution, data are available about investment in the tourism sector, conferences, local and abroad tourism bureaus, tourism movements, overnight stays and general reviews. Another source of tourism information is the Israel Hotel Association: Data is not freely available, it is only for internal use of the association. Sometimes they share information with researchers, but not on a regular basis.
Main data collected	The two entities collaborate: all tourism information from the Ministry and publications is joint by the Ministry and the Bureau. The Israel Bureau of statistics publishes data in 3 ways: 1. **Annual book of statistics:** tourism and hospitality included 2. **Quarterly publications:** tourism and hospitality statistics are much more detailed than the yearly book 3. **Monthly publications**: short update with the main figures Occasionally they have other publications, such as analysis, trends reports, and comparisons. Data are available regarding: • Tourist Movements (Arrivals and departures, day visits) • Hotels Income, Expenditure and Product • Accommodation Services

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	• International Tourism
	• Income and Expenditure in Foreign Currency
	According to the Airport Survey, which is carried out every year, they consider a sample of 20.000 people, including international tourists. Many variables are collected. This data can be found in the Ministry of Tourism. Mainly economic variables (expenditure, what items they buy, average length of stay, consumer behaviour in terms of accommodation, quality of Israel products). Outsourced to a research company but financed and published by the ministry.
	The Ministry sometimes commissions studies to universities, in order to look at specific issues, like tourism planning, human resources in tourism.
	Additionally, data provided by the Ministry of Tourism to the UNWTO contains further information related to the number of employees by tourism industries, number of jobs by status in employment, and macroeconomic indicators related to international tourism (inbound and outbound tourism expenditure over GDP, tourism balance over GDP, inbound and outbound tourism expenditure over exports and imports of goods, among others).
Geographical scale	Data are generally available at national level, but the Central Bureau of Statistics also collects at regional and sometimes municipal level.
Frequency of data collection	Tourism Movements are registered monthly; accommodation services, international tourism, income and expenditure in foreign currency and hotels' income, expenditure and product are collected annually.
	The Israel Bureau of statistics publishes data with the following frequency:
	• Annual book of statistics: tourism and hospitality included.
	• Quarterly publications: tourism and hospitality statistics are much more detailed than the yearly book.
	• Monthly publications, short update with the main figures.
Data accessibility	Free of access.

Link to database	_https://www.cbs.gov.il/en/subjects/Pages/Tourism-and-Hotels.aspx_
	Regional Level
Institutions and data collected	N/A
	Municipal Level
Institutions and data collected	Municipality of Tel Aviv-Yafo: Statistical data about municipality jurisdiction, climate, population, employment, tourism, museums, transports and so on. Jerusalem Institute for Policy Research: Data about tourist hotels and rooms, overnight stays, accommodation occupancy, hotel revenues and tourist characteristics. This is a not for profit research organization, they used the Central Bureau of statistics, secondary resources of data.
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	There are no observatories of tourism in Israel. Nevertheless, there is a **Center for Tourism, Pilgrimage & Recreation Research** in Haifa, where they use the data collected by the Bureau of Statistics. The Research Authority serves as the administrative and financial framework for research activities, scientific experiments and technical analyses carried out by University faculty, and TRDF staff.
3. Open Big Data	
Institutions/ Organizations collecting data	Government of Israel Central Bureau of Statistics
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	**Open Government Data Portal** The Israeli government has developed an open data initiative which also contains tourism statistics. Data are collected from different official sources such as the Ministry of Tourism, Ministry of Foreign Affairs, Ministry of Agriculture and Rural Development, Government ICT Authority, and different municipalities. Only available in Hebrew. **Automatic Data Collection on the Internet for Measuring the Sharing Economy in the Short-Term Accommodation Sector**

	The [Central Bureau of Statistics](#) carried out a research to try to estimate the impact of the sharing economy on the tourism sector. In the absence of an accurate estimate of the volume of activity of the sharing economy in Israel, an experiment was made to estimate it by use of automatic data collection. Through the automatic collection at the Airbnb website, detailed information was received on the properties offered for short-term rental within Israel. Data on the geographical distribution of assets, characteristics of assets, and how many people offer properties for rent through the platform, the country of origin of the tourists who were hosted, rental rates and more. Through these data, together with a combination of information from other sources (the Ministry of Tourism's Incoming Tourism Survey, tourist arrivals data, etc.), an annual estimate was made of the income received from this type of activity.
Link to database	https://data.gov.il/dataset?tags=תיירות
4. Sustainable tourism indicators (STI)	
STI initiatives	No.
Brief description of initiatives	Nevertheless, there is the **Israel Ministry of Environmental protection**, which is responsible for developing standards for protecting the environment and enforcement. The Ministry's areas of activity include treatment of solid waste, reducing air pollution, prevention of pollution of water sources and raising awareness for recycling, preservation, rehabilitation and prevention of over-exploitation of ecosystems, natural resources and open spaces. The Ministry of Environmental Protection develops a series of [environmental indicators](#) to provide a comprehensive picture of the state of the environment in Israel and describe the quality of environmental resources, the processes of pollution, and the means of treating the wastes produced by human activity. These indicators are divided into the following categories: • Air Quality (Concentration of Respirable Particles, Ozone, and Nitrogen Oxides). • Biodiversity (Species in Danger of Extinction, Number of Invasive Species). • Energy & Economic Activity (Primary Supply of Energy & GDP per Capita, Energy Consumption per Capita, Electricity Consumption). • Land Use (Built Areas, Open Spaces). • Population (Population Size, Growth, and Density). • Seas (Lead concentrations in sediments along the coast, Cleanliness level of the Mediterranean Coasts on the basis of number of plastic pieces per unit of land).

	• Water (Water Quality - Nitrogen and Phosphorus Concentrations, Chloride Concentrations).
Experience with ETIS indicators	No.
Data accessibility	N/A
Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**SPOT - Social and innovative Platform On cultural Tourism and its potential towards deepening Europeanisation (2020-2022)** Israel participates in the EU-funded SPOT project through the Bar Ilan University. The SPOT project aims to develop a new approach to understanding and addressing cultural tourism and to promote development of disadvantaged areas. Specifically, it will identify layers of data and capitalise on existing practice. It will explore emerging forms of cultural tourism, identifying opportunities and developing strategies allowing local people to gain benefit from their precious cultural assets. SPOT will engage academics and stakeholders for development of policy proposals and generalise lessons learnt through an Innovation Tool to assist policymakers and practitioners. **ARTIST - Agenda for Research on Tourism by Integration of Strategies for Transport** The project aims to demonstrate how tourism statistics can be applied to related transport mobility, as well as providing lessons for urban and transport planners in managing tourism flows. The objectives of the ARTIST project were to analyse the share and dynamics of tourism in total mobility; to review existing visitor management practices, especially in European cities with large tourism flows, and to demonstrate the need for a Community transport initiative on this issue. Israel participated in the project through the Center for Tourism, Pilgrimage and Recreation Research.
6. Contacts for further information	
	Dr. Yaron Ergaz Director of the Research and Statistical Department Israel Ministry of Tourism YaronE@tourism.gov.il

7.4 Jordan

Name of Country	Jordan

1. Official Statistics	National Level
Institutions collecting data	Tourism data are collected by the Ministry of Tourism and Antiquities (MOTA - Jordan) and by Jordan Tourism Board (JTP, Jordan).
Main data collected	MOTA provides information on the tourism industry and tourism related industry; as for the tourism industry, data collected regards tourism supply (accommodations, museum, etc.), tourism demand (flows, expenditure, motivation, etc.) and a large amount of related information allowing to calculate tourism indicators. **Tourism Activities & Employment**: Data related to the number tourist establishments (accommodation, transportation, travel agencies, food and beverage services), as well as data on employment in the tourism sector by gender, nationality and location. Number of Employees in Different Tourism Activity Number of Employees in Different Tourism Activity by Nationality Number of Employees in Different Tourism Activity by Locality Hotels, Apartments & Others, Rooms & Number of Employees Distributed by Gender & Nationality Number of the Tourism Activity by Location **Classification of Visitors**: Number and percentage variation of tourist arrivals by continent and nationality. Monthly data on outbound tourism is also included. Overnight & Same day visitors Monthly Overnight & Same day visitors by Nationality Overnight & Same day visitors by Region All Arrivals by Border and Region Number of Jordanian Resident Traveling Abroad for the Purpose of Tourism

Package Tours: Data related to package tours and cruise passengers, by continent and main destination.

Number of Tourist, Nights & ALS for Package Tours by Countries Groups

Monthly Number of Tourist, Nights & ALS for Package Tours

Same Day Visitors and Cruise Passengers - package Tours

Distribution of Package Tours by Place of Stay

Tourism Income and Expenditure: Monthly tourism receipts and expenditures, including percentage variation. Expressed in millions of Jordanian dinars.

Tourism Receipts and Expenditures by month

Tourism Receipts by month & Country Groups

Visitors to Touristic sites: Number of visitors to the main tourist attractions by nationality.

Visitors to Main Tourist Sites by Nationality

Number of Visitors to Touristic Sites by Locations

Monthly Number of Visitors to Petra by Nationality

Monthly Number of Visitors to Jerash by Nationality

Monthly Number of Visitors to Um Qais by Nationality

Monthly Number of Visitors to Nebo by Nationality

Monthly Number of Visitors to ajlun by Nationality

Monthly Number of Visitors to Madaba - Map by Nationality

Monthly Number of Visitors to Rum by Nationality

Monthly Number of Visitors to karak by Nationality

Monthly Number of Visitors to Baptism by Nationality

Monthly Number of Visitors to Desert Castles by Nationality

Monthly Number of Visitors to Pella by Nationality

Monthly Number of Visitors to Folklore Museum by Nationality

Monthly Number of Visitors to Jordan's Museum of Archeology

Monthly Number of Visitors to Iraq AL meer by Nationality

Monthly Number of Visitors to Madaba Museum by Nationality

Monthly Number of Visitors to Salt Museum by Nationality

Monthly Number of Visitors to Um Aljmal by Nationality

Monthly Number of Visitors to Madaba Visit Center by Nationality

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	Monthly Number of Visitors to Shobak by Nationality Monthly Number of Visitors to Afra by Nationality Monthly Number of Visitors to Mkawer by Nationality Monthly Number of Visitors to Um Rasas by Nationality Monthly Number of Visitors to Halabat Castel by Nationality **Establishment Statistics Accommodation**: Additional information regarding tourist accommodation occupancy, classification (1-5 Stars, Apartments, Suites, Camping, Hostels), and main location. Tourist Accommodation Establishments Indicators Beds Night / Arrivals at Hotels by Classification & Month Beds Night / Arrivals at Hotels by Location & Country Groups Monthly Beds Night/Arrivals at Hotels by Country Group Beds Night / Arrivals at Hotels by Classification & Country Groups Beds Night / Arrivals at Hotels by Nationality Hotels Occupancy by Classification Hotels Occupancy by Location & Classification Hotels Occupancy by Location **Tourism Satellite Account:** The Jordan Tourism Satellite Account is also periodically published by the USAID Building Economic Sustainability through Tourism Project, in collaboration with the Ministry of Tourism and Antiquities and the Department of Statistics. The latest TSA was published in 2016 and it provides information about tourism demand, tourism expenditure, and the overall contribution of tourism towards Jordan's economic development.
Geographical scale	Data are generally available at national and regional detail; some information (accommodation) is also available at the municipality level.
Frequency of data collection	Data on tourism accommodation are observed yearly; tourism flows are recorded monthly. Time series of tourism flows and supply are available, at both national and regional levels.
Data accessibility	Free of access.
Link to database	https://www.mota.gov.jo/Contents/stat2019.aspx
	Regional Level

Institutions and data collected	N/A
	Municipal Level
Institutions and data collected	The general procedure in Jordan is that all the tourism and hospitality sector (hotels ...etc.) or any related sector (airports) have to send a report to the Ministry of Tourism and the police every day in order to collect relevant tourism data.
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	Jordan Strategy Forum: The Jordan Strategy Forum (JSF) is a not-for-profit organization, which represents a group of Jordanian private sector companies that are active in corporate and social responsibility (CSR) and in promoting Jordan's economic growth. The JSF also offers a rare opportunity and space for the private sector to have evidence-based debate with the public sector and decision-makers with the aim to increase awareness, strengthen the future of the Jordanian economy and apply best practices. They published the report Enhancing the Competitiveness of the Tourism Sector in Jordan: Prospects and Adaptation to New Trends - February 2020
3. Open Big Data	
Institutions/ Organizations collecting data	Currently there are no tourism big data repositories being developed in Jordan.
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	N/A
Link to database	N/A
4. Sustainable tourism indicators (STI)	
STI initiatives	Yes.
Brief description of initiatives	According to Jordan's National Tourism Strategy 2011-2015, Jordan prioritizes environmental sustainability by adopting initiatives that protect and preserve the environment so that it can be enjoyed by current and future generations as well as visitors. The tourism sector in Jordan has taken the first step towards this by incorporating environmental concerns at the planning level; and the sector will adopt initiatives in areas such as transport, energy use, water, waste reduction, management

and conservation in a planned effort to reduce the environmental footprint. In this sense, Jordan implemented the **WEF Travel and Tourism Competitiveness Index (TTCI)** to monitor the performance of the newly adopted tourism strategy, and has set targets for achievement in each which can be tracked on an annual basis.

Green Key Ecolabel

The Royal Marine Conservation Society of Jordan has been in charge of the Green Key ecolabel certification since 2009. The Program awards a Green Key certification to Touristic Establishments that meet a set of high standard environmental requirements in a set of 13 categories (Environmental Management, Staff Involvement, Guest Information, Water, Washing and Cleaning, Waste, Energy, Food and Beverage, Indoor Environment, Green Areas, Corporate Social Responsibility, Green Activities, Administration) and 130 criteria. Jordan has 27 establishments registered & awarded with the Green Key international award.

Experience with ETIS indicators	No.
Data accessibility	Not publicly available.
Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	NEST – Network of Education in Sustainable Tourism / Financed by the Agenzia Italiana per la Cooperazione allo Sviluppo (AICS), with the University of Bologna and implemented by its Center for Advanced Studies in Tourism (CAST) and the Centro Universitario di Bertinoro (Ce.U.B.). Italy. 5/11/2018 to 16/12/2018

The aim of this project is the creation of efficient and structured intervention tools, along the Mediterranean Sea, in order to revive the Tourism sector and adopt Sustainable Tourism practices that are fundamental for their economies. A sustainable development of the Tourism sector, which is considered strategic in terms of employment, contribution to national GDP and social development, could be achieved not only through investments in infrastructures and technology necessary to enhance tourism supply, but also by undertaking wide-ranging capacity building. The Autumn School in Sustainable Tourism will provide high-level skills connected with the Tourism industry, create a network of knowledge and favour spill over effects among participants. Therefore, the training program will enable candidates to exploit all the tangible and

intangible assets at their disposal once they return to their homeland.

Additional projects:

Jordan Tourism Development projects:

USAID (United States Agency for International Development) has been working with the Government of Jordan on the strengthening of their tourism statistics and the development of a TSA since 2007 through a series of tourism projects. Additionally, a set of performance indicators for tourism have been proposed, related to conservation capacity of archaeological and heritage sites, environmental protection of natural resources, attractiveness of Jordan as a tourism destination, female empowerment and gender equality, specialized tourism products and services, among others. Further, the Jordan Development Knowledge Management Portal contains relevant data and reports derived from USAID initiatives in Jordan.

USAID's Jordan Local Enterprise Support (LENS):

Tourism, a focus sector of the Jordan Local Enterprise Support (LENS) project, supports local enterprise development around targeted destinations and integrating local suppliers into hospitality value chains, in addition to product development and marketing in niche sub-sectors such as adventure and experiential tourism in targeted locations. Under LENS, FHI 360 has pioneered the **Alternative Travel Local Analytics System (ATLAS)**, an empirical model that measures the impact of tourism in terms of revenue, job creation and investment on communities and destinations.

6. Contacts for further information	
	May Hwaidi ay Tourism Ministry of Jordan may.hwaidi@mota.gov.jo Bashar Khawaja at Jordan Tourism Board (JTP) bashark@visitjordan.com

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7.5   Lebanon

Name of Country	Lebanon
1. **Official Statistics**	**National Level**
Institutions collecting data	Tourism data are collected by the following institutions: **Central Administration of Statistics**: The Central Administration of Statistics (**CAS**) is in charge of collecting, processing, producing and disseminating social and economic statistics at the national level. CAS applies the United Nations Fundamental Principles of Official Statistics, and the EU Statistics Code of Practice. **Lebanon Ministry of Tourism**: Originally created in the 1930s within the Ministry of National Economy, the main role of the Ministry of Tourism is to monitor and supervise the Lebanese tourism sector. Additional data are provided by: Directorate-General for General Security (Ministry of the Interior) Central Bank of Lebanon Ministry of Culture Ministry of the Environment
Main data collected	Tourism statistics provided by the **Central Administration of Statistics** are composed of: - passengers' movement, - visitors to tourist sites, - hotels, - furnished apartments, and - car rental agencies The **Ministry of Tourism** publishes the following data: - Tourism accommodation establishments, - Restaurants and similar establishments, - Capacity of tourist accommodation establishments,

- Guest flows in collective tourist accommodation,

- International flows (inbound/outbound),

- Rates of restaurants,

- Visits to tourism sites.

A yearly report is also compiled by the **Ministry of Tourism's Service of Research and Studies**, identifying the most interesting trends and analysing the country's tourism data. However, it was last published in 2013. It is also important to add that tourism arrivals data do not include visitors of Lebanese, Syrian, and Palestinian nationality.

Tourism data published in the official websites of the Ministry of Tourism and the Central Administration for Statistics are only available until the years 2013 and 2014. However, information compiled by the **UNWTO** shows that data for inbound tourism (arrivals by region and mode of transport, overnight stays, and expenditure by trip purpose), outbound tourism (expenditure and main purpose of trip), tourist industries (number of establishments by tourism sector, number of available rooms, and occupancy rate), employment (number of employees by tourism industries), and macroeconomic indicators related to international tourism (inbound and outbound tourism expenditure over GDP, tourism balance over GDP, inbound and outbound tourism expenditure over exports and imports of goods, among others), were collected up until the year 2019 by the Ministry of Tourism.

The **Directorate-General for General Security** (Ministry of the Interior) is in charge of providing the number of arrivals through all ports (land, sea, air).

Central Bank of Lebanon: Balance of payments statistics (tourism exports and imports).

Ministry of Culture: Data regarding the number of visits to main tourist sites.

Ministry of the Environment: Basic environmental indicators, such as: Protected Coastal Area, Number of Sustainable Development Plans / Agendas adopted and implemented by local authorities, Artificialized coastline per total coastline, Coastline land cover, Sea water quality, Annual Energy Consumption, Total Water Demand per Sector. Specific tourism

	indicators include: Number of visitors to protected areas, Currency balance due to tourism activities, Number of international tourists per 100 inhabitants, and Number of tourist hotel nights per hundred inhabitants.
Geographical scale	Data are mostly available at national level, while hotel occupancy data are also published at a regional scale, and the number of museums visitors is collected at a local level.
Frequency of data collection	Data on tourism accommodation are observed yearly. Data on tourism flows are recorded every 2-3 months.
Data accessibility	Free of access. Further data is accessible after asking for authorization from the Ministry of Tourism.
Link to database	http://www.cas.gov.lb/index.php/statistical-yearbook#2006
	Regional Level
Institutions and data collected	N/A
	Municipal Level
Institutions and data collected	N/A
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	**American University of Beirut** The Nature Conservation Center at the American University of Beirut implemented a project entitled Baldati Bi'ati (translation: my village, my environment) in 2011 and 2012 that established, in collaboration with local communities, a database of features related to the environment, the nature of water resources, pollution and activities that can endanger the environment, sustainability of life in villages, ecotourism activities that can be implemented in villages and cultural and social landmarks.
3. Open Big Data	
Institutions/ Organizations collecting data	Currently there are no tourism big data repositories being developed in Lebanon.
Type of data collected, accessibility of data, integration with statistical	N/A

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sources at regional/national/local level	
Link to database	N/A
4. Sustainable tourism indicators (STI)	
STI initiatives	No.
Brief description of initiatives	Although there are no initiatives to explicitly collect sustainable tourism indicators, the Ministry of the Environment compiles basic environmental indicators, such as: Protected Coastal Area, Number of Sustainable Development Plans / Agendas adopted and implemented by local authorities, Artificialized coastline per total coastline, Coastline land cover, Sea water quality, Annual Energy Consumption, Total Water Demand per Sector. Specific tourism indicators include: Number of visitors to protected areas, Currency balance due to tourism activities, Number of international tourists per 100 inhabitants, and Number of tourist hotel nights per hundred inhabitants.
Experience with ETIS indicators	No.
Data accessibility	N/A
Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	MEDSTAT: The Central Administration of Statistics in Lebanon actively cooperates with MEDSTAT – the Euro Mediterranean Statistical Cooperation Programme, which aims at supporting the Mediterranean Partner Countries in collecting reliable and coherent statistical data, and tourism is one of its priority sectors. The MEDSTAT programme experts have suggested that the main priority would be to develop the necessary tourism data to feed the national accounts statistics, developing the tourism satellite account (TSA), and improving the quality / frequency of the hotel survey. Additional projects: TAIEX workshop on Rural Tourism Statistics: TAIEX is the Technical Assistance and Information Exchange instrument of the European Commission. A workshop on Rural Tourism Statistics was held in Beirut on 5 and 6 May 2016 in the framework of the EU-funded Technical Assistance and

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	Information Exchange Instrument (TAIEX). The aim of the expert mission is to enhance the beneficiary's skills to collect and analyse data on rural accommodation establishments for adequate planning and promotion of the tourism sector. **Lebanon Rural Tourism Strategy**: The goal of the five-year strategy is to enhance economic opportunities in Lebanese rural areas through improving the competitiveness of specific value chains, including rural tourism and another set of agriculture sectors and food products. The rural tourism strategy follows a rural tourism value chain assessment including a SWOT analysis of the sector (strengths, weaknesses, opportunities, and threats). The assessment included an analysis of the current situation of rural tourism in Lebanon. It identified main rural tourism stakeholders, dynamic trends in rural tourism and the different segments and sub segments. The development of the rural tourism strategy is in line with the identified need to strategize and advocate for the development of the rural tourism sector through cooperation and common action among stakeholders.
6. Contacts for further information	
	N/A

7.6 Palestine

Name of Country	Palestine	
1. Official Statistics	**National Level**	
Institutions collecting data	Tourism data are collected by the **Palestinian Central Bureau of Statistics** (PCBS).	
Main data collected	**PCBS** gathers information through surveys on the tourism department. There is information about: • occupancy of hotels. • tourism activities (tourism establishments, intermediate consumption, employees involved in the tourism sector). • outbound tourism • inbound tourism and • domestic tourism. Specifically, the PCBS provides quarterly and yearly tourist accommodation data related to the average length of stay, number of guests by nationality, number of hotels and hotel rooms, average room occupancy, as well as hotel employment data. Last updated in 2019. Data related to tourism activities (Food and beverages establishments, manufacture and sale of crafts and souvenirs, recreation and entertainment activities, transportation, travel agencies, and transportation) are also available with regards to the number of enterprises, total expenditure, number of employees, and average wages. Last updated in 2018. Outbound and domestic tourism data contain information about the number of Palestinian households that conducted outbound or domestic trips, average expenditure, and destination. Last updated in 2018. Inbound tourism data are mostly related to the number of visitors and it is distributed by age, nationality, age, main visited attractions, and average length of stay. Last updated in 2009. Additionally, a tourism satellite account for the years 2009-2017	

	was developed specifying the contribution of tourism consumption and expenditure to gross domestic product (GDP).
Geographical scale	Data are available mostly at a national level. However, the following data are also available at a regional level (North of West Bank, Middle of West Bank, Jerusalem Governorate, South of West Bank, and Gaza Strip):
	• Number and Percentage of Guest Nights by Nationality and Region, 2017
	• Percentage Distribution of Households that Conducted Domestic Trips by Destination of Trip and Region, 2018
	• Average Households Expenditure during the Domestic Trip by Type of Expenditure and Region, 2018
	• Average Number of Employees in the West Bank Hotels by Region, Quarter, Type of Work and Sex, 2019
	• Percentage Distribution of Inbound Visitors by Age Group and Region, 2009
	• Percentage Distribution of Most Frequent Nationality of Inbound Visitors by Country of Residence and Region, 2009
	• Average Length of Stay of Inbound Visitors by Region and Destination, 2009
	Only data regarding the Percentage Distribution of Households that Conducted Domestic Trips by Destination of Trip and Region are available at a destination level from the Palestinian Central Bureau of Statistics.
Frequency of data collection	Data on tourism accommodation are observed quarterly and annually for the period 2009-2019. The rest of the tourist data is published annually.
Data accessibility	Free of access.
Link to database	http://www.pcbs.gov.ps/site/lang__en/507/default.aspx#T
	Regional Level
Institutions and data collected	N/A
	Municipal Level
Institutions and data collected	N/A
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	The Palestinian Central Bureau of Statistics (PCBS) usually collects tourism data in collaboration with the **Representative**

	Office of Norway to the Palestinian Authority, and the **Swiss Development and Cooperation Agency (SDC)**. The **Palestine Economic Policy Research Institute (MAS)** in cooperation with the Palestinian Central Bureau of Statistics (PCBS) and the Palestine Monetary Authority (PMA), also publishes the "Quarterly Economic and Social Monitor" which contains data regarding the contribution of tourism towards Palestine's economy. The **Alternative Tourism Group Study Center** is an NGO that advocates for responsible tourism in Palestine, and periodically publishes articles, journals, and reports related to tourism development in Palestine. In addition, they also conduct a periodic "Tourism Scan", which aims to collect all relevant data regarding tourism patterns in Palestine published by media outlets, external websites, and international organizations.
3. Open Big Data	
Institutions/ Organizations collecting data	Currently there are no tourism big data repositories being developed in Palestine.
Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level	
Link to database	
4. Sustainable tourism indicators (STI)	
STI initiatives	No.
Brief description of initiatives	N/A
Experience with ETIS indicators	No.
Data accessibility	N/A
Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	No EU funded projects on tourism data collection have taken place in Palestine. However, Palestine was part of **Euromed Heritage IV (2008-2012)**, an EU project consisting of a

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	framework for exchanging experiences, channelling the dissemination of best practices and new perspectives aimed at the development of an institutional cultural environment. An important aspect of the project was the collection of inventories of cultural heritage that included movable goods, immovable properties, historic sites and cultural landscapes, intangible heritage, etc., with an emphasis on data gathering, formatting and accessibility.
6. Contacts for further information	
	N/A
Notes	Most international cooperation projects in Palestine are related to education, housing, and sustainable tourism development and promotion. As a result, there are no initiatives strictly dealing with tourism data only.
	Given Palestine's current border situation and territorial dispute, the Palestinian Central Bureau of Statistics (PCBS) is not able to produce accurate tourism data for all Palestinian territories. Also, since most data are collected with the financial support of external organizations, mainly the Representative Office of Norway to the Palestinian Authority, and the Swiss Development and Cooperation Agency (SDC), the publication of tourism data tends to be rather infrequent.

7.7   Tunisia

Name of Country	Tunisia
1. Official Statistics	**National Level**
Institutions collecting data	**Ministry of Tourism** **National Institute of Statistics (INS)** **Central Bank of Tunisia**
Main data collected	**Ministry of Tourism**: There is information about tourist receipts, overnight stays, and arrival to the borders. This data is collected yearly, at a national level. **National Institute of Statistics (INS)**: The following data are available: • Touristic Investment • Number of touristic establishments • Bed capacity • Direct tourism jobs • Average length of stay (days) • Touristic foreign exchange earnings • Nights and Lodging • Accommodation capacity by touristic region • Total tourist overnight stays by nationality • Number of establishments by touristic region • Occupancy rate by touristic region • Touristic Entries and Output • Entries of non-resident travellers by nationality • Evolution the entrances of non-resident travellers by transport and border post • Outputs of non-resident travellers by nationality • Evolution of the outputs of non-resident travellers by transport and border post • Tunisian entries by transport and border post • Tunisian outputs by country of destination and transport route

Geographical scale	Data are mostly available at a national level. Only accommodation capacity data are available by region.
Frequency of data collection	Data are observed yearly.
Data accessibility	Free of access.
Link to database	http://www.ins.tn/en/themes/tourisme
	Regional Level
Institutions and data collected	N/A
	Municipal Level
Institutions and data collected	N/A
2. Tourism Observatories and Research Centres	
Institutions and type of data collected	**Tunisian Observatory of Economy (TOE):** The Tunisian Observatory of Economy (TOE) is a research organization dedicated to the analysis of economic policies and their impact on Tunisia's development. The TOE carries out analysis reviews, research, recommendations, and proposals. Several of their data analysis topics are related to the tourism sector, for example, Public-Private Partnerships (PPPs), employment within tourist establishments, etc.
3. Open Big Data	
Institutions/ Organizations collecting data	Currently there are no tourism big data depositories being developed in Tunisia

The government of Tunisia has started an open data initiative. The National Open Data Portal is a single access point that compiles all data produced by multiple Tunisian public institutions. However, little to no data is available on tourism. Only available in French and Arabic. |
| **Type of data collected, accessibility of data, integration with statistical sources at regional/national/local level** | N/A |
| **Link to database** | N/A |

4. Sustainable tourism indicators (STI)	
STI initiatives	No.
Brief description of initiatives	Tourism" has proposed the following indicators related to water consumption: • Average monthly consumption of water per bed-night and per type of accommodation; Distribution of hotels' water consumption points. • Percentage loss in total consumption (hotels). • Hotels' use of wastewater as a percentage of total water consumption. • Annual consumption per hectare for irrigation of a golf course. • Annual consumption of a swimming pool, per m3 of swimming pool. • Percentage of tourist accommodations with a swimming pool. • Percentage of tourist accommodations with a well-being centre (e.g. spas). • Ratio of bed-nights in market accommodation/bed-nights in non-market accommodation Percentage of bed-nights in graded accommodation (for which information is available on water consumption). • Surplus consumption of a household accommodating tourists (expressed as volume per day per visitor). • Percentage of hotels that have adopted water saving policies. **Tunisian Eco-label:** The Center for Environmental Technologies (CITET) developed the Tunisian eco-label with the objective of improving products and services among the textile, *tourism*, food, soap and cleaning sectors. The Tunisian eco-label for the tourism industry aims to improve energy efficiency, reduce water consumption, optimise waste management, encourage the use of renewable resources and safer substances to the environment and promote environmental education. However, it has not been widely adopted by Tunisian hotels since it lacks clear commercial benefits and marketing impact.
Experience with ETIS indicators	No.
Data accessibility	N/A

Link to database	N/A
5. EU funded projects on tourism data collection	
Project details (programme, scope, main outputs, website)	**MEDSTAT II: "Water and Tourism"** investigates the use of water for tourism and the availability of statistical information on this subject. In Tunisia, the tourist product is mostly hotel-based and the informal and non-market share of tourism is minor. The graded hotel sector is considered in Tunisia to be a good basis for observing tourist activity as it represents practically the only tourism product the country has. It would appear useful to concentrate on hotels and similar establishments only (clubs, holiday villages) in order to obtain a relatively precise view of the impact of tourism. Additional projects: **National strategy for adaptation to climate change of the tourism sector in Tunisia**: Within the framework of Tunisian-German cooperation, the Tunisian Ministry of Environment and Sustainable Development (MEDD) is collaborating with the German Technical Cooperation (GTZ) in the execution of a project related to the implementation of the United Nations Framework Convention on Climate Change (CCC/GTZ Project). The strategy proposes the creation of a Climate Change Information Centre (CICC), and a Tunisian Climate Change Database (TCCDB) linked to the tourism sector. CO EVOLVE4BG: *Co-evolution of coastal human activities & Med natural systems for sustainable tourism & Blue Growth in the Mediterranean.* Co-Evolve4BG is an ongoing project that will take advantage of the methodology of the CO-EVOLVE project that was funded by the Interreg MED Programme and extend its main actions towards the South & East Mediterranean through the integration of new pilot areas. Co-Evolve4BG is part of a wider project, "Med Coast for Blue Growth" labelled by the 43 Countries of the Union for the Mediterranean. CPMR is an associated partner of this project.
6. Contacts for further information	
	N/A

8   Mediterranean Tourism Observatories

During the first phase of BestMED project, in order to collect preliminary information about the state of the art of Tourism Observatories in the Mediterranean, the University of Maribor among its partner activities, performed a survey on a list of selected Observatories. A number of managers of Mediterranean Observatories has been interviewed in order to assess their needs, with a particular focus on the platform that will be developed by BestMED. The selection of Observatories was based on the UNWTO INSTO network.

The following paragraphs summarize the main results of the survey conducted by the University of Maribor.

Seven countries out of the twelve in the European part of the Mediterranean have some kind of tourism observatory. Most of them focus on a specific region (Alentejo Sustainable Tourism Observatory, Algarve Sustainable Tourism Observatory, Navarre Tourism Observatory, Sustainability Observatory Ibiza, Côte d'Azur Tourism Observatory, Aegean Islands Observatory). There are also three national tourist observatories in the Mediterranean area (Italy National Tourism Observatory, CROSTO Tourism Observatory, Greece National Tourism Observatory). In Italy, there are also two tourist observatories focusing on a specific field in tourism (Digital Innovation and Wedding Tourism Observatory).

8.1   Portugal

8.1.1   Alentejo Sustainable Tourism Observatory

The Alentejo Sustainable Tourism Observatory was founded through a collaboration between Portugal Tourism, the Alentejo Regional Tourism Board, Évora University and both the Portalegre Polytechnic Institute and Santarém. ASTO is the first monitoring entity within a nation-wide observatory initiative launched by the Portuguese Government in the framework of the 2027 Tourism Strategy. Monitoring areas include, among others: Community Participation, Tourism Seasonality, Competitiveness of Tourism Businesses, Water Availability and Conservation, Local Satisfaction with Tourism; Destination Economic Benefits; Employment (UNWTO SDT 2, 2019).

8.1.2   Algarve Sustainable Tourism Observatory

A Sustainable Tourism Observatory has been created by the Algarve tourism board (RTA) to establish what needs to improve for the region to become a more sustainable tourism destination. The observatory will aim to "study, analyse and monitor the Algarve's performance in the areas of economic, social and environmental sustainability". The feedback will then be used to define new tourism strategies (Portugal Resident, 2019).

The observatory, opened at the BTL tourist fair in Lisbon, will be operated alongside Turismo de Portugal (National Tourist Authority), the Local Coordination and Development

Commission (CCDR-Algarve) and the Algarve University (UAlg). UAlg will carry out studies while CCDR-Algarve will have 'technical and institutional assistance' (Portugal Resident, 2019).

In a communication sent to the press, RTA says that the observatory is in line with Portugal's Strategy for Tourism 2027 and will soon present a bid to become part of the International Network of Sustainable Tourism Observatories (INSTO) (Portugal Resident, 2019). This observatory is not fully operational while we are writing this report.

8.2 Spain

8.2.1 Navarre Tourism Observatory

The Navarre Tourism Observatory, being the first Tourism Observatory in Spain to join INSTO, seeks to be the reference point for partners at all levels and to assist them with Tourism Intelligence in the effective expansion of tourism as a strategic operation for the country in a sense of full sustainable growth. The Observatory is hosted by the Directorate of Tourism and Trade of the Government of Navarre and builds upon already established monitoring activities in the economic area, extending its efforts to a wider monitoring approach, including regular measurement of social and environmental impacts of the sector (UNWTO SDT 3, 2019).

Its point of reference is the Strategic Tourism Plan of Navarre and it is part of the VI programme devoted to Smart and Innovative Tourism (Kingdom of Navarre, n.d.).

The Navarre Tourism Observatory is a program for collecting both quantitative and qualitative knowledge from different outlets to integrate evidence from official reports, empirical surveys, the Internet of Things and Big Data from social networks and traditional media (Kingdom of Navarre, n.d.).

It has been designed based on five dimensions of study: governance, economic, social, environmental and territorial (Kingdom of Navarre, n.d.). The observatory reports include (Kingdom of Navarre, n.d.):

- Supply and demand in tourist accommodation
- Revenue from tourism
- Employment in tourism
- Tourist Information Offices
- Way of St. James: pilgrims
- Website visits
- Tourism resources
- Air travel

8.2.2 Sustainability Observatory Ibiza

The Sustainability Observatory is a project intended to enhance awareness regarding Ibiza's existing condition of sustainability. The research starts with the gathering of knowledge which is fragmented and challenging to obtain. This information is then interpreted and analysed with data on key themes such as biodiversity, waste, water, energy, territory and tourism. By doing this, the main socio-environmental issues on Ibiza are identified and quantified. This will help direct goals and efforts to protect the natural resources and environment on the island. The Observatory must distribute and convey the findings via a sustainability measurement framework, as well as issuing annual reports. This will help to inform public debate and promote the implementation of solutions to improve Ibiza's sustainability (IbizaPreservation 1, 2020).

Tourist demand:

- Arrival of tourists.
- Tourist expenditure.
- Overnight stays.
- Average stay.
- Tourists for every 100 inhabitants.
- Arrival of passengers (air and sea) and cruises.

Tourism offer:

- Tourist accommodation.
- Tourist accommodation occupation
- Profitability of the hotel sector.
- Tourist places for every 100 inhabitants.
- Overnight stays by tourist place.
- EMAS certification.

Motivations and evaluations:

- Motivation of the trip.
- Assessment of fate.
- Trend analysis on Twitter.
- TripAdvisor analysis.
- Residents' opinion on tourism (IbizaPreservation 2, 2020).

8.3 France

8.3.1 Côte d'Azur Tourism Observatory

The Côte d'Azur Tourism Observatory, created in 1984 by the Côte d'Azur France Regional Tourism Committee and the Alpes - Maritimes Departmental Council, produces official

tourism data for the Côte d'Azur, on the territory of the Alpes-Maritimes and Monaco (Comité Régional de Tourisme Côte d'Azur 1, 2020).

The Côte d'Azur Tourism Observatory sets up and ensures the operation of the tourism measurement and knowledge system, via its tourism statistics system (SST) 'Touriscope Côte d´Azur'. It sets up statistical tools and ensures the production of information allowing to refine the economic intelligence of this sector of activity, for the benefit of communities and professionals. It participates in national meetings to present the results of its work, or to join in methodological research on the measurement of tourism (Comité Régional de Tourisme Côte d'Azur 1, 2020).

- Surveys and productions: The Tourism Observatory handles the source surveys and uses the findings, rendering a range of methodological and analytical tools accessible to the users (Comité Régional de Tourisme Côte d'Azur, 2020).
- Methodology: The Tourism Observatory of the Côte d'Azur slowly established and perfected a creative and effective technique for the processing of tourism data: the Touriscope Tourism Statistics System. It makes data global continuity and coordination of its output with World Tourism Organization (UNWTO) requirements and suggestions on the Tourism Satellite Account (CST) (Comité Régional de Tourisme Côte d'Azur 1, 2020).

In Côte d'Azur, the SST Touriscope has been developed since 1984 by the Tourism Observatory of the Côte d'Azur France Regional Committee (CRT). It is based upon an ongoing investigation mechanism designed for the production of tourism statistics. The monitoring process involves an innovative data operating system based on the systematic cross-referencing of data and the exploitation of sources according to their respective relevance. Touriscope Côte d'Azur is the official signature of Côte d'Azur France tourism statistics, which guarantees the consistency, quality and comparability of tourism data (Comité Régional de Tourisme Côte d'Azur 1, 2020).

The Touriscope methodology is based on several fundamental options: it includes a system of permanent source surveys on partial fields which require exhaustive flow quantification. Such "statistical sub-universes" require such an approach, because they have a statistically reliable and rigorously established "mother population." Built on these partial universes, but which represent an important part of the tourist demand, the permanent source surveys, called "pillar surveys" (at the highest degree of robustness) thus constitute the framework of the permanent observation system, supplemented by d 'other ad hoc measures allow the calculation ratios to be refined (Comité Régional de Tourisme Côte d'Azur 2, 2020).

The source surveys on which the program is centred are ideally national surveys, allowing for a regionalized variability and providing data that offers an appropriate degree of statistical intensity. If that is not the case, either we have established a framework for the retrieval of regionalized national data or we have adopted different instruments (Comité Régional de Tourisme Côte d'Azur 2, 2020).

The surveys are structured to produce precise data by country of origin of the clienteles, and the extrapolations are made from the volumes quantified for the air transport mode and for accommodation types of hotel type. The country of origin of the clientele is indeed the main discriminating factor on behaviour (Comité Régional de Tourisme Côte d'Azur 2, 2020).

Pillar surveys:

- Approved hotels (CRT-INSEE-Ministry of Tourism).
- Tourism and hotel residences (CRT).
- Visavion visitors airplane (CRT / MTA).
- SDT French Visitors (TNS Sofres-Ministry of Tourism).

"Secondary" surveys

- Visetran foreign visitors (CRT - Tourist Offices).
- Outdoor Hotels (CRT-INSEE).
- Villages, holiday centres and youth accommodation (CRT then INSEE).

Statistical collections:

- Museums and sites (CRT).
- Gîtes de France.
- Tourist offices (CRT).
- Cruise passengers.
- Tourist tax.
- Casinos (Comité Régional de Tourisme Côte d'Azur 2, 2020).

8.4 Italy

8.4.1 Italy National Tourism Observatory

Established by the Prime Minister and subsequently entrusted to ENIT, the ONT (National Tourism Observatory) has the task of studying, analysing and monitoring the socio-economic dynamics of tourism, on a qualitative and quantitative basis. Consistent with these purposes, the ONT carries out investigations on subjects not adequately investigated by the official statistics and collects documents, researches and investigations produced by the most authoritative national and international subjects, also in order to assess the level of competitiveness of Italy (ONT, n.d.).

The fundamental objectives that the National Tourism Observatory has are (ONT, n.d.):

- give a systemic view of existing tourism research by unifying sources and data.
- to disseminate scientifically accredited information and data on tourism trends and phenomena in real time.

- provide forward-looking and strategic indications useful for the promotion strategies of the Country System and for the communication, promotion and marketing of the tourist offer.

Made from data from ISTAT and Bank of Italy, this section includes three query engines and statistics processing produced particularly by ontit.it to provide a specific and extremely useful analysis resource for all those who need effective, precise and comprehensive statistical data for work or review (ONT, n.d.).

The databases contain ISTAT and Bank of Italy data which constitute the necessary basis for official quantitative surveys on Italian tourism. The search masks enable the consumer to process statistics using several choices and crossings, consistent with the currently accessible statistical data. From the tables collected, the findings of the work carried out in Excel can be downloaded (ONT, n.d.).

8.4.2   Digital Innovation in Tourism Observatory

In 2014, the Digital Innovation in Tourism Observatory was founded to research and recognize the future of one of Italy's most important economic sectors: tourism. Competitiveness in this sector is increasingly influenced by the use of digital technologies in tourism relations and the management of services. Particularly interesting are the new concept of "tourist" that is taking shape, the different modes on interaction between sector players, and the integration of digital and non-digital channels and tools. The goal of the Observatory is therefore to guide Italian companies in understanding digital travel dynamics and identify the opportunities that such tools can provide in developing business strategies and to institutions. To become a point of reference also as regards digitalizing business trips, the Business Travel Observatory has been founded in 2019 in collaboration with the University of Bologna, which has been studying the dynamics of the Italian business travel market in depth for over 15 years (Osservatorio Digital Innovation, n.d.).

The Observatory's research is structured according to the following topics (Osservatorio Digital Innovation, n.d.):

- **Cross analyses:** quantify the digital Tourism in Italy (revenue generated through digital channels); start-ups and innovation drivers (evolution of the frontier of innovation, trends and innovative business models).
- **Digital tourist journey:** behaviour of the digital tourist in all travel phases (products and services purchased and channels used, etc.) with particular focus on Millennials and high level spenders (long range destinations), inspiration phase and Chinese tourists.
- **Tourist retailing:** define, map, and quantify channels (consultants, eMarketplace, peer-to-peer, etc.) and identify innovative forms of retailing also in other sectors.

- **Customization and artificial Intelligence in omnichannel terms:** map experience customization and artificial intelligence tools through the various stages of the digital traveller journey to intercept prospects and consolidate the relationship with acquired customers.
- **Mobility:** an in-depth evaluation of the offer (innovative start-ups, integration of services and multimodality, etc.) and the requirements of the demand.
- **Accommodation:** quantify the sub-sector especially focusing on quantifying the non-hotel section.
- **Business travel:** quantify the market, innovative tools used through the Digital business traveller journey (focus on booking tools and payment systems), innovative tools (mobile and not) for end-to-end management of business travel, cost-benefit analysis of the most innovative solutions, business travel management within the company (mobility manager, CFO, Travel manager, HR manager, Procurement manager) etc.

Research relies on different methods:

- Monitor sector literature and top news (national and international) to identify the most meaningful trends.
- Investigate supply chain players (both demand and offer sides).
- Study of successful and unsuccessful cases of innovative retailing solution application.
- Study Business Travel cases to learn more about the impacts (costs, benefits, criticalities) on companies adopting mission management digital tools for end-to-end management of missions or single process phases (booking, payment, etc.).

Impact is evaluated through original analytic and quantitative models designed by the School of Management of Politecnico di Milano and applied to real business cases in Italy (Osservatorio Digital Innovation, n.d.).

8.5 Croatia

8.5.1 Tourism Observatory – CROSTO

CROSTO – Croatian Sustainable Tourism Observatory is a long-term international research project of Institute for tourism. It is established in cooperation with the World Tourism Organization (UNWTO) in order to monitor and measure tourism sustainability in Croatia. CROSTO is a member of International Network of Tourism Observatories (INSTO) which is being developed under auspices of the UNWTO (CROSTO, 2020).

The main objective of CROSTO is to continuously measure and monitor the development of sustainable tourism in the most tourism developed region of Croatia (Adriatic Croatia). Through the establishment of periodic and systematic monitoring processes, the observatory is key to observe and understand issues related to sustainable tourism, supporting local stakeholders in their decision-making processes with essential evidence. By applying the

European Tourism Indicator System among local communities and at the same time being part of INSTO, the observatory's main tools in realization of its vision will be promotion, education and knowledge transfer. The long-term objective of CROSTO is to help establishing more observatories within the country and serve as coordinating entity, seeking to support sustainable tourism throughout the entire country in the future (CROSTO, 2020).

Since the measurement covers entire counties (NUTS3 regions) – not just their coastal areas, which are heavily burdened by tourism, but also the large, underdeveloped hinterland area – great differences were und at the local level and, thus, the results are average values that offer a general insight into the overall state of sustainability (CROSTO, 2020).

Therefore, since 2018, CROSTO monitoring has been specifically initialized at the local level, whereby six local destinations, which have very diverse features, were selected for the purposes of further measurement: Rovinj, Mali Lošinj, Novalja, Hvar, Ston and Dubrovnik (CROSTO, 2020).

In designing a model of sustainability measurement at the local level, the research team at CROSTO started from the fact that active stakeholder involvement in the process is the key to success as well as an important strategic resource, which can and should be used to plan sustainable development (CROSTO, 2020).

This fact is particularly important due to the complexity of the procedure, whereby measuring the sustainability of tourism is a process that must involve stakeholders from the fields of energy distribution, communal services, social services, spatial planning and tourism. Therefore, it is necessary to consider all of the relevant factors that determine the individual dimension of sustainability. As a first step, each monitored destination appointed a local CROSTO coordinator to establish which institutions must be included in the measurement process. In addition, the local CROSTO coordinators in each destination then formed a local working group comprised of managers in companies and institutions responsible for collecting the data needed in measurement (CROSTO, 2020).

Considering that the Republic of Croatia is a member of the European Union and in accordance with the recommendations of the European Commission, the European Tourism Indicator System for Sustainable Destination Management - ETIS was applied in the selection of baselines. However, given the UNWTO INSTO initiative, the list of indicators is fully adapted to all mandatory sustainability issues selected by the UNWTO. In this regard, all nine ETIS sections of indicators will be applied, if possible, fully covering eight of the nine mandatory issues selected by the UNWTO.

Due to the importance of tourist satisfaction with the destination in the form of sustainability of development, as well as sustainable destination management policies that are not part of the UNWTO mandatory areas, the list of baseline indicators has been expanded by three more ETIS indicators. Also, the baseline list of indicators is made up of two indicators that are not part of ETIS, but are a separate mandatory area of the UNWTO's list for space management.

Given that the indicators for UNWTO areas are global and relatively general, some of the indicators (spatial) have been adapted to the situation in Croatia, and indicators have been proposed to give a more realistic picture of the sustainability of the use of space for tourism purposes. Also, ETIS indicators are slightly adapted, according to terminology, and data collection capabilities (CROSTO, 2020). Overview of basic CROSTO indicators (CROSTO, 2020):

Table 4. CROSTO Indicators

Sustainability area	Indicator	
economic	**Number of tourist overnight stays in commercial accommodation**	
	Explanation	The number of tourist overnight stays is a basic indicator for measuring the economic success of the tourist development of a destination.
	Description	Registered nights in commercial accommodations (hotels and similar accommodation (NKD 55.1), resorts and similar short-stay accommodation (NKD 55.2), campsites and camping areas (NKD 55.3) and other accommodation (55.9) annually.
	Access	Direct use of secondary data.
	Data sources	eVisitor / DZS
economic	**Direct employment in tourism as a share of total employment in the destination**	
	Explanation	The indicator measures the impact of tourism development on the employment of the permanent population of the destination.
	Description	Share of persons in paid employment in legal entities and crafts and liberal arts in the activity of providing accommodation and preparation and service of food (area I according to NKD 2007) in August, in total number of employees in legal persons and crafts and liberal arts in August of a certain year.
	Access	A complex indicator whose estimation is based on secondary data.
	Data sources	DZS
economic	**Percentage of annual gross occupancy of accommodation facilities**	
	Explanation	The indicator assesses the intensity of the seasonality of tourism in the destination.
	Description	Utilization of (gross) commercial accommodation on an annual basis.
	Access	A composite indicator whose estimate is based on secondary data (total number of beds available in commercial accommodations in August and total number of nights spent in commercial accommodation throughout the year).
	Data sources	eVisitor / DZS

economic	**Average daily consumption of tourists in euros**	
	Explanation	Along with the volume of tourist demand (number of nights), the average daily consumption of tourists is one of the most important indicators of the economic viability of tourist activity in a destination. The average daily consumption of tourists is also the basis for monitoring total tourism revenues and the direct economic impact of tourism on the destination. It also indicates links within the value chain in the destination offering.
	Description	Estimation of the average daily consumption of tourists in commercial accommodations. Includes tourist expenditures on tourist services and products such as accommodation, transportation, food and drink, entertainment, sports, culture, excursions, equipment rental, shopping, souvenirs, etc., per person and night.
	Access	A quantitative survey of tourism demand conducted on representative samples of tourists (survey). If the results of such surveys are available, the indicator is directly taken from the survey. Otherwise, research is needed.
	Data sources	Survey of tourists (e.g. surveys of the TOMAS Institute of Tourism)

Sustainability area	**Indicator**	
social	**Number of tourist overnight stays per hundred permanent residents**	
	Explanation	Unlike the indicator of the satisfaction of the local population with tourism, which measures the subjective feeling of the burden on tourism of the local community, this indicator measures the objective intensity of tourism, that is, the pressure that tourism creates on the local community and space.
	Description	Number of tourist overnight stays in commercial and non-commercial accommodation for hundreds of permanent residents.
	Access	A complex indicator whose estimation is based on secondary data (total number of tourist nights spent annually in commercial and non-commercial accommodation facilities and total number of permanent residents). The indicator is based on tourist overnight stays and thus partly deviates from the ETIS / UNWTO proposal which takes into account the number of tourists and overnight visitors. However, neither the number of tourists nor the number of one-day visitors is available in the Croatian tourism statistics system. Furthermore, the number of tourist arrivals is overestimated due to multiple recording of arrivals in different accommodation capacities.
	Data sources	- eVisitor for the number of nights spent in commercial accommodation - eVisitor, DZS and other sources for estimating the number of nights in non-commercial accommodation - DZS to assess the permanent population in a given year

social	**Percentage of permanent population satisfied with tourism**		
	Explanation	The positive attitude of the inhabitants towards the development of tourism is one of the key elements of its success. Where tourism is not supported, residents' resistance to infrastructure investments can be expected. Additionally, hospitable hosts are one of the key factors in forming the overall satisfaction of tourists with a visit.	
	Description	A complex indicator based on questions that describe the attitudes of locals towards tourism development and tourists. The indicator is an estimate of the proportion of permanent residents who are satisfied with tourism in the destination in the total number of permanent residents in the destination (in%).	
	Access	Quantitative survey of local attitudes conducted on representative population samples (survey). If the results of such surveys are available, the indicator is directly taken from the survey. Otherwise, research is needed.	
	Data sources	Primary quantitative survey (local population survey).	
social	**Proportion of tourists who are satisfied with their overall experience in the destination**		
	Explanation	Visitor satisfaction is the relationship of perceived value and quality, expectations and actual experience. Satisfied visitors are returning to their destination, bringing in new guests, staying longer, generating more revenue and creating jobs in the destination. Furthermore, the monitoring of visitor satisfaction measures and monitors the effects of activities on the promotion of the tourist product of a destination.	
	Description	Estimation of the proportion of tourists (in%) in commercial accommodations that are satisfied with their overall experience / stay in the destination.	
	Access	Quantitative survey of tourism demand conducted on representative samples of tourists in commercial accommodation (survey). If the results of such surveys are available, the indicator is directly taken from the survey. Otherwise, research is needed.	
	Data sources	Survey of tourists (e.g. surveys of the TOMAS Institute of Tourism)	
social	**Percentage of repeat / permanent tourists in the destination**		
	Explanation	The goal of the destination is to attract new guests, but also to retain the old ones. Permanent ('loyal') guests often bring greater benefits to the destination. The proposal (ETIS) is to track the proportion of guests who return within the last 5 years and to focus on tracking repeat tourist arrivals in commercial forms of accommodation.	
	Description	Estimated number of tourists in commercial accommodation who have already visited the destination during the last 5 years in the total number of tourists in commercial accommodation in the destination (in%).	

	Access	Quantitative survey of tourism demand conducted on representative samples of tourists in commercial accommodation (survey). If the results of such surveys are available, the indicator is directly taken from the survey. Otherwise, research is needed.
	Data sources	Survey of tourists (e.g. surveys of the TOMAS Institute of Tourism)

Sustainability area	Indicator	
environmental	**Consumers' energy consumption in relation to the energy consumption of permanent residents**	
	Explanation	The tourism 'sector' is a significant consumer of electricity. Energy consumption is directly correlated with climate change, which is a high priority of the European Commission. Monitoring the energy consumption of tourists and the energy footprint of tourism is extremely important in order to stimulate energy conservation and achieve financial savings for tourism providers, as well as companies engaged in energy efficiency and renewable energy production. The European Commission provides funding through various tourism energy footprint monitoring funds.
	Description	Total energy consumption in commercial accommodation capacity in GWh compared to total energy consumption of permanent population in GWh.
	Access	A complex indicator whose estimation is based on secondary data. Total energy consumption in commercial accommodation is estimated on the basis of existing energy consumption standards by type of accommodation and accommodation structure. Household energy consumption is based on the results of surveys conducted and population estimates.
	Data sources	- eVisitor for the number of nights in commercial accommodation by type of accommodation - DZS for estimating the number of permanent residents and energy consumption in households and services - Hrvoje Požar Energy Institute (energy consumption norms)
environmental	**Water consumption of tourists compared to water consumption of permanent residents**	
	Explanation	Water is a key resource and limiting factor in tourism development, especially due to the increased risks caused by climate change, hydrological anomalies, etc. Water consumption is a key topic in Croatia and due to large losses in the water supply system. Monitoring of water consumption also indicates the possibility of financial savings for which incentives can be obtained from EU funds (for both tourism providers and utilities and local self-government units).

		Description	Consumption of water in commercial accommodation capacity in relation to water consumption of permanent residents.
		Access	A complex indicator whose estimation is based on secondary data. Total water consumption in commercial accommodation is estimated on the basis of existing water consumption standards by type of accommodation and accommodation structure. Household water consumption includes household water consumption in publicly connected apartments and those using hydrophores.
		Data sources	- DZS for water consumption and data on households connected to the public water supply network, i.e. those using hydrophore (2011 Census) - eVisitor for the number of nights - Water Supply Plan of Split-Dalmatia County, Institute of Civil Engineering of Croatia, 2008.
environmental	**Percentage of destination wastewater treated to at least a secondary level before discharge**		
		Explanation	Tourism brings an intense and asymmetric load to the wastewater treatment system. This is especially important in destinations dominated by beaches, lakes and rivers as key attractions. Wastewater can endanger the quality of the environment on which tourism is competitive. The possibility of financing municipal infrastructure from EU funds (for both tourism providers and utility companies) is also available.
		Description	Percentage of destination wastewater treated to at least a secondary level before discharge.
		Access	A complex indicator whose estimation is based on secondary data. Official data on wastewater treatment is corrected by the share of households / apartments connected to the public sewerage system at the county level.
		Data sources	DZS
environmental	**The production of municipal waste by tourists compared to the production of municipal waste by permanent residents**		
		Explanation	According to European Commission estimates, the system for collecting, separating, using and disposing of waste is still sub-standard. Health, environmental / environmental and safety aspects of risk are already present in tourist destinations, and increased tourism activity enhances them, thus jeopardizing the competitiveness of the tourist destination.
		Description	Production of municipal waste by tourists in commercial accommodation facilities in relation to the production of municipal waste by permanent residents.
		Access	A complex indicator whose estimation is based on secondary data.

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	Data sources	- Croatian Environment and Nature Agency
		- eVisitor for the number of nights
		- DZS to estimate the number of permanent residents in a given year
environmental	**Proportion of tourism companies using voluntary certification / eco-labelling schemes**	
	Explanation	Trends indicate that 'new' tourists take care of the environment and nature and prefer accommodation facilities that operate accordingly. Likewise, 'new' tourists prefer the guarantee of such a business. Furthermore, certification has the effect of raising awareness of the environmental and nature topics of tourists and residents and, indirectly, of the sustainability of the local community.
	Description	The indicator measures the level of awareness of tourism service providers about environmentally sustainable and socially responsible operations, and represents the share of tourism companies using voluntary certification / eco-labelling schemes in the total number of tourism enterprises (in%).
	Access	In the absence of official and publicly available data on the possession of certificates in tourism (environment, sustainability, quality, food safety, chemical safety, social responsibility, etc.), it is necessary to conduct a primary quantitative survey on a set of tourism providers, primarily accommodation and tourism providers and hospitality services.
	Data sources	- The ministry of tourism
		- TZ system
		- Croatian Environment and Nature Agency
		- Survey of providers of accommodation and catering services in tourism

Sustainability area	Indicator	
spatial	**Share of destination area outside the construction area of the settlement on which the catering and tourist facilities were built**	
	Explanation	Based on the indicator, the extent to which the areas outside the settlement are occupied by construction for tourism purposes is determined, and the continuous monitoring of this indicator indicates the extent of expansion of the catering and tourist purpose zones.
	Description	The share (in%) of the destination area outside the construction area of the settlement on which the catering and tourist facilities (zones T1 / T2 / T3) were built in the total area of the local government unit.
	Access	A complex indicator whose estimation is based on secondary data.
	Data sources	- Ministry of Construction and Physical Planning

		- Croatian Institute for Spatial Development / County Institutes for Physical Planning	
spatial	**Share of destination area within the construction area of the settlement on which the catering and tourist facilities were built**		
	Explanation	Based on the indicator, it is determined to what extent the areas within the settlement were occupied by construction for tourism purposes, i.e. to what extent the settlement retained the function of permanent residence throughout the year.	
	Description	The share (in%) of the area of the destination area within the construction area of the settlement on which the catering and tourist purposes (T1, T2, T3, T4, U) were built in the total area of the construction area of the settlement.	
	Access	A complex indicator whose estimation is based on secondary data and additional analysis of construction.	
	Data sources	County zoning institutes (urban development plans)	

Source: CROSTO, 2020

8.6   Greece

8.6.1   Greece National Tourism Observatory

In order to create a monitoring and evaluation system related, inter alia, to the United Nations Agenda 2030 and its SDGs, the Ministry of Tourism has set the goal to establish a National Observatory for sustainable tourism development. For this reason, a Working Group was set, consisting of members from the Ministry, representatives and experts with experience on this specific field.

With the mission to design a Roadmap for the creation of a National Observatory to achieve Sustainable Tourism Development, the working group has undertaken a thorough research and conducted in-depth review of the criteria and standards referring to the context of creating a Sustainable Tourism Indicators System based on the international experience. Following, the Working Group submitted two technical reports.

Certain indicators- social, economic, environmental- and data providers have been identified, at both national and regional level, to ensure analysis of trends at local, regional, national and international level. The two deliverables suggest setting up technical administrative working groups assigned with specific competencies and tasks, working together and aiming at joining the International Network of Sustainable Tourism Observatories (INSTO).

It is also envisaged that Regional Observatories will be established in accordance with the World Tourism Organization standards following the same methodological procedure as the national observatory. The network will be operating within a cooperative framework ensuring standardization of the data processing and outputs.

A digital platform with dynamic content will enable the collection, sharing and visualization of data (variables, indicators), the coordination and processing of data and the presentation -through an interactive map- of all the indicators at national, local and regional level.

General objective of the National Observatory is the transformation of the current tourism model into a new one, based on the principles of sustainability, that will highlight the comparative advantages of tourism destinations, further strengthen the positive economic results of tourism to the national GDP, while respecting the rich natural and cultural heritage of the destinations and contributing to the development of local communities.

8.6.2   Aegean Islands Observatory

Established by the University of the Aegean in collaboration with UNWTO and with the support of the Ministry of Tourism of Greece, the first Sustainable Tourism Observatory in Europe opened in the Aegean Islands, the main archipelago of Greece, in early 2013. The observatory has several physical sites, one in Rhodes for the South Aegean, another in Chios for the North Aegean, and one at the University of Aegean in Mytilene, on the island of Lesvos (UNWTO SDT, 2020).

The monitoring efforts focus on the environmental, social and economic impacts of tourism in the Aegean archipelago and seek to serve as a model to expand the concept to a national level. The monitoring and implementation of sustainable tourism practices are being realized in close cooperation with the tourism public and private sector in the area of the Aegean (UNWTO SDT, 2020).

8.7   Cyprus

8.7.1   Cyprus Tourism Observatory

Development and operation of the Cyprus Tourism Observatory depends on an integrated system of knowledge management processes. The Tourism Observatory was implemented within the "Para Mare Tourism" project, a project co-funded by the European Regional Development Fund through the Cross-Border Cooperation Programme "Greece-Cyprus 2007-2013" (Annual Report on Tourism 2013 – Cyprus, 2014).

Within the project, the Tourism Observatory developed a portal as well as a common data base. The information gathered includes inter alia data from national and international statistical studies, research work, as well as other useful data of the tourism sector, that are collected by the responsible institutions and organisations. The expected results of the project include inter alia the benefits of valid and targeted information for enterprises in the tourist sector, the availability of statistical data and information when conducting researches, and when evaluating and determining a sustainable tourism strategy (Annual Report on Tourism 2013 – Cyprus, 2014). However, we found no evidence that Cyprus Tourism Observatory is still working.

8.8 Other Observatories and related institutions

Name	Website	Country	Geographical scale	Brief Description	Data collected
VTO - Virtual Tourism Observatory	https://ec.europa.eu/growth/tools-databases/vto/	BEL	European	The Virtual Tourism Observatory provides access to a broad collection of information, data, and analysis on current trends in the tourism sector. It includes the latest available figures on the sector's trends and volumes, economic and environmental impact, and the origin and profile of tourists. It aims to support policy makers and businesses to develop better strategies for a more competitive European tourism sector.	Statistics Illustrated is a powerful visualisation tool that displays monthly and annual data on tourist flows, accommodation capacity, occupancy, expenditure, and other data on the trips of EU residents. The data collected concerns **Economy** information, such as GDP, current prices (in million euro) and unemployment; **Tourism Demand** data, like: - Arrivals at tourist accommodation establishments (Number in million) - Arrivals at tourist accommodation establishments (Change from previous year) - Nights spent at tourist accommodation establishments (Number in million) - Nights spent at tourist accommodation establishments (Change from previous year) - Average number of nights spent per arrival, yearly - Trips (Number in million) - Trips Domestic/Outbound, yearly (Number in million) - Average number of trips per tourist, year. Moreover, we can find information about **Tourism Intensity**, which refers to the number of nights spent in the destination; **Occupancy**; **Travel in travel services** and **Employment,** considering persons by selected tourism industries.
European Observation Network for Territorial Development and Cohesion (ESPON)	https://apps.espon.eu/etms/	LUX	European	The ETMS aims at continuous observation and monitoring of territorial trends in relation to policy objectives of Territorial Cohesion. This tool, developed under the ESPON European Territorial Monitoring System project	The following Territorial Observations are available: 1. "Population development and migration" 2. "Accessibility" 3. "Economic Performance of European Regions" 4. "Internet Roll-out" 5. "Creative Workforce" 6. "Regions and cities in the global economy" 7. "Natural Hazards and Climate Change in European Regions" 8. "Regions Integrating Land and Sea" 9. "Gateway Functions in Cities"

				(ETMS), provides statistical information and practical evidence on territorial trends, dynamics, patterns, and structural changes related to Europe's main territorial policies and objectives.	10. "Potentials and Challenges for Iceland, Liechtenstein, Norway and Switzerland – and for the European Union" 11. "European Neighbourhoods" 12. "Economic Crisis and the Resilience of Regions" 13. "Evidence for a European Urban Agenda"
UNWTO International Network of Sustainable Tourism Observatories (INSTO)	http://insto.unwto.org/	ESP	International	Network of tourism observatories monitoring the economic, environmental, and social impact of tourism at the destination level.	INSTO establishes nine mandatory issue areas that observatories must monitor: tourism seasonality, employment, destination economic benefits, governance, local satisfaction, energy management, water management, wastewater (sewage) management, and solid waste management.
World Travel and Tourism Council Data Gateway (WTTC Data Gateway)	https://wttc.org/ https://wttc.org/Research/Economic-Impact/Data-Gateway	GBR	International	The WTTC provides monitoring of tourism data for most countries in the world.	The tool measure business tourism spending, direct contribution to employment, direct contribution to GDP, domestic tourism spending, individual government expenditure, internal travel and tourism consumption, investment (capital investment), leisure tourism spending, outbound travel and tourism expenditure, total contribution to employment, total contribution to GDP and visitor exports (foreign spending). WTTC Data Gateway provides data for the last 20 years and projections until 2028.

Osservatorio Innovazione Digitale nel Turismo - School of Management Politecnico di Milano	https://www.osservatori.net/it/ricerche/osservatori-attivi/innovazione-digitale-nel-turismo	ITA	National	The aim of this Observatory is to study and understand the evolution of Tourism. Taking into consideration technological aspects.	It focuses on the tourism market, start-ups, Digital Tourist Journeys, retailing, mobility, and business travel.
CROSTO - Croatian Sustainable Tourism Observatory (part of INSTO)	http://www.crosto.hr/en/	HRV	National	The main objective is to support the continuous improvement of sustainability and resilience in the tourism sector through systematic, timely and regular monitoring of tourism performance and impact. Furthermore, to connect dedicated destinations to better understand destination-wide resource use and foster the responsible management of tourism.	Sustainable measurement processes, considering socio cultural impacts. CROSTO considers three main categories, which are the economic one, the social one, the environmental one and the spatial one. For the economic and the social sector there are four (4) indicators; for the environmental five (5); and for the spatial two (2).
Lisbon Tourism Observatory	https://www.visitlisboa.com/en/about-turismo-lisboa/d/documents/observatorio	POR	Local	Its main objectives are: The sustained tourism development in its area of intervention; The promotion of Lisbon as a tourist destination in leisure articles; The promotion of Lisbon as a	The data collected concerns: hotel information by area, safety, cruise passengers, congress participants, purpose of trip, satisfaction and image, and visitor activities.

				venue for congresses, fairs and as an incentive trip destination; The provision of Information and support for visiting tourists.	

Asturias Tourism Information System	http://www.sita.org/	ESP	Local and Regional	Tourism data for Asturias, Northern Spain.	Detailed tourism data including about its economic impact. Research papers. We can find reports with data concerning:
					1. classification and number of travellers
					2. classification of tourists considering their place of origin
					3. number of night stays, according to the type of accommodation structure
					4. Indicators of profitability of the hotel industry
					5. tourist demand
					   a. purpose of the trip
					   b. choice of Asturias as destination
					   c. type of trip (alone or in company)
					   d. organisation of the trip
					   e. lodging
					   f. expenses
					6. tourism offer
					   a. hotel industry (choice between camping, hotels, hostels etc.)

Azores Tourism Observatory (part of INSTO)	http://www.observatorioturismoacores.com/	POR	Local and Regional	To promote the analysis, dissemination, and monitoring of the evolution tourism activity.	The Azores Tourism Observatory analyses and disseminates statistics on tourism in the Azores produced by the Azores Regional Statistics Service (SREA), the entity responsible for the official production of statistics. The key indicator areas are the following: tourism seasonality, energy management, water management, solid waste management, wastewater (sewage) management, and local satisfaction with tourism.
Balearic Islands Tourism Observatory	http://www.caib.es/sacmicrofront/contenido.d	ESP	Local and Regional	Observatory monitoring the main economic	Relevant economic tourism indicators, e.g. demand, accommodation, labour market data, monthly reports.

	o?mkey=M1007 2911244127834 137&lang=EN&c ont=23165			indicators of tourism in the Balearic Islands.	
Basque Tourism Observatory	http://observat orioturisticodee uskadi.basqueto ur.net/SitePages /index.aspx#	ESP	Local and Regional	The Observatory was created by the Basque Government in 2011 as an instrument included in the Tourism Competitiveness and Innovation Plan 2010-2013, to provide a global and constant vision of the situation and evolution of the tourist industry.	The Basque Tourism Observatory currently collects the following data: ● Tourism Demand (Profile and behaviour of tourists and tourist movements in the Basque country). ● Markets (study on the positioning of Euskadi in a post Covid-19 scenario). ● System of tourist intelligence (STI) including indicators such as tourist movements across borders, tourist expenditure divided by gender, profile, and behaviour of male and female tourists.
Canary Islands Tourism Observatory	http://www.gob can.es/turismo/ viceconsejeria/v iceconsejeria.ht m	ESP	Local and Regional	Tourism data for the Canary Islands.	Statistics, tourism situation, ad-hoc research.
Cote d'Azur Tourism Observatory (Touriscope)	http://www.cot edazur-touriscope.com/ v2/home/	FRA	Regional	To undertake survey work & analysis of supply and demand tourist destination. Works towards continuous improvement of data. Ensures reliability, uniformity and comparability of data produced on tourism. Control of internal	General tourism information. For example, frequency of travel in the region, origin of the travellers, purpose of the trip, hotel occupancy, and number of overnight stays.

				statistical databases on tourism.	
Italian National Tourism Observatory	http://www.ont it.it/ont/	ITA	National	Strategic planning in the drafting of key documents, building an integrated system of sector information, promotion of statistical data homogeneity on a European level.	A portal containing a document library, statistical databases, analyses, press reviews, event information etc. Information about international tourism, tourism flows and tourism indicators. This information can be gathered also from Italian official statistic websites, such as ISTAT and BANCA DI ITALIA.
Plan Bleu - Mediterranean environment and sustainable development observatory	http://www.pla nbleu.org/index UK.html	FRA	European	The Plan Bleu produces information and knowledge to alert decision-takers and other stakeholders to environmental risks and sustainable development issues in the Mediterranean.	Information about activities, data, publications, and a "toolbox". Tourism is one of the topic areas for which information is available.
Spanish Responsible Tourism Observatory	http://turismoy cooperacion.org /fundacion/inde x.php?option=c om_content&vi ew=article&id=6 6&Itemid=57	ESP	Regional and National	Information about Corporate Social Responsibility (CSR), International Cooperation and other aspects of responsible tourism.	Guides and Manuals, Reports, articles, interviews, opinion, Project Experiences and Case Studies. Its focus is on sustainable development of Spanish Ecotourism destinations.
Alentejo Sustainable Tourism Observatory	https://www.vis italentejo.pt/pt/	POR	National	Provide official tourism data.	Community Participation, Tourism Seasonality, Competitiveness of Tourism Businesses, Water Availability and Conservation, Local Satisfaction with Tourism; Destination Economic Benefits; Employment

(INSTO OBSERVATORY)					
Algarve Sustainable Tourism Observatory (part of INSTO)		POR	Regional and National	The observatory has the aim to improve the region to become a more sustainable tourism destination.	The observatory will aim to study, analyse and monitor the Algarve's performance in the areas of economic, social and environmental sustainability.
Sustainability Observatory Ibiza	https://ibizapreservation.org/project/ipf-sustainability-study/	ESP	Regional	Coordinate a Sustainability Observatory to contribute to the long-term prosperity of Ibiza by preserving the island's natural resources.	Data on key themes such as biodiversity, waste, water, energy, territory and tourism. For what concerns tourism we can find this information: 1. **TOURIST DEMAND** · Arrival of tourists · Tourist expenditure · Overnight stays · Average stay · Tourists for every 100 inhabitants · Arrival of passengers (air and sea) and cruises. 2. **TOURISM OFFER** · Tourist accommodation · Tourist accommodation occupation · Profitability of the hotel sector · Tourist places for every 100 inhabitants · Overnight stays by tourist place · EMAS certification. 3. **MOTIVATIONS AND EVALUATIONS** · Motivation of the trip · Assessment of fate · Trend analysis on Twitter · TripAdvisor analysis · Residents' opinion on tourism.
Navarre Tourism Observatory (INSTO OBSERVATORY)	https://www.turismo.navarra.es/eng/profesionales/Observatorio-turistico/presentacion/presentacion.htm	ESP	National	It seeks to be the reference point for partners at all levels and to assist them with Tourism Intelligence in the effective expansion of tourism as a strategic operation for the country in a sense of full sustainable growth.	The observatory reports include (Kingdom of Navarre, n.d.): ● Supply and demand in tourist accommodation ● Revenue from tourism ● Employment in tourism ● Tourist Information Offices ● Way of St. James: pilgrims ● Website visits ● Tourism resources ● Air travel.

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Greece National Tourism Observatory		GR	National	The working group will gather information to create a sustainable tourism index, submit proposals to the government for the development of an information system on tourism data, and gather data on tourism trends at the local, regional, national, and international levels, for the management and promotion of Greece as a destination.	It produces official tourism data
Aegean Islands Observatory (part of INSTO)	http://tourismo bservatory.ba.a egean.gr/	GR	Regional and National	Provide official tourism data	The monitoring efforts focus on the environmental, social, and economic impacts of tourism in the Aegean archipelago and seek to serve as a model to expand the concept to a national level.
The South Tyrol Sustainable Tourism Observatory (part of INSTO)	http://insto.un wto.org/observ atories/south-tyrol-italy/	ITA	Local	The Observatory is aiming at monitoring, evaluating, and communicating on South Tyrol's (i.e. the Autonomous Province of Bolzano/Bozen) tourism developments and the impacts they have. With the generated data in areas such as mobility, climate change, regional products and quality control, employment and many	INSTO Key Issue Areas, plus Innovation Sustainable Consumption and Production Ski Tourism and other Nature Sports Biodiversity and Nature Protection Cultural Heritage and Traditions Mobility Land Use and Spatial Planning Visitor Management and Satisfaction Adaptation to Climate Change

				other topics, the Observatory will support awareness-raising activities and decision-making processes of different stakeholders' groups, serving the local community that fosters communication, collaboration, and evidence-based destination management.	
OTIE Observatory on Tourism for Islands Economy	https://www.otie.org/	ITA	European	The activities of the Observatory are focused on updating the Databank on Insular Tourism, creating a Documentation Centre on the islands, conducting studies and research work, organizing forums and seminars, and participating in European projects on cooperation and social development.	The activities of the Observatory are focused on updating the Databank on Insular Tourism, creating a Documentation Centre on the islands, conducting studies and research work, organizing forums and seminars and participating in European projects on cooperation and social development.
Shape Tourism Observatory	https://shapetourism.interreg-med.eu/index.php?id=13080&path=1	Transnational	Mediterranean	The observatory was developed in the framework of the Shape Tourism EU funded project, which provides analysis and operational tools to pinpoint an integrated	Interactive maps that represent an interpretative tool of tourism dynamics based on the four dimensions: Reputation, Attractiveness, Competitiveness, and Sustainability covering the 52 Mediterranean Regions. These Maps can be explored at a Macro-Area level, a Regional level and at a single urban administrative division as well

				methodology to shape and drive tourism sustainable growth, particularly for Cultural Destinations in the Med region. The platform includes maps to visualize data collected, as well as the results of a survey to experts, carrying capacity scenarios and cluster maps	
Tunisian Observatory of Economy (TOE)	https://www.economie-tunisie.org/en/observatory	TUN	National	The Tunisian Observatory of Economy seeks to provide guidance to citizens regarding economic policies and their impact on development through independent, objective, documented and critical information.	Several of their data analysis topics are related to the tourism sector, for example, Public-Private Partnerships (PPPs), employment within tourist establishments, etc.

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Observatoire Régional du Tourisme du Grand Est	https://observat oire.art-grandest.fr/	FRA	Local and Regional	The regional observatory, attached to the Agence Régionale du Tourisme du Grand Est, is in charge of measuring tourist activity and informing local stakeholders and professionals.	Website available only in French.
Valle d'Aosta: Osservatorio Turistico della Valle d'Aosta	https://www.os servatorioturisti covda.it/	ITA	Regional	The main purpose of this Observatory is to map tourism movement, flows and events organised in the region. Moreover, data is collected to apply adequate strategies and policies in the tourism sector.	It deals with the measurement of tourism phenomena, concerning the displacements, the tracking of flows and the activities performed by professionals of the tourism sector.
Piemonte: Osservatorio Turistico	https://www.re gione.piemonte. it/web/temi/cul tura-turismo-sport/turismo/o sservatorio-turistico	ITA	Regional	Thanks to the Regional Observatory it is possible to analyse in a dynamic way the statistical data concerning tourists' flows.	It's the tool used for the analysis of tourism offer, the trend and the evolution of the demand and tourism markets. It aims to monitor promotion activities, information, and tourist reception in Piemonte.
Liguria: Regione Liguria	https://www.re gione.liguria.it/h omepage/turis mo/osservatori	ITA	Regional	The data available allows both the public and private sector to be updated on the progress of the sector	It is possible to find data about tourism satisfaction, investments in the sector, international tourism, and provisional scenarios.

	o-turistico-regionale.html			and to be aware of the correct decisions to make, concerning programming and corporate strategies.	
Lombardia: Regione Lombardia	https://www.regione.lombardia.it/wps/portal/istituzionale/HP/DettaglioRedazionale/servizi-e-informazioni/Enti-e-Operatori/promozione-del-turismo/promozione-turistica/osservatorio-regionale-del-turismo	ITA	Regional	Data is collected in order to study the evolution of the demand and supply of the tourism sector and to monitor the activities of promotion, information and tourism reception in the Region.	Through the management of tourism data, it is possible to identify the hospitality structures and to measure the tourism flows.
Trentino Alto Adige: ISPAT	http://www.statistica.provincia.tn.it/statistiche/settori_economici/turismo/	ITA	Regional	The purpose of this Observatory is to gather information about tourism to compare it with previous years and develop new strategies.	Tourism expenses, tourism flows, seasonal tourism, and the propensity to digital innovation in the hospitality branch
Veneto: Regione del Veneto	http://statistica.regione.veneto.it/banche_dati_	ITA	Regional	The aim of this website is to make the statistical information currently possessed by the U.O.	Tourism movements

	economia_turis mo.jsp			Sistema Statistico Regionale of the Veneto Region easily available.	
Friuli – Venezia Giulia: Regione Autonoma Friuli-Venezia Giulia	https://www.re gione.fvg.it/rafv g/cms/RAFVG/G EN/statistica/	ITA	Regional	Data is collected to keep people updated on the latest news and to inform them about the statistical data of the Region.	In this link we can find information about the development of tourism policies, data about flows and expenses on hospitality branches, events and catering.
Emilia-Romagna: Regione Emilia-Romagna	https://statistic a.regione.emilia - romagna.it/doc umentazione/ril evazioni/turism o	ITA	Regional		Regione Emilia Romagna shares statistical data about tourism movements, the detection of tourism demand and hospitality offer.
Emilia-Romagna: Unioncamere Emilia-Romagna	https://www.uc er.camcom.it/	ITA	Regional		Unioncamere Emilia Romagna shows data concerning tourism (financial statements, expenditure on destinations, events, etc.)
Toscana: Regione Toscana	https://www.re gione.toscana.it /statistiche/ban ca-dati-turismo	ITA	Regional		The data collected are movements of clients in the tourism (arrivals and departures) and the hospitality sectors.
Umbria: Regione Umbria	https://www.re gione.umbria.it/ turismo-attivita-sportive/statisti	ITA	Regional		The data gathered refer to the demand and supply of tourism, at a regional level, and data referring to the region and state of origin of tourists

	che-del-turismo1				
Marche: Regione Marche	http://statistica.regione.marche.it/statistiche-per-argomento/turismo	ITA	Regional	Data is collected to develop information systems coordinated with different institutional levels. Moreover, the aim is to inform the population and the decision makers.	In this section we can find data regarding tourism flows (arrivals, Italian tourists, and foreign tourists) and the accommodation capacity (number of structures and typology, number of available beds, rooms, etc.).
Lazio: RADAR of Regione Lazio	http://www.visitlazio.com/osservatorio/	ITA	Regional	The aim is to gather all information telematically by all entities of the tourism sector in the Region.	This information system provides information about tourism flows.
Abruzzo: Regione Abruzzo	https://www.regione.abruzzo.it/content/osservatorio-turistico-regionale	ITA	Regional		The regional observatory of tourism shares statistical data about arrivals and tourism attendances and accommodation capacity of the available structures
Molise: Regione Molise	http://www.regione.molise.it/web/turismo/turismo.nsf/0/26BB5CDCF69EE990C125758B0036A7EC?OpenDocument	ITA	Regional		From this webpage, we can find information about the tourism flows, tourists' satisfaction, and the number of Italian tourists in the region.

Campania: Rilevatore Turistico Regionale of Regione Campania	http://www.rilevatoreturistico.regione.campania.it/EPT/home.do	ITA	Regional	The region of Campania has collected information concerning the tourism flows in order to ease the communication system among the hospitality structures and the tourism offices.	Tourism flows
Puglia: Agenzia Regionale del Turismo PUGLIAPROMOZIONE of Regione Puglia	https://www.agenziapugliapromozione.it/portal/web/guest/osservatorio-del-turismo	ITA	Regional	The aim of the Observatory is to gather information in an ordered way in order to keep track of the increasing popularity of the Region.	In this section it is possible to find quantitative data concerning accommodation, tourism flows and significant tourism areas.
Basilicata: APT Basilicata	https://www.aptbasilicata.it/Sistema-Informativo-Statistico-Turistico.2098.0.html	ITA	Regional	Data is collected in order to incentive tourism in the Region	Tourism flows
Calabria: Osservatorio Turistico	https://portale.regione.calabria.it/website/portaltemplates/view/view.cfm?15101	ITA	Regional		Tourism flows

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Sicilia: Osservatorio Turistico Regione Siciliana	https://osservatorioturistico.regione.sicilia.it/public/default	ITA	Regional	The aim is to monitor and improve the tourism offer in the Region.	The region gathers and analyses the information regarding the accommodation capacity and the tourism flows.
Sardegna: SIRED	https://sired.sardegnaturismo.it/	ITA	Regional	Data is collected in order to fulfil the obligation towards ISTAT in gathering statistical information.	SIRED is an information system of gathering and elaborating data concerning accommodation capacity and tourism flows

9 Assessment: Identification of gaps, needs and challenges

In this paragraph we attempt to draw some preliminary conclusions concerning gaps, needs and challenges in data gathering and management on sustainable tourism in the Mediterranean. In the last years a number of EU funded project have supported research and pilot initiatives on the topic, generating a wide range of local actions and related preliminary assessments of gaps, needs and challenges, which are partially common also to this deliverable.

9.1 Official Statistics

As far as official statistics are concerned, all EU countries, as well as IPA and Southern Mediterranean countries, have an operating National Statistics Bureau (NSB). All the NSB could be reached online and are free of access with few exceptions for specific studies or researches. The type of data available varies from country to country, but at least the basic information about tourism flows and accommodation sector consistency are present for each country. The statistics at national level could always be found in international databases such EUROSTAT, OECD or the UNWTO Satellite Account system. Thus, some differences arise when it comes to the type of data collected, accuracy in the collection and geographical details (Malta only collects data at the country scale because of its dimension, Montenegro has data at a lower scale than the national one only for accommodation, Bosnia Herzegovina only collects data at the national level as well as Cyprus, Gibraltar and Palestine; Egypt has a focus on specific destinations), while timing of data collection always allow to build yearly trends and in the large majority of cases to highlight seasonality (with the exception of Bosnia Herzegovina, Malta, Montenegro, Egypt and Tunisia). In general, data are collected at the municipal scale, transmitted to upper administrative levels and made available as aggregated data. Not every country has a NSB website translated in English, which might limit the accessibility of data at the regional scale where available. In some countries (such as France, Italy, Spain and Portugal) data are made available also by regional based institutions, providing specific insights and yearly based reports. We might then conclude that, as far as official statistics are concerned, a large variety persist in terms of data gathering methods, geographical scale and frequency of data collection at the sub national level, while at the national level discrepancies in the data gathering and management are less visible. Data are made available and easy to access thanks to EU initiatives (EUROSTAT) or international organisations (OECD and UNWTO), allowing benchmarking and evaluation of tourism dimensions at the national level. Few attempts have been made to create more homogeneous data gathering across borders and when this is the case it was possible thanks to external funding (e.i. IPA Adriatic STAR project).

9.2   Tourism Observatories and Research Centres

University of Maribor's survey on EU tourism observatories highlighted a general absence of them throughout the Mediterranean Countries with few exceptions.

Italy is the only country where tourism data related research is included in the national organisation chart of the sector. It's also the place where every region has its own tourism observatory, since tourism policies refers to the regional administration, while the national government has a coordination role. Nevertheless, research centres dealing with tourism data in the form of independent observatories or specific divisions of universities and research institutes could also be found in Spain, Portugal, France, Croatia and Greece. Some of them are also included in the International Network of Sustainable Tourism Observatories (INSTO) and have in general a regional perspective or a specialised approach on a specific aspect. Greece is setting up its national tourism observatory at this very time, while France has a limited number of observatories, mainly related to regional scale destinations. The regional initiatives often involve the local chamber of commerce together with universities and other research institutions, making tourism data management an example of public private cooperation. Where research tradition in tourism studies is older, such as in the Spanish case, the number of research centres is quite high, as well as the type and number of researches conducted. In the IPA countries it's more difficult to find research centres or observatories outside the official statistics bureau: gathering and managing data is an expensive activity, which might come after other priorities. Cyprus has a well-established research tradition on tourism and this is also reflected by the number of public and private institutions dealing with tourism data. Finally, the situation is quite varied in the countries of the ENI CBC MED programme: although tourism is a leading sector for the country, Egypt seems not having invested that much in research and data management; Israel and Jordan instead, have both a well-established tradition in tourism research, with a number of universities producing valuable research on the topic, but none of them has a proper observatory for tourism data outside the national statistics bureau. Lebanon lack from a national data observatory for tourism and the same could be said for Palestine, even though for the latter, the international cooperation provides studies on specific items. The two French speaking countries (Algeria and Tunisia) share the same condition: a well-established national statistics bureau, but no tourism observatories outside this official institution. Tourism has always been a source of income for Tunisia more than for Algeria, and this might explain the difference in terms of tourism related higher education, which also reflects the general absence of research centres for Algeria.

We might then conclude that tourism observatories in the MED area belong to different local research traditions related to tourism, as well as to the different weight the tourism sector has on the national economies. This might be also the reason why in some countries the regional dimension of observatories has been developed, more than the national one. Seeking information at the destination level, the regional boundaries seems to be more appropriated

to framework specific phenomena or to support decision making based on benchmarking activities.

9.3   Big and Open Data

Different researches emphasize the potential of Big Data for tourism firms to gain relevant insights and information on customers' experiences, feelings, interests, opinions, behaviours, preferences etc. However, in a tourism destination context such data are not widely used by policy makers and authorities to create value. Many of the issues with big data in general apply to the tourism sector. One of these is the difficulty of sharing information across sources. Though cities have no shortage of information, it is often spread out across multiple organizations that do not combine data. On top of that, organizations often do not have a standard way of collecting data. This prevents it from being used to its full potential. This might be the reason why in our research, the most difficult information to look for is the one related to Big and Open data.

While open data projects mainly rely upon national or regional government initiatives, Big Data implies not only making public data available for the greater public, but also combining data from different sources, some of which might be privately owned. As an example, web-based data have to be purchased and later combined with qualitative and quantitative data gathered with different methods. This means that Big Data are expensive, and this might be the reason why in the large majority of cases, the examples of Big data applied to tourism that could be found in the MED area, comes from pilot initiatives or special projects. France has developed a nation-wide open data initiative on tourism, based on the data made available by the tourism offices spread in the country. This example and its effectiveness might be related to the specific territorial governance of the French tourism sector but could be set as a reference example for other countries. Spain as well has been able to develop a nation-wide Big data system for tourism, clearly stating the relationship between their respective position in the international ranking of the most visited countries. Italy has a set of locally based experiences and one private company selling reports on specific destinations using big data. Some countries are in the project development phase as far as Big Data for tourism are concerned (Slovenia, Cyprus). In other MED and ENI CBC MED cooperation area countries, Big Data are far from being operational.

Overall, the implementation of big data in the tourism sector is still at an early stage. However, there are interesting perspectives as demonstrated by the current EU initiatives, the most ambitious one being the European Statistical System's ESSnet Big Data project. This project, which is currently ongoing, aims at leveraging the potential of big data sources to produce official statistics, with a specific work package related to innovation in tourism statistics. The goal is to create a smart Tourism Information System that will serve as a basis to improve the existing Tourism Satellite Accounts.

9.4 ETIS Indicators

In our research, the use of sustainable tourism indicators, their collection over time and their use for informing relevant policies at the destination level has been often related to past or current EU projects. The initiative of the commission aiming at giving local stakeholders a valuable tool for the evaluation of tourism impacts on the environment and the society has been the booster of local or nation-wide (it is the case of Slovenia, France and Portugal for example) projects on indicators. Two main lines could be identified: projects targeting the destination or projects targeting tourism products. The main issue in this case is again the data availability as well as specific funding for data gathering made available at local and regional level. ETIS indicators are often difficult to be constructed, discouraging the public sector to engage in this activity. Despite the narratives, also included in official strategic documents, it is very difficult for national governments to collect these indicators in a long-term perspective. Unfortunately, the state of the art for ETIS or other sustainability indicators in the MED area shows great differences among countries and within the same country among regions and destinations, also in terms of regularity in data gathering. As stated by the Med Sustainable Tourism Community, "At the Mediterranean level, the main current knowledge/data gaps on tourism is a key issue in order to feed decision-making processes and propose alternative tourism models".

9.5 Gaps, needs and challenges

National Statistics Bureaus have set the basis and made the history of territorial governance and government in the EU and beyond. Nowadays the public ownership of data seems to be questioned by an increasing amount of data privately produced, which could be useful in better designing policies and related practices in the tourism sector, helping professionals to choose sustainability as a strategic asset for the future.

Together with engaging in the new Big Data adventure, there is a need of gathering more relevant and standard data at the regional level. A more harmonised and standard way of gathering relevant data among med regions would help addressing problems going beyond administrative borders, such as the environmental pressure related to tourism exploitation. Together with flows and accommodation dimensions, other already available data (most of them building the structure of the sector) are relevant for tourism, such as accessibility, transport, pollution. When it comes to data outreach, this information is not always related to the tourism industry, which might hinder the possibility for local policy maker to have the picture of a complex sector.

In a fast society, timing becomes crucial, there is a need of harmonising and accelerating the internal processes of data availability at least at a monthly level for the whole set of analysed countries. Data collection on a regular basis seems to be the first gap to be faced by Med countries as a whole, in particular when it comes to sustainability indicators. As far as our assessment made possible, and despite the participation in UNWTO activities, there is a need

of a better governance at the ministries level in order to discuss the best possible strategies for data management in the tourism sector at the sub national level and coordinate cross border actions where relevant.

When it comes to sustainability evaluation, one should not forget the other side of the coin, which means residents. Currently official statistics on tourism only look at tourists (demand) and accommodation (supply), but relevant information to inform policies comes from the availability of other type of data, such as average quality of life and living standards of residents. Again, before engaging in big data, official statistics need to be better exploited.

Existing observatories at the Mediterranean level usually do not participate in networks. Networking activities and cooperation among observatories and research centres need to be further developed at every geographical scale: within the same country among regions and among different countries in a cross-border perspective. The role of regional observatories is relevant for little or dispersed destinations, which need a more detailed information and a sub-regional level benchmarking. Networking need also to be developed as a tool for lowering the costs of data purchase procedures and/or support the cooperation with larger numbers of industry professionals.

With a few exceptions, Big Data are almost non-existing in the Mediterranean region as a whole. As already stated, there are a number of EU funded projects and initiatives trying to fill the gap and contribute to a better understanding of the complexity of tourism. The lack of a coordinated public action on Big Data, the question of data ownership and the very slow decision process in terms of data security and transparency that the UE has implemented, have had a crucial role in preventing the MED area countries in engaging in the field. Therefore, there is a need of an EU framework policy for data management to face the challenge of allowing private data to be used by public institutions for research and policy purposes. Of course, local public entities might not have the required level of skilled staff in order to approach the development of a Big Data for tourism, but one of the evidences related to the large number of pilot actions undertaken by MED regions, is that universities and research centres could act as valuable intermediators. Furthermore, universities and research institutions could support and share with public entities the technical maintenance of hardware and software needed, as well as fundraising initiatives also supporting dissemination and capitalisation.

Despite the efforts, sustainability indicators for tourism have not been extensively adopted by local or regional administrations. As stated by the MED Sustainable Tourism Community: "Lack of data availability at local level, lack of political commitment and financial investment for monitoring, low level of skills of human resources to properly manage measurement and data collection" are the gaps to be filled. This has led to the absence of a standardized basis for the collection of relevant information, particularly at the national level. As UNWTO very well summarizes: "This is a significant gap, and one that limits the potential for the development of policies directed at advancing sustainable tourism." The other gap is due to the fact that, while pilots and research exercises on assessing sustainable tourism indicators

have been done at the local (destination/municipal) scale, policy making often is a regional level procedure. One of the main challenges is therefore to coordinate actions between administrations across the different decision-making levels.

10 Conclusions and Recommendations

In this paragraph we try to give a first set of possible recommendations in order to face the challenges and fill the gaps listed above. One might notice very soon that the large majority of our conclusions are in line with those developed by the MED Sustainable Tourism Community:

1. Design a common framework in order to define indicators, standardise data collection methods and management, as well as data communication and accessibility (Advocate at EU level for a Common Methodological Framework to measure and monitor tourism sustainability in the Mediterranean aligned with existing tools within the European policy framework. See MED STC actions suggested).

2. The common framework should not be limited to tourism data, but to the whole set of data relevant to understand tourism complexity.

3. Following EUROSTAT methodology implemented at the national level, data harmonization should also be extended at the regional and local scale across EU destinations, integrating in one single tool the outcomes of ESPON activities.

4. Support transboundary and cluster-like data aggregation in order to better understand tourism sustainability within the boundaries of sub regional destinations.

5. Development of cooperative structures, such as clusters, networks and consortium to support the involvement of different actors: private data owners, private companies, public entities, national statistics offices, etc. in contributing to data sharing.

6. Enhance the accessibility to secondary data sources also through networking, best practice sharing and compatibility of data warehouses of regional observatories.

7. Support the development of a single platform to host the outputs of related projects already funded through EU.

8. Provide incentives by allocating specific funds to regional governments within the ERDF and other ESIF tools to gain access to relevant data from private sources with a long term perspective to contribute to informed and evidence-based policy making.

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Annexes

Annex 1: Template for data gathering D. 3.1.1 and D 3.1.2

Name of the country	
Official statistics	
Who is collecting tourism data at NATIONAL level?	*Please indicate whether or not the Country has a National Statistics Office dealing with tourism data. Write the name of the office in charge of collecting tourism data; provide the link to the website of the public national institution dealing with tourism data;*
Which data are available? Consistency, flows, other?	*Please indicate which data are available:* *Dimension of the tourism industry (number of hotels and similar accommodation facilities; number of holiday and other short stay accommodation; camping grounds, recreational vehicle parks and trailer parks; average dimension of accommodation facilities in number of beds;)* *Tourism flows (number of arrivals both domestic and international, average length of stay, data about daily visitors, distribution of domestic and international tourists by type of accommodation facility)* *Other data collected (socio-cultural variables such as employment; tourism density over local population; number of cultural tourism attraction; economic variables such as tourism expenditure; tourism contribution to GDP; occupancy rates, etc.; environmental variables: energy consumption; water consumption, waste management, etc.)*
At which territorial/geographical scale the data are observed?	*Please indicate at which geographical scale the above-mentioned data are available:* *National, Regional, province or department, destination*
How often data is collected? Are there data series available? Which years?	*Please indicate how often data are collected:* *annually, monthly, weekly, daily are there time series available? If yes for which data and which geographical scale?*
Data accessibility (free of access, payment required, etc.)	*Please indicate whether data are free of access or not*
Link (if existing) to the database	*Please indicate the link to the database*

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Who is collecting data at REGIONAL (subnational) level?	
Who is collecting data at DESTINATION/MUNICIPAL level?	
Are there research institutions/observatories specialized on data gathering for tourism?	
Open Big data	
Who is developing big data on tourism?	
What type of data are collected, at which geographical level and how often?	
Data accessibility (free of access, payment required, etc.)	
Are data integrated with national and local level in terms of tourism management?	
Link (if existing) to the Big Data providers	
Sustainable tourism indicators	
Is the country collecting sustainable tourism indicators?	*Yes No*
If yes give details about the data collection strategy/program.	*Please give evidence about indicators relevant for sustainable tourism (ETIS, other EU projects or initiatives, SDGs), which are collected by both public and private entities at any geographical scale. Are there time series available?*
Are ETIS indicators used in the country?	*Please explain if the indicators system is still operating and in use or if stemming from the ETIS experience other initiatives have been developed by single destinations.*

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Data accessibility (free of access, payment required, etc.)	*Please indicate whether data are free of access or not*
Link (if existing) to the database	*Please indicate the link to the database*
EU funded projects on tourism data	
Have you participated in previous EU funded projects dealing with tourism data collection and management?	*Yes/ No* *Please indicate the name, programme (Interreg, COSME, EASME, E+, H2020 etc.), scope and objective of the project:* *Provide the link to the website and any additional information/documents about it.*
Do you know about other interesting projects or best practices in tourism data management to suggest?	*Please indicate the name, scope and objective of the project:* *Provide the link to the website and any additional information/documents about it.*
Based on your previous experience, would you suggest a list of key stakeholders dealing with tourism data collection and management?	*Please specify name and website if institutions or contact details if individuals*

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