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Can indicators for sustainable tourism improve tourism planning in the coastal destinations? Empirical evidence from Catalonia, Istrian Region and Tuscany Region

Abstract

Due to the continuous increase of the tourism industry, tourism destinations need to be managed under a sustainable framework, with the main aim of minimizing the adverse effects caused by tourism flows. In recent years, several attempts have been made to measure those effects and value the level of sustainability of every destination. A clear example of this is the European Tourism Indicator System (ETIS). In the paper, the results are presented of a project which aimed to test indicators of sustainable tourism in coastal destinations of Catalonia, Istrian Region, and Tuscany Region. The results of 33 collected indicators are available on the online platform of the project INTERREG MED MITOMED+. During the first year, in every category of indicators (economic, social-cultural and environmental) only some indicators were collected, which was expected because different regions apply different methodologies. The collected data is the starting point that shows destinations how the indicator can be obtained and what its purpose is. Furthermore, collected data can help local and regional tourism stakeholders to prevent factors of risk, to take decisions and to improve the implementation of policies for sustainable maritime and coastal tourism development in the Mediterranean area.

Key words: sustainable tourism; indicators of sustainable tourism; sustainable development; maritime and coastal destinations

1. Introduction

It is well known that the Mediterranean attracts the most significant number of tourists, more than any other destination in the world (Apostolopoulos, Leontidou, & Loukissas, 2001; Escrich, 2019). In 2017, Southern/Mediterranean Europe had 267.4 million arrivals, the world's most substantial number, and the next region by the number of arrivals was Western Europe, with 192.7 million (UNWTO, 2018). The reason for such results can be reflected in the many amenities and types of tourism that the Mediterranean offers to visitors. The Mediterranean will provide satisfaction to visitors who want sea, sun, and fun while, on the other hand, the Mediterranean offers culture, history and antiquity (Apostolopoulos et al., 2001).

Given the above, tourism has a significant and crucial role in the economic development of the Mediterranean countries (Drius, Bongiorni, Depellegrin, Menegon, Pugnetti, & Stifter, 2019), and it has

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a significant share in the GDP. In 2017, according to UNWTO, in Southern/Mediterranean Europe, it reached US$ 199.1 billion in International Tourism Receipts (UNWTO, 2018).

On the other hand, tourism, as is indicated by Manning (1999), is one of the most risk-averse industries and dependent upon social, economic and environmental stability. As a result of all the changes caused by the accelerated expansion of tourism, the importance of sustainable tourism development in Mediterranean destinations is growing, as a means of preventing and alleviating the negative consequences that are inevitable in the growth of the tourism industry (Sirakaya, Jamal, & Choi, 2001; Tanguay, Rajaonson, & Therrien, 2013; Farsari & Prastacos, 2001).

The European Union emphasises the importance of sustainable tourism management, focusing on three pillars of sustainability: economic, socio-cultural and environmental. In this sense, the European Commission developed the European Tourism Indicators System - ETIS, (ETIS, 2013 and 2016) although the importance of indicators was recognised and suggested many years before by scientists and tourist organisations. Different studies have emphasised the importance of sustainable tourism and, as indicated by Torres–Delago and Palomeque (2014) "sustainability paradigm is clearly consistent at the level of discourse, and even in the planning, but does not translate sufficiently into action." Our goal was to develop a tool that can be useful in measuring sustainability in Mediterranean coastal destinations to support decision-makers and tourism destination managers.

2. Literature review

2.1. The role of indicators in tourism planning

Although the concept of sustainable development was approved, its acceptance was superficial (Butler, 1999). The need to develop indicators can be found in the fact that decision-makers and various researchers have recognised the low quality of available information related to the state of society as a fundamental problem in the evaluation of sustainability (Sirakaya et al., 2001). As the OECD stated in the 1990s, considerable progress has been made in understanding the importance of indicators and their use and in defining the methods of measurement (OECD, 2000). Indicators warning tourism stakeholders about possible problems in the tourism industry were developed in 1993, under the WTO initiative. Furthermore, in the Rome Conference held in 1999, OECD member states, organisations and institutes discussed important guidelines for using sustainable development indicators at the international, national and local levels (OECD, 2000).

Many researchers were dealing with this topic. Torres–Delago and Palomeque (2014) explained the relationship between tourism and sustainability, pointing out that this relationship always existed but was not understood until, much later, official institutions put this topic into focus, initially on the environmental dimension. Many authors have emphasised the need to develop methods for evaluating the impacts of tourism in order to move towards sustainability (Torres–Delago & Palomeque, 2014; Gahin, Veleva, & Hart, 2003; Castellani & Sala, 2010). Additionally, the same authors indicated that destination managers must determine which types and sets of indicators they want to use, i.e. the indicators must be chosen taking into account the final goal and answers which they want to get from them (Manning, 1999). Kates, Parris, and Leiserowitz (2005) explained that a way to define sustainable development is in how it is measured by evaluating different initiatives. The relatively new tool suggested by the European Commission in 2013 was a European Tourism Indicators System (ETIS) with 27 core and 40 optional indicators; after being tested in some destinations, a revised version of ETIS was released in 2016 (ETIS, 2013 and 2016). The suggestions from the destinations that voluntarily tested the ETIS were that data collection techniques and procedures needed to be improved

(Modica, Capocchi, Foroni, & Zenga, 2018). This was also among the tasks of the MITOMED+ project (MITOMED+, https://mitomedplus.andalucia.org/mitomedplus/index.html).

2.2. The importance of sustainable tourism indicators

The real path to supporting and achieving sustainable development of tourism destinations lies in understanding sustainable tourism as a decision-making strategy (Waas, Hugé, Block, Wright, Benitez-Capistros, & Verbruggen, 2014). For this purpose, there is a need to measure the effects that sustainable tourism has achieved, and this can best be done through the indicators of sustainability in tourism. Indicators have proven to be the best instrument to give sustainable tourism a full meaning (Butler, 1999; Modica et al., 2018). The importance of indicators is reflected in their definition: they represent the link between subjective thinking that can often lead to wrong conclusions and an objective assessment of the state of an area based on tests, scientific knowledge and experience gained in the targeted area itself (Sirakaya et al., 2001).

According to WTO (2004) "indicators are considered relevant only if they effectively address the key issues associated with planning and management of a destination" and they need to be harmonised at the national, regional and global levels (UN, 2001). Setting a good indicator that will firmly fulfil its role requires good knowledge and experience, or research. Besides, the indicators are dynamic and consistent with the changes, and they must be changed, i.e. it is important to evaluate and test whether they are still in the trend with current circumstances or whether they need to be updated (McGranahan, 1972).

The purpose of the indicators is reflected in the three essential roles they have. The first role is to present the current state of sustainability at the destination. Second, to monitor the results of activities and policies carried out at the destination in order to develop and implement sustainability. Third, to warn about the changes that are taking place. Indicators have the role of demonstrating a complex system easily and pointing to the changes that are happening in order to trigger significant political and legal actions (McCool & Stankey, 2004). As Gahin et al. (2003) indicated, a process of developing and calculating the indicators is valuable because "it serves as a vehicle to generate community consensus about what is important and engages community members in working towards shared goals."

According to the literature, many different researchers have tried to develop and test different indicators as a useful set of information for stakeholders and decision-makers (Choi & Sirakaya, 2006, Navarro Jurado et al. 2012, DEDUCE consortium, 2007; Blancas, Lozano-Oyola, González, Guerrero, & Caballero, 2011; Vera Rebollo & Ivars Baidal, 2003; Choi & Sirakaya, 2006, Fodranová, Kubičková, & Michalková, 2015). Our goal was to test the usefulness of the MITOMED+ set of indicators at the local and regional levels, aiming at their comparison on a transnational level.

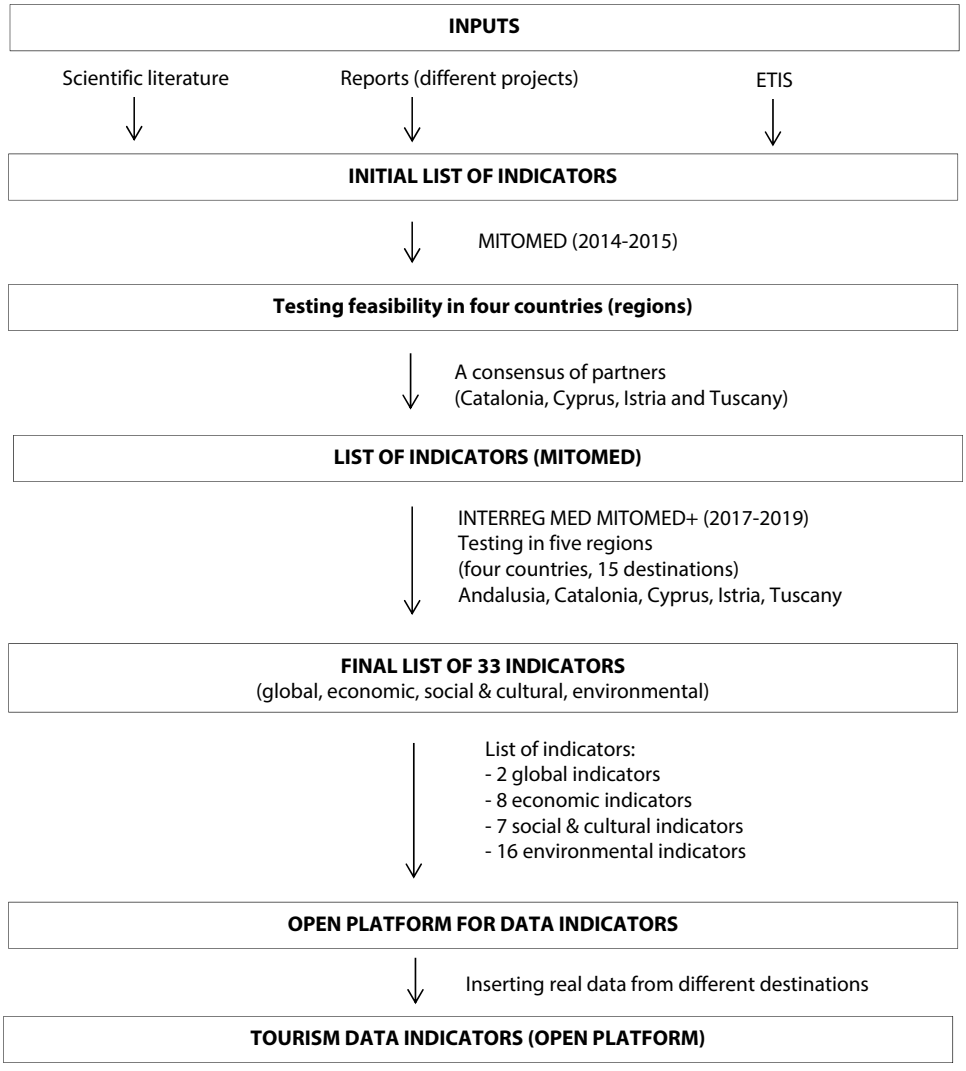
The indicators development process was divided into three phases. First phase was testing the possibility of calculating indicators in the regions involved in the MITOMED project – Catalonia, Cyprus, Tuscany and Istria. In this phase indicators from ETIS (2013) were used. Also, indicators suggested by other researches and studies (Choi & Sirakaya, 2006, Navarro Jurado et al. 2012, DEDUCE consortium, 2007; Blancas et al., 2011; Vera Rebollo & Ivars Baidal, 2003; Choi & Sirakaya, 2006) were chosen for testing feasibility in the above-mentioned regions. The main goal was to test the feasibility of data gathering in these regions and to suggest the set of indicators that can be useful for coastal areas. The result of the project was MITOMED set of indicators (GAP Analysis, 2015). The methodology for the calculation of each indicator was taken from the suggested methods in previous studies or ETIS (2013) adapted to the different models of calculation in each region/destination. These were the primary points for the further development of MITOMED+ set of indicators. In the second phase, at the beginning

of the MITOMED+ project partners from Andalusia, Catalonia, Cyprus, Tuscany and Istria discussed the MITOMED set of indicators and agreed about the final version of the new MITOMED+ set. The last phase where the development of the Open platform for tourism data indicators and inserting real data in the platform. The development process of creating a set of indicators and Open platform is presented in Figure 1.

3. Tourism data indicators system and online open platform

Indicators calculated in the regions have been collected in different ways: contacting local partners, cities and municipalities, tourist companies, official governmental statistics, tourist offices, local, regional or national statistical bureaux and other stakeholders, or by conducting a visitor's survey.

Figure 1
The development process of creating a set of indicators and open platform

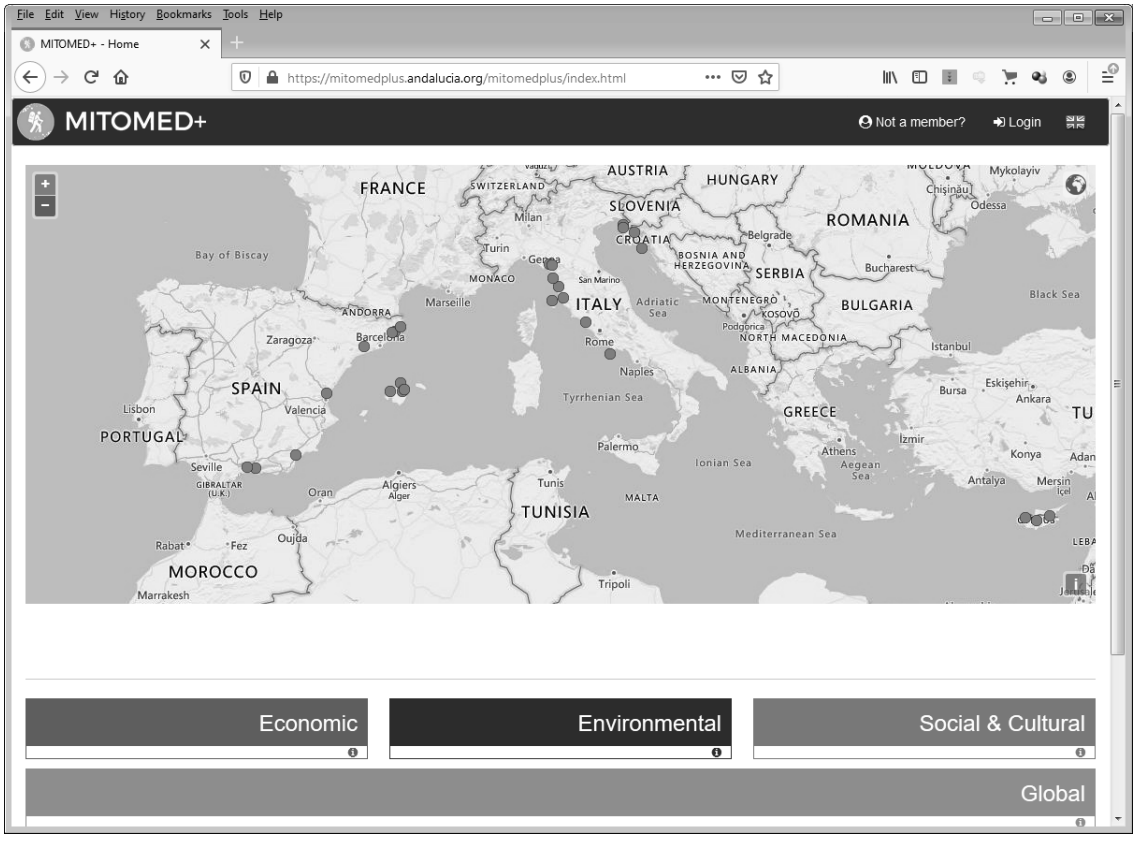


This paper presents the analysis of collected indicators in three regions, Catalonia, Istria and Tuscany. Although all three regions are part of the Mediterranean, the regions of Catalonia, Istria and Tuscany are different in many ways, starting from basic characteristics such as size, population, length and diversity of the coast, the number of visitors, to the specific features of each destination and different regulations related to tourism. The paper presents the interpretations of the specific indicators that can or cannot be compared among different destinations in these regions. The goal is to generate a picture of the state of sustainability of tourism in the destinations and provide information about needed improvements in order to develop coastal tourism destinations in a more responsible way.

The indicators are divided into categories. The environmental category contains 16 indicators, the economic category eight indicators, the socio-cultural category has seven indicators and the global category, two indicators (MITOMED+, https://mitomedplus.andalucia.org/mitomedplus/index.html). Within these categories of indicators, there are 33, or in total 38 with sub-indicators. All these indicators are available on an open online platform created within the project framework.

The development process of the MITOMED projects are presented in Figure 1. In Figure 2, the front page of the online Open platform for data indicators of the MITOMED+ project was given.

Figure 2
MITOMED+ Open platform for data indicators



Source: Interreg Mediterranean MITOMED+ project (https://mitomedplus.andalucia.org/mitomedplus/index.html).

4. Catalonia, Istrian Region and Tuscany Region

As stated above, due to the high popularity of Mediterranean destinations, the management of sustainable tourism is necessary in view of the current satisfaction of all tourism stakeholders and of the future negative consequences in the absence of control and planning. In this paper, three Mediterranean destinations were selected as empirical examples. Catalonia, Istrian Region, and Tuscany Region are present on the online Open platform of the project MITOMED+.

4.1. Catalonia

Catalonia is the leading Spanish tourism destination in terms of the number of arrivals, overnight stays and tourist expenditure (INE, 2018). Located on the north east side of the Iberian Peninsula and its border with France and Andorra is the main terrestrial entrance of tourists into Spain. The attractiveness of its coastal area (Costa Brava and Costa Daurada), together with the coastal city of Barcelona generates a maximum influx of tourism to the coastal areas. Three pilot municipalities were chosen for the project among the over 100 coastal destinations that Catalonia has, considering the maximum variety and distribution of them in the territory. So Calonge-Sant Antoni, Lloret de Mar and Torredembarra were the selected areas.

4.2. Istrian Region

The Istrian Region is a peninsula of 2,820 square kilometres making up 4.98% of the total area of the Republic of Croatia. Istria County has 208,055 inhabitants, which makes up 4.85% of the population of the Republic of Croatia (Census, 2011). In 2017 in Istria were registered 27,511,615 overnights and 4,223,322 arrivals, and in 2018 in Istria were 28,442,464 overnights and 4,179,326 arrivals (CNTB, 2019). For example, in Istria in 2018, there were 22.6% of arrivals compared to the total number of tourist arrivals in Croatia, and 26.82% of overnights compared to the Croatian total (CNTB, 2019). Most of the tourist activity is registered in the coastal areas. The Istrian Region consists of 10 cities and 31 municipalities within which 31 tourist boards operate (CNTB, 2019). The destinations were chosen to participate in the project because they have a significant number of tourist arrivals and overnights and they have different positions (geographically - east and west coast of the Istrian peninsula, and larger and smaller destinations). In the testing phase of the project, we decided to involve different destinations to test the process of data collection. The data was collected at the local self-government level. Tourist destinations involved were the cities of Poreč, Novigrad and Labin.

4.3. Tuscany Region

Tuscany is a region located in the heart of Italy covering 22,985 square kilometres. The Tuscan coast faces the Mediterranean Sea for over 633 kilometres, of which 397 kilometres are continental coasts and 230 kilometres are coast surrounding islands. The Tuscan Archipelago is composed of seven major islands which are tourist attractions thanks to the crystal-clear seas, as well as their natural, cultural and historical heritages. The Tuscan coast has about 715,000 inhabitants, which makes up about 19% of the population of the Tuscany Region. In 2017 more than 15,200,000 overnight stays and 2,800,000 arrivals (IRPET, 2017) were registered on the Tuscan coast. Every year, Italian and foreign tourists choose the Tuscan coast for a holiday to find a relaxing spirit and service quality.

The destinations involved in Tuscany are a group of homogeneous municipalities, defined in the Regional law n.24 of 18/05/2018. The law has integrated the Consolidated Law on tourism with the definition of homogeneous territorial areas (called 'ambiti territoriali'), as an optimal tool for tourism organisation. Following the regulation changes in Tuscany, the destinations involved in the project are to be considered as a group of several municipalities, i.e. Versilia is an area made of 7 municipalities.

The project partnership has identified the modality of collection and calculation of indicators. It has considered the implications related to the comparative analysis (benchmark activity) among destinations which include only one municipality.

Table 1
General data for the destinations involved in testing phase in Catalonia, Istrian Region and Tuscany Region for 2017

Region	Destination	Total area (km^2)	Population	Number of beds	Number of tourists	Number of overnight stays	Number of tourists/ residents	Number of beds/ resident
Catalonia	Sant Antoni de Calogne	33.60	10,709	9,369	19,018	669,523	1.78	0.87
	Lloret de Mar	48.70	37,042	33,412	1,233,320	5,624,000	33.30	0.90
	Torredembarra	8.71	15,726	323	n/a	n/a	n/a	0.02
Istria	Poreč	119.00	16,696	28,234	567,062	3,199,276	33.96	1.70
	Novigrad	27.00	4,345	13,451	222,744	1,139,111	51.26	3.10
	Labin	71.85	11,642	10,762	211,477	1,313,654	18.16	0.92
Tuscany	Versilia	438.18	164,723	34,212	638,557	2,593,152	3.88	0.21

Sources for Catalonia: Interreg Med MITOMED+ Open platform.

Sources for Istrian County: City of Labin; City of Novigrad; Službeni glasnik Grada Poreča 8/10 (2010); DZS (2011); Izvješće o stanju u prostoru Istarske županije (2013); eVisitor (2017).

Sources for Tuscany Region: Regional Statistics Office – Tuscany Region; IRPET - Regional Institute for Economic Planning of Tuscany.

5. Results

In the process of collecting indicators, various sources of information were used. Some data was easily accessible, and some data was not available; this depends on the indicator and/or region. However, data sources include the following options: local partners, cities and municipalities, tourist companies, official governmental statistics, tourist offices, local, regional or national statistical bureaux, surveys and other stakeholders. After inserting the data in the platform, a database is created that allows further calculation of the indicators. The online platform allows interpretation of results in multiple ways: comparative between destinations, ranking and evolution (MITOMED+, https://mitomedplus.andalucia.org/mitomedplus/index.html).

As already mentioned, each destination which participates in the online platform is a part of differently organised national, regional and local systems, therefore, they have different possibilities for data collection.

Table 2
Results of the global, economic, social and cultural indicators for the destinations involved in testing phase in Catalonia, Istria and Tuscany

	Name of indicator/destination	Catalonia			Istrian Region			Tuscany Region
		Sant Antoni de Calogne	Lloret de Mar	Torredembarra	City of Poreč	City of Novigrad	City of Labin	Versilia
1.	Percentage of the area of the destination with a sustainable tourism action plan, with agreed monitoring, development control and evaluation arrangement (%)	100.0	100.0	n/a	n/a	n/a	n/a	100.0
2.	Visitor satisfaction with their overall experience in the destination	75.0	n/a	n/a	91.73	85.47	88.89	94.27
3.	Percentage of tourist organisations in the destination using a voluntary verified certification/labelling for environmental/quality/ sustainability and/or CSR measures (%)	1.87	n/a	n/a	n/a	n/a	n/a	1.96
4. a)	Relative contribution of tourism to the GDP destination (%)	83.1	n/a	n/a	n/a	n/a	n/a	n/a
4. b)	Proportion of tourist organisations in relation to the total number of businesses in the destination (%)	n/a	n/a	n/a	n/a	n/a	n/a	19.23

Table 2 **Continued**

	Name of indicator/destination	Catalonia			Istrian Region			Tuscany Region
		Sant Antoni de Calogne	Lloret de Mar	Torrede-mbarra	City of Poreč	City of Novigrad	City of Labin	Versilia
4. c)	Proportion of active population in tourist organisations in relation to the whole active population (%)	75.72	n/a	n/a	n/a	n/a	n/a	9.2
5.	Average length of stay of tourists (nights)	11.0	5.6	n/a	6.0	5.7	6.3	4.1
6.	Number of overnight stays	n/a	n/a	n/a	30.5	23.13	32.77	n/a
7.	Occupancy rate in commercial accommodation (%)	n/a	62.31	n/a	25.79	16.9	26.84	18.0
8.	Direct tourism employment as percentage of total employment (%)	n/a	n/a	n/a	n/a	n/a	n/a	n/a
9.	Daily spending per tourist (€)	12.9	n/a	n/a	101.85	112.78	110.88	117.0
10.	Number of cruise passengers per day, in relation to the total population (1:1 ratio)	n/a	0.0	n/a	n/a	n/a	n/a	0.0
11.	Number of beds in commercial accommodation in relation to population (1:1 ratio)	0.87	0.88	n/a	1.7	3.1	0.92	0.21
12.	Variation of unemployment rate between low and high season (%)	6.4	n/a	n/a	n/a	n/a	n/a	n/a
13.	Number of equivalent visitors per resident (1:1 ratio)	1.8	0.44	n/a	0.56	0.83	0.31	4.88
14.	Number of second/rental homes per one home (1:1 ratio)	0.51	0.27	0.6	0.48	n/a	n/a	0.36
15.	Percentage of tourist attractions that are accessible to people with disabilities and/ or participating in recognised accessibility schemes (%)	80.0	n/a	n/a	n/a	n/a	n/a	54.0
16.	Proportion of cultural sites and practices under some protection label related to the total number of cultural resources	n/a	n/a	n/a	100.0	100.0	100.0	8.3
17.	Average wage in tourism for women compared to men's employment	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Source: Interreg Mediterranean MITOMED+ (https://mitomedplus.andalucia.org/mitomedplus/index.html).

Table 3
Results of the environmental indicators for the destinations involved in testing phase in Catalonia, Istria and Tuscany

	Name of indicator/destination	Catalonia			Istrian Region			Tuscany Region
		Sant Antoni de Calogne	Lloret de Mar	Torrede-mbarra	City of Poreč	City of Novigrad	City of Labin	Versilia
18.	Percentage of the destination area that is designated for protection (%)	55.1	1.48	4.05	0.01	0.0	18.73	27.58
19.	Percentage of the destination area under a biodiversity protection plan (%)	55.1	0.87	4.05	7.31	22.52	3.34	23.36
20.	Solid urban waste produced by destination in tons per person per day (relation between low and high season)	0.63	0.82	0.29	n/a	n/a	n/a	n/a
21.	Volume of solid urban waste recycled (relation between low and high season)	1.1	1.37	1.2	n/a	n/a	n/a	n/a
22.	Water consumption in litres per person per day (relation between low and high season)	0.8	0.99	0.6	1.52	1.4	1.1	n/a
23.	Energy consumption (KWh) per person per day (relation between low and high season)	0.9	0.6	0.5	n/a	n/a	n/a	n/a
24. a)	Number of colony-forming units of pollution in seawater per 100 ml (Escherichia coli)	n/a	2.0	n/a	n/a	n/a	n/a	16.0
24. b)	Number of colony-forming units of pollution in seawater per 100 ml (Intestinal enterococci)	n/a	2.0	n/a	n/a	n/a	n/a	18.0
25.	Number of berths and moorings for recreational boating in relation to the total length of coastline	13.9	14.9	n/a	13.8	17.5	3.51	96.73

Table 3 **Continued**

	Name of indicator/destination	Catalonia			Istrian Region			Tuscany Region
		Sant Antoni de Calogne	Lloret de Mar	Torrede-mbarra	City of Poreč	City of Novigrad	City of Labin	Versilia
26.	Number of blue flags, EMAS, ISO 14001 and other national environmental certifications, in relation to the number of beaches as that part of the coastline considered bathing area	63.15	100.0	100.0	72.73	37.5	57.14	100.0
27.	Percentage of sand nourished	0.79	0.0	n/a	n/a	7.86	4.29	0.0
28.	Percentage of coastline Km of free access beaches relative to total lineal Km of beaches (%)	100.0	100.0	100.0	100.0	100.0	100.0	21.32
29.	Water quality in tourist harbours/ marinas (ppm)	n/a	n/a	n/a	n/a	n/a	n/a	3.1
30.	Percentage of beaches accessible to all: mobility and sensorial disabilities (%)	100.0	0.4	25.0	n/a	n/a	14.29	100.0
31.	Percentage of electric energy consumed by renewable sources (%)	10.02	10.02	10.02	n/a	n/a	n/a	n/a
32.	Number of days when the NOx threshold is surpassed	0.0	n/a	0.0	0.0	0.0	0.0	0.0
33.	Use of land: area of developed and building land in relation to land designated as not for building (1:1 ratio)	0.4	0.4	1.39	n/a	0.1	0.2	n/a

Source: Interreg Mediterranean MITOMED+ (https://mitomedplus.andalucia.org/mitomedplus/index.html).

At this stage, the assessment of the project results can identify the operation of the platform and collection of data. Table 2 and 3 offer an overview of calculated indicators and data that were not available. Common difficulties emerged in the three countries related to economic aspects, such as the calculation of the relative contribution of tourism to the Gross Domestic Product (GDP) destination and tourism employment. This data is available at the regional level, but not at the destination level. The GDP data is not available in relation to the tourism sector at local level. Environmental indicators at present lack the collection of data related to water, energy, waste and renewable sources consumption. In the Catalonian destinations, data is available, but not in Istria and Tuscany. For instance, in Tuscany, the services are managed by different agencies according to destinations; for this reason, data collection and comparison are difficult.

It is also essential to note that destinations use different approaches in calculating data. The idea is to calculate tourism data at the local level. But what is local? For instance, in Istria, the data was calculated on the local government unit and in Tuscany, the data was gathered together for several units, based on different legislations. The idea is that local governments use Open platform for them and that they can compare data with a similar destination. The primary benefit that is expected from the platform is the opportunity to calculate data and compare different years, showing the need for improvements for each destination. Also, some destinations do not have data for indicators calculation for now, but they will be able to calculate data for the future (for instance - urban waste produced by destinations in Istria). However, the Open platform does not require all indicators to be entered, and indicators can be subsequently modified. Therefore, destinations can monitor the available data indicators. The gathered data (Table 1) shows that very small destinations cannot collect some basic data that are the ground points for several indicators, so platform maybe is not the best solution for the small destinations. Although the idea of an open platform is a comparison of different categories of the indicators (economic, socio-cultural and environmental) in all destinations registered in the platform, the best results can be obtained between similar destinations, e.g. destinations in the same region, with similar size of the population, etc.

6. Discussion and conclusion

The results of gathering the tourism data indicators underline the importance of involving all tourism stakeholders in the management of the destination and help them to understand the benefits of using indicators. Tourism data Indicators System and Online open platform help public and private tourism stakeholders to analyse the current impact of tourism on local economies, environments and societies. The benchmarking activity improves the consciousness of destinations, intending to create an integrated environment capable of giving strength and improving regional development. The platform allows exchange of experiences and information among municipalities, contributing a method by which the competitiveness of tourist destinations can be achieved. It can be concluded that the effort of calculating data indicators is not a waste of time. There is a need to find the optimum number of data indicators useful for the destination planning, as was indicated by other researchers that have studied tourism indicators (Gahin et al., 2003; Torres–Delago & Palomeque, 2014; Modica et al., 2018). The main benefit of this example is that indicators are tested at the transnational level. The results are visible to all; this allows researchers and tourism experts, as well as tourism managers and decision-makers, to study data in the future. Also, to give other destinations insights into the possibilities to modify data collection to have useful tourism data indicators that can be compared with other destinations and regions. In the end, developing a tool, like the possibility to calculate a set of indicators for local governments, can have a broader impact in conducting and creating policies that promote sustainable and responsible tourism in the Mediterranean.

The set of tested indicators consists of 33 indicators; however, data for some indicators is unavailable because of various reasons. Some indicators are available only at a national level and, for some indicators, data is not registered, or there is no available data for indicator calculation. The other fundamental limitation for the better understanding of indicators usage as an information guide in tourism destination planning is the fact that indicators were collected only for two years. In this paper only the data from 2017 was used, as the data for 2018 is still being inserted.

The practical contribution of the paper is in providing information to destination management, local and regional governments and policy-makers to understand destinations sustainability level better. The presented system of indications that were tested in the Mediterranean coastal destinations can encourage decision-makers to conduct corresponding policy to improve sustainability level in their destinations.

Future research should be focused on the analysis of the trend that is essential information in sustainable tourism development planning. Further data collections and studies are needed for a full evaluation of the potentialities of our approach and a thorough comparison of different regions' trends. Since the development of sustainable tourism requires long term planning, it would be interesting for future research to identify the trend through the years based on the data entered, in different regions. Such research may determine the importance of listing indicators on the open platform.

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