

ALGARVE SUSTAINABLE TOURISM OBSERVATORY (AlgSTO)

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 **INSTO** | World Tourism Organization
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of Sustainable Tourism
Observatories

 visit Algarve
Portugal

 **CCDR**
Algarve

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Foreword

One year after the Algarve Sustainable Tourism Observatory (AlgSTO) being admitted into the International Network of Sustainable Tourism Observatories (INSTO) of the United Nations World Travel Organization (UNTWO), it is of the utmost importance to evaluate its short existence, and to materialise the undissociated reflection over what has been achieved and about the principles that substantiated its conception, in March 2019.

The need for real time information, enabling an accurate decision-making process and capable to support strategic planning, has been long flagged as a priority both by regional and national level agents, particularly those connected with the tourism sector. This aspiration is due not only to the high preponderance of tourism within the regional and national economy both, but also because it is an activity extremely susceptible to external factors.

Therefore, and though acknowledging the enormous qualitative and quantitative leap attained by some national organisations, such as the National Statistics Institute for Portugal (INE) and Tourism of Portugal, which have been developing an important effort towards the simplification of collecting, processing, systemising and making information accessible, the constitution of AlgSTO was the natural and logical response to a regional and sectorial aspiration.

This effort was led by three regional and one national organisation: Turismo de Portugal (Tourism of Portugal), Região de Turismo do Algarve (Algarve Tourism Board), Universidade do Algarve (University of Algarve) and Comissão de Coordenação e Desenvolvimento Regional do Algarve (the Commission of Coordination and Regional Development of Algarve).

The objective was admittedly, to ascertain itself as an element of support to the most relevant sector in the Algarve, strengthening it, helping it to become more efficient and resilient, thus contributing for its sustainability, and consequently of the region as whole.

The opportunities that may stem from a network environment were not neglected, being the main reason why meetings with regional stakeholders have been encouraged and are already taking place, that work has been developed aiming at the close articulation between the various national sustainable tourism observatories (in existence and future ones) and a decision was made to integrate the INSTO.

Following a year within this course of action, and accordingly to its predefined time frame, the evaluation of the accomplished results is now submitted, highlighting two situations that are evident:

- It was an extraordinarily atypical year, due to the current global pandemic health crisis. With the tourist year off to an auspicious start in 2020, following the trend of growth of the previous years, the emergence and spreading of the coronavirus COVID-19 changed the world as we knew it, with implications (also) on the work developed by AlgSTO;
- There is still a long and challenging work ahead of us, concerning the production of relevant information. Obviously, evidence can be found in the assumed impossibility, for the time being, of analysing and presenting all indicators identified as relevant.

Nevertheless, we are facing these circumstances not so much as a problem (and they indisputably are so), but most of all, as a clear and evident sign of the need to bring continuity to the AlgSTO project, steering towards the consolidation of the regional tourist activity, under the standpoint of its sustainable development.

Executive Summary

Over the most recent decades, the Portuguese region of Algarve has been revealed itself a tourist destination of high quality, being intensely sought after by visitors, both national and foreign, to the point of having become the dominant sector in the context of the regional economy. Presently, the external tourist demand is mainly concentrated in five markets, with the British market having the most prominent position. The Region has been asserting itself as a tourist destination oriented towards specific products, with emphasis on 'sun-and-sea', golf, business tourism, nature tourism and residential tourism.

However, the high pace of growth of Algarve tourism, along with its undeniable benefits, especially those concerned with the generation of regional wealth and jobs, has been raising concerns arising from the widespread recognition of the existence of some unfavorable impacts; in particular, on the environmental resources, but also on the Algarve economy and the society as a whole. These concerns call for the existence of an organizational structure, capable of providing permanent monitoring of regional tourist activity. Such organization is the Algarve Sustainable Tourism Observatory (AlgSTO), recently created, whose development is the central idea contained in this report. AlgSTO's adhesion to UNWTO-INSTO will represent a step of great impact on the Observatory's visibility and credibility, as a coordinating and supervising entity in the processes of monitoring regional tourist activities.

The mission committed to the AlgSTO is, therefore, the improvement of processes designed to the adoption of sustainable practices, within the framework of Algarve tourism activities; namely, the decision-making processes leading to the creation of a healthier, greener, more resilient and regenerated tourist destination, offering a better quality of life, better means of mobility, more safety, and even improved environmental parameters (*e.g.*, waste production, efficient use of resources, air and water quality).

In order to make its mission effective, AlgSTO will need to study, analyze and monitor tourism performance in different areas of sustainability; also, to be able to anticipate the future evolution of the variables that determine tourism activity in the Region, using

scientifically validated forecasting instruments, as well as the development of hypothetical but realistic scenarios. A tool that will prove critical in the accomplishment of the aforementioned mission is the so-called Decision Support System (SAD), an online platform whose purpose is to receive, store and process statistical data, which will serve as the basis for the construction of a vast set indicators, with high levels of temporal and geographic disaggregation. It will also be an instrument capable of supporting the production of forecasts and the scenarios foreseen in the AlgSTO set of objectives. An important peculiarity of SAD is to foresee the involvement of a wide range of regional stakeholders, whose role is that of data providers and, at the same time, users of processed information, in particular in the form of sustainable performance indicators, as well as forecast figures.

The report provides detailed information regarding 11 areas of sustainability that UNWTO-INSTO classifies as mandatory treatment by observatories that intend to become members of the network coordinated by that entity. It is, therefore, an explicit commitment by AlgSTO to that organization. In addition, two other areas that the Observatory considers of special interest to the Algarve have been incorporated. The option for the 13 areas of sustainability was subordinated to the requirement to characterize four fundamental dimensions of tourism sustainability: social, economic, environmental and institutional. The measurement of tourism sustainability levels, in conjunction with the areas thus defined, was designed in the construction of 43 indicators, all of them endorsed by the ETIS (European Tourism Indicators System for Sustainable Destination Management), and according to their relevance in the perspective of regional stakeholders that AlgSTO has been engaging in reflection work leading to the preparation of this report.

Despite all the effort made by the work team in obtaining the statistical information required for the operationalization of the selected indicators, it was not always possible to do so. Specifically: the levels of disaggregation, both temporal and geographical, of the indicators, were not carried out in accordance with the team's wishes. It is expected that such difficulties, understandable in the light of the tight deadlines that the work team imposed on itself, may soon be overcome.

In general, the exercise of applying the selected indicators to the available data gave rise to a first characterization, albeit incomplete, of the levels of sustainability of Algarve tourism. This confirms some of the perceptions that are common to entities that regularly deal with the tourism sector in the Algarve, some of which are: a growing trend of tourist intensity, although more accentuated in coastal areas, where the main accommodation structures are concentrated; higher levels of tourist density in coastal municipalities of relatively small physical size; confirmation of the existence of well-marked seasonal cycles, although in the last decade there has been a slight easing in the annual distribution of the number of overnight stays. However, this movement was not matched by other critical variables, such as employment.

One aspect to recall is the lack of information to measure a large number of environmental variables. This is a clear weakness that will need to be overcome as quickly as possible. Even so, it was possible to observe a slight deterioration in air quality levels, in the five-year period delimited by the years 2014 and 2018.

Finally, data on institutional sustainability allow us to establish a somewhat contradictory picture. Thus, while the situation of environmental certification of means of accommodation evolved favorably in the period 2011-2016, training actions aimed at promoting the sustainability of human resources declined slightly during the same period.

The emergence of the recent health crisis, caused by the rapid spread of COVID-19, has produced formidable negative effects on all sectors of activity, across all countries of the World. In the specific case of the Algarve tourism sector, considering the period comprising the first 10 months of 2020, compared to the same period in 2019, negative growth rates were observed in the number of passengers, in the number of overnight stays and in the value of profits generated in the scope of the operations of tourist companies, of 60%, 61.2% and 77%, respectively. These reductions in activity, unprecedented in the historical record of Algarve tourism, manifested in a transversal way in all markets of origin of tourist

flows, but with particular intensity in the British market, which, as it is known, constitutes the element that has been the main contributor to the region's tourism. In contrast, flows from domestic origins proved to be the least affected by the crisis. So far, the prospects for the year 2021 remain bleak, so it is expected that the sector's recovery will proceed slowly.

Paradoxically, the occurrence of the COVID-19 crisis, may represent an opportunity to rethink the tourism development models that have been in force in the Region, as well as to formulate solutions to sustainability problems whose recognition is, by the way, consensual. This will certainly be one of the tasks that AlgSTO will devote its best attention to, with the purpose of joint reflection with stakeholders and the adoption by them of practices that overcome some of the problems that tourism in the Region is currently facing.

Algarve at a glance



1. Algarve at a glance

1.1 Identity

The Algarve is the southernmost region of Portugal. It has an area of 4 997 Km², 438 406 residents and populational density of 88.0 per Km².

It has a network of aerial, road, railroad and maritime infrastructures that, altogether, open the region to Europe and to the World. Its main doorway is Faro International Airport which on a national level is the second biggest in what concerns air traffic. The A1 (to Lisbon) and A22 (regional) motorways are its main road accesses.

Among its main strong points are:

- Mild weather conditions throughout the year, with over 3000 hours of sunshine and low rainfall;
- Its 318 Km of coastline with coves, cliffs, sea caves, and rocky or wide golden sandy beaches, along with a clear, lukewarm and calm sea, which makes the Algarve region to be considered the best beach destination in Europe/ the world;
- The natural areas occupying 70% of the Algarvian Coast and 37% of its territory inserted in natural reservations, nature parks or protected landscape areas, suggestive of open-air activities throughout the whole year, like walking trails (Via Algarviana, GR15, Rota Vicentina), bicycle riding (Ecovia) or birdwatching;
- A wide tourist offer, based on a variety of accommodation facilities, transportation, entertainment (wide range of hotel offer, recognized quality of its services, 40 golf courses considered to be among the best in the world, marinas, sports and cultural facilities, a wide range of events throughout the year);
- A hospitable population, speaking several languages and always ready to welcome, and to unveil its history and traditions, arts and crafts, folklore, its gastronomy based essentially on the Mediterranean Diet, which is part of the UNESCO's World Heritage.

1.2 Economic data and the weight of tourism

The Algarve is a region where the tertiary sector has a big weight, therefore being the one that presents itself as the main employment generator, and where the highlights are the tourism sector companies. Of the employed population of the Algarve (92.9% of the active population), in 2019 about 83% work in tertiary sector companies, 12.4% in the secondary sector and 4.8% in the primary sector.

The weight of the regional GVA in the activity sector “wholesale and retail commerce; repair of vehicles and motorcycles; transportation and storage; restaurant and accommodation activities” was in 2019 of 39.5%. The second biggest contribution to the regional GVA in 2017 was “Real Estate Activities” with 16.9%.

The contribution of the Algarve to the national GDP was, in 2019, of 4.76%. In the same year, the Algarve represented 33% of total bed nights and 35.8% of bed capacity in Portugal.

1.3 Main tourist markets

Considering the origin of external demand, it is noticeable that five international markets represent 84% of the total of processed passengers (United Kingdom, Germany, Ireland, France and Netherlands – 2019 data).

In terms of strategy, the Algarve has divided 20 incoming markets grouped into three different types: proprietary (which are already matured and consolidated in the region, and for its weight in the market and/or potential for growth, justify priority of action); wager (markets that are not yet consolidated and which require a different strategy in order to increase demand); to monitor (those which still don’t have a high demand in the region, but have a growth potential).

Table 1: Market rating matrix

Markets	Rating		
	Priority markets	Wager markets	Markets to monitor
United Kingdom	X		
Portugal	X		
Germany	X		
Ireland	X		
Netherlands	X		
France	X		
Spain	X		
Belgium		X	
Poland		X	
Canada		X	
USA		X	
Italy		X	
Sweden		X	
Switzerland		X	
Brazil		X	
Austria		X	
Denmark		X	
Norway			X
Finland			X
Russia			X

Source: Algarve Regional Tourism Board.

1.4 Tourist products

The Algarve has 17 products/segments identified, grouped into four types:

1 – Primary products/segments – Products/segments that are by themselves a primary motivation to visit the region:

- Sun & sea
- Golf
- *Meeting Industry & Corporate*
- Nature Tourism
- Residential Tourism

2 – Complementary products/segments – Products/segments that are presented as a secondary and/or complementary motivation to visit the region:

- Gastronomy and Wine
- Cultural and landscaping *Touring*
- Health & well-being Tourism

3 – Products/Segments with potential - Products/segments which are in a development stage which is not yet consolidated:

- Sports Tourism
- Nautic Tourism
- Accessible and Senior Tourism
- Campervan Tourism

4 – Other products/segments – Other products/segments which are not yet very developed/implemented in the region, but even not being properly developed/structured, start to show some expression in demand:

- Cruises Tourism
- Cinema and audiovisual Tourism
- Luxury Tourism
- LGBTQIA+
- *Weddings*

1.5 Future Strategy

The development strategy set for the Algarve is based in three axis which reflect the critical factors for the success of the region and for which a set of action plans and strategic projects were programmed:

- Axis A – Competitivity – The intervention in this axis is aimed at enabling the region to present itself in a differentiated and unique fashion in the global;
- Axis B – Quality – this axis is aimed at presenting a set of projects that contribute to the qualification and consolidation of the supply;

- Axis C – Contribution for the 2030 Agenda – The action plans and their corresponding strategic projects will contemplate interventions that promote the development of sustainable tourism in the region, lending their contribution so that the tourism in the region asserts itself as a development engine and territorial and social cohesion.

In this strategic frame, the promotion of the Observatory for Sustainable Tourism in the Algarve is of utmost importance, allowing to monitor the tourist development in the areas of economic, social and environmental sustainability.

The Algarve Sustainable Tourism Observatory (AlgSTO): A platform for knowledge transfer



2. The Algarve Sustainable Tourism Observatory (AlgSTO): A platform for knowledge transfer

The Algarve Sustainable Tourism Observatory (hereafter AlgSTO) was created on last 14th of March 2019, as a result of a partnership between the Algarve Regional Tourism Board (RTA-Algarve), the Algarve Regional Coordination and Development Commission (CCDR-Algarve), the University of Algarve (UAlg) and the Tourism of Portugal (TdP). The AlgSTO began its activities with the preparation of a preliminary report that integrated the application to the United Nations World Tourism Organization (UNWTO) International Network of Sustainable Tourism Observatories (INSTO). On the 23rd of January 2020, during the International Tourism Fair (FITUR) in Madrid, the AlgSTO officially became a member of the UNWTO-INSTO network.

The Algarve is a tourist destination of excellence and the growing importance of tourism activity in the region raises the need for an ongoing assessment of the economic, social, environmental and institutional impacts which are the strategic dimensions of sustainability. The acceptance as a member of the UNWTO-INSTO strengthens the role of the AlgSTO in measuring and monitoring tourism sustainability in the region by echoing the growing concern about these impacts of tourism and the growing commitment of decision makers with ensuring the principles of sustainable tourism in the design of public tourism policies.

2.1 The AlgSTO's mission and objectives

The Observatory's mission is to support the continuous improvement of the sustainability of tourism in the Algarve in the social, economic and environmental dimensions, as well as to support the decision-making process in view of the development of the Algarve as a healthier, greener, resilient and regenerated destination, with higher quality of life, better mobility facilities, air and water quality and reduced crime.

In particular, the Algarve Sustainable Tourism Observatory has the following specific objectives:

- To study, analyze and monitor the tourism performance of the Algarve in the areas of economic, social and environmental sustainability;
- To anticipate future trends for the Algarve through statistical forecasting tools as well as scenario analysis;
- To contribute to the objectives of studying and monitoring the 2027 Tourism Strategy on sustainability.

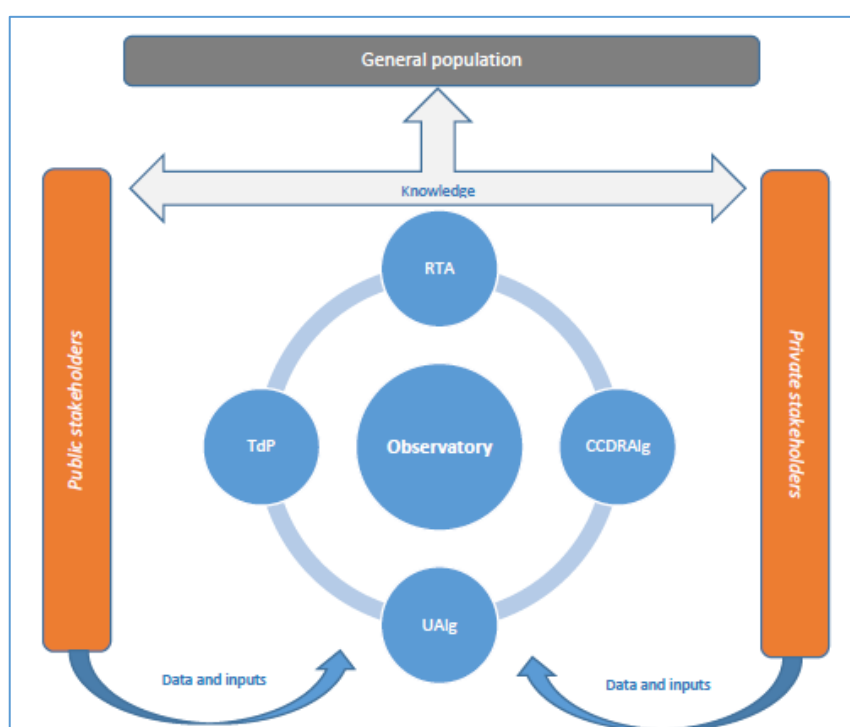
A Decision Support System integrated in an online platform, describing and monitoring a broad set of indicators, through descriptive tools, and also detecting and anticipating trends, through statistical forecasting tools, is intended to be the AlgSTO's central operational tool. It will be a dynamic and multidimensional platform that monitors, compares and simulates forecasting scenarios on a set of indicators, with a high frequency and geographic disaggregation. As result, the tourist sector stakeholders will be provided with specific and detailed knowledge of the region, to support the definition of strategies of tourism development and competitiveness, ensuring the preservation and enhancement of local identity, heritage and values, as strategic assets.

2.2 *The AlgSTO's governance*

The AlgSTO is located at the University of Algarve and several regional entities participate in its governance structure as a result of a broad platform of partnerships with public and private stakeholders. These include public and private stakeholders and knowledge production research centers on tourism. In fact, the acceptance of the principles, objectives and action plans for tourism sustainability in the Algarve by all stakeholders, as well as their practical implementation, will imply articulated work towards this common objective and therefore this collaboration with regional stakeholders comes out as a crucial element of the AlgSTO's mission, as expressed in Figure 1.

Without all stakeholders using and valuing the information that will be produced on a regular basis by the Observatory, it will not fulfill its mission in its fullness and, without everyone contributing, at least with some type of data on its activity, the Observatory will be limited in its capacity to produce information that supports the decision-making of each of its users. Therefore, it is believed that this collaboration is a win-win strategy, so the creation of a platform of AlgSTO's regional partners is no doubt an essential condition for the success of the observatory's activity in the medium and long term.

Figure 1: The AlgSTO's mission



Source: Own elaboration.

The regional stakeholders compose the Local Working Group (LWG) which contributes actively for the accomplishment of the AlgSTO's mission at different but complementary avenues: providing data and technical advice on a regular basis; recommending the collection of data on new variables and/or the implementation of new surveys providing information to fulfill unattended needs; and providing support and advice to data suppliers.

The LWG holds also an active role in informing potential stakeholders in the region about the benefits resulting from becoming members of the Observatory, thereby attracting new members and ensuring a broader spectrum of activity and greater utility and longevity of the Observatory. The achievement of the AlgSTO's objectives will be possible only through the involvement of the largest number of stakeholders in the region. Only in this way it is possible to monitor as closely as possible the reality of the Algarve, as well as to realize the real information needs of the region.

3. Measuring and monitoring tourism sustainability dimensions: Research methodologies and sustainability indicators

With this document the AlgSTO intends to present the first annual report in compliance with the commitment assumed as a member of the UNWTO-INSTO network.

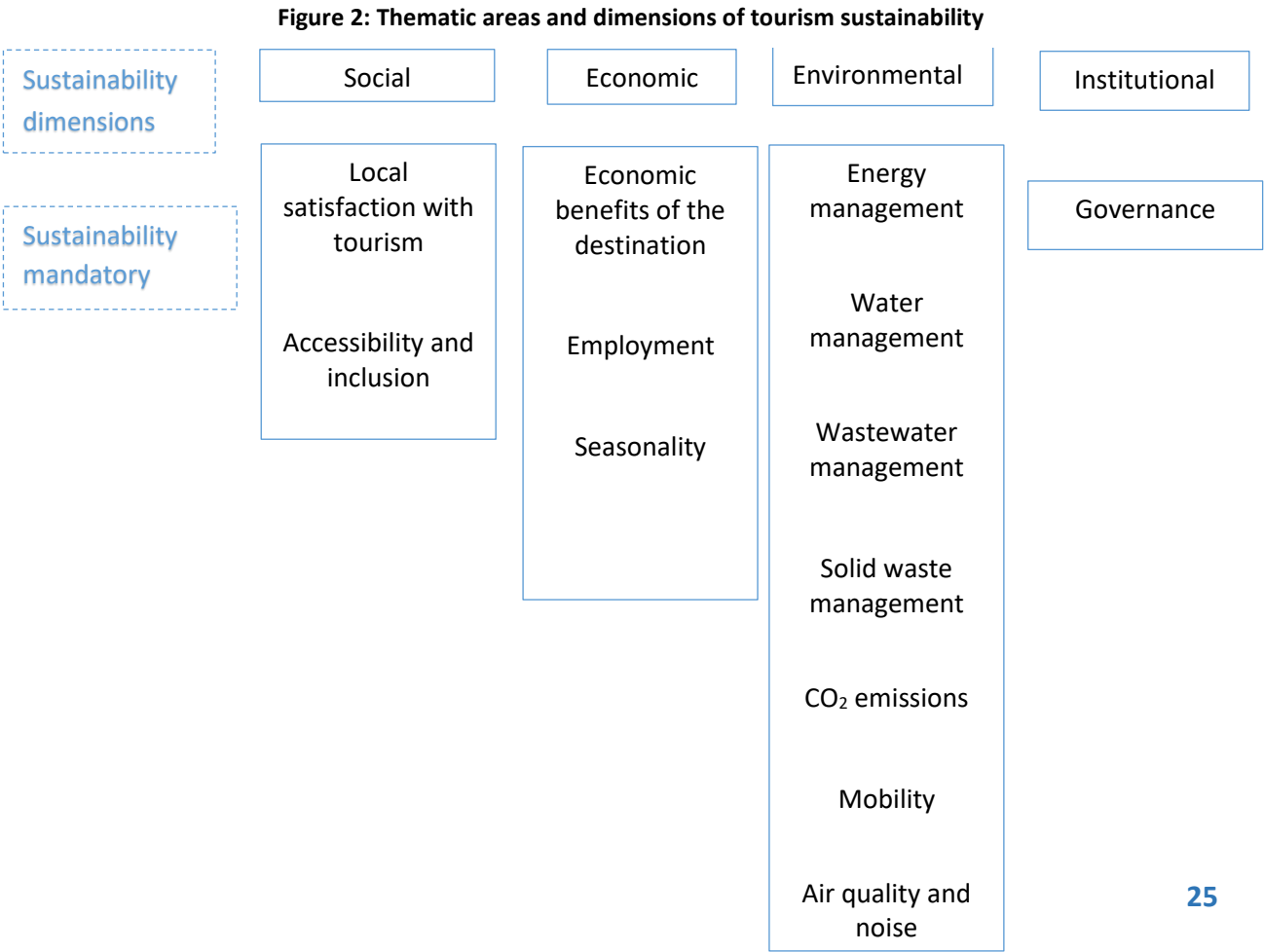
A first workshop with regional stakeholders was held to introduce the AlgSTO, its mission, structure, objectives and the activities plan, whose timetable was subsequently adjusted due to the pandemic situation. In this workshop, the stakeholders became aware of the UNWTO mandatory sustainability areas that the AlgSTO should monitor, which are considered relevant for the region. In order to meet additional unattended information needs, other workshops will occur in 2021 which probably result in data collecting of specific additional sustainability areas.

This report presents detailed information on eleven sustainability areas of tourism in the Algarve, whose analysis and measurement, based on indicators referenced in the European Tourism Indicators System for Sustainable Destination Management (ETIS)¹, constitute the AlgSTO's commitment assumed before the UNWTO-INSTO.

¹ The European System of Tourism Indicators for Sustainable Destination Management (ETIS) was created by the European Commission in 2013.
(https://ec.europa.eu/growth/sectors/tourism/offer/sustainable/indicators_en).

These eleven mandatory sustainability areas are the following: (1) Local satisfaction with tourism; (2) Economic benefits of the destination; (3) Employment; (4) Seasonality; (5) Energy management; (6) Water management; (7) Wastewater management; (8) Solid waste management; (9)

Governance; (10) Accessibility and inclusion; (11) CO₂ emissions. These areas are intended to measure different dimensions of sustainability such as social (due to the impacts of tourism on people’s well-being), economic (given the impacts on economic growth), environmental (attending to tourism impacts on natural resources) and institutional (which is a key dimension influencing the implementation of other dimensions of sustainability). Two additional sustainability areas have been included given their relevance for the Algarve: mobility and air quality and noise. All the thirteen sustainability areas are grouped into the 4 sustainability dimensions as illustrated in Figure 2.



Source: Own elaboration.

In order to measure tourism sustainability in the eleven mandatory areas, a total of forty-one indicators were selected from the European Tourism Indicators System for Sustainable Destination Management, attending to their relevance for the regional stakeholders. Not all the indicators were implemented and calculated in the first year of the AlgSTO's activity, given the difficulties emerged from the pandemic situation, but further efforts will be developed in the upcoming years to provide detailed information for those indicators and others revealed by the stakeholders.

Efforts have been developed to gather information for each indicator both at the regional and the municipality levels and for the largest possible horizon. However, for some indicators, it was not possible to have data at the municipality level while for others the data are available for short time horizons.

In order to measure tourism sustainability in the two additional sustainability areas, a total of four indicators were considered. Tables 1-4 present detailed information of the indicators for each sustainability area/dimension, as well as information of data availability for the indicators presented in this report. Further technical information for all indicators is provided in Annex A.

The social sustainability dimension is accounted for by two sustainability areas, specifically the "local satisfaction with tourism" and the "accessibility and inclusion". The information is reported in Table 2.

Table 2: Social sustainability: areas and indicators

Dimension	Indicator No.	Indicators' description	Information of data availability
Social Sustainability	<i>Local satisfaction with tourism</i>		
	I ₁	Tourist intensity index	Algarve: annual (2011-2019); Municipalities: annual (2011-2019) and monthly (2017-2019)
	I ₂	Percentage of residents satisfied with tourism	Data not available
	I ₃	Lodging capacity in tourist accommodation establishments, per 1000 inhabitants	Algarve and municipalities: annual (2014-2018)

I ₄	Number of second homes per 100 households	Data not available
I ₅	Value of rents for residential apartments located in areas of strong tourist pressure	Data not available
I ₆	Tourist density index	Algarve and municipalities: annual (2015-2019)

Accessibility and inclusion

I ₇	Percentage of rooms in accommodation establishments accessible to people with disabilities	Data not available
I ₈	Percentage of public transport accessible to people with disabilities and with specific access requirements	Data not available

Source: Own elaboration.

To assess the local satisfaction with tourism, from a set of six indicators selected previously, three indicators are considered in this report, namely the “tourist intensity index”, the “lodging capacity in tourist accommodation establishments, per 1000 inhabitants” and the “tourist density index”. The data for “the percentage of residents satisfied with tourism”, the “number of second homes per 100 households” and the “value of rents for residential apartments located in areas of strong tourist pressure” are not available.

The economic sustainability dimension is accounted by three sustainability areas, specifically the “economic benefits of the destination”, the “employment” and the “seasonality”. The information is reported in Table 3.

To assess the economic benefits of the destination, from a set of seven indicators selected previously, four indicators are considered in this report, namely the “number of nights in tourist accommodation establishments, per month”, the “relative contribution of tourism in the region to the regional and national economy”, the “average stay of tourists” and the “productivity of tourism activity”. The data for the “number of same-day visitors”, the “revenue from tourism” and the “average daily expenditure per tourist” are not available.

To assess the effects on employment, from a set of five indicators selected previously, two indicators are considered in this report, namely the “direct employment in tourism as a percentage of total employment in the region” and the “seasonal employment as a percentage of direct tourism employment in the region”. The data for the “percentage of men and women employed in tourism in the region”, the “qualified employment as a percentage of direct employment in tourism in the region” and the “average monthly salary of direct employment in tourism” are not available.

From a set of three indicators to measure the seasonality area, two indicators are considered. These are the “number of nights spent in the region by tourists, per month” and the “seasonality rate”. The monthly data for “the occupancy rate in tourist accommodation establishments per month and annual average” are not available.

Table 3: Economic sustainability: areas and indicators

Dimensions	Indicator No.	Indicators' description	Information of data availability
<i>Economic Sustainability</i>	<i>Economic benefits of the destination</i>		
	I ₉	Number of nights in tourist accommodation establishments, per month	Algarve: monthly (2010-2019); Municipalities (2011-2019)
	I ₁₀	Number of same-day visitors	Data not available
	I ₁₁	Relative contribution of tourism in the region to the regional and national economy	Algarve and municipalities: annual (2008-2018)
	I ₁₂	Average stay of tourists	Algarve: annual (2004-2019)
	I ₁₃	Productivity of tourism activity	Algarve and municipalities: annual (2008-2018)
	I ₁₄	Revenue from tourism	Data not available
	I ₁₅	Average daily expenditure per tourist	Data not available
<i>Employment</i>			
	I ₁₆	Direct employment in tourism as a percentage of total employment in the region	Portugal, Algarve and municipalities (2008-2018)

I ₁₇	Percentage of men and women employed in tourism in the region	Data not available
I ₁₈	Qualified employment as a percentage of employment in tourism in the region	Data not available
I ₁₉	Seasonal employment as a percentage of direct tourism employment in the region	Algarve: annual (2011-2017)
I ₂₀	Average monthly salary of direct employment in tourism	Data not available

Seasonality

I ₂₁	Number of nights spent in the region by tourists, per month	Algarve: Monthly (2010-2019)
I ₂₂	Occupancy rate in tourist accommodation establishments per month	Data not available
I ₂₃	Seasonality rate	Algarve and municipalities: Monthly (2010-2019)

Source: Own elaboration.

The environmental sustainability dimension is accounted by seven sustainability areas, specifically “energy management”, “water management”, “wastewater management”, “solid waste management”, “CO₂ emissions”, “mobility” and “air quality and noise”. The information is reported in Table 4.

To assess the energy management, from a set of four indicators selected previously, one indicator is considered in this report, namely the “the percentage of tourist companies taking measures to reduce energy consumption”. The data for “the daily energy consumption of tourists, relative to the daily energy consumption of the resident population”, “the percentage of energy consumption produced by renewable sources, in relation to total energy consumption” and “the percentage of companies adopting energy efficiency measures” are not available.

To assess the water management, from a set of four indicators selected previously, one indicator is considered in this report, namely the “percentage of tourist companies taking measures to reduce water consumption”.

The data for the “daily water consumption by tourists, relative to daily water consumption by the resident population”, the “percentage of tourist companies using recycled water” and the “percentage of companies promoting efficient use of water in their operations” are not available.

To assess the wastewater management, from a set of three indicators selected previously, one indicator is considered in this report, namely the “percentage of sewage treated prior to discharge”. The data for the “urban wastewater discharge compliance rate” and the “percentage of companies that develop efficient waste management actions” are not available. Unfortunately, none of the indicators to assess the solid waste management and the CO₂ emissions are included in this report given the absence of available information for the Algarve.

Table 4: Environmental sustainability: areas and indicators

Dimensions	Indicator No.	Indicators' description	Information of data availability
<i>Environmental Sustainability</i>	<i>Energy management</i>		
	I ₂₄	Daily energy consumption of tourists, relative to the energy consumption of the resident population	Data not available
	I ₂₅	Percentage of tourist companies taking measures to reduce energy consumption	Algarve: annual (2011-2017)
	I ₂₆	Percentage of energy consumption produced by renewable sources, in relation to total energy consumption	Data not available
	I ₂₇	Percentage of companies adopting energy efficiency measures	Data not available
	<i>Water management</i>		
	I ₂₈	Daily water consumption by tourists, relative to daily water consumption by the resident population	Data not available

I ₂₉	Percentage of tourist companies taking measures to reduce water consumption	Algarve: annual (2011-2017)
I ₃₀	Percentage of tourist companies using recycled water	Data not available

Wastewater management

I ₃₂	Percentage of sewage treated prior to discharge	Algarve and municipalities: Annual (2001-2009)
I ₃₃	Urban wastewater discharge compliance rate	Data not available
I ₃₄	Percentage of companies that develop efficient waste management actions	Data not available

Solid waste management

I ₃₅	Daily waste production by tourists, relative daily waste production by the resident pop (Kg)	Data not available
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CO₂ emissions

I ₃₆	Percentage of tourists and tourists who use different means of transport to reach their destination	Data not available
I ₃₇	Percentage of tourists and tourists using public transport to reach their destination	Data not available
I ₃₈	Average distance (km) travelled by tourists and tourists between the place of residence and the tourist destination	Data not available
I ₃₉	Percentage of tourist companies involved in climate mitigation activities - such as reducing CO ₂ emissions, energy consumption systems, etc.	Data not available

Source: Own elaboration.

To assess the environmental sustainability in terms of mobility and air quality and noise, a set of four indicators is considered in this report. Mobility is assessed namely by the “movement of passengers on inland waterways”, the “number of passengers embarked and disembarked from cruise ships at the Port of Portimão” and the “number of passengers boarded and disembarked at Faro airport”, whereas the air quality and noise is assessed with the computation of an “air quality index”.

Table 4: Environmental sustainability: areas and indicators (Continuation)

Dimensionsindicator No.		Indicators' description	Information of data availability
<i>Mobility</i>			
<i>Environmental Sustainability</i>	I ₄₀	Movement of passengers on inland waterways	Algarve: quarterly (2019-2020)
	I ₄₁	Number of passengers embarked and disembarked from cruise ships at the Port of Portimão	Algarve: annual (2014-2019)
	I ₄₂	Number of passengers boarded and disembarked at Faro Airport	Algarve: quarterly (2019)
<i>Air quality and noise</i>			
	I ₄₃	Air quality Index	Algarve: quarterly (2019)

Source: Own elaboration.

The institutional sustainability dimension is accounted by the Governance area, whose indicators “Percentage of companies and tourist establishments using voluntary certification of environmental sustainability or corporate social responsibility” and “Percentage of establishments providing training on sustainable practices” are available in this report. The information is reported in Table 5.

Table 5: Institutional sustainability: areas and indicators

Dimensio	Indicator No.	Indicators' description	Information of data availability
Institutional Sustainability	Governance		
	I ₄₄	Percentage of companies and tourist establishments using voluntary certification of environmental sustainability or corporate social responsibility	Algarve: annual (2011-2016)
	I ₄₅	Percentage of establishments providing training sustainable practices	Algarve: annual (2011-2017)

Source: Own elaboration.

In summary, at this stage, most of the indicators are not available, not only for the region, but also at the municipality level. This highlights a significant information gap of relevant information about tourist activity in the region and strengthens the AlgSTO's commitment in developing efforts to surpassing it in the future.

4

Sustainability areas and indicators



4. Sustainability areas and indicators

Associated to tourism development there are social, economic, environmental and institutional effects whose monitoring and assessment are important tools to guarantee a balanced and sustainable growth of tourism destinations. In the following sections, the information on the sustainability indicators for these four sustainability dimensions are presented to assess and present a diagnosis of the sustainable dimensions of the tourist activity in the Algarve.

4.1 *Social sustainability*

Social sustainability of tourism is about identifying and managing the impacts of this activity on people. The tourism sector, being the main engine of the economy in Algarve, undoubtedly generates, directly or indirectly, effects on locals, whether they are employees, employers or residents. These impacts, in turn, affect the tourist activity. Therefore, measuring the impacts on local residents' satisfaction is of crucial importance to guarantee sustainability in the tourism industry.

4.1.1 *Local satisfaction with tourism*

Measuring local residents' satisfaction with tourism is of crucial importance as it can be a critical factor to determine the success of tourist destinations. Residents can be both positively and negatively impacted by tourism activity. Tourism activity promotes job creation, private and public investments and the economic activity, but it can also impact negatively the residents' way of life causing problems in the relationship with tourists. The balance of these opposite effects determines the satisfaction with tourism activity which plays a critical role on determining tourists' loyalty and repetition of the visit.

Being aware of the changes in the levels of residents' satisfaction and taking the necessary measures to improve their satisfaction with tourism are fundamental factors for tourism sustainability. Currently, official data on local satisfaction is not available. Therefore, only indirect measures of local satisfaction measurement have been addressed, such as the tourism intensity index, the number of beds available in accommodation establishments, per 1000 residents, and the tourist density index.

4.1.1.1 Tourist Intensity Index

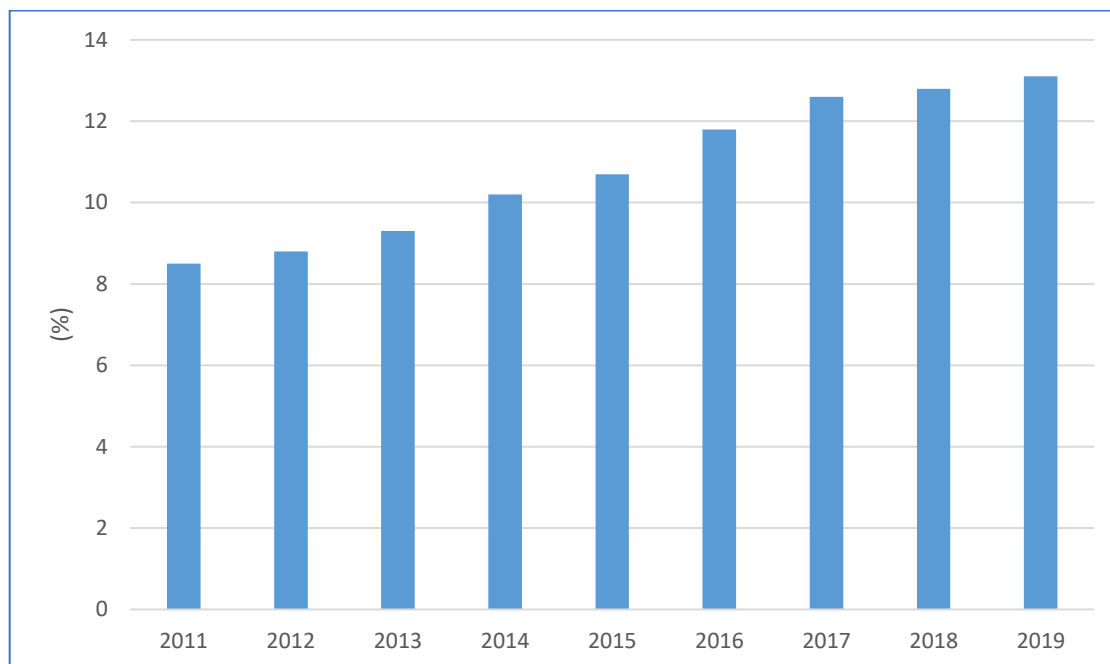
Tourist Intensity Index (*TII*) aims to quantify the relationship between the number of nights in tourist accommodation establishments and the population residing in the same geographical area and during the same period of time. The indicator is inherently based on the rationale that the greater the number of tourists per resident, the greater the pressure that tourism activity will exert on the 'normal life' of local populations.

The information on this indicator is provided for the whole region of Algarve, on a monthly basis, over the period 2011-2018, and for each municipality, on a monthly basis, over the period 2017-2019.²

The tourist intensity index has shown a growing pattern in the Algarve in the period 2011-2019, increasing from 8.5% to 13.1%, as shown in Figure 3. By other words, the number of overnight stays increased from 8.5 to 13.1 overnight stays per 100 inhabitants, which represents a growth rate of 54.1% in that period. However, this growth does not exhibit a steady growth in the whole period, since that its values remained relatively stable in 2017-2019.

² The technical information on this indicator is provided in the Annex A, Table A1.

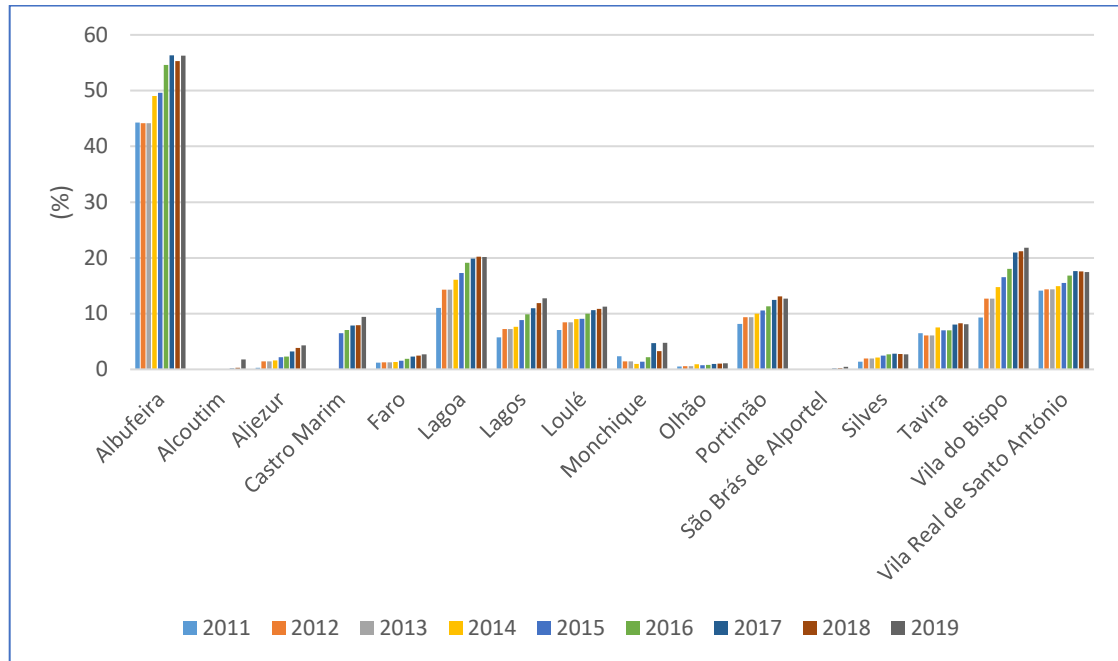
Figure 3: Tourist Intensity Index. Algarve, 2011-2019



Source: National Statistical Institute; Own calculation.

The upward trend of the intensity index across 2011-2019 is transversal to almost all municipalities as depicted in Figure 4, and the highest values are reached in municipalities located in coastal areas, such as Albufeira, Lagoa, Vila do Bispo and Vila Real de Santo António. In particular, Albufeira and Lagoa reveal an intensity index in 2018 of 55.3% and 20.2%, respectively, which denotes the huge presence of tourism in these two municipalities when compared to the resident population. This has led to overloading of accommodation capacities in these destinations. On the other side of the spectrum are other coastal municipalities and inland municipalities in which the tourist pressure is below the average. Given this diversity, the variability of this indicator, measured by the standard deviation, is high.

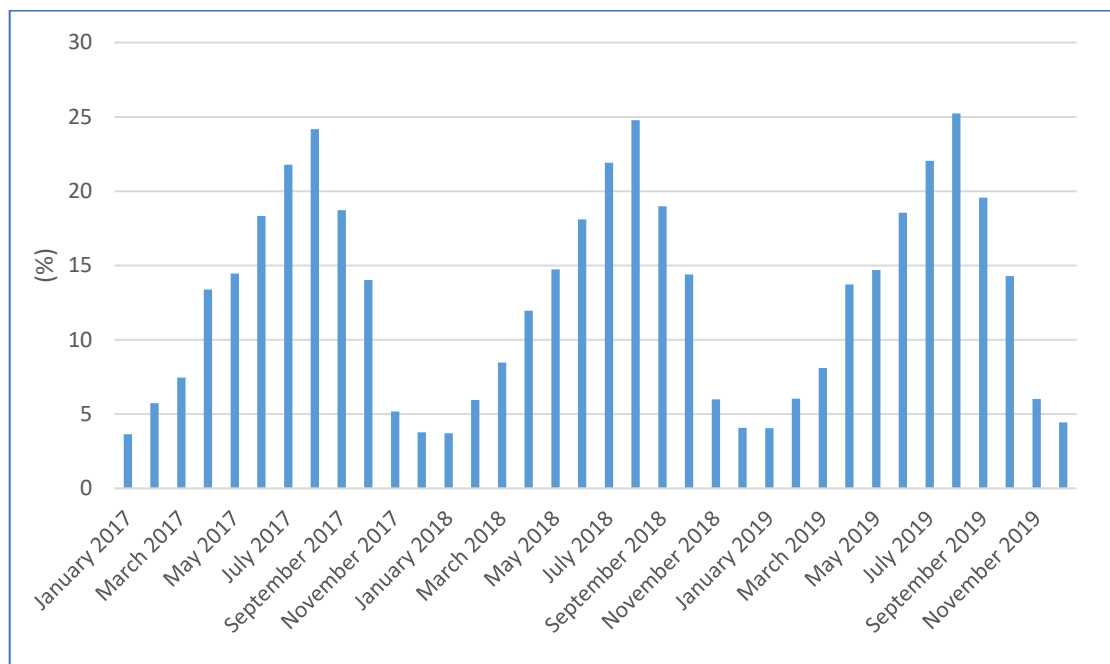
Figure 4: Tourist Intensity Index. Algarve municipalities, 2011-2019



Source: National Statistical Institute; Own calculation.

The pattern shown by the indicator on a month-by-month basis, over 2017-2019, reported in Figure 5 reveals the strong seasonality that characterizes the tourist activity in the regions, with the highest values occurring repeatedly during the peak season from June to September. This picture is illustrative of the highest pressure during the tourist peak season.

Figure 5: Tourist Intensity Index. Algarve, January 2017-December 2019



Source: National Statistical Institute; Own calculation.

4.1.1.2 Lodging capacity in tourist accommodation establishments, per 1000 inhabitants

The high level of tourist intensity demands an adequate response by the supply side of the market. This indicator, measured as the number of beds per 1000 inhabitants, is highly relevant since it shows the relative importance of tourism lodging supply in relation to inhabitants. Therefore, its analysis provides insights about the response capacity of the region to the tourist pressure and hence is a way of measuring the relative impact of tourism on the residents' way of life. The information on this indicator is provided for the region of Algarve and the municipalities on an annual basis from 2014-2018³.

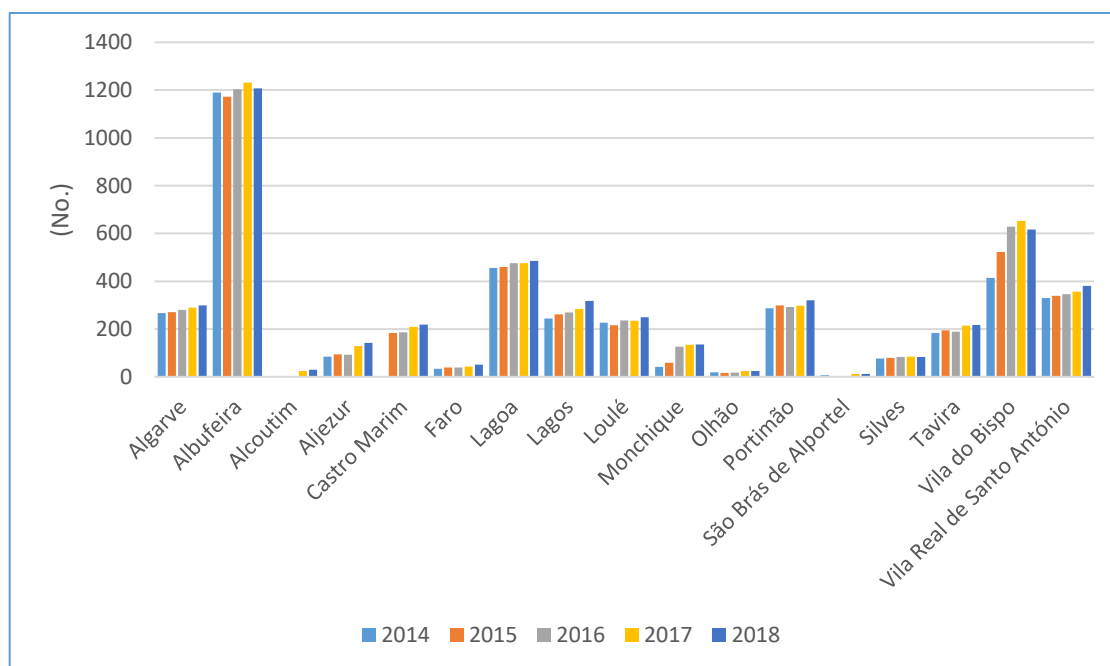
The indicator reports an increasing trend in the Algarve as reported in Figure 6. The number of beds per 1000 residents increased from 266.2 in 2014 to 298.8 in 2018 corresponding to a growth rate of 12.2%.

The aggregate figures for the whole region cover regional disparities at the municipality level. Once again, the municipalities with higher tourist intensity index – Albufeira, Lagoa, Vila do Bispo and Vila Real de Santo António – tend to reveal higher lodging capacities. The

³ The technical information on this indicator is provided in the Annex A, Table A2.

annual average lodging capacity per 1000 residents in these municipalities are, respectively, 1200.8, 470.3, 567.1 and 350.5 beds, clearly above the regional average of 281.1 beds.

Figure 6: Lodging capacity in tourist accommodation establishments by 1000 inhabitants. Algarve and municipalities, 2014-2018



Source: National Statistical Institute; Own calculation.

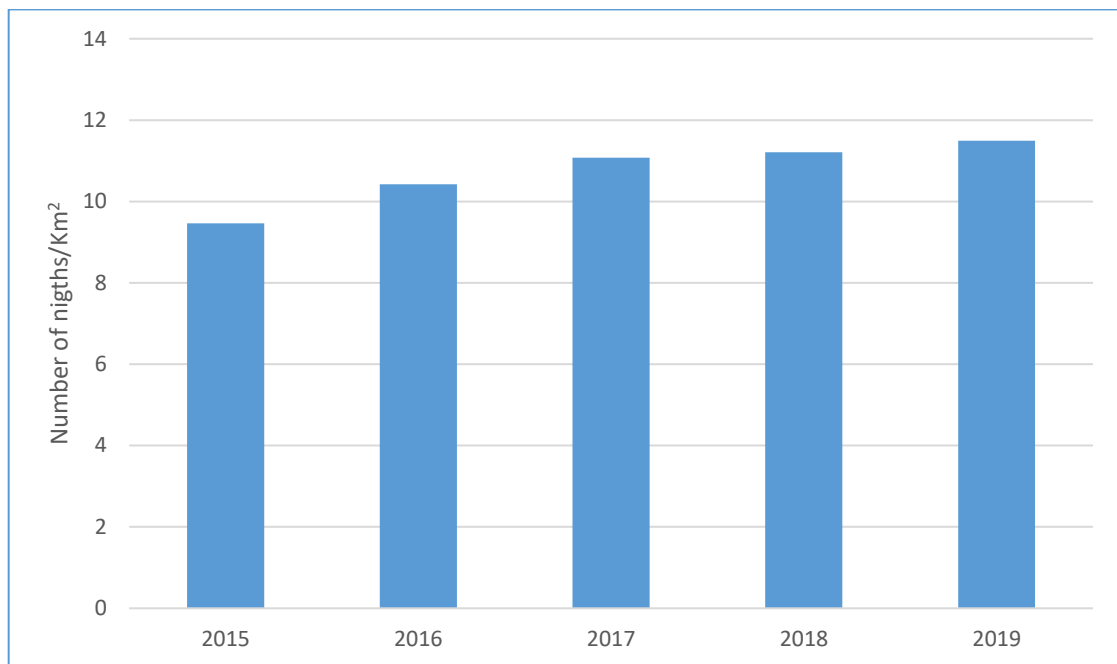
4.1.1.3 Tourist Density Index

The Tourist Density Index (*TDI*) releases information to characterize the social impact of tourism and, in particular, the possible degree of dissatisfaction of indigenous populations in the face of the most excessive effects of the tourist phenomenon. It enables the assessment of tourist pressure on the region, through the relationship between the number of overnight stays in tourism accommodation establishments and the area of the region, measured in Km². The information on this indicator is provided on an annual basis for the region of Algarve, over the period 2015-2019, and for each municipality over the period 2014-2018⁴.

⁴ The technical information on this indicator is provided in the Annex A, Table A3.

The density index reveals an increasing trend in the Algarve over the period 2015-2019, from 9.5 overnight stays per km² in 2015 to 11.5 overnight stays per Km² in 2019, as illustrated in Figure 7.

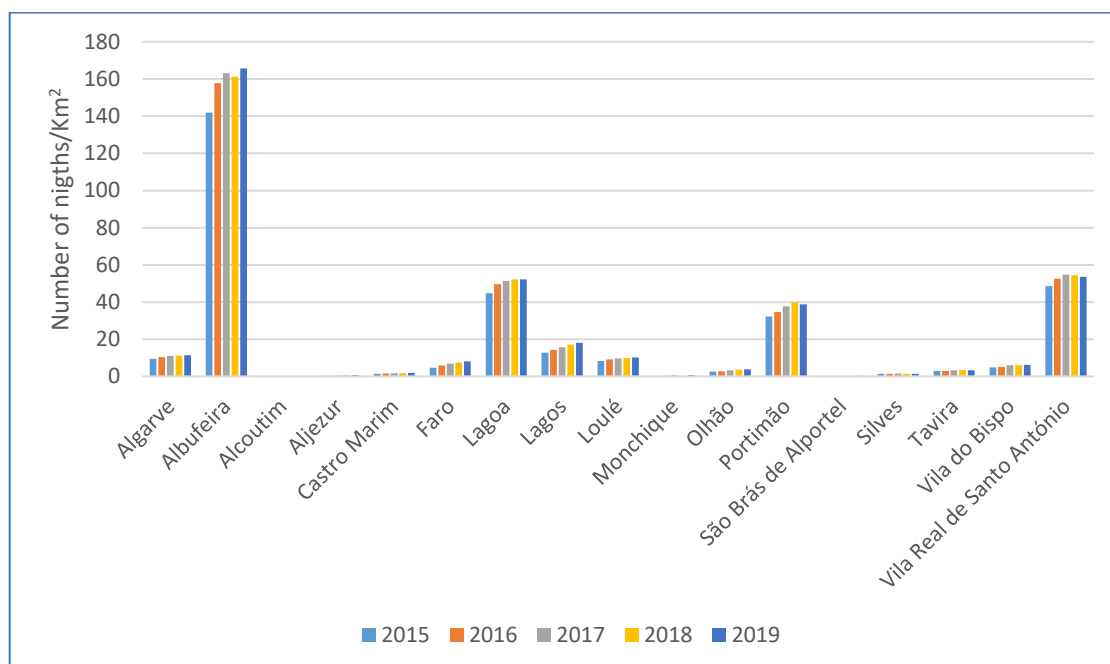
Figure 7: Tourist density index. Algarve, 2015-2019



Source: Tourism of Portugal; Own elaboration.

The aggregate analysis covers once again pronounced differences at municipality level as illustrated in Figure 8. The municipalities near the coast line, such as Albufeira, Lagoa, Portimão and Vila Real de Santo António, report the highest values for the tourist density index, quite above the region average, which reveals a potential high pressure on the territory and consequentially potential social impacts.

Figure 8: Tourist density index. Algarve and municipalities, 2015-2019



Source: National Statistical Institute; Own elaboration.

4.2 Economic sustainability

Tourism is an important engine for economic growth and development, hence economic sustainability of tourism is generally considered with respect to a focus on macro level and objective indicators, such as gross domestic product, employment rate and investment. While useful, macro-level and objective perspective do not capture many other indicators that have significant importance to local stakeholders, who are affected by tourism development strategies and who have their own interpretations of sustainability. For monitoring purposes, economic sustainability is measured through the destinations' economics benefits from tourism, employment effects and tourism seasonality.

4.2.1 Economic benefits of the destination

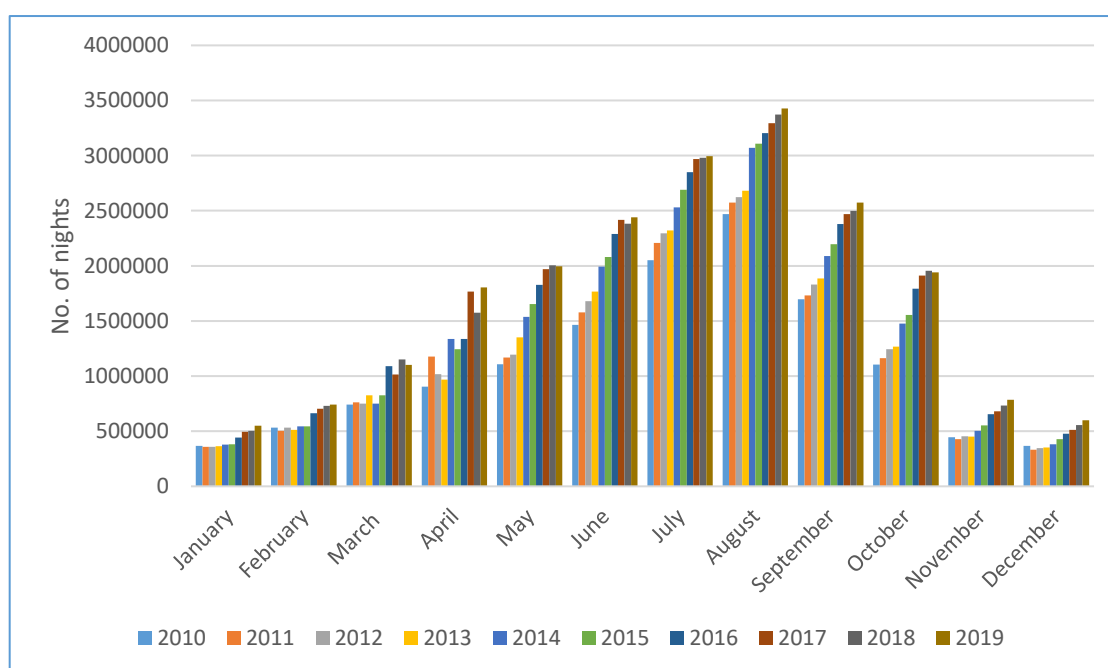
To measure the economic benefits of tourism in the region, only indicators that constitute indirect measures have been addressed. They are the number of nights in tourist accommodation establishments, per month, the relative contribution of tourism in the region to the regional and national economy, the average stay of tourists, and the productivity of tourism.

4.2.1.1 Number of nights in tourist accommodation establishments, per month

This indicator, considers the total number of nights in all types of tourist accommodation. Direct use of secondary data has been made to create this indicator, which is available on a monthly basis from 2010 to 2019 for the region and municipalities⁵.

Figure 9 shows the increasing pattern of this indicator at the region level in all months over the period 2010-2019, with June, July, August and September accounting for the highest number of nights in tourism accommodation. This upward trend has been transversal to all municipalities without exceptions, as illustrated in Figure 10.

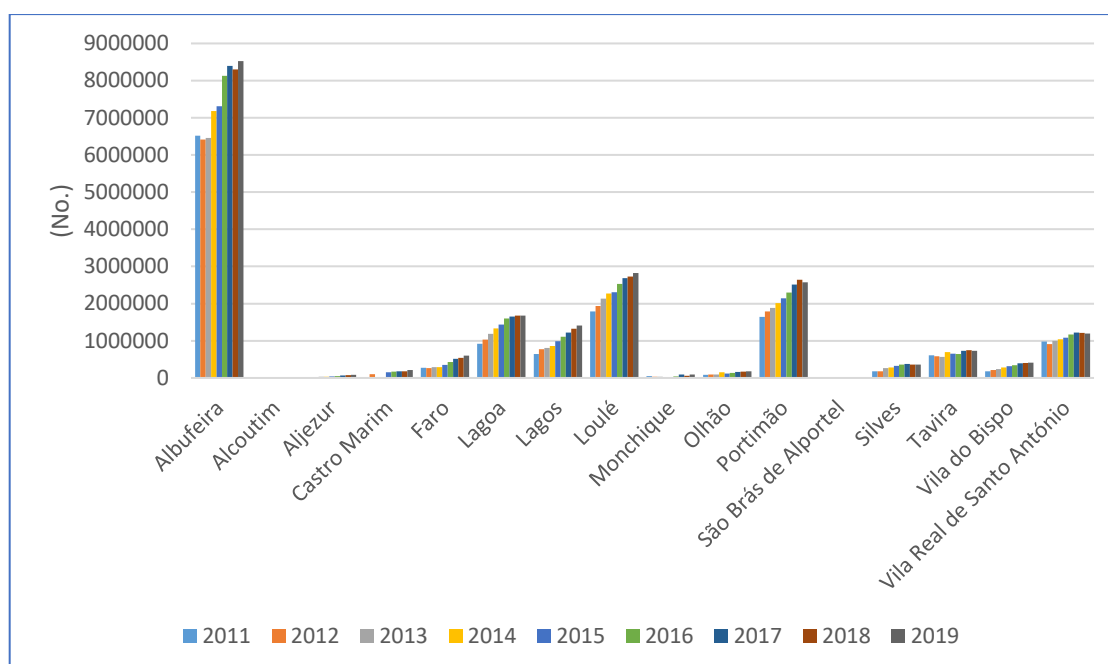
Figure 9: Number of nights in tourist accommodation establishments per month. Algarve, 2010-2019



Source: Tourism of Portugal; Own elaboration.

⁵ The technical information on this indicator is provided in the Annex A, Table A4.

Figure 10: Number of nights in tourist accommodation establishments. Algarve municipalities, 2011-2019



Source: National Statistical Institute; Own calculation.

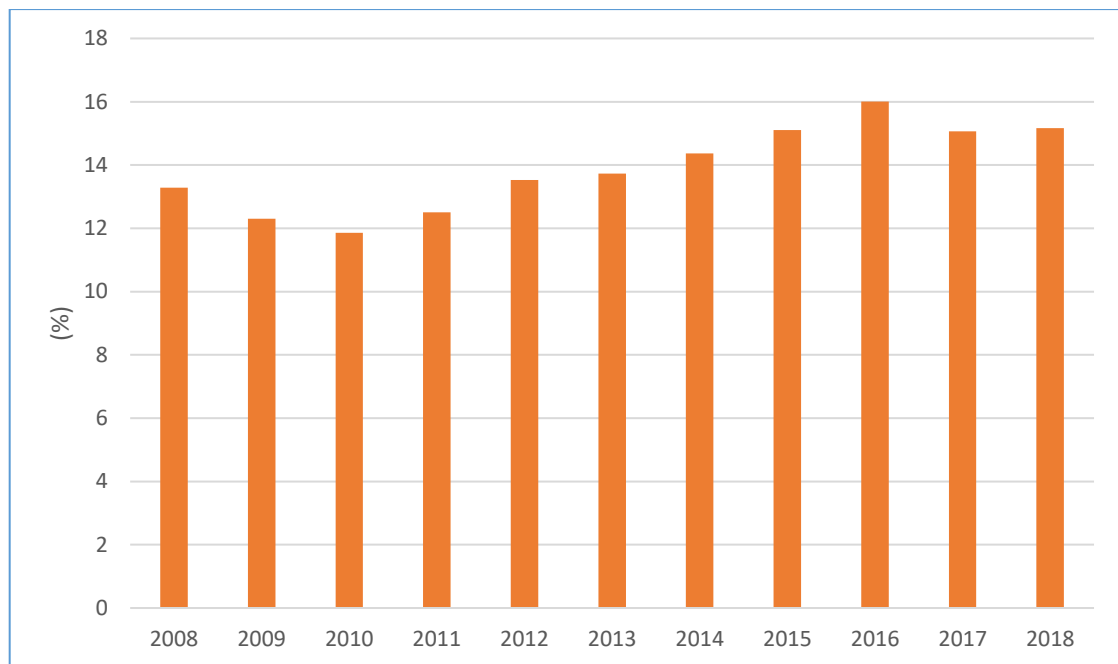
4.2.1.2 Relative contribution of tourism in the region to the regional and national economy

This indicator aims to gather information about the contribution of tourism in Algarve, in the economy of the region itself and in the national economy by accounting for the proportion of the sector gross value added (GVA) generated in the region on the region's total GVA and the country's GVA in the sector. For this analysis purpose, the tourist sector is proxied by the accommodation sector and the food and beverage services sector. The data on this indicator is available on an annual basis for the Algarve and for the municipalities, over the period 2008-2018⁶.

The share of the GVA generated by these sectors in the region in the GVA of these sectors at the national level is quite expressive, ranging from 13.3% in 2008 to 15.2% in 2018. The evolution of the regional share of these sectors in the sectoral GVA at the national level is represented in Figure 11, and it is quite illustrative of the growing regional importance of the dynamics of these sectors in the country.

⁶ The technical information on this indicator is provided in the Annex A, Table A5.

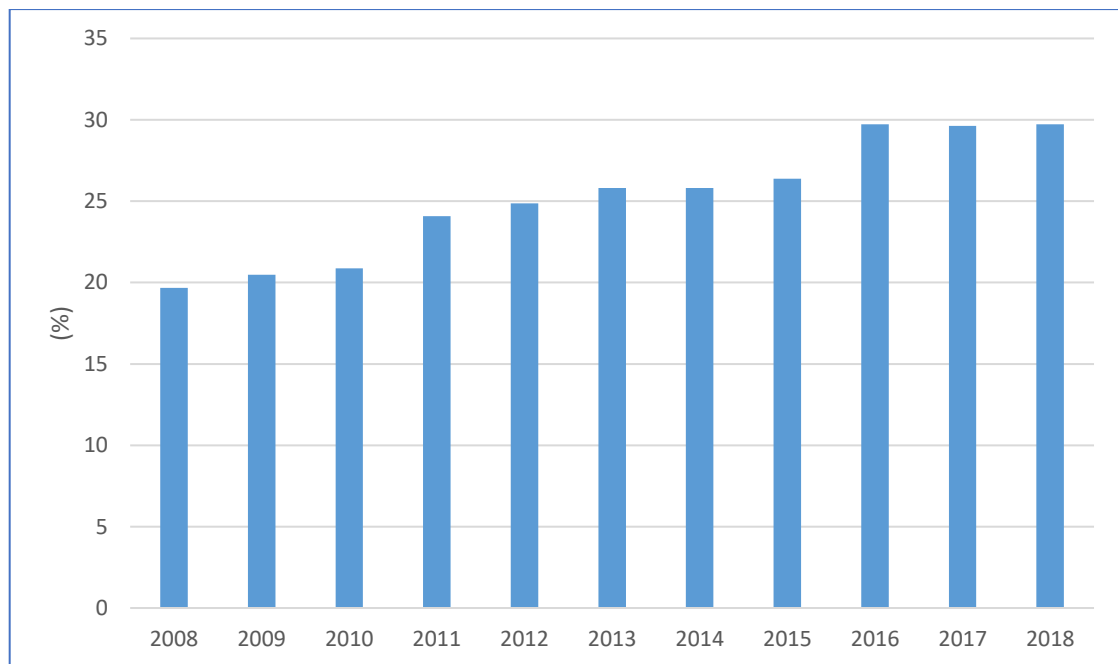
Figure 11: Regional share of GVA in accommodation, food and beverage services in Portugal's GVA in the sector. Algarve, 2008-2018



Source: National Statistical Institute; Own calculation.

At the regional level, the GVA of these sectors represented 29.7% of the regional GVA in 2018, having recorded an increase of 10 percent points since 2008. The evolution of this share shows a steady increase over the whole period as reported in Figure 12.

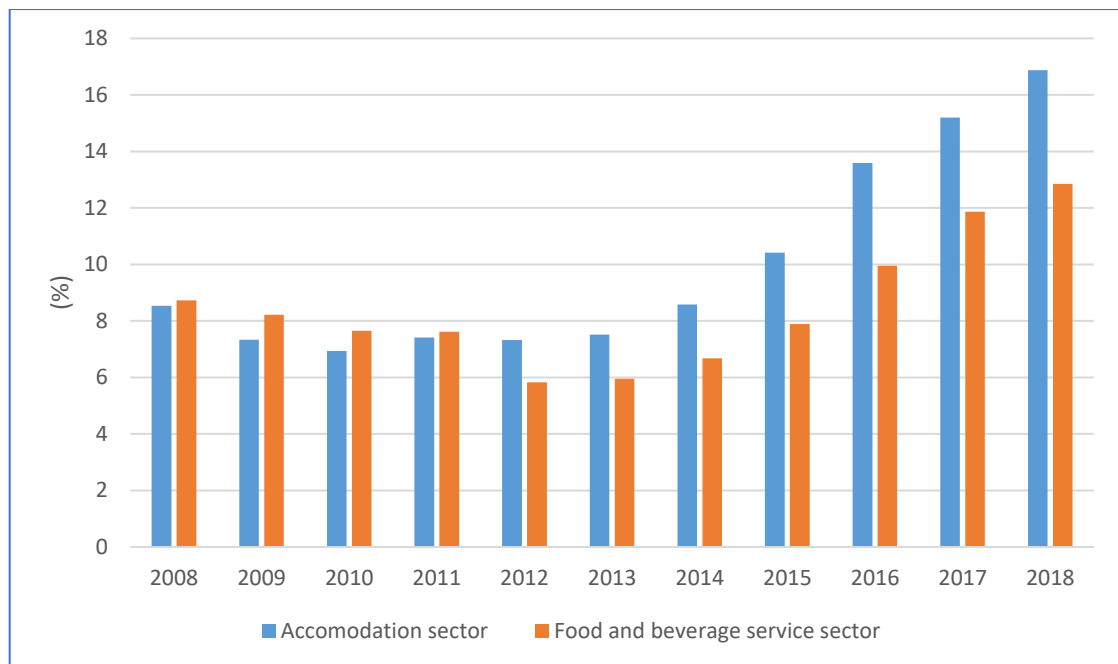
Figure 12: Share of Algarve's GVA in accommodation, food and beverage services in Algarve's total GVA. Algarve, 2008-2018



Source: National Statistical Institute; Own calculation.

As to the contribution of each sector to the region's GVA, Figure 13 illustrates an inversion of the weights, with a growing dominance of the accommodation sector since 2012, whose GVA represented 16.9% of the region's GVA in 2018, against 12.9% of the food and beverage service sector.

Figure 13: Shares of the GVA in accommodation and food and beverage services in Algarve's total GVA. Algarve, 2008-2018



Source: National Statistical Institute; Own calculation.

The analysis at the municipality level, as illustrated in Figures 14 and 15 suggest the existence of economic vulnerability due to an excessive dependence on tourism. Approximately 60% of the GVA in the accommodation and food catering services in the region are originated in three municipalities, specifically Loulé, Faro and Albufeira, and this picture has remained stable over the period 2008-2018.

Figure 14: Share of municipalities GVA in accommodation and food and beverage services in the region's GVA in 2008

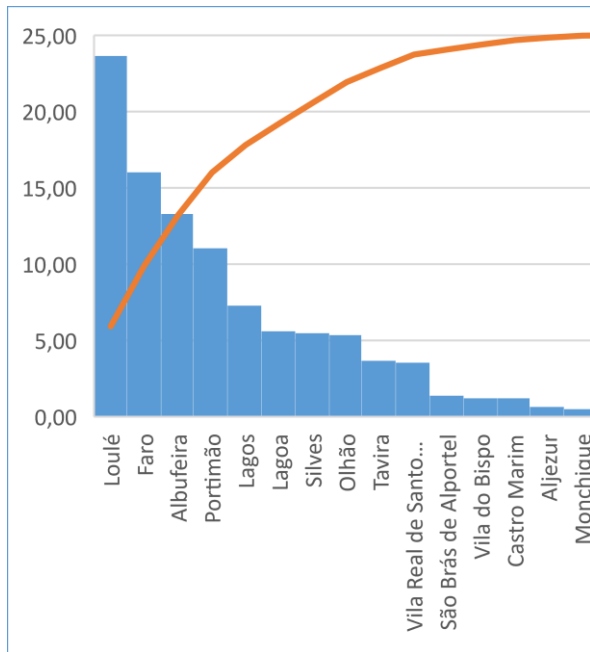
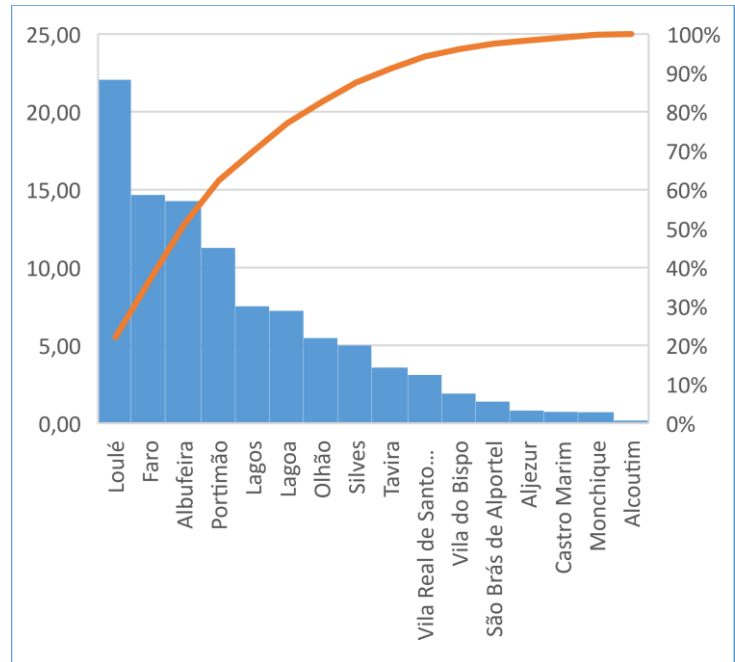


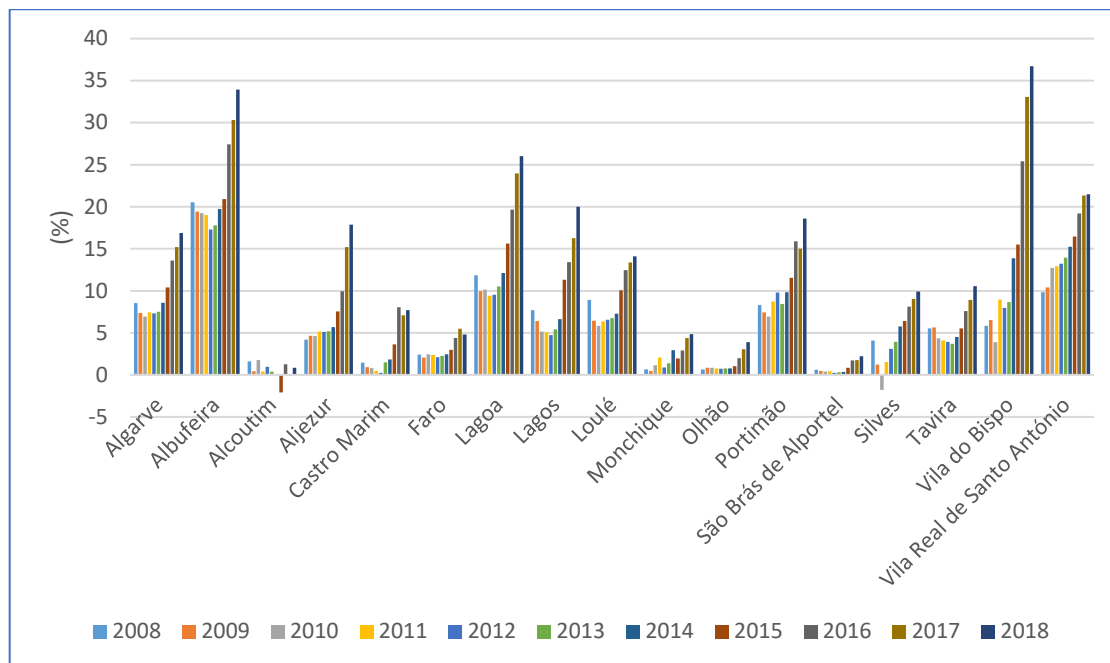
Figure 15: Share of municipalities GVA in accommodation and food and beverage services in the region's GVA in 2018



Source: National Statistical Institute; Own calculation.

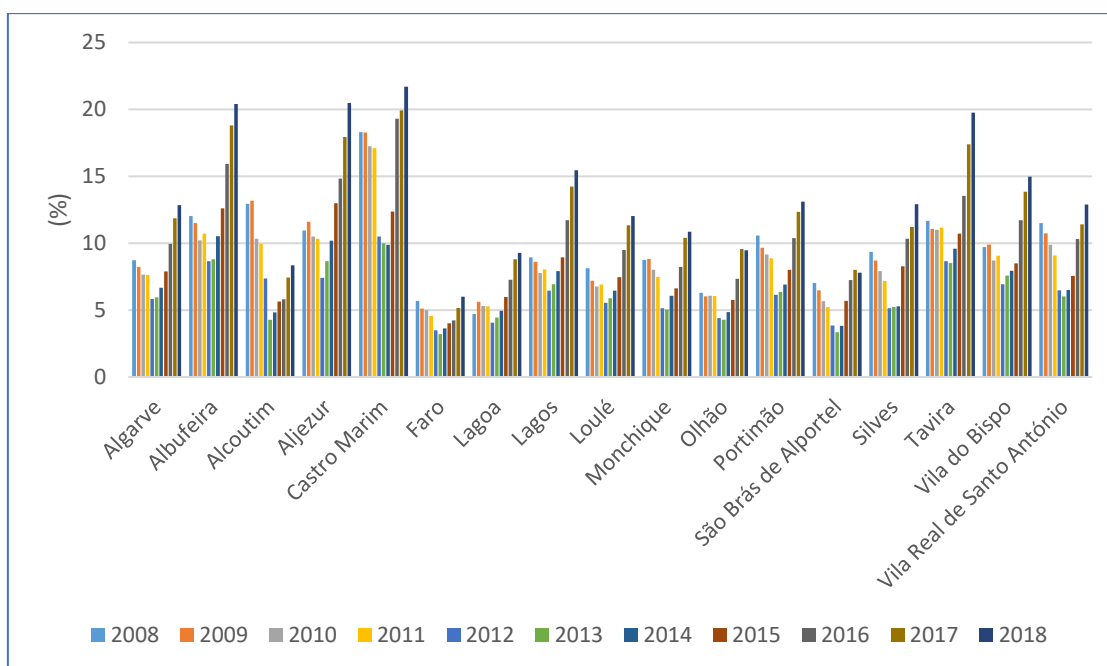
The analysis by sector also reveals asymmetries in the distribution of the relative shares of each sector in the Algarve's GVA. Figures 16 and 17 report the evolution of the municipalities' GVA shares of the accommodation and the food and beverage sectors, respectively, in the region's GVA. Although it is observable a growing share of both sectors in all municipalities since 2012, Albufeira, Lagoa and Vila do Bispo have been the leaders in the accommodation sector, with shares quite above the regional average. Regarding the food and beverage sector, the municipality of Albufeira also presents values quite above the share of the sector in the region's GVA, together with the municipalities of Aljezur, Castro Marim and Tavira.

Figure 16: Share of the GVA in accommodation sector in Algarve's total GVA. Algarve and municipalities, 2008-2018



Source: National Statistical Institute; Own calculation.

Figure 17: Share of the GVA in food and beverage sector in Algarve's total GVA. Algarve and municipalities, 2008-2018



Source: National Statistical Institute; Own calculation.

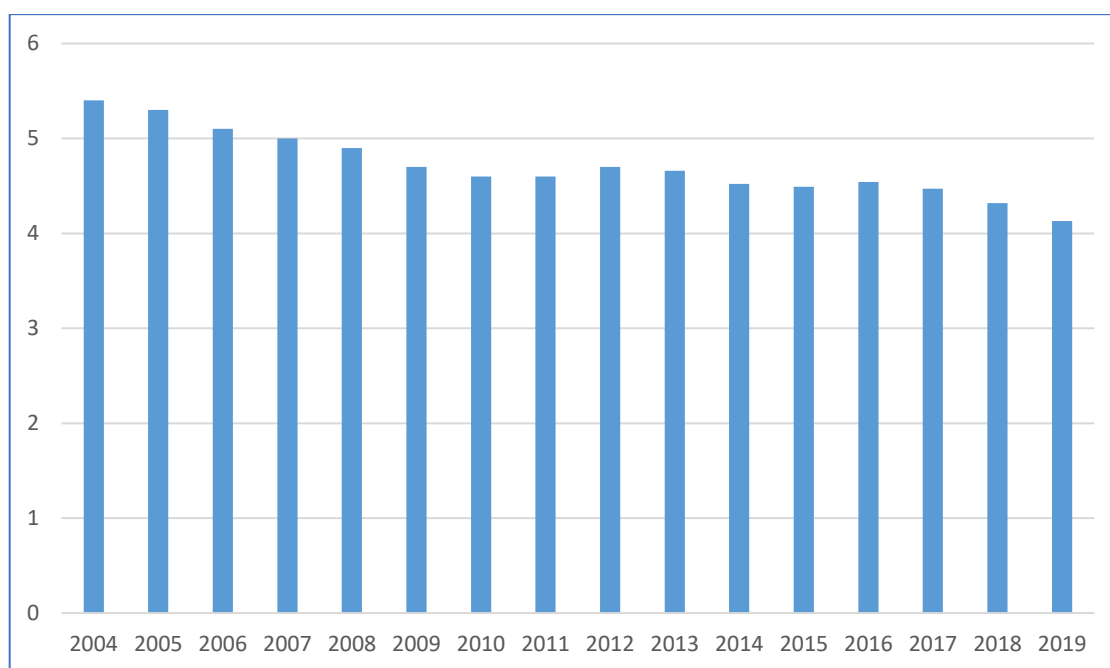
4.2.1.3 Average stay of tourists

This indicator, by relating the number of tourists with the number of overnight stays in tourist accommodation establishments, constitutes an instrument which is an important factor to analyse the economic sustainability and, at the same time, to monitor tourism seasonality and environmental sustainability.

This is a composite indicator based on secondary data and it is computed by the ratio of the number of overnight stays to the number of guests that gave rise to those overnight stays. The information on this indicator is provided for the region of Algarve on an annual basis for the period 2004-2018⁷ and reported in Figure 18.

The average stay in tourist accommodations has shown a slight downward movement from 5.4 nights in 2004 to 4.3 nights in 2018 per guest visiting the region.

Figure 18: Average stay in tourist accommodations. Algarve, 2004-2019



Source: National Statistical Institute; Own elaboration.

⁷ The technical information on this indicator is provided in the Annex A, Table A6.

4.2.1.4 *Productivity of Tourism*

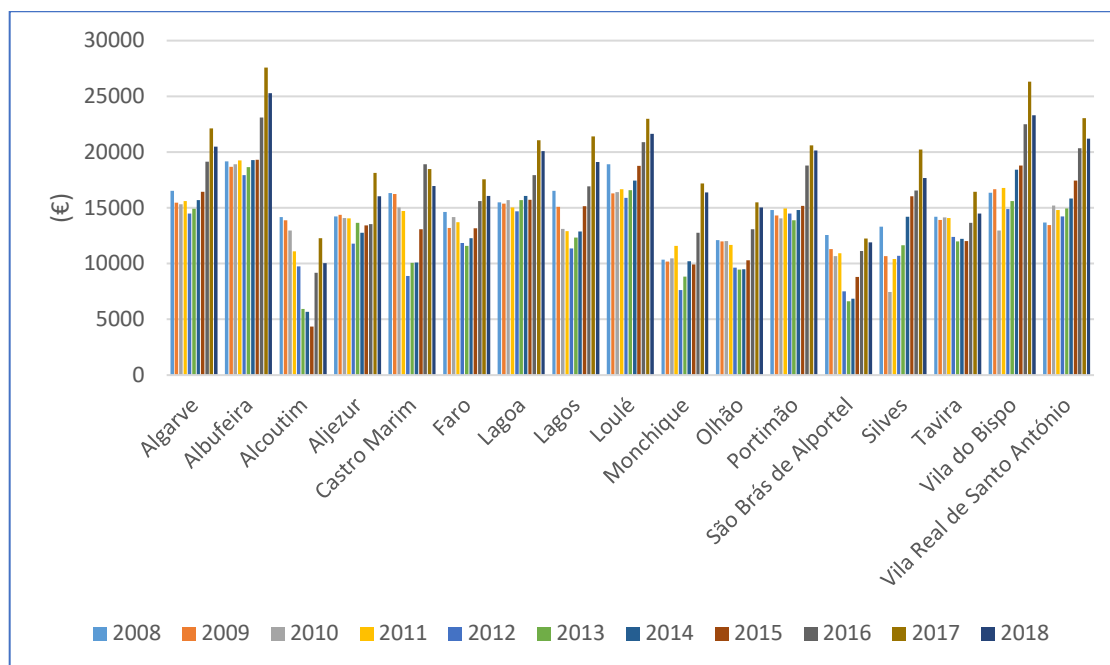
This indicator measures the productivity of the tourist sector by quantifying the relationship between GVA and employment generated in the sectors of accommodation and food and beverage services, which have been considered to represent the tourism sector in the region. The choice of GVA-based productivity measures reflects the ability of these sectors to convert primary input usages, such as capital and labor, to income.

The information on this indicator for the above mentioned sectors is provided for the region of Algarve and for each municipality, on an annual basis, for the period 2008-2018 and it is reported in Figure 19⁸.

The average productivity in the Algarve, over the period, is €16,928.16 and only three municipalities – Albufeira, Loulé and Vila do Bispo – report average productivity values above the region's average. It is also possible to observe a jump of the municipalities' productivity levels in 2016 and 2017, together with a general reduction in 2018.

⁸ The technical information on this indicator is provided in the Annex A, Table A7.

Figure 19: Productivity of accommodation, food and beverage sectors. Algarve and municipalities, 2008-2018



Source: National Statistical Institute, Own calculation.

Moreover, almost 60% of the region productivity in these sectors is concentrated in 50% of the municipalities, and this picture remained stable over the period as illustrated in Figures 20 and 21 for 2008 and 2018, respectively.

Figure 20: Share of municipalities productivity in accommodation, food and beverage sectors in 2008. Algarve municipalities

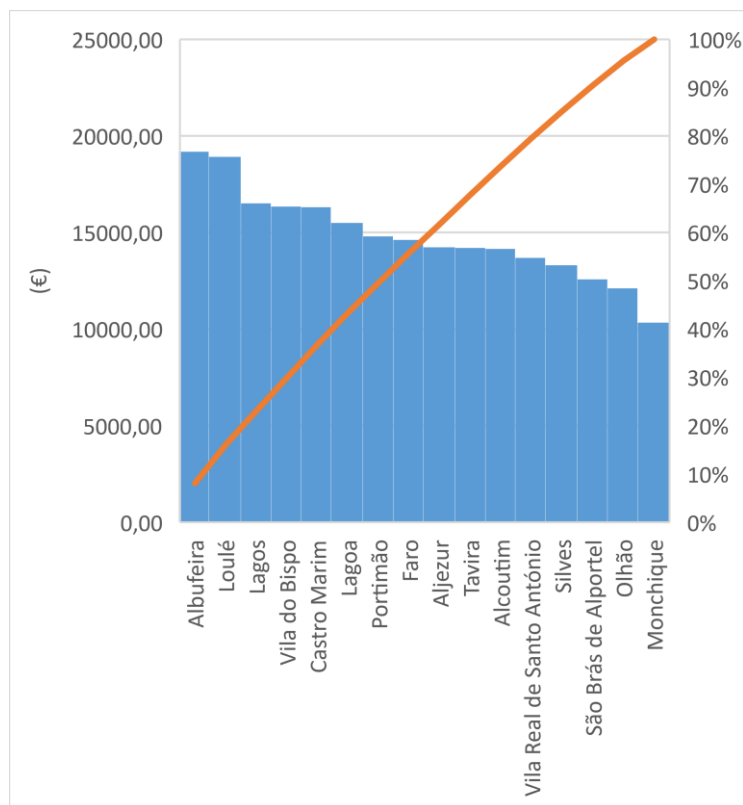
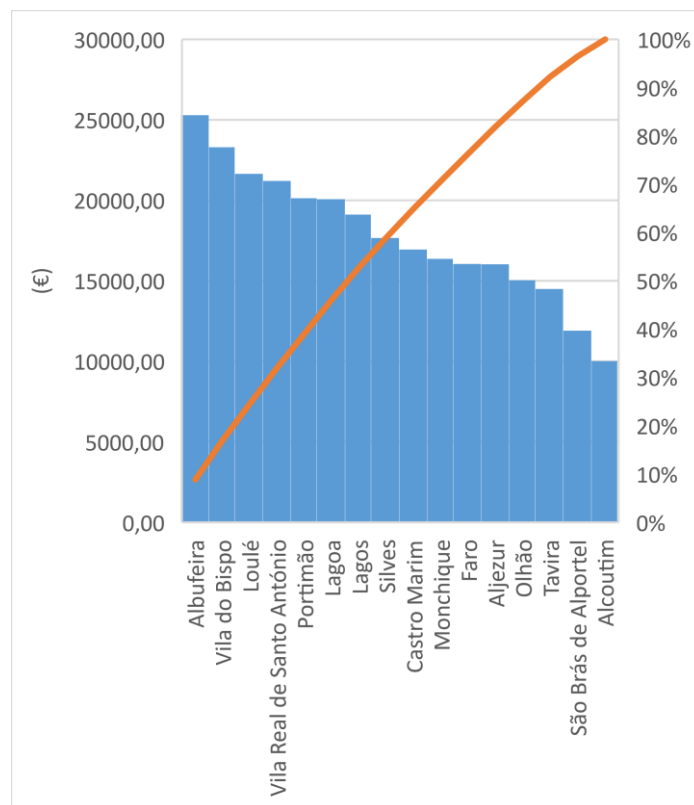


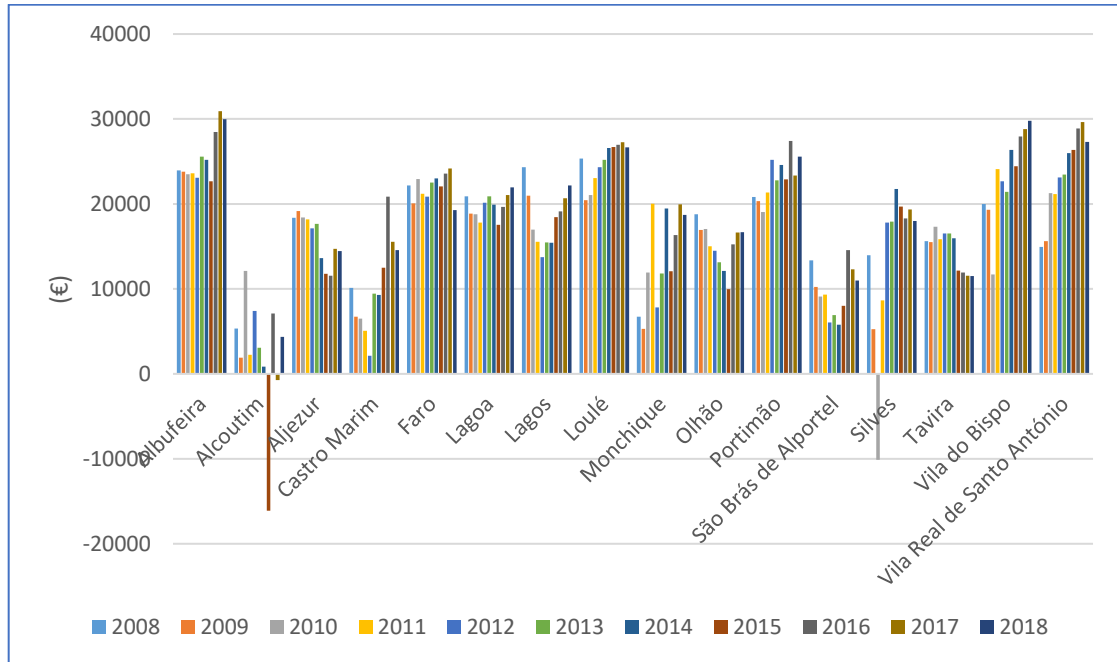
Figure 21: Share of municipalities productivity in accommodation, food and beverage sectors in 2018. Algarve municipalities



Source: National Statistical Institute; Own elaboration.

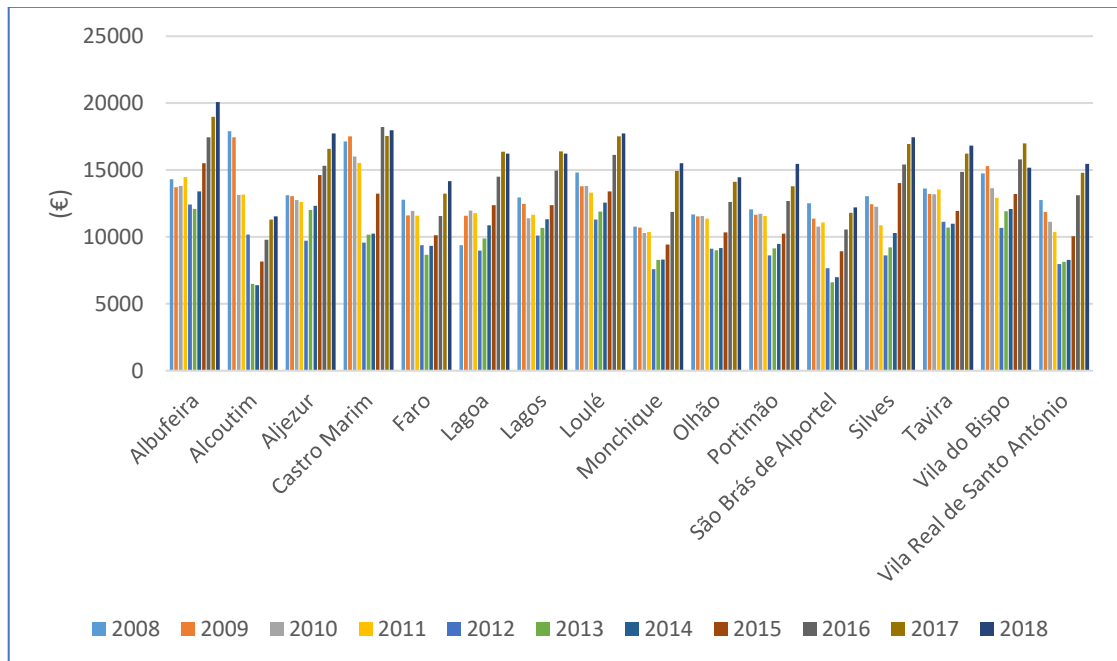
The municipalities with the highest average productivity in the accommodation sector, as illustrated in Figure 22, are Albufeira, Loulé, Portimão, Vila do Bispo and Vila Real de Santo António. The municipalities of Albufeira and Loulé are also among those with the highest average values of the productivity in the food and beverage sector, together with Aljezur, Castro Marim, Tavira and Vila do Bispo, as can be observed in Figure 23.

Figure 22: Productivity in the accommodation sector. Algarve municipalities, 2008-2018



Source: National Statistical Institute; Own elaboration.

Figure 23: Productivity in the food and beverage sector. Algarve municipalities, 2008-2018



Source: National Statistical Institute; Own elaboration.

4.2.2 Employment

Employment is another area of economic sustainability, as proposed by the World Tourism Organization (UNWTO, 2004), given that tourism can be understood as a set of productive activities that cater mainly for visitors. As such, tourism is an important source of job creation.

The indicators related to employment here considered are the direct employment in tourism as a percentage of total employment in the region, and the seasonal employment as a percentage of direct employment in tourism in the region.

4.2.2.1 Direct employment in tourism as a percentage of total employment in the region

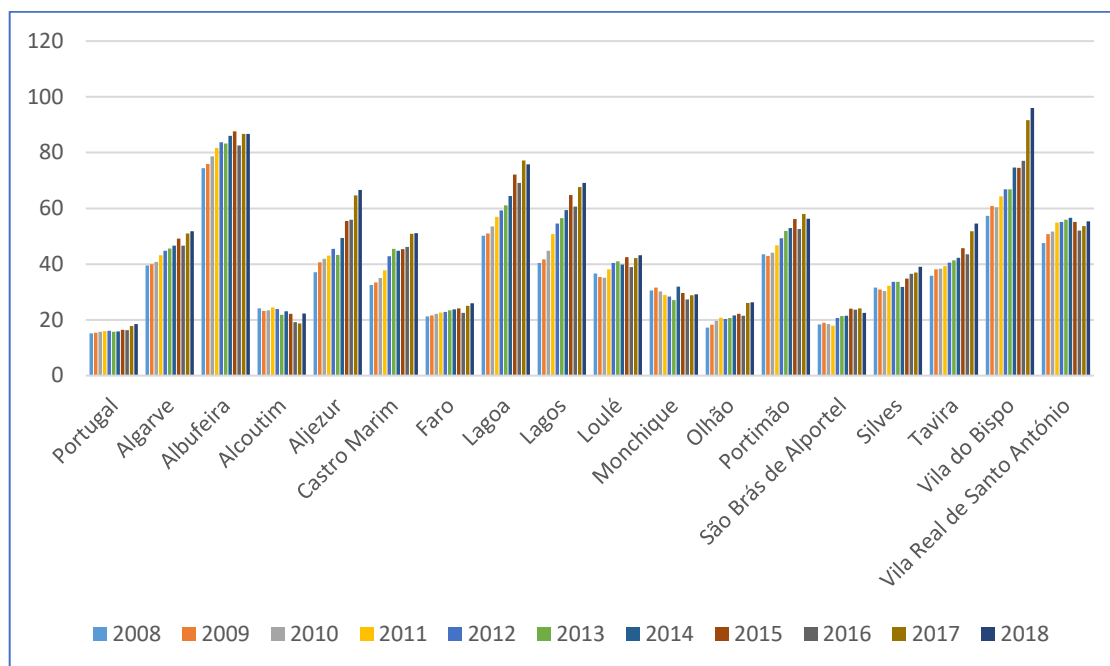
This indicator allows us to understand the role of tourism in job creation and the relative importance of the sector in terms of job creation. The sector of accommodation and food service activities has been considered to represent the tourism sector.

The information on this indicator is provided for the region of Algarve and at the municipality level on an annual basis for the period 2004-2018⁹.

The data on this indicator at the regional and municipality levels are reported in Figure 24, which clearly illustrates the large dependence of the employment in the Algarve on the tourism activity when compared to the figures at the national level. On average, for the period 2008-2018, the direct employment in tourism in the country is 16.3% of the total employment, while for the region this value is 45.4%. This is quite illustrative of the relevance of the tourism activity in the region. High differences are also identified at the municipality level, with the municipalities of Vila do Bispo, Albufeira, Lagoa, Portimão and Lagos exhibiting high dependence on tourism as the average share of employment in tourism is above 50%.

⁹ The technical information on this indicator is provided in the Annex A, Table A8.

Figure 24: Direct employment in tourism as a percentage of total employment. Portugal and Algarve municipalities, 2008-2018



Source: National Statistical Institute; Own calculation.

4.2.2.2 Seasonal employment as a percentage of direct employment in tourism in the region

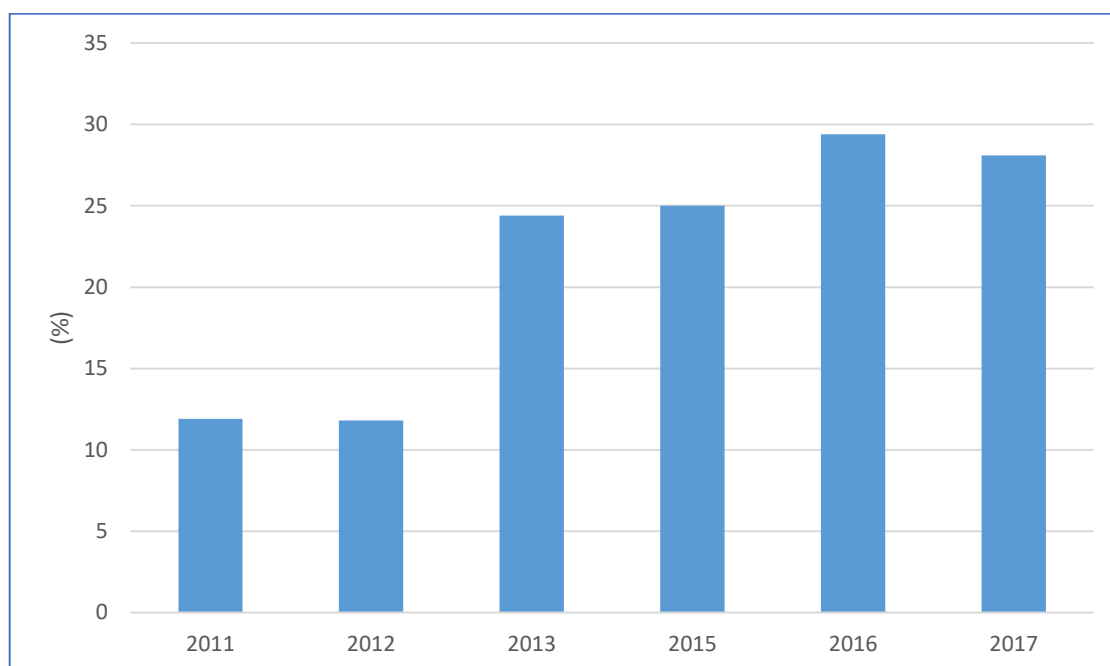
This indicator provides a characterization of the seasonality of the employment generated by the tourist sector in the region.

According to this indicator, the definition of seasonal service employees allows assessing the evolution of employees whose employment relationship is a fixed or uncertain term contract (with a seasonal character) compared with the evolution of the total number of people employed in hotel establishments.

Data is available for the region on an annual basis for the period 2011-2017¹⁰ in Figure 25.

¹⁰ The technical information on this indicator is provided in the Annex A, Table A9.

Figure 25: Percentage of seasonal employees. Algarve, 2011-2017



Note: Data for 2014 is not available.

Source: Tourism of Portugal; Own elaboration.

4.2.3 Seasonality

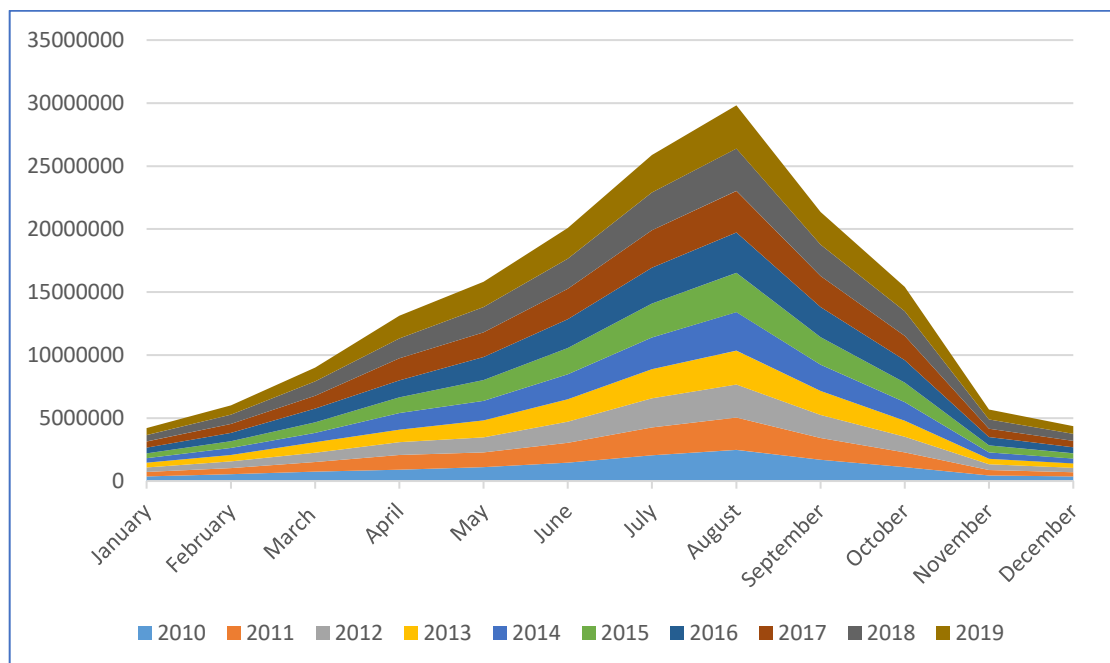
To analyze the seasonality in the tourism activity in the region, the indicators used are the number of overnight stays by tourists, per month, and the seasonality rate.

4.2.3.1 Number of nights spent in the region by tourists, per month

The information on this indicator is provided for the region of Algarve on an annual basis from 2010-2019¹¹. Figure 26 illustrates the high levels of seasonality that characterize the tourist activity in the Algarve. Most of the nights spent by tourists in the region are concentrated in the peak season, that is concentrated in the period from June to September.

¹¹ The technical information on this indicator is provided in the Annex A, Table A10.

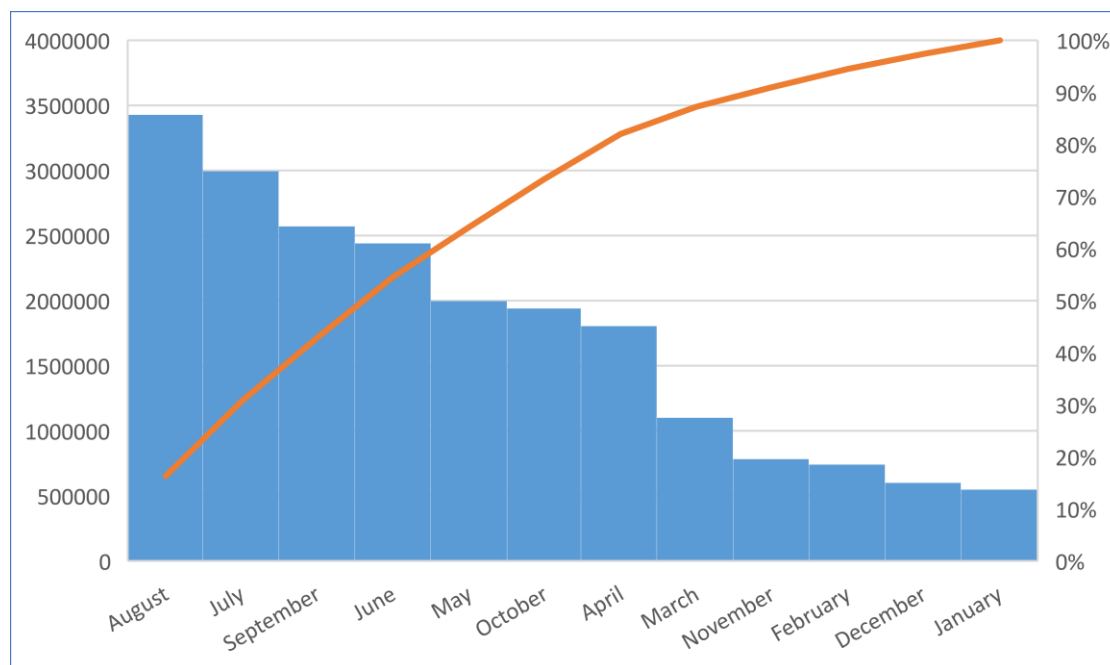
Figure 26: Number of nights in Tourist Accommodation establishments, per month. Algarve, 2010- 2019



Source: Tourism of Portugal; Own elaboration.

In 2019, the last year for which the information is available, about 60% of the nights spent by tourists in the region were concentrated from June to September, as shown in Figure 27.

Figure 27: Number and monthly share of nights in tourist accommodation establishments. Algarve, 2019



Source: Tourism of Portugal; Own elaboration.

4.2.3.2 Seasonality Rate

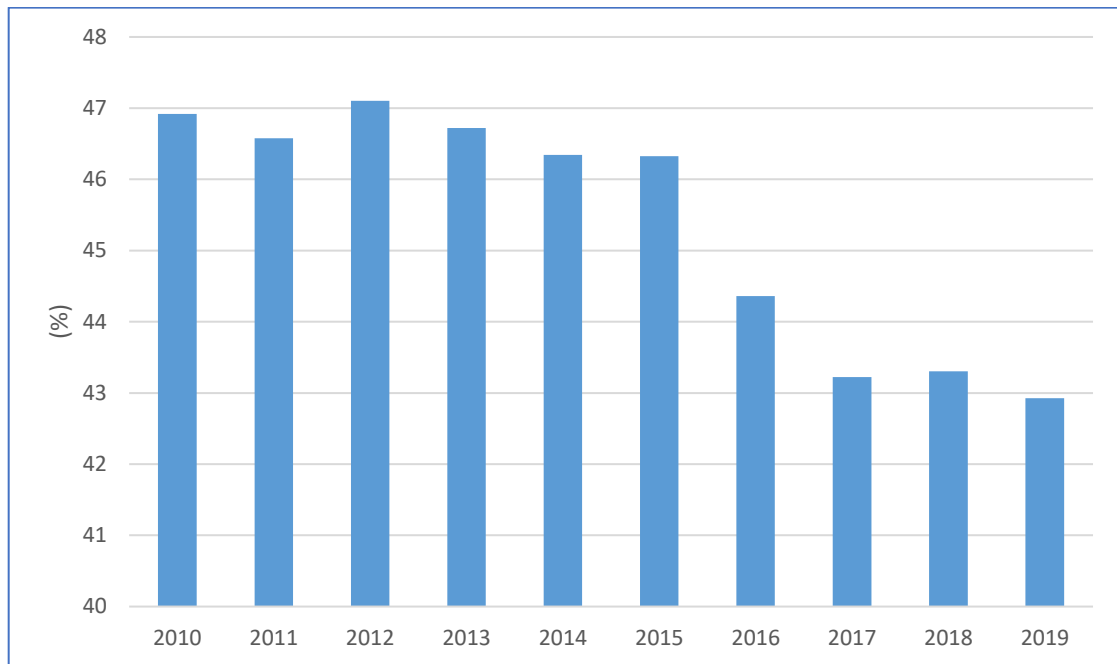
This indicator considers the relationship between the number of nights that tourists spend in the region in the three months which constitute the high season of the annual tourist cycle, and the annual total. It assesses the relative weight of tourist demand in the three months of greatest demand (July, August and September), in relation to the annual total, as measures by the number of overnight stays in accommodation establishments.

This is a composite indicator based on secondary data, and it is calculated for the whole region on an annual basis for the period 2019-2019¹².

The evolution of this indicator is described in Figure 28, where it is possible to observe that the percentage of nights tourists spent in the region during the months of July, August and September reduced by more than 3 percent points in the last three years.

¹² The technical information on this indicator is provided in the Annex A, Table A12.

Figure 28: Seasonality Rate. Algarve, 2010-2019



Source: Tourism of Portugal; Own calculation.

4.3 Environmental sustainability

Tourism and environment are inter-linked. The environment of a tourist destination, it’s socio-cultural attributes and resources constitute the basic background for the evolution, growth and development of tourism in the area. Increasing tourism activities in a destination often results in overuse and degradation of the environment and resources of tourism, which in turn lead to a decline in the growth of tourism and loss of tourism value for the destination.

Sustained tourism in a destination depends on the carrying capacity, resilience of the host/destination environment, intensity of tourist activity and sociological attributes of the host society. Hence, the goal of environmental sustainability is to conserve natural resources and to develop alternate sources of power while reducing pollution and harm to the environment.

According to the World Tourism Organization, tourism development that meets the needs of present tourists and host regions while protecting and enhancing the tourism opportunities for future generations is sustainable tourism. It respects the fragile environmental balance that characterizes many touristic destinations. Hence, it implies management of all resources in such a way that economic, social, and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity, and life support system. Longevity and sustenance of tourism needs special considerations regarding the sustenance of the host environment. It is based on a long term perspective (UNWTO, 1998).

For monitoring purposes, environmental sustainability is measured through natural resources management, such as energy and water, wastewater management, mobility and air quality and noise.

4.3.1 Energy management

To analyze energy management in the region, the indicator used is the percentage of tourist companies taking measures to reduce energy consumption.

4.3.1.1 Percentage of tourist companies taking measures to reduce energy consumption

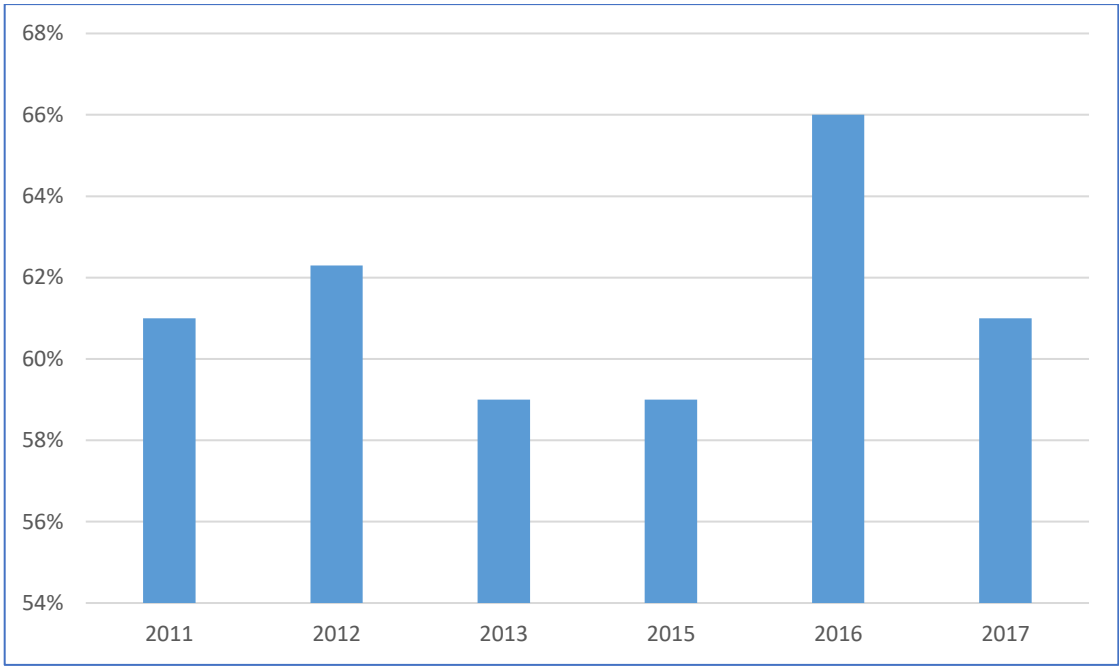
This indicator measures the commitment of the tourism companies towards energy savings through different measures. Energy consumption in the tourism sector is crucial information for the development and planning of tourism activity. The reduction of the energy bill will allow the cost reduction of the activity. Likewise, monitoring tourism companies' commitment to energy savings through different measures, such as the use of low energy lighting, helps to measure the success of energy saving programs and initiatives. Direct data from Tourism of Portugal is used to represent this indicator.

The data for this indicator is available for the whole region over the period 2011-2017, with the exception of 2014, and they are described in Figure 29¹³.

¹³ The technical information on this indicator is provided in the Annex A, Table A13.

After a drop in 2013 and 2015, more than 60% of the accommodation establishments adopted measures to optimise energy consumption in the last two years for which the information is available. Furthermore, the percentage of accommodation establishments with objectives to limit energy consumption was 61.6% and 56.3% in 2016 and 2017, respectively.

Figure 29: Accommodation establishments that optimize energy consumption. Algarve, 2011-2017



Note: Data for 2014 is not available.
Source: Tourism of Portugal; Own elaboration.

4.3.2 Water management

Water is a scarce and finite resource which is often taken for granted. Population has increased over the last decades, resulting in a strong pressure on the already scarce water resources. Urbanization has also changed the agrarian nature of many areas. The population expansion and the search for strong economic growth are placing new demands on available water supplies. The temporal and spatial distribution of water is also a major challenge with groundwater resources being overdrawn. It is for these reasons that reducing, recycling and reusing of water is crucial for sustainability.

The monitoring of water consumption in companies in the tourism sector and the comparison of this consumption with consumption made by residents, highlights both the weight of the tourism sector in the use of this important resource and the need for conservation measures where and whenever necessary. Likewise, monitoring the involvement of companies in the sector in the rational use of water and in conservation activities helps to assess the success of water conservation initiatives that will result in cost savings for companies. In addition, the use of recycled water to be used in garden irrigation is an effective strategy for reducing water consumption.

The implementation of a policy of optimization of water consumption in a hotel establishment implies that it has developed a policy of quality and environmental management, based on objectives and processes to achieve commitments related to quality and the environment. It also implies taking periodic actions to continually improve its performance, in addition to reflecting the level of involvement of establishments in environmental preservation.

The higher the percentage of hotel establishments with policies for optimizing water consumption, the greater the concern shown with environmental preservation and the consequent sustainability of tourism.

The indicator used to monitor the water management is the percentage of tourist companies that are taking measures to reduce water consumption.

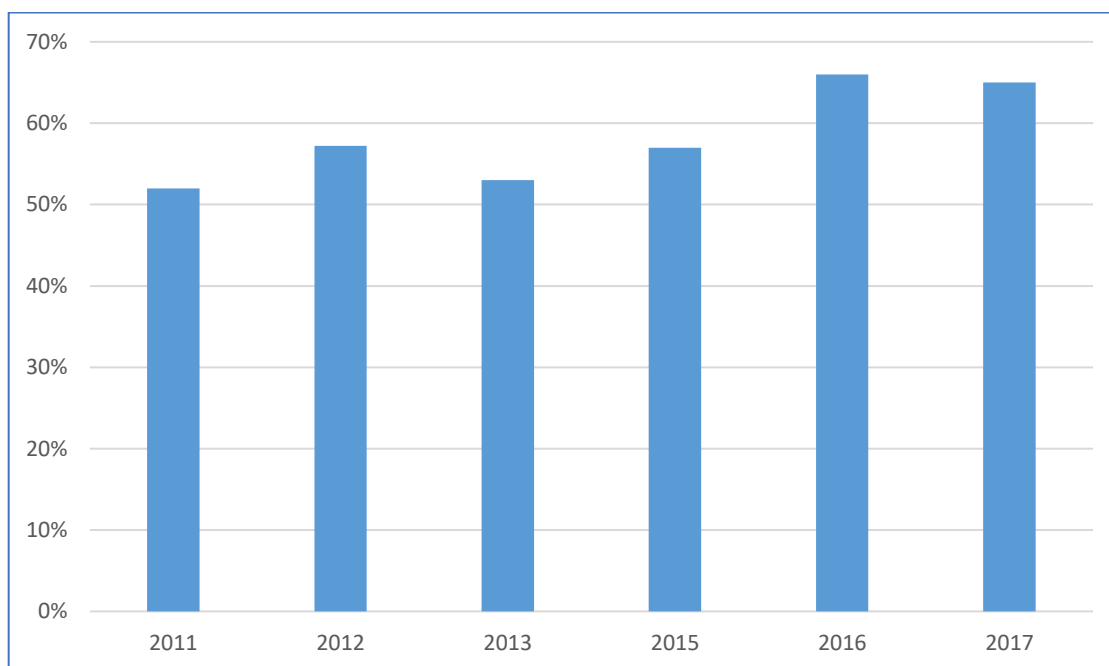
4.3.2.1 Percentage of tourist companies taking measures to reduce water consumption

This indicator allows to evaluate the evolution of the share of hotel establishments, resorts and tourist apartments that manage water efficiently. The data is available for the whole region on an annual basis and for the period 2011-2017¹⁴.

¹⁴ The technical information on this indicator is provided in the Annex A, Table A14.

The percentage of accommodation establishments that have been implementing measures towards reduction of water consumption has been increasing over the years, as shown in Figure 30. Moreover, 65% and 55% of the establishments defined objectives of water reduction in 2016 and 2017, respectively.

Figure 30: Accommodation Establishments that Optimize Water Consumption. Algarve, 2011-2017



Note: Data for 2014 is not available.

Source: Tourism of Portugal; Own elaboration.

4.3.3 Wastewater management

Waste management and recycling are fundamental issues for policy makers to protect the environment. Wastewater management implies handling of wastewater to protect the environment in order to ensure public health, economic, social and political soundness. Wastewater is water whose physical, chemical or biological properties have been changed as a result of the introduction of certain substances which render it unsafe for some purposes such as drinking. Wastewater treatment is the process and the technology that is used to remove most of the contaminants that are found in wastewater to ensure a sound environment and good public health.

The proposed indicators to monitor wastewater management reflect the existence of efficient sewage treatment and management infrastructures, an aspect that is fundamental for sustainability. Tracking this information helps to identify problematic areas.

The indicator used to monitor the wastewater management is the percentage of sewage treated prior to discharge.

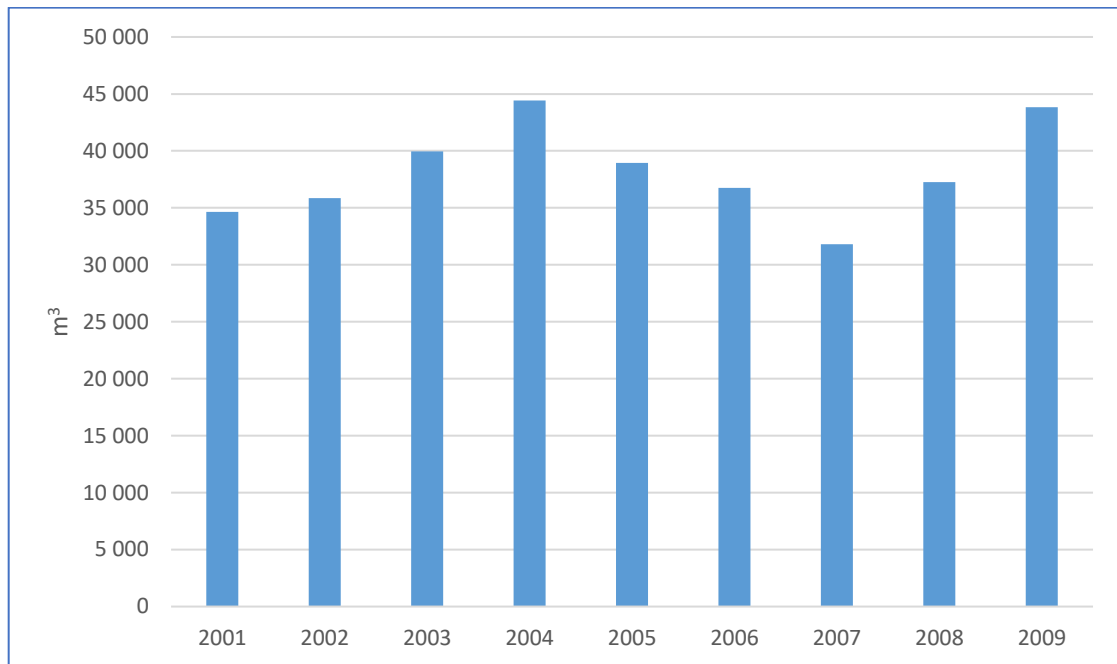
4.3.3.1 Percentage of sewage treated prior to discharge

Treatment of wastewater is carried out in wastewater treatment plants (Portuguese acronym: ETAR) or in municipal septic tanks. Data is available for the whole region and for the municipalities on an annual basis from 2001-2009¹⁵.

The volume (in m³) of wastewater treatment in the region registered an oscillatory movement in the period, with an upward behaviour before 2004, followed by a downward movement until 2007. It returned to the upward trend in 2008 and 2009, as shown in Figure 31.

¹⁵ The technical information on this indicator is provided in the Annex A, Table A15.

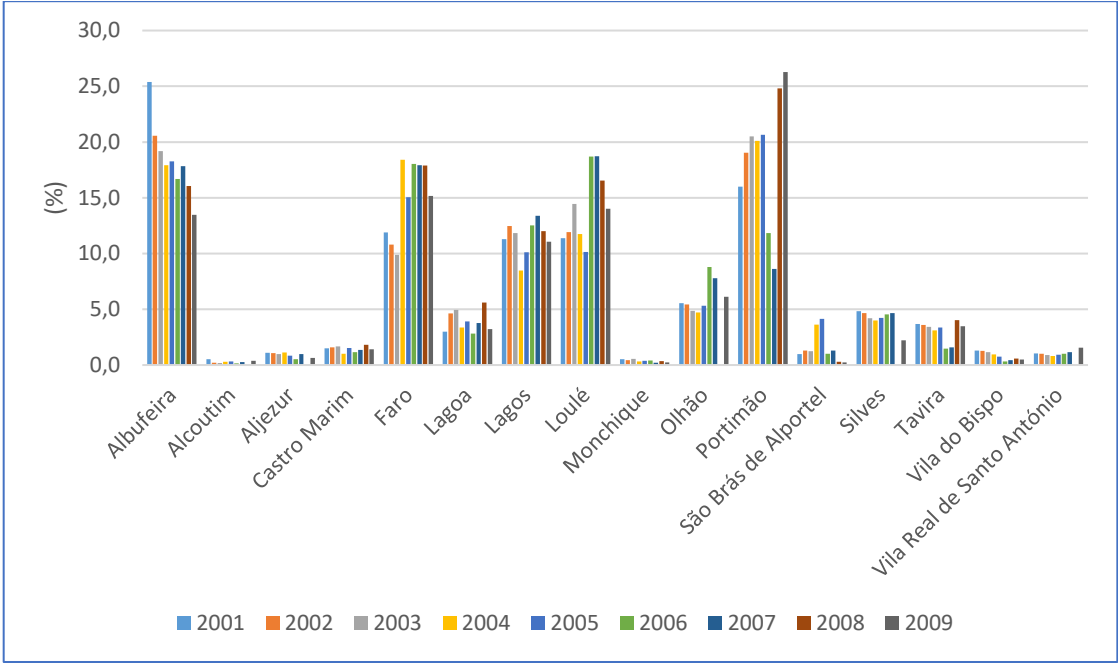
Figure 31: Waste water treatment. Algarve, 2001-2009



Source: National Statistical Institute; Own elaboration.

At the municipality level, the picture was mixed in this period, as shown in Figure 32. Some municipalities revealed a decreasing share of wastewater treatment in the total volume of wastewater treatment in the region while others revealed the oscillatory picture observed at the regional level. The most paradigmatic case is Albufeira, one of the top tourist municipality, where the share of wastewater treatment decreased.

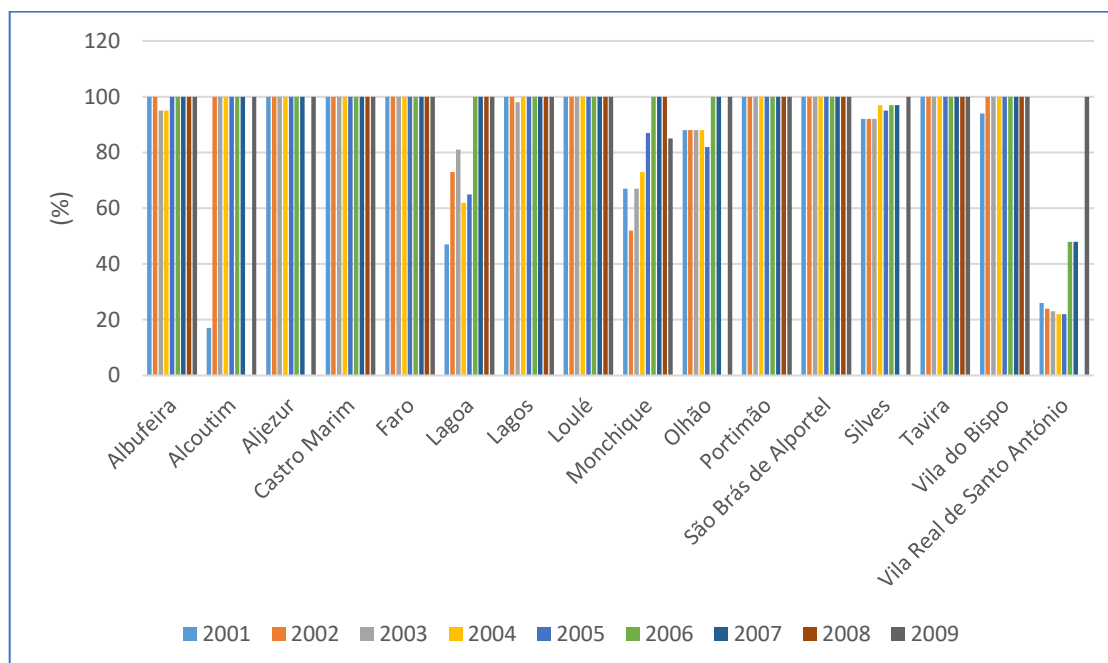
Figure 32: Share of each municipality in wastewater treatment in Algarve. Algarve municipalities, 2001-2009



Source: National Statistical Institute; Own elaboration.

Interesting is the fact that in most of the municipalities 100% of the wastewater is treated before discharge, as shown in Figure 33.

Figure 33: Proportion of wastewater treated in municipalities. Algarve municipalities, 2001-2009



Source: National Statistical Institute; Own elaboration.

4.3.4 Mobility

People and goods mobility is intrinsically associated to economic growth, as it is implied by economic activity. Being tourism the main economic activity in the Algarve, this activity involves the movement of people and goods which exerts pressure of the territory whose monitoring becomes necessary.

The indicators used to monitor mobility are the movement of passengers on inland waterways, the number of passengers embarked and disembarked from cruise ships at the Port of Portimão and the number of passengers boarded and disembarked at Faro Airport.

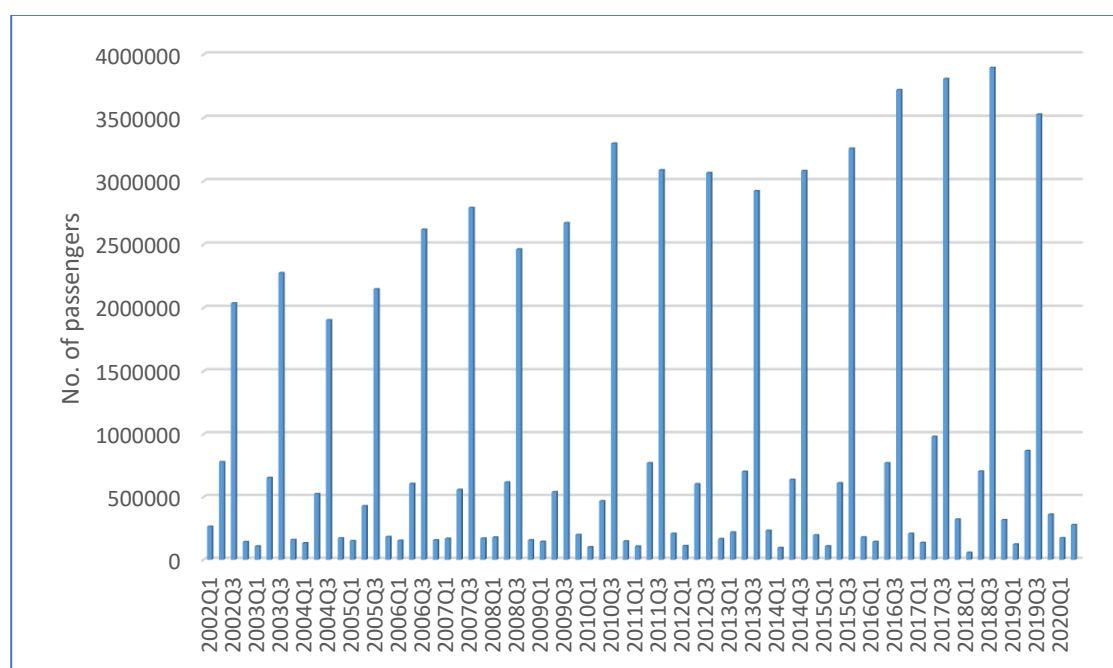
4.3.4.1 Movement of Passengers on Inland Waterways

This indicator measures the number of passengers moving on inland waterways. Inland waterway is the regular service performed by public transport, obeying itineraries, schedules or minimum frequencies and pre-fixed rates.

At the regional level, the beaches considered for this indicator are Ria Formosa (Faro - Ilha de Faro, Ilha Deserta and Ilha do Farol; Olhão - Ilha da Culatra and Ilha da Armona; Tavira - Ilha de Tavira, Quatro Águas – Ilha de Tavira; Fuzeta – Ilha da Armona; Sta. Luzia - Terra Estreita; Cabanas – Ilha de Cabanas;) and the beaches located by the Guadiana River (Vila Real de Santo António in Portugal and the beach of Ayamonte, in Spain).

Figure 34 reports quarterly data of the total movement of passengers on the above inland waterways for the period between 2002 and 2020¹⁶. It is noticeable, not only the seasonal pattern of the values, but also the increasing trend of number of passengers in the 3rd quarters, which correspond to peak tourist seasons.

Figure 34: Total movement of passengers on inland waterways. Algarve, Quarterly, 2002-2020



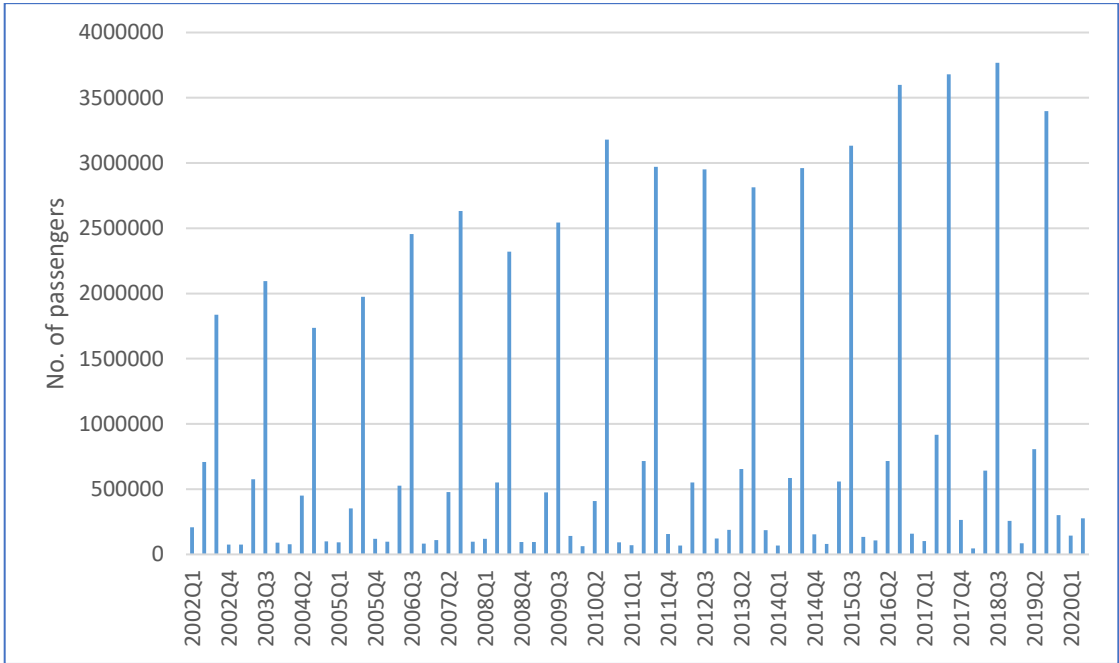
Source: Observe; Own elaboration.

The previous aggregate analysis covers an unbalanced distribution of the passengers traffic between the Ria Formosa and the Guadiana River. The disaggregated analysis is illustrated in Figures 35 and 36, where it is detected the greater pressure on the Ria Formosa and the surrounding beaches.

¹⁶ The technical information on this indicator is provided in the Annex A, Table A16.

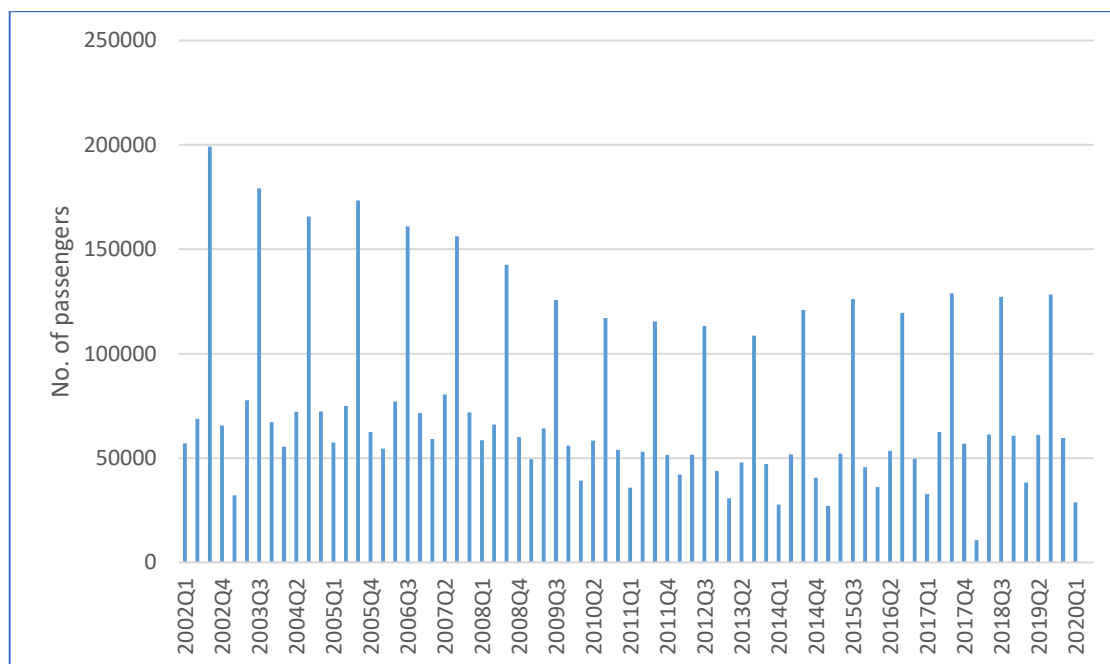
Besides the seasonal pattern that is shared by both, it is detectable a pronounced increasing trend in peak tourist season in the Ria Formosa, which contrasts with the decreasing trend in the Guadiana River. This is quite informative about the high pressure that the Ria Formosa, which is also a designated Natural Park of over 170 Km².

Figure 35: Movement of passengers on inland waterways. Algarve – Ria Formosa, Quarterly, 2002-2020



Source: Observe; Own elaboration.

Figure 36: Movement of passengers on inland waterways. Algarve – Guadiana River, Quarterly, 2002-2020



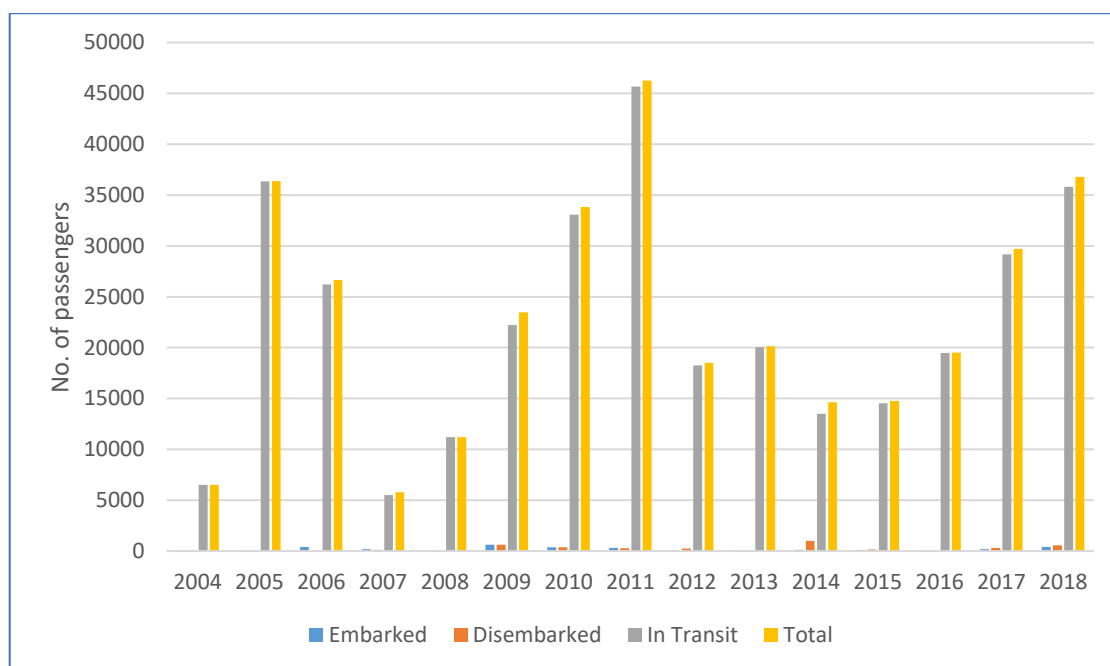
Source: Observe; Own elaboration.

4.3.4.2 Number of passengers embarked and disembarked from cruise ships at the Port of Portimão

This indicator provides the number of passengers embarked, disembarked and in transit at the Port of Portimão, from cruise ships, and the information, for the period 2004-2018, is provided in Figure 37¹⁷. The higher movement is related to the number of passengers in transit, having the most expressive value been observed in 2011. After a decline in the following years, there seem to have been a recovery since 2016. The numbers of embarked and disembarked passengers have been very negligible.

¹⁷ The technical information on this indicator is provided in the Annex A, Table A17.

Figure 37: Number of passengers embarked and disembarked from cruise ships at the Port of Portimão. Algarve – Portimão, 2004-2018



Source: Observe; Own elaboration.

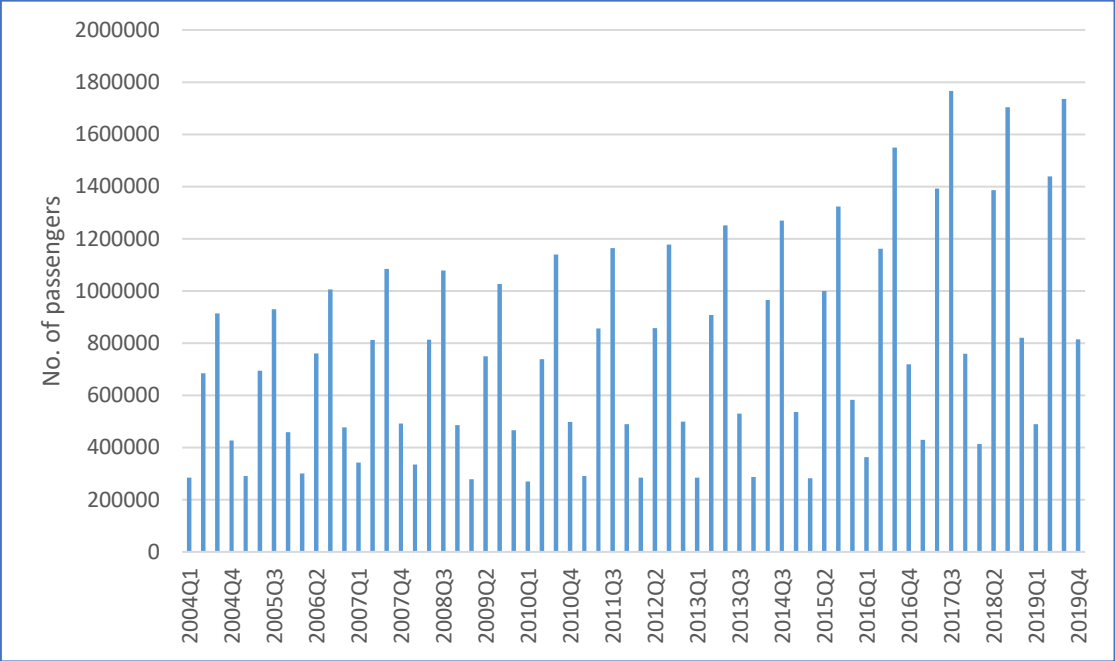
4.3.4.3 Number of passengers boarded and disembarked at Faro Airport

This indicator provides the number of passengers embarked and disembarked at Faro Airport, covering the nature of the traffic (inland, territorial and international) and is reported in Figures 38 and 39¹⁸.

There is a visible increase in volume of travelers over the years, with the pressure being highest in the third quarters, which reflects once again the strong seasonality of the tourist activity.

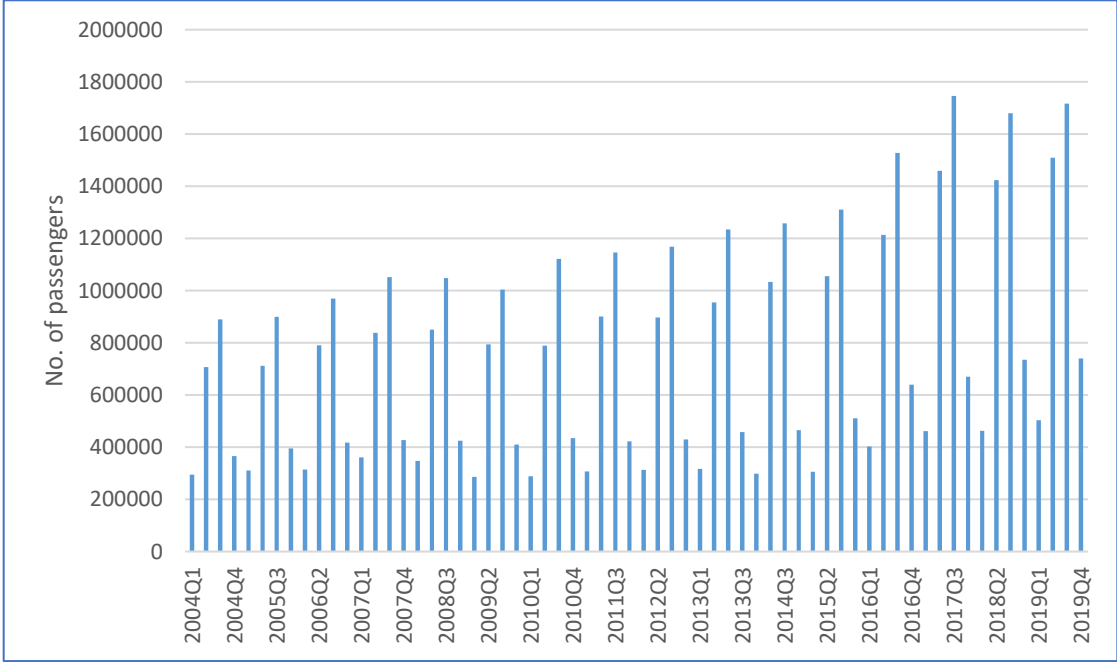
¹⁸ The technical information on this indicator is provided in the Annex A, Table A18.

Figure 38: Number of passengers Boarded at Faro Airport. Algarve-Faro, Quarterly, 2004-2019



Source: Observe; Own elaboration.

Figure 39: Number of passengers disembarked at Faro Airport. Algarve-Faro, Quarterly, 2004-2019



Source: Observe; Own elaboration.

4.3.5 Air quality and noise

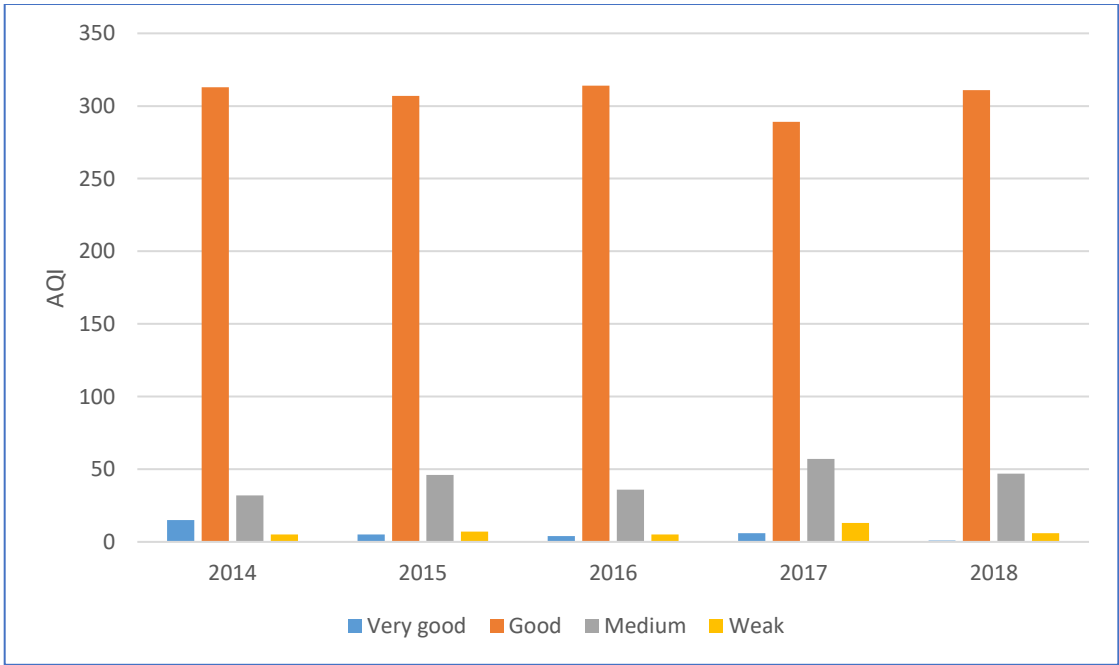
Given the extension of natural areas that represent 70% of the region’s territory, from which more than 50% constitute protected landscape areas and the basis for tourist offer, monitoring air quality and noise assumes a critical role. The indicator used to monitor mobility is the air quality index.

4.3.5.1 Air quality index

The Air Quality Index (AQI) for a given municipality results from the arithmetic average calculated for each of the pollutants measured at all stations in the network in that municipality. The data on the Air Quality Index are provided for the main tourist municipalities, namely Albufeira, Faro and Portimão in Figure 40¹⁹.

It is noted that over the years the air quality has remained good in Algarve as well as the municipalities of Albufeira, Faro and Portimão.

Figure 40: Air Quality Index . Algarve- Albufeira, Faro and Portimão, 2014-2018



Source: Observe; Own elaboration.

¹⁹ The technical information on this indicator is provided in the Annex A, Table A19.

4.4 Institutional sustainability

The mainstream concept of sustainable development supports a balance between environment, economic, and social sustainability (Organisation for Economic Co-operation and Development, 2001). However, besides these traditional dimensions, there is a fourth dimension of sustainability, namely institutional sustainability, which is a key factor influencing the implementation of other dimensions of sustainability. For monitoring purposes, institutional sustainability is measured through governance.

4.4.1 Governance

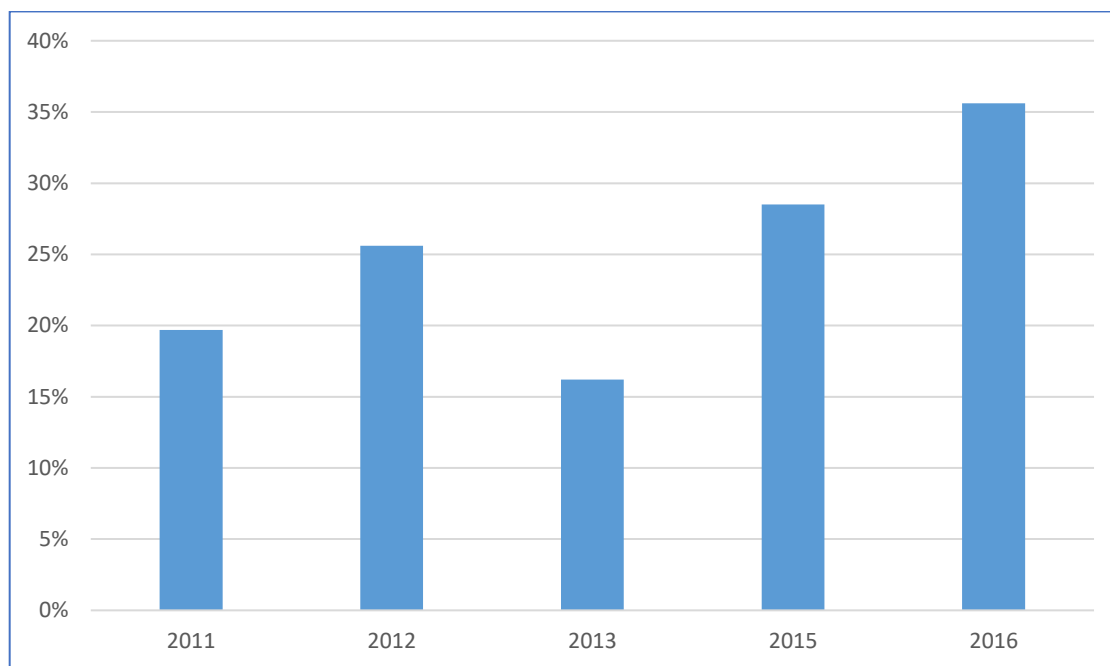
The indicators used to monitor Governance are the percentage of companies and tourist establishments using voluntary certification of environmental sustainability or corporate social responsibility and the percentage of establishments providing training on sustainable practices.

4.4.1.1 *Percentage of companies and tourist establishments using voluntary certification of environmental sustainability or corporate social responsibility*

This indicator analyses the percentage of tourism companies that had an independent verification of their sustainability practices and allows managers and decision makers to create incentives for participation. Certification is an indication of the interest and implementation of sustainable business practices by the industry. The implementation and certification of quality management and environmental management systems in tourist establishments implies that it has developed a quality and environmental management policy, based on objectives and processes to achieve commitments related to quality and the environment. It also implies taking periodic actions to continually improve its performance, in addition to reflecting the level of involvement of establishments in environmental preservation.

Data on this indicator is available for the region on an annual basis and for the period 2011-2016, as shown in Figure 41²⁰. It is observable that by 2016 more than 35% of the accommodation establishments in the region had some kind of environmental certification.

Figure 41: Percentage of Accommodation establishments with environmental certification. Algarve, 2011-2016



Note: Data for 2014 is not available.

Source: Tourism of Portugal; Own elaboration.

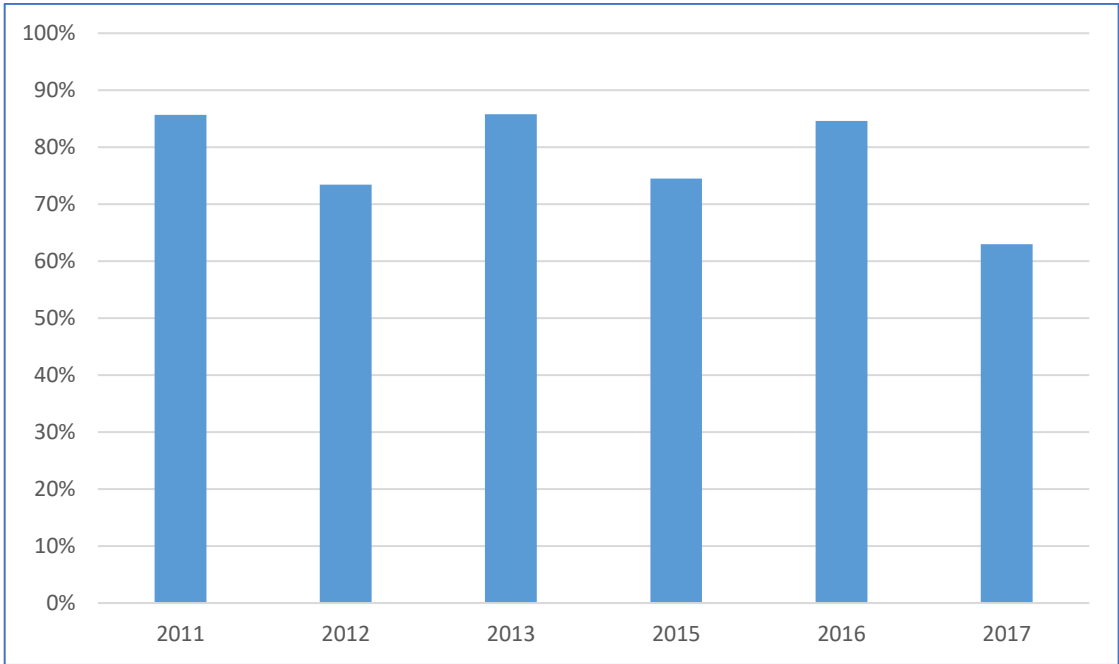
4.4.1.2 Percentage of establishments providing training on sustainable practices

This indicator allows identifying the importance attached to training on environmental issues, which naturally has an impact on the quality and efficiency of the provision of services in the tourism sector. Training for employees in good environmental practices allows to assess the evolution of the percentage of hotel establishments, resorts and tourist apartments that provide training / information to their employees in matters of the environment.

²⁰ The technical information on this indicator is provided in the Annex A, Table A20.

The data on this indicator is available for the region on an annual basis and for the period 2011-2017, and is reported in Figure 42²¹. It is possible to conclude that a large proportion of the tourist establishments provided employees training on sustainable practices.

Figure 42: Percentage of establishments providing training on sustainable practices. Algarve, 2011-2017



Note: Data for 2014 is not available.
Source: Tourism of Portugal; Own elaboration.

²¹ The technical information on this indicator is provided in the Annex A, Table A21.

Tourist activity in Algarve and the pandemic in 2020



5. Tourist activity in Algarve and the pandemic in 2020

5.1 *Impact of the COVID-19 pandemic in Algarve tourism*

All the indicators available at the moment, confirm the huge negative impact of the COVID-19 pandemic in the tourism sector in the Algarve. The available data, referring to the first ten months of 2020 and by comparison with same period of the previous year point to a 60% loss in the number of passengers, 61.2% in bed nights and 77% in profits.

All the foreign markets showed a great decrease in the demand for the Algarve, with special relevance to the impact resulting from the loss in the UK market – the main incoming market to the region (-82.2% of guests and -82.4% bed nights).

The demand from internal market was more resilient, still, with losses of 25.2% in the number of guests and 22% in bed nights. The incoming passengers at Faro International Airport, between January and October 2020, were 74.3% less than in the same period of the previous year.

In its quick monthly estimate, the National Statistical Institute (INE), points that, in the month of November, there was an underlined loss in tourist activity, with the main incoming markets, globally maintaining a decrease of over 70%, accentuating the loss in comparison with the previous month. In the Algarve, the loss of bed nights was of 77% in this period.

According to AHETA – Association of Hotels and Resorts of the Algarve – the business volume had a break of over 800 million Euros in 2020 (-65.1%), as result, mainly, of a loss in demand of the main incoming markets (-75.1%).

Upon this degree of uncertainty which still rules facing the pandemic evolution throughout the World and mainly in Europe, with rigid travel restrictions, it is estimated that tourist activity will be heavily conditioned in 2021 and, as a consequence, the recovery of the sector may take a long period of time.

5.2 Tourism performance indicators in the Algarve – January to October

5.2.1 Guests

The number of guests registered in the Algarve from January to October 2020 was 1.9 million, 60% less than in the same period of the previous year, as reported in Table 6 and Figure 43.

Table 6: Number of guests. Algarve, 2015-2020

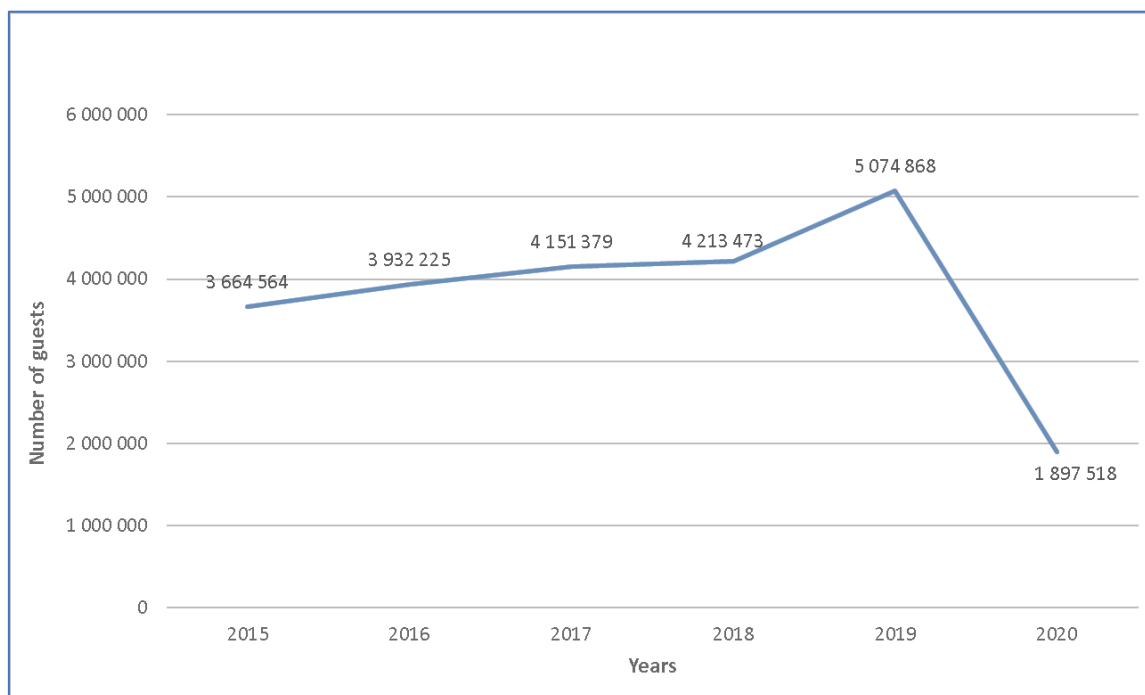
Number of Guests	2015	2016	2017	2018	2019	2020
Total	3 664 564	3 932 225	4 151 379	4 213 473	5 074 868	1 897 518
Variation (%)	3,0%	7,3%	5,6%	1,5%	20,4%	-60,0%

Source: Tourism of Portugal.

Provisional data until October 2020 shows that the number of Portuguese guests dropped 25.2% in comparison with the same period of the previous year, which was the smallest loss, demonstrating some significant resilience and vitality of the national market, particularly in the third trimester of 2020, where the loss was of 0.2%, translating into less than three thousand guests.

The number of foreign guests had a drop of 73.6%, with the UK, the main market for the region, recording a drop of 82.2% in the number of guests, while guests from Spain dropped 52.6% and The Netherlands 56.1%.

Figure 43: Evolution of the number of guests. Algarve, 2015-2020



Source: Tourism of Portugal.

5.2.2 Bed nights

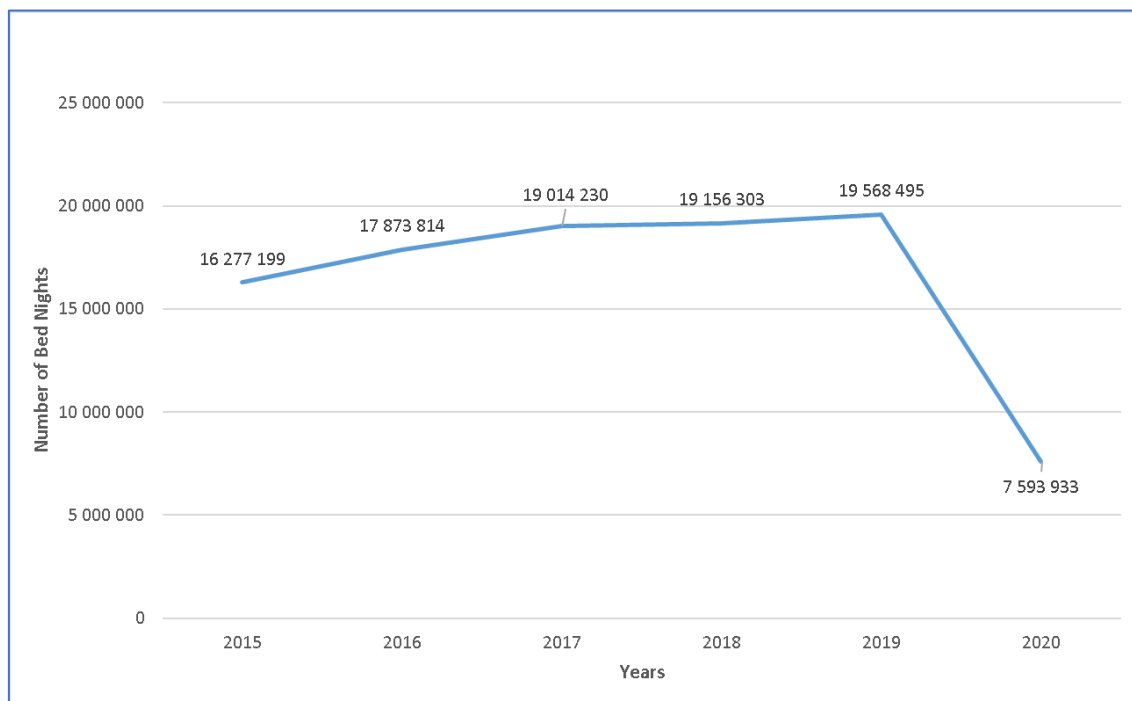
Bed nights registered in this period – January to October 2020 – were 7.59 million, 61.2% less than in the same period of the previous year. The evolution of this indicator is reported in Table 7 and Figure 44.

Table 7: Number of bed nights. Algarve, 2015-2020

	2015	2016	2017	2018	2019	2020
Number of Bed Nights	16 277 199	17 873 814	19 014 230	19 156 303	19 568 495	7 593 933
Variation (%)	2,9%	9,7%	17,6%	-1,0%	2,2%	-61,2%

Source: Tourism of Portugal.

Figure 44: Evolution of the number of bed nights. Algarve, 2015-2020



Source: Tourism of Portugal.

Table 8 reports information on the evolution of the number of bed nights distinguishing between Portuguese and foreign tourists and also information about the origin countries. Bed nights from residents amounted to 3.7 million, 22% less than in the same period of the previous year, proving to be the smallest drop of all the markets in the region, translated especially in the third trimester, where the drop was 0.6%, representing 17.8 thousand bed nights.

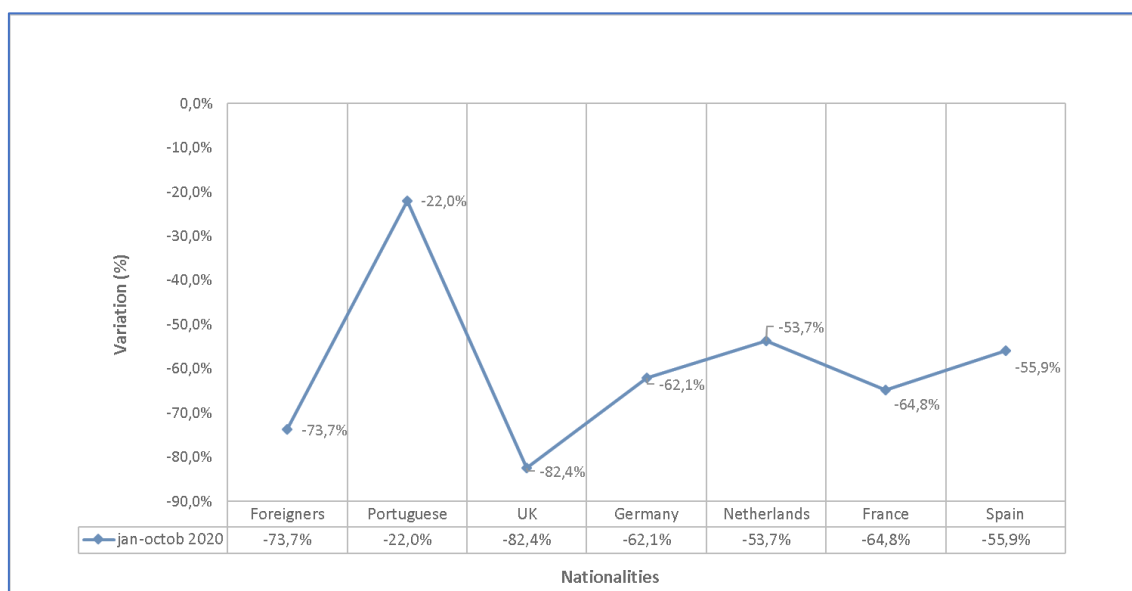
Table 8: Bed nights per tourists' country of residence. Algarve, 2015-2020

Bednights NUTS II - Algarve	2015	2016	2017	2018	2019	2020
Portuguese	3 987 542	3 929 032	4 081 547	4 534 162	4 744 724	3 700 643
Foreign	12 379 657	13 944 782	14 932 683	14 622 141	14 823 771	3 893 290
UK	5 688 676	5 529 814	5 595 085	5 455 644	5 583 615	984 059
Germany	1 602 292	1 617 995	1 963 723	1 888 617	1 686 781	639 446
Netherlands	1 275 596	1 226 820	1 416 423	1 255 498	1 109 404	513 439
France	624 932	851 876	992 467	1 086 623	1 110 858	391 295
Spain	834 140	785 685	891 170	965 076	1 047 294	461 377

Source: Tourism of Portugal.

In what concerns to the variation of the number of bed nights between 2019 and 2020, the main incoming market in the region, the UK, had an 82.4% loss, which translated into 4.6 million less bed nights, while Ireland amounted to a 92.1% drop with 1.2 million less bed nights. Still considering the group of the most important inbound markets to the region, losses between 53.7% from The Netherlands and 64.8% from France were noted. These values are reported in Figure 45. From January to October, and in the five previous years – 2015 to 2019 –, with the exception of 2018, there were annual increases of bed nights, varying between 2.2% in 2019 and 17.6% in 2017.

Figure 45: Variation of the number of bed nights. Algarve, 2019-2020



Source: *Tourism of Portugal*.

5.2.3 Profit

Both total and accommodation profit, are a reflex of data observed in the “Guests” and “Bed Nights” indicators. From January to October 2020 the total amount of profit was 447.2 million Euro, with a percentage break of 77.7% in comparison with the same period of 2019. The values of these indicators are reported in Table 9 and Figure 46.

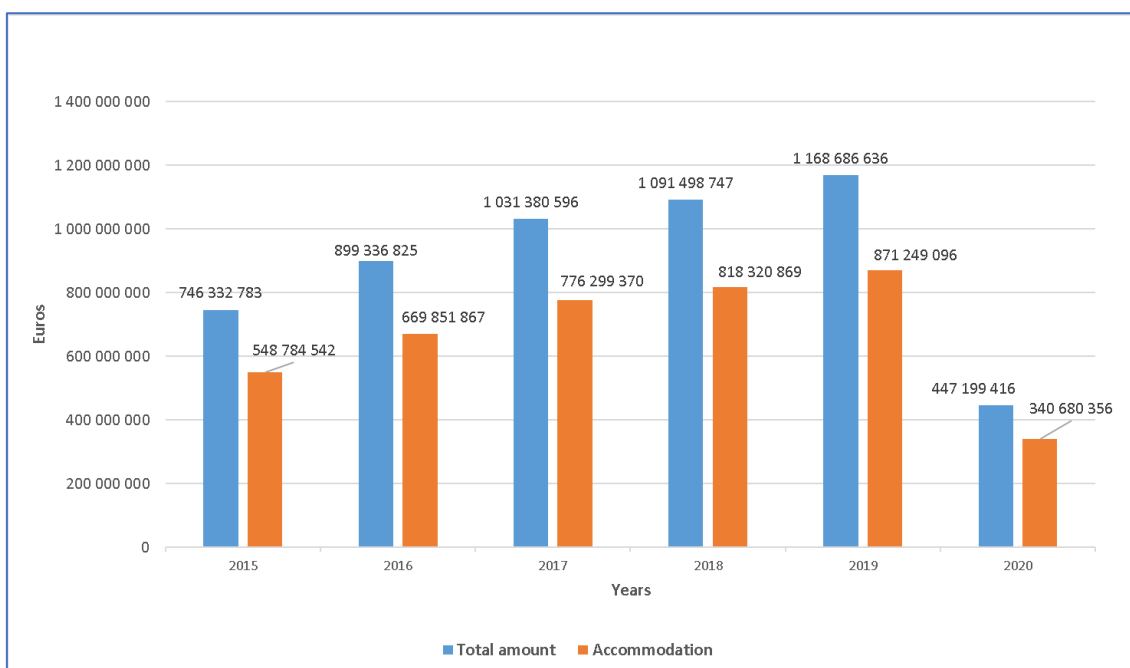
Table 9: Total and accommodation profit. Algarve, 2015-2020

Profit - Total	2015	2016	2017	2018	2019	2020
	746 332 783 €	899 336 825 €	1 031 380 596 €	1 091 498 747 €	1 168 686 636 €	447 199 416 €
Variation (%)	8,5%	20,5%	14,7%	5,8%	7,1%	-77,7%
Profit - Accommodation	2015	2016	2017	2018	2019	2020
	548 784 542 €	669 851 867 €	776 299 370 €	818 320 869 €	871 249 096 €	340 680 356 €
Variation (%)	11,6%	22,1%	15,9%	5,4%	6,5%	-77,8%

Source: Tourism of Portugal.

For this same period, accommodation profit came down to 340.7 million Euro, 77.8% in comparison with the same period in 2019.

Figure 46: Evolution of total versus accommodation profits. Algarve, 2015-2020



Source: Tourism of Portugal.

Considering the period between January and October from 2015 to 2019, it is noticeable an increase in total profit, varying between 20.5% in 2016 and 5.8% in 2018. In this same period, but in terms of accommodation profit, the results were similar, with an annual increase and percentual oscillation between 22.1% in 2016 and 5.4% in 2018.

5.2.4 Faro International Airport – Passengers

The data on the number of incoming passengers at Faro airport are reported in Table 10 and Figure 47. About 2.076 million passengers disembarked at Faro between January and October 2020, which represents a drop of 74.3% relatively to the same period of the previous year.

Table 10: Number of incoming passengers at Faro airport. 2015-2020

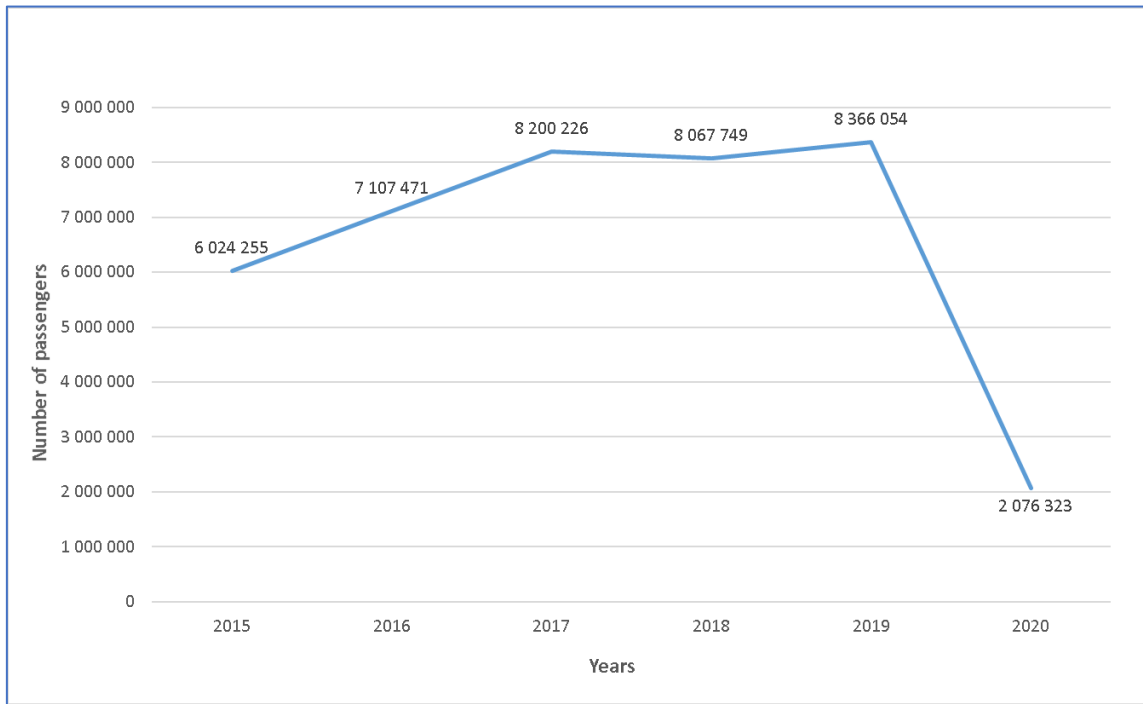
Number of passengers (Faro Airport)	2015	2016	2017	2018	2019	2020
	6 024 255	7 107 471	8 200 226	8 067 749	8 366 054	2 076 323
Variation (%)	-2,3%	18,0%	15,4%	-1,6%	2,0%	-74,3%

Source: ANA – Aeroportos de Portugal.

The disaggregated analysis reveals that the number of foreign passengers dropped 75.8% in comparison with the same period of the previous year. The incoming passengers from The Netherlands have registered the lowest loss (about 55.2%), while the UK, the main regional incoming passenger market, had a variation of 82% less, translating into 3.4 million passengers.

The Portuguese citizens represent 7% of the total incoming passengers at Faro International Airport, with a drop of 62.7% (-244.4 thousand passengers).

Figure 47: Evolution of the number of incoming passengers at Faro airport. 2015-2020



Source: ANA – Aeroportos de Portugal.

Between January and October, there was an increase in the number of passengers in 2015 and 2017, with a growth of 18% in 2016 and 15.4% in 2017, but a break (-1.6%) in 2018 with a pickup of 2% in 2019.

5.2.5 Revenue per available room (RevPAR)

According to the data provided by the National Statistical Institute, the regional RevPAR numbers have been consistently increasing, on aggregate, since 2015. This indicator has a positive variation on performance of 38.9% during the 2015 – 2019 period, standing for the capacity that unit managers have in filling their room availability. The relevant information is reported in Tables 11 and 12.

Table 11: Evolution of the revenue per available room. Algarve, 2015-2019 ²²

Revenue Per Available Room (RevPAR)	2015	2016	2017	2018	2019	2020
NUTS II - Algarve	39,30	46,07	51,97	52,98	54,60	

Source: National Statistical Institute / Travel BI.

Table 12: Evolution of the revenue per available room. Algarve-Nuts II, 2015-2020 ²³

Revenue Per Available Room NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGG
2015	8,17	11,80	16,43	24,27	31,41	48,68	76,41	99,65	56,15	30,16	12,06	10,36	39,30
2016	9,90	14,43	22,49	27,21	38,68	58,07	88,81	110,27	67,14	37,24	14,91	11,76	46,07
2017	11,35	16,89	21,08	37,14	43,75	66,21	98,55	123,15	75,16	41,93	16,26	13,39	51,97
2018	12,33	16,95	24,62	34,76	45,78	67,88	99,68	125,61	76,67	43,65	16,46	14,52	52,98
2019	13,76	17,45	22,45	39,18	45,17	69,83	100,85	129,83	78,57	44,23	17,31	15,90	54,60
2020	14,45	19,76	12,80	2,50	3,86	15,63	40,87	83,92	46,88	20,40	6,70		

Source: National Statistical Institute / Travel BI.

However, careful consideration must be given to profitability in order to assess if the RevPAR performance can be translated into increasing revenue by units. From 2015 until 2019, the annual variation of profit has been positive thus indicating the overall positive performance of accommodation units.

On 2020, the RevPAR performance will be severely skewed influenced by the impact that COVID-19 has been having on travel fluxes worldwide, in spite of lighter government measures during summer and towards the end of the year celebrations.

5.2.6 Average length of stay

The regional average length of stay KPI has been experiencing an annual slight decrease since 2018 (an average of – 0.2 %). Prior to that, the indicator had a stabilized run of 4.5 since 2015 until 2017. In 2019, the performance in low season, dropped below four days of length stay up until May and also in November, contributing for the final achieved numbers. The data are reported in Table 13.

²² & ²³ The RevPAR for 2020 represents the aggregate value from January until November. The indicator numbers from December have not been officially released yet.

Table 13: Average length of stay. Algarve, 2015-2019 ²⁴

Average Length of Stay	2015	2016	2017	2018	2019	2020
NUTS II - Algarve	4,5	4,5	4,5	4,3	4,1	

Source: National Statistical Institute / Travel BI.

The monthly based analysis, whose data is reported in Table 14, shows that in 2020, April had an average length stay of 7.06 days, unverified in previous years, that probably can be associated with the COVID-19 outbreak and the traveling restrictions that ensued, leading people to lengthen their stay.

Table 14: Monthly average length of stay. Algarve, 2015-2020 ²⁵

Average Length of Stay NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGG
2015	4,09	4,39	4,24	3,95	4,05	4,48	5,06	4,93	4,50	4,50	4,25	3,62	4,49
2016	4,08	4,32	4,25	3,95	4,34	4,60	4,84	5,09	4,60	4,52	4,24	3,73	4,54
2017	4,17	4,32	4,52	4,02	4,27	4,54	4,84	4,99	4,44	4,40	4,11	3,49	4,47
2018	4,16	4,37	4,21	4,01	4,08	4,35	4,74	4,72	4,20	4,25	4,05	3,46	4,32
2019	3,93	4,06	3,97	3,93	3,81	4,04	4,53	4,43	4,13	4,21	3,89	3,55	4,13
2020	3,71	3,91	4,84	7,06	3,58	3,48	4,11	4,08	4,10	3,51	3,73		

Source: National Statistical Institute / Travel BI.

However, in spite of lacking the final numbers in 2020, there is a trending towards the indicator performing below prior years. Since 2015, the average length of stay dropped 8.0% (from 4.49 to 4.13).

5.2.7 Room and bed occupancy rate

The regional room occupancy rate has been trending between 61.2%, in 2015, and 64.2%, verified in 2019 (a positive variation of 4.9%), though peaking at 66.1% in 2017. However, in 2019 there was a slight increase of 1% comparing with 2018. The data is given in Table 15.

²⁴ & ²⁵ The Average Length of Stay for 2020 represents the aggregate value from January until November. The indicator numbers from December have not been officially released yet.

Table 15: Rooms occupancy rate. Algarve, 2015-2020 ²⁶

Room Occupancy Rate	2015	2016	2017	2018	2019	2020
NUTS II - Algarve	61,2%	64,5%	66,1%	63,2%	64,2%	30,8%

Source: National Statistical Institute / Travel BI.

The performance from 2020, in spite of lacking the numbers from December, is expected to be considerably lesser than in 2019, due to COVID-19 related impact on the travel industry, even considering a probable increase on internal demand.

As with room occupancy rate, the bed occupancy rate is also a KPI that measures success and helps in understanding trends on demand and customer behaviour. The regional bed occupancy rate has been increasing since 2015, coming to stabilize around 50%, since 2018. An overall increase of 7.7%, since 2015, as can be concluded from the data in Table 16.

Table 16: Bed occupancy annual rates. Algarve, 2015-2019 ²⁷

Bed Occupancy Rate	2015	2016	2017	2018	2019	2020
NUTS II - Algarve	46,5%	49,6%	51,6%	50,2%	50,1%	

Source: National Statistical Institute / Travel BI.

The analysis of this indicator on a monthly basis, depicted in Table 17, shows that last year, the first two months had the best comparative performances in 6 years, followed by a string of poor performances, always under 30% excluding August and September – whereas, also below previous years.

²⁶ The Occupancy Rate for 2020 excludes the months of April, May and December, the latter for not being officially released yet.

²⁷ & ²⁸ The Occupancy Rate for 2020 excludes the months of December for not being officially released yet.

Table 17: Bed occupancy monthly rates. Algarve, 2015-2020²⁸

Bed Occupancy Rate NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AGG
2015	16,1%	23,3%	29,6%	38,1%	46,8%	60,1%	72,5%	81,0%	61,7%	44,8%	22,0%	19,2%	46,5%
2016	18,4%	26,3%	36,1%	39,4%	51,0%	63,8%	74,2%	81,2%	65,0%	49,9%	26,3%	20,7%	49,6%
2017	20,5%	29,1%	33,3%	50,8%	52,8%	65,3%	75,1%	81,7%	66,1%	51,6%	26,1%	21,8%	51,6%
2018	20,3%	29,5%	35,7%	43,8%	52,2%	62,5%	73,3%	80,7%	64,5%	51,3%	26,1%	21,9%	50,2%
2019	21,6%	28,9%	32,7%	48,4%	50,4%	61,7%	71,9%	80,2%	64,0%	50,1%	27,3%	23,8%	50,1%
2020	21,9%	31,8%	18,0%	5,5%	6,6%	15,0%	29,8%	56,2%	40,0%	21,0%	9,1%		

Source: National Statistical Institute / Travel BI.

Although lacking the final 2 months, the aggregated bed occupancy rate in 2020 will probably fall under 40%. This will be in line with room occupancy rate, due to the COVID-2019 related impact on travel industry.

5.2.8 Unemployment per activity

Table 18: Unemployment in Accommodation, Food Services and Similar. Algarve, 2019-2020

Unemployment per Activity Accommodation, Food Services and Similar NUTS II - Algarve	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2019	9 403	8 162	5 758	3 537	2 351	1 865	1 638	1 578	1 845	2 908	7 699	9 040
2020	3 965	8 465	9 632	11 637	12 063	10 929	8 832	7 319	7 465	9 137	12 772	14 250
Δ 2020 / 2019	-58%	4%	67%	229%	413%	486%	439%	364%	305%	214%	66%	58%

Source: Instituto de Emprego e Formação Profissional.

Table 18 shows that the last 12 months have been particularly taxing on economy, on businesses and, therefore, on family income, a reflexion of the employment behaviour. Year 2020 started with a good performance on the unemployment indicator, registering a decrease of almost 60% considering the same month in 2019. However, from February and all through the year, the unemployment rate at accommodation, food services and similar sector has witnessed an unprecedented – in recent years – growth in numbers, coinciding with the COVID-2019 outbreak and its consequent impact on economic activity, production and consumption wise. Companies closing activities, whereas others have temporarily laid off all or part of their staff. During high season, there was an increase in June (486%), July (439%), August (364%) and September (305%) of the unemployment rate, comparing to the same months in 2019.

Conclusions



6. Conclusions

In recent years, tourism has shown a favorable performance affirming its leading role in the national context, particularly in the Algarve region, seen as a consolidated destination and the country's image in the main markets. In 2019, two factors stood up in the region: first, the region grew in volume, but above all in the quality of demand. In fact, there were increases in the number of guests and in the number of overnight stays (mainly Portuguese), but this is reflected in particularly in the increase of the revenue. Second, the Algarve, which has historically experienced seasonality problems, recorded a significant increase in overnight stays during the low season (+ 24.2%), well above the variation of the total of overnight stays (+ 10.3%).

However, the pandemic context that started in 2020, challenged us as never before, showing structural problems and critical factors, although not new, gained economic and social dimensions, which we still do not know it's the real impact. This context requires a careful reflection on the need to reinforce commitments, goals and objectives in line with the emerging agendas (decarbonization, energy transition, circular economy, social pillar and digitalization), which transversally aim at sustainability and whose demand requires training of regional stakeholders, increasing the relevance of the Algarve Sustainable Tourism Observatory (AlgSTO).

In this context, based on this report, it will be important to act attentively and preventively in labor and training issues, for example in terms of seasonal employment and in the inversion of establishments that provide training on sustainable practices to their workers. But also, to draw lessons from the evolution of the average number of overnight stays, which have been decreasing in recent years. On the other hand, the positive evolution registered in the indicators associated with the attenuation of seasonality, the increase in income and the growing weight of accommodation establishments with environmental certification, accentuates the emphasis of the sustainability factors to be monitored by the observatory.

With this focus, in a generic way, we can differentiate challenges at 3 levels: for the tourism sector, for the touristic region and for the Algarve Sustainable Tourism Observatory (AlgSTO).

In the tourism sector, the challenges stem from new contexts, patterns of specialization and differentiation of supply, as well as the renewed demands of the market and tourists. Traveling and going on holidays requires planning and procedures, safety and sanitary, which should provide confidence in the experiences to be offered, valuing different levels of services and performance, distinct from the previously experienced. The differentiation of the offer must form the basis of competitiveness, deepening local identities and assets and giving preference to the adoption of sustainable and environmentally responsible management practices, adding the projection of smart destinations, in the analytical and relational logic with customers and these in the management of its own tourist experiences. Tourists of the future, connected and mobilized for societal problems, must assert themselves as privileged actors in destinations, sharing, in a first line, the quality of life of residents and assuming assertive choices that promote social and territorial cohesion and equity.

The challenges inherent to the Algarve region, are inseparable from those in the tourism sector, to which are added dimensions that result from the economic and social vulnerabilities aggravated by the pandemic, with an urgent need to accelerate processes of diversification of the productive base and qualification of the territory; the tourism area, which still reveals serious weaknesses in terms of innovation; but also in the qualification of professionals in the sector, reconvert training profiles or adapting them to the new agendas. Regional tourism is a highly consumer and user of natural resources, not only as a support element, but as a differentiating asset, which finds in natural capital and biological diversity, competitiveness factors, capable of contributing to the promotion and reduction of seasonality, responding to new paradigms and capturing more demanding segments and markets.

This is in line with the documents of a strategic, territorial and sectoral nature in the region, with the Algarve having the appropriate tourist scale and maturity, to work as a laboratory space, to innovative test, intelligent, circular and creative experiences with strong scalability and replicability.

Finally, for AlgSTO, the challenges focus on 5 dimensions: the reinforcement and urgency to have and systematize data and indicators, in a fast and credible way, creating knowledge and developing research, transferable to the market; with the strengthening of knowledge and analytical processes, decisions made by public stakeholders and companies will be better; in the encouragement of innovative practices and promoting entrepreneurial spirit in the touristic community; in the valorization of the network work, either interinstitutional in the regional context, or multilevel articulation with the national organisms, or for the promotion of the exchange and sharing of experiences with other INSTO members; and finally, in an operational and governance dimension, finding funding ways that enable a permanently dedicated team, maximizing the work of the observatory and fully fulfill its mission.

The favorable performance that the region has registered in the last decade, cannot and should not fail a response from the sector to the current crisis, focused on competitiveness and sustainability, trying to minimize the strong regional vulnerabilities, shown by the pandemic. The moment demands increase responsibility from the actors, with a view to valuing strategic assets, endogenous resources and installed skills, which have not been affected, and which should be placed at the service of the stabilization and affirmation of the region.

Unlike other recent economic crises, the recovery of the economy does not seem to put the environmental and social component as a low priority, imposing a rapid transition to sustainable development models for most economic activities, so the current moment must be seen as an opportunity to better prepare for the future. This will allow not only resilience in the face of future crises, but also the revitalization of the tourism activity under the commitment to do better and more safely, from an economic, social and environmental point of view.

In view of the presented challenges, it is important that stakeholders and professionals in the tourism sector ensure that tourists know, understand and are interested in assuming, the commitment to achieve sustainable development of touristic territories and destinations, with each one of us, finding the best path, and following it in a co-responsible way, contributing to affirm the tourist destination of Algarve and the work developed by AlgSTO, as an international reference in terms of sustainability.

Annexes



7. Annex A: Indicators' technical notes

Table A1: Tourist Intensity Index

Algarve Indicator	Tourist Intensity Index
UNWTO Mandatory Area	Local Satisfaction with tourism
ETIS section	C. Social and cultural impact
ETIS criterion	C.1 Community /social impact
ETIS indicator	C.1.1 Number of tourists/visitors per 100 residents
Description	Tourism Intensity Index. Measures the ratio between overnight stays in collective tourist accommodations and the resident population residing in the same area over the same period.
Concepts	Tourist accommodation establishment: Establishment that provides short-term accommodation services for remuneration, operating in one or more buildings or facilities. Types: hotels, local accommodation, tourism in rural areas and lodging tourism.
Approach/Calculation	$((\text{Annual overnight stays} / 365) / \text{Total resident population}) * 100$ $((\text{Monthly overnight stays} / n \text{ days month}) / \text{total resident population}) * 100$
Geographic level and periodicity	NUTSII: Monthly (Jan 2017-Dec 2019), Annual (2011-2019) Municipality: Annual (2011-2018)
Data source(s)	- INE, guests stays and other data on hotel activity survey. Indicator: Nights (No.) in tourist accommodation establishments by Geographic localization (NUTS - 2013) and Type (tourist accommodation establishment); Monthly - INE, Annual estimates of resident population. Indicator: Resident population (No.) by Place of residence (NUTS - 2013), Sex and Age group; Annual
Limitations/issues	- There is no data available on tourist arrivals on a regional level. Therefore it was chosen to use tourist nights instead of number of tourists. - The category 'nights tourist accommodation establishments' does not cover all tourist nights since it leaves out some types of accommodation (such as youth hostels, holiday camps and camp-sites).

Table A2: Lodging capacity in tourist accommodation establishments, per 1000 inhabitants

Algarve Indicator	Number of beds available in tourist accommodation establishments per 1000 residents
UNWTO Mandatory Area	Local Satisfaction with tourism
ETIS section	C. Social and cultural impact
ETIS criterion	C.1 Community /social impact
ETIS indicator	C.1.3 Number of beds available in commercial accommodation establishments per 1000 residents.
Description	Number of beds available in tourist accommodation establishments per 1000 residents.
Concepts	Tourist accommodation establishment: Establishments that provide short-term accommodation services for remuneration, operating in one or more buildings or facilities. Hotels, local accommodation, campsites, youth hostels, tourism in rural areas and lodging tourism.
Approach	Composite indicator based on secondary data. (Lodging capacity tourist acc. / total residents) * 1000
Geographic level and periodicity	NUTSII: Annual (2004-2018) By Municipality: (2017-2018)
Data source	• INE, Guests stays and other data on hotel activity survey. Indicator: Lodging capacity (No.) in tourist accommodation establishments by Geographic localization (NUTS - 2013) and Type (tourist accommodation establishment); Annual • Lodging capacity in tourist accommodation establishments by 1000 inhabitants (No.) by Geographic localization (NUTS - 2013); Annual • From the above two sources data is available for the years 2014-2018 only, hence we obtained the remaining data from the tables provided by 'Tourism Statistics' following the individual links for each year: • https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=5596816&PUBLICACOESstema=00&PUBLICACOESmodo=2 • https://www.ine.pt/ngt_server/attachfileu.jsp?look_parentBoui=416437385&att_display= • INE, Annual estimates of resident population. Indicator: Resident population (No.) by Place of residence (NUTS - 2013), Sex and Age group; Annual
Limitations/Issues	Data for the municipalities does not capture the full scope of accommodation types. Campsites, holiday camps and youth hostels are not included.

Table A3: Tourist Density Index

Algarve Indicator	Tourist Density Index
UNWTO Mandatory Area	Local Satisfaction with tourism
ETIS section	C. Social and cultural impact
ETIS criterion	No Match as this is Algarve specific
ETIS indicator	
Description	Tourist Density - allows the assessment of tourist pressure on the region, through the relationship between the number of overnight stays in tourist developments and the area of the region, measured in Km2.
Concepts	Includes the entire tourist accommodation sector: hotels (hotels, apartment hotels, tourist apartments, tourist villages, inns and farms in Madeira), local accommodation with 10 or more beds (according to the statistical threshold provided for in EU Regulation 692 / 2011) and tourism in the rural / housing space.
Approach	Direct Data from Turismo de Portugal
Geographic level and periodicity	NUTSII Annual (2015-2019)
Data source(s)	https://travelbi.turismodeportugal.pt/pt-pt/Paginas/PowerBI/Sustentabilidade/densidade-turistica.aspx
Limitations/issues	Only available from 2015

Table A4: Number of nights in tourist accommodation establishments, per month

Algarve Indicator	Number of nights in tourist accommodation establishments
UNWTO Mandatory Area	Destination Economic Benefits
ETIS section	B. Economic value
ETIS criterion	B.1 Tourism flow at destination
ETIS indicator	B.1.1 Number of tourist nights per month
Description/concepts	Number of nights in tourist accommodation establishments per month. Tourist accommodation establishment: Establishment that provides short-term accommodation services for remuneration, operating in one or more buildings or facilities. Types: hotels, apartment hotels, tourist apartments, tourist villages, Inns and others.
Approach	Direct use of secondary data
Geographic level and periodicity	NUTSII: Monthly (Jan 2010– Dec 2019) By Municipalities, Annual: (2011-2018)
Data source(s)	travelBI by Turismo de Portugal. https://travelbi.turismodeportugal.pt/pt-pt/Paginas/PowerBI/dormidas.aspx (They have sourced the data from : INE, Guest stays and other data on hotel activity survey. Indicator: Nights (No.) in tourist accommodation establishments by Geographic localization (NUTS - 2013) and Type (tourist accommodation establishment); Monthly) For municipality data http://smi.ine.pt/Indicador/Detalhes/13750?LANG=EN
Limitations/issues	The category 'tourist accommodation establishments' does not capture the full scope of accommodation types. Nights in youth hostels, camp-sites and holiday camps are not included in this indicator.

Table A5: Relative contribution of tourism in the region to the regional and national economy

Algarve Indicator	Gross value added by economic sector
UNWTO Mandatory Area	Destination Economic Benefits
ETIS section	B. Economic value
ETIS criterion	B.1 Tourism flow at destination
ETIS indicator	B.1.3 Relative contribution of tourism to the destination's economy (%GDP)
Description	Gross value added (in % of total GVA) by enterprises per economic sector. It allows to view the relative weight of the tourism industry in the total GVA of Portugal. The industries are categorised by CAE Rev. 3 classification, which is the Portuguese implementation of the NACE Rev.2 classification of economic activities provided by EUROSTAT. In this classification the sector 'accommodation and food service activities' can be regarded as (partially) representing the tourism industry.
Concepts	Gross value added: Gross production value less the cost of raw materials and other consumption in the production process. Enterprise: Legal entity (natural or legal person) that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations.
Approach	Direct use of secondary data (converted into percentages).
Geographic level and periodicity	NUTSII and Municipality: Annual (2008 – 2018)
Data source(s)	INE, Integrated business accounts system. Indicator: Gross value added (€) of Enterprises by Geographic localization (NUTS - 2013) and Economic activity (Division - CAE Rev. 3); Annual
Limitations/issues	The sector 'accommodation and food service activities' does not cover the entire tourism industry. However, considering the lack of detailed data on the entire industry, it is still a useful starting point to analyse the share of GVA by the tourism industry.

Table A6: Average stay of tourists

Indicator	Average stay of tourists
Mandatory Area	Tourism Enterprise Performance
ETIS section	B. Economic Value
ETIS criterion	B.2 Tourism Enterprise Performance
ETIS indicator	B.2.1 Average length of stay of tourists (nights)
Description	This indicator, by relating the number of tourists with the number of overnight stays in tourist accommodation establishments, constitutes an instrument which is an important factor in monitoring tourism seasonality and analysing economic/environmental sustainability.
Concepts	Tourist Accommodation establishments= hotels+apartment hotels+tourist villages+lodging houses+inns+rural tourism+lodging tourism+local accommodation
Approach/Formula	Composite indicator based on secondary data=Ratio of the number of nights spent to the number of guests that gave rise to these nights spent. Number of nights spent/ Number of guests that originated those nights
Geographic level and periodicity	NUTSII Annual (2004-2018)
Data source(s)	https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_public_acoes&PUBLICACOESpub_boui=384536089&PUBLICACOESmo_do=2
Limitations/issues	Classification of touristic establishments is consistent from 2013 onwards. Till 2012 touristic accommodation establishments did not include rural and habitational tourism, local accommodation, camping sites, youth hostels, lodges or summer camps. Moreover, each year had different components in the definition.

Table A7: Productivity of tourism

Algarve Indicator	Productivity of tourism activity
UNWTO Mandatory Area	Destination Economic Benefits
ETIS section	B. Economic value
ETIS criterion	No Match as this is Algarve specific
ETIS indicator	N.A
Description	This indicator measures the productivity of the sector by quantifying the relationship between GVA and employment generated in the sector
Concepts	Gross value added: Gross production value less the cost of raw materials and other consumption in the production process. Total Employment: Persons employed (No.) in Enterprises by Geographic localization (NUTS - 2013) and Economic activity (Division - CAE Rev. 3); Annual Enterprise: Legal entity (natural or legal person) that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations.
Approach	Ratio= Total GVA of Accommodation and food sector+Accommodation sector+Food and beverage sector/ Total no. of persons employed in each sector
Geographic level and periodicity	NUTSII and Municipality: Annual (2008 – 2018)
Data source(s)	INE, Integrated business accounts system. Indicator: Gross value added (€) of Enterprises by Geographic localization (NUTS - 2013) and Economic activity (Division - CAE Rev. 3); Annual Persons employed (No.) in Enterprises by Geographic localization (NUTS - 2013) and Economic activity (Division - CAE Rev. 3); Annual
Limitations/issues	The sector 'accommodation and food service activities', 'accommodation sector' and 'food and beverage sector' have been considered to represent the tourism sector.

Table A8: Direct employment in tourism as a percentage of total employment in the region

Algarve Indicator	Direct Employment in tourism as a percentage of total employment in the region
UNWTO Mandatory Area	Employment
ETIS section	B. Economic value
ETIS criterion	B.3 Quantity and Quality of employment
ETIS indicator	B.3.1 Direct tourism employment as a percentage of total employment in the destination
Description	This indicator allows to understand the role of tourism in job creation and the relative importance of the sector in terms of job creation.
Concepts	STAFF: The persons who during the reference period participated in the business of the enterprise/institution, regardless of the duration of this participation, under the following conditions: a) staff bound to the enterprise/institution by an employment contract, receiving remuneration in return; b) staff which has ties to the enterprise/institution, who, for not being bound by an employment contract, does not receive regular remuneration for the hours worked or the labour supplied (e.g. owner-managers, unpaid family workers, active members of cooperatives); c) staff with ties to other enterprises/institutions who worked at the enterprise/institution and receive remuneration directly from it; d) persons in the above situations, absent for a period of no more than one month due to holidays, labour dispute, vocational training, as well as disease and occupational accident. HOTEL ESTABLISHMENT: Tourist development (establishment) with the purpose of providing, on a fee basis, lodging and other accessory or support services, with or without the provision of meals. Hotel establishments can be classified as: hotels, boarding houses, lodging houses, inns, motels and apartment-hotels. For statistical purposes, also included here are tourist villages and tourist apartments. ENTERPRISE: Legal entity (natural or legal person) that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations.
Approach	$\text{Employment in tourism sectors as a \%age of total employment} = \frac{\text{Total employment in Accomodation and food service sector} + \text{accommodation sector} + \text{food and beverage service sector}}{\text{Total employment}} * 100$
Geographic level and periodicity	NUTSII and Municipality: Annual (2008 – 2018)
Data source(s)	INE, Integrated business accounts system. Indicator: Persons employed (No.) in hotel establishments by Geographic localization (NUTS - 2013) and Type (hotel establishment); Annual For total employment and employment in tourism sectors: Persons employed (No.) in Enterprises by Geographic localization (NUTS - 2013) and Economic activity (Division - CAE Rev. 3); Annual
Limitations/issues	The sector 'accommodation and food service activities', 'accommodation sector' and 'food and beverage sector' have been considered to represent the tourism sector, as there is no direct data designated as 'tourism sector'. The annual employment figures for hotel establishments by geographic

localization and type have also been included. However, data for municipalities is not available for this category.

Table A9: Seasonal employment as a percentage of direct employment in tourism in the region

Algarve Indicator	Seasonal employment as a percentage of direct tourism employment in the region
UNWTO Mandatory Area	Employment
ETIS section	B. Economic value
ETIS criterion	B.3 Quantity and Quality of employment
ETIS indicator	B.3.2 Percentage of jobs that are seasonal
Description	This indicator allows to understand the role of tourism in job creation and the relative importance of the sector in terms of job creation.
Concepts	Seasonal Service Employees - allows assessing the evolution of employees whose employment relationship is a fixed or uncertain term contract (with a seasonal character) with the total number of employees employed in hotel establishments. This indicator also assess the percentage of employees with a seasonal character who are employed in the Tourism sectors.
Approach	Direct data from Turismo de Portugal
Geographic level and periodicity	Algarve Annual (2011 – 2017). There is no data for 2014
Data source(s)	https://travelbi.turismodeportugal.pt/pt-pt/Paginas/PowerBI/Sustentabilidade/colaboradores-ao-servico-de-caracter-sazonal.aspx
Limitations/issues	Data is available only annually from 2011 to 2017, with a break in 2014. It is based on Turismo de Portugal's survey on environmental performance and social responsibility.

Table A10: Number of nights spent in the region by tourists, per month

Algarve Indicator	Number of nights in tourist accommodation establishments
UNWTO Mandatory Area	Destination Economic Benefits
ETIS section	B. Economic value
ETIS criterion	B.1 Tourism flow at destination
ETIS indicator	B.1.1 Number of tourist nights per month
Description/concepts	Number of nights in tourist accommodation establishments per month. Tourist accommodation establishment: Establishment that provides short-term accommodation services for remuneration, operating in one or more buildings or facilities. Types: hotels, apartment hotels, tourist apartments, tourist villages, Inns and others.
Approach	Direct use of secondary data
Geographic level and periodicity	NUTSII: Monthly (Jan 2010– Dec 2019) By Municipalities, Annual: (2011-2018)
Data source(s)	- travelBI by Turismo de Portugal. https://travelbi.turismodeportugal.pt/pt-pt/Paginas/PowerBI/dormidas.aspx - For municipality data: http://smi.ine.pt/Indicador/Detalhes/13750?LANG=EN
Limitations/issues	The category ‘tourist accommodation establishments’ does not capture the full scope of accommodation types. Nights in youth hostels, camp-sites and holiday camps are not included in this indicator.

Table A11: Occupancy rate in commercial accommodation establishments per month and average for the year

Algarve Indicator			Occupancy rate in tourist accommodation establishments per month and annual average
UNWTO Mandatory Area			Seasonality
ETIS section			B. Economic value
ETIS criterion			B.2 Tourism and Enterprise performance
ETIS indicator			B.2.2 Occupancy rate in commercial accommodation establishments per month and average for the year
Description			This indicator allows to understand the volume of tourism in the destination and provides information on seasonal patterns.
Concepts			$NOR(\text{bed places}) = [\text{No. of overnight stays during reference period} / \text{N}^{\circ} \text{ of available beds in reference period (considering double beds count as two)}] * 100$
Approach			Direct data from INE
Geographic periodicity	level	and	Algarve and Municipalities, Annual: (i) for hotel establishments (2011 – 2019), (ii) for tourist accommodation establishments (2017 and 2018).
Data source(s)			• Bed occupancy net rate (%) in hotel establishments by Geographic localization (NUTS - 2013) and Type (hotel establishment); Annual • Bed occupancy net rate (%) in tourist accommodation establishments by Geographic localization (NUTS - 2013) and Type (tourist accommodation establishment); Annual • https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOESpub_boui=445437698&PUBLICACOESmodo=2 (for 2019 data) Source of data is from (i) the survey on guests stays and other data on hotel activity survey. (ii) Survey on the Stay of Guests in Hospitality and Other Accommodation
Limitations/issues			Data on occupancy rate for different types of hotel establishments is available from 2011 to 2019, but for tourist accommodation is available only for the years 2017 and 2018. Monthly data is not available.

Table A12: Seasonality Rate

Algarve Indicator	Seasonality Rate
UNWTO Mandatory Area	
ETIS section	No Match as it is Algarve specific indicator
ETIS criterion	
ETIS indicator	
Description/concepts	<i>Seasonality Rate= (Total No. of nights in tourist accommodation establishments in July+August+September/ Total No. of nights in tourist accommodation establishments whole year)*100</i> Seasonality Rate: assesses the relative weight of tourist demand in the three months of greatest demand (July, August and September), in relation to the annual total, as measures by the number of overnight stays in accommodation establishments. Tourist accommodation establishment: Establishment that provides short-term accommodation services for remuneration, operating in one or more buildings or facilities. Types: hotels, apartment hotels, tourist apartments, tourist villages, Inns and others.
Approach	Composite Indicator based on secondary data
Geographic level and periodicity	NUTSII: Monthly (Jan 2010– Dec 2019)
Data source(s)	travelBI by Turismo de Portugal. https://travelbi.turismodeportugal.pt/pt-pt/Paginas/PowerBI/dormidas.aspx (They have sourced the data from : INE, Guest stays and other data on hotel activity survey. Indicator: Nights (No.) in tourist accommodation establishments by Geographic localization (NUTS - 2013) and Type (tourist accommodation establishment); Monthly)
Limitations/issues	The category 'tourist accommodation establishments' does not capture the full scope of accommodation types. Nights in youth hostels, camp-sites and holiday camps are not included in this indicator. Using this formula, it is not possible to calculate seasonality for the municipalities of Algarve as monthly data is not available for 'total no. of nights in tourist accommodation establishments'. Only annual data (from 2011-2018) is available at INE for the municipalities.

Table A13: Percentage of tourism companies taking measures to reduce energy consumption

Algarve Indicator	Percentage of tourist companies taking measures to reduce energy consumption
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	D.6 Energy Usage
ETIS indicator	D.6.2 Percentage of tourism enterprises that take actions to reduce energy consumption
Description	This indicator measures the commitment of the tourism companies towards energy savings through different measures
Concepts	Establishments that Optimize Energy Consumption - allows to evaluate the evolution of the share of hotel establishments, resorts and tourist apartments that manage energy efficiently. The higher the percentage of hotel establishments with low power consumption systems, the greater the concern demonstrated to environmental preservation and consequent sustainability of tourism
Approach	Direct data from Turismo de Portugal
Geographic level and periodicity	NUTSII Annual (2011 – 2018)
Data source(s)	https://travelbi.turismodeportugal.pt/en-us/Pages/PowerBI/Sustentabilidade/accommodation-optimize-energy-consumption.aspx
Limitations/issues	There is no elaboration of the components of 'Accommodation Establishments' considered by TravelBI for this indicator.

Table A14: Percentage of tourism companies taking measures to reduce water consumption

Algarve Indicator	Percentage of tourist companies taking measures to reduce water consumption
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	D.5 Water Management
ETIS indicator	D.5.2 Percentage of tourism enterprises taking actions to reduce water consumption
Description	This indicator allows to evaluate the evolution of the share of hotel establishments, resorts and tourist apartments that manage water efficiently.
Concepts	The implementation of a policy of optimization of water consumption in a hotel establishment implies that it has developed a policy of quality and environmental management, based on objectives and processes to achieve commitments related to quality and the environment. It also implies taking periodic actions to continually improve its performance, in addition to reflecting the level of involvement of establishments in environmental preservation. The higher the percentage of hotel establishments with policies for optimizing water consumption, the greater the concern shown with environmental preservation and the consequent sustainability of tourism.
Approach	Direct data from Turismo de Portugal
Geographic level and periodicity	NUTSII Annual (2011 – 2017)
Data source(s)	https://travelbi.turismodeportugal.pt/en-us/Pages/PowerBI/Sustentabilidade/accommodation-optimize-water-consumption.aspx
Limitations/issues	There is no elaboration of the components of 'Accommodation Establishments' considered by TravelBI for this indicator. Supplementary data about Accommodation Establishments with objectives to limit water consumption is provided by TravelBI at: travelbi.turismodeportugal.pt/en-us/Pages/PowerBI/Sustentabilidade/accommodation-objectives-water.aspx This indicator allows assessing the evolution of the percentage of hotel establishments, resorts and tourist apartments with the objective of reducing water consumption. Data is available only for the years 2016 and 2017.

Table A15: Percentage of sewage treated prior to discharge

Algarve Indicator	Percentage of sewage treated prior to discharge
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	D.4 Sewage Treatment
ETIS indicator	D.4.1 Percentage of sewage from the destination treated at least at secondary level prior to discharge
Description	This indicator reflects the existence of efficient sewage treatment and management infrastructure.
Concepts	• TREATED WASTEWATER: Wastewater after treatment of which is carried out in wastewater treatment plants (Portuguese acronym: ETAR) or in municipal septic tanks. • SEWER DRAINAGE SYSTEM: Set of infrastructures and equipments designed to collect the sewage produced by a community and drain it to a proper treatment facility in order that it is discharged in soil or water bodies in a way that it does not change existing environmental conditions. A complete system includes: drainage pipes or net; intermediate discharger; pumping station; interceptor, wastewater treatment plant and final discharger. • REFERENCE PERIOD: The length of time for which data are collected, e.g. a specific day, month or year.
Approach	(Direct discharge of wastewater/ Effluents rejected)*100 where effluents rejected = direct discharge of wastewater + discharge of wastewater after treatment.
Geographic level and periodicity	NUTSII and Municipalities Annual (2001 – 2009)
Data source(s)	Statistics Portugal, National inventory of water supply and wastewater systems / physical and operational view (for 2006-2009) Statistics Portugal, Environmental survey - Water and wastewater structure characterization (for 2001-2005)
Limitations/issues	Data is available only from 2001-2009. However, annual data is available at NUTS II level both for (i) Proportion of wastewater treated by Geographic localization; and (ii) Total volume of wastewater treated of wastewater drainage and treatment systems by Geographic localization and Level of treatment.

Table A16: Movement of Passengers on Inland Waterways

Algarve Indicator	Movement of Passengers on Inland Waterways
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	This is Algarve specific
ETIS indicator	Mobility
Description	This indicator measures the number of passengers moving on inland waterways
Concepts	Movement of passengers in inland waterways by river line, that is a regular public transport service following itineraries, timetables or minimum frequencies and with pre-established fares. There are urban and interurban routes. National level Beaches - Ria Formosa (Faro - Faro island; Faro - Deserta island; Faro - Farol island; Olhão - Farol island; Olhão - Culatra island; Olhão - Armona island; Tavira - Tavira island; Quatro-Águas - Ilha de Tavira; Fuzeta - Armona island; Sta. Luzia - Terra Estreita; Faro – Culatra island; Cabanas - Cabanas island); and international level Guadiana River (V. R. S. António - Ayamonte).
Approach	Data obtained from INE by OBSERVE
Geographic level and periodicity	Quarterly data from 2002 to 2020
Data source(s)	INE- Retrieved from Inland waterways passengers and goods transport survey
Limitations/issues	Pressure on inland waterways is measured

Table A17: Number of passengers embarked and disembarked from cruise ships at the Port of Portimão

Algarve Indicator	Number of passengers embarked and disembarked from cruise ships at the Port of Portimão
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	This is Algarve specific
ETIS indicator	Mobility
Description	This indicator provides the number of passengers embarked, disembarked and in transit at the Port of Portimão, from cruise ships
Concepts	The higher movement is related to the number of passengers in transit. The numbers of embarked and disembarked passengers have been very negligible.
Approach	Data obtained from INE by OBSERVE
Geographic level and periodicity	Yearly data from 2004 to 2018
Data source(s)	INE- Retrieved from Statistics on Passenger traffic evolution at the Port of Portimão.
Limitations/issues	Pressure is measured.

Table A18: Number of passengers boarded and disembarked at Faro Airport

Algarve Indicator	Number of passengers boarded and disembarked at Faro Airport
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	This is Algarve specific
ETIS indicator	Mobility
Description	This indicator provides the number of passengers embarked and disembarked at Faro Airport
Concepts	Nature of traffic (internal, territorial and international) is captured via this indicator.
Approach	Data obtained from INE by OBSERVE
Geographic level and periodicity	Yearly data from 2004 to 2020
Data source(s)	INE- Retrieved from Airports and airfields survey.
Limitations/issues	Reflects the strong seasonality of the tourist activity.

Table A19: Air quality index

Algarve Indicator	Air Quality Index
UNWTO Mandatory Area	Environmental Impact
ETIS section	D. Environmental Impact
ETIS criterion	This is Algarve specific
ETIS indicator	Air Quality Index
Description	The Air Quality Index (IQar) for a given area results from the arithmetic average calculated for each of the pollutants measured at all network stations in that area. The values thus determined are compared with the concentration ranges associated with a color scale and the pollutants with the highest concentration are responsible for the IQar.
Concepts	Arithmetic average calculated for each of the pollutants measured in all network stations of that area.
Approach	Data obtained from INE by OBSERVE
Geographic level and periodicity	Yearly data from 2014 to 2018
Data source(s)	INE- Retrieved from Air Quality Index. Aglomeração Sul corresponds to the locations Albufeira, Faro, and Portimão.
Limitations/issues	The air quality has remained good in Algarve as well as the municipalities of Albufeira, Faro and Portimão.

Table A20: Percentage of companies and tourist establishments using voluntary certification of environmental sustainability or corporate social responsibility

Algarve Indicator	Percentage of companies and tourist establishments using voluntary certification of environmental sustainability or corporate social responsibility
UNWTO Mandatory Area	Governance

ETIS section	A. Destination Management
ETIS criterion	A.1 Sustainable Tourism Management in Tourism Enterprises
ETIS indicator	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 measures.
Description	This indicator analyses the percentage of tourism companies that had an independent verification of their sustainability practices.
Concepts	The implementation and certification of quality management and environmental management systems in tourist establishments implies that it has developed a quality and environmental management policy, based on objectives and processes to achieve commitments related to quality and the environment. It also implies taking periodic actions to continually improve its performance, in addition to reflecting the level of involvement of establishments in environmental preservation.
Approach	Direct data from Turismo de Portugal
Geographic level and periodicity	NUTSII (2011 – 2016)
Data source(s)	Turismo de Portugal
Limitations/issues	‘Accommodation Establishments’ defined by TdP imply Hotel establishments, which are classified as hotels, hostels, inns, motels and apartment hotels (apartment hotels); for statistical purposes, tourist villages and apartments are also included. - Others (Pensions, Furniture and Inns).

TableA21: Percentage of establishments providing training on sustainable practices

Algarve Indicator	Percentage of establishments providing training on sustainable practices
UNWTO Mandatory Area	Governance

ETIS section	No Match as it is Algarve specific indicator
ETIS criterion	
ETIS indicator	
Description	This indicator identifies the importance attached to training on environmental issues
Concepts	Training for Employees in Good Environmental Practices - allows to assess the evolution of the percentage of hotel establishments, resorts and tourist apartments that provide training / information to their employees in matters of the environment.
Approach	Direct data from Turismo de Portugal
Geographic level and periodicity	NUTSII (2011 – 2017)
Data source(s)	Turismo de Portugal



INSTO

World Tourism Organization
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