



**CROSTO – Croatian Sustainable Tourism Observatory  
2018 Report  
Focal area: Adriatic Croatia**

Zagreb, December 2018

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Zagreb, December 18, 2018.

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## Introduction

CROSTO – Croatian Sustainable Tourism Observatory has been established in 2016 to support the vision for sustainable development of tourism in Croatia. It is hosted by the Institute for Tourism, an academic institution with more than 50 years of experience in research and consultancy in tourism. In October 2016, CROSTO has officially become a member of the INSTO network thereby adopting standards and practices of monitoring sustainable tourism promoted by UNWTO.

The main objective of CROSTO is to continuously measure and monitor the sustainability of tourism development in the most tourism developed region of Croatia – Adriatic Croatia. This is one of the country's two NUTS-2 regions, with a territory of 24,705 square kilometers and 1,411,935 inhabitants. The region is characterized by a narrow coastal area, in which most of the tourist activity takes place, and a wider hinterland (mostly mountain area), which is very scarcely inhabited. Adriatic Croatia main tourism attraction is almost six thousand kilometers long and indented coastline, with 1,246 islands and islets varying in size. Tourism in Adriatic Croatia is characterized by high seasonality. With total number of 1,2 million beds in commercial accommodation facilities, the majority of accommodation in Adriatic Croatia is still in the ownership of private households. The highest capacity occupancy is recorded in the hotel sector.

There are various environmental issues related to Adriatic Croatia which are mostly the consequence of insufficient management and planning. Landscape degradation due to intensive and uncontrolled construction of second homes and apartment blocks is the most serious impact that tourism has on the environment and natural resources. The unresolved solid waste and waste water management are also serious issues in fast-growing coastal settlements, where the construction of tourist infrastructure is not accompanied by the construction of municipal infrastructure. There is an increasing spatial imbalance in development between dynamic coastal areas, heavily populated and characterized by intensive levels of land use and consumption, and inland areas declining in number of inhabitants. Finally, the issue of overcrowding has come up in the last few years, primarily relating to cultural destinations burdened with a large number of cruise ships passengers.

In measuring and monitoring procedures, CROSTO adopts the European Tourism Indicator System (ETIS) for sustainable destination management, developed by the European Commission. It has been decided to use ETIS due to Croatia's compliance, as a European Union member state, with EU recommendations. The ETIS indicators which have been used cover all the mandatory sustainability issues selected by the UNWTO. Along with measuring and monitoring tourism sustainability at the regional level, the intention is to promote the application of ETIS among local communities all over Croatia. In fact, there are plans for fostering the appliance of ETIS on municipal level. It has to be noted, however, that this heavily depends on cooperation among all relevant stakeholders, especially the National Tourist Board and the Croatian Ministry of Tourism which have mandatory power over local tourist destinations. The final goal of CROSTO is the aspiration to grow into a regional monitoring center coordinating many local observatories all over Croatia, all of them applying ETIS for measuring and monitoring tourism sustainability in their own local jurisdictions.

## Administrative activities since the last Report

Following the first year of experimental operation, CROSTO enters its second year as entirely established observatory. The experimental measurement of tourism sustainability conducted in the first year has shown all strengths and weaknesses of the framework for monitoring tourism sustainability in the Adriatic Croatia. The main weakness was related to deficiency of financial resources needed for measurement of all three dimensions of tourism sustainability. However, this challenge was successfully overcome in the second year by the help of Croatian Ministry of Tourism and the Croatian National Tourist Board. We hope that this cooperation will keep going in the future.

Since the last Report, CROSTO has stepped into the phase of advanced operation. This involves successful completion of three following tasks:

- Consolidation of management;
- Acquirement of necessary financial resources;
- Inception of the pilot project of monitoring tourism sustainability at the local level.

Starting as a concept in the heads of few young researchers at Institute for tourism, CROSTO was firstly led by an economist, Dr. Ivan Kožić. It appears to be a convenient solution as well as establishment of fully operable observatory was concerned. However, the practice has shown that further upgrading and continuity of operation requires a person with the primary background in environmental studies as the lead person of CROSTO. The head of CROSTO has thus become Dr. Izidora Markovic Vukadin, an expert in sustainable development with special focus on protected areas of nature. She took the lead position in CROSTO observatory starting in October 2018. Her mission will be the maintenance of continuous monitoring of tourism sustainability at the regional level as well as starting measurement at the level of towns and municipalities which involves the transfer of knowledge to the representatives of local communities and support the establishment of measuring and monitoring practice.

In the first year of the CROSTO's experimental operation, it became clear that financial support provided outside of its hosting organization will be necessary for the regular activities as well as for the maintenance of measuring and monitoring process on the regular basis. For instance, substantial financial resources has proven to be necessary for the conduction of survey related to calculation of the indicator of residents' satisfaction with tourism. These resources were provided by the Croatian National Tourist Board thereby making the measurement of the most important indicator of social sustainability possible. Moreover, Croatian Ministry of Tourism has declared the recurrent provision of financial support for the regular activities of CROSTO observatory. The CROSTO has thus consolidated its annual budget which will be used for the reimbursement of business trips costs and continuous training and specialization of CROSTO team members.

Starting as the observatory of tourism sustainability in the Adriatic Croatia, CROSTO has declared its mission as the measurement and monitoring tourism sustainability at regional level. Since it has become clear that measurement at regional level can, in fact, blur the picture of tourism sustainability if some specificities of particular destinations are not concerned, the second year of CROSTO's operation was dedicated to the inception of pilot project of measuring and monitoring tourism sustainability at the level of towns and municipalities. The five established tourist destinations (towns) together with one developing destination (town) have been included into the program of experimental measurement of tourism sustainability. This attempt aims to reveal the main issues related to acquirement of data and calculation of sustainability indicators at local level. It has to be noted that the interest for participation expressed by the destinations was great. However, despite of unquestionable enthusiasm, the preparation phase has shown some critical obstacles which could make measurement of tourism sustainability at the level of towns and municipalities exceptionally difficult but not unrealistic.

## Measurement Results for 2017

The first official measurement of tourism sustainability in Adriatic Croatia was conducted in 2016. It was primarily an experimental attempt in order to identify issues that could emerge in the regular monitoring process. The 2016 exercise identified up-to-date data availability and international comparability as two major issues for a successful measurement process. In the meantime, data availability for the second sustainability measurement process in Adriatic Croatia has been significantly improved, but there are no substantial improvements/changes in the international comparability of the sustainability indicators.

Regarding the improvements in data availability, there are two updated data sources: TOMAS Summer Survey 2017 and Survey on satisfaction and attitudes of local population towards tourism development conducted in 2018.

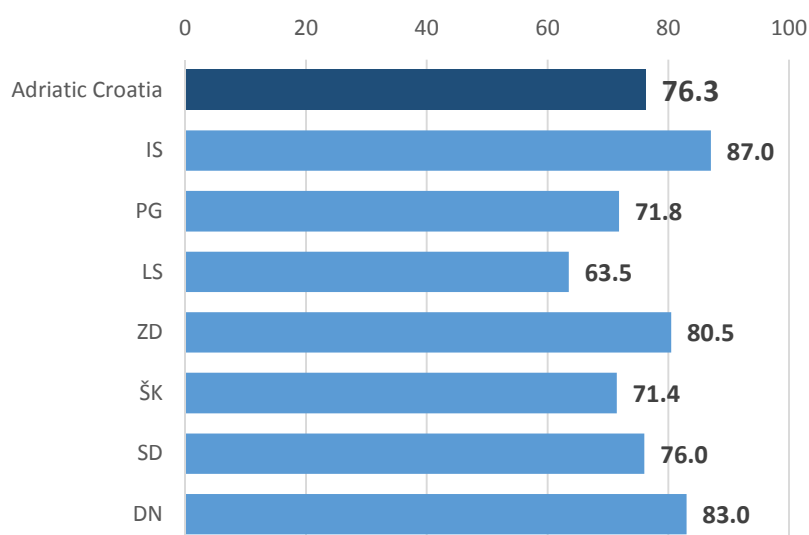
TOMAS Summer Survey – a longitudinal Survey on Attitudes and Expenditures of Tourists in Croatia was conducted in 2017 for the 10<sup>th</sup> time in 30-year period (the previous survey was conducted in 2014). It is a quantitative survey, conducted from July to October 2017 on a sample of almost 6 thousand tourists in commercial accommodation facilities in 67 destinations in Adriatic Croatia. Personal interview (CAPI) with tourists from 20 main generating markets was used as data collection method, while a structured questionnaire was used as a research instrument. The survey results are representative for summer tourism demand (7 coastal counties, July to October 2017). The results are weighted by data on tourists' overnights (eVisitor data base) on a county level, according to the type of accommodation and country of origin.

Survey on satisfaction and attitudes of local population towards tourism development was conducted in 2018 (the previous one is from 2012) on a sample of 2,535 residents (1,800 in Adriatic Croatia). Data are collected by telephone interview (CATI). The survey results are representative for Croatian population by region, size of settlement, gender, age and education level.

This section of the report is dedicated to the second official measurement of the set of 14 CROSTO indicators for 2017.

CROSTO indicator	Percentage of residents who are satisfied with tourism
UNWTO mandatory issue	Local satisfaction with tourism
ETIS section	C Social and cultural impact
ETIS criterion	C.1 Community/social impact
Description / Scope	Composite indicator based on a battery of questions describing resident attitudes towards tourism development and tourists
Approach	Based on representative survey of local residents
Data source/s	The survey was conducted in 2018 (the previous results are from 2012) on a representative sample of 1.8 thousand residents in Adriatic Croatia. There were several survey questions (following ETIS recommendations) describing residents' attitudes toward tourism development. The following indicator was used as CROSTO indicator: the share of residents who consider tourism and tourists visiting their town / municipality bring benefits to their community.
Limitations / issues	Figures from the survey conducted in 2018 were used as a proxy for 2017 indicator.

**Figure 1:**  
**The share of residents who consider tourism and tourists visiting their town / municipality bring benefits to their community in 2017 by county**



Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, ŠK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

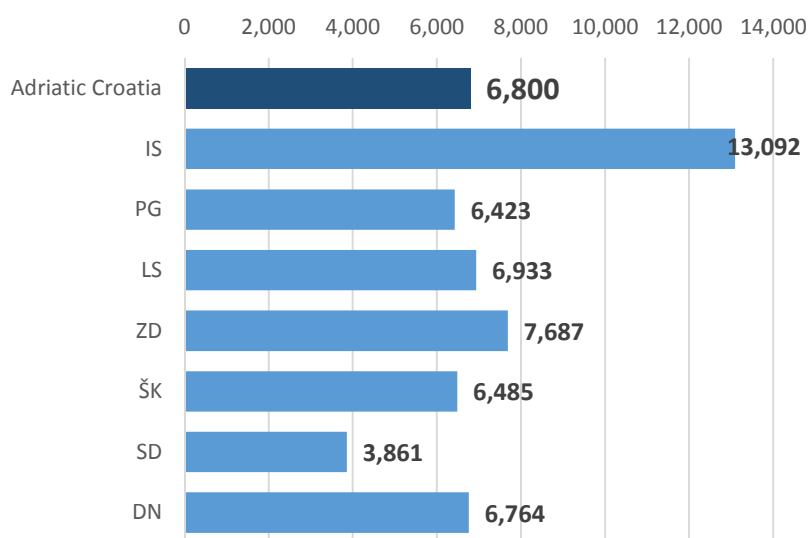
Comments More than three quarters of residents in the Adriatic Croatia consider that tourists and tourism development have positive impacts on their community. The share of respondents with positive attitude towards tourism development ranges from 64% in county of Lika-Senj (the county with the smallest number of tourist facilities) to 87% in county of Istria (the most tourism developed county with the highest number of tourist facilities and the highest tourist activity).

CROSTO indicator	Number of tourist nights per 100 residents
UNWTO mandatory issue	-
ETIS section	C: Social and cultural impact
ETIS criterion	C.1 Community/social impact
Description / Scope	Number of tourist nights in commercial and non-commercial accommodation facilities as per 100 residents
Approach	Composite indicator based on secondary data There is a slight deviation from the proposed indicator - the number of tourist nights is used instead of number of tourists/visitors since both, number of tourists and number of same-day visitors, are not available within the Croatian system of tourism statistics. Furthermore, number of tourist arrivals is overestimated due to multiple recording of arrivals in different accommodation facilities.
Data source/s	CBS, First Release 4.3.2. TOURIST ARRIVALS AND NIGHTS IN 2017 CBS, First Release 4.3.3. NON-PROFIT TOURISM ACTIVITY IN 2017 CBS, First Release 7.1.3. POPULATION ESTIMATE OF REPUBLIC OF CROATIA, 2017
Limitations / issues	<ul style="list-style-type: none"> <li>The quality of the survey results regarding non-commercial accommodation facilities is questionable, since it depends on the rate registration is evaded and the authorities' supervisory capabilities</li> <li>Quality of survey results as well as the rate of hidden overnights most probably differ among counties, that might cause different deviations regarding the counties</li> </ul>

**Figure 2:**  
Number of tourists nights per 100 residents in Adriatic Croatia in 2017 by county

**Table 1: Percent change of 2017 indicator in comparison to 2016**

	2017/2016 (%)
IS	110.4
PG	109.3
LS	113.6
ZD	120.5
ŠK	110.8
SD	112.2
DN	113.3
<b>Adriatic Croatia</b>	<b>112.3</b>



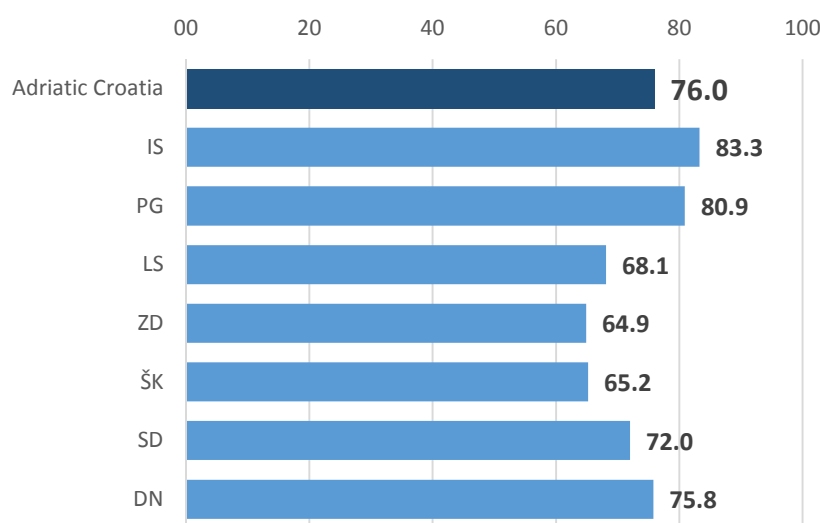
Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, ŠK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

**Comments** Almost 7 thousand tourists' overnights in 2017 are realized per 100 residents in the Adriatic Croatia (the increase of 12% in comparison to 2016). Istria, the most tourism developed county, has 13 thousand tourists overnights per 100 residents, while five counties recorded almost the same level of tourist flows. The smallest ratio is recorded in Split-Dalmatia county. The highest increase in this indicator is recorded in county of Zadar (21%).



CROSTO indicator	Percentage of tourists who are satisfied with their overall experience in the destination
UNWTO mandatory issue	-
ETIS section	A Destination management
ETIS criterion	A.2 Customer satisfaction
Description / Scope	Percentage of tourists who are satisfied with the overall tourist experience in the destination
Approach	Direct use of secondary data (2017 TOMAS Summer Survey, the previous results are from the 2014 survey). Variable 'satisfaction with the overall experience' is measured on a 7-point Likert scale (1-very bad to 7-excellent). Ratings 6 and 7 are considered as the evidence of tourist's satisfaction with the overall experience.
Data source/s	TOMAS Summer 2017 - Survey on Attitudes and Expenditures of Tourists in Croatia in 2017 (Institute for Tourism); sample size of almost 6 thousand tourists in commercial accommodation facilities in Adriatic Croatia; data were collected from July to October 2017
Limitations / issues	<ul style="list-style-type: none"> <li>• Same-day visitors and tourists in non-commercial accommodation were not included in the survey's population</li> <li>• Survey on Attitudes and Expenditures of Tourists in Croatia is a longitudinal survey, conducted every three to four years, but its execution is not stable since it is always dependent on availability of financial resources</li> </ul>

**Figure 3:**  
Percentage of tourists who are satisfied with their overall experience in the destination in Adriatic Croatia in 2017 by county



**Table 2: Percent change of 2017 indicator in comparison to 2016**

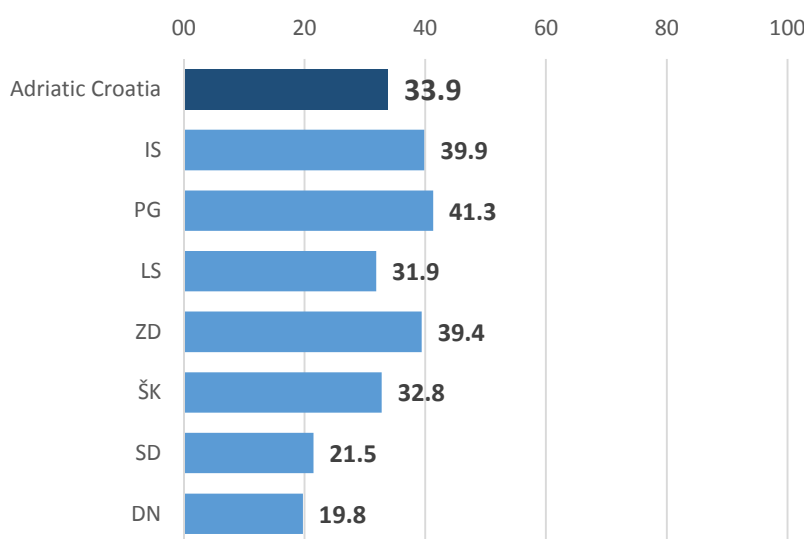
	2017/2014(%)
IS	109.3
PG	104.5
LS	81.0
ZD	79.0
ŠK	92.9
SD	94.9
DN	94.4
Adriatic Croatia	98.8

Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, ŠK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

**Comments** Tourist satisfaction with their overall experience in the destination in 2017 was high, with more than three quarters of tourists rating their overall experience as excellent or very good. The overall satisfaction was almost the same as that observed in 2014. The highest tourist satisfaction is recorded in Istria and county of Primorje-Gorski Kotar – those counties recorded also an increase in tourist satisfaction in comparison to 2014. All other counties recorded a slight decrease in tourist satisfaction. The highest decrease (21%) was in county of Zadar.

CROSTO indicator	Percentage of repeat/return tourists
UNWTO mandatory issue	-
ETIS section	A Destination management
ETIS criterion	A.2 Customer satisfaction
Description / Scope	Percentage of tourists in commercial accommodation facilities who have visited a destination during last 5 years
Approach	Direct use of secondary data
Data source/s	TOMAS Summer 2017 - Survey on Attitudes and Expenditures of Tourists in Croatia in 2017 (Institute for Tourism); sample size of almost 6 thousand tourists in commercial accommodation facilities in Adriatic Croatia; data were collected from July to October 2017
Limitations / issues	<ul style="list-style-type: none"> <li>• Highly dependent on type of accommodation</li> <li>• In the past surveys the repeat visit was not restricted to the period of last 5 years; this has been modified in the 2017 survey in order to be completely consistent with the proposed ETIS indicator; 2017 survey results are therefore not entirely comparable with the results obtained in 2014</li> <li>• Survey on Attitudes and Expenditures of Tourists in Croatia is a longitudinal survey, conducted every three to four years, but its execution is not stable since it is always dependent on availability of financial resources</li> </ul>

**Figure 4:**  
**Percentage of repeat/return visitors to destination during last 5 years in Adriatic Croatia in 2017 by county**

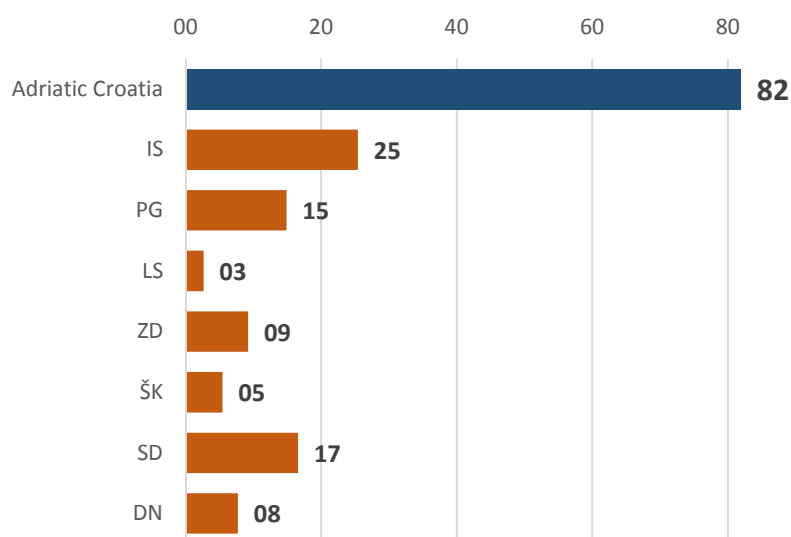


Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, ŠK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

**Comments**  
 The overall percentage of repeat/return visits in Adriatic Croatia (during last 5-year period) is 34%. Above average rate of repeat visits is registered in counties with a higher share of campsites and household accommodation (County of Primorje-Gorski Kotar, Istria and Zadar). The lowest rate of repeat visits is in the County of Dubrovnik-Neretva, where the city of Dubrovnik is recording an above average share of first-time visitors, and County of Split-Dalmatia. County of Split-Dalmatia has on average the youngest tourists, while the city of Split is, similarly to Dubrovnik, recording an above average share of first-time visitors.

CROSTO indicator	Number of tourist nights
UNWTO mandatory issue	Destination economic benefits
ETIS section	B Economic value
ETIS criterion	B.1 Tourism flow (volume and value) at destination
Description / Scope	Registered number of overnights realized in commercial accommodation facilities (hotels and similar accommodation, holiday and other short-stay accommodation, camping sites and camping grounds, other accommodation) in 2017
Approach	Direct use of secondary data
Data source/s	CBS, First Release 4.3.2. TOURIST ARRIVALS AND NIGHTS IN 2017
Limitations / issues	<ul style="list-style-type: none"> <li>Registered number of overnights in commercial accommodation only</li> <li>Distribution of overnights by type of accommodation facility differ significantly among counties, having different influence on destination benefits from tourism activity</li> <li>Rate of non-registered overnights most probably differ among counties</li> </ul>

**Figure 5:**  
Number of tourist nights in Adriatic Croatia in 2017 by county (in million)



**Table 3: Percent change of 2017 indicator in comparison to 2016**

	2017/2016 (%)
IS	109.9
PG	106.5
LS	114.0
ZD	112.3
ŠK	109.4
SD	111.5
DN	113.0
Adriatic Croatia	110.2

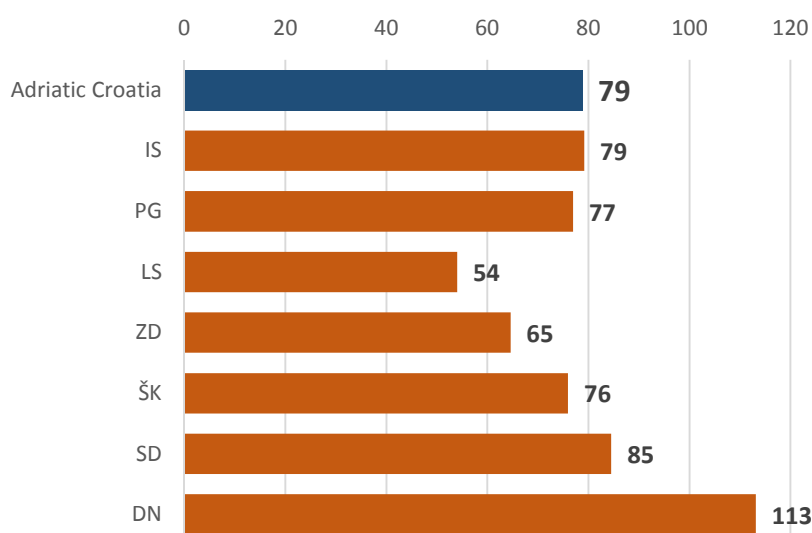
Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, ŠK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

Comments

A total of 82 million overnights in commercial accommodation facilities were realized in Adriatic Croatia in 2017 (95% of all overnights realized in Croatia and 10% increase in comparison to 2016). The share of overnights realized by foreign tourists is more than 90%. The specific feature of Croatian tourism is that the majority (almost 50%) of all overnights is realized in rooms/apartments/summer houses. Istria is the most tourism developed county with 25 million tourist overnights or 31% of all overnights registered in the Adriatic Croatia region.

CROSTO indicator	Daily spending per tourist overnight
UNWTO mandatory issue	Destination economic benefits
ETIS section	B Economic value
ETIS criterion	B.1 Tourism flow (volume and value) at destination
Description / Scope	Average expenditures in euros per night per tourist in commercial accommodation facilities in 2017
Approach	Direct use of secondary data
Data source/s	TOMAS Summer 2017 - Survey on Attitudes and Expenditures of Tourists in Croatia in 2017 (Institute for Tourism); sample size of almost 6 thousand tourists in commercial accommodation facilities in Adriatic Croatia; data were collected from July to October 2017; the previous results are from the 2014 survey
Limitations / issues	<ul style="list-style-type: none"> <li>Survey on Attitudes and Expenditures of Tourists in Croatia is a longitudinal survey, conducted every three to four years, but its execution is not stable since it is always dependent on availability of financial resources</li> </ul>

**Figure 6:**  
Daily spending per tourist overnight in Adriatic Croatia in 2017 by county (in Euro)



**Table 4: Percent change of 2017 indicator in comparison to 2016**

	2017/2016 (%)
IS	124.1
PG	133.7
LS	96.2
ZD	82.8
ŠK	141.3
SD	121.4
DN	122.1
Adriatic Croatia	118.7

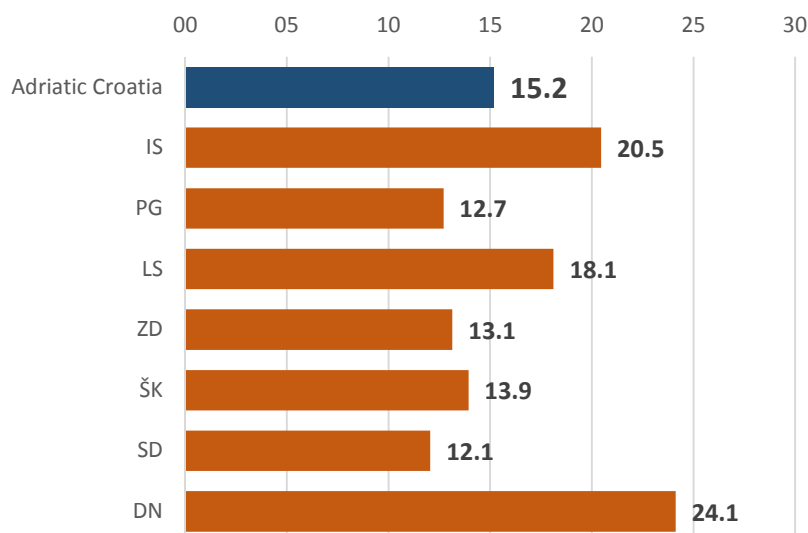
Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, ŠK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

**Comments**

The average daily tourist expenditure in 2017 was 79 Euro (without travel expenses to and from destination), 19% higher in comparison to 2014, and ranging from 54 Euro in County of Lika-Senj to 113 Euro in County of Dubrovnik-Neretva. 49% of the total daily expenditure is the expenditures for accommodation, 17% for restaurants and bars, and 34% for all other services in destination. It should be noted that daily tourist expenditure, apart from the structure and quality of tourism destination product, is also a reflection of structure of tourists' overnights by accommodation facilities within counties.

CROSTO indicator	Direct tourism employment as percentage of total employment
UNWTO mandatory issue	Employment
ETIS section	B Economic value
ETIS criterion	B.3 Quantity and quality of employment
Description / Scope	Share of persons employed in legal entities and in crafts and trades in NKD (2007) section I <i>Accommodation and food service activities</i> in August 2017 in total employment in legal entities and crafts and trades in August 2017
Approach	Estimated based on secondary data available for March and corrected for total employment ratios in March and August, since the August is the peak month of tourist activity
Data source/s	CBS, First Release 9.2.4. PERSONS IN PAID EMPLOYMENT, BY ACTIVITIES AND COUNTIES, Situation as on 31 March 2017, Table 1 CBS, First Release 9.2.2/1. PERSONS IN EMPLOYMENT IN CRAFTS AND TRADES AND FREE LANCES, FIRST QUARTER OF 2017, Table 3
Limitations / issues	<ul style="list-style-type: none"> <li>Limited to employment in NKD (2007) section I Accommodation and food service activities only</li> <li>Employees in family housing/households not included; since the importance of household accommodation differs among the counties, it could have a significant impact on employment on a county level</li> </ul>

**Figure 7:**  
Direct tourism employment as percentage of total employment in a destination in Adriatic Croatia in 2017 by county (in %)



**Table 5: Percent change of 2017 indicator in comparison to 2016**

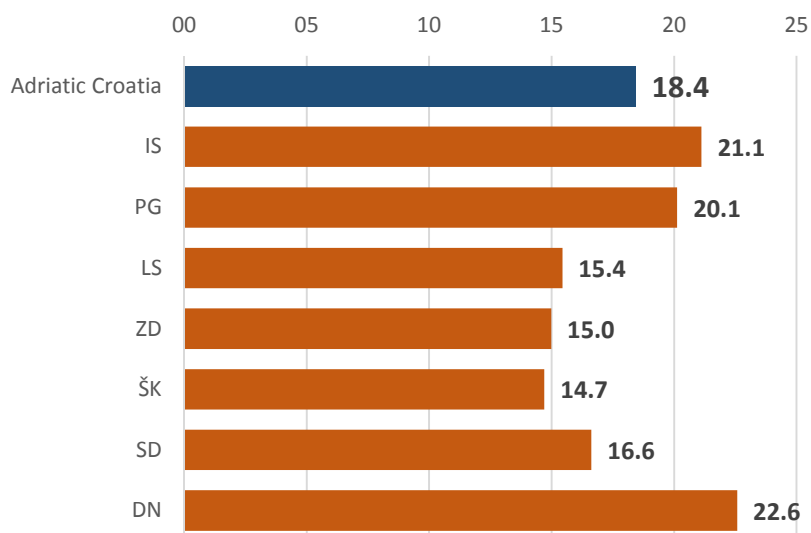
	2017/2016 (%)
IS	102.2
PG	96.2
LS	102.3
ZD	101.8
ŠK	97.6
SD	103.7
DN	98.2
Adriatic Croatia	101.3

Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

**Comments** Direct tourism employment (in NKD section I *Accommodation and food service activities*) in August 2017 is estimated at 15.2% of total employment in Adriatic Croatia. The two highest rates of direct tourism employment were recorded in County of Dubrovnik-Neretva (24.1%) and County of Istria (20.5%) as a consequence of high proportion of hotels and similar accommodation facilities in County of Dubrovnik-Neretva and high proportion of both hotels and similar accommodation as well as camping sites in County of Istria. In comparison to 2016, there is an 1% increase in direct tourism employment in Adriatic Croatia. The highest increase is recorded in County of Split-Dalmatia (almost 4%).

CROSTO indicator	Gross annual occupancy rate in commercial accommodation
UNWTO mandatory issue	Tourism seasonality
ETIS section	B Economic value
ETIS criterion	B.2 Tourism enterprise(s) performance
Description / Scope	Gross yearly occupancy rate in commercial accommodation The indicator will be extended in the future with monthly gross occupancy rates in the commercial accommodation
Approach	Composite indicator based on total number of available beds in commercial accommodation (the maximum is registered in August) on yearly basis and total number of overnights in commercial accommodation in 2017
Data source/s	CBS, First Release 4.3.2. TOURIST ARRIVALS AND NIGHTS IN 2017 (ad-hoc request for data)
Limitations / issues	<ul style="list-style-type: none"> <li>Registered number of overnights in the commercial accommodation only</li> <li>Highly dependent on the structure of accommodation capacity by type</li> </ul>

**Figure 8:**  
**Gross yearly occupancy rate in commercial accommodation in Adriatic Croatia in 2017 by county (in %)**



**Table 6: Percent change of 2017 indicator in comparison to 2016**

	2017/2016 (%)
IS	98.4
PG	101.7
LS	99.8
ZD	97.3
ŠK	99.5
SD	97.6
DN	103.4
Adriatic Croatia	99.1

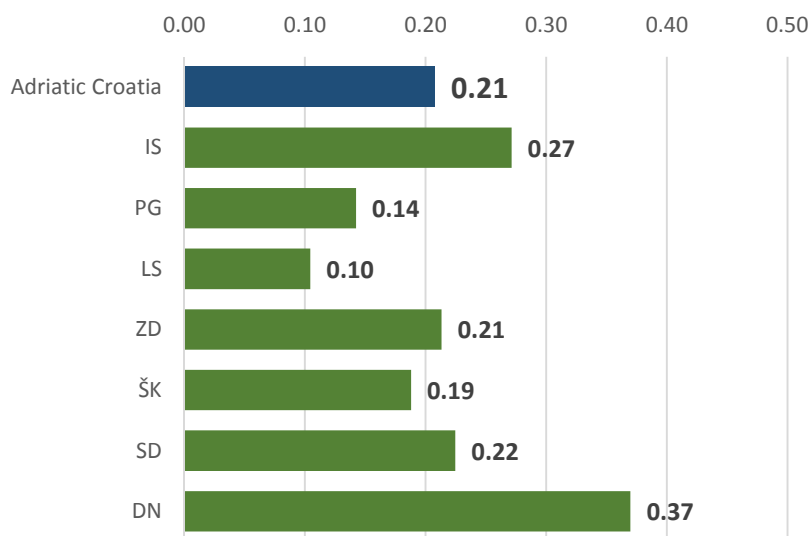
Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, ŠK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

**Comments**  
Gross yearly occupancy rate in commercial accommodation in Adriatic Croatia in 2017 is 18%, mostly due to high seasonality of tourist activity in the region and high share of household accommodation (rented rooms/apartments/ houses). Due to higher rate of increase in capacity (number of beds) in comparison to increase in overnights, the overall occupancy rate is slightly decreased in comparison to 2016 (1%). Above average occupancy rates are recorded in three counties (Dubrovnik-Neretva, Istria and Primorje-Gorski Kotar), mostly due to higher share of hotel and similar accommodation. Counties of Dubrovnik-Neretva and Primorje-Gorski Kotar recorded slight increase in the utilization of accommodation facilities in comparison to 2016 (3% and 2%, respectively).

CROSTO indicator	Energy consumption per tourist night compared to general population energy consumption per resident night
UNWTO mandatory issue	Energy management
ETIS section	D Environmental impact
ETIS criterion	D.6 Energy usage
Description / Scope	Total tourist energy consumption in GWh divided by total household consumption in GWh
Approach	Total energy consumption in commercial accommodation capacities is estimated based on the 2012 survey results (consumption norms by type of accommodation) and the structure of accommodation capacities in 2017 (estimated by Energy Institute Hrvoje Požar, Zagreb, Croatia). Energy consumption in households is based on the survey results from 2012 and number of residents in 2017.
Data source/s	CBS (2015). Data of energy efficiency in households and services, 2012 CBS, First Release 4.3.2. TOURIST ARRIVALS AND NIGHTS IN 2017, additional ad-hoc analysis CBS, First Release 7.1.3. POPULATION ESTIMATE OF REPUBLIC OF CROATIA, 2017
Limitations / issues	<ul style="list-style-type: none"> <li>Registered number of overnights in the commercial accommodation only</li> <li>Energy consumption in households includes, partly, tourism consumption; since the share of household accommodation differs significantly among counties it can to some extent distort the estimates and comparability among the counties</li> <li>There are no updates of 2012 energy survey (consumption norms)</li> </ul>

**Figure 9:**

**Energy consumption per tourist night compared to general population energy consumption per resident night in Adriatic Croatia in 2017 by county**



**Table 7: Percent change of 2017 indicator in comparison to 2016**

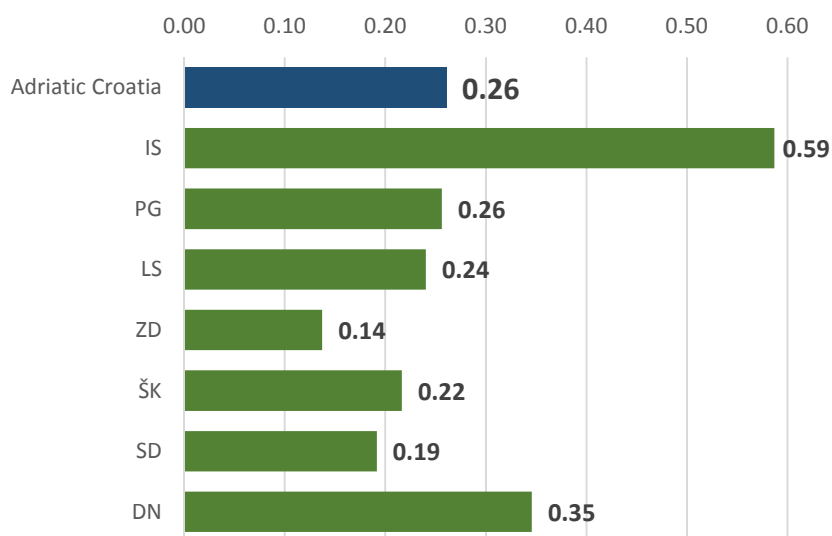
	2017/2016 (%)
IS	105.2
PG	107.2
LS	114.2
ZD	106.5
ŠK	107.5
SD	109.2
DN	104.0
Adriatic Croatia	107.1

Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

Comments	Energy consumption of tourists to residents in Adriatic Croatia in 2017 is 0.21, 7% higher than in 2016. The highest rate of energy consumption by tourists is associated with counties with the highest share of hotels and similar accommodation and the lowest tourism seasonality, namely County of Dubrovnik-Neretva (0.37) and County of Istria (0.27).
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CROSTO indicator	Water consumption per tourist night compared to general population water consumption per resident night
UNWTO mandatory issue	Water management
ETIS section	D Environmental impact
ETIS criterion	D.5 Water management
Description / Scope	Water consumption by tourists in commercial accommodation compared to total water consumption by households
Approach	Estimates of water consumption by tourists in commercial accommodation were based on consumption norms by type of accommodation obtained in 2008 and number of overnights by type of accommodation in 2017. Household consumption includes both public supply system and hydrofoil pump, etc.
Data source/s	CBS, First Release 6.1.2. COLLECTION, PURIFICATION AND DISTRIBUTION OF WATER, 2017 CBS, Census of Population, Households and Dwellings 2011, Dwellings by Occupancy Status, 2017 Institute IGH, Water Supply plan for County of Split-Dalmatia, 2008
Limitations / issues	<ul style="list-style-type: none"> <li>Registered number of overnights in the commercial accommodation only</li> <li>Same water consumption by households on public water supply and hydrofoil pumps is assumed</li> <li>No updates of 2008 consumption norm by type of accommodation</li> </ul>

**Figure 10:**  
Water consumption per tourist night compared to general population water consumption per resident night in Adriatic Croatia in 2017 by county



**Table 8: Percent change of 2017 indicator in comparison to 2016**

	2017/2016 (%)
IS	105.1
PG	107.0
LS	104.3
ZD	63.1
ŠK	105.9
SD	103.1
DN	102.9
Adriatic Croatia	96.1

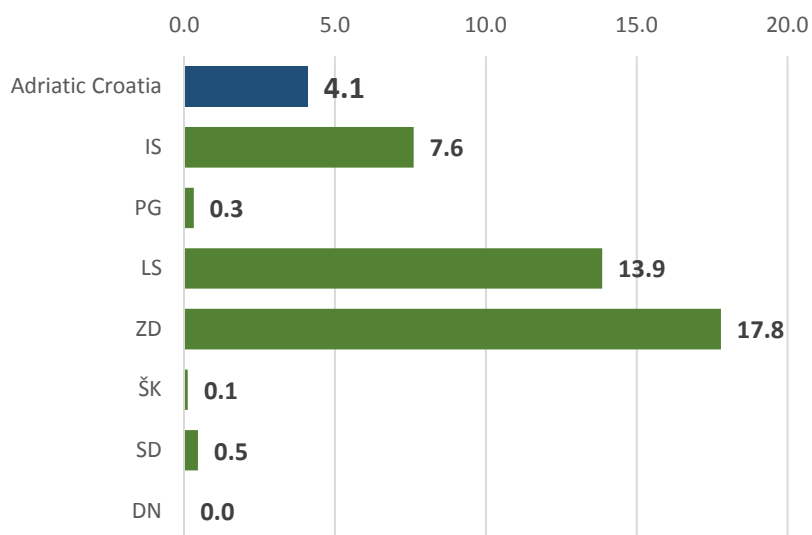
Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

Comments	The amount of water used by tourists in Adriatic Croatia in relation to residents is 0.26, slightly lower than in 2016 (4%), primarily due to significant decrease in water consumption in County of Zadar. Those figures need to be additionally double checked. The highest rate of water consumption by tourists is associated with counties with the highest share of hotel and similar accommodation and the lowest tourism seasonality, namely County of Istria (0.59), where there is also the highest number of households on public water supply system as well as the highest number of registered tourists overnights.
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CROSTO indicator	Percentage of sewage from a destination treated to at least secondary level prior to discharge
UNWTO mandatory issue	Waste water (sewage) management
ETIS section	D Environmental impact
ETIS criterion	D.4 Sewage treatment
Description / Scope	Percentage of sewage from a destination treated to at least secondary level prior to discharge
Approach	The official data on sewage treated to at least secondary level prior to discharge were corrected by rate of households/dwellings connected to a public sewer system on county level
Data source/s	CBS, First Release 6.1.3. PUBLIC SEWAGE SYSTEM, 2017, additional ad-hoc analysis CBS, Census of Population, Households and Dwellings 2011, Dwellings by Occupancy Status, 2017
Limitations / issues	<ul style="list-style-type: none"> <li>The rate of households/dwellings connected to a public sewer system was applied to the total waste water (from households and economic activities) by counties</li> </ul>

**Figure 11:**  
Percentage of sewage from a destination treated to at least secondary level prior to discharge in Adriatic Croatia in 2017 by county



**Table 9: Percent change of 2017 indicator in comparison to 2016**

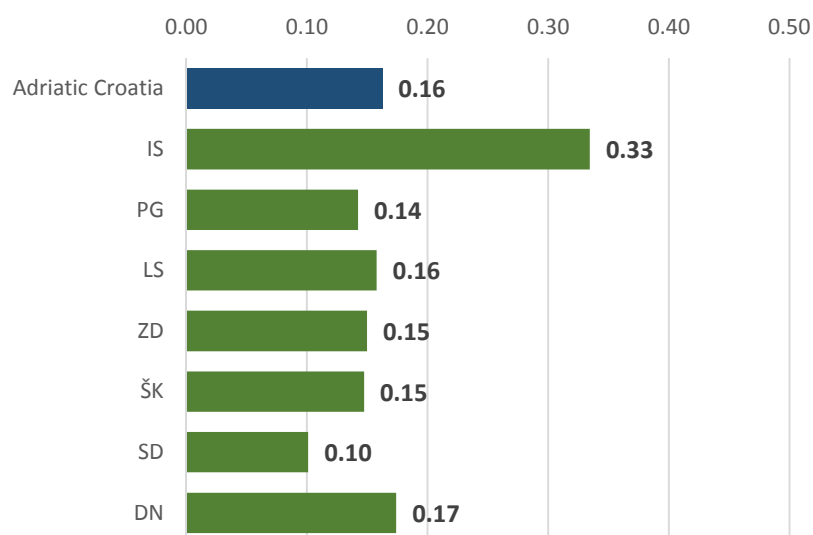
	2017/2016 (%)
IS	59.4
PG	83.8
LS	136.6
ZD	90.5
ŠK	116.3
SD	59.4
DN	-
Adriatic Croatia	70.6

Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, ŠK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

Comments	Only 4.1% of sewage in Adriatic Croatia is treated to at least secondary level prior to discharge. The highest rate of treatment is in County of Zadar (18%) even when corrected for households not connected to public sewage system (72%). The indicator significantly decreased in comparison to 2016.
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CROSTO indicator	Waste production per tourist night compared to general population waste production per resident night
UNWTO mandatory issue	Solid waste management
ETIS section	D Environmental impact
ETIS criterion	D.3 Solid waste management
Description / Scope	Waste production by tourists in relation to residents waste production
Approach	Based on total amount of solid waste produced in 2017 (source: Croatian Agency for Environmental and Nature Protection), number of residents and number of tourists overnights in 2017
Data source/s	Croatian Agency for Environmental and Nature Protection CBS, First Release 4.3.2. TOURIST ARRIVALS AND NIGHTS IN 2017, additional ad-hoc analysis CBS, First Release 7.1.3. POPULATION ESTIMATE OF REPUBLIC OF CROATIA, 2017
Limitations / issues	<ul style="list-style-type: none"> <li>Registered number of overnights in commercial accommodation only</li> <li>The assumption is that tourists and residents have the same patterns of consumption and hence the same production of solid waste</li> </ul>

**Figure 12:**  
Waste production per tourist night compared to general population waste production per resident night in Adriatic Croatia in 2017 by county



Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, ŠK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

**Table 10: Percent change of 2017 indicator in comparison to 2016**

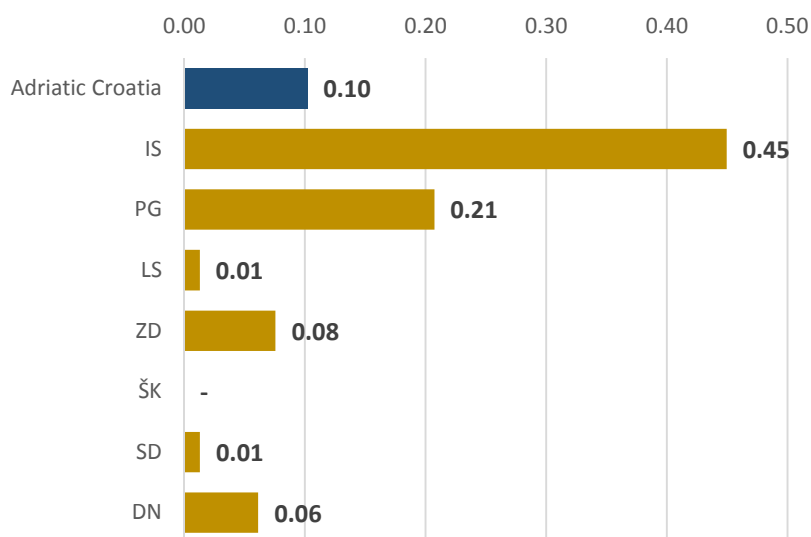
	2017/2016 (%)
IS	109.9
PG	107.5
LS	116.3
ZD	112.9
ŠK	111.1
SD	112.1
DN	113.5
Adriatic Croatia	111.0

**Comments** The extra pressure of solid waste generated by tourists in relation to residents is estimated to 0.16. The highest rate is recorded in Country of Istria (0.3), proportionally to the highest number of tourists overnights. The rate of tourist’s waste production increased in comparison to 2016 for 11%.

CROSTO indicator	Percentage of tourism enterprises using voluntary certification/labelling for environmental Corporate Social Responsibility
UNWTO mandatory issue	-
ETIS section	A Destination management
ETIS criterion	A.1 Sustainable tourism public policy
Description / Scope	To measure the awareness of accommodation providers regarding environmental/quality/sustainability and/or Corporate Social Responsibility in their operation
Approach	Ad-hoc survey planned for 2019
Data source/s	There is no currently available list of certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility for tourism enterprises/facilities in Adriatic Croatia. In cooperation with Ministry of Tourism and Croatian Agency for Environmental and Nature Protection a survey of all accommodation facilities aimed at collecting such data is planned for 2019
Limitations / issues	<ul style="list-style-type: none"> <li>Collecting and monitoring certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility in household accommodation facilities could be a specific issue due to the huge number of such facilities available in Adriatic Croatia and willingness of their owners to participate in such survey</li> </ul>
Figure	<b>Data N/A</b>
Comments	-

CROSTO indicator	Percentage of destination area out of the settlement's boundaries built for tourist purposes
UNWTO mandatory issue	Governance
ETIS section	-
ETIS criterion	-
Description / Scope	To measure and monitor areas out of the settlement's boundaries which is built or designated for tourist purposes
Approach	Indicator is used instead of the proposed one '% of destination area subject to control (density, design, etc.)' since it is evaluated as more important for the area of Adriatic Croatia
Data source/s	Ministry of Construction and Physical Planning (2012) Izvješće o stanju u prostoru Republike Hrvatske 2008-2012 [National Report on the State of Spatial Development of the Republic of Croatia 2008-2012] Since there are no new data, the indicator is the same as in 2016
Limitations / issues	<ul style="list-style-type: none"> <li>No updates on the state of spatial development of the Republic of Croatia</li> <li>Due to high number of rooms/apartment/houses available for rent within towns/villages in the Adriatic Croatia, it is of outmost importance for the Adriatic Croatia to extend this indicator to measure the % of built area for renting purposes within the settlement's boundaries; for example, 19% of all dwelling in the Adriatic Croatia are used for short-term rental in tourism</li> </ul>

**Figure 12:**  
**Destination area out of the settlement's boundaries built for tourist purposes in Adriatic Croatia in 2017 by counties (in %)**



Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

Comments	On average, only 0.1% of the area outside the settlements is already built for tourist purposes. The highest (above average) percentage of built area is in Istria (0.45%) and County of Primorje-Gorski Kotar (0.21%).
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## Establishing measurement at the local level

Since the measurement covers entire counties (NUTS3 regions), not just their coastal areas which are heavily burdened by tourism, but also big hinterland area which are underdeveloped, we found great differences on the local level, and thus result in average values and offer a general insight into the state of sustainability. Therefore, since 2018, the measurements have been initialized at local level, where six destinations have been selected for the purposes of measurement, which have very diverse features. Selected pilot destinations for measurement at the local level are the cities / municipalities: Rovinj, Mali Lošinj, Novalja, Hvar, Ston and Dubrovnik.

In designing a model of sustainability measurement at the local level, we started from the fact that the continually participatory stakeholder involvement in the process is the key of success and that it is an important strategic resource that can and should be used to plan sustainable development. This fact is particularly important due to the complexity of the process, whereby measuring the sustainability of tourism is a process that must include stakeholders from the fields of energy distribution, communal services, social services and tourism. Therefore, it is necessary to consider the factors that determine the individual dimension of sustainability, to determine what are the management characteristics at the town or municipal level and to establish a network of stakeholders that must be involved in the process.

The re-selection of the pilot destination was intended to ensure the representation of different typologies of destinations in order to test the measurement system in different environments, whereby the following basic criteria have been used in the process:

- Location - Inclusion in the measurement of destinations along the NUTS 2 region of Adriatic Croatia, representing northern (Rovinj, Mali Lošinj), middle (Novalja, Hvar) and south Adriatic (Ston, Dubrovnik);
- Geographical features- the inclusion of coastal (Rovinj, Ston and Dubrovnik) and island towns (Mali Lošinj, Novalja, Hvar) as two groups characterized by different levels of accessibility, environmental and social sensitivity and economic opportunities;
- Tourist development - inclusion of different levels of tourist development (measured by the number of overnight stays), from those most developed in Croatia (Dubrovnik, Rovinj), through high (Mali Lošinj, Novalja) and middle-developed (Hvar) to developing destination (Ston) ;
- Tourism types - inclusion of destinations of different strategic orientations, focusing on all the high quality of services differentiates destinations that make their position and recognisability in the tourist market an extraordinary cultural and historical heritage (Dubrovnik, Ston), combining cultural, attractiveness (Hvar, Rovinj), 'party' orientation (Novalja) and specialization for health, naturalness and vitality (Mali Lošinj);
- Exposure to the negative impacts of tourism - inclusion of destinations that are due to their resource-attraction features on the one hand, and the level of tourist development and the type of tourist activity on the other hand, already exposed to significant (Dubrovnik, Novalja, Hvar), medium (Rovinj, Mali Lošinj ) and smaller (Ston) pressures of tourism with negative consequences on the spatial, cultural and social features of the site;
- Tourism management - inclusion of destinations with high-level availability of human and organizational capacities in the tourist community and in the city / municipal administration for the implementation of systematic measurements of tourism sustainability and participation in future CROSTO activities.

The number of pilot destinations was limited to six, given the potential of a small team of the Tourism Institute and the Ministry of Tourism to manage the pilot-measurement process. However, the chosen destinations are identified as tourist 'champions' in their regions and are planning to be included in the forthcoming stages of the project and play an important part in spreading CROSTO network by motivating and involving other destinations in the measurement process.

A preliminary meeting was held with the selected pilot destinations, after which each destination appointed a local coordinator. The role of the local coordinator of the CROSTO Observatory is to

establish which are the institutions that must be included in the measurement. In addition, the local coordinators in each destination have formed a local working group whose task is to collect and deliver the data from the institution they are working in (eg. water supply company, waste disposal company, etc.).

The members of the CROSTO Observatory have, within the framework of establishing the local measurement process, carried out two workshops and a series of field visits and consultations with the local project coordinators at pilot-level and, where appropriate, meetings with local working groups. The objective of field consultations is to identify problematic issues when collecting data needed to measure at the local level, as well as finding possible solutions. Furthermore, field visits and meetings have identified a set of problematic topics from which specific indicators of tourism sustainability will be synthesized for each destination. Although the process of establishing measurements at the local level is still ongoing, we can distinguish some of the main elements that have been noted thus far in the development of the process:

- - A motivated local coordinator is the most important element of successful measurement;
- - The local coordinator should preferably be from the local administration (she/he must have “mandatory power” – for example, deputy mayor);
- - The local coordinator and other stakeholders need precise guidelines for the process;
- - In smaller places, it is easier to perform ad-hoc surveys, but more difficult to acquire institutional data;
- - A specific approach is needed for each destination due to the diversity of the data collection process / data availability.

## Motivational and educational stakeholder workshops for pilot destinations

The process of organizing tourism sustainability measurements on local level involved the organization of two workshops with pilot destinations. The first workshop had an informative and motivational character, while the second one was educational introducing the stakeholders to how the CROSTO system on local destination level is envisioned and how indicators are to be measured. Both workshops were held at the Ministry of Tourism. The workshops are described in more detail below:

- **1<sup>st</sup> Workshop – Introduction to CROSTO and becoming a pilot destination**

The workshop was attended by local government and/or tourism board representatives from all of the invited pilot destinations. They were introduced to CROSTO as part of UNWTO's International Network of Sustainable Tourism Observatories (INSTO) and also to CROSTO organizational structure or the, so called, Interinstitutional Working Group comprised by the Institute for Tourism, Ministry of Tourism, Croatian Agency for Environment and Nature, National Bureau of Statistics and Croatian Tourism Board. The results of tourism sustainability measurements on regional level were presented and the representatives were briefed on the ETIS framework and, specifically, on 14 base indicators to be measured on local level.

The workshop emphasized the benefits for destinations in joining CROSTO and, specifically the role a tourism sustainability measurement system can play as an indispensable information base for destination management. Steps destinations need to take in order to become part of the CROSTO initiative were outlined, as well as the support the Institute for Tourism will provide in setting up a common methodology for data collection, analysis, archiving and dissemination. Finally, the Island of Lošinj Tourism Board, as the only destination already implementing the ETIS system in Croatia, shared their experiences with other prospective pilot destinations.

- **2<sup>nd</sup> Workshop – Tourism sustainability indicators and conducting the measurements**

Following a period of in-destination consultations, all the invited pilot destinations decided to join the CROSTO initiative and all also participated in the 2<sup>nd</sup> CROSTO workshop. The main goal of this workshop was to familiarize the participants with 14 base tourism sustainability indicators selected from ETIS. Each indicator's importance, required data, sources of data and calculation method were explained.

The destinations were then presented with a timeline, spanning the period from July to December of 2018 in which they would need to: a) name a local CROSTO coordinator, b) form a local Working Group, c) inform the local data providers of the CROSTO initiative and of their role in it, d) collect the data and perform necessary calculations, e) schedule a field visit with members of the Institute for Tourism team, f) disseminate results and organize local promotion of CROSTO and their role in it.

## Dissemination

The development of tourism sustainability monitoring system at regional, and even more on local level, depends on the awareness of stakeholders in the destination of the importance of measuring sustainability of tourism as a basis for further management activities. Given that awareness depends, inter alia, on public opinion that can be created through various activities, one of the goals of CROSTO observatory is to increase the visibility of process. Therefore, two major activities were undertaken during the last year:

- establishment of the CROSTO Observatory website
- organization of the 1st annual conference of the CROSTO Observatory

The CROSTO Observatory Web site is a dissemination activity that is directed towards the largest number of stakeholders at the local, regional, and international level. The website provides a series of general information (general information on the Observatory, Founder Institutions, Mission and Goals, Foundation Documents, INSTO Network Information and Contacts). Furthermore, 15 basic indicators are presented on website, including basic information on each indicator (explanation, description, access and data source). In the Useful Documents section, users can find out more detailed information about ETIS and download the ETIS Indicator Manual. In the same category there is also an explanation of UNWTO's methodology and link for useful documents. Ultimately, in the Pilot Destination category, a short profile was presented for each destination, local coordinators' contacts were associated, and results of measurement and information on establishing the measurement process will be published in the future. The News category has the function of continuously reporting on the activities of members of CROSTO, as well as about the activities of establishing the process, involving new destinations in the process and the like. The site is created in Croatian and English, which aims to enable the domestic stakeholders to make use of the knowledge gained by the establishment of a measurement project as well as to the internationally interested public, primarily to other INSTO observatories who wish to use the methodology developed by the CROSTO Observatory.

As an important dissemination activity of the project, the CROSTO Observatory Conference was organized on the topic: "Measuring Tourism Sustainability in Practice". The conference was held on November 29, 2018 at the House of Europe in Zagreb organized by the Institute for Tourism and the Ministry of Tourism of the Republic of Croatia, under the auspices of Kolinda Grabar-Kitarović, President of the Republic Croatia. Conference's focus was on setting up a process of measuring and monitoring the sustainability of tourism, as well as on linking with international practices. The participants of the conference were representatives of regional and local tourist boards, municipalities, cities and counties, universities and polytechnics, private sector (hoteliers, agencies, consultants), public institutions for nature protection, public spatial planning institutions, non-governmental organizations, media and representatives of foreign institutions. The conference was organized in two sessions:

- 1. SESSION: Sustainability Indicators in Theory and Practice - Review of Practices at the International, European, National, Regional and Local Level, with an emphasis on issues of establishing the process and further measuring progress;
- 2. SESSION: Determination of limits of growth – emphasis was placed on protected natural and cultural areas, and their management based on sustainability indicators and the determination of the carrying capacity.

In the second of the conference, a panel discussion was held on "Establishing a system for monitoring the indicators of sustainable tourism and establishing limits of growth ". In conclusion, main task of this conference was to raise public awareness considering measuring sustainability of tourism at all levels, the benefits arising from it, and ultimately the necessity of institutionalization of the process.



## Further development/recommendations

Previous activities of CROSTO observatory since its establishment in 2016 and also the successful integration of national institutions and pilot destination on the local level, as well as the implementation of second county sustainable tourism measurement along with initial local measurement indicate the interest and the need of creating a system of measuring the sustainability of tourism in Croatia. With the improvement of the measurement methodology, we consider that we should systematically work in the following activities in the future:

### ACTIITIES OF PROJECT EXPANSION

- Increasing the number of destinations at the local level included in the national CROSTO network - after the pilot phase has been carried out it is desirable to have continuous phasing or widening of measuring the sustainability of tourism on a larger number of destination in both the Adriatic and continental Croatia.
- Expanding regional level measurement on the continental Croatia - after the establishment of the measurement system at the 7 coastal counties, it is necessary to expand measurement on the continental counties, where the measurement would include 21 counties. The purpose of measurement in less developed tourist counties would be informed management development.
- Use of measuring results - results should be used as the basis for all future development strategies, plans and policies at all levels from national to local, and the basis for determining priorities and funding sources.

### METHODOLOGY IMPROVEMENT

- Expansion of the list of base indicators – current list of base indicators is solution which was initially tested the ability of data collection, calculation of the indicators, and weakness / strength of the individual indices. It has been noted that some problematic issues are not sufficiently covered by the current list of base indicators, and it is therefore necessary to establish additional 5 to 10 indicators in the area of demography, transport and nature conservation.
- Creating a database on tourism sustainability - supported by all relevant national institutions, with emphasis on the Central Bureau of Statistics, but also with the support of the Croatian Environment and Nature Agency / Ministry of Environmental Protection and Energy, the Croatian Tourist Board (eVisitor), the Ministry of Tourism (eTourism), the Institute for Tourism, the Energy Institute Hrvoje Požar, Croatian Waters, Croatian Institute for Spatial Development, Oceanographic Institute and others. Based on this database it would be easier to provide data analytics, create new relevant indicators, but also continuously improvement of measurement process.

### INTERNATIONAL COOPERATION

- Inclusion of measuring sustainability of tourism as EUSAIR Activity - The Fourth Pillar of EUSAIR: "Sustainable Tourism" is concerned with developing the region's full potential in terms of innovative, sustainable and responsible tourism. In this regard, and given that the Ministry of Tourism, together with Albania, coordinates the fourth pillar of the Strategy, it is necessary to include the CROSTO Observatory's activities in the Adriatic-Ionian Strategy itself.
- Intensifying international co-operation and creating partnerships - opportunities for international co-operation are very extensive, covering various themes and factors. There is the opportunity for possible cooperation with other sustainable tourism observatories, international organizations UNWTO / EC and / or tourism institutions, as well as within partnerships on EU or other international projects.

## ACTIVITIES OF PROJECT POPULARISATION

- Popularization of the CROSTO initiative in domestic professional public and wider public - It is necessary to foresee the use of various techniques in communicating with the public in order to ensure their support, involvement and willingness to cooperate and to adapt their own methodologies and policies in order to achieve more integrated and successful destination management. One of the activities would be further continuous maintenance of the CROSTO Observatory Conference.
- Evaluation of involvement in the process of measurement - by the relevant institution (the Ministry of Tourism / HTZ) to increase the number of destinations in the process, which is a prerequisite for concrete information on the regional level. Evaluation implies acknowledgments, certifications, and / or achieving advantages in various applications. Finally, formalization of the process through the legislative framework would be recommended.