



CROATIAN  
SUSTAINABLE  
TOURISM  
OBSERVATORY:  
UPDATE REPORT

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## 1. INTRODUCTION

The development of tourism in accordance with the principles of sustainability requires a clear understanding of the current situation across all sustainability dimensions—economic, social, and environmental. This is particularly important in destinations like Croatia, where tourism contributes substantially to the gross domestic product. However, insufficient planning, weak program implementation, and a lack of coordination often result in fragmented governance. This, in turn, creates significant pressure on all three pillars of sustainability.

The newly adopted **Tourism Law of the Republic of Croatia**, along with its Bylaw on Sustainability Indicators, seeks to establish a coherent and legally binding framework to address these challenges and guide tourism development towards long-term sustainability. Destination Management Organizations (DMOs) play a vital role in this process by linking public institutions, utility and tourism service providers, and actively participating in the transition to sustainable tourism destinations.

Although sustainability is a widely discussed concept, its actual integration into tourism policy and practice—particularly through measurable and actionable indicators—remains limited. This raises the question of whether the inclusion of destinations into sustainability frameworks can be evaluated reliably, and how meaningful recommendations for improvement can be derived.

To address this need, the CROSTO – Croatian Sustainable Tourism Observatory was established in 2016, hosted by the Institute for Tourism, a national research institution with over 65 years of experience in tourism development and policy. In October 2016, CROSTO became a member of the UNWTO's International Network of Sustainable Tourism Observatories (INSTO), thereby adopting international standards for sustainable tourism monitoring.

While CROSTO played a key role in establishing local measurement practices and disseminating methodologies, the COVID-19 crisis disrupted systematic data collection and reporting. In light of this, and building on the new legislative framework, CROSTO is now reintroducing its monitoring efforts with a revised and aligned indicator set, fully consistent with national requirements.

This report marks a turning point, as we are initiating a transition towards a new, legally grounded monitoring model that aligns with the Tourism Law and the Bylaw on Sustainability Indicators. The new CROSTO indicator set consists of 20 indicators: 17 mandatory and 3 additional thematic indicators selected from the list of specific indicators defined in the legislation. Collectively, this indicator set covers all 11 mandatory sustainability areas defined by the UNWTO INSTO framework, thus ensuring international comparability while maintaining national relevance.

The monitoring is geographically scoped to the NUTS 2 region of Adriatic Croatia, and its seven associated NUTS 3 counties, providing both regional and local insight into tourism sustainability dynamics.

Accordingly, this document aims to:

- Present guidelines for improving the monitoring and evaluation of sustainability in tourism;

- Define a harmonized and comprehensive methodology for measuring and interpreting the selected indicators;
- Establish a structured approach for data collection and reporting aligned with both national legal obligations and international standards.

Through this renewed approach, we aim to strengthen data-driven governance, support evidence-based decision-making, and foster sustainable development practices across all levels of Croatia's tourism system.

## 2.OVERVIEW OF EXISTING PRACTICES

### 2.1. International practices

Indicators are tools that show the state or change of the system, quantifying data through professional processing. In the context of sustainable tourism, these indicators play a key role in monitoring, reporting and guiding development policies. It is essential that they are politically relevant, robust, connected to priorities, coherent, feasible, accessible, and valid. They can be simple or composite, and are used to assess sectoral development, measure progress and strategy for the future. It is crucial to establish the indicator framework in a systematic manner, taking into account the interconnection of indicators and their interdependence with other sectors. Adapting indicators in line with the challenges of data collection and defining a long-term indicator framework are essential.

Professional and scientific literature, as well as examples of good practice, highlight the following indicator frameworks and documents important for the development of the first comprehensive set of indicators - indicator framework of sustainable tourism in the Republic of Croatia at destination level:

- o UNWTO, 2004. Indicators of Sustainable Development for Tourism Destinations. A Guidebook, World Tourism Organization, Madrid, Spain.
- o European Commission, 2016 European Tourism Indicator system. ETIS Toolkit for Sustainable Destinations.
- o Dupeyras, A. and MacCallum, N. (2013). Indicators for Measuring Competitiveness in Tourism: A guidance Document, OECD Tourism papers, 2013/02, OECD Publishing.
- o GTSC (2013) Global Sustainable Tourism Council criteria for Destinations (GSTC-D) version 1.0 November 2013.
- o The system of environmental-Economic Accounting 2012-EEA Central Framework (EEA Central Framework) and linking the TSA and the EEA: A Technical Note
- o UNWTO, Statistical Tourism satellite account Program Measuring Sustainable Tourism (2016) developing Statistical Framework for Sustainable Tourism
- o UNWTO, Measuring the sustainability for Tourism (MST): Proposal for a set of indicators (October 2023).
- o European system of accounts — ESA 2010, Regulation (EU) No 549/2013 of the European Parliament and of the Council of 21 May 2013
- o System of National Accounting 2008 [SNA 2008], European Commission, International Monetary Fund, Organization for Economic Co-operation and Development, United Nations, Word Bank
  - o European environmental economic accounts, EEEA, Regulation (EU) No 691/2011 on European environmental economic accounts
- o Tourism satellite account: Recommended Methodological Framework 2008 [TSA: RMF 2008], United Nations, World Tourism Organization, Commission of the European Communities, Organization for Economic Co-operation, and Development
- o International recommendations for Tourism Statistics 2008 [IRTS 2008], United Nations, World Tourism Organization.
- o COMMISSION DECISION (EU) 2017/175 on 25 January 2017 on establishing the EU Ecolabel criteria for

tourist accommodation (notified under document number C (2017) 299) (text with EEA relevance)

- o COMMISSION REGULATION (EU) 2018/2026 on 19 December 2018 amending Annex IV Regulation (EC) No 1221/2009 of the European Parliament and of the Council on the voluntary participation of organizations in a community eco- management and audit scheme (EMAS)
- o COMMISSION DELEGATED REGULATION (EU)/... supplementing Directive 2013/34/EU of the European Parliament and of the Council with regard to sustainability reporting standards for [https://eur-lex.europa.eu/legal-content/HR/TXT/PDF/?uri=PI\\_COM:C\(2023\)5303](https://eur-lex.europa.eu/legal-content/HR/TXT/PDF/?uri=PI_COM:C(2023)5303).
- o HRN EN ISO 14001 Environmental management systems – Requirements with instructions for use (ISO 14001:2015; EN ISO 14001:2015)
- o ISO/TC 228. ISO TC 228/WG 13 – Sustainable Tourism. Draft of New Proposal: Sustainable Tourism – indicators for organizations – requirements and guidance for use (2022-04-13).
- o Croatian Observatory for sustainability of Tourism (CROSTO): Guide for measuring and monitoring sustainability of Tourism for destinations, Institute for Tourism, Zagreb 2019 (UNWTO/INSTO)
- o National list of indicators, Ministry of economy and Sustainable Development, 2018, Chrome - extension://efaidnbmnnnibpcajpcglclefindmkaj/[https://www.haop.hr/sites/default/files/uploads/dokumenti/06\\_integrirane/dokumenti/nlp/-.pdf](https://www.haop.hr/sites/default/files/uploads/dokumenti/06_integrirane/dokumenti/nlp/-.pdf).

## 2.2. Conceptual Framework and Tourism Law

As part of the current reform of sustainable tourism development in the Republic of Croatia, the **Strategy for sustainable tourism development until 2030** was adopted. This document defines the following ten key challenges from the economic, social, and environmental aspects of tourism development, as one of the key economic branches of the Croatian economy:

- Time and space inequality,
- Adverse impact of tourism on the environment and nature,
- The unfavorable interrelationship between tourism and climate change,
- Adaptation to accelerated technological changes in tourism,
- Quality of life and well-being of the local population,
- Insufficient human resources in abundance and quality,
- Inadequate structure and quality of accommodation,
- Adverse business and investment environment,
- An insufficiently effective legislative and governance framework; and
- The impact of crises on tourism and changes in the behaviour and needs of tourists.

Among these key challenges, this document elaborates on the challenges of *the Adverse impact of tourism on the environment and nature* and *the Unfavourable interrelation between tourism and climate change*, which are also related to other mentioned challenges, such as the unfavourable business and investment environment, the impact of crises on tourism, or changes in the behavior and needs of tourists.

The current trends, as well as the direction outlined by the EU Green deal, provide clear directions for the

overall sustainability of the tourism sector, local community, and businesses (of all sizes and activities) to focus on:

- resource efficiency (energy, water, space, biodiversity)
- prevention of emissions or pollution in environmental components (air, water, sea, soil), including greenhouse gases
- and increasing resilience to climate change.

Indicators of the national strategy were therefore considered to ensure their link with the process of creating a list of indicators at destination level (Table 2.2).

**Table 2.1.** Indicators of the Strategy for the Development of Sustainable Tourism of the Republic of Croatia until 2030

SROT 2030 (OG 2/23)	Indicator name	Data sources
SC2, PP 2.1. Reducing the burden of tourism on environmental components and nature and PP 2.2. reducing the negative impact of tourism on space	II.02.8.21 travel and Tourism Development Index (TTTDI – WEF) – environmental sustainability	T & T sustainability, available at: <a href="https://www.weforum.org/reports/travel-and-tourism-development-index-2021/explore-the-data">https://www.weforum.org/reports/travel-and-tourism-development-index-2021/explore-the-data</a>
SC2, PP 2.3. Reducing the negative impact of tourism on the climate	II.02.8.27 emissions of CO <sub>2</sub> to air according to NACE (Revision II) tourism activities	Air Emissions accounts by NACE Rev. 2 activity, Accommodation and food services activities, available at: <a href="https://ec.europa.eu/eurostat/databrowser/view/ENV_AC_AINAH_R2_custom_7079216/default/table?lang=en">https://ec.europa.eu/eurostat/databrowser/view/ENV_AC_AINAH_R2_custom_7079216/default/table?lang=en</a>
SC4, PP 4.3. Improving the data monitoring system	II.02.8.2 travel and Tourism Development Index (TTTDI – WEF) – demand drivers	T & T demand drivers available at: <a href="https://www.weforum.org/reports/travel-and-tourism-development-index-2021/explore-the-data">https://www.weforum.org/reports/travel-and-tourism-development-index-2021/explore-the-data</a>



Furthermore, the elaboration of strategic orientation and the formulation of measures is defined in the **National Sustainable Tourism Development Plan by 2027**. As stated in the document, “the medium-term vision of sustainable tourism of Croatia is achieved by the implementation of specific goals by 2027, which is monitored by the achievement of defined outcome indicators”, which ensure the assessment of whether:

- conditions for reducing the seasonality of Croatian tourism and whether tourism is moving towards year-round business with increasing tourist traffic on the continent and in the hinterland, including the interior of the island
- systematic sustainable management of the environment and space, based on the reception capacity of the destination, contributing to climate change reduction.
- growth in number and strengthening of human resources with the development of lifelong learning programmes and growth of wages in tourism
- fostering innovation and digital transformation of tourism
- improving the legislative framework and business environment are in function of increasing investments and competitiveness of Croatian tourism
- establishment of a data monitoring system and development of IT tools to monitor the realization of the goals of Croatian tourism and provide the basis for making business decisions and measures of tourism policy.

Indicators of the national plan were therefore considered, to ensure their link with the process of creating a list of indicators at destination level.

**The system of Sustainable Tourism satellite accounts of the Republic of Croatia** for the national and regional level, established from April 2023 to June 2026 as a necessary tool for public policy management, is a joint project of the Ministry of Tourism and sports, the Ministry of Science and Education and the Institute for Tourism. Among other things, the system will obtain data based on the collection of data from secondary sources and primary research. In the future, this data will be one of the bases for producing concrete indicators, defined in the framework of the C1.6 reform of National recovery and Resilience Plan 2021 2026. (NPOO) and national strategic-planning and implementing documents.

Data to be collected in the framework of primary research are data on non-commercial tourist accommodation, same-day visitors and attitudes of the local population, data on environmental impacts of road traffic (bus terminals), nautical tourism with an emphasis on charter yachting and domestic cruise, on road liner and individual passenger transport, as well as on travel agencies and providers of accommodation services and food preparation and service. Data available from secondary sources are an equally important basis for the calculation of indicators, for example: information on rail, coastal liner passenger traffic, protected natural values and cultural heritage.

Under the **Tourism Law, in Article 4** a destination is defined as “market and tourism valorised spatial unit which represents the goal of tourist trips and covers the area of one or more local or regional government units”. The elements of the tourist destination are:

- space
- public tourism infrastructure
- business tourism infrastructure
- utility infrastructure
- tourist attractions
- human resources
- natural and cultural goods
- identity and image
- public services and services
- traffic (moving and stationary).

Under **the Tourism Law, in Article 14, p. 2** destination sustainability indicators are defined as a tool for monitoring sustainability and informed management of tourism development which measure the impacts of tourism on the economic, social, environmental, and spatial aspects of destination sustainability:

- satisfaction of local population with tourism
- satisfaction of tourists and same-day visitors with the destination
- Accessibility of destination
- Security of destination
- sustainable destination management
- management of water resources
- waste water management
- waste management
- protection of biodiversity
- sustainable energy management
- climate change mitigation and adaptation
- sustainable management of space
- tourist traffic
- tourism infrastructure
- business of economic operators in tourism.

Furthermore, the Law defines the choice of:

- a) mandatory indicators, which the destination has an obligation to monitor
- b) specific indicators, chosen voluntarily by the destination (depending on the type and its development orientation).

Mandatory sustainability indicators are monitored at the level of each destination.

Specific sustainability indicators to be monitored at destination level are determined by the destination Management Plan.

The list of mandatory and specific indicators for monitoring sustainability, the source and recording of data necessary for the calculation of indicators, deadlines, as well as the manner of monitoring sustainability is stipulated by the Minister in the ordinance referred to in Article 13 (4) of the Tourism Law.

### 3.METHODOLOGY AND PROPOSAL OF INDICATORS SYSTEM

The methodology for selecting indicators for destination level is informatorily based on existing indicators of higher territorial levels. The basis of this research is therefore the existing destination indicator frameworks covering several hundred indicators, of which a smaller part are those for which the calculation methodology has been established and which are ultimately monitored in a meaningful and continuous manner.

#### 3.1. Methodology for selecting relevant indicators for sustainability of tourism

Majority of tourism traffic of the Republic of Croatia takes place in seven coastal counties: Istria County, Primorje- Gorski Kotar County, Lika-Senj County, Zadar County, Šibenik-Knin County, Split- Dalmatia County and Dubrovnik-Neretva County (NUTS-3). These counties are the key area for establishing the measurement system at regional level, and the tendency is to measure sustainability to cover all others (continental counties).

However, the current top-down approach of the international tourist board in establishing the data flow and methodology of their processing and public display with indicators did not ensure a continuous and unhindered data flow, nor the uniformity of their processing (methodology) for all aspects of sustainability, except for the economic aspect and partly social. Namely, tourism statistics mostly cover the national level, rarely regional, and are mainly based on economic indicators on tourism turnover and employment in tourism (e.g. Eurostat). It can be said that tourism, due to its complexity and fragmentation in monitoring a wide range of data from diverse economic sectors (NKDs), encompasses a major challenge for the environment and natural resources (apart from air emissions accounts, but only for accommodation and food preparation and service activities). The data situation of the safety strand in terms of human well-being and health is even more challenging, as there is no data at national or regional levels which monitor this area.

Furthermore, the methodology for selecting indicators for destination level is informally based on existing indicators of higher territorial levels. The basis of this research is therefore the existing destination indicator frameworks covering several hundred indicators, of which a smaller part are those for which the calculation methodology has been established, and which are ultimately monitored in a meaningful and continuous manner.

Since the Republic of Croatia is a member of the European Union and in order to comply with the recommendations of the European Commission, the European system of Tourism indicators for Sustainable destination Management - ETIS was used in the selection of basic indicators. However, given the INSTO initiative OF UNWTO, the scoreboard is fully adapted to all mandatory sustainability issues selected by

UNWTO. In this respect, all nine ETIS indicator sections will be applied and where possible, cover eight of the nine mandatory issues selected from UNWTO.

In accordance with the scientific and professional approach of considering existing resources, mapping, and evaluation of existing indicators of tourism sustainability, the following eminent frameworks of destination indicators of tourism sustainability were selected at international, EU and national level:

- the Global Sustainable Tourism Council (GSTC)
- Organisation for Economic Co-operation and Development (OECD)
- Measuring the sustainability of Tourism (MST- UNWTO)
- European Commission (EC- ETIS)
- Environmental management systems ISO 14001:2015, EMAS (eco-management and audit scheme) and EU Ecolabel
- sustainability report factors- ESG (environmental, Social and governance Reporting; ESRS factors), in order to reduce the potential risk of additional burden on economic operators in the tourism sector in terms of data monitoring and the publication of indicators.

The previously mentioned systems and frameworks provide comprehensive guidelines and standards for measuring sustainability in tourism. Here are a few reasons why these systems are important:

- Internationally recognised standards: These frameworks and systems are internationally recognised and widely accepted. This enables consistency and comparability between different destinations and tourist entities, fostering a global approach to sustainability of tourism.
- Interdisciplinary approach: These systems consider different aspects of sustainability, including environmental, social, and economic dimensions. This contributes to a holistic approach to sustainable tourism, taking into account the complexity of the challenges that tourist destinations face.
- Support for policies and guidance: OECD, UNWTO and EU play a key role in shaping policies and guidelines related to sustainable tourism development. The use of their frameworks contributes to alignment with international standards and sustainability objectives.
- Environmental management: ISO 14001:2015, EMAS and EU Ecolabel provide specific environmental management guidance. This is crucial for tourist destinations that want to reduce their ecological footprint and preserve natural and cultural goods.
- Reducing risks and burdens: including ESG factors in corporate reporting helps reduce potential risks and burdens for tourism operators. Transparent reporting on environmental, social and governance aspects contributes to stakeholder trust.
- Compliance with market trends: more and more travellers are looking for sustainable travel. The use of these systems helps destinations and tourism operators to respond to the growing demand for sustainable tourism and better meet the needs of modern travellers.

Ultimately, these systems provide structure and guidance so that tourist destinations can systematically monitor, assess, and improve their sustainability, which is crucial in an era when sustainable approaches have become crucial for the long-term success of tourism.

The conceptual framework for the analysis of indicators (Table 2.4) from the abovementioned relevant indicator frameworks was established on the basis of Thematic areas (Law on Tourism, Art. 14, p. 2):

- o satisfaction of local population with tourism
- o satisfaction of tourists and same-day visitors with the destination
- o Accessibility of destination
- o Security of destination
- o sustainable destination management
- o management of water resources
- o waste water management
- o waste management
- o protection of biodiversity
- o sustainable energy management
- o climate change mitigation and adaptation
- o sustainable management of space
- o tourist traffic
- o tourism infrastructure
  - o business of economic operators in tourism.

Each indicator is associated with a broader area of sustainability:

- o economical
- o social
- o environmental – climate
- o environmental — natural
- o spatial and organizational aspect of the sustainability of the destination.

Characteristic/attribute/relevance for data, data source and grade has been added to each indicator as a key basis for the analysis, selection, and prioritisation of the indicator:

Data type (information):

- o qualitative (informative)
- o quantitative (data and methodologically based).

Complexity of the indicator:

- o simple (single data and/or information)
- o composite (more than two data).

Data sources, necessary for the development of indicators:

- o secondary data sources (data publicly available)

- o secondary data sources (records, databases, registers in organizations and institutions requiring a specific application (not publicly available)
- o primary research (to be carried out in continuity, according to the agreed frequency, instrument, and sample).

Availability of data necessary for the production of indicators, based on territorial division:

- o regional
- o destination.

Relevance of indicators, based on geographical and climatic characteristics of destinations in the Republic of Croatia according to statistical division of the Croatian territory into two NUTS-2 regions for:

- o The continental Croatian (HR04)
- o The Adriatic Croatia (HR03).

Relevance of indicators, in relation to their usefulness for tourism development management tools defined in the Tourism Law, i.e. for:

- o Destination Management plans
- o Calculation of the carrying capacity of the destination.

**Table 3.1.** Evaluation Table

Indicator system		ETIS/GSTC/OECD/MST/EMAS/ISO/EU Ecolabel/ESG-ESRS
Indicator		(name)
Thematic area		Themes from the Tourism Law
Complexity	Simple indicator/composite (two data)	Yes/No
	Composite indicator	Yes/No
Data Type	Quantitative	Yes/No
	Qualitative	Yes/No
Data Source	Secondary data (publicly available)	Yes/ No /partially
	Secondary data (in databases/institutions and other requiring additional request or data processing)	Yes / No / partially
	Primary research	Yes / No / partially
Availability of data	Availability of data at regional level	Yes / No / partially
	Availability of data at local level	Yes / No / partially
Relevance	Relevance for the Adriatic Croatia	Yes / No / partially
	Relevance for continental Croatia	Yes / No / partially
	Relevance for the calculation of CC	Yes / No / partially
	Relevance for management plans	Yes / No / partially

According to Article 14 of the Tourism Law, for each of the sustainable areas defined by law, it is necessary to establish mandatory and specific indicators (electoral) that will be measured in accordance with the Management plan at destination level, therefore for each indicator apart from relevance, priority is determined based on:

- connection with selected indicators to the UN Sustainable Development goals (SDGs),
- logical checks, i.e. coherence of selected indicators and their robustness based on defined characteristics and attributes of indicators, data, and sources
- an overview of scientific and professional international, EU and national sources and good practices.
- Implementation of expert focus groups:
  - National expert Group for data and indicators (MINGOR, MINTS, IZTZG, EFST, FTMH, PMF, CBS, EIHP)
  - National expert Group of managing authorities (MINTS, TBs and LGUs)

During the process, the balance of indicators was considered through the identified dimensions of sustainability, relevance of indicators, availability of data, focus, unambiguity, etc. Also, in terms of defining the most useful set of indicators within the OECD indicator-oriented workshop, an expert working group was held with international authorities and regions experienced in implementing the indicator system. The proposed system of indicators is ultimately adapted to the context and possibilities of Croatian destinations, based on a series of amendments and a narrower overview of the terms.

### 3.2. Mandatory indicators

A total of 17 mandatory indicators were selected, for 15 different thematic areas from the Law (Table 2.5), with 2 indicators requiring primary research, while for other indicators data is available. However, there is often data that is not publicly available, but available on request, and therefore communication within the destination of different management bodies (DMO, City/Municipality, communal company, , HEP, etc.) is a prerequisite for data collection and calculation of indicators.

All the proposed indicators are relevant for monitoring the sustainability of tourism in Croatia, but they may present a significant challenge for continuous implementation for tourist boards in the future. Therefore, for the sake of clarity, a single methodological framework for the calculation of mandatory indicators has been defined. For each selected mandatory indicator there is: a definition and explanation of indicators (in some cases also sub-indicators), approach and link to key themes of the Tourism Law, necessary data and (potential) data sources, availability of calculation data, description or link to the description of the primary survey (if necessary), periodicity of data collection, calculation methodology, frequency of measurement and limitations.













**Table 3.2.** Methodological framework of mandatory indicators


Indicator (indicator code)	
Correlation of indicators with Systems	Correlation of indicators with international systems
	Links with the Tourism Law
	Link with SDGs
Characteristics of the indicator	Definition
	Description
	Sub-indicators (optional)
Data	Data name
	Unit of measurement
	Data Source/potential Source
	Availability of data and data gap
	Primary research (link to proposal)
	Periodicity of data collection
Methodology for calculating indicators	
Measurement frequency	
Indicator constraints	


All selected indicators include such tables, which are currently available in Croatian. Mandatory indicators are divided into categories based on areas of sustainability, and thematic areas from the Tourism Law, Article 14, as follows in the following table 3.3.

Table 3.3. Mandatory indicators, availability of data and feasibility assessment.

	Sustainability area	Monitoring system	Indicator	INSTO thematic area	Tourism Law- Indicator code / Thematic area	Availability of data from secondary sources	Primary research (Y/N)	Assessment of the feasibility of the indicators
1	Social	ETIS/UNWTO MST	Number of tourist overnight stays per one hundred permanent residents during peak tourist season	-	ZT-3 – satisfaction of the local population with tourism	Publicly available	NO	
2		ETIS/UNWTO – MST	Share of local population satisfied with tourism in the destination	Local satisfaction	ZT-2 – satisfaction of the local population with tourism	Data not available	YES	
3		UNWTO MST/ETIS	Satisfaction with the overall stay at the destination	Economic benefits	tourists and same day visitors with the	Partially available	YES	
4		UNWTO MST/ETIS	Share of attractions (sites) accessible to persons with disabilities	Accessibility	SD-1 - Security of the destination	Available upon request	NO	
5		GSTC	Number of organized tourist clinics (SD-1)	Governance	SD-2 - Security of the destination	Data available on request	NO.	

6	Environmental	ETIS	Water consumption ratio per tourist night in commercial accommodation with general water consumption of destinations population (per person; per night)	Water management	UVR-1 - Management of water resources	Available on request	NO	
7		ETIS	Ratio of communal waste generated per tourist night in commercial accommodation and waste generated by the population in the destination (kg (tonnes) per capita, per year or by month)	Solid waste management	GO-2 - waste management	Available on request	NO.	
8		UNWTO - MST	Share and categories of protected natural areas in the total area in the Republic of Croatia	-	BR-1 - Biodiversity protection	Data publicly available	NO	
9		ETIS	Ratio of electricity consumption per tourist night in commercial accommodation with consumption of electricity by the general population of the destination (per person; per night)	Energy management	UEN-1 - Sustainable energy management	Data partially available/available on request	NO	
10		GSTC	A system for climate change adaptation and risk assessment is established	Climate action	UPK-1 - Climate change mitigation and adaptation	Data publicly available	NO.	

11	Economic	UNWTO - MST	Total number of tourist arrivals in the months or quarters with the highest burden	Destination Economic Benefits	TP-1 - Tourist traffic	Data publicly available	NO.	
12		UNWTO – MST/ETIS	Average length of stay in the destination	Destination Economic Benefits	TP-2 - Tourist traffic	Data publicly available	NO.	
13		UNWTO - MST	Total number of employees in accommodation, food preparation and service activities	Employment	PGS-1 - Business of economic operators in tourism	Data partially available	NO.	
14		OECD	Business income of economic operators (corporate taxpayers) in accommodation and food preparation and service activities	Destination Economic Benefits	PGS-2 - Business of economic operators in tourism/Tourist traffic	Data available on request	NO.	
15	Spatial/Management	GSTC	Identification and classification of tourist attractions	-	TI-1 - Tourist infrastructure	Data publicly available	NO.	
16		GSTC	Status of the implementation of activities from the destination management plan	Governance	ODU-1 - Sustainable destination Management	Data partially available	NO.	




17		UNWTO - MST	Number of nights in commercial accommodation per hectare of built area of local government units	Governance	OUP-1 - Sustainable room Management	Data available on request	NO.	
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### 3.3. Specific indicators

In order to enable more comprehensive and systematic monitoring of tourism sustainability at the destination level, the Tourism Act and its accompanying Regulation on Sustainability Indicators provide for an additional set of 50 specific indicators. These indicators are structured across 15 thematic areas defined by the legislative framework, with the primary aim of objectively tracking the impacts of tourism on the social, economic, and environmental dimensions of development.

While some indicators rely on available secondary data sources, others require the implementation of primary research involving local communities, tourists, day visitors, and tourism-related businesses.

To ensure full alignment with the 11 core areas of sustainability monitoring established by the World Tourism Organization (UNWTO) for the International Network of Sustainable Tourism Observatories (INSTO), it was decided to supplement the legislatively proposed indicator set with three additional indicators—one addressing the issue of tourism seasonality and the other related to wastewater management. These indicators are already recognized and incorporated within the Regulation on Specific Sustainability Indicators, further ensuring their relevance and compliance with the national regulatory framework.

	Monitoring system	Indicator	INSTO thematic area	Tourism Law- Indicator code /Thematic area	Availability of data from secondary sources	Primary research (Y/N)	Assessment of the feasibility of the indicators
18	ETIS	Gross annual occupancy rate in commercial accommodation	Tourism seasonality	STP-1 – Tourism traffic	Publicly available	NO	
19	ETIS/ UNWTO – MST	Share of destination's wastewater treated to at least secondary level prior to discharge	Waste water management	SGOV-4 – Wastewater Management	Publicly available	NO	
20	ETIS	Percentage of tourism enterprises using voluntary certification/labelling for environmental Corporate Social Responsibility	Climate action	SUPK-1 – climate mitigation	Primary research	YES	

## 4. TOOLS DEVELOPED

Monitoring the sustainability of tourism is essential for ensuring the long-term development of destinations, and in Croatia, it is regulated by the Tourism Act, which mandates that each destination management plan must include the calculation of indicators for every destination in the Republic of Croatia. Accordingly, sustainability indicators are defined through two key bylaws developed by Ministry:

- **Bylaw on the Methodology for Developing Destination Management Plans<sup>1</sup>**
- **Bylaw on Indicators for Monitoring the Development and Sustainability of Tourism<sup>2</sup>**

The **Bylaw on Indicators** clearly defines both mandatory and specific indicators and details them through methodological tables. Each indicator is elaborated in the following structure:

- Indicator Linkages (Connection with international frameworks, Croatian Tourism Act, and Sustainable Development Goals)
- Indicator Characteristics (Definition, Description)
- Data (Name of data, Unit of measurement, Data source/potential source, Data availability and data gap, Data collection frequency)
- Calculation Methodology
- Measurement Frequency
- Zoning
- Limitations and Perspectives of the Indicator

To support this bylaw, additional tools have been developed by Ministry of Tourism and Sports to facilitate data collection and indicator calculation<sup>3</sup>:

- **Calculation of Mandatory Indicators**
  - Excel spreadsheet for direct data input and automatic calculation of 17 core indicators.
- **Guidelines for Data Collection from Secondary Sources**
  - Excel file with detailed instructions on where to find data, including step-by-step visual guides to data sources.
- **Calculation of Specific Indicators – Social Sustainability Aspects**

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<sup>1</sup> NN (112/2024). [https://narodne-novine.nn.hr/clanci/sluzbeni/2024\\_09\\_112\\_1890.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2024_09_112_1890.html)

<sup>2</sup> NN (112/2024). [https://narodne-novine.nn.hr/clanci/sluzbeni/2024\\_09\\_112\\_1891.html](https://narodne-novine.nn.hr/clanci/sluzbeni/2024_09_112_1891.html)

<sup>3</sup> MINTs. <https://mint.gov.hr/alati-za-upravljanje-razvojem-turizma-u-destinaciji/23970>

- Excel spreadsheet for direct data input and automatic calculation of specific social sustainability indicators.
- **Guidelines for Collecting Data for Specific Social Indicators from Secondary Sources**
  - Excel file with detailed instructions and visual guides to secondary data sources.
- **Guidelines for Conducting Local Resident Attitude Surveys**
  - Document outlining methods, sampling, quality control, and the questionnaire for primary research on local residents.
- **Guidelines for Conducting Visitor Satisfaction Surveys**
  - Document describing methods, sampling, quality control, and the questionnaire for primary research with tourists and same-day visitors.
- **Guidelines for Conducting Business Surveys**
  - Document outlining methods, sampling, quality control, and the questionnaire for primary research with tourism-related businesses.
- **Guidelines for Collecting Data for Specific Environmental Indicators from Secondary Sources**
  - Excel file with detailed instructions and visual guides to environmental data sources.
- **Calculation of Specific Environmental Sustainability Indicators**
  - Excel spreadsheet for direct data input and automatic calculation of grouped specific indicators (social, environmental, spatial, and economic).
- **Guidelines for Collecting Data for Specific Economic Indicators from Secondary Sources**

Excel file with detailed instructions and visual guides to economic data sources
- **Calculation of Specific Economic Sustainability Indicators**
  - Excel spreadsheet for direct data input and automatic calculation of grouped specific indicators (social, environmental, spatial, and economic).

To ensure a high-quality framework for monitoring tourism sustainability at the destination level, the methodology for indicator selection in Croatia is based on international systems, while indicators are tailored to national needs and data availability. In this way, Croatian destinations are equipped with tools that are both aligned with global practices and adapted to the specific challenges of local tourism.



## Update Report

Furthermore, the Ministry of Tourism and Sports organized regional workshops on the Tourism Act and its accompanying regulations and guidelines for destination representatives and holders of Management Plans, including local and regional tourist boards. In addition to presenting the legislative framework and destination management plans, carrying capacity calculation, emphasized conclusions and recommendations for closing the gap between the current state and the preferred or acceptable changes in selected indicators, were also addressed.

## 5. INDICATORS RESULTS FOR 2023.

In this part a total of 11 of selected 20 indicators is presented with their results, along with their limitations and interpretation. Since the data refers to 2023, some indicators are not yet measurable. For example, tourist clinics are being established based on legislation enacted only in 2023. Additionally, there has been no prior research into the attitudes of the local community, and destination management plans are still under development, making it impossible to assess their implementation at this stage.

### 1. Number of tourists overnight stays per one hundred permanent residents during peak tourist season

Indicator	Number of tourists overnight stays per one hundred permanent residents during peak tourist season																									
INSTO mandatory area	-																									
International monitoring system	MST / ETIS																									
Approach	Composite indicator based on secondary data. The indicator defines the total number of tourist overnight stays in the destination in relation to one hundred permanent residents during the peak month considered the main tourist season, which also implies the greatest strain both in terms of infrastructure and social aspects.																									
Data source/s	eVisitor CBS, First Release 7.1.3. POPULATION ESTIMATE OF REPUBLIC OF CROATIA, 2023																									
Limitations / issues	<ul style="list-style-type: none"> <li>Same-day visitors and tourists in non-commercial accommodation were not included</li> </ul>																									
Results	<table border="1"> <thead> <tr> <th></th><th>IS</th><th>PG</th><th>LS</th><th>ZS</th><th>SK</th><th>SD</th><th>DN</th><th>Adriatic Croatia</th></tr> </thead> <tbody> <tr> <td>Result</td><td>12,62</td><td>5,47</td><td>7,06</td><td>6,38</td><td>5,70</td><td>3,91</td><td>5,20</td><td>6,21</td></tr> </tbody> </table> <p>Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva</p>									IS	PG	LS	ZS	SK	SD	DN	Adriatic Croatia	Result	12,62	5,47	7,06	6,38	5,70	3,91	5,20	6,21
	IS	PG	LS	ZS	SK	SD	DN	Adriatic Croatia																		
Result	12,62	5,47	7,06	6,38	5,70	3,91	5,20	6,21																		

<b>Comments/ Interpretation</b>	Istria, the most tourism developed county, has 12,62 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 (3,91).
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### 3. Percentage of tourists who are satisfied with their overall experience in the destination

Indicator	Percentage of tourists who are satisfied with their overall experience in the destination																									
<b>INSTO mandatory area</b>	Destination Economic Benefits																									
<b>International monitoring system</b>	MST / ETIS																									
<b>Approach</b>	Direct use of secondary data from the previous year (2022/23 TOMAS 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.																									
<b>Data source/s</b>	TOMAS Croatia 2023- Survey on Attitudes and Expenditures of Tourists in Croatia in 2022/23 (Institute for Tourism); sample size of almost 14,5 thousand tourists in commercial accommodation facilities in Adriatic Croatia; data were collected from June 2022 to June 2023																									
<b>Limitations / issues</b>	<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>TOMAS Summer survey has not been conducted in 2022 and 2023; it is a longitudinal survey, conducted every three; its execution is not stable</li> </ul>																									
<b>Results</b>	<table border="1"> <thead> <tr> <th></th><th>IS</th><th>PG</th><th>LS</th><th>ZS</th><th>SK</th><th>SD</th><th>DN</th><th>Adriatic Croatia</th></tr> </thead> <tbody> <tr> <td>Result</td><td>90,8</td><td>89,6</td><td>97,0</td><td>95,2</td><td>88,6</td><td>95,7</td><td>93,5</td><td>92,4</td></tr> </tbody> </table> <p>Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva</p>									IS	PG	LS	ZS	SK	SD	DN	Adriatic Croatia	Result	90,8	89,6	97,0	95,2	88,6	95,7	93,5	92,4
	IS	PG	LS	ZS	SK	SD	DN	Adriatic Croatia																		
Result	90,8	89,6	97,0	95,2	88,6	95,7	93,5	92,4																		
<b>Comments/ Interpretation</b>	Tourist satisfaction with their overall experience while staying in destination in 2018 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 also recorded 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.
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## 6. Water consumption per tourist night compared to general population water consumption per resident night

Indicator	Water consumption per tourist night compared to general population water consumption per resident night
INSTO mandatory area	Water Management
International monitoring system	MST/ETIS
Approach	<p>Estimates of water consumption by tourists is based on total use of fresh water by tourists and for tourism activities, as part of the total water use in the society. The calculation is provided according to the “Methodological work on measuring the sustainable development of tourism, Part 2: Manual on sustainable development indicators of tourism”, European Commission, 2006”:</p> <p style="text-align: center;"><b>CALCULATION TOOL</b></p> $\frac{\text{Total use of fresh water}}{(\text{No. of residents} \times 365) + \text{No. of overnight stays}} \times \text{Total number of overnight stays}$
Data source/s	<ul style="list-style-type: none"> <li>• Croatian Bureau of Statistics, Collection, purification and distribution of water, 2023 (available at: <a href="https://podaci.dzs.hr/2024/hr/77328">https://podaci.dzs.hr/2024/hr/77328</a>)</li> <li>• Croatian Bureau of Statistics, Census of Population 2021 (available at: <a href="https://dzs.gov.hr/u-fokusu/popis-2021/88">https://dzs.gov.hr/u-fokusu/popis-2021/88</a>)</li> <li>• Ministry of Tourism and Sports, National plan for sustainable tourism until 2027 (available at: <a href="https://narodne-novine.nn.hr/clanci/sluzbeni/2023_08_97_1441.html">https://narodne-novine.nn.hr/clanci/sluzbeni/2023_08_97_1441.html</a>)</li> </ul>
Limitations / issues	<ul style="list-style-type: none"> <li>• Registered number of overnights in the commercial accommodation only</li> <li>• According to the National plan for sustainable tourism until 2027 the share of tourism in 7 Adriatic countries was 95,6% in 2019</li> </ul>

Results	<p>Volume of water delivered and used (x 10<sup>6</sup> m<sup>3</sup>)</p> <p>Share of water used in tourism (%)</p> <p>Legend:</p> <ul style="list-style-type: none"> <li>Volume of water delivered from public water supply system</li> <li>Volume of water used in tourism</li> <li>Share of water used in tourism in water delivered from public water supply system</li> </ul>
Comments/ Interpretation	<p>Water consumption in tourism has been continuously growing since 2015, so in 2023 the share of water used in tourism from the public water supply is 7.3% in relation to the total water delivered to all residents of the Republic of Croatia.</p>

## 7. Waste production per tourist night compared to general population waste production per resident night

Indicator	Waste production per tourist night compared to general population waste production per resident night
INSTO mandatory area	Solid Waste Management
International monitoring system	MST / ETIS
Approach	<p>Based on total amount of solid waste management - municipal waste (MW) produced in period 2015-2024, number of residents and number of tourists overnights in 2024. The calculation is provided according to the “Methodological work on measuring the sustainable development of tourism, Part 2: Manual on sustainable development indicators of tourism”, European Commission, 2006”.</p> <p><b>CALCULATION TOOL</b></p> $\frac{\text{Total amount of municipal waste}}{(\text{No. of residents} \times 365) + \text{No. of overnight stays}} \times \text{Total no. of overnight stays}$
Data source/s	<ul style="list-style-type: none"> <li>Croatian Bureau of Statistics, Census of Population, Households and Dwellings 2021, Dwellings by Occupancy Status 2021 (available at: <a href="https://dzs.gov.hr/u-fokusu/popis-2021/88">https://dzs.gov.hr/u-fokusu/popis-2021/88</a>)</li> </ul>

	<ul style="list-style-type: none"><li>Ministry of Environment and Green Transition; Report on municipal waste 2024 (available at: <a href="https://isgo-portal.mingor.hr/hr/izvjesca/izvjesca-o-komunalnom-otpadu">https://isgo-portal.mingor.hr/hr/izvjesca/izvjesca-o-komunalnom-otpadu</a>)</li></ul>																																	
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><li>According to the National plan for sustainable tourism until 2027 the share of tourism in 7 Adriatic countries was 95,6% in 2019.</li></ul>																																	
Results	<table><thead><tr><th>Year</th><th>MW quantities in tourism (<math>\times 10^3</math> t)</th><th>Share of MW from tourism in total MW (%)</th></tr></thead><tbody><tr><td>2015</td><td>100</td><td>6.5</td></tr><tr><td>2016</td><td>140</td><td>8.5</td></tr><tr><td>2017</td><td>155</td><td>9.5</td></tr><tr><td>2018</td><td>165</td><td>9.8</td></tr><tr><td>2019</td><td>170</td><td>10.0</td></tr><tr><td>2020</td><td>85</td><td>5.0</td></tr><tr><td>2021</td><td>135</td><td>8.5</td></tr><tr><td>2022</td><td>180</td><td>10.5</td></tr><tr><td>2023</td><td>180</td><td>10.5</td></tr><tr><td>2024</td><td>190</td><td>10.5</td></tr></tbody></table>	Year	MW quantities in tourism ( $\times 10^3$ t)	Share of MW from tourism in total MW (%)	2015	100	6.5	2016	140	8.5	2017	155	9.5	2018	165	9.8	2019	170	10.0	2020	85	5.0	2021	135	8.5	2022	180	10.5	2023	180	10.5	2024	190	10.5
Year	MW quantities in tourism ( $\times 10^3$ t)	Share of MW from tourism in total MW (%)																																
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2021	135	8.5																																
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2024	190	10.5																																
Comments/ Interpretation	<p>The amount of MW generated in tourism increased by 93% between 2015 and 2019. In 2020, due to the significant decline in tourist overnight stays (COVID-19 pandemic) the amount of MW from tourism also decreased significantly to the pre-2015 level. From 2021 onwards, the increase in tourist arrivals will also increase the recorded amount of MW from tourism.</p>																																	

## 8. Percentage of natural area coverage in the territory of the destination (change over time)

Indicator	Percentage of natural area coverage in the territory of the destination (change over time)
INSTO mandatory area	Climate action
International monitoring system	UN Tourism/national monitoring

Approach	<p>Climate Change and Tourism, “Excerpt from Indicators of Sustainable Development of Tourism Destinations, A Guidebook, World Tourism Organization (2004)”, pp. 161; Components of the climate change issue: mitigation.</p> <p>The indicator has been modified.</p> <p>It shows the shares (%) of natural areas under national protection (protected areas - PAs) by each coastal county and in Adriatic Croatia.</p> <p>These PAs, which are heavily used in tourism, are valuable resources in mitigating climate change and provide other ecosystem services.</p>																		
Data source/s	<ul style="list-style-type: none"><li>Ministry of Environmental Protection and Green Transition, Bioportal (available at: <a href="https://bioportal.hr/">https://bioportal.hr/</a>)</li><li>Croatan Statistical Bureau, Counties, areas, population, cities, municipalities and settlements, Census 2021 (available at: <a href="https://podaci.dzs.hr/hr/podaci/stanovnistvo/">https://podaci.dzs.hr/hr/podaci/stanovnistvo/</a>)</li></ul>																		
Limitations / issues	<ul style="list-style-type: none"><li>The indicator shows the share of natural areas under national protection (PAs). In the counties there are also natural areas that are not under the national protection. Such data are not available (except sporadically in some self-government units through the Greenery Cadastre or similar data bases). Therefore, the indicator has been modified.</li><li>Areas under Natura 2000 are part of PAs that are under national protection, but these data are not shown in this indicator since they are under revision. Data on PAs are available on the Bioportal.</li></ul>																		
Results	<p>Share of Pas in total area of the county (%)</p> <table><tr><td></td><td>IS</td><td>PG</td><td>LS</td><td>ZD</td><td>SK</td><td>SD</td><td>DN</td><td>Adriatic Croatia</td></tr><tr><td>Result</td><td>7.170</td><td>7.284</td><td>35.193</td><td>21.696</td><td>28.547</td><td>15.789</td><td>24.358</td><td>20.81</td></tr></table> <p>Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva</p>		IS	PG	LS	ZD	SK	SD	DN	Adriatic Croatia	Result	7.170	7.284	35.193	21.696	28.547	15.789	24.358	20.81
	IS	PG	LS	ZD	SK	SD	DN	Adriatic Croatia											
Result	7.170	7.284	35.193	21.696	28.547	15.789	24.358	20.81											
Comments/ Interpretation	<p>A protected area is a geographically clearly defined area intended for nature protection and managed for the long-term preservation of nature and the associated ecosystem services, including mitigation of climate change through sequestration of greenhouse gasses.</p> <p>It is defined by the Nature Protection Act (OG 80/13, 15/18, 14/19, 127/19, 155/23), which is also the fundamental legal act that prescribes provisions for the protection of natural values of the Republic of Croatia.</p>																		

## 11. Total number of tourist arrivals in the month with the highest load

<b>Indicator</b>	<b>Total number of tourist arrivals in the month with the highest load</b>
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INSTO mandatory area	Destination Economic Benefits																										
International monitoring system	MST / ETIS																										
Approach	Direct use of secondary data for the year of interest																										
Data source/s	Croatian Bureau of Statistics																										
Limitations / issues	<ul style="list-style-type: none"><li>• Tourists in non-commercial accommodation were not included</li><li>• Multiple counting (if a tourist stays in several different accommodation facilities during the trip, all are counted as arrivals)</li></ul>																										
Results	<table><tr><td></td><td>IS</td><td>PG</td><td>LS</td><td>ZD</td><td>SK</td><td>SD</td><td>DN</td><td>Adriatic Croatia</td></tr><tr><td>Result</td><td>1,123,499</td><td>735,527</td><td>200,162</td><td>477,222</td><td>255,527</td><td>891,208</td><td>402,973</td><td>4,086,118</td></tr></table>										IS	PG	LS	ZD	SK	SD	DN	Adriatic Croatia	Result	1,123,499	735,527	200,162	477,222	255,527	891,208	402,973	4,086,118
		IS	PG	LS	ZD	SK	SD	DN	Adriatic Croatia																		
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Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva																											
Comments/ Interpretation	The indicator shows the total number of tourist arrivals in the destination in the month that is considered the peak month of tourist season based on the number of overnight stays. A month with the highest number of overnight stays in all counties of Adriatic Croatia is August. A total of over 4 million tourist arrivals were realized in commercial accommodation facilities in Adriatic Croatia in August 2023. Istria is the most tourism developed county with 1.1 million of tourist arrivals or approximately 27% of all arrivals registered in the Adriatic Croatia region in August 2023.																										

## 12. Average length of stay of tourists in the destination

Indicator	12. Average length of stay of tourists in the destination
INSTO mandatory area	Destination Economic Benefits
International monitoring system	MST / ETIS
Approach	Secondary data representing tourist overnight stays and tourist arrivals are divided to get an average number of overnight stays that a tourist makes in the destination in the year of interest.



Data source/s	Croatian Bureau of Statistics																									
Limitations / issues	<ul style="list-style-type: none"> <li>• Tourist in non-commercial accommodations were not included</li> <li>• Multiple counting of arrivals (if a tourist stays in several different accommodation facilities during the trip, all are counted as arrivals)</li> </ul>																									
Results	<table border="1"> <tr> <td></td><td>IS</td><td>PG</td><td>LS</td><td>ZD</td><td>SK</td><td>SD</td><td>DN</td><td>Adriatic Croatia</td></tr> <tr> <td>Result</td><td>5.8</td><td>5.1</td><td>3.9</td><td>5.6</td><td>5.6</td><td>5.0</td><td>3.9</td><td>5.2</td></tr> </table> <p>Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva</p>									IS	PG	LS	ZD	SK	SD	DN	Adriatic Croatia	Result	5.8	5.1	3.9	5.6	5.6	5.0	3.9	5.2
	IS	PG	LS	ZD	SK	SD	DN	Adriatic Croatia																		
Result	5.8	5.1	3.9	5.6	5.6	5.0	3.9	5.2																		
Comments/ Interpretation	<p>The length of stay, i.e. an average number of overnight stays made by a tourist in commercial accommodation facilities, can be considered relevant information for the management of the destination, especially in the context of contemporary trends in shortening the length of stay, but also from the aspect of human resources management. In 2023, an average length of stay of a tourist in the Adriatic Croatia region was 5.2 overnights per one arrival. The highest length of stay was registered in Istria County, while the lowest was registered in both, Lika-Senj County and Dubrovnik-Neretva County.</p>																									

### 13. Total number of employees in accommodation and food service activities

Indicator	Total number of employees in accommodation and food service activities
INSTO mandatory area	Employment
International monitoring system	MST / ETIS
Approach	Direct use of secondary data for the year of interest
Data source/s	Croatian Bureau of Statistics
Limitations / issues	<ul style="list-style-type: none"> <li>• The indicator shows an average considering the entire year which could neglect the importance of tourism seasonality</li> <li>• Data on non-residents are not presented</li> </ul>
Results	

		IS	PG	LS	ZD	SK	SD	DN	Adriatic Croatia
	Result	17,794	12,713	2,012	7,410	4,607	20,492	10,655	75,683
	Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva								
<b>Comments/ Interpretation</b>	The indicator shows an average number of employees on a monthly basis in the accommodation and food service activities according to the National Classification of Activities (NACE). It may indirectly indicate improvement or deterioration of the business climate generally in tourism business. In 2023, an average monthly number of employees in accommodation and food service activities in the Adriatic Croatia region was 75,683. The highest average monthly employment was registered in Split-Dalmatia County, while the lowest was registered in Lika-Senj County.								

#### 14. Operating revenue of entrepreneurs (corporate taxpayers) in accommodation and food service activities

Indicator	Operating revenue of entrepreneurs (corporate taxpayers) in accommodation and food service activities								
INSTO mandatory area	Destination Economic Benefits								
International monitoring system	MST / ETIS								
Approach	Direct use of secondary data for the year of interest								
Data source/s	FINA – Financial Agency								
Limitations / issues	–								
Results									
		IS	PG	LS	ZD	SK	SD	DN	Adriatic Croatia
	Result (millions of euros)	1,340	724	109	406	200	858	570	4,207

	Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva
<b>Comments/ Interpretation</b>	The indicator shows operating revenue of all corporate taxpayers in the accommodation and food service activities according to the National Classification of Activities (NACE). It is related to the ability of tourism entrepreneurs to deliver tourist service, whereby the increase or decrease in the period of time may indicate an improvement or deterioration of business climate in tourism and hospitality sector. In 2023, operating revenue of entrepreneurs (corporate taxpayers) in accommodation and food service activities in the Adriatic Croatia region was 4.2 billion of euros. The highest operating revenue was registered in Istria County, while the lowest was registered in Lika-Senj County. It should be noticed that operating revenue of tourism entrepreneurs in Istria accounts for almost one third of total operating revenue generated by all tourism entrepreneurs of Adriatic Croatia region.

## 15. Identification and classification of tourist attractions

Indicator	Identification and classification of tourist attractions																	
INSTO mandatory area	Governance																	
International monitoring system	GSTC																	
Approach	Direct use of secondary data for the year of interest. The indicator serves to identify and categorize tourism resources within the destination, including natural attractions (parks, reserves, landscapes) and cultural-historical/anthropogenic attractions (historical sites, museums, monuments, intangible heritage).																	
Data source/s	Bioportal National Registry of cultural heritage																	
Limitations / issues	Indicator gives a quantitative information, while it would be useful to know the state and status of valorization of each attraction.																	
Results	<table><tr><td></td><td>IS</td><td>PG</td><td>LS</td><td>ZD</td><td>SK</td><td>SD</td><td>DN</td><td>Adriatic Croatia</td></tr></table>										IS	PG	LS	ZD	SK	SD	DN	Adriatic Croatia
	IS	PG	LS	ZD	SK	SD	DN	Adriatic Croatia										

	Natural Protected areas	35	32	32	20	13	42	41	215
	Cultural heritage	354	455	263	321	339	1171	616	3.200
	Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, SK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva								
Comments/ Interpretation	<p>Research shows that Split-Dalmatia County has by far the highest number of protected cultural assets, while natural resources are more evenly distributed across the counties. However, an analysis of nature protection categories reveals that, although Lika-Senj County does not have the highest total number of protected sites, it stands out with as many as three national parks and one nature park, highlighting its exceptional importance in natural heritage protection.</p> <p>The identification and categorization of tourism resources are essential for the development of sustainable tourism, as they enable efficient management and preservation of natural and cultural resources. They provide a foundation for creating targeted marketing strategies that highlight the unique attributes of the destination, thereby attracting the right tourists. Additionally, they help local communities to understand and appreciate their heritage, fostering local engagement and raising awareness about the importance of preserving these resources for future generations.</p>								

## 20. Percentage of tourism enterprises using voluntary certification/labelling for environmental Corporate Social Responsibility

Indicator	Percentage of tourism enterprises using voluntary certification/labelling for environmental Corporate Social Responsibility
INSTO mandatory area	Destination management
International monitoring system	EPA Network Interest Group on Environment and Tourism (IGET)
Approach	Desk research has been conducted in 2021 within the network of EU environmental protection agencies (IGET).
Data source/s	<ul style="list-style-type: none"> <li>IGET ad-hoc desk research</li> </ul>

	<ul style="list-style-type: none"> <li>Economic Institute Zagreb, Sectorial Analysis – Tourism, 2023, No.108, Year 12 (ISSN: 1848-8986)</li> </ul>		
<b>Limitations / issues</b>	<ul style="list-style-type: none"> <li>Collecting certification/labelling for environmental /quality/sustainability and/or Corporate Social Responsibility in household accommodation facilities, beaches and marinas was a specific issue due to the huge number of such entities available in Adriatic Croatia and willingness of their owners to public such information.</li> <li>The limitation of desk research was significant, as it was conducted through an internet search in 2021</li> <li>The research focused on environmental certifications</li> </ul>		
<b>Results</b>	<b>Name of the initiative</b>	<b>Geographical area (national, regional or local)</b>	<b>Total number of certificates awarded (if known)</b>
	European Ecolabel for Tourist Accommodations	Europe	7
	Blue Flag	Global	53 beaches and 26 marinas; TOTAL 79
	ISO 140001	Global	12
	Green Key	Global	7
	Green Destination-Destination Top 100 and GD Awards	Global	2
	Travelife Sustainability System	Global	13
	European Destination of Excellency (EDEN)	Local	6
	European Charter for Sustainable Tourism in Protected Areas (ECST)	Local (destinations and attractions) and tour operators	1
<b>Comments/ Interpretation</b>	Compared to number of total business entities (29 942) in 2021, the share of tourist entities (including beaches and marinas) using voluntary environmental was 0.5% in 2021.		

## 6. KNOWLEDGE SHARING

During 2023, CROSTO's expertise was shared and applied in several key areas. One of the main contributions was the development of a proposal for an indicator system aligned with the new Tourism Law, as part of the Next Generation project *System of Tourism Sustainable Satellite Account* (TSSA [.link](#)). Additionally, the process of developing these indicators was presented at various international and domestic scientific and professional conferences. Team members also contributed to the academic field by publishing scientific papers focused on the development and application of sustainability indicators in tourism.

Some of the dissemination activities are listed here:

Izidora Marković Vukadin delivered a guest lecture at the TATA Institute of Social Sciences – School of Skill Education in Bombay, India, on the topic *“Tourism Carrying Capacity and Environmental Impact Assessment (EIA) – Tools for Sustainable Tourism Management,”* presenting Croatian and EU experiences in developing tourism management tools.

At the invitation of the Greek Ministry of Tourism, Zrinka Marušić participated in a panel discussion *“A Conversation with the Research Community”* during the 28th UN Climate Change Conference (COP28), where she presented the Institute's work on measuring tourism sustainability, including the TOMAS survey, the CROSTO observatory, and the Sustainable Tourism Satellite Account project under the Croatian Ministry of Tourism and Sports.

As part of Croatia's presidency of the EU Strategy for the Adriatic-Ionian Region, Dr. Izidora Marković Vukadin gave a presentation titled *“Effects of tourism on alluvial and marine environments: good, bad, evil or responsible, sustainable and transformative”* at a conference on water and marine pollution by plastic and microplastics, held in Zagreb on November 29, 2023.

Zrinka Marušić took part in the fourth meeting of the UNWTO Expert Group on Measuring the Sustainability of Tourism (MST), held in Marbella, Spain (September 19–20, 2023), where she presented Croatia's experience and challenges in measuring tourism sustainability through the project *Sustainable Tourism Satellite Account of the Republic of Croatia*.

At the 8th Annual Conference of the Market Intelligence Group (MIG) and Marketing Group (MKG) of the European Travel Commission, held in Zagreb from February 15–17, 2023, Zrinka Marušić presented the Institute's research and activities in collaboration with the Croatian Ministry of Tourism and Sports and Croatian National Tourist Board, highlighting the project *Sustainable Tourism Satellite Account of the Republic of Croatia (TSSA)*.

As part of the five workshops on "Strengthening Tourism Resilience to Climate Change" held in 2023 (Vrana - May, Rijeka - June, Virovitica - September, Dubrovnik - November, and Zagreb - December) conducted by the Sector for Special Forms of Tourism and Analytics, Innovation and

Sustainable Development of the Ministry of Tourism and Sports the project Sustainable Tourism Satellite Account of the Republic of Croatia (TSSA) was emphasized.

Scientific publications focused on indicators:

- Vukadin Marković, I. ., Gjurašić, M., & Krešić, D. (2023). From over-tourism to under-tourism—an opportunity for tourism transformation in the City of Dubrovnik. In *Ethical and Responsible Tourism* (pp. 457-471). Routledge.
- Vukadin Marković, I., Zovko, M. & Mandić, A. (2023). Redefining sustainable tourism challenges and associated indicators in protected and conserved areas. In *The Routledge Handbook of Nature Based Tourism Development* (pp. 399-418). Routledge.
- AFRIĆ RAKITOVAC, K., MARKOVIĆ VUKADIN, I., & UROŠEVIĆ, N. (2023). Smart SPA and Sustainable Tourism—Measuring Sustainable Transformation of European Health Tourism Destinations. In 1. Europska GREEN konferencija (pp. 321-321).
- Bučar, K., Vukadin, I. M., & Hendija, Z. (2023). Blue Flags on islands in the Republic of Croatia. In *Blue Flag Beaches* (pp. 156-170). Routledge.
- Zovko, M. (2023). Evaluacija poslovne izvrsnosti u okviru izvješćivanja o održivosti (ESG). *Zbornik Računovodstvo i menadžment*, 24(1), 295-296.
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## 7. FURTHER DEVELOPMENT/RECOMMENDATIONS

In Croatia, the measurement of 17 obligatory sustainability indicators will occur in each of the 21 Croatian Counties in process of creation of Regional Management plans highlighting the commitment to comprehensive data collection and analysis in the tourism sector. However, the unique specificity of Croatia necessitates meticulous attention to detail in the measurement process, considering the diverse geographic, cultural, and environmental characteristics present across the country.

Moreover, for 2 of these indicators, primary research is required, entailing significant human and financial resources. For instance, surveys targeting tourists or citizens demand substantial logistical planning and funding allocation. Consequently, indicators requiring primary research will be measured at a lower frequency, typically every 2 to 3 years. This strategic approach ensures that resources are allocated efficiently while maintaining the integrity and accuracy of the data collected.

Moving forward, our focus will be on establishing reliable data flows to facilitate the measurement and monitoring of these indicators effectively for each Croatian county in each year. The Ministry of Tourism and Sports has been at the forefront of these efforts, spearheading initiatives to develop a centralized database. This centralized repository will serve as a cornerstone for data management, enabling streamlined access to information and enhancing collaboration among stakeholders involved in sustainability measurement and policy implementation. By consolidating data from various sources, including government agencies, research institutions, and industry partners, the centralized database will provide a comprehensive overview of tourism-related activities and their impact on sustainability indicators. This holistic approach fosters transparency, accountability, and informed decision-making, driving progress towards achieving sustainable tourism goals.

Furthermore, the establishment of standardized data collection protocols and quality assurance mechanisms will ensure the accuracy and reliability of the information gathered. Collaborative partnerships with local communities, tourism stakeholders, and academic institutions will be essential in leveraging expertise and resources to support data collection efforts.

Ultimately, the integration of reliable data flows and the establishment of a centralized database represent critical steps towards enhancing the measurement and management of sustainability indicators in Croatia's tourism sector. By harnessing the power of data-driven insights, we can better understand the complex dynamics of tourism development and implement targeted strategies to promote environmental conservation, socio-cultural preservation, and economic prosperity for present and future generations.



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