

Measuring sustainability KPIs in Croatian tourism destinations

Dubravka Vlašić

Abstract

Tourism destinations are various areas in which tourism activities take place. Due to the importance and influence they have on the environment it is crucial that their impact should be measured, reported and monitored through sustainability indicators. The system of sustainability indicators that they present for the destination should be uniform, comparable and publicly available.

Regarding the fact that there are constant pressures concerning sustainability information from various external users, interested parties and legal requirements, it is important to set proper steps in measurement process at the tourism destination level and to define basic Sustainability KPIs which the tourism destinations will be reporting in order to keep track of their improvements and possibility of comparison with other similar tourism destinations.

This paper presents international frameworks of sustainability indicators and steps regarding the process of setting measurements in the tourism destination. The paper also presents Croatian national regulations on tourism destinations reporting sustainability KPIs and current state-of-the-art of Croatian coastal top 5 tourism destination counties' difficulties in its application.

Key Words: sustainability information, sustainability KPIs, tourism destination, sustainability framework

JEL classification: L83, O18, Q5

INTRODUCTION

Tourism and sustainability interconnection is important and any tourism activity and the effect it has on the economy should take into account its social, economic as well as environmental implications. Natural and cultural resources are in the focus of tourism attractions in tourism destinations. They largely depend on quality and quantity of natural resources which in great scale can be impacted by tourism industry. Tourists make irreversible damage to the environment through vast pressure they put on ecosystems. For the purposes of tourism development exertion of land, water and air, many other processes generating pollution and waste, causing erosion and deforestation occur, investments in infrastructure and buildings are made. The damage they make, consequently, influence profitability and also affect employment in companies involved in tourism and hospitality services.

Previous research on sustainability in tourism destination differs in many ways. First of all, there is urgency of addressing overtourism as threat to sustainability in destinations worldwide (Milano, C., Koenig, K., 2022). Excessive number of visitors in tourism destinations highlight the importance that should be given to environmental practices and indicators, which sometimes interferes with the performance of other indicators (e.g., economic), that can cause problems (Berselli et al. 2022; Matarazzo 2022).

Also, tourism sustainability issues require a data-driven approach in destination management (Scuttari, A. et al, 2023). Awareness of spatial component in tourism destinations management and the lack of those components in traditional tourism statistics was also spotted as well as variations of tourism-related issues within countries regions and municipalities (Batista e Silva, F. et al 2018; Cerezo-Medina, A. et al 2022).

Because of growing awareness of this influence on tourism destinations, there is a need to assessing the sustainability in order to keep monitoring the influence tourism has on local environment, its economy and social aspects. The information gathered in that sense presents higher quality information which would enable better decision-making regarding sustainability decisions for destinations. Negative impacts in the last 10 years have reassessed tourism activity regarding its long-term economic, social and environmental sustainability. World community has therefore increased numerous initiatives at subnational level in order to generate sustainability KPIs that analyse, monitor or evaluate the environmental implications of tourism development in specific areas and follow their trends. Sustainability indicators developed in this way can help tourism destinations plan, anticipate and regulate activities connected to all sustainability components in order to manage their future visions.

Previous research on tourism destinations regarding sustainability issues usually present different and individual case studies which contain information that are not comparable (Ruhanen, L. et al. 2015). Also, measuring tourism destination has evolved in two ways: one way is directed towards tourism statistical frameworks and the other towards setting indicators by different organizations (Agyewaah et al. 2017; Kristjansdottir, K.R et al 2018, Marinello et al, 2023). Setting indicators was and still is not an easy task, and in their application, there is concern regarding their consistency and precise methodology. Applying indicators can sometimes lead to results that are not comparable regarding different spatial scales in different countries and therefore proper conceptual framework for measuring tourism destination sustainability should be defined.

In any methodology developed inter-relation between indicators should be recognised and indicators should not be considered individually as discrete variables (Miller&Twining-Ward, 2005). Thematic indicator development methodologies are more commonly used in sustainable tourism monitoring because they are considered flexible and have indicators organized in different categories such as economic, social, cultural, technical, political or institutional

(Miller & Twining-Ward, 2005; WTO, 2004). Thematic methodologies can also be easily used in bottom-up approach, but they do not take into consideration interrelations and interconnectivity of systems, and therefore need to be complemented with systems approaches (Meadows, 1998).

International frameworks that developed in the past were based on traditional tourism statistics standards like International recommendation for tourism statistics (IRTS) 2008 and Tourism Satellite Account: Recommended Methodological Framework (TSA:RFM) 2008 whose focus was on national and regional extent but not on local. For that reason, many frameworks for sustainability indicators regarding tourism destinations were developed and it seems to tourism destinations to have good choice. However, because of the reason that they were not adapted to local scale, tourism destinations seek and implement the easiest options that is not always the best solution.

Adapting frameworks from national to local scale is challenging because they demand knowledge on specifics of local areas. There is also a need for change in existing collection of data because most of them come from national statistics offices that have not enough detailed information on particular areas (eg. information on towns, counties, destinations etc.). In that way, national statistics are in a very challenging positions as to adapt or wider their collection of data on local scale in order to provide necessary information in their databases for further calculations of sustainability indicators.

The aim of this paper is to present theoretical frameworks within the research on international sustainability indicator frameworks developed for tourism destinations as well as national regulations developed for Croatian tourism destinations. The paper is also assessing the state of implementing sustainable tourism principles in five Croatian destinations, identifies specific steps to set up a comprehensive sustainability indicators system as well as challenges they face concerning calculations of sustainability indicators as they are obliged by Croatian Tourism Act to report and monitor their values. The last section presents and comments research results and suggests possibilities for future research.

INTERNATIONAL TOURISM DESTINATION SUSTAINABILITY FRAMEWORKS

Sustainability in tourism destination is connected to management of economic, social and environmental resources in order to ensure future of the destination through minimizing negative consequences, preserving cultural heritage, maximizing benefits through responsible use of resources, support of local economy, respect for local culture and involving all stakeholders in planning and decision-making for tourism destination progress.

In order to keep track on sustainability, several international institutions have established lists of sustainability KPIs to be used when following sustainability issues. ,

On the basis of its initiative for developing sustainability tourism methodology in the early 1990's and collected practical experiences, United Nations World Tourism Organisation (UNWTO) has established and published Indicators of sustainable development for Tourism destinations – A guidebook (World Trade organization, 2004) This publication is oriented towards developing Tourism destination Sustainability indicator system where tourism destination is considered at local, regional and national level i.e. it can be in a form of town, area, or state. The methodology suggests three implementation phases of measurement each of them containing four steps. Apart from methodology it also analyses fifty significant topics/problems of sustainable tourism development for which sustainability indicators are suggested. UNWTO has also published Statistical Framework for Measuring the Sustainability of Tourism (MST). This recent study presents system of monitoring and management for information required in managing destinations at local and regional level. It is based on 50 topics/problems

of sustainable tourism development with which sustainability indicators are suggested (World Tourism Organization, 2024). The topics of sustainable development contain: satisfaction of local inhabitants with tourism, tourism impact on local community, tourist satisfaction, tourism seasonality, influence on economy, energy management, availability and preservation of water, quality of potable water, procedures with wastewater from households, waste management, development control and tourism intensity control.

The European Commission has established European tourism Indicator system (ETIS) toolkit for sustainable destination management. This system has been established in 2016. with its goal of helping sustainability measurement of tourism destinations. This system is useful in following results a tourism destination gains and as basis for strategic and operation decisions. ETIS is based on 27 core and 40 optional indicators that are divided into four categories: destination management, social and cultural impact, economic value and environmental impact (European Commission, 2016). The system is flexible and enables widening and narrowing the number of indicators regarding destination needs, local stakeholders' interests and topics raising regarding sustainability issues. The results allow following, managing and strengthening sustainability of the tourism destination, monitoring the results and provides information for decision-making. It should also be noted that this system enables benchmarking of values among destinations over time.

Organization for Economic co-operation and development (OECD) has developed Indicators for Measuring Competitiveness in Tourism. This internationally applicable and comparable system of Indicators measures tourism competitiveness in national tourism policies adoption. Indicators are divided into 11 core and additional 9 indicators which are divided into four categories: tourism performance and impacts, the ability of a destination to deliver quality and competitive tourism service, attractiveness of a destination, policy responses and economic opportunity. Further development of the system and suggestion of additional indicators is predicted (Dupeyras & MacCallum, 2013).

Global Sustainable Tourism Council (GSTC) has also established a list of criteria for Sustainability. These criteria are published in special sections, one of them for Governments and Destinations (GTSC-D), and contain guidance for developing policies, raising awareness, conducting training for using sustainability standards framework on national and local level. First version of GTSC-D was developed by consulting different certification standards, indicators, criteria and best practices from different countries and after revision, the second version includes performance indicators designed to provide guidance in measuring compliance with the Criteria against which one or more of the 17 SDGs is identified. Also, tourism public policy-makers and destination managers should include effective and credible tourism sustainability policies in their strategic plans. The criteria are structured into four sections: Sustainable management, Socio-economic, cultural and Environmental sustainability (Global Sustainable Tourism Council - Destination Criteria, 2019).

The overview of International sustainability KPI's frameworks is shown in Table 1.

Table 1: Overview of International sustainability KPIs frameworks

United nations World tourist organizations (UNWTO)	European commission (EC)	Organization for economic co-operation and development (OECD)	Global Sustainable Tourism Council (GSTC)
Indicators of Sustainable Development for Tourism Destinations – a Guidebook	European Tourism Indicator System (ETIS)	Indicators for Measuring Competitiveness in Tourism	Global sustainable tourism council - Destinations
Focused on developing destinations Sustainability Indicator systems (local, regional and national level)	System of monitoring and management of destinations (local and regional level)	Internationally applied and comparable indicators system for measuring competitiveness in setting national tourism policies. (national level)	Criteria include general principles and minimum requirements for tourism destination Protection and sustainability of natural and cultural resources
4 categories 50 indicators	4 categories: 27 core and 40 optional indicators	Core and additional indicators (categories have 11 indicators) system and new indicators development	4 categories 37 indicators

Source: authors suggestion according to World Tourism Organization (2024) Indicators of Sustainable Development for Tourism destinations A guidebook (English Version), Statistical Framework for Measuring the Sustainability of Tourism, European Commission, 2016, EC European tourism Indicator system (ETIS) toolkit for sustainable destination management, European Commission, Dupeyras, A. and N. MacCallum (2013), “Indicators for Measuring Competitiveness in Tourism: A Guidance Document”, *OECD Tourism Papers*, Global Sustainable Tourism Council - Destination Criteria, 2019, GSTC Destination criteria, Version 2.0 with Performance Indicators and SDGs.

In order to implement a uniform sustainability destination management system and apply effective measurement in the tourism destination it is necessary to set proper procedure, for which the following steps are suggested:

- to formally assign the coordinator of the process and team members,
- to clearly define tasks and timeframe for collection of the required sustainability data,
- to introduce the system to all the participants in order to communicate set requirements and solve any potential problems,
- to educate participants on how to apply sustainability in their companies, introduce them with current trends and best practice and teach them how to collect information and calculate indicators
- to publish sustainability indicators and information.

The indicators should be collected having in mind the specifics of tourism destination. It should be noted that each tourism destination is unique and distinct, with its own particularities

that cannot be ignored especially in the comparison process. If necessary, additional specific indicators should be introduced or developed. In this particular stage questionnaires should be sent to all participants in the destination in order to collect information for the improvements from all interested parties. The yearly report on Sustainability indicators should also be available and communicated to all participants and different interested parties in the destination. According to the results, ways of improving sustainability in the destination should be discussed and changes introduced.

The sustainability indicators have multiple functions: they should collect and present past results that will be used for planning activities that would improve understanding of complex and interconnected processes in the destination. By selecting the list of indicators that are providing relevant information regarding sustainability the following should be kept in mind: indicators should be transparent, relevant, comparable, simple, measurable and cost efficient. They should be divided into three main groups: economic, environment and social.

According to indicators presented in international frameworks (UNWTO, EC, OECD, GSTC), the list of sustainability indicators for tourism destination is suggested below:

ECONOMIC sustainability indicators:

- Total tourism overnight
- Percentage of employment in tourism industry (Total employed inhabitants in tourism / Total employed inhabitants) * 100
- Occupancy percentage of commercial accommodation (occupied commercial accommodation / available commercial accommodation) * 100
- Average internal tourism expenditure per visitor (total tourism expenditure / number of visitors)

ENVIRONMENTAL sustainability indicators:

- Total energy consumption per visitor
- Percentage of energy consumption per visitor compared to energy consumption per inhabitant
- Total water consumption per visitor
- Percentage of water consumption per visitor compared to water consumption per inhabitant
- Total wastewater per visitor
- Total waste generation per visitor
- Percentage of waste generation per visitor compared to waste generation per inhabitant
- Percentage of tourist facilities in the destination that have mandatory certifications

SOCIAL sustainability indicators:

- Percentage of tourists per inhabitants – calculation: (Total number of tourists / total number of domestic inhabitants * 100
- Percentage of domestic inhabitants satisfied with tourism - calculation: (total number of domestic inhabitants satisfied with tourism in the tourism destination / total number of domestic inhabitants)* 100

- Percentage of tourism satisfaction in the destination (total number of satisfied tourists in the destination / total number of tourists in the destination) * 100
- Percentage of repeat / return visitors – Total number of repeated visitors / Total number of visitors) * 100

In order to increase inhabitants' satisfaction, tourism destination should be aware of its limitations e.g., limitations of tourism growth which include prevention of overtourism and mass tourism through recognising destinations carrying capacity, avoidance of different types of tourism, monitoring of tourism influence on everyday's life and activities in the destination. In that sense noise, crowd, waste, nature pollution, water management, energy consumption, parking issues should be properly monitored and managed, and negative impacts minimized. Also, involvement of inhabitants into tourism is important not only as employees but also through their opinion and satisfaction with investments into infrastructure and other improvements.

CROATIAN TOURISM DESTINATION SUSTAINABILITY FRAMEWORK

Croatia is among developing countries highly dependent on its tourism. With its GDP around 24% depending on tourism activities, its direct impact on Croatian BDP is 11,32% (<https://podaci.dzs.hr/2024/hr/101483>). The Document on Croatian Tourism sustainable development strategy by 2030 defines ten key challenges in economic, social and environmental aspects of Croatian economy (Institute of Tourism 2023, p.19):

- unfavourable influence of tourism on the environment and nature,
- unfavourable relation between tourism and climate changes,
- adjustment to accelerated technological changes in tourism,
- local inhabitants' quality of life and well-being,
- lack of human resources in numbers and quality,
- inadequate structure and quality of lodging capacities,
- Unfavourable business and investment environment,
- Unfavourable and inefficient regulation framework
- influence of crises on tourism and
- changes in tourism behaviour and needs.

According to EU Directives Green plan on tourism sustainability, local community and companies (of different industries and sizes) the emphasis should be placed on: efficient use of resources (energy, water, space, biodiversity) minimization and prevention of CO2 emission (in air, water, sea, land), raising resistance to climate changes. In this matter national strategic indicators have been studied to ensure their linkage to the list of indicators set for destination level (local). The elaboration of measures has been defined by National plan of sustainable tourism development by 2027 where the goals set in strategy are monitored:

- (1) is tourism switching from highly seasonal to year-round (coastal and continental),
- (2) is sustainability implemented in all aspects of the environment and space (controlling of carrying capacity, climate change influences),
- (3) is there increase in educating human resources, developing lifelong learning programs and increase of payrolls in tourism,

(4) are encouraged innovations and digital transformation in tourism,

(5) is there improvement in existing regulation framework and business environment directed towards raising competitiveness of Croatian tourism.

Croatian Ministry of tourism and sport has published Guidelines and instructions for Management tourism destination plan in September 2024. The primary purpose of Management tourism destination plan is to ensure sustainability development of tourism destination according to the strategic planning, spatial planning and other regulations prescribed at national level.

The Croatian Tourism Act from 2023 (Official gazette No 156/23) prescribed obligation of publishing Management tourism destination plan for all Tourist boards which are placed both at local and regional level and Tourism board of City of Zagreb. This Management Plan contains the direction of destination development regarding improvement of visitors' satisfaction, natural and cultural heritage protection and wellbeing for local community. It presents basis for decision making and steps for managing sustainability tourism development for local units and other supervisory boards in the tourism destination. The Management plan identifies important questions that arise in the destination and how to manage, improve and perform measures for all stakeholders involved. The emphasis is on sustainable development of tourism destination, its environmental protection and pros and cons as well as market opportunities. All stakeholders e.g. local authorities, tourist boards, private sector, non-governmental organizations, expert groups, entrepreneurs and local inhabitants should cooperate for the benefit of the entire community. Their role in the creation of Management Plan is presented in table 2.

Table 2 Stakeholders and their role in creating the Management tourism destination Plan

Local and regional authorities	Tourist boards	Private sectors	Local inhabitants	Non-governmental organizations	Expert groups
Cities, communities, counties, regional development agencies	National, regional and local tourist boards	Hotel and tourism companies, tourist agencies, tour operators, transportation companies	Inhabitants of the destination	Environmental protection, cultural heritage and social inclusion organizations	Institute of tourism, academy, specialized companies
Set destination policies, legal framework	Coordinate	Provide services to guests and locals	Employees, coexistence	Observe and comment	consultancy
Set basic strategic goals for tourism development	Plan and coordinate stakeholders	Create and provide services and tourist products, investments and strategies should be according to	Preservation on cultural and natural heritage, create authenticity	Protect interests of local communities and inhabitants,	Expert viewpoints, studies, information analysis, help in shaping strategies and

		sustainability development	Live with tourists		monitoring plans
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Source: authors suggestion according to Guidelines and instructions for Management tourism destination plan, Croatian Ministry of tourism and sports, September 2024.

The tourism destination managed properly should increase their competitive position on national and global market, attract tourists and investments in tourism but also help in raising positive effects of tourism on local community, infrastructure and services.

The Plan should enable monitoring and evaluation of tourism activities concerning development strategies and strategic goals and improving management of natural resources e.g., water, energy and waste through minimizing their negative impact on the environment and local community.

When creating a Management Plan, stakeholders' opinions and viewpoints should be taken into consideration. Through organizing workshops, exchanging opinions, presenting visions and experiences of stakeholders, measures and activities that will enable better efficiency and effectiveness of activities, better environmental protection, better tourist, local community and private sector satisfaction should be presented publicly.

Also monitoring and evaluation of Management plan should be presented through promotional and educational activities to all stakeholders because in that sense information on the importance of sustainable tourism development is adequately disseminated to all interested parties.

Croatian Tourism Act (National Gazette 112/24) cites qualitative indicators that are informative and quantitative indicators that are data related and methodologically collected. The sources of their collection are primary and secondary. Primary are obtained through research that should be regularly conducted according to agreed timeframe, continuity, methodology and sample

Secondary are from publicly available sources, from different statistical datasets, organizations and institutions that are not individually publicly available but could be received upon request and primary.

Croatian system eVisitor is a tailor made national information system that was introduced in 2016. This information system is used for registering guests (tourists) check-ins and check-outs for companies and private persons (owners of renting apartments or small businesses) regarding lodging. This system is introduced to provide general statistics on Croatian tourism and include physical number of companies and private persons lodging facilities in Croatia (number of beds, category, location etc.) and serves for inspection purposes for payments of tourist taxes and analysis of information for tourism statistics reporting purposes. The data necessary for calculating indicators that are collected from primary sources are kept in tourism boards and should be provided to Croatian Ministry of tourism and sports. The sustainability indicators should be reported in May of current year for previous year.

According to Croatian Tourism Act the Management Plan should be based on two sets of tourism destination indicators: general and specific. They present the structure and guidelines for tourism destination to measure, evaluate and improve their sustainability which is crucial for long-term success. General destination indicators are mandatory while specific are optional. The indicators should present current state-of-the-art of the destination and the direction towards goals set in the strategy. They also serve for monitoring the situation regarding sustainability in the tourism destination as well as benchmarking with similar destinations.

General sustainability indicators for tourism destination cover social, environmental, economic and spatial aspects of tourism. In that sense social aspect is measured by satisfaction of local inhabitants with tourism and tourists with their staying in the tourism destination, destination accessibility and safety. Environmental aspects include water expenditure and management, waste management, protection of biodiversity and energy expenditure and management, minimization and adjustment to climate changes.

Economic sustainability aspects present tourism traffic and businesses directly related to tourism. The component regarding spatial aspect concerns tourism infrastructure and sustainable tourism management as well as sustainable management of areas. The list of general indicators is presented in table 3.

Table 3 List of general sustainability indicators for tourism destinations

	INDICATOR	Sustainability aspect	Sustainability area
1.	Number of tourists overnight per 100 inhabitants in the tourism high season	social	Satisfaction of local inhabitants with tourism
2.	Satisfaction of local inhabitants with tourism	social	Satisfaction of local inhabitants with tourism
3.	Satisfaction of tourists with destination during stay	social	Satisfaction of local inhabitants with tourism
4.	Percentage of attractions accessible to persons with disabilities	social / management	Accessibility
5.	Number of organized tourism ambulance	social	Destination safety
6.	Percentage of water consumption per overnight in comparison to average water consumption of local inhabitants in the destination (per person and per overnight)	environmental	Water management
7	Percentage of waste generation per guest night in comparison to average waste generated by local inhabitants in the destination (tone)	environmental	Waste management
8	Percentage of protected environment in comparison to total area of the destination (total and by category)	environmental nature	Biodiversity protection
9	Percentage of energy consumption per guest night compared to average energy consumption of local inhabitants in the destination	environmental climate	Energy consumption
10	Management system for adjusting to climate changes and risk evaluation	environmental climate	Climate changes
11	Total tourism arrivals in the highest season month	economic	Tourism traffic

12	Average length of stay of tourist in the destination	economic	Tourism traffic
13	Total number of employees directly employed in lodging and food and beverage industry	economic	Business in tourism
14	Revenues (business activities) of companies in lodging and food and beverage industry	economic	Business in tourism/ tourism traffic
15	Identification and classification of tourism attractions	spatial/ management	Tourism infrastructure
16	Status of implementation of activities from Management Plan	spatial/ management	Sustainable destination management
17	Number of overnight in lodging capacities of the destination by acre of land of building area	spatial/ management	Sustainable area management

Source: Croatian Tourism Act Official gazette 112/24 pg. 12

Optional sustainability indicators also cover social, environmental, economic and spatial aspects of tourism in the destination, but they present more detailed components of general indicators

In social section they measure impact of tourism on the quality of local inhabitants, take into consideration positive/negative opinion of local inhabitants on their living areas, percentage of high stressed inhabitants regarding tourism, changes in demography connected to tourism overnight, number of permanent guests in the destination, publicly available information on destination attractions, public transportation for invalids, criminal activities and incidents reported to the police, number of car accidents, reported noise problems in the destination etc. In environmental section more detailed indicators include reporting on companies that take actions regarding water expenditure, water quality, usage of recycled water, information on wastewater, general waste information, waste separation, waste minimization management plans, air pollution, locally used products and services percentage in the destination for tourism purposes etc.

Sustainability economic aspect requires additional information on carrying capacity of the tourism destination, average tourism expenditure, labour productivity, percentage of businesses directly involved in tourism owned by locals, percentage of local inhabitants labour per age, educational level and type of employment contract, percentage of foreign labour involved directly in tourism etc. Spatial sustainability aspects include number of seasonal facilities, publicly available plan of handling extraordinary situations, strategy for attracting visitor outside the high season, private houses and apartments rented for tourism purposes, developed monitoring system regarding attractions and protection of the environment and pressure on tourism development on cultural heritage.

The Rulebook on monitoring development and sustainability tourism indicators published in 2023 (National Gazette 112/2024) prescribes for each sustainability indicator correlation to:

- international systems (ETIS, GSTC, UN TOURISM MST)
- Croatian Law on accounting (paragraph and article no.)
- UN Sustainable Development Goals (number of goal) and

- National sustainable tourism development strategy by 2030 (National Gazette 2/23) and National development Plan of Sustainable tourism by 2027 (Strategic goal and special goal)

In order to avoid problems in implementation as much as possible, for each sustainability indicator the Rulebook contains definition and description as well as data according to which particular indicator is calculated: the title of data, unit of measurement, source of data (Croatian National statistics, e-visitor et al.), availability and continuity time-frame. There is also Methodology of its calculation (formula) and frequency of measurement.

METHODOLOGY AND RESEARCH RESULTS

The research was conducted using publicly available Reports on County development regarding sustainability information of top 5 Croatian tourism counties available on their website which makes it a case study oriented. The Counties taken into consideration are situated on the Adriatic coast: Istarska, Primorsko-goranska, Zadarska, Splitsko-dalmatinska and Dubrovačko-neretvanska). Only Primorsko-goranska county has Management Plan of sustainable tourism development by 2030 on their website, while all other counties have Development County Plan by 2027 publicly available. The content of reports was examined by using key words: sustainable tourism, sustainability, sustainability indicators, environmental, social and governmental indicators, ESG politics and environmental protection. The information regarding sustainability was investigated in the context of its current state-of the art, possibilities for improvement and benchmarking within the Croatian tourism destinations.

Table 4: Top 5 Croatian tourist counties by overnights with tourism arrivals in 2024.

Rang	County	Overnights	Tourism arrivals
1	Istarska	27.907,047	4,873,947
2	Splitsko-dalmatinska	18.270.528	3.765.889
3	Primorsko-goranska	15.416.334	3.092.963
4	Zadarska	10.461.110	1.917.986
5	Dubrovačko-neretvanska	8.293.708	2.147.058

Source:<https://podaci.dzs.hr/2024/hr/76895>

Istarska County has not yet published Report required by Croatian Tourism Act. In the Development plan for Tourism in Istarska County by 2027 no sustainability indicators are directly mentioned. Sustainability tourism development is mentioned in general context of plans by 2027 under special goal 3.3. Sustainable tourism based on the service quality and authentic content where they state that “tourism is important for Istrian economy and that in the future sustainable tourism and resistivity mostly caused by seasonality of tourism” (Istrian county Development plan by 2027, p.87)

The Tourism development Plan of Primorsko-goranska county by 2030 in the matter of sustainability indicators state the need of “developing monitoring system of data collection and research that will create basis for decision making in tourism. Decisions made in Primorsko-goranska county destination management should be based on analytical basis, relevant data and research results that can be audited. Therefore, it is necessary to continuously monitor indicators of sustainable tourism development in order to bring tourism policy measurements and key

decisions” (Primorsko-goranska County by 2030, p.55). The Sustainable tourism development is mentioned many times but does not specifically present sustainability indicators nor their values. However, the document contains research results on local inhabitants but also other stakeholders in tourism (tourism boards, local community and other businesses situated in this county) attitude towards tourism elements relevant for calculating sustainability indicators. Generally, the research shows that local inhabitants and other stakeholders are not satisfied with tourism development in this county and require measures to be taken directed towards environmental protection and sustainability in general (Primorsko-goranska County by 2030, appendix 1).

Development plan for Zadar county by 2027 emphasizes the importance of sustainable development in the vision for the year 2027 in middle term. They mention indicators mostly connected to spatial areas but not connected to tourism. They also state that sustainable tourism all-year-around has been developed in this county, with special segment of rural tourism which makes tourism different and more interesting for visitors. Innovation and sustainable development should be the priority in future development and it should enable local inhabitants’ optimal usage of living areas. (Zadarska county Development plan by 2027.)

Splitsko-dalmatinska county states in its Development plan by 2027 that future development of tourism should be based on sustainability that implicit growth that should be under control, tourism facilities based on local resources, extension towards rural areas and development of new and innovative products outside high season. This Development plan does also not specify any particular sustainability indicators mentioned in the Tourism Act (Splitsko-dalmatinska county Development plan by 2027)

Development Plan on Dubrovačko-neretvanska county by 2027 speaks about sustainability in general through raising quality of tourism offer and destination management. Under the development of special tourism types, it provides special section called encouragement of sustainability, digitalization and innovation in business. It does not mention any particular sustainability indicator (Dubrovačko-neretvanska county Development plan by 2027)

Although international and national frameworks provide detailed list and procedures of measuring sustainability indicators, there are still a lot of open questions regarding their content and collection of data necessary for their calculation and reporting in practice.

They include, amongst others, information on how to obtain water expenditure, total waste in households and lodging in a month with lowest and highest number of tourism traffic (cubic meter) regarding many tourism service providers in the county, where to get the information on number of employees and revenues in lodging and food and beverage facilities and total number of employees. The questions also include on how to calculate e.g., percentage of water expenditure per tourist stay and per local inhabitant, and where to find reliable information for its calculations. The users are in dilemma which data to use when calculating quantities of waste per tourist stay and per local inhabitants in the destination (in tonnes) for the County regarding the fact that local communities present different data (total waste/ total mixed waste/both data). There are also open questions regarding calculation of spatial indicators that are connected to calculation of tourist overnight by construction area (hectar) and where to collect that particular data etc.

Croatian Tourism Act has published a list of general but also specific sustainability indicators on economic, social and environmental components of tourism destinations and they also included spatial components through indicators. The reason for that can be found in the fact that space is also considered important in the context of tourism burden in the destination e.g., pressure on infrastructure being one of the issues in that sense.

Practical implementation of the Tourism Act faces several important components: (1) education on how to perform measurements, (2) timeframe for its creation and publication as well as (3) penalties for absence of their publication.

Currently, the problem is also in lack of reliable information collected by different organizations regarding counties, municipalities and towns' level, that can be solved by systemizing separate statistical forms and collecting additional large number and type of data necessary for calculating sustainability indicators. To enable this step, it is necessary to improve local community capacities involved in collection and distribution of such information.

It can be concluded that Croatian counties still struggle with setting properly the system of data collection in order to calculate sustainability indicators at tourism destination level.

Current level of availability of data is preventing or limiting calculations of sustainability indicators and therefore, there is a need for further research, education and development of cooperation among different levels of local and regional companies and organizations that collect necessary information for regularly providing them to counties for enabling calculations and monitoring of sustainability indicators at the tourism destination level.

The examined Development plans of counties do not contain sustainability indicators which means that there is generally a problem connected to the initial step of the implementation i.e., the data collection and personnel involved in this process. The solution to this problem might be in:

- employing additional personnel that would be in charge for collecting data from secondary sources and conducting necessary research in order to create basis for sustainability indicators calculations,
- ensuring additional workshops and educating personnel on how to perform research and calculate sustainability indicators,

It is also advisable for counties to cooperate with national institutions in Croatia for any questions they might have. Croatian national tourist board and Institute of tourism employ many professionals that are available for any instructions on how and what to do in a certain step of the process. Also, cooperation among all the counties is recommended due to exchange of experiences, discussion on problems that occur and possibilities of finding solutions for problems, finding and exchanging knowledge on best practical solutions and implementing them in the process of data collection, calculations and publication of general and special sustainability indicators. Apart from gaining experience and best practice within the country communication and cooperation with other countries is also suggested e.g., Mediterranean or European Union countries through national, professional and educational institutions.

The cooperation is crucial also in identifying referential values and monitoring of all presented indicators as well as enabling benchmarking among counties or referential destinations.

The future research should be conducted in order to include in research on sustainability issues different stakeholders in the tourism destination (residents, companies other than tourism, tourists) and to obtain their point of view, critical opinion and practical issues that can be used in improving the current situation regarding sustainability issues in the tourism destinations. Also, comparison of sustainability indicator systems within different countries if available is suggested. Recommendations for future research should also be directed towards exploring published reports in the future to obtain information on whether there has been improvement regarding sustainability information, particularly if there will be a list and values on sustainability indicators published and to monitor the results and improvement of reports.

CONCLUSION

Tourism destinations need to provide public reports containing sustainability indicators referential values in order to inform stakeholders on their influence on sustainability. International frameworks and Croatian Tourism Act have published set of sustainability indicators for tourism destination divided into four categories: environmental, social, economic and spatial.

The research results have shown that although Croatian Tourism Act has published the list of sustainability indicators, tourism destination still struggle with its practical implications because there is a lack of data necessary for calculation regarding current old fashion systems of reliable data collection. In this matter tourism destinations still do not report appropriate sustainability indicators. Therefore, data collection systems should be modernized and upgraded through cooperation and communication of national, regional and local authorities, but also involving all stakeholders needs and propositions. Monitoring based on sustainability indicators is necessary for planning future tourism development in tourism destinations. By providing referential values and monitoring their changes, improvements in managing tourism destinations would become more transparent and comparable and therefore basis for future development and activities that would be oriented towards more environmentally, socially and economically sustainable tourism development could be applied.

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