



INSTO Insights Webinar

THIRD INSTO INSIGHTS WEBINAR: MEASUREMENT IN THE FIELD OF WATER MANAGEMENT AT DESTINATION LEVEL

Thursday, 23 February 2023 | 12:00pm – 1:15 pm CET | Zoom Session

Measuring water consumption and wastewater production; enhancing monitoring through TSSA

Zrinka Marušić, mag.math.
Izidora Marković Vukadin, PhD



CROSTO at glance



- CROatian Sustainable Tourism Observatory
- Established in 2016 by  REPUBLIC OF CROATIA Ministry of Tourism and Sport & 
- Member of INSTO from 2016
- NUTS 2 level Adriatic Croatia
- 15 core indicators (ETIS+UNWTO)
- NUTS 2 level measurements from 2017
- Destination level measurements from 2018 (16 destinations)

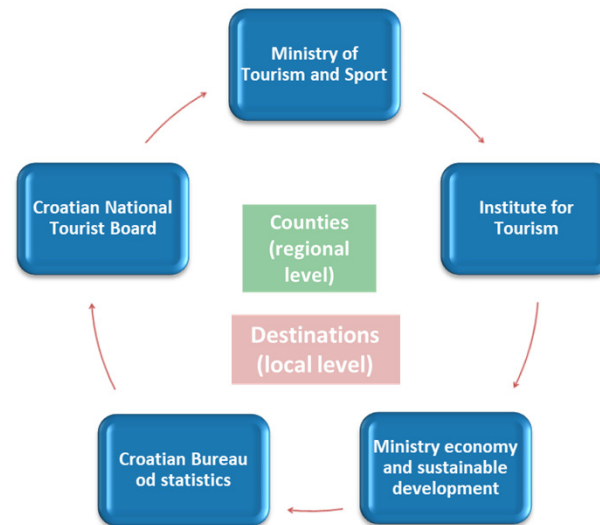
CROSTO mission:

To enable an independent stakeholder integration process
at local level

CROSTO levels of action

Stakeholders' involvement national level

- Body:
 - MRS (inter - institutional body)
- Activities:
 - exchange of news and ideas related to the measurement process at the national level
 - detecting the main issues of tourism in Croatia
 - designing an annual report
 - organization of dissemination activities



Stakeholders' involvement local level

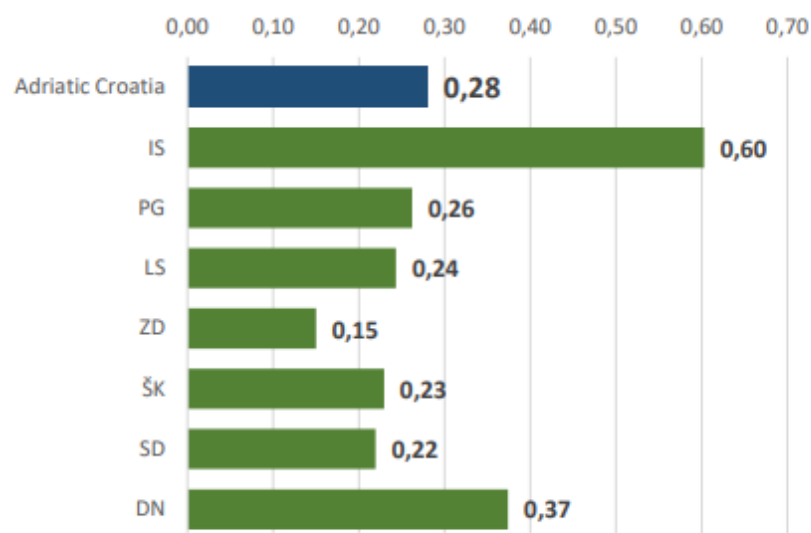
- Body:
 - Local working group + Local Coordinator
- representatives of the city / municipality, local DMO, spatial planning institution, utility company, energy distributor, development agency and other local stakeholders
- Activities:
 - implementation of primary research, collection of secondary data, detection of key topics (bottlenecks, challenges, crowding) with the function of selecting specific indicators, planning of activities based on indicators, strengthening destination-level cooperation

CROSTO indicator list

CROSTO core indicators	UNWTO mandatory issue	ETIS section
Percentage of residents who are satisfied with tourism	Local satisfaction with tourism	C Social and cultural impact
Number of tourist nights per 100 residents		
Percentage of tourists who are satisfied with overall experience		A Destination management
Percentage of repeat/return tourists		
Percentage of tourism enterprises using voluntary certification/labelling for environmental CSR		
Number of tourist nights	Destination economic benefits	B Economic value
Daily spending per tourist overnight		
Direct tourism employment as percentage of total employment	Employment	
Gross annual occupancy rate in commercial accommodation	Tourism seasonality	
Energy consumption per tourist night compared to general population energy consumption per resident night	Energy management	D Environmental impact
Water consumption per tourist night compared to general population water consumption per resident night	Water management	
Percentage of sewage from a destination treated to at least secondary level prior to discharge	Waste water (sewage) management	
Waste production per tourist night compared to general population waste production per resident night	Solid waste management	
Percentage of destination area out of the settlement's boundaries built for tourist purposes	Governance	
Percentage of the destination area within the construction zone of the settlement where the facilities of catering and tourist purposes	Governance	

Water consumption per tourist night compared to general population water consumption per resident night

- Based on consumption norms by type of accommodation and number of overnights by type of accommodation
- Household consumption includes both public supply system and hydrofoil pump, etc.
- Data sources:
 - CBS, First Release 6.1.2. COLLECTION, PURIFICATION AND DISTRIBUTION OF WATER, 2018
 - Census of Population, Households and Dwellings 2011, Dwellings by Occupancy Status,
 - 2017 Institute IGH, Water Supply plan for County of Split-Dalmatia, 2008

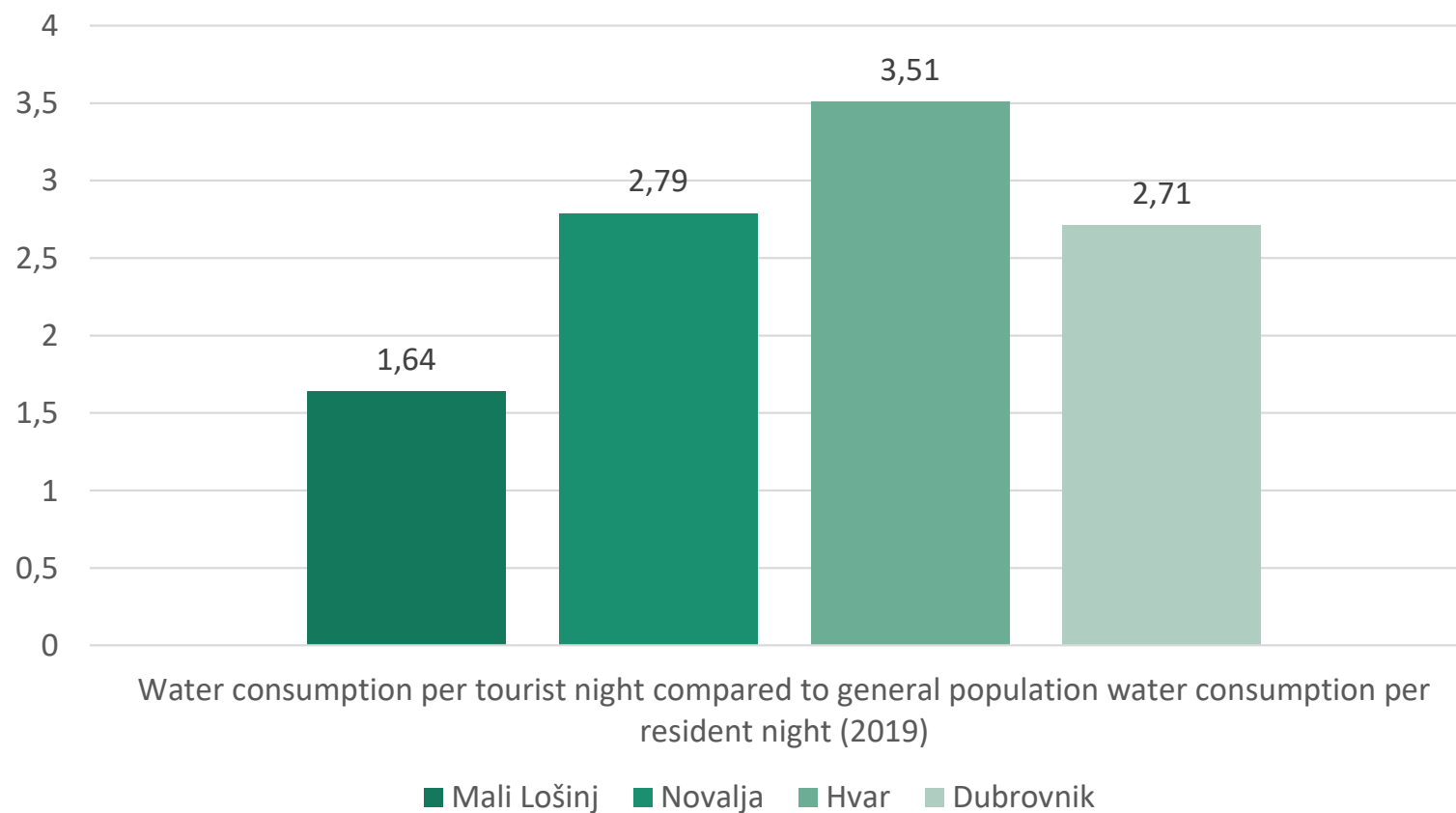


Counties: IS Istria, PG Primorje-Gorski Kotar, LS Lika-Senj, ZD Zadar, ŠK Šibenik-Knin, SD Split-Dalmatia, DN Dubrovnik-Neretva

Limitations:

- Includes only commercial accommodation
- Patterns of consumption

Local level – water consumption



Data sources: Local utility companies

Challenges of the measurement process (local/national/international scope)

- **Data availability / assessment of indicators** (e.g. family owned accommodation, non-commercial accommodation – second homes and VFR, same-day visitors, nautical tourism etc.);
- **Region specific challenges** related to the measurement process (i.e. region's development level)
- **Data harmonization** highly dependent on portfolio/structure of tourism products
- **Data integration** (development of some kind of **aggregate/compound indicator**)
- **Interpretation** of indicators (inauguration of some **baseline values/intervals** in order to enable benchmarking and/or recognition of 'good value practice')
-

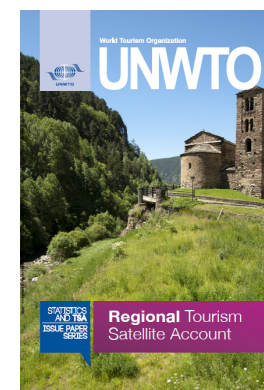
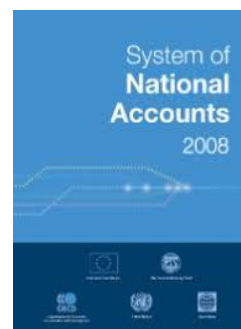


TOURISM SUSTAINABILITY SATELLITE ACCOUNTS (TSSA) development and implementation

I
(Legislative act)

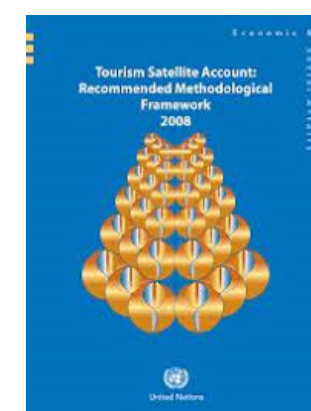
REGULATIONS

REGULATION (EU) No 691/2011 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 6 July 2011
on European environmental economic accounts
(Text with EEA relevance)



LINKING THE TSA AND THE SEEA:
A TECHNICAL NOTE

World Tourism Organization (UNWTO) is a specialized agency of the United Nations
created and founded by international treaty. It is the only international organization in the world
dedicated to tourism.

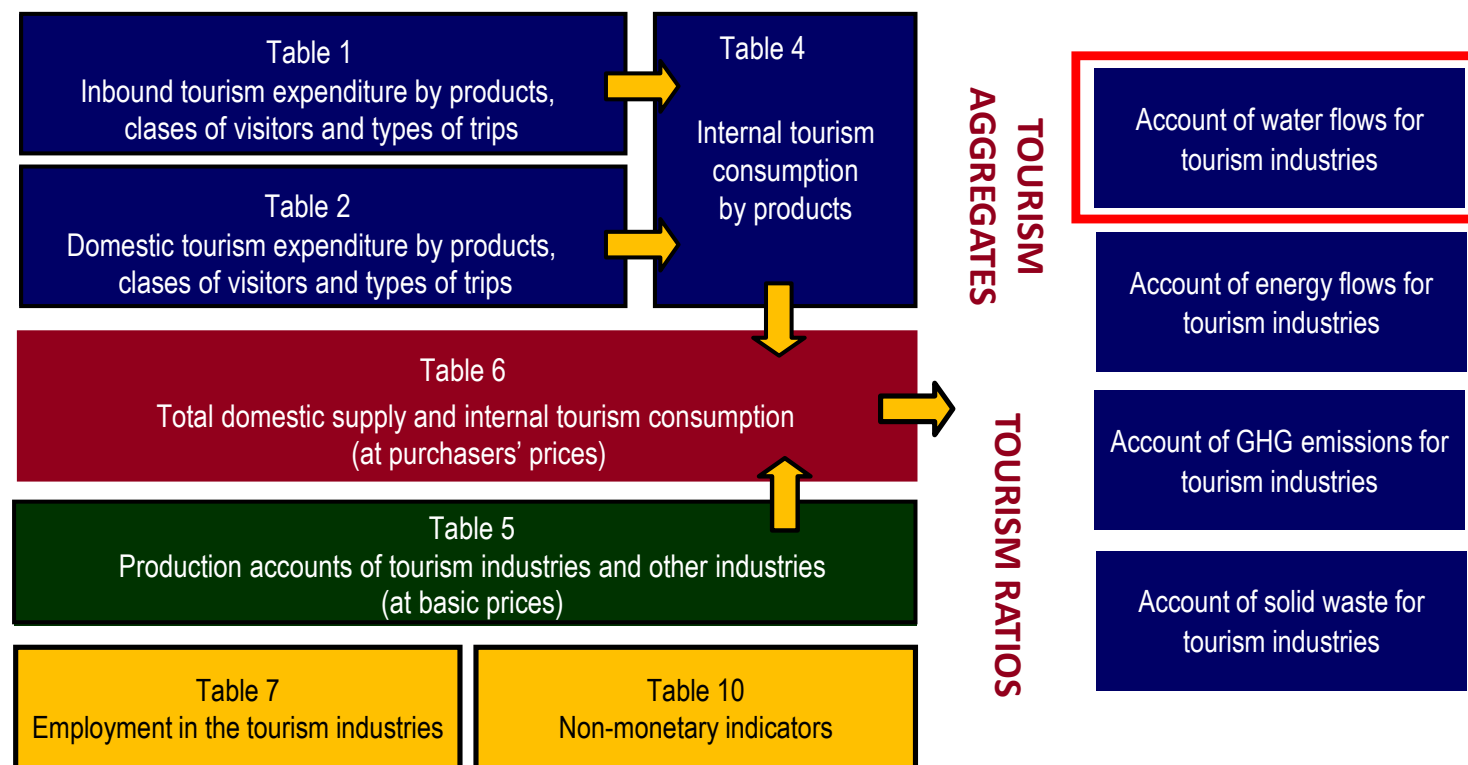


Methodological framework

System of Tourism Sustainability Satellite
Accounts for the Republic of Croatia

TSSA tables

TSA tables + S tables (Linking the TSA and the SEEA: Technical note): searching for rigor and consistent solutions at national and regional level

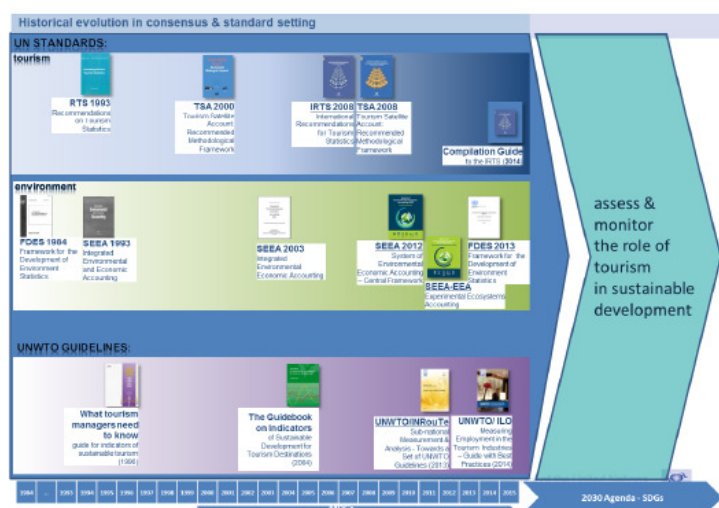


System of Tourism Sustainability Satellite
Accounts for the Republic of Croatia

NB: Dark grey cells are null by definition

UNWTO MST & TOURISM SUSTAINABILITY SATELLITE ACCOUNTS

Methodological framework and context map of MST platform



DIMENSION

ECONOMIC

Tourism industry value added

Tourism GDP

Tourism establishments

Tourism expenditure

ENVIRONMENTAL

Water use in tourism industries (including wastewater flows)

Energy use in tourism industries

GHG emissions generated by tourism industries

Solid waste generated in tourism industries

SOCIAL

Community

Visitor perception

Tourism governance

Accessibility

Decent work

TSSA

Harmonized system of **tourism sustainability accounts** on national and regional level:

- Based on the similar methodological framework as MST
- Focuses on the similar indicators of tourism activity as MST

A FRAMEWORK FOR TESTING AND DEVELOPMENT OF METHODOLOGY

AN EXAMPLE OF GOOD PRACTICE

Available data

Main official sources –
water flows (Eurostat)

- Water abstraction, water use by supply category and economical sector, water use in the manufacturing industry by activity and supply category, population connected to wastewater treatment plants, generation and discharge of wastewater in volume.

Water use by supply category and economical sector (online data code: ENV_WAT_CAT)
Source of data: Eurostat

Settings: **Default** [Download] [Refresh]

Table [Line] [Bar] [Map]

	TIME	2018 ↓	2019 ↓	2020 ↓
GEO ↓	NACE_R2 ↓			
Croatia	Agriculture, forestry and fishing	2.00 (e)	2.00 (e)	2.00 (e)
Croatia	Industry and construction	26.25	29.18	28.80
Croatia	Mining and quarrying	0.22	0.24	0.22
Croatia	Manufacturing	11.09	11.30	11.30
Croatia	Production and distribution of electricity	2.00	2.00	2.00
Croatia	Production and distribution of electricity - for cooling p...	0.00	0.00	0.00
Croatia	Construction	12.94 (e)	15.64 (e)	15.28
Croatia	Services	56.09 (e)	58.15 (e)	57.12
Croatia	Households	170.99	170.98	170.88
Croatia	All NACE activities plus households	255.34	260.30	258.80

Issues:

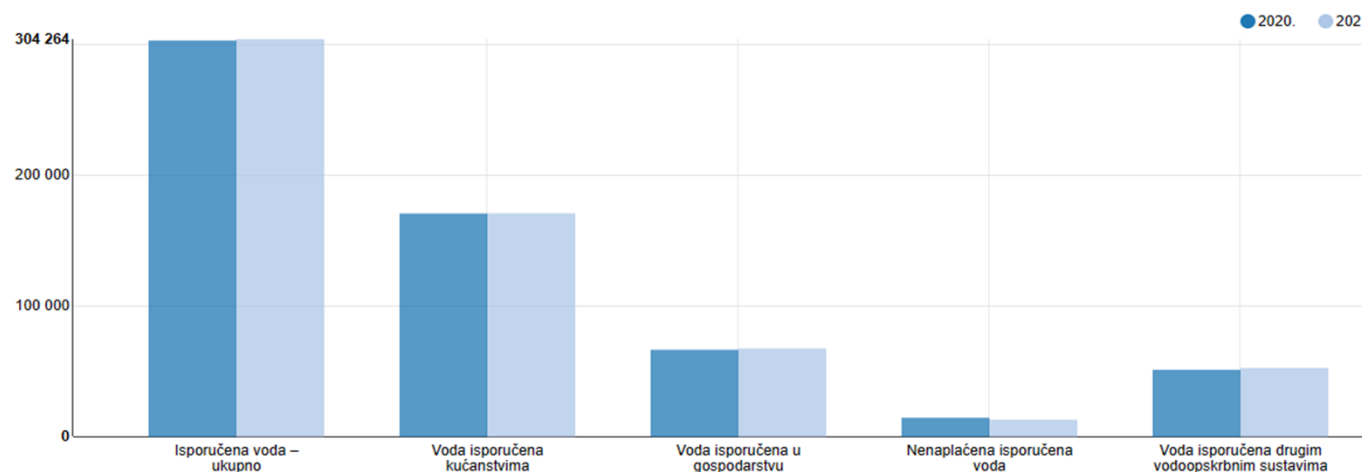
- No appropriate data from the official statistics on (two), three or four-digit NACE levels (some secondary data partly available on two digit level)
- Lack of regional aspect

System of Tourism Sustainability Satellite
Accounts for the Republic of Croatia

Available data

Main official sources –
water flows statistics
(CBS)

- Water abstraction, use and treatment (annually)
- Water use by sector (only NACE 2 B – D)
- Similar to Eurostat data



Source: CBS

Issues:

- No appropriate focus on tourism activities
- Lack of regional aspect

System of Tourism Sustainability Satellite
Accounts for the Republic of Croatia

Available data

- Data from local water suppliers:
 - water use in households and economy (by local self-government units)
 - water use by enterprises (by enterprise, without NACE 2)
 - water use by settlement and category (tourism, agriculture, manufacturing, services, households and public institutions) – poor quality of data
- Data from national water supplier



HRVATSKE VODE

System of Tourism Sustainability Satellite
Accounts for the Republic of Croatia

Data gaps



implementation
of primary
research for data
disaggregation

- No appropriate data (two, three or four-digit NACE) on the level of specific tourism products and on regional level
- Accuracy of data concerning the non-rented accommodation and non-registered economy
- GDPR and the possibility of using data by distributors
- Dispersion of data at the regional level due to different distributors

System of Tourism Sustainability Satellite
Accounts for the Republic of Croatia

Primary surveys
including water
consumption

1. revenue and gross value added, with environmental impact, generated by providers of accommodation services in households
2. tourist services, costs and environmental impacts generated by accommodation in secondary homes
3. environmental impacts of nautical tourism
4. revenues, gross value added, and environmental impacts of hotel and restaurants sector generated by tourism

System of Tourism Sustainability Satellite
Accounts for the Republic of Croatia

Plans – System of sustainable indicators of tourism activity based on TSSA project (including water management)

Assessment of the potential and possibilities of the TSSA of Croatia for the formulation of relevant and internationally harmonized indicators of the sustainability of tourism

- Analysis of the findings of the document Establishing the methodological framework of TSSA
- Analysis of examples of international good practice of tourism sustainability indicators
- Proposal of indicators from the perspective of economic, environmental and social sustainability
- Valorization of indicator proposals from the perspective of relevance, accuracy, timeliness, precision, availability and clarity, comparability and compliance

Expert focus group on the proposal of economic, environmental and social indicators of tourism sustainability

- Survey of representatives of public stakeholders (MINTS, HTZ, DMOs, etc.) related to expectations and needs for sustainable policies
- Organization of an expert meeting on the topic of verification of proposals for indicators of tourism sustainability and their relevance for the management of tourism policy
- Assessment of findings

Preparation of the final list Indicators of sustainability of tourism as a basis for a new law in tourism

- Consolidation and synthesis of the previously prepared foundations for the establishment of the indicator proposal
- Harmonization of the working version of the study

THANK YOU FOR YOUR ATTENTION

Zrinka Marusic
zrinka.marusic@iztztg.hr
Izidora Marković Vukadin
Izidora.markovic@iztztg.hr

Institute for Tourism
Vrhovec 5
10 000 Zagreb
CROATIA

www.iztztg.hr
www.crosto.hr
<https://www.iztztg.hr/hr/sustav-satelitskih-racuna-odrzivog-turizma-rh/>