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OECD Tourism Papers 2025/02

Strengthening the evidence base for a sustainable tourism future in Slovenia

A TAILORED SET OF SUSTAINABILITY INDICATORS

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OECD Tourism Papers

Strengthening the evidence base for a sustainable tourism future in Slovenia

A tailored set of sustainability indicators

This report presents a tailored set of 20 indicators to be used as a tool to inform and enhance evidence-based policy development and sustainable destination management in Slovenia. It builds on existing frameworks and good practices at international, national and regional level. Indicator selection was informed by key policy priorities identified in the Slovenian Tourism Strategy 2022-28 and through stakeholder consultations. The report highlights avenues for future development to refine indicator methodologies and close existing data gaps on central policy issues.

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The project builds on previous work of the OECD Tourism Committee, and its Working Party on Tourism Statistics, which highlights the need to better measure the economic, environmental and social dimensions of tourism, to inform policy making and support sustainable tourism development and destination management. The project also takes into account existing international and national frameworks to measure the sustainability of tourism as well as relevant indicators previously developed and used in Slovenia. Focussing on a concrete, operational set of indicators that addresses key policy priorities in Slovenia, the indicators are aligned as much as possible with UN Tourism's Statistical Framework Measuring the Sustainability of Tourism (SF-MST) and initiatives developed by the European Commission.

The report was co-ordinated and edited by Eva Katzer, Policy Analyst (CFE), under the supervision of Peter Haxton, Senior Policy Analyst (CFE) and Jane Stacey, Head of the Tourism Policy and Analysis Unit. Kristen Corrie, Policy Analyst (CFE), provided drafting inputs. Monserrat Fonbonnat, Assistant (CFE), provided administrative support.

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Executive summary

Tourism is a key contributor to the Slovenian economy. In 2023, travel exports represented 28% of total services exports, almost EUR 3.3 billion, and at 4.7 million, international visitors in hotels and similar establishments were almost back to pre-pandemic levels. However, as tourism has rebounded strongly, some destinations in Slovenia are again experiencing negative environmental and social impacts associated with rapid and unplanned tourism growth. While substantial progress has been made to better understand and measure the impacts of tourism, in Slovenia and elsewhere, further work is needed to develop a practical approach to monitor and benchmark progress, while taking into consideration the unique characteristics of countries and destinations. Tourism sustainability indicators can also help to increase awareness of the importance of sustainable practices among tourism stakeholders in Slovenia.

This report presents a set of indicators as a tool to inform and enhance evidence-based policy development and sustainable destination management in Slovenia. It builds on existing frameworks and good practices at international, national, and regional level. It takes a policy-led approach to facilitate long-term implementation in a resource-constrained environment and help turn data into action for sustainable development. This approach consists of four key steps: prioritisation, indicator selection, implementation, and action. This report focusses on the first two steps in this process.

The identification of policy priorities is informed by the Slovenian Tourism Strategy 2022-28, which sets out a vision of sustainable tourism development in Slovenia, with a smaller footprint and greater value for all. Given Slovenia's nature-based tourism offer and the country's image as a green destination, there is a particular focus on decarbonising and reducing the environmental impact of tourism, including water consumption, waste production and biodiversity protection. An assessment of data availability to select both relevant and measurable indicators to address these policy priorities resulted in the identification of a set of 20 core indicators and 35 metrics structured around the following five policy priorities:

- **Quality, value and year-round supply of the portfolio of tourism products and services:** Tourism value added, Receipts from the export of travel, Seasonality, Length of stay, Boutique accommodation, Digital business transformation, Occupancy.
- **Positioning tourism as a generator of value in other industries and sustainable development:** Tourism GDP contribution, Tourism employment, Training and skills.
- **Satisfaction of the population, employees and guests:** Satisfaction of the local population, Satisfaction of guests, Satisfaction of employees, Gender pay gap.
- **Decarbonising and rebalancing Slovenian tourism:** Carbon footprint, Tourism density and intensity, Resource use, Sustainable mobility, Environmental protection.
- **Competent and effective management structures:** Quality of management at business level.

The process of identifying and implementing a set of indicators, if undertaken collaboratively, can foster co-operation between data specialists and policy makers to ensure that the 'top-down' identification of policy priorities is achievable with the 'bottom-up' availability of data. Ongoing and regular work to review and improve this set of indicators in Slovenia will help to ensure that they remain 'fit for purpose'. The report concludes by highlighting avenues for future development to refine indicator methodologies and close data gaps on central policy priorities. While data are available for 31 of 35 metrics, further work is required to measure resident satisfaction, carbon emissions, water consumption and sustainable mobility.

A policy-led approach to measuring the sustainability of tourism

Introduction

Tourism is a key contributor to the Slovenian economy. In 2023, travel exports represented 28% of total services exports, almost EUR 3.3 billion, but remained below the pre-pandemic levels of 33%. Tourism-related industries employed almost 69 600 persons in 2023, accounting for 7.4% of the total workforce, and increased by 0.5% compared to 2019. In 2023, Slovenia received almost 4.7 million international visitors at commercial accommodation establishments, representing 99% of pre-pandemic levels. Domestic tourism typically performs strongly in Slovenia and returned to pre-pandemic levels in 2023 with 1.5 million domestic tourists recorded at commercial accommodation establishments.

Despite global discussions during the pandemic about the opportunity for tourism to 'build back better', visitor numbers and expenditure remain key measures of tourism success for many destinations. While tourism has rebounded strongly, certain destinations in Slovenia and elsewhere are again experiencing negative environmental and social impacts often associated with rapid or unplanned tourism growth. While substantial progress has been made to better understand the positive and negative impacts of tourism in recent years, measuring and monitoring the impacts on the environment and local communities are still lagging. Further work is needed to develop a practical approach that allows for comparability while taking into consideration the unique characteristics of countries and destinations.

In May 2022, the Slovenian Tourism Strategy 2022-28 (Republic of Slovenia, 2022[1]) was adopted to achieve Slovenia's vision for a green and boutique tourism sector, with a smaller footprint and greater value for all. The strategy sets five strategic goals, including: i) to increase the quality and value of year-round tourism; ii) increase the satisfaction of workers and visitors; iii) position tourism as a generator of value and sustainable development; iv) advance decarbonisation; v) ensure a competent and efficient tourism governance structures. To monitor progress, the Strategy defines 14 indicators and 25 measures, with specific progress targets identified for 2028.

The OECD has worked closely with Slovenia to build on this work and develop a core set of indicators to measure and monitor the sustainability of the tourism sector. While many statistics are already available to monitor tourism in Slovenia, more reliable and regular data on the sustainable transformation is needed to effectively monitor the implementation of the tourism strategy and enhance policy and decision making. This requires a system of relevant and comparable indicators to measure the sustainability of the Slovenian tourism sector over time.

This work focusses on reviewing the indicators identified in the National Tourism Strategy, complementing them with new indicators, where relevant, to monitor the key policy priorities for sustainable tourism development in Slovenia. The outcome is an advanced and refined set of indicators under the responsibility of the Statistical Office of the Republic of Slovenia (SURS) to be regularly updated and disseminated in a user-friendly manner. The project considers indicators that can be compiled with existing data as well as potential or aspirational indicators for future compilation. The OECD work builds on an analysis of existing

indicator frameworks and approaches in Slovenia and beyond. A two-day technical workshop clarified key challenges and gaps related to the compilation of a core indicator set to measure and monitor the sustainability of tourism in Slovenia. The workshop promoted peer learning and built capacity, involving international experts from academia, government and the private sector.

Review of existing approaches and frameworks

Developing indicators to measure the sustainability of tourism has been a focus of work for the OECD and other international institutions, for over three decades (OECD, 2003[2]; UNWTO, 1997[3]; UNEP and MSCD, 1999[4]; Eurostat, 2006[5]). However, establishing and maintaining a reliable evidence base that supports decision making has proven challenging (OECD, 2021[6]). While the quality and availability of tourism statistics have improved considerably in recent years, measurement of tourism impacts has traditionally focussed on economic aspects, guided by the International Recommendations for Tourism Statistics (United Nations, 2008[7]) and the Tourism Satellite Account methodological framework (UN Statistics Division, Eurostat, OECD, 2008[8]). Tourism-specific statistical definitions and regularly produced statistics capturing environmental and social impacts of tourism have lagged behind. Examples of some the most prominent frameworks, indicator sets and approaches at international, national and sub-national level are outlined below.

The endorsement of the Statistical Framework – Measuring the Sustainability of Tourism (SF-MST) by the United Nations Statistics Commission is an important step forward in forging international consensus on the production of reliable and comparable data on the economic, environmental, and social impacts of tourism (UN Tourism, 2024[9]). This UN Tourism-led statistical framework, developed under the leadership of Austria and Spain, provides fundamental concepts, definitions, and data organisation structures for tourism statistics across economic, social, and environmental impacts. Further work is needed to provide methodological guidance to support the concrete implementation of the framework and derive a meaningful set of internationally comparable indicators for sustainable tourism development.

Improving statistics and indicators for tourism is a key pillar of the EU Tourism Transition Pathway (European Commission, 2022[10]) and the multi-annual EU Work Plan of the European Agenda for Tourism 2030 (Council of the European Union, 2022[11]). A range of initiatives are underway to advance this agenda, including work by Eurostat to develop and implement a set of indicators to measure the sustainability of tourism based on available data and the EU Tourism Dashboard, developed and maintained by the European Commission's Joint Research Centre (JRC) and Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW). The EU Tourism Dashboard is a tool that brings together existing data to understand the performance of tourism at country and sub-national levels. The Dashboard's three policy pillars (green, digital, socio-economic) use a range of methodological principles and data sources, including from national statistical agencies, Eurostat, and UN Tourism. The Together for EU Tourism (T4T) expert group has a dedicated sub-group on measuring sustainability, with results to be shared with all stakeholders via a Stakeholder Support Platform (forthcoming).

Other European-level initiatives include the European Tourism Indicators System [ETIS] (European Union, 2016[12]) and MITOMED+ (based on ETIS with a focus on coastal and maritime tourism). Previous work by Eurostat (2006[5]), led by Statistics Sweden, proposed a core set of 20 indicators to measure the sustainable development of tourism at the national, regional and local level. Following the final edition in 2019, the biennial World Economic Forum Travel and Tourism Competitiveness Index has evolved into a Development Index, with revised indicators focussing on the sustainable and resilient development of the sector (see Box 1). Building on the work to develop and implement these existing frameworks provides an opportunity to accelerate the process of sustainable tourism indicator development.

Box 1. Selected international tourism sustainability indicator frameworks

Selected examples of existing international work on indicator frameworks are outlined below.

- **European Tourism Indicators System** (ETIS) – The framework consists of 43 core indicators supplemented by 33 additional indicators. It is a voluntary tool designed to measure the sustainability of European tourism destinations (European Union, 2016[12]).
- **EU Tourism Dashboard** – The Dashboard presents 19 indicators and 14 descriptors designed to promote and monitor the green and digital transitions and the socio-economic resilience of the tourism sector. The starting point for preparing the indicators has been the identification of data which is available across all EU member states (European Commission, 2022[13]).
- **UN Tourism proposal for a set of indicators to measure and monitor the sustainability of tourism** – Linked with the work to prepare the SF-MST, UN Tourism proposed a set of 30 initial indicators at the 4th Expert Group on MST in September 2023 (UN Tourism, 2023[14]).
- **World Economic Forum Travel and Tourism Development Index** (WEF, 2024[15]) – The Index focusses on monitoring the resilience and sustainable development of tourism. The pillar 'Travel and Tourism Sustainability' tracks 24 indicators across three themes (environmental sustainability, socio-economic impact and sustainability of travel and tourism demand).
- **World Travel and Tourism Council (WTTC) 'Travel and Tourism's Global Footprint' dashboard** – estimates the economic, social and environmental footprint of the tourism sector across 11 core measures and seven of the SDGs related to tourism. The tool allows for benchmarking across countries and international regions, and comparison over time while also providing historical data where available, to allow countries to monitor their own progress (WTTC, 2024[16]).

Work undertaken to date at international, national and sub-national level provides a solid platform to accelerate efforts for new data and indicators. As the discussion around sustainable tourism has evolved, so have the measurement frameworks. While most frameworks and indicators are structured around the pillars of economic, environmental and social sustainability, there is considerable diversity in the scope and range of indicators covered, which creates challenges for international comparability as well as for decision makers in destinations (with often limited capacity and resources) to understand which priority issues and indicators to focus on.

In general, the following measures and associated indicators are included in most frameworks:

- Economic measures: for example, seasonality, visitor market share, share of GDP, share of employment, average expenditure, and average length of stay.
- Environmental measures: for example, water and energy consumption, air and greenhouse gas emissions, waste (water and solid), environmental certification and mode of transport.
- Social measures: for example, gender equality, accessibility of tourism sites, satisfaction of the local community, tourist satisfaction, valorisation of culture and heritage.

At country level, sustainability is a key pillar of many new and updated tourism strategies and action plans, including in Denmark, Finland, and Portugal. In collaboration with VisitDenmark, the Centre for Regional and Tourism Research has developed a system of indicators to measure the sustainability of tourism at destination and municipal level (see Box 2). Three requirements guided the choice of indicators – they should i) be easy to understand and interpret, ii) rely on bottom-up data and iii) be internationally comparable. However, data availability differs between social, environmental and economic dimensions. The environmental dimension is least advanced, requiring further work going forward.

Box 2. Measuring and monitoring the sustainability of tourism in Denmark

In collaboration with VisitDenmark, the Centre for Regional and Tourism Research (CRT) developed a system of indicators for measuring the sustainability of tourism in Denmark at destination and municipal level. The indicators were developed building on a literature review and a participatory process involving destinations, businesses and tourism associations. The resulting system includes 22 indicators across three dimensions of sustainability, with most indicators linked to Denmark's national tourism strategy:

Economic	Social	Environmental
Bed nights	Tourists' satisfaction	Accommodation with certification
Arrivals	Local satisfaction	Electricity consumption in tourism industry
Seasonality in bed nights	Number of beds per 100 residents	Heating consumption in tourism industry
Average spend of tourists per day	Tourism intensity	Water consumption in tourism industry
Average length of stay	Tourism density	Carbon footprint
Tourism-related employment	Inclusion of marginalised labour	
Local ownership of tourism-related firms	Seasonality in employment	
Labour productivity	Educational level of employment	
Tourism-related tax revenue		

Data collection is financed by VisitDenmark. Data is processed by CRT to calculate the indicators, building on strong co-operation with the national statistical institute which provides data input. The indicator results allow comparing destinations' performance, with data accessible via a Dashboard.

As part of Visit Finland's Sustainable Travel Finland initiative, indicators providing data at business, regional and national level are built from the national sustainable tourism programme and certification scheme to promote visibility of the sustainability of tourism. It is intended that these indicators will help to evaluate and inform the development and implementation of the next tourism strategy (see Box 3).

Box 3. Creating evidence through the sustainable tourism programme in Finland

Visit Finland has developed the Sustainable Travel Finland programme including sustainable tourism indicators compiled at company, regional and national level, structured across four dimensions:

- Destination management: for example, the number of tourism companies participating in the programme, share of residents satisfied with tourism's impact on their place of residence.
- Economic value: for example, the number of education and training courses related to sustainable tourism, share of seasonal workers.
- Social and cultural impact: for example, the number of companies with multilingual communication, share of enterprises providing services for people with reduced mobility.
- Environmental impact: for example, the share of companies measuring carbon footprint, share of companies actively participating in climate change mitigation measures.

In the future, these indicators will help to evaluate and set targets for the national tourism strategy and its actions. Data is collected from businesses, regions, visitor and resident surveys and Statistics Finland. To monitor and communicate progress against the actions and indicators of the programme, Visit Finland publishes annual reports. Based on the results, Visit Finland evaluates which indicator targets need to be more ambitious to encourage the sector to make more sustainable choices.

Sustainability indicators are increasingly being embedded in national tourism strategies or subsequently developed as part of the monitoring frameworks. Turismo de Portugal developed a Sustainable Tourism Indicators System (Turismo de Portugal, 2023[17]) in line with Portugal's national Tourism Strategy 2027, with economic, social and environmental indicators directly linked to targets in the national tourism strategy to monitor progress in achieving the strategic goals (see Box 4).

Box 4. Measuring and monitoring the sustainability of tourism in Portugal

The Tourism Strategy 2027 framed sustainability at the core of tourism policies in Portugal to reflect tourism's role as a driver for economic, social and environmental development throughout the territory. The Strategy sets eight strategic goals or targets across the three pillars of sustainability. To monitor progress, Turismo de Portugal developed a set of tourism sustainability indicators building upon existing frameworks, including the Indicators of Sustainable Development for Tourism Destinations (UNWTO, 2004[18]), and ETIS, the European Tourism Indicators System for sustainable destination management (European Union, 2016[12]), in an effort to maximise international comparability. The central goal was to develop a practical approach to measurement geared to inform decision making. The resulting set covers 43 indicators, articulated around three dimensions of sustainability and 11 thematic areas (see table below). Data is currently available for 37 of the 43 indicators.

Economic	Social	Environmental
Seasonality	Accessibility	Environmental management
Economic benefits	Pressure	Energy management
Employment	Tourist satisfaction	Water management
	Local satisfaction	Solid waste management

Indicators to measure the sustainability of tourism are also being developed at sub-national level, including to support a growing focus on destination management. Visit Flanders has developed a set of indicators to help monitor progress towards their vision of value creation for all stakeholders. The indicators cover four core pillars of Residents, Visitors, Entrepreneurs and Place. For their implementation, Visit Flanders has adopted a dual approach, combining a toolkit to enable local stakeholders to collect data and the Destination Barometer, a dashboard to visualise results (see Box 5).

Box 5. Toolkit and Destination Barometer to implement indicators in Flanders, Belgium

The Travel to Tomorrow framework guides Visit Flander's efforts to develop Flanders as a destination with flourishing places and value creation for all stakeholders. Guided by the four pillars Residents, Visitors, Entrepreneurs and Place, Visit Flanders has developed a set of 90 potential indicators across 20 dimensions. This allows destinations to choose the indicators relevant to them from the toolkit, with selected indicators presented in the Destination Barometer.

Visit Flanders has developed a toolkit to facilitate bottom-up data collection, building capacity and empowering local stakeholders to compile and analyse indicators in collaboration with Visit Flanders. The toolkit provides tools to collect data, such as surveys and interview protocols.

The Destination Barometer is a dashboard to collect and visualise available information for 14 themes across the four dimensions, using maps and graphs. Exemplary indicators are resident perception of tourism impacts, resident satisfaction with cultural and recreational amenities, visitor satisfaction, employment, job vacancies, and CO_2 emissions. Data are generally available at regional level.

However, some indicators are also measured at a more granular level. Radar charts are used to compare performance between different types of accommodation and attractions. Visit Flanders continuously works to improve data availability, methodologies and visualisation. Challenges remain to identify relevant threshold values and improve timeliness of data.

Despite the shared aim of improving the evidence base for sustainable tourism policy making, many indicator frameworks include long lists of indicators and metrics that are rarely compiled or used due to limited resources and data availability. Conversely, an excessive focus on data availability, may lead to measurement as an end in itself rather than a means to inform policy. Moreover, existing frameworks and initiatives often define and conceptualise indicators differently and take different methodological approaches. This heterogeneity hinders comparability across countries, regions and destinations. Decision makers face a wide, and often conflicting array of concepts, methodologies and data that is difficult to navigate. This report contributes to developing a practical approach to monitoring impacts that on the one hand allows for comparability while on the other recognises the unique characteristics of destinations – with indicators as a tool to enhance evidence-based policy making towards sustainable development.

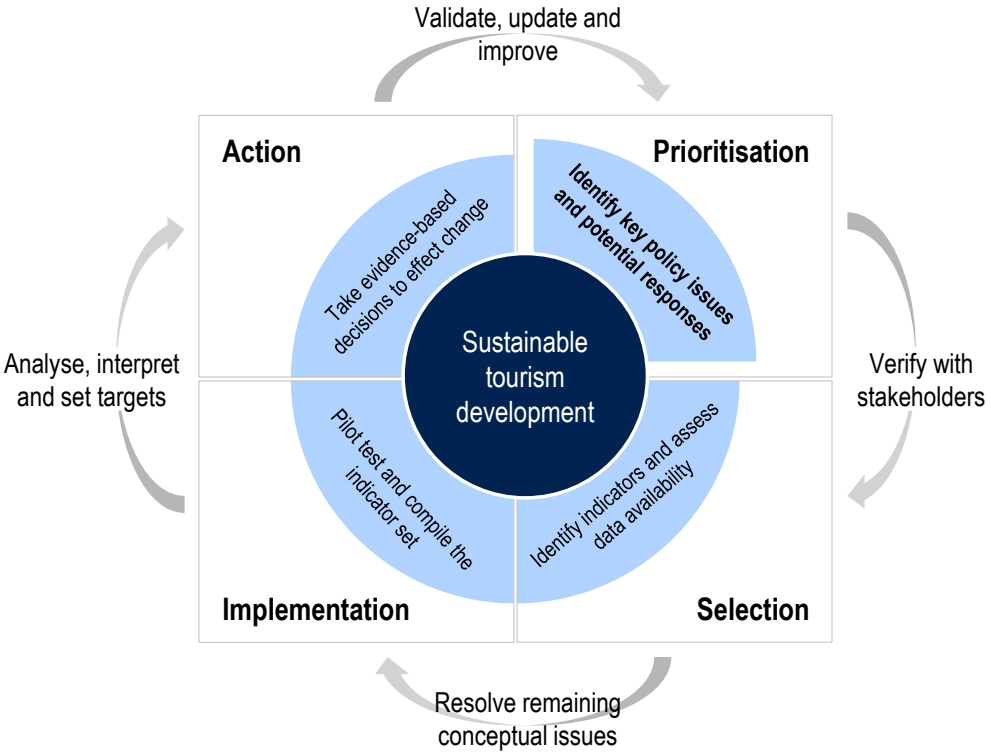
Developing and implementing a set of tourism sustainability indicators

Tourism stakeholders agree that there is a need for robust data on tourism sustainability. However, the existence of data and indicator frameworks does not necessarily translate into concrete action towards sustainable development (Crabolu, Font and Miller, 2023[19]). This data-action gap needs to be closed to turn information into positive change on the ground.

This report adopts a policy-led approach to indicator development to help turn data into action for sustainable development. The approach consists of four key steps: prioritisation, indicator selection, implementation and action (see Figure 1). The first step is the prioritisation of data needs based on the identification of key policy priorities agreed upon with stakeholders. This includes linking the destination context and tourism strategies to indicators as well as thinking about what needs to change and how. The selection of indicators to monitor the key policy priorities builds on an assessment of data availability and quality, ensuring that indicators are not only relevant, but also measurable. Focussing on a core set of indicators can also facilitate long-term implementation in a resource-constrained environment. Additional, supplementary indicators can then be used to capture contextual specificities. After resolving remaining conceptual and practical issues, as part of the implementation phase it is necessary to pilot test and compile the indicator set, establishing baseline data. Analysis and interpretation of the indicator results bridges the gap from implementation to action, enabling policy makers to take evidence-based decisions to effect change, including the setting of targets and thresholds to guide future efforts.

Regular reviews of the system of indicators helps to ensure that it remains ‘fit for purpose’. Circumstances as well as unique destination characteristics and policy priorities may change over time, requiring adaptation and potentially expansion of the indicator set. While the ‘perfect’ measure may not be available at the outset, the iterative process aims to continuously drive the indicator system towards more relevant, timely and robust information. As part of a holistic toolkit for sustainable tourism development, it is beneficial to complement indicators with other sources of relevant information where available.

Figure 1. Approach for establishing a policy-led indicator system



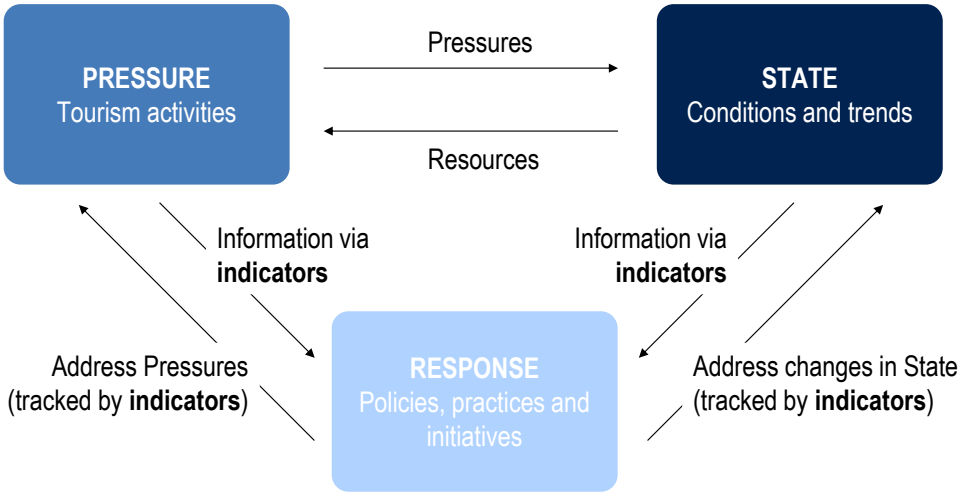
Source: OECD elaboration.

The process of developing and implementing a set of indicators relies on collaboration between data specialists and policy makers. This ensures that the 'top-down' identification of policy priorities is achievable and aligned with the 'bottom-up' availability of data. Such an approach can provide additional benefits. Tourism sustainability indicators can serve as a means to increase awareness of the importance of sustainability among tourism destination stakeholders. The process builds capacity for decision makers to better understand core policy priorities and facilitates the transition towards more sustainable models of tourism.

This report presents a policy-led approach to the development of a system of indicators as a tool to inform and enhance evidence-based policy development and sustainable destination management in Slovenia. It builds on existing frameworks and good practices at international, national and regional levels. The indicator logic follows the Pressure-State-Response (PSR) model (see Figure 2) to reflect causal mechanisms underlying key policy priorities and to help close the data-action gap by monitoring response measures.

As illustrated in Figure 2, 'pressure' refers to human activities or natural events that exert stress on the environment and social systems, while 'state' describes the condition of the environment and social systems. The state can change from a recognised baseline in response to the pressure. Tourism activities for instance impact local community perceptions, tourist satisfaction, and water quality. Social and environmental ecosystems provide the resources for tourism activities to flourish, including cultural and natural heritage. Finally, 'responses' are actions taken by governments, organisations, and individuals to mitigate, adapt to, or prevent negative pressure and changes in state stemming from tourism. Responses include, for example, promoting the use of sustainable mobility options to reduce emissions from transport. Indicators provide information on the effectiveness of implemented responses.

Figure 2. Indicator logic: Pressure, State, Response



Source: Adapted from (Li, 2004[20]), Environmental management indicators for ecotourism in China's nature reserves: A case study in Tianmushan Nature Reserve. *Tourism Management*, *25*(5), pp. 559-564.

The PSR model was first proposed in Canada in the early 1990s as an evolution of the cause-effect models (Bowen and Riley, 2003[21]) and was further developed by the OECD to make sense of how human activity interacts with the environment (OECD, 1993[22]). The PSR model was expanded by the European Environment Agency to include additional aspects of Drivers and Impacts, resulting in the DPSIR framework (Driver-Pressure-State-Impact-Response). Due to its simplicity, the original PSR is used in this work. Whilst initially focussed on human-environment interactions, the model can be extended to include social and cultural changes in response to the pressure.

The model structures indicators into a format that facilitates the use of data and information for policy development (Tscherning et al., 2012[23]), however, it is not without weaknesses. For example, it can be argued that causality is more complex than visualised in what is a simplified conceptual model. Multiple pressures might for instance interact to affect changes in state and relationships are not linear. Further, the classification of variables and where they fit in the model can be ambiguous. Depending on the particular context of application, variables could be interpreted as pressures or changes in state; assumptions and case-specific perspectives therefore need to be clarified. However, as long as there is an agreement of indicator interpretation amongst key users of the model, these issues should not impede effective implementation.

Indicators to measure and monitor the sustainability of tourism in Slovenia

Policy context

Slovenia is a tourist destination known for its beautiful landscapes and rich history. It offers a diversity of natural attractions including the Julian Alps, Lake Bled, and the Adriatic coast. Ljubljana, the capital, is famous for its lively culture and historic buildings. The country promotes itself as a sustainable tourism destination and has many wellness and spa resorts with natural springs, while more adventurous visitors can enjoy skiing, rafting, and cycling. Slovenia is also gaining popularity for its food and wine, with tourists able to experience local produce from 24 gastronomic areas and three distinct wine regions.

The Slovenian Tourism Strategy 2022-28 sets out a vision of sustainable development of tourism in Slovenia, offering a green boutique experience, with a smaller footprint and greater value for all. To monitor progress on the key commitment of balanced growth under the principle of 'A little more and much better', Slovenia has established 25 impact metrics, each with their own quantitative targets to reach by 2028 based on a 2019 baseline. Indicator compilation relies on multiple data sources including from SURS, the Green Scheme of Slovenian Tourism managed by the Slovenian Tourist Board, the Bank of Slovenia and the Agency of the Republic of Slovenia for Public Legal Records and Related Services.

The following five objectives of Slovenia's tourism strategy reflect the key policy priorities to be addressed in order to move to more sustainable models of tourism. Given Slovenia's nature-based tourism offer and their promise of a 'green' destination, there is a particular focus on decarbonising Slovenian tourism and reducing the environmental impact of tourism.

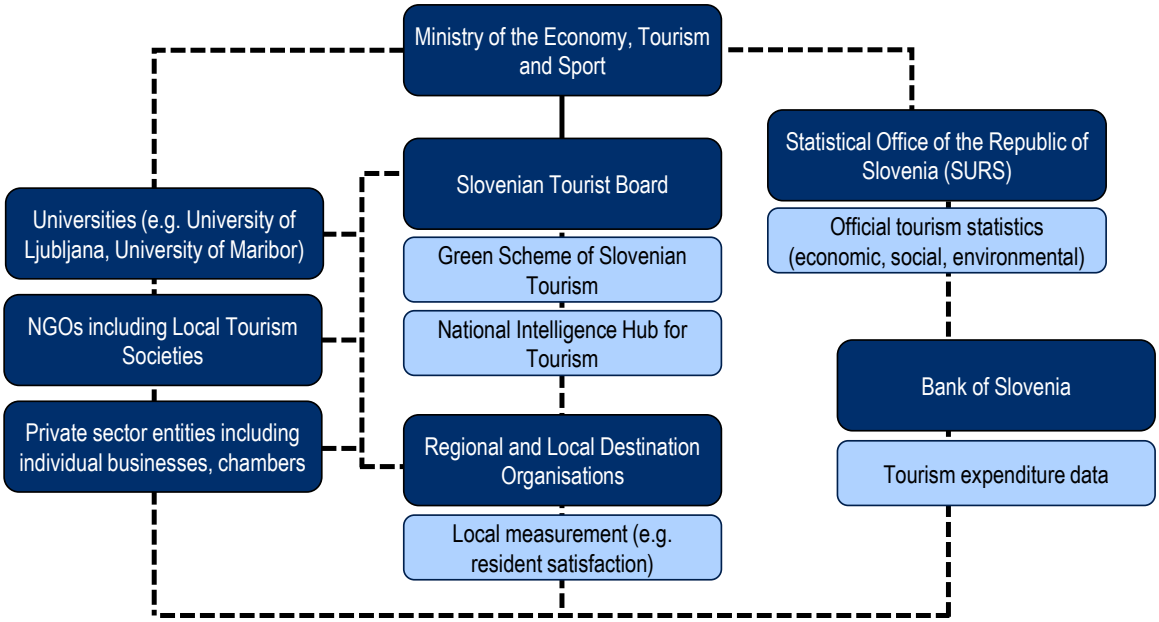
- Quality, value and year-round supply of the portfolio of tourism products and services
- Positioning tourism as a generator of value in other industries and sustainable development
- Satisfaction of the population, employees and guests
- Decarbonising and rebalancing Slovenian tourism
- Competent and effective management structures

To better monitor progress to address the key policy priorities, Slovenia seeks to complement the set of impact indicators with additional analytical indicators. However, the difficulty lies in establishing a core set of indicators that can be continuously compiled with available resources. This project has established a refined set of indicators which will fall under the responsibility of SURS and will be regularly updated and disseminated in a user-friendly manner.

Multiple stakeholders collect and analyse tourism data in Slovenia (see Figure 3 for an overview of the data governance structure). In response to a need for more granular data and to complement data published by SURS, the Slovenian Tourist Board is implementing the National Intelligence Hub for Tourism, a platform to collect and process local, national and international tourism data. The focus will be on accelerating the green and digital transition and upgrading the Green Scheme of Slovenian Tourism, a

certification programme and tool developed at the national level under the Slovenia Green brand. To implement the National Intelligence Hub, the Slovenian Tourist Board completed the prototype development phase in 2023, including analysis of data sources, preparation of functional specifications, and dashboard design. The implementation phase commenced in 2024 and is expected to be completed by the end of 2025. Close collaboration between the Slovenian Ministry of the Economy, Tourism and Sport, the Slovenian Tourist Board and SURS as well as with stakeholders from other sectors is needed to enhance the evidence base for tourism policy making, whilst avoiding duplication of data.

Figure 3. Tourism data governance structure in Slovenia



Overview of core set of indicators

Reflecting the five strategic objectives of the Slovenian Tourism Strategy 2022-28, the proposed set of 20 core indicators and 35 metrics is structured around the above five policy priorities (see Table 1). The following sections outline how indicators are to be compiled under SURS' responsibility, supported by good practice examples from other countries and regions.

Table 1. Indicators to measure and monitor the sustainability of tourism in Slovenia

Key policy priority	#	Indicator	Metric	PSR	Pillars of sustainability
I. Quality, value and year-round supply of the portfolio of tourism products and services	I.1	Tourism value added	Total value added in accommodation and food service activities (NACE I)	State	Economic
			Value added per employee in accommodation and food service activities (NACE I)	State	
	I.2	Receipts from inbound travel	Inflows from the export of travel relative to overnight stays by international tourists	State	Economic
	I.3	Seasonality	Share of total tourist overnight stays in the top 3 months	Pressure	Economic, social
	I.4	Length of stay	Average length of stay of tourists in accommodation establishments	State	Economic, environmental

Key policy priority	#	Indicator	Metric	PSR	Pillars of sustainability
	I.5	Boutique accommodation	Share of 4- to 5-star hotels and similar accommodation establishments with less than 50 rooms	State	Predominantly economic
			Share of 4- to 5-star campsites	State	
			Number of farms with tourist accommodation	State	
	I.6	Digital business transformation	Share of enterprises reporting lack of appropriate staff or lack of knowledge as limiting factor	Response	Predominantly economic
			Share of enterprises reporting lack of financial resources as limiting factor	Response	
			Share of enterprises reporting lack of possibilities to quickly adjust management or business processes as limiting factor	Response	
	I.7	Occupancy	Net occupancy rate of permanent bed places in all types of accommodation	State	Economic
			Net occupancy rate of indivisible units in all types of accommodation	State	Economic
II. Positioning tourism as a generator of value in other industries and sustainable development	II.1	Tourism GDP contribution	Share of tourism GDP in total GDP of the economy	State	Economic
	II.2	Tourism employment	Share of persons employed in tourism of all persons in employment	State	Economic, social
			Number of persons employed in tourism	State	
	II.3	Training and skills	Share of employed persons participating in job-related non-formal education or training activity in accommodation and food service activities (NACE I)	Response	Economic, social
III. Satisfaction of the population, employees and guests	III.1	Satisfaction of the local population	Average satisfaction with tourism of the local population	State	Predominantly social
	III.2	Satisfaction of guests	Average general impression of Slovenia by international tourists	State	Economic, social
	III.3	Satisfaction of employees	Average monthly earnings by legal persons employed in accommodation and food service activities (NACE I) relative to national average monthly earnings by all legal persons	State	Economic, social
			Share of employees in permanent employment in accommodation and food service activities (NACE I)	State	
			Average number of actual weekly hours of work in accommodation and food service activities (NACE I)	State	
	III.4	Gender pay gap	Gender pay gap in tourism (1411 Hotel managers)	State	Economic, social
IV. Decarbonising and rebalancing Slovenian tourism	IV.1	Carbon footprint	Total carbon footprint generated by tourism activity (direct and indirect tourist consumption)	State	Environmental
			Carbon emissions from international passenger flights (territory principle)	State	
			Carbon emissions from accommodation and food service activities (NACE I)	State	
	IV.2	Tourism density and intensity	Number of tourist overnight stays per square kilometre	Pressure	Environmental, social
			Number of tourist overnight stays per local resident	Pressure	
	IV.3	Resource use	Electricity consumption in accommodation and food service activities (NACE I)	State	Environmental
			Direct tourist water consumption	State	
			Waste generation in accommodation and food service activities (NACE I)	State	
	IV.4	Sustainable mobility	Share of international tourists using sustainable mobility options as main mode of transport in the destination	Response	Environmental, social
	IV.5	Environmental protection	Current expenditure for environmental protection	Response	Environmental
V. Competent and effective management structures	V.1	Quality of management at business level	Number of enterprise births in accommodation and food service activities (NACE I)	State	Governance, economic
			Number of enterprise deaths in accommodation and food service activities (NACE I)	State	

Compilation guidance

Quality, value and year-round supply of the portfolio of tourism products and services

I.1 Tourism value added

Tracking the value added by tourism helps evaluate the economic performance of the sector over time. Data on tourism value added assists policy makers to make informed decisions about resource allocation, infrastructure development, and promotional activities aimed at boosting the sector. In the first instance, the focus will be on accommodation and food service activities (NACE I). Going forward, this can be broadened to include all tourism-characteristic activities. Contextual analysis is important to assess the trade-offs of growing value added relative to the environmental and socio-cultural impacts. Further, the measurement of value added does not provide information on the distribution of economic benefits.

Compilation information: I.1 Tourism value added			
Metrics and units	I.1.1	Total value added in accommodation and food service activities (NACE I)	EUR
	I.1.2	Value added per employee in accommodation and food service activities (NACE I)	EUR / employee
Target direction	Positive – the policy aim is to increase economic benefits from tourism.		
Frequency	Annual		
Data source	SURS: Structural Business Statistics (SiStat database)		

I.2 Receipts from inbound travel

Measuring receipts from the export of travel helps quantify the economic impact of inbound travel by linking visitor spending to their length of stay. It highlights how much revenue is generated per night spent by international tourists, providing insights into the economic benefits of tourism.

Compilation information: I.2 Receipts from inbound travel			
Metrics and units	I.2.1	Inflows from the export of travel relative to overnight stays by international tourists	EUR / overnight stay
Target direction	Positive – the policy aim is to increase economic benefits from inbound tourism per international tourist night spent.		
Frequency	Annual		
Data source	Bank of Slovenia: Balance of payments (Data series) SURS: Tourist arrivals and overnight stays (SiStat database)		

I.3 Seasonality

Challenges around temporal spread arise in the summer months of July and August in particular. Visitor volumes in these months lead to pressure on infrastructure including traffic congestion, increased water and electricity consumption as well as waste production. For international comparability, the metric will measure the share of overnights of international and domestic tourists in the three peak months (June, July and August), aligned with the EU Tourism Dashboard (European Commission, 2022[13]).

Compilation information: I.3 Seasonality			
Metrics and units	I.3.1	Share of total tourist overnight stays in the top 3 months	%
Target direction	Negative – the policy aim is to reduce the concentration in the top three months.		
Frequency	Annual		
Data source	SURS: Tourist arrivals and overnight stays (SiStat database)		

I.4 Length of stay

Increasing the length of stay can help bring more value to a destination including through the purchase of local products. Tourists who are staying longer in one place are also seen as more responsible travellers, potentially reducing the environmental footprint per night and euro spent. The metric will rely on accommodation statistics as the data include short-stay accommodation through collaborative economy platforms, cover international and domestic tourists, and are timelier than survey data on international tourists collected every three to five years. An avenue for future development could be to model the overall length of stay, building on all three available data sources (accommodation statistics, quarterly domestic tourist survey, and the international tourist survey).

Compilation information: I.4 Length of stay			
Metrics and units	I.4.1	Average length of stay of tourists in accommodation establishment	overnight stays
Target direction	Positive – the policy aim is to increase the average length of stay.		
Frequency	Annual		
Data source	SURS: Tourist arrivals and overnight stays (SiStat database)		

I.5 Boutique accommodation

As outlined in the national tourism strategy, Slovenia aims to create a 'green and boutique' experience for visitors. Stakeholders agreed to focus on 'boutique' accommodation under policy priority I and include 'green' or environmental aspects under policy priority IV. While Slovenia has not yet identified official standards to define 'boutique' accommodation establishments, hotels and campsites with high star ratings are expected to be part of this category. Metric I.5.1 includes a capacity limit to exclude large hotels, reflecting the small scale typically associated with boutique accommodation. Farm-based tourist accommodation also fits into this category as it offers a unique experience close to nature. Promoting farm stays is a policy goal to create employment opportunities in rural areas and disincentivise rural-to-urban migration. Detailed information on accommodation establishments including hotels, campsites and farm-stay is available from the accommodation registry.

The definition of 'boutique' accommodation needs further refinement going forward. Beyond the smaller scale, 'boutiqueness' typically refers to further intangible characteristics such as unique design and character, personalised service, location in scenic or fashionable areas and a focus on experience. Following agreement on a definition, metrics should be revised accordingly.

Compilation information: I.5 Boutique accommodation			
Metrics and units	I.5.1	Share of 4- to 5-star hotels and similar accommodation establishments with less than 50 rooms	%
	I.5.2	Share of 4- to 5-star campsites	%
	I.5.3	Number of farms with tourist accommodation	Count
Target direction	Positive – the policy aim is to increase the offer of boutique accommodation establishments.		
Frequency	Annual		
Data source	SURS: Tourist arrivals and overnight stays (SiStat database)		

I.6 Digital business transformation

As mobile networks are available across Slovenia, internet speed is not a major issue hampering the digitalisation of tourism (Slovenia also does not collect this data). However, a key policy issue is enabling the digital transformation of tourism enterprises, improving productivity and competitiveness as well as opening up new market opportunities through digitised products or services and new business models. Data on the usage of ICT (Information and Communication Technologies) and e-commerce in enterprises

provide insights into the barriers to digital business transformation[1] – major limiting factors in 2023 were lack of possibilities to quickly adjust management or business processes [51%], lack of financial resources [49%] and lack of appropriate staff or knowledge [45%] (SURS, 2024[24]). One limitation is that these data are only available at 2-digit NACE level for enterprises with 10 or more employees and self-employed persons. Furthermore, the survey items represent national questions that are not included in the Eurostat model questionnaire on ICT usage and e-commerce in enterprises; there is thus a risk that they might be discarded in the case of resource shortages. Nonetheless, the metrics provide a starting point to analyse the barriers to digital transformation in tourism and progress on improvements.

Moving forward, SURS could explore the possibility to capture businesses with less than 10 employees and self-employed persons. The Ministry and/or the Slovenian Tourist Board could also consider employing qualitative approaches such as focus groups with selected micro-enterprises to help understand the challenges and opportunities they face in relation to digital technology utilisation. OECD is also undertaking work on digitalisation indicators with a focus on accommodation establishments, in collaboration with Slovenia and the European Commission – when finalised, Slovenia could also consider adding any relevant indicators identified from this work.

Compilation information: I.6 Digital business transformation			
Metrics and units	I.6.1	Share of enterprises reporting lack of appropriate staff or lack of knowledge as limiting factor for digital business transformation (NACE I)	%
	I.6.2	Share of enterprises reporting lack of financial resources as limiting factor for digital business transformation (NACE I)	%
	I.6.3	Share of enterprises reporting lack of possibilities to quickly adjust management or business processes as limiting factor for digital business transformation (NACE I)	%
Target direction	Negative – the policy aim is to reduce the barriers to digitalisation for tourism enterprises.		
Frequency	Annual		
Data source	SURS: Usage of information-communication technologies and e-commerce in enterprises (SiStat database)		

I.7 Occupancy

Measuring bed occupancy rates is often referenced in indicator frameworks, as the indicator gives an indication of the extent to which tourism supply and demand match and whether existing assets are used efficiently (European Commission, 2022[13]; European Union, 2016[12]; Turismo de Portugal, 2017[25]; UNWTO, 2004[18]). Data on occupancy rates can inform forward planning, management and regulation. For example, it can be used to cap new accommodation developments, only allowing new establishments above a certain region-specific occupancy threshold (UNWTO, 2004[18]). However, occupancy rates may also point to issues of seasonality, providing a basis for gearing marketing efforts to promote off-peak and shoulder seasons.

Compilation information: I.7 Occupancy			
Metrics and units	I.7.1	Net occupancy rate of permanent bed places in all types of accommodation	%
	I.7.2	Net occupancy rate of indivisible units in all types of accommodation	%
Target direction	Positive – the policy aim is to increase occupancy rates.		
Frequency	Monthly		
Data source	SURS: Tourist arrivals and overnight stays (SiStat database)		

[1] Elements of "digital business transformation", as defined by the Slovenian Chamber of Commerce:
- transformation of business activities or processes;
- development of employees' knowledge of the use of ICT;
- involvement of employees, partners in innovating products or service;
- changed way of co-operating with customers (e.g. using social media, data analytics, digital channels for purposes of marketing or selling products or providing services, involving customers in development), etc.

Positioning tourism as a generator of value in other industries and to support sustainable development

II.1 Tourism GDP contribution

Measuring the contribution of tourism and tourism-related industries to Slovenia's GDP captures the relative economic importance of tourism, showing the sector's role in generating income and employment. The Slovenian Tourism Strategy 2022-28 aims to implement a balanced growth scenario under the principle 'A little more and much better'. A very high contribution of tourism to GDP can point to a lack of economic diversity and indicate weaknesses in other areas of the economy, potentially negatively affecting economic diversification. Rapid or unplanned tourism growth can also result in negative impacts on the environment and local communities. As for all metrics, the data on tourism's contribution to GDP needs to be interpreted in conjunction with contextual factors. For example, Slovenia aims to position tourism as a generator of value in other industries (e.g., agriculture, energy, retail), and to support sustainable development – further work is therefore needed to complement this high-level GDP metric with additional targeted metrics. Together, they can give a more accurate picture of how tourism is embedded in and contributes to local and national value chains, including through the purchase of inputs from sectors such as agriculture, energy, retail, arts, culture or transport.

Compilation information: II.1 Tourism GDP contribution			
Metrics and units	II.1.1	Share of tourism GDP in total GDP of the economy	%
Target direction	Optimum band – the policy aim is to optimise tourism's economic contribution. This optimum needs to be defined and interpreted contextually – a diversified economy brings benefits and a disproportionately high contribution of tourism to GDP may not be beneficial.		
Frequency	Triennial		
Data source	SURS: Economic accounts for tourism (SiStat database)		

II.2 Tourism employment

One of the key benefits that tourism can bring to the local economy is employment, given the sector is labour intensive and creates jobs across skill levels and age groups (OECD, 2015[26]). Tourism-related industries in Slovenia employed almost 69 600 persons in 2023, accounting for 7.4% of the total workforce, and increased by 0.5% compared to 2019 (OECD, 2024[27]). However, a disproportionately high share of tourism employment can signal a dependence on the sector, exposing the wider economy to potential shocks (Eurostat, 2006[28]), as demonstrated by the COVID-19 pandemic. Measuring tourism employment over time can help to identify trends and changes in the labour market, such as shifts in the types of jobs available or changes in the demand for certain skills or qualifications.

Compilation information: II.2 Tourism employment			
Metrics and units	II.2.1	Share of persons employed in tourism of all persons in employment	%
	II.2.2	Number of persons employed in tourism	number
Target direction	Optimum band – the policy aim is to optimise tourism's role in employment creation. This optimum needs to be defined and interpreted contextually – a diversified economy brings benefits, and a disproportionately high share of tourism employment can signal a dependence on the sector, exposing the wider economy to potential shocks.		
Frequency	Monthly or quarterly		
Data source	SURS: Persons in employment (SiStat database)		

II.3 Training and skills

Slovenia, like many other countries, is facing a shortage of skilled labour for the tourism sector. As a result, improving training to foster skills is a key policy aim. While data on training is available for accommodation

and food service activities from the Labour Force Survey, the estimates are less reliable and have been flagged for caution in SURS' database in 2021, 2022 and 2023. The metric is included as a placeholder, reflecting its policy relevance, whilst acknowledging the need to potentially identify another data source that specifically focusses on tourism as an activity.

Compilation information: II.3 Training and skills			
Metrics and units	II.3.1	Share of employed persons participating in job-related non-formal education or training activity in accommodation and food service activities (NACE I)	%
Target direction	Positive – the policy aim is to improve training and skills for the tourism workforce.		
Frequency	Annual		
Data source	SURS: Labour Force Survey (SiStat database)		

Satisfaction of the population, employees and guests

III.1 Satisfaction of the local population

Tracking the local population's satisfaction gives an indication of whether tourism development aligns with the needs and preferences of the community, fostering social harmony and minimising potential conflicts between residents and tourists, ideally contributing to local population well-being. To measure local community perceptions of tourism at national and potentially regional level, SURS is considering including relevant questions in the domestic tourism survey, following Austria's example (see Box 6).

Compilation information: III.1 Satisfaction of the local population			
Metrics and units	III.1.1	Average satisfaction of the local population with tourism	average score
Target direction	Positive – the policy aim is to increase the satisfaction of the local population.		
Frequency	Quarterly		
Data source	SURS: Tourism travels of domestic population (future plans to potentially include question on local community perception of tourism in the survey)		

Box 6. Austria's approach to measuring local community tourism acceptance

Austria's national tourism strategy Plan T – Masterplan for Tourism is the basis for national tourism policy development. To monitor progress, the plan initially comprised 12 economic, environmental and social indicators. The indicators are reviewed regularly to adapt to changing circumstances and new data availability, with 14 indicators currently used. Signals of 'overtourism', for instance, highlighted the need to measure residents' perceptions of tourism. In response, Austria added an indicator on tourism acceptance to an existing survey on Austrians' travel behaviours. Statistics Austria compiles the indicator at national level and partially at regional level. For reliable results at destination level, the sample size of 15 000 respondents per year would need to be increased.

The survey started with the first reference quarter 2024. The questionnaire follows the premise of 'Keep it short and simple'. The main question is 'How do you personally rate the impact of tourism on your place of residence?', with respondents asked to provide a rating on a 5-point scale from predominantly positive to predominantly negative. To better understand the factors influencing the rating, the survey also includes an open-ended question: 'Why do you rate the impact of tourism on your place of residence as predominantly positive/negative?'. The aim of compiling community acceptance of tourism on an ongoing basis is to record the perceived effects of tourism to provide a holistic picture of the population's attitude towards tourism and to monitor the development over the long term.

Complementing the potential measurement by SURS, destinations included in the Green Scheme of Slovenian Tourism already measure the average satisfaction of the local population with the development of tourism at destination level. As the Slovenian Tourist Board, who run the Green Scheme, is not part of the national statistical system, SURS cannot publish the data in their database. Close collaboration is needed to build synergies between SURS' potential data collection at national and regional level, and the Slovenian Tourist Board's destination-level monitoring under the Green Scheme.

III.2 Satisfaction of guests

Visitor satisfaction is a key determinant of longer-term sustainability and competitiveness of destinations. It gives an indication of the quality of the tourism offer, with more satisfied tourists more likely to return in the future and/or recommend the destination to others. SURS conducts a survey to collect data on international tourist satisfaction every three to five years.

Compilation information: III.2 Satisfaction of guests			
Metrics and units	III.2.1	Average general impression of Slovenia by international tourists	average score
Target direction	Positive – the policy aim is to improve tourists' impression of Slovenia.		
Frequency	Every 3-5 years		
Data source	SURS: Foreign Tourists in Slovenia (SiStat data by country of residence and SiStat data by types of municipalities)		

III.3 Satisfaction of employees

Improving job quality is central to employee satisfaction and retention. Key challenges in Slovenia include low wage levels compared to other sectors, a relatively high share of non-permanent employment and long working hours. SURS collects rich employment data from the Statistical Register of Employment to monitor monthly and annual progress. In addition to wage data by NACE I activities, data is also available by occupational group; measuring the pay gap for representative occupational groups could be an indicator to further explore in the future.

Compilation information: III.3 Satisfaction of employees			
Metrics and units	III.3.1	Average monthly earnings by legal persons in accommodation and food service activities (NACE I) relative to national average monthly earnings by legal persons	%
	III.3.2	Share of employees in permanent employment in accommodation and food service activities (NACE I)	%
	III.3.3	Average number of actual weekly hours of work in accommodation and food service activities (NACE I)	hours
Target direction	III.3.1 Positive – the policy aim is to improve the average wage in tourism relative to the national average. III.3.2 Positive – the policy aim is to increase the share of employees in permanent employment. III.3.3 Context-dependent – the policy aim is to find a balance between the number of actual hours worked with the hours that employees wish to work, striving for international comparison of hours worked by tourism employees.		
Frequency	III.3.1 Annual III.3.2-3 Quarterly to capture seasonal effects		
Data source	III.3.1. SURS: Earnings (SiStat database) III.3.2-3 SURS: Labour Force Survey		

III.4 Gender pay gap

The share of women in the tourism workforce is typically higher than in the overall economy (OECD, 2015[26]). In 2019, 54% of people employed in tourism were women compared to 39% in the broader economy (UNWTO, 2019[29]). The COVID-19 pandemic, however, has exacerbated existing inequalities in the tourism labour market, in particular affecting vulnerable groups including women (ILO, 2022[30]). A majority of tourism businesses are micro, small and medium-sized enterprises (MSMEs), of which many are of smaller scale. These businesses are often run by female entrepreneurs; however, women are

underrepresented in senior management positions in larger tourism businesses (UNWTO, 2019[29]). In Slovenia, tourism occupational groups show a higher gender pay gap than the average across all occupational groups: Among hotel managers, the gender pay gap was 15.1% in 2022, compared to 6.1% in all occupational groups (SURS, 2023[31]).

Compilation information: III.4 Gender pay gap			
Metrics and units	III.4.1	Gender pay gap in tourism (occupational group 1411 Hotel managers)	%
Target direction	Negative – the policy aim is to reduce the gender pay gap in tourism.		
Frequency	Annual		
Data source	SURS: Structure of earnings statistics (SiStat data)		

Decarbonising and rebalancing Slovenian tourism

IV.1 Carbon footprint

Tourism both affects and is affected by climate change. Tourism-related transport (air travel in particular) is a major contributor to global emissions. Recent estimates point to tourism emissions in the range of 8% to 11% of global emissions (WTTC & UNEP, 2021[32]). At the same time, climate change directly affects tourism, as extreme weather events reduce the attractiveness of tourism destinations and rising temperatures compromise some tourism segments. The impacts of climate change alter the terrestrial and marine ecosystems upon which tourism depends. Reducing emissions from tourism directly contributes to the sustainability of the sector and responds to the global climate crisis. Decarbonisation is a key objective of Slovenia's Tourism Strategy. Data on carbon footprint from international tourist arrivals could be useful to inform the marketing mix and promotion activities.

As a starting point, SURS will focus on the following two metrics:

- IV.1.2 Carbon emissions from international passenger flights, based on the OECD database on Air Transport CO_2 Emissions (Clarke et al., 2022[33]) [the source excludes connecting flights and does not capture emissions from tourists arriving via airports in neighbouring countries].
- IV.1.3 Carbon emissions from accommodation and food service activities (NACE I), based on SURS National Accounting Matrix including Environmental Accounts [NAMEA] (2022[34]).

Going forward, SURS will consider one further metric to provide a more complete view of carbon emissions generated by tourism activities:

- IV.1.1 Total carbon footprint generated by tourism activity (direct and indirect tourist consumption)

The table below provides compilation information for the three metrics.

Compilation information: IV.1 Carbon footprint			
Metrics and units	IV.1.1	Total carbon footprint generated by tourism activity (direct and indirect tourist consumption)	t CO_2e
	IV.1.2	Carbon emissions from international passenger flights (territory principle)	t CO_2e
	IV.1.3	Carbon emissions from accommodation and food service activities (NACE I)	t CO_2e
Target direction	Negative – the policy aim is to reduce greenhouse gas emissions from tourism.		
Frequency	Annual		
Data source	IV.1.2 OECD database on Air Transport CO2 Emissions IV.1.3 SURS: NAMEA – Air emission accounts (SiStat database)		

As a longer-term goal, SURS is exploring whether linking TSA (Tourism Satellite Account) and SEEA (System of Environmental-Economic Accounting) could be an option to calculate IV.1.1, Total carbon footprint generated by tourism activity, going beyond the emissions associated with the transport component of inbound travel to Slovenia. This could complement the indicators listed above and provide

internationally comparable data as proposed under SF-MST by UN Tourism. See Box 7 for carbon footprint measurement in Queensland, Australia.

As an avenue for future development, SURS could also estimate carbon emissions from international arrivals by car based on survey and/or registry data (for mode of transport, number of arrivals, place of origin and potentially passengers per car), a distance calculator for average distance, and emission factors (e.g., by the United Kingdom's Department for Environment, Food & Rural Affairs [DEFRA]). Useful examples include Denmark's calculation of international transport including road transport (see Box 8) and Tourism and Road Transport Emissions in Italy based on domestic travel survey data (see Box 9).

Ideally, Slovenia would like to obtain emissions data at municipal level; however, the international tourist survey only provides data by source market and by type of municipality (Slovenia has 212 municipalities with 5-6 types of municipalities). Future development could consider using data from the accommodation registry, available by source market and municipality, to calculate the carbon footprint per tourist overnight stay and allocate the emissions to individual municipalities as a supplementary indicator. Complementing the measurement by SURS, the Slovenian Tourist Board monitors the number of ecolabel-certified providers, as a proxy for the private sector's contribution to environmentally friendly practices.

Box 7. Carbon footprint of tourism destinations in Queensland, Australia

Resulting from the Tourism Sector Adaptation Plan developed by the Queensland Government in partnership with the Queensland Tourism Industry Council and Griffith University, a research project has estimated direct and indirect greenhouse gas emissions from tourism activity in Queensland and its 13 tourism regions (Pham, Meng and Becken, 2017[35]).

Emissions were calculated for five groups:

1. Goods and services produced by local industries (including domestic air transport)
2. Goods and services (mainly goods) imported from overseas
3. Fuel consumption by self-drive visitors
4. Intermediate inputs used, mainly agricultural products and electricity
5. International aviation

The calculation for groups 1-4 builds on two central frameworks: the TSA and carbon emission accounting frameworks. Data came from Australia's greenhouse gas inventory as well as national visitor surveys on tourism expenditure by Tourism Research Australia (TRA). Regional input-output tables help link these datasets to create regional TSAs and emission accounts.

To estimate emissions from road transport, the calculation relies on fuel expenditure data. Emissions from international aviation are calculated through a more direct approach, drawing on monthly emissions data for incoming flights to Queensland (sourced from Amadeus) in combination with visitor arrival data (by country of origin) collected by the Australian Bureau of Statistics. The approach uses a combined average emission factor for economy and premium class passengers. Emissions are allocated to individual destinations, based on number of nights in each location.

Box 8. Measuring the carbon footprint of tourism in Denmark

Commissioned by VisitDenmark, the Centre for Regional and Tourism Research (CRT) has developed a methodology to measure the carbon footprint of tourism in Denmark at destination level, following the ambition set out in the National Strategy for Sustainable Growth in Danish Tourism by the Ministry of Industry, Business and Financial Affairs (CRT, 2024[36]).

The methodology links regional TSAs to the SEEA, following the approach recommended by UN Tourism's MST-SF. Regional input-output tables complement the calculation to capture indirect greenhouse gas emissions from residential economic units.

CRT calculates emissions from international transport separately, including air, road and sea transport (2023[37]). The calculation combines inbound visitor survey data with emission factors for different transport modes and average distances. To estimate travel distances, CRT assumes that tourists travel from a country's or region's capital city and take the fastest route available. For flights, the distance estimation relies on data from airports, for other transport modes it relies on Google Maps. Emission factors are mainly based on Danish data; for air transport, CRT uses ICAO's flight emissions tool.

Box 9. Tourism and road transport emissions in Italy

The Italian Institute for Environmental Protection and Research (ISPRA) estimates emissions from private road transport of tourists in Italy, including transport by motorbikes, cars, campers, caravans and vans (ISPRA, 2024[38]). The approach relies primarily on data from the Italian National Institute of Statistics' (ISTAT) household sample survey "Trips and Holidays" for information on the origin, destination and transport mode of overnight and same-day domestic visitors (Betta et al., 2021[39]). To calculate the distances between origin and destination, distance matrices released by ISTAT were used and validated through common commercial route planners such as Google Maps. For emission factors, calculations rely on ISPRA's Database of Average Emission Factors of Road Transport in Italy. The ISPRA database uses the COPERT road emission inventory model (Calculations of Emissions from Road Transport), which is co-ordinated by the European Environment Agency (EEA), to estimate emission factors. Vehicle type use was assumed to be representative of the fleet composition in Italy, as captured by the Automobile Club d'Italia. By multiplying visitor numbers, distance travelled and emission factors (per passenger kilometre), the indicator presents an estimate of emissions produced by domestic tourist trips in Italy.

IV.2 Tourism density and intensity

Tourism density and intensity measures give an indication of the pressure that tourism exerts on the local population and the environment. Slovenia seeks to align its definition of density and intensity, with international frameworks. UN Tourism's SF-MST (2024[9]) suggests measuring intensity as the number of visitors compared to the number of residents and density as the number of visitors compared to the spatial area. In the EU Tourism Dashboard (European Commission, 2022[13]), indicators are based on dividing the total number of nights spent, by the resident population (tourism intensity) and the total area (tourism density) respectively. To better capture the pressures, OECD recommends using overnight figures and align with international frameworks by using yearly rather than daily figures as originally included in Slovenia's tourism strategy. The metrics include nights spent by domestic and international tourists.

Compilation information: IV.2 Tourism density and intensity			
Metrics and units	IV.2.1	Number of tourist overnight stays per square kilometre	overnight stays / km^2
	IV.2.2	Number of tourist overnight stays per local resident	overnight stays / resident
Target direction	Context-dependent – in areas with high density/intensity resulting in negative pressures on the environment and the local population, the policy aim is to decrease the number of nights spent by tourists relative to the area / local population. In less popular destinations, the policy aim may be the inverse.		
Frequency	Monthly to capture seasonal effects		
Data source	SURS: Tourist arrivals and overnight stays (SiStat database) SURS: Selected data on municipalities (SiStat database)		

IV.3 Resource use

Electricity consumption, water use and waste production by tourists negatively affect the environment and local communities in Slovenia. Electricity consumption by tourists contributes to greenhouse gas emissions and adds pressure to the electricity grid, especially during the peak season. Water use is an issue in the summer months when Slovenia faces water scarcity. Tourists also add considerably to waste production. In addition to waste generation by production and service activities, a considerable volume of waste generated by tourism activity is part of municipal waste. The indicator IV.3 is measured by three metrics:

Compilation information: IV.3 Resource use			
Metrics and units	IV.3.1	Electricity consumption in accommodation and food service activities (NACE I)	kWh
	IV.3.2	Direct tourist water consumption	m^3
	IV.3.3	Waste generation in accommodation and food service activities (NACE I)	t
Target direction	Negative – the policy aim is to reduce resource consumption.		
Frequency	Ideally quarterly or monthly to capture seasonal effects; however, for IV.3.2 and IV.3.3, only annual data exists (IV.3.1 is available monthly).		
Data source	IV.3.1 SURS: Monthly energy statistics (SiStat data) IV.3.2 SURS: Water indicators (SiStat data); estimation based on SURS data on water consumption of local residents IV.3.3 SURS: Waste generation (SiStat data)		

SURS' data on electricity consumption is based on smart electricity metres, available for accommodation and food service activities (NACE I). While SURS currently receives data aggregated at one-digit NACE levels, SURS is in negotiations to receive individual data which could enable compilation of the indicator at lower activity levels and in combination with other data sources. Data on consumption of energy products (including electricity, district heat, natural gas, liquified petroleum gas, wood fuels, extra light fuel oil, unleaded motor gasoline, diesel oil) is also available for NACE I. Energy data could be further divided into NACE activities I55 and I56, although survey sample sizes restrict the extent to which data can be disaggregated. As electricity is the major energy product consumed, accounting for 68% of energy use in Slovenia in 2022 (SURS, 2023[40]), and potential exists to obtain more granular data based on smart electricity metres, the core metric included here focusses on electricity consumption. For future consideration, data on renewable energy and waste generation may also be relevant.

As a starting point to measure tourist water consumption, OECD proposes an estimation based on existing water consumption data for local residents (see Box 10 for an example from the Azores). Studies estimate that tourists consume two to three times more water than local residents; depending on the country, tourism water use per person per day can be up to nine times higher than for local residents (Becken, 2014[41]; Gössling et al., 2012[42]; Garcia and Servera, 2003[43]). To account for behavioural patterns that tend to result in higher average consumption, residents' consumption per person per day should be multiplied by a conservative 'penalty factor' of 2, then extrapolated to the total number of tourists – the Azores do not currently use a penalty factor in their approach. The SURS department responsible for water consumption statistics is working on a model to refine the estimation of tourism water consumption to minimise any over-estimation of usage. Going forward, audit data could help improve estimation accuracy.

Box 10. Estimating tourist water consumption and waste production in the Azores, Portugal

Under the motto "A place is only good to visit if it is a good place to live", the Azores Destination Management Organisation has established a set of indicators for sustainable tourism development. Among the indicators, the Azores estimate water consumption, allocating total potable water use to tourist and resident nights. The calculation draws on municipal water consumption data from the Regulatory Authority for Water and Waste Services in the Azores and tourist arrival statistics. As a first step, the Azores calculate the total number of 'person years', combining visitors (including cruise passengers) and residents, using the following formula:

- Total number of destination residents + (total number of overnights / 365) + (total number of same-day visitors / 365)

In a second step, they calculate the water consumption per person year:

- Total volume of potable water used (kilolitres) / total number of person years

As a last step, they convert the annual consumption into daily consumption, and multiply it by the total number of nights spent by tourists, counting same-day visitors as one night:

- Water consumption per person year / 365 days per year * Total number of tourist nights

In 2022, one person used on average 80.1 m^3 per year, with tourism contributing an estimated 714 000 m^3 to the total consumption in the Azores. The same calculation is used to estimate waste production. Although this may underestimate the water use and waste production of tourists, the calculation provides a valuable starting point to estimate pressures on natural resources and local infrastructure.

From the SURS waste generation survey, data on waste generation and treatment are published for accommodation and food service activities (NACE I). SURS collects data from an administrative source also – the application IS-Odpadki managed by the Slovenian Environment Agency (ARSO). The application is intended for electronic support in the recording of shipments of waste with record sheets and is used also for the annual reporting on waste and its management. At national level, data could be further broken down to NACE activities I55 and I56; however, at a lower territorial level, data for detailed activities could be protected due to statistical confidentiality. The waste collection survey gathers data on municipal waste generation, including all business entities to which the municipality has granted the right to implement the mandatory public services of municipal waste collection. The data are available at municipal level on an annual basis. As a starting point, the metric captures waste generation from production and service activities for NACE I. However, this approach faces limitations and needs refinement going forward as the data does not include municipal waste produced by tourism activity.

IV.4 Sustainable mobility

Transport is a major contributor to tourism-related carbon emissions. Promoting sustainable mobility options such as cycling, walking or public transport for domestic and international tourists as well as local residents is a goal of Slovenia's tourism strategy. Infrastructure development, however, limits possibilities for travellers to arrive by train.

The inbound tourism survey includes questions on the main mode of transport (according to distance) by which international tourists entered Slovenia. For domestic tourists, information on the main mode of transport is collected for each trip. The data currently published differentiates between arrival by car, bus, plane and 'other' – the sample size is too small to publish arrival by train separately (applies to domestic and international). SURS is considering including a question in the inbound tourism survey on destination-based transport modes used by international tourists during their stay. Building on these plans, the indicator

set includes a stretch metric capturing the share of tourists using sustainable mobility options as the main mode of transport in the destination (cycling, walking, footpath scooters and public transport).

Compilation information: IV.4 Sustainable mobility			
Metrics and units	IV.4.1	Share of international tourists using sustainable mobility options as main mode of transport in the destination (cycling, walking, footpath scooters, public transport)	%
Target direction	Positive – the policy aim is to increase the use of sustainable mobility options.		
Frequency	Annual		
Data source	Survey of Foreign Tourists – data not yet available, SURS plans to include question in the 2025 edition of the survey.		

IV.5 Environmental protection

Slovenia's natural environment is a key attraction for international and domestic visitors. Natura 2000 protected sites cover approximately 40% of Slovenia's surface area. Promoting the conservation of biodiversity and the sustainable use of natural resources in Slovenia is key for tourism and maintaining functioning ecosystems. Slovenia is starting to develop ecosystem accounts (System of Environmental-Economic Accounting Ecosystem Accounting [SEEA-EA]). SURS already publishes Environmental protection indicators such as *Current expenditure for environmental protection*. Although not tourism-specific, this metric is included to capture the biodiversity element in the core set of sustainability indicators. Once impact-oriented indicators are available from SEEA-EA, these should be considered to replace the investment-based indicator to capture the effects of environmental protection. A future goal could be to include indicators from SEEA such as the *Extent of natural ecosystems* or *Services provided by ecosystems* in the set of tourism sustainability indicators.

Compilation information: IV.5 Environmental protection			
Metrics and units	IV.5	Current expenditure for environmental protection	million EUR
Target direction	Positive – the policy aim is to increase investment in environmental protection (see above for limitations of investment- rather than impact-focussed measure).		
Frequency	Annual		
Data source	SURS: Environmental protection indicators (SiStat data)		

Competent and effective management structures

V.1 Quality of management at business level

Tourism enterprises contribute to economic development, employment and supply of tourism services, including in rural areas. Monitoring enterprise births and deaths provides insights into the health and dynamism of the tourism sector, enabling policy makers to identify trends and formulate targeted interventions to support entrepreneurship and economic diversification. A majority of tourism enterprises in Slovenia are micro or small enterprises – SURS data on business births and deaths is available for enterprises with 1-4, 5-9 and 10 or more employees at two-digit NACE level (I55 Accommodation and I56 Food and beverage service activities).

While monitoring births and deaths of tourism enterprises provides important insights in the entrepreneurial dynamics in the sector, the data provides limited insights on the quality of management at the business level, which is important but not the only factor influencing business survival. Other factors include access to finance, other framework conditions and the state of the overall economy. The wider set of indicators monitoring Slovenia's tourism strategy also includes metrics on the quality of tourism management at destination and national level; these metrics are compiled by municipalities, the Slovenian Tourist Board and other entities.

Compilation information: V.1 Quality of management at business level			
Metrics and units	V.1.1	Number of enterprise births in accommodation and food service activities (NACE I)	count
	V.1.2	Number of enterprise deaths in accommodation and food service activities (NACE I)	count
Target direction	V.1.1: Positive – the policy aim is to boost entrepreneurial activity. V.1.2: Negative – the policy aim is to decrease business failures.		
Frequency	Annual		
Data source	SURS: Business demography (SiStat data)		

Future indicator development

Reflecting the five strategic objectives of the Slovenian Tourism Strategy 2022-28, the proposed set of 20 core indicators and 35 metrics are structured around five policy priorities. Following the four phases of the proposed policy-led approach – prioritisation, selection, implementation and action – ongoing and regular work to review and improve the indicators will help to ensure they are 'fit for purpose'. While data are available for 31 of 35 metrics, future work is needed to refine methodologies and close existing data gaps on central aspects including local community satisfaction, boutique accommodation, training and skills, resource use, carbon emissions and sustainable mobility.

As Slovenia aims to create a 'green and boutique' experience for visitors, the definition of 'boutique' accommodation needs further refinement going forward. Beyond the smaller scale of accommodation establishments, 'boutiqueness' typically refers to further intangible characteristics such as unique design and character, personalised service, location in scenic or fashionable areas and a focus on experience. Following agreement on a definition, metrics should be revised accordingly.

Improving training to foster skills is a key policy objective to optimise the tourism labour force. While data is available from the Labour Force Survey for accommodation and food service activities (NACE I), the estimates are less reliable and have been flagged for caution in SURS' database in the years 2021, 2022 and 2023. The metric *Share of tourism employees participating in job-related non-formal education or training activity* is included as a placeholder, reflecting the policy relevance. However, it needs methodological improvements going forward.

Tracking local resident perception provides an indication of whether tourism development aligns with the needs and preferences of the community. To measure local community perception of tourism at national and potentially regional level, SURS is considering including relevant questions in the quarterly domestic tourism survey. Going forward, further well-being focussed metrics going beyond survey data can help better understand benefits of tourism for the local population.

As in other destinations, water consumption and waste production by tourists negatively affect the environment and local communities in Slovenia. As a starting point to measure tourist water consumption, OECD proposes an estimation based on average water consumption of local residents. The SURS department responsible for water consumption statistics are working on a model to refine the estimation of tourism water consumption to minimise any over-estimation of usage. Going forward, audit data could help improve estimation accuracy. From the SURS waste generation survey, data on waste generation and treatment are published for accommodation and food service activities (NACE I). However, this approach faces limitations and will need refinement to reflect municipal waste produced by tourism activity.

Tourism both affects and is affected by climate change. Decarbonisation of tourism is a key objective of Slovenia's tourism strategy and essential to the promise of a 'green' tourist experience. As a starting point, the set of indicators includes measures of air travel emissions and emissions from electricity use in accommodation and food service activities. As a longer-term goal, SURS is exploring the possibility of linking TSA (Tourism Satellite Account) and SEEA (System of Environmental-Economic Accounting) to calculate the total carbon footprint generated by tourism activity, going beyond the emissions associated with the transport component of inbound travel to Slovenia.

A policy-led approach to selecting and refining a set of indicators starts with the policy questions to identify and prioritise data needs (top-down), followed by an analysis of the data availability and data gaps that need to be closed to answer the key policy questions (bottom-up). This integrated approach limits the number of indicators to a relevant core set, contributing to evidence-based policies. Building on the prioritisation of policy issues and indicator selection, the next step is to pilot test and implement the proposed indicators, establishing baseline data. Analysing and interpreting results against targets and thresholds is the foundation for taking evidence-based action towards sustainable development.

Co-ordinated action between different tourism stakeholders avoids duplication and builds synergies. SURS, the Slovenian Tourist Board, the Slovenian Ministry of the Economy, Tourism and Sport and other relevant stakeholders will benefit from collaborating both horizontally and vertically. Horizontal collaboration across government entities strengthens the evidence base by sharing the resource burden and taking advantage of different competencies, making continuous monitoring more realistic. Vertical collaboration will help achieve a better integration between the more granular community- or destination-level monitoring and the monitoring undertaken at the national level. The advantages include that data will be compatible: by for instance aligning metric definitions, national-level efforts can benefit from local data collection and report information in an aggregate manner while local entities may benefit from benchmarking against other destinations. Collaboration will likely extend beyond data co-ordination and exchange towards policy implementation.

Moving to a sustainable future of tourism requires transformative change. Measurement can help monitor progress against policy goals. The indicators included in the proposed core set are a first step, but more radical rethinking of tourism success requires an equally radical rethinking of measurement. Going forward, more detailed examination of how tourism interacts with the environment and local communities is needed. Cross-sector collaboration is essential for systemic action, looking beyond sustainable *tourism* development towards overall sustainable development.

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