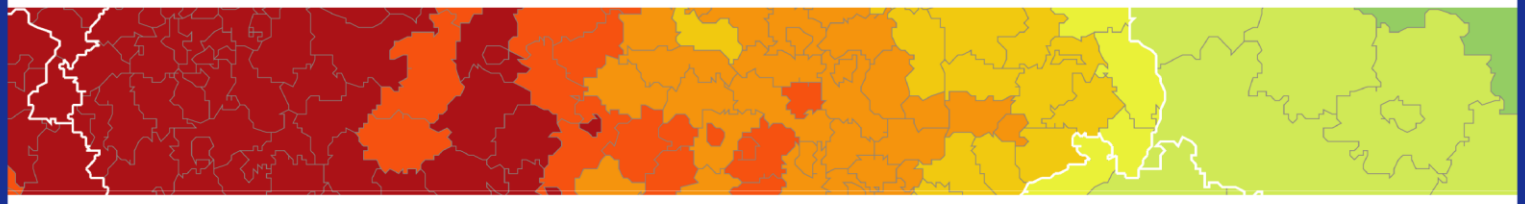
ESPON

EUROPEAN UNION

Co-financed by the European Regional Development Fund

Inspire policy making by territorial evidence



Carrying capacity methodology for tourism

Targeted Analysis

Final Report

Final Report

This targeted analysis activity is conducted within the framework of the ESPON 2020 Cooperation Programme, partly financed by the European Regional Development Fund.

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway and Switzerland.

This delivery does not necessarily reflect the opinion of the members of the ESPON 2020 Monitoring Committee.

Authors
Bernd Schuh, Martyna Derszniak-Noirjean, Roland Gaugitsch, ÖIR GmbH (Austria)
Sabine Sedlacek, Christian Weismayer, Bozana Zekan, Ulrich Gunter, Daniel Dan, Lyndon Nixon
Modul University Vienna GmbH (Austria)
Tanja Mihalič, Kir Kuščer, University of Ljubljana, School of Economics and Business (Slovenia)
Miša Novak, Miša Novak s.p. ALOHAS (Slovenia)

Case study authors
Bled: Miša Novak, Miša Novak s.p. ALOHAS (Slovenia)
Brežice: Kir Kuščer, University of Ljubljana, School of Economics and Business (Slovenia)
Divača: Tanja Mihalic, University of Ljubljana, School of Economics and Business (Slovenia)
Gorizia – Nova Gorica: Bozana Zekan, Christian Weismayer, Modul University Vienna GmbH (Austria)

Advisory Group
ESPON EGTC: Sandra Di Biaggio (Senior Project Expert – Policy Analysis and Project Development), György Alföldy (Financial Expert)

Information on ESPON and its projects can be found on www.espon.eu.

The web site provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.

This delivery exists only in an electronic version.

Contact: info@espon.eu

Final Report

Carrying capacity methodology for tourism

Version 11/11/2020

Disclaimer:

This document is a final report.

The information contained herein is subject to change and does not commit the ESPON EGTC and the countries participating in the ESPON 2020 Co-operation Programme.

The final version of the report will be published as soon as approved.

Table of contents

List of Figures

List of Tables

Executive Summary

The ESPON project “Carrying capacity methodology for tourism” is a targeted analysis covering four tourism destinations in Slovenia and Italy. Its main task is the development and testing of a methodology to measure a regions carrying capacity regarding sustainability aspects related to tourism impact. Especially destinations experiencing strong tourism growth, but also those with high tourism intensity (i.e. a high number of arrivals in relation to the number of local residents) and with high seasonality can be subject to considerable negative effects related to the amount of tourists visiting their area. Destination stakeholders thus have a vested interest in being able to assess if they have reached critical thresholds in their development and what they can undertake to mitigate the related negative effects.

For measuring carrying capacity, multiple approaches have been developed in several contexts, which served as an inspiration for the development of the methodology at hand. It was especially designed to fit the needs of local and regional stakeholders and follows a participatory approach. This methodology was tested in four case study destinations located in Slovenia (Bled, Brežice and Divača) and one in a cross-border destination of Nova Gorica/Gorizia at the Slovenian and Italian border.

As a conclusion of the reflection on existing methodologies, the project team deducted the following characteristics for the carrying capacity methodology developed:

- **There is no single denominator for carrying capacity –** a multitude of aspects in the socio-economic context of destinations are touched upon and carrying capacity is strongly related to the dimensions of sustainability and its conceptual components (i.e. economy, society and the environment). Still the challenge is to establish a causality between tourism as a sub-sector of the economy and spatial phenomena (flows and concentration) and all these multiple aspects.
- There is **no single way of capturing the carrying capacity** along the different dimensions (social, economic and environmental). The methodological approach meets this challenge by allowing for different ways to assess normative borders for carrying capacities.
- There is **no unified way to take territorial specifics of tourist destinations into account** when assessing their carrying capacity. Not only will carrying capacity be different in different regional circumstances, but there is also no one-size-fits-all approach for assessing carrying capacity of tourist destinations.

Therefore, the methodology developed has to take into account those necessary flexibilities, adapt to the local needs and provide guidelines general enough to fit different destinations yet comprehensive enough to provide reliable and valid results. It consists of both quantitative and qualitative elements. Preparatory steps by a moderation/facilitation team are followed by participatory steps, where information gathered is reflected upon with destination stakeholders. Crucially, this allows to combine external expert inputs on tourism development patterns and corresponding management approaches with regional knowledge and experience. The moderated process allows destinations not only to detect their carrying capacities, but to develop actions on the regional/local scale accordingly. Innovative types of data and visualisations of

tourists flows are integrated into the methodology, in order to capture the full picture of local tourism dynamics.

Application of the methodology

The application of the methodology in the case studies confirmed, that a **participatory approach** combining external expert input with regional knowledge was well suited to identify critical tourism impacts. It allowed furthermore, to assess the situation against the background of the COVID 19 pandemic, which would not be possible with quantitative data from past years alone. Innovative approaches to collecting, treating and visualising data provided insights which were not available to destination stakeholders before, and enabled them to better shape policy responses to critical development fitting their development strategy.

The case studies revealed, that the methodology is in deed capable of **adapting to regional needs** rather flexibly. Regional background ranges from high tourism pressure (Bled), need for further development of tourism offer and underdeveloped potential (Brežice and Divača) to need for finding a common definition and starting cooperation in the first place (Nova Gorica – Gorizia). The methodology was applied in all types of regions successfully, and valuable policy inputs could be deduced.

Applying the methodology in practice also confirmed the initial approach of interpreting „carrying capacity“ not as some kind of fixed number, but rather as a **tool of destination management.** It is to be understood in a wider framework of regional development, revealing **interrelations between tourism inflow and the socio-economic development of a region.** Socio-economic development can enhance tourism capacities and tourism offer, while the impact of tourism has important consequences for regional development and may require significant adjustments in development strategies for tourism in particular and for regional development in general.

The methodology thus suggests the involvement of not only stakeholders related to tourism but also stakeholders from regional authorities in general. Players in regional development such as members of sectoral associations (e.g. environmental associations) should be included as well, as no sector is isolated from any other. The strong **process orientation** and participatory elements create **ownership** for the involved parties, facilitating the uptake of results into regional development strategies and other policies.

Conclusions on indicators and data

Reviewing methodologies has exposed a strong orientation towards indicators. However, without a methodology and a specific application idea, indicators alone cannot provide appropriate statements about carrying capacity. A disadvantage of many existing methodologies is that they offer indicators which are either not measurable or not realistically applied and monitored by authorities. This significantly lowers their usability and application in reality. Therefore it was concluded, that the methodology developed in the project should focus on measurable indicators and any indicators proposed in the process which cannot be populated by a comprehensive data source would have to be disregarded. This approach proved successful in the case studies.

Furthermore, while the methodology includes significant qualitative elements, quantitative data is still necessary for providing input. While publicly available statistical data is oftentimes very valuable, dedicated monitoring systems can provide not only statements about the carrying capacity situation but also allow for their constant monitoring and provide the possibility of a relatively swift reaction and adjustment to changing situations.

Destinations suffering from rapidly increasing numbers of tourists

In many destinations, tourist numbers are growing rapidly which puts under pressure local infrastructures, environment and population. The case studies revealed, that a lot of the related effects are based on strong concentration of tourists around a few selected sites. Such destinations therefore should manage the flows of tourists in a way that leads to a more even distribution and mitigates their negative effects. Furthermore, in case of high seasonality and thus even stronger pressure on local population, it is vital to ensure the approval of locals by means of participative engagement into tourism activities and implementation of a common vision.

Destinations still defining their offer or showing an underdeveloped potential

There are many destinations which are experiencing mixed patterns of yet undefined tourism development. Many such destinations are receiving some interest but have not yet reached a critical mass to become a popular destination based on certain defined offer. This gives those destinations the opportunity to develop in a more controlled manner, e.g. by targeting specific types of tourists. Such regions in particular would benefit greatly from cooperation, professional branding and DMO support as well as from improving their socio-economic situation. In case of underdeveloped potentials, underlining the regional attractiveness in outreach activities, or appealing to tourists from nearby hotspots can be a valuable approach.

Cross-border destinations

Across European borders, there are many cross-border cities and regions with different historical and cultural heritage. They could be strengthened not only through socio-economic cooperation but also, and/or simultaneously, through cooperation on tourism. In such contexts, typical cross-border development projects may increase tourism offer as they work to reduce border effects and facilitate flows between borders.

Transversal recommendations

Cooperation is a very important element of destination development in different types of carrying capacity problems. It offers symbiotic benefits for destinations suffering from over- and under-tourism. Close cooperation can help smartly steer tourist flows, define tourism offer and increase the attractiveness of destinations.

As **local populations** are the hosts offering services and infrastructure that attracts tourists, it is necessary that they are comfortable with their role as hosts and do not suffer from extensive pressure. Conflicts should be mitigated and tourism development should be undertaken participatively and in consensus with local populations.

1 Background of the project

1.1 The background

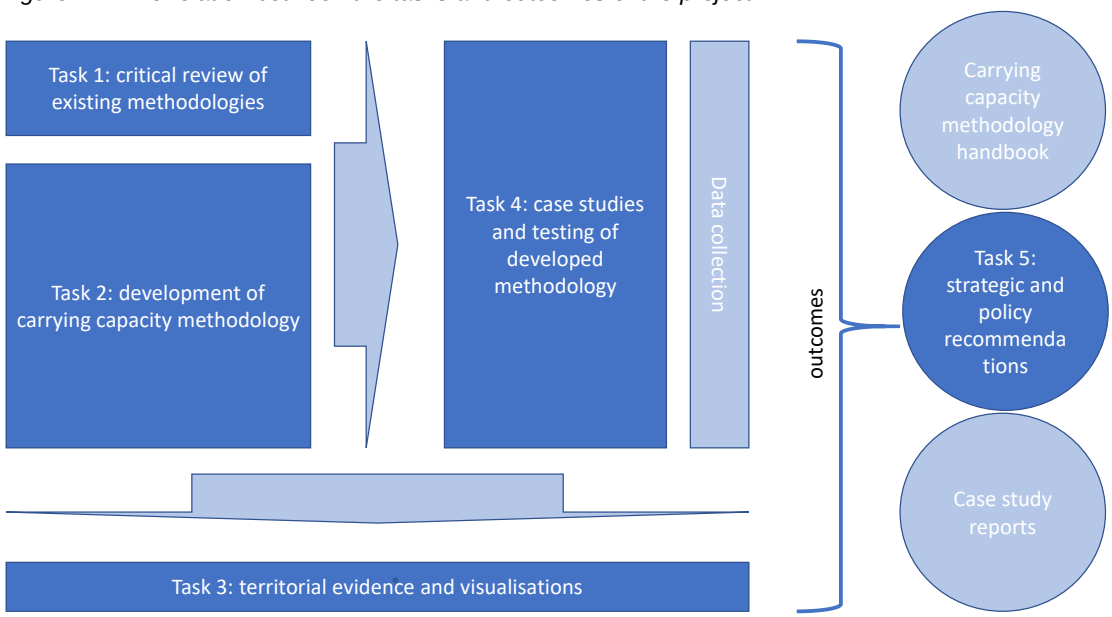
The aim of this ESPON Targeted Analysis project is to develop a methodology for measuring the carrying capacity of touristic destinations (Task 2), based on a review of existing methodologies (Task 1). This methodology is tested in four case study destinations located in Slovenia (Bled, Brežice and Divača) and in a cross-border destination of Nova Gorica/Gorizia at the Slovenian and Italian border (Task 4).

The methodology consists of both quantitative and qualitative elements. It is embedded in a moderated process, which allows destinations not only to detect their carrying capacities, but to develop actions on the regional/local scale accordingly. The project explores innovative types of data and visualisations of tourist flows which are integrated into the methodology (Task 3) and applied in case studies. The project relies on quantitative data (regional/local statistics) as a precondition for providing meaningful results and also includes qualitative elements such as the close collaboration with destination stakeholders.

Final products of the project will be a comprehensive handbook leading through the methodological steps to assess the carrying capacity of any destination, a supporting visualisation tool (dashboard) as well as territorial evidence on the impact of tourism in the case study regions along with recommendations on managing tourism flows to ensure a sustainable development of the region (case study reports).

The relation between different tasks and outcomes of this project is presented in the figure below.

Figure 1.1: The relation between the tasks and outcomes of the project



Source: Consortium, 2020.

Even though most case studies are located in Slovenia, they are very different in terms of their carrying capacity issues. While some destinations, such as Bled face the challenge of over

tourism, others, such as Divača, look towards a sustainable increase in tourism numbers. As a result, the developed methodology will be able to flexibly adjust to various carrying capacity challenges in different European destinations, whether linked to over- or under-performing in terms of carrying capacity. This flexibility as a feature of the methodology proves very opportune in the face of the health crisis caused by the coronavirus.

1.2 Overview of the relevant stakeholders

In addressing this element of the project's deliveries, it is necessary to emphasise the differentiation between the types of stakeholders involved into the project. Three types of stakeholders can be identified as relevant to the project:

- Project Stakeholders (group 1), i.e. the stakeholders who are involved into the Targeted Analysis by having submitted the project's proposal to ESPON: INFORMEST, Municipality of Bled, Association of cities of the Republic of Croatia, Municipality of Brežice, Association of municipalities and towns of Slovenia, Municipality of Divača.
- Case study stakeholders (group 2), i.e. the key stakeholders relevant for conducting the case studies as well as for whom the case study results should serve as tourism policy and strategic inputs. Some of these stakeholders (Municipalities of Bled, Brežice and Divača as well as INFORMEST for Nova Gorica/Gorizia) are also Project Stakeholders. At the same time, case study destination stakeholders also involve a wider range of stakeholders who would benefit from the results of the applied carrying capacity methodology in their destinations.
- Wider tourism stakeholders at the EU-wide scale (group 3) are all other stakeholders who will benefit from this ESPON activity. This includes stakeholders in any other European destination (local and regional levels) as well as policy-level stakeholders at EU and national level.

In the earlier stages of this project, a broad overview of the political priorities for group 3, wider tourism stakeholders, as well as some stakeholders from group 1 was conducted. Its purpose was to inform and direct the development of the carrying capacity methodology based on the overall tourism policy needs that justify this project. Such a wider overview of tourism policy priorities is a good starting point before engaging more specifically with case studies and with group 2 stakeholders. Also, for this reason, a particular focus was placed on group 3 stakeholders in Slovenia where most case studies are being conducted. Other stakeholders such as the EC's TRAN Committee, the Association of Cities of the Republic of Croatia (also a Project Stakeholder) and the Italian Friuli Venezia Giulia region were also considered.

This overview of various stakeholders from groups 1 and 3 has resulted in reinstating the necessity of pursuing sustainable tourism by using the concept of carrying capacity of destinations as a driver for it. In other words, it became clear from the stakeholders´ perspective that if the carrying capacity is "exceeded" then tourism needs to be organised differently, e.g. switching to a more sustainable form of tourism. As confirmed in the review of the objectives of local and national Slovenian public authorities, these stakeholders are committed to the Green Scheme

of Slovenian Tourism (GSST) initiative[1] which provides a framework for the development and monitoring of sustainable tourism. The GSST has been recognized as a best practice also by the study for TRAN Committee (Weston et al., 2019). The initiative is linked to the ambitions of the Strategy for Sustainable Growth of Slovenian Tourism 2017-2021 (MGRTRS, 2017) which emphasises that tourism in Slovenia is generally more characterised by "under-tourism" rather than by over-tourism. As such, it is also integrated into the macro-regions destinations model introduced in this document (MGRTRS, 2017).

Thus, the focus is strongly placed on the sustainable increase of tourism. However, there are exceptions in destinations such as Bled within Slovenia, but mainly in other European destinations like Dubrovnik or Venice which have seen a strong increase in tourism numbers leading to capacity challenges. One of the issues in destinations such as Bled, which are affected by over-tourism, is a strong increase in AirBnB rentals. This has led to calls for revision of the housing laws in order to address the consequences of this phenomenon. The focus on greening tourism as well as dealing with its impact in overcrowded destinations in echoed also among Croatian and Italian stakeholders (e.g. "The Action Plan for Development of Green Tourism").

The goals of looking into the carrying capacity are to help steering competitive and sustainable tourism in destinations affected by both under- and over-tourism. Particularly Slovenian and Italian destinations seek development towards "boutique" or "slow" destinations as opposed to becoming mass tourism destinations. According to the GSST operator (interview correspondent), this ESPON project can further assist the GSST by making use of the sustainability indicators (Green Destination, 2019) and expanding the approach through the management tool to manage unsustainable situations, such as temporarily large visitor flows. At the same time, GSST can assist the project with ideas on green schemes (based on European Tourism Indicator System- ETIS), qualitative indicators (based on Green Destination Standards) and satisfaction surveys (based on ETIS).

An in-depth analysis of the policy objectives and needs of the case study stakeholders (group 2) is an element of the methodological steps 1 and 2 (thus, it is an element of the case studies). These steps are fundamental as they help steer the application of the methodology in the appropriate manner for case study specific findings. There is a slight difference in the nature of this inquiry into policy objectives and needs of group 2 to the inquiry conducted previously for groups 1 and 3. The analysis conducted as a part of the methodology in the framework of case studies focuses on the policy objectives and needs that behind each destination's concern with its carrying capacity in order to deliver targeted and relevant statements. In contrast, the overview of policy objectives of Project Stakeholders (group 1) and wider tourism stakeholders

[11] The GSST is based on international sustainability criteria (GDS and ETIS). To obtain the Slovenia Green Destination label (bronze/silver/gold), the destinations must meet the Green Destinations Standard criteria (GDS), while providers first obtain/present one of internationally recognized labels that are also verified by Slovenia Green (for example TravelLife). The four Slovenian destinations, involved in our ESPON project (Bled, Brežice, Divača, Nova Gorica), are already a member of GSST.

(group 3) focused on the policy objectives generally and in relation to how the methodology for measuring carrying capacity in tourism shall be developed.

At the same time, wider EU stakeholders (group 3) will also benefit from this project with transferable recommendations that will be deduced based on the conducted case studies. In other words, both general and specific recommendation on carrying capacity and its measurement will aim to address not only stakeholders of the case studies (group 2), but also wider European stakeholders of groups 1 and 3. The project can develop transferable results as, even though case study stakeholders are predominantly located in Slovenia, they represent a diverse range of issues related to the carrying capacity of tourism. As mentioned previously, some destinations' interest is to balance over-tourism (e.g. Bled), others seek to sustainably increase number of tourists (Divača), while others still wish to explore ways of cross-border cooperation on sustainable tourism (Nova Gorica and Gorizia). This variety of carrying capacity issues in tourism steers the development of a flexible methodology that can be applied in all circumstances, whether related to over-, under-tourism or any external influencing factor affecting tourism intensity (e.g. external shocks). It is safeguarded that the developed methodology will be highly relevant for stakeholders in group 3, i.e. all tourism-related stakeholders in EU's destinations.

1.3 Meeting the challenge of shifting policy objectives and needs due to the health crisis

Tourism has been, and is expected to be also in the near future, particularly affected by the coronavirus health emergency. With no travels, closed borders and future prospects of very close monitoring of travels, tourism activities are expected to decrease substantially in the short run. It is safe to presume that over-tourism may not be the same pressing issue in the upcoming holiday season 2020/21, perhaps not even in the next few years. At the same time, this shift in our lifestyles and tourism practices offers an opportunity to transition to more sustainable practices and restore tourism in a more sustainable manner.

In this light the concept of carrying capacity for tourism and thus our methodology to capture it and deduct recommendations for immediate action for the single destination, gains importance. The application of the method and the tools which will be provided by this project will therefore offer a remedy to define a way out of the Covid19 situation for each tourist destination.

2 Reflection on existing methodologies

The review of the existing methodologies has shown that there is no one single solution for assessing carrying capacity that would fit all destinations. Whilst the descriptions of the individual sustainability initiatives are beyond the scope of the current report, it is necessary to highlight once more the most prominent approaches along with their strengths, weaknesses, potential degree of applicability to the four case study destinations. List of suggested tourism indicators for measuring carrying capacity (encompassing all three dimensions of sustainability) stemming from these studies are a relevant input to this project as well. This information is summarized in Table 2.1 below and has served as a starting point for discussion regarding the development of the new carrying capacity methodology, which is at the core of the current project.

Table 2.1: Suggested tourism indicators for measuring carrying capacity.

Study	Strengths	Weaknesses	Potential degree of applicability	Suggested indicators[2]
Jurado et al. (2012)	Carrying capacity assessment: 24 indicators (9 physical, 9 socioeconomic, 6 social)	– Focus on the coastal area – Data availability/collection effort	Medium	1. bed nights (absolute value and percentage change) 2. arrivals (absolute value and percentage change) 3. average length of stay 4. tourism revenues 5. share of tourism contribution to GDP 6. occupancy rate 7. number of bed spaces available in commercial accommodation establishments (absolute value and percentage change) 8. share of Airbnb bed spaces 9. distribution of bed spaces 10. distribution of demand (seasonality) 11. tourism density 12. tourism intensity 13. percentage of same day visitors
UNWTO (2014)	Density (explicitly labelled as carrying capacity in this report), CO_2 emissions, water consumption, solid waste generation, visitor load (number of tourists per day per 100 residents), resident satisfaction, congestion and intrusion, use of essential services	– Focus on cities – Data availability/collection effort	Medium	
Gössling et al. (2015)	Travel distance and estimation of CO_2 emissions	Focus on countries, no focus on modal split, source-market weighting, number of destinations visited	Low	
European Union (2016); European Commission (n.d.)	– 43 core indicators – Supplementary indicators for specific types of destinations – Slovenia as one of the case studies	Data availability/collection effort	High	
González-Guerrero, Robles, Pérez, Ibarra, and Martínez (2016)	– Overview of the carrying capacity studies – Evaluation of visitor management models	NA	Low	
Green Destinations (2017)	– 6 main themes – 100 criteria	Data availability/collection effort	Medium	

[2] This list of indicators is based on the literature review on carrying capacity of tourism destinations. The listed methodologies are all using their own often very comprehensive indicator lists. Since one of the most identified weaknesses is the data availability and data collection effort the suggested list of indicators is focusing on from the expert perspective most relevant indicators encompassing the three dimension of sustainability.

Study	Strengths	Weaknesses	Potential degree of applicability	Suggested indicators[2]
McKinsey & Company and World Travel & Tourism Council (2017)	– 9 metrics for a diagnostic development – 5 tactics with specific sets of actions	Focus on cities	High	to total number of visitors 14. CO_2 emissions (during traveling to/from and at the destination) 15. waste production per tourist night compared to general population waste production per person (kg) 16. water consumption per tourist night compared to general population water consumption per resident night 17. energy consumption per tourist night compared to general population energy consumption per resident night 18. closeness to airports, cruise ports and World Heritage Sites 19. negative TripAdvisor reviews 20. overall satisfaction of visitors and residents with tourism
Önder, Wöber and Zekan (2017)	An overview of potential objectives and indicators for destinations and their policymakers (classified as economic, social, and/or environmental)	Focus on cities	High	
University of St. Gallen (2017)	– 6 steps for understanding visitor flows	NA	High	
Lenzen et al. (2018)	– Bilateral embodied CO_2 emissions – Breakdown of the tourism carbon footprint into purchased commodities and emitting industries	– Focus on countries – Analytical complexity	Low	
Peeters et al. (2018)	– 6 indicators of over tourism – Applicable to various types of destinations – Bled as one of the case studies	NA	High	
Roland Berger (2018)	– Quality versus quantity – proactive measures (short term, midterm, long term) – 3 reactive measures	Focus on cities	Medium	
UNWTO (2018, 2019)	– 11 strategies – 68 measures	– Focus on cities – Data availability/collection effort	Medium	
Gunter and Wöber (2019)	Travel distance, modal split, source-market weighting, number of destinations visited, and estimation of CO_2 emissions	Focus on cities	High	
Önder and Zekan (2019)	Recommendations	Focus on cities	Medium	
WEF (2019)	Variables from the pillars on environmental sustainability and natural resources	– Focus on countries – Data availability/collection effort	Medium	

Source: Consortium, 2020.

As is evident, even among the studies that were singled out by the consortium, there is very little overlap regarding the strengths of the individual studies. Nonetheless, what made them of interest to the project team are various measures/approaches that were proposed in line with the discussion either on carrying capacity or on the overall sustainability of destinations. Comprehensiveness is certainly a strength of some of these studies as demonstrated by the number of indicators and investigation of different dimensions of sustainability. However, proposal of tens of (new) indicators does not guarantee that the methodology at hand will, in the end, be operational by the stakeholders of different types and sizes of destinations. Therefore, weaknesses of each study were also identified and presented in Table 2.1.

One weakness that makes the above proposals not operational is the complexity of certain proposed indicators. This makes them difficult to comprehend and, hence, also to implement by local policymakers. Certainly, the most prominent weakness is the common problem of data availability/data collection effort needed to embark on the assessment of carrying capacity. In other words, destinations may not have the resources (e.g., human, financial, time) available to initiate a collection of a multitude of indicators proposed in the empirical studies. In addition, it may also be beyond their possibilities to do this on a continuous basis in order to monitor the impact over time. However, researchers often overlook this practical aspect when proposing new indicators and/or new methodologies.

It may also be the case that some indicators are not collected at all by the authorities as they are not deemed important or are only relevant to one type of destinations and not to the others. With this in mind, if the focus of the reviewed studies had been placed solely on coastal areas, countries, or cities, this was also marked as a potential weakness, as the proposed approaches may be limited to this one type or one size of destination. This for instance, may make these methodologies irrelevant for the current project and requires further consideration. Therefore, taking into account both strengths and weaknesses of the individual studies, the project team opted to additionally reflect on a potential degree of applicability of each approach in diverse settings. This is especially relevant as the new carrying capacity methodology developed in the scope of this project should be applicable to other (similar) destinations throughout European regions.

Arguably, the most important outcome of this stage of the project is the list of suggested tourism indicators compiled by the project team, which stem from the reviewed studies on existing methodologies. More specifically, the idea was not to propose yet another set of new indicators as such initiatives are beyond numerous, but rather to work with indicators which (1) are commonly accepted in the literature, (2) encompass all three dimensions of sustainability, and (3) have a high chance of being both available and of interest to the stakeholders of the four case study destinations, as per expertise of the project team. Moreover, an effort was made to keep the list operational and feasible in terms of number of indicators, in order not to overburden the stakeholders.

However, the element which differentiates our methodology from the reviewed ones, is that this list of suggested tourism indicators is only a starting point. During steps 1 and 2 in the proposed methodology, indicators are selected and adapted in a tailor-made manner for each destination in a joint exercise involving both stakeholders and experts who carry out the methodology implementation. This feedback loop constitutes one major strength of the new carrying capacity methodology. This process results in destination-specific shortlists of the originally proposed list of indicators, which also includes a ranking of their relative importance. Indicator shortlists are then the basis for all data collection efforts and analysis on the part of the project team (see section 3).

As a conclusion of the reflection on existing methodologies the project team deducted the following characteristics for the carrying capacity methodology developed:

- **There is no single denominator for carrying capacity –** a multitude of aspects in the socio-economic context of destinations are touched upon and carrying capacity is strongly related to the dimensions of sustainability and its conceptual components (i.e. economy, society and the environment). Still the challenge is to establish a causality between tourism as a sub-sector of the economy and spatial phenomena (flows and concentration) and all these multiple aspects. These causal loops, which in the methodology will be captured via **systemic pictures,** are to be kept transparent and simple enough for decision makers to understand and sufficiently robust to actually reflect the impact of tourism in the territorial context. The way to establish this link is by intertwining context related territorial information (as expressed by indicators) with tourist related information. In accordance, one step will be to establish a set of territorial specific indicators, which will be tailored to the circumstances of each of the destinations/regions and cross them with tourist related indicators expressing both stocks and flows of tourists and their concentration in the territory of the destination.
- There is **no single way of capturing the carrying capacity** along the different dimensions (social, economic and environmental). The methodological approach meets this challenge by allowing for different ways to assess normative borders for carrying capacities. While for some indicators carrying capacity is to be understood as staying within a limit or getting closer to it (e.g. economic growth induced by tourism), for other indicators it would mean to stay within a corridor of an “optimal” condition (e.g. biodiversity within a tourist destination), while getting closer to the limit would indicate a critical condition. In other words, the method will have to be able to deal with various ways to describe and measure the target values of carrying capacity. The decision about whether carrying capacity in a specific context should be understood as threshold or corridor, as well as its value, will be done also based on a broad consultation process with the stakeholders and their assumed strategies in the destinations.
- There is **no unified way to take territorial specifics of tourist destinations into account** when assessing their carrying capacity. Not only will carrying capacity be different in different regional circumstances, but there is also no one-size-fits-all approach for assessing carrying capacity of tourist destinations. The consequence for the methodology to be developed will be that the method suggested will have to provide a guidance and procedure rather than a single measurement approach. The ultimate decision on the methodology to be applied will have to be made by the expert based on their expertise as well as findings with regards to the destination. The methodology developed sets the overall frame and will thus be universally applicable, but the single elements of measurement (the indicators to be selected to describe territorial context) will have to be tailored to the territorial specifics, i.e. picked from suggested and available context indicators.

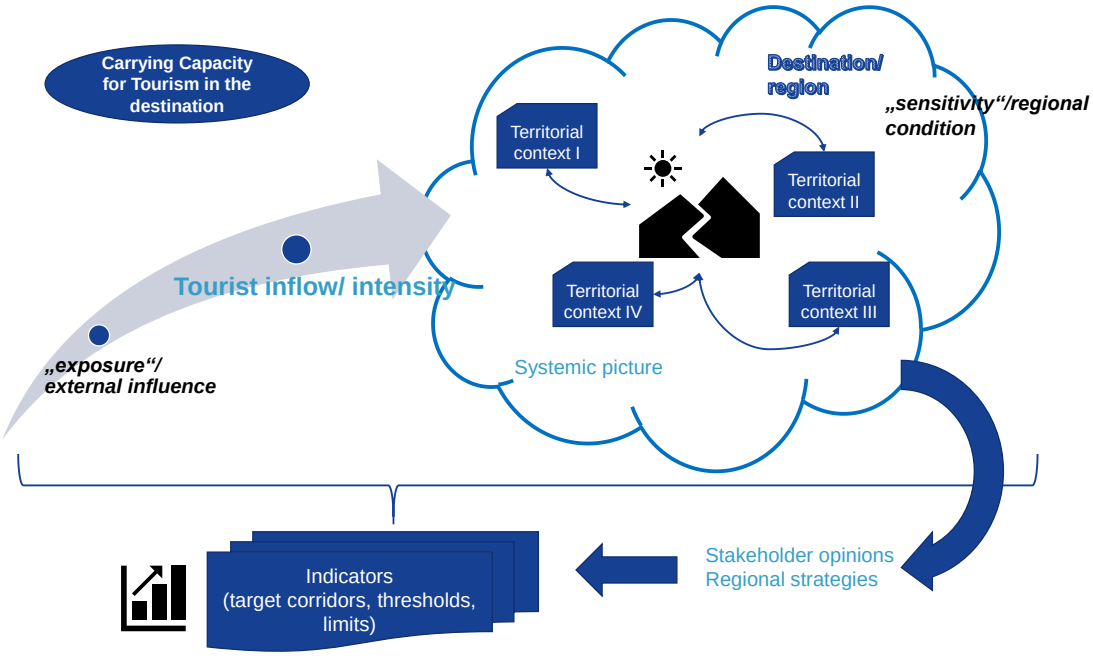
3 The carrying capacity methodology

The development of the methodology in the project is rooted in the review of existing methodologies, and their strengths and weaknesses. When identifying carrying capacities for tourism, multidimensional issues that depict territorial characteristics and external influences on this territory have to be captured (presented on Figure 3.1):

- Tourism intensity and concentration in territorial terms and in time
- Tourism flows into and within the destination
- The consequences in terms of causal loops that refer to user conflicts and the opportunity costs connected to them – on the territorial conditions of the destination – in economic, social and environmental terms.

The following figure depicts these interrelations. The situation of the destination is captured in selected indicators that are used to operationalise the tailor-made calculations relevant to the destination's carrying capacity. These calculations are subsequently interpreted to provide a statement on the carrying capacity (methodological steps are further described below and presented in Figure 3.2).

Figure 3.1: Background to the carrying capacity methodology.



Source: Consortium, 2020.

3.1 Step-by-step approach

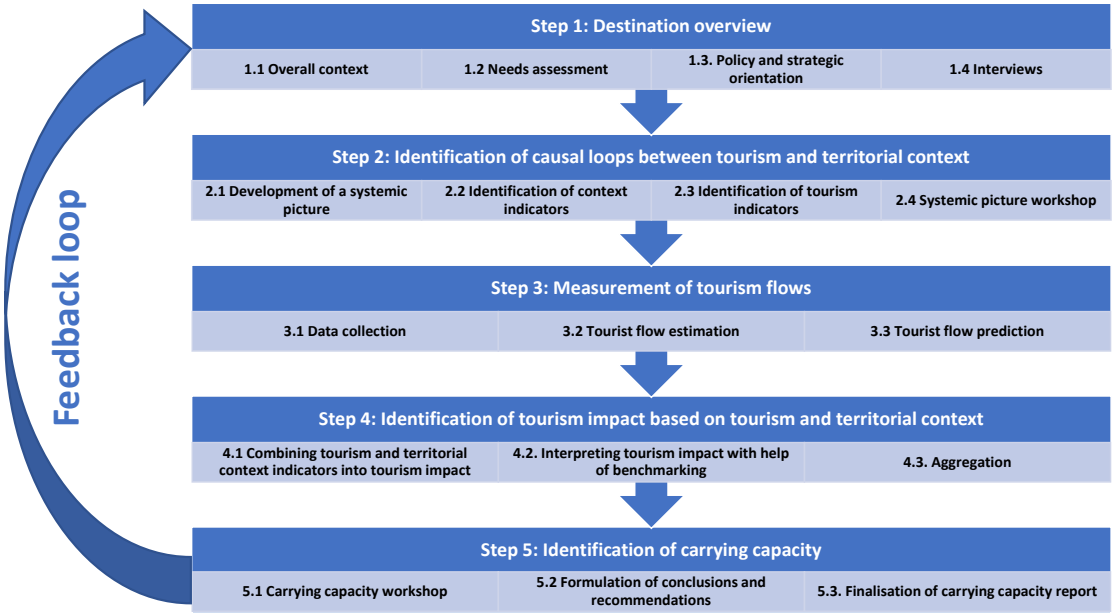
The framework of the carrying capacity methodology implies a step-by-step approach, whereby each individual step can be considered as an individual vertebra. Together, they form a unified methodological backbone (*universal approach*), but with enough flexibility at each step for adaptation to destination- or region-specific conditions and circumstances (*tailor-made approach*). Moreover, further adaptions are possible in situations where an external shock such as the COVID-19 pandemic necessitates re-orientation and recovery (*resilience approach*). This makes the methodology an attractive tool since destinations and regions experience and learn

about their carrying capacity based on their own destination- and region-specific understanding and knowledge. With this step-wise approach, the methodology demonstrates a strong process orientation which ideally should be accompanied by external moderation and expertise.

The role of the external moderator or facilitator is to support the destination from Step 1 to Step 5 of the methodology from a neutral position. The facilitator can be accompanied by a small group of experts who support quantitative and qualitative data collection across the steps as well as take care of workshop organisation.

Figure 3.2 summarizes the five steps of the methodology: It starts with the destination overview (Step 1), followed by the identification of relevant causal loops between tourism and the territorial context in a systemic picture (Step 2) before explicitly focusing on the measurement of tourism flows (Step 3) as well as tourism impacts in conjunction with the territorial context (Step 4). Steps 3 and 4 are conducted with the support of a visualisation tool (ESPON Carrying Capacity Dashboard). Step 5 has to be understood as the identification of the destination specific carrying capacity (based on the measurement in Step 4) and the derived policy recommendations. This final Step 5 allows a feedback loop to the need's assessment in Step 1 and the developed systemic picture in Step 2 in order to reflect upon needed adjustments due to external shocks such as the COVID-19 pandemic. Therefore, at the carrying capacity workshop (Step 5), stakeholders are requested to adjust the systemic picture on the basis of changing needs.

Figure 3.2: Carrying capacity methodology



Source: Consortium, 2020.

3.1.1 Step 1: Destination's overview

According to this set-up, the destination- and region-specific conditions need to be evaluated carefully. This is covered in **Step 1** of the developed methodology, where the facilitator works closely together with the regional stakeholders in the destinations with the aim of collecting

information about the overall context **(Sub-step 1.1),** conducting a needs assessment **(Sub-step 1.2),** reporting about the policy and strategic orientation **(Sub-step 1.3),** and validating and complementing the findings in a round of telephone or face-to-face interviews **(Sub-step 1.4).** Overall, destinations would need to provide access to relevant policy documents as well as statistical data and nominate stakeholders for the interviews. The number of interviewees depends on the size of the destination but on average three to four stakeholders would suffice. In order to capture the carrying capacity's relevant aspects, ideally stakeholders from the municipality, the local DMO and the regional economic development agency should be included.

Beginning with a description of the destination's definition and its justification, the overall context of the destination has to be understood which includes defining the system's scope and describing the status quo. Socio-economic context data and tourism-related data have to be gathered which help to understand the destination's overall situation. This **Sub-step 1.1** is based on the existing documents, reports, and statistical data. The next **Sub-step 1.2** provides a data- and literature-based overview of the destination's needs in terms of tourism development, socio-economic development, and issues related to the destination's carrying capacity and is finalized with a detailed needs assessment. This is followed by a full-fledged analysis of existing relevant policies and strategies at all territorial levels **(Sub-step 1.3),** as well as stakeholders' perceptions and opinions on these matters retrieved from interviews **(Sub-step 1.4)** along a detailed interview guideline. The guideline focuses on aspects such as the definition of the destination, the perception of the main challenges, and the estimation of the biggest potential in terms of tourism development. As such, the interviews are designed to validate and complement findings from previous sub-steps.

The resulting analysis allows then a profound assessment of the destination's territorial context, its political and strategic objectives in relation to tourism and helps to understand the perceived and intended destination development, which is a carrying capacity-related dimension.

3.1.2 Step 2: Identification of causal loops between tourism and the territorial context

Following the findings from the destination's overview, **Step 2** focuses on defining causal loops and interlinkages between regional development aspects (such as the socio-economic and territorial situation) and the tourism situation of the destination. A systemic picture aims to visualise causal connections between tourism exposure and territorial context. By drawing these interlinkages, it becomes also clear where "information" will be needed in order to describe these causal loops: Territorial context indicators **(Sub-step 2.2)** and tourism indicators **(Sub-step 2.3)** are selected based on the systemic picture. The systemic picture and indicator selection are validated in an ensuing workshop **(Sub-step 2.4).** This step needs preparation work by the facilitator and input from stakeholders at the systemic picture workshop. In order to capture the carrying capacity's relevant aspects stakeholders from the municipality, the local DMO, the regional economic development agency, the environmental protection agency, and other tourism experts should be involved.

In the first Sub-step, the facilitator designs and creates a systemic picture of tourism impacts for the destination **(Sub-step 2.1).** This preliminary systemic picture reflects the situation in the particular destination based on information collected in Step 1 during the review of the policy documents, reports, and other sources (desk research), as well as the stakeholder-specific information retrieved from the conducted interviews. It captures the interlinkages between tourism and territorial context along the three dimensions of sustainability (economic, social, environmental), as well as the governance dimension.

The causal links between tourism and the territorial context visualised in the preliminary systemic picture are translated into context indicators **(Sub-step 2.2)** and tourism indicators **(Sub-step 2.3).** A list of exemplary indicators retrieved from pre-existing methodologies (see Table 2.1 in the previous chapter 2) is used as a starting point since these indicators capture all relevant dimensions. Based on this list, a destination-specific indicator selection is suggested, which should be selected by the facilitator and the involved stakeholders on the basis of the identified policy goals and needs.

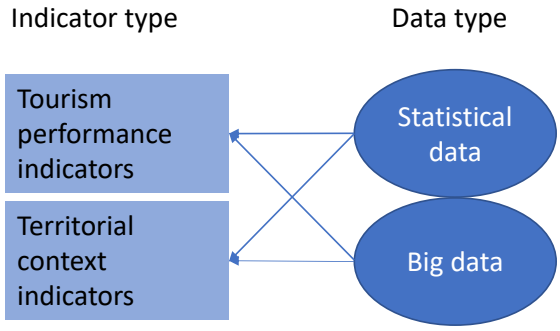
The preliminary systemic picture and the indicator list are developed as a preparation for the systemic picture workshop **(Sub-step 2.4).** In this first workshop with destination stakeholders, the material produced so far is presented. Stakeholders are invited to amend and adapt the picture based on their own perspectives. This revision round is particularly important since the changes and adaptations in the systemic picture lead either to new and additional indicators or even to a complete removal of certain indicators. At the end of the workshop, stakeholders are asked to weigh each single indicator on a scale from one to five in order to identify the most important indicators within the group of involved stakeholders. A subsequent revision of the preliminary systemic picture and discussion of proposed indicators leads to the final systemic picture and a finalised indicator list for a destination.

3.1.3 Step 3: Measurement of tourism flows

After the completion of Step 1 and 2, the measurement of tourism flows is based on the identified indicators and starts with data collection for the detailed destination analysis of tourism and territorial context. For both of these types of indicators, different data can be collected. Figure 3.3 illustrates which types of data are used for depicting and analysing tourism performance and territorial context indicators. Big data (for the destinations under study: touristic OpenStreetMap (OSM) data, Instagram data) is used as a complementary source for depicting tourism performance in the respective case study areas.

Usually statistical data is available from public or private statistical organisations. Indicators capturing relevant territorial and tourism aspects, such as the indicators identified and shortlisted in Step 2, should be collected from these sources depending upon availability.

Figure 3.3: Combinations of data types for tourism and territorial context indicators



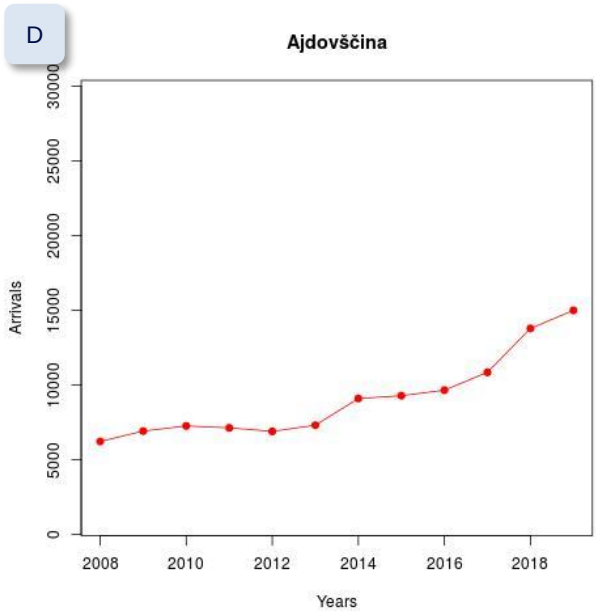
Source: Consortium, 2020.

In contrast to statistical data, big data offers information of a different nature and can be explored to complement statistical data. Big data indicators capture social/attractiveness, for example, with sentiment indicators derived from social media posts. A sub-stream within the broader field of opinion mining (for an overview see Pang & Lee, 2008; Liu, 2012), called sentiment analysis allows to operationalize such feelings of people expressed in emotive written text or statements as an alternative to satisfaction surveys. For example, overcrowding of certain regions might decrease positive feelings on sight and vice versa: positive feelings expressed on social media may have an influence on overcrowding. As positive and negative social media posts represent the authors' feelings, user-generated content (UGC) from the study regions can be investigated using text mining methods like verbal emotion recognition. For example, sentiment analysis based on Instagram posts reveals insights into the perception of the region from the tourists' perspective (Ranaweera & Rajapakse, 2016). The overall sentiment will be investigated to trace feelings influenced by various temporal characteristics, as for instance the number of tourists and subsequent perceptions of the region due to overcrowding, or the effect of positive headlines (e.g., cultural events) and negative headlines (e.g., terrorist attacks) in the news media about a certain region.

Step 3 is structured along three Sub-steps, data collection **(Sub-step 3.1),** followed by tourist flow estimation **(Sub-step 3.2)** which allows to understand the tourism situation of the destination. The visualisation of this data helps to set the grounds for an accurate prediction of the study regions' tourist flows and to determine its development over time. After visualising tourist flows in Sub-step 3.2, the next **Sub-step 3.3** is dedicated to predicting future tourist flows. Based on the structure of the included variables, appropriate forecasting models need to be employed.

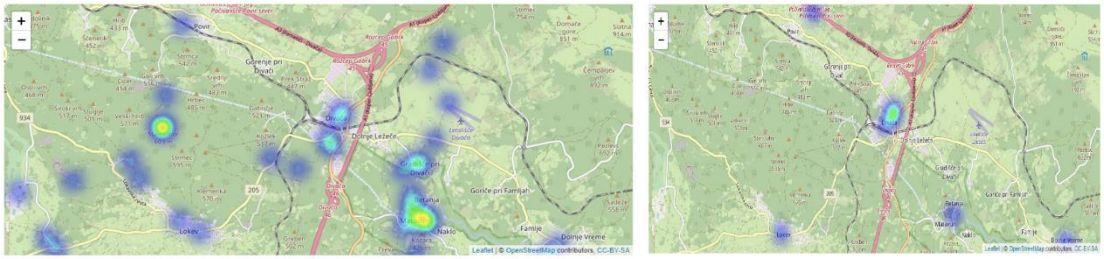
The tourist flow estimation step helps to determine the destination's tourist flows over time and can be depicted with statistical data and big data. With regards to big data, for example assessment of Instagram data can show in addition to statistical indicators, how past overnights/arrivals developed over time and indicate tourist hotspots. For example, heat maps derived from the data sources can be used for estimating tourist flow-related information (see Figure 3.5).

Figure 3.4: Example of a time series graph on tourist flow based on arrivals 2008-2019



Source: Consortium, 2020.

Figure 3.5: Tourist flow estimation based on OSM based POI (left) and Instagram data (right)

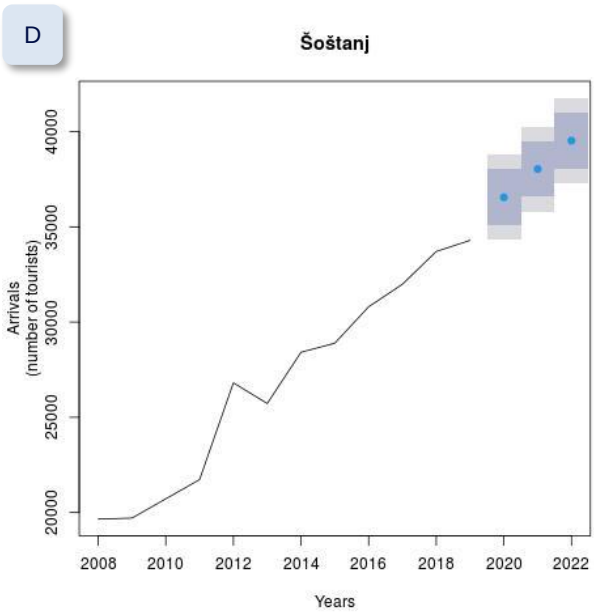


Big Data derived from social media platforms however can be used in multiple ways providing relevant information to the carrying capacity assessment, such as by analysing the hashtags used or the comments made in posts. Examples of analyses possible with that include sentiment analysis as well as association mining.

For the tourist flow analysis as visualised in Figure 3.4 and Figure 3.5 data needs to be selected in a systemic way. It should be clear for each destination which indicator is available for which time period (space-time components). Time series graphs like Figure 3.4 allow to detect trends, seasonal patterns, outliers, and missing values. Spatial data allows GIS-based visualisations: for example, maps where tourism hotspots can be easily identified (Figure 3.5). Different types of big data (e.g. Instagram, TripAdvisor, etc.) allow additional analyses, which help to understand tourism behaviour and/or help to compensate for missing statistical data. However, not all types of big data are available for free. Social media data for example needs to be purchased for certain periods. Therefore, a careful selection of big data is needed in order to avoid collecting the same type of data multiple times (for example, social media data describing the same trends and impacts) and hence avoid disproportionately high costs.

For providing forecasts, more advanced statistical software such as R will be needed since these models are typically not computable in Excel. The developed dashboard allows for a number of forecasts based on the "forecast" package for R. An example of a tourism forecast visualisation is shown in Figure 3.6

Figure 3.6: Example for a tourism forecast visualisation based on arrivals



Source: Consortium 2020

3.1.4 Step 4: Identification of tourism impact based on tourism and territorial context

Step 4 provides an overview of the tourism's impact based on examining the tourism effects in the territorial context. The key element of this Step is a combination of indicator pairs **(Sub-step 4.1)** (statistical as well as big data) which depict both territorial and tourism contexts of the destinations. The selection of indicator pairs is based on the identified needs in Steps 1 and 2. The facilitator suggests indicator pairs for those needs where data is available. In a first step, selected indicator pairs are visualised in graphs on the dashboard. In the next step, the outcome of pairing indicators is benchmarked according to quartiles considering neighbouring territories to obtain a better understanding of the impact **(Sub-step 4.2).** The dashboard allows for various types of pairwise indicator comparisons. In the Step 5 workshop, the participants and the facilitator can experiment with other meaningful combinations to see how tourism performance and territorial context indicators behave over time and to understand their interdependencies.

Sub-step 4.1: Combining pairs of indicators to capture the relationship between the tourism and territorial context over time

The two aspects – tourism (1) and territorial context (2) – are regarded as two related dimensions to the concept of carrying capacity.

(1) Tourism is captured by tourism performance indicators (e.g. number of overnights, arrivals, length of stay) to measure the touristic exposure of a certain geographical region. It

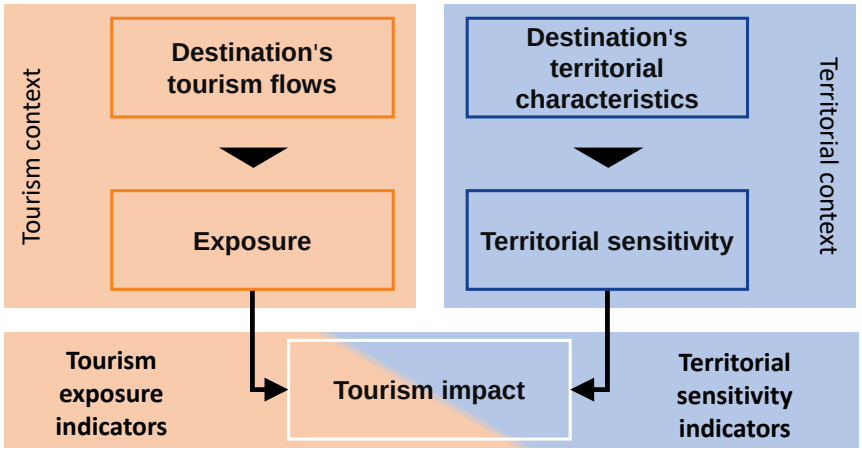
is captured by statistical data. Big data is used as a complementary source for depicting tourism performance in the respective destinations.

(2) Territorial context is captured by territorial context indicators that are relevant to the destination, as identified in Step 2. Territorial context consists of different dimensions: the economic situation (e.g. income or unemployment), the environmental situation (e.g. waste), and the social attractiveness situation (sentiment analysis).

The selection of relevant indicators of both types is developed according to defined policy objectives and needs, based on the work conducted in Steps 1 and 2. This includes the stakeholders' greatest concerns when it comes to carrying capacity problems as derived from desk research, interviews and workshops. The methodology is based on a theoretical concept of tourism impact which is illustrated in Figure 3.7.

The concept defines tourism impact as a cause-effect reaction of tourism exposure on the one hand and territorial sensitivity on the other hand. Tourism exposure is defined by tourist flows and territorial sensitivity by the destination's territorial characteristics. In order to measure tourism impact both types of indicators (tourism exposure indicators and territorial sensitivity indicators) need to be displayed against each other.

Figure 3.7: A theoretical concept of tourism impact



Source: Consortium, 2020.

The respective combinations are displayed in the visualisations against each other on the x-axis and y-axis.

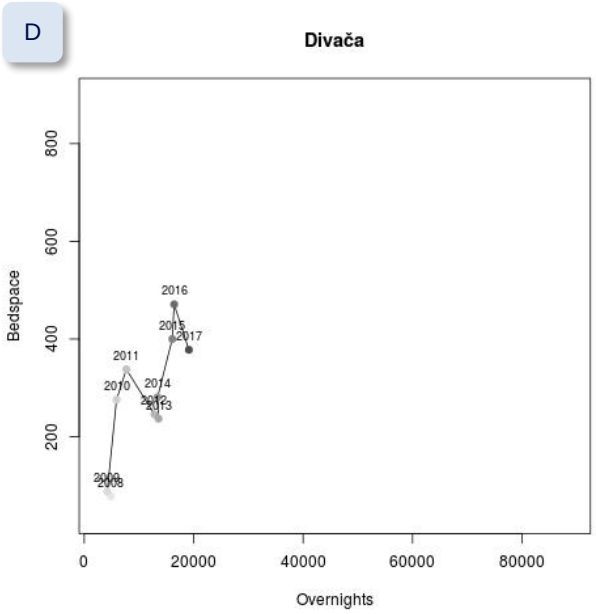
(1) The tourism exposure axis (indicators of the x-axis) contains indicators which denote the tourism exposure of the destination, all indicators measuring tourism performance, like arrivals, overnights, length of stay, seasonality, etc.;

(2) The territorial sensitivity axis (y-axis) contains territorial context indicators like ageing, employment, income, bed spaces, etc.

Figure 3.8 provides an example for a combination. The exemplary plot shows an increasing trend of overnights (tourism performance indicator) as well as bed spaces (territorial context indicator) over time. A positive relationship between the two is necessary. Otherwise, the destination will

sooner or later reach its carrying capacity limits as it cannot offer a bed for all the tourists potentially spending their night in the destination (e.g., the graph would be a horizontal line).

Figure 3.8: Example of the tourist flow impact (Overnights/Bed places) for Divača



Source: Consortium 2020

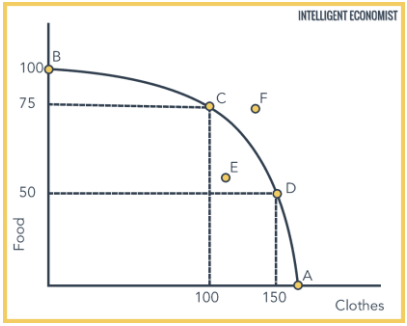
Sub-step 4.2: Evaluating the tourism and territorial context relationship by benchmarking

As noted, when defining carrying capacity of tourism the issues are the following:

- Carrying capacity itself is an “optimisation problem” – assuming that there is a “border situation” of the territorial context, where one additional unit of input (in our case tourism intensity) will result in a crossing of the capacity threshold.
- At the same time, there is no strict threshold which may be established, but territorially specific situations or target corridors defining the carrying capacity.
- Still one crucial element of determining the carrying capacity of a tourist destination will be the comparative element positioning the performance of a single destination vis-à-vis the threshold/borderline of carrying capacity.

In economic theory, such an “optimisation” problem is described by the Production Possibility Frontier (see Figure 3.9) combining within a given technical standard of production two (or more) production factors (e.g. capital and labour). The aim of every economically efficiently acting enterprise will be to reach a combination of the factors, which produces an output as close as possible to production possibility frontier, which symbolises those combinations with maximum output at any given input combination.

Figure 3.9: Production possibility frontier



Source: Intelligent Economist, 2019 (https://www.intelligenteconomist.com/production-possibilities-frontier/)

Transferred to our context of carrying capacity – this means that our understanding of the carrying capacity shall allow:

(1) for an assessment of the carrying capacity for each pair of tourism performance indicators (in the sense of exposure) and territorial context indicators (in the sense of sensitivity). – Sub-step 4.1

(2) for a positioning of each of the destinations within or without this "borderline" of the capacity. As no fixed border will be established but the comparative element will be needed the comparisons will be calculated between "comparable" objects (i.e. all destinations in Slovenia for the given project). – Sub-step 4.2

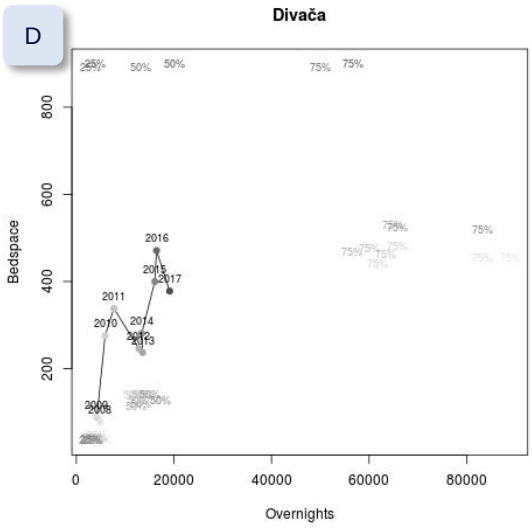
The carrying capacity is established by a comparison with the broader surrounding of destinations, but this destination sample may be narrowed down when discussing single destination results in Step 5 of the methodology.

Visualisations like Figure 3.10 provide an overview of the relationship between the development of the territorial context and tourism performance. It is important to note that, while interpreting the resulting impact, an objective evaluation of "good" or "bad" is not possible. For example, increasing tourism intensity might be bad for an already overcrowded destination, but good for an economically weak destination with hardly any tourists. The actual evaluation of what is to be understood as "good" or "bad" depends on destination specific policy goals and strategic objectives of the destinations.

The dashboard offers two different types of benchmarking options all of which can be exported and downloaded if needed.

(a) "Quartile-Matrix-Benchmark"
This allows stakeholders to evaluate their destination's development in comparison with the quartile thresholds of all other destinations in the broader surrounding (e.g., LAU or any other local administrative unit can be selected depending on the data specifications in the dashboard) contained in the database over time. Figure 3.10 presents an example for such a visualisation. It reveals a positive trend of the destination over time when it comes to the relationship between overnights and bed space. In addition, the stakeholders have the possibility to evaluate their destination's development compared with other destinations contained in the database. The destination moves towards a higher number of overnights and bed space – a higher rank – compared with the typical trend of all other destinations in the database. Between 2010 and 2015 it passed the 50% quartile threshold describing a shift from the bottom 50% to the top 50% indicating a faster development compared with the destinations' average.

Figure 3.10: Quartile-benchmarking example (Overnights/Bed places) for Divača

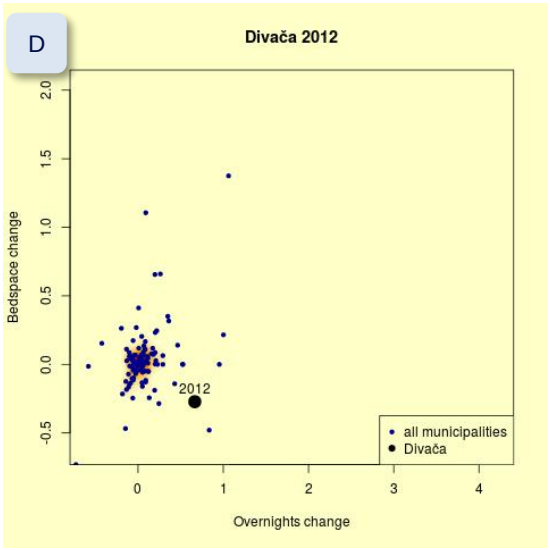


Source: Consortium 2020

(b) "Density-Matrix-Benchmark"

The second type of visualisation allows stakeholders to evaluate their destination in comparison with all other destinations in the broader surrounding (e.g., LAU or any other local administrative unit can be selected depending on the data specification in the dashboard) for a specific year and to have a look at this over several years. The plot shows the density of all other LAU regions' observations and highlights the destination under study. The user is able to browse through the years to observe the development of the specific destination. Figure 3.11 presents a visualisation for a destination in the year 2012. There was an increase in overnights while the bed space showed a decreasing trend. This indicates potential problems in the long run as there will be carrying capacity problems as the number of overnights will sooner or later exceed the bed space. Whilst clicking through the different years, each destination can inspect such trends over all available time points contained in the dataset.

Figure 3.11: LAU 2 benchmarking example (Overnights change/Bed places change) for Divača



Source: Consortium 2020

3.1.5 Step 5: Identification of carrying capacity

Step 5 focuses on interpreting the results from the application of the methodology in a particular destination and formulating concrete statements for stakeholders. This includes conclusions about the carrying capacity in the destination and clearly formulated policy recommendations. There are three Sub-steps foreseen: **Sub-step 5.1** is the organisation of the carrying capacity workshop, **Sub-step 5.2** formulation of conclusions and policy recommendations, and **Sub-step 5.3** is the finalisation of the carrying capacity report.

The crucial element of Step 5 is a joint validation workshop where the results of the applied methodology are presented, discussed and validated. The workshop serves several purposes: it ensures that stakeholders understand the methodology and its results, and it offers a platform to commonly discuss the findings and finalise the understanding of the carrying capacity in the destination. The workshop introduces the methodology to the destination's stakeholders, allows to discuss the destination specific results, and to reflect on the outcome of the systemic picture developed in Sub-step 2.1. At the same time, stakeholders have the possibility to exchange with facilitators on further ways of addressing the results as well as managing their destinations. The joint workshop contributes to the stakeholders' ownership of the results of the methodology application.

During the workshop the results are analysed and interpreted against their historical development and benchmarking with other municipalities. The process of interpreting these findings necessarily requires the judgement of the destination's stakeholders, and involves returning to the overview of the destination's needs and objectives by experts (Step 1). Only based on this

reference to the destination's context, needs as well as strategic and policy objectives, it is possible to assess the destination's carrying capacity for the respective indicator pairs. Based on the identified critical points, participants are also invited to brainstorm about concrete actions necessary which will lay the ground for formulating policy recommendations.

Following the workshop, the respective recommendations are to be drafted by the facilitators and sent on feedback loop to the workshop participants. Finally, the results can be written up in a comprehensive carrying capacity report.

3.2 Data collection process

This project involved several steps related to the collection of data. As pointed out above, the data collected is a vehicle to "translate" territorial conditions (sensitivity) and tourism exposure into computable indicators and thus visualise and assess the territorial impact and finally the carrying capacity of tourism for certain territorial contexts. Data collection took place within the framework of the case studies in an exemplary way which follow the developed methodological concept. For this reason, data collection took place specifically for indicators which were investigated in the case study, according to the methodological Steps 2 and 3. The process of identifying indicators is summarised again below.

3.2.1 Indicator identification process

- **Compilation of a list of exemplary indicators** based on the existing methodologies from the literature: the list includes context and tourism indicators along the three dimensions of sustainability. Table 2.1 contains a list of the most common indicators for measuring carrying capacity in tourism which are extracted from the literature.
- **Adaptation of the indicator list for specific destinations:** consideration of destination-specific needs and policy goals (Step 1 in the methodology) and development of a detailed systemic picture of tourism impacts. Stakeholders are ranking the relevance of indicators during/or after the systemic picture workshop (Sub-step 2.4 in the methodology).
- **Finalisation of the indicator lists:** the finalisation of the indicator lists focuses on the distribution of indicators along the three dimensions of sustainability and an adequate allocation of context and tourism performance indicators.
- **Identification of data sources:** after the finalisation of the indicator list, the data sources for each indicator need to be identified in cooperation with the stakeholders in the destination (Step 2 in the methodology).

Once lists of relevant indicators are developed, the processes of collecting statistical and big data for purposes of the methodological Steps 3 and 4 are conducted. These processes, as they have been undertaken in the present project for purposes of testing the methodology in case studies, are described below.

3.2.2 Statistical data collection process

The statistical data collection process follows two main steps:

- **Data selection:** Identification of different data sources at the destination and national level. In the project, data selection took place at the national level and included official statistics agencies in Slovenia (Statistical Office of the Republic of Slovenia (SURS)) and Italy (Istituto Nazionale di Statistica (ISTAT)) as well as at the EU level (Eurostat).

- **Data collection:** The available data should be collected for at least ten years (in the project 2008-2018/19). Not all indicators in the dashboard are available for the full period.

Based on the weighted indicator lists for the four destinations in the project Table 3.1 lists all indicators where data is collected for further analysis. Table 3.1 includes both tourism performance and territorial context indicators collected for all 150 Slovenian municipalities. The database includes data from 2008-2018 for most indicators and allows to apply the proposed methodology to the four case studies. With the reference to all municipalities each case study destination can benchmark its tourism performance to other municipalities. All analyses can be visualised with different types of visualisations (see examples in Section 4 and 5). The data for the listed indicators was uploaded to the dashboard and represents the database used for the case study visualisations. The character of the database is a "living database" which can be easily updated and extended if destinations further collect and provide more data. However, the upload should be assisted by the facilitator defined in the methodology. It needs to be added that pro-active data collection and provision in form of open data will help destinations to systematically monitor their tourism performance, socioeconomic and environmental development and the more data for more destination is available in the dashboard the more meaningful benchmarking is possible. In the given case it would be highly recommended to feed in the Green Certificate data for the available periods and to further collect environmental data at the destination level since this is not available yet. With this approach the methodology and dashboard are certainly an improvement to existing comparable databases (e.g. MITOMED+[3]), as it already starts with a comprehensive data set (23 indicators for 212 municipalities) and thus provides an incentive to upload destination data in order to allow for comparisons and an assessment of carrying capacities.

Table 3.1: Indicators in the database (alphabetical order)

Ageing
Population >=65/Population <=14
<Methodological Explanations: Slovenia>
Arrivals
Tourist Arrivals
<Methodological Explanations: Slovenia>
Arrivals Change, Overnights Change
Annual Change in %, Base Year is Previous Year
Bed spaces
Number of Indivisible Units and Bed spaces that are Available to Tourists
<Methodological Explanations: Slovenia>
Bed spaces Change
Annual Change in %, Base Year is Previous Year
Bed spaces Density
Bed spaces/Population

[3] https://mitomed-plus.interreg-med.eu/fileadmin/user_upload/Sites/Sustainable_Tourism/Projects/MITOMED%2B/Web_platform_User_Manual.pdf

Employment
Persons in Employment by Municipalities of Employment
<Methodological Explanations: Slovenia>
Employment Ratio
% of Labour Force within the Working Age Population
<Methodological Explanations: Slovenia>
Enterprises
Number of registered legal or natural person, which had either turnover or employment or investments during the reference year.
<Methodological Explanations: Slovenia>
Green Certificate
Tourism Providers with Slovenia Green Label
<Methodological Explanations: Green Scheme of Slovenian Tourism>
Income
Average Monthly Cross Earnings
<Methodological Explanations: Slovenia>
Length of Stay
Overnights/Arrivals
Natural increase
Difference between the Number of Births and Deaths
<Births – Methodological Explanations: Slovenia> <Deaths – Methodological Explanations: Slovenia>
Overnights
Tourist Overnights
<Methodological Explanations: Slovenia>
Population
<Methodological Explanations: Slovenia>
Population density
Population/Square Kilometre Surface
Seasonality
Gini Coefficient based on Monthly Bed nights
Surface area
Square kilometre surface covered by the municipality's borders
Tourism Density
Arrivals/Square Kilometre Surface of the Municipality
Tourism Intensity
Arrivals/Population
Turnover
...of enterprises (1,000 EUR) is the total amount that the enterprise settled with sale of goods, material and performed services in the reference year. It is measured on the basis of selling prices stated on invoices and other documents less discounts at sale or later on and the value of returned quantities. It includes all costs and charges linked to the buyer and excludes all duties and taxes on the goods or services invoiced by the unit and value added tax, possible sale of fixed assets, financial turnover, subsidies and other extra turnover. Data on turnover of enterprises from 2013 also included turnover of banks and savings banks.
<Methodological Explanations: Slovenia>
Unemployment
% of Registered Unemployed within the Active Population
<Methodological Explanations: Slovenia>
Waste
Municipal Waste Collected by Public Waste Removal Scheme (kg/capita)
<Methodological Explanations: Slovenia>

Source: Consortium, 2020

3.2.3 Big data collection process

The Big Data collection process follows three distinct steps:

- **Identification of suitable big data sources** to complement the statistical indicators: the existing big data sources (web and social media platforms) need to be selected along three important criteria – relevance to the destination, sufficient volume for data analysis and affordability (social media platform data to be used for a full fletched analysis is not available for free and needs to be purchased).
- **Definition of the methodology** for collecting relevant data from the identified sources
- **Initiation of the data collection process:** this includes data cleaning and storage in suitable formats.

Identification of suitable big data sources

For the given project Facebook, Twitter, Instagram, TripAdvisor and other websites were evaluated as possible data sources in order to identify the primary points of interest (POIs). Finally, the list of POIs was compiled by identifying every "activity" listed in the TripAdvisor pages for the case study regions and their adjoining regions with at least two reviews. This led to 11 POIs in Bled (including Gorje), 6 POIs in Brežice, 2 POIs in Divača, and 37 POIs in Nova Gorica – Gorizia (including Ajdovščina, Brda and Vipava).

Definition of the methodology for collecting relevant data from the identified sources

Facebook only allows access to publicly posted content which is too restrictive for the purpose of the project. Twitter shows very low volume and relevance for content mentioning many POI and region-specific terms. Instagram, on the other hand, is used very commonly for sharing visual impressions from locations that people visit and thus provides insights into POIs that are communicated. Such Instagram posts are often geo-tagged with the location and hashtags are used frequently to further indicate the place and purpose of the posting. Full datasets can be acquired from Instagram containing specific geolocations, hashtags, and posts using third party services. For websites, mentions of the given regions and POIs in international news sources (which we have access to) were too sparse. Therefore, the focus is on sites which share reviews of tourist POIs. Foursquare (https://foursquare.com/) exhibited very few reviews (called "tips") for many POIs, whereas TripAdvisor (as already the source of primary POIs as explained above) naturally did match the selected POIs with varying numbers of reviews. However, the frequency of reviews on TripAdvisor is much lower compared to Instagram posts. For example, Lake Bled – a highly popular POI on both sites (Instagram and TripAdvisor) – had only 79 reviews so far in 2020 on TripAdvisor (while the total no. of reviews for Lake Bled on the TripAdvisor site is 9.217) whereas the Instagram hashtags for Lake Bled saw an estimated 24.000 posts and geolocated posts at Lake Bled and an estimated at 12.000 this year alone (cut-off date: 15 May 2020). As it is stated in their Terms of Service, the use of TripAdvisor data for all external purposes including academic purposes is prohibited. As a consequence, we decided to focus on the online data collection from Instagram. The selection is based on (a) a comparative pre-analysis of the different social media data for the case study destinations and (b) on the quantity of posts available in the different social media platforms. The data was fed into the

dashboard. The dashboard also offers an additional function for further big data upload (a) from different social media platforms and (b) for other destinations. This function includes three steps:

(1) Data upload
(2) Calculate overall sentiment/basic emotion values
(3) Visualisations:
    (a) Overall sentiment
    (b) Basic emotions

Initiation of the data collection process

The data collection included relevant data for the destinations and the surrounding region or a POI as we wanted to focus on collecting data from visitors to that particular tourism region (both domestic and international, for which the used language may be a basis for differentiation).

Three criteria were used to collect data from Instagram: case study region hashtags, POI hashtags, and POI geolocation. For the collection of data from the case study region hashtags the service Picodash (https://www.picodash.com/) was used which provided up to 10.000 posts per hashtag with a very complete metadata extraction. The generic case study region hashtags were chosen to allow a more comprehensive picture of the user-generated content (UGC) on Instagram since tourism-specific hashtags are likely to be used only by destination management and marketing organizations (DMOs).

In addition, a complementary collection using the tool 4K Stogram, which requires just a single one-time license fee for unlimited data downloading was included. It captures both the photo/video posted as well as the accompanying text of the posting, however, it does not have any additional metadata like Picodash. 57 hashtags and 47 geolocations related to region POIs (the data includes a clear geolocation, longitude/latitude information and a reference to the municipality) were subscribed and collected up to 1.000 posts and stories for each. This allows us to have additional data available for analysis once we complete the analysis with the Picodash data.

Since the collected data contains both textual and visual elements (photography), both text and media mining approaches were considered in the analysis. A first indicator that can be extracted from the data collection is the frequency of posting from a POI/region. A sampling of the frequency of posting from POIs in case study regions compared to the regions' own identified "hotspots" demonstrated a clear correlation (the "hotspots" were the POIs with the most posts according to geolocation and/or hashtag) and indicated that frequency itself can be a suitable indicator of comparative volume of visitors to regions' POIs. Then, for the textual elements, a generic sentiment analysis (positive/negative polarity) as well as association mining (where extent of association with terms deemed desirable or undesirable along a selected dimension is measured) was applied. This produces aggregated scores (along a specified scale such as -1 ... +1) for both sentiments (generic) as well as associations to certain dimensions, like social, environmental, and economic factors. For the visual elements, a generic and tourism-specific

visual concept detection can be applied to determine the most common visual themes in photography at a POI or in a touristic region. Visual destination images are defined as the cognitive image formed of a destination through secondary information sources (Nixon 2020).

3.3 Dashboard and visualisations

All visualisation presented in section 3 are based on a developed open source Shiny dashboard which has to be understood as a supporting tool for Step 3 and Step 4 of the methodology and not as a stand-alone tool (see Figure 3.12). The dashboard[4] is R-based, which is an open source statistical program[5] offering rich packages, good visualisation capabilities, and most importantly, statistical computations. There is a scientific community available to maintain, update, and check all the distributed material. The basic idea was to develop a web structure accessible to non-experts and to embed data and their visualisation in an easy-to-understand manner.

The open source dashboard is based on the defined types of indicators – territorial context and tourism performance indicators. The dashboard includes both statistical and big data – stakeholders will be able to see visualisations for their own destination for specific points of time as well as for specific time periods. In addition, the stakeholders can compare their own tourism performance with other destinations which will help them to identify their carrying capacities. These comparisons can be selected based on similar or different exposures and similar or different tourism flows.

Figure 3.12: Insights into the dashboard

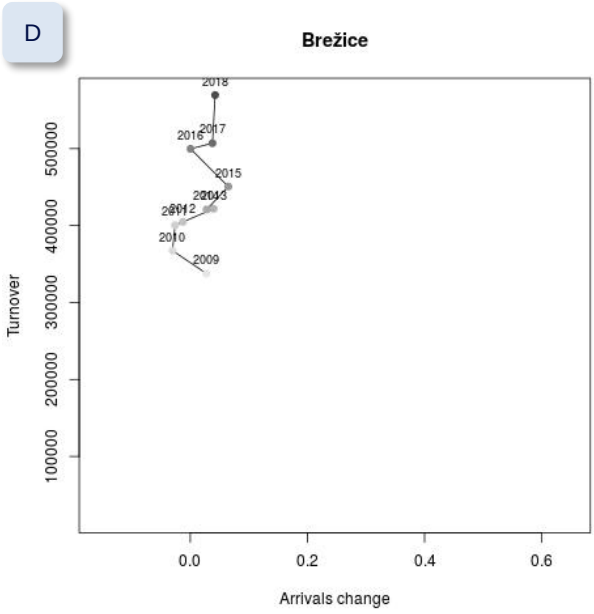
Source: Consortium 2020.

Visualisations included on the dashboard show combinations of indicators to depict tourism impact as well as benchmarking (quartile and LAU2).

[4] Shiny from R Studio: https://shiny.rstudio.com/

[5] R project for statistical computing: https://www.r-project.org/

Figure 3.13: Visualisation example for a matrix time series — (Brežice)



Source: Consortium, 2020.

For the given visualisation in Figure 3.13 the following description is provided on the dashboard in form of notes on the graph:

"Each point shows the combination of the two selected indicators for the selected municipality through all years available in the database. The darker the grey coloration of the year, the more current its observation. Changes along the horizontal/vertical axis depict changes on the 'Tourism performance'/'Territorial context' indicator."

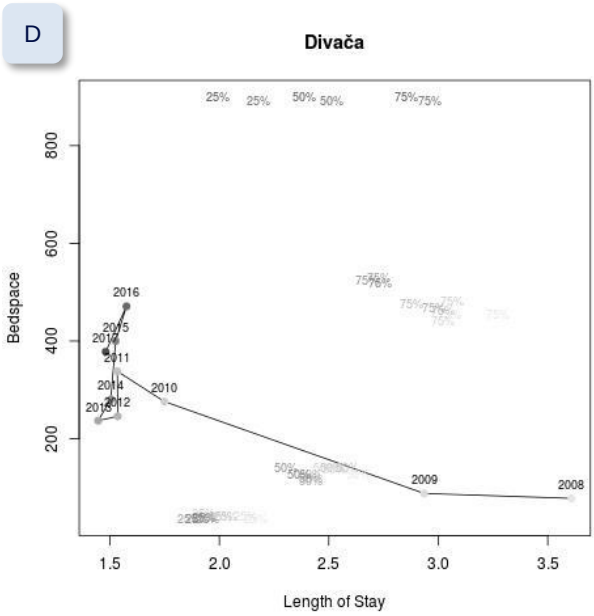
The description of the indicator and its units is provided on the dashboard for the given visualisation in Figure 3.13 as follows:

Arrivals
Tourist arrivals
<Methodological Explanations: Slovenia> [hyperlink which leads to more details]
Turnover
...of enterprises (1,000 EUR) is the total amount that the enterprise settled with sale of goods, material and performed services in the reference year. It is measured on the basis of selling prices stated on invoices and other documents less discounts at sale or later on and the value of returned quantities. It includes all costs and charges linked to the buyer and excludes all duties and taxes on the goods or services invoiced by the unit and value added tax, possible sale of fixed assets, financial turnover, subsidies and other extra turnover. Data on turnover of enterprises from 2013 also included turnover of banks and savings banks.
<Methodological Explanations: Slovenia>[6]

Both, the time series graphs of all the indicators and the matrix containing the relationships between the territorial context and tourism are extended with information of the quartile values over all municipalities contained in the database. This feature can be used for **benchmarking** purposes to compare one's own destinations with others. Different examples will be presented below.

[6] This text and all following highlighted texts are extracts of the explanations provided within the dashboard.

Figure 3.14: Visualisation –example–example for a matrix time series with quartile benchmark (Divača)

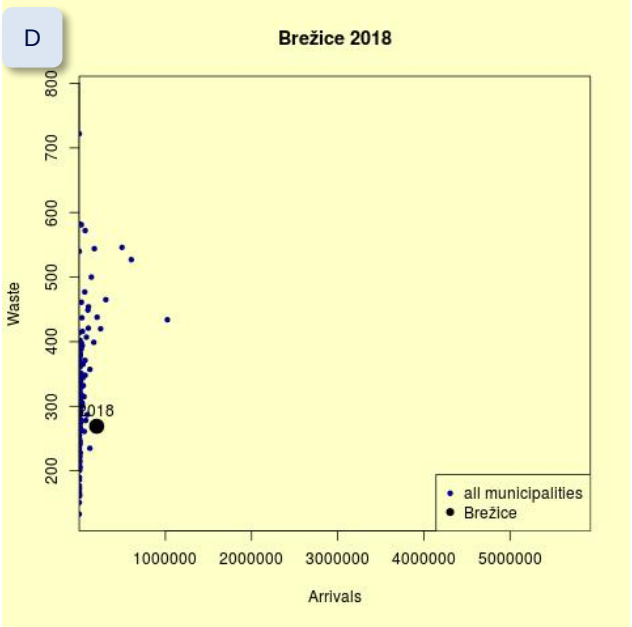


Source: Consortium, 2020.

For the given visualisation in Figure 3.14 the following description for the quartile benchmark is provided on the dashboard in form of notes on the graph:

Quartile Benchmark
If this option is selected, the 25%, 50%, and 75% quartiles are determined (out of all municipalities for which data is available for the respective year) and these values are displayed over the years. The darker the grey coloration of the percentage value, the more current its observation. Quartiles are determined by ranking all municipalities according to the selected indicator and determining the threshold that separates the 25% of those municipalities scoring lowest on the selected indicator from the rest, the 50% threshold that cuts the ranked indicator in the middle and in this way splits all municipalities half-half (the so-called median), and the 75% threshold separating the highest scoring 25% from the rest.

Figure 3.15: Visualisation example for a density matrix benchmark (Brežice)

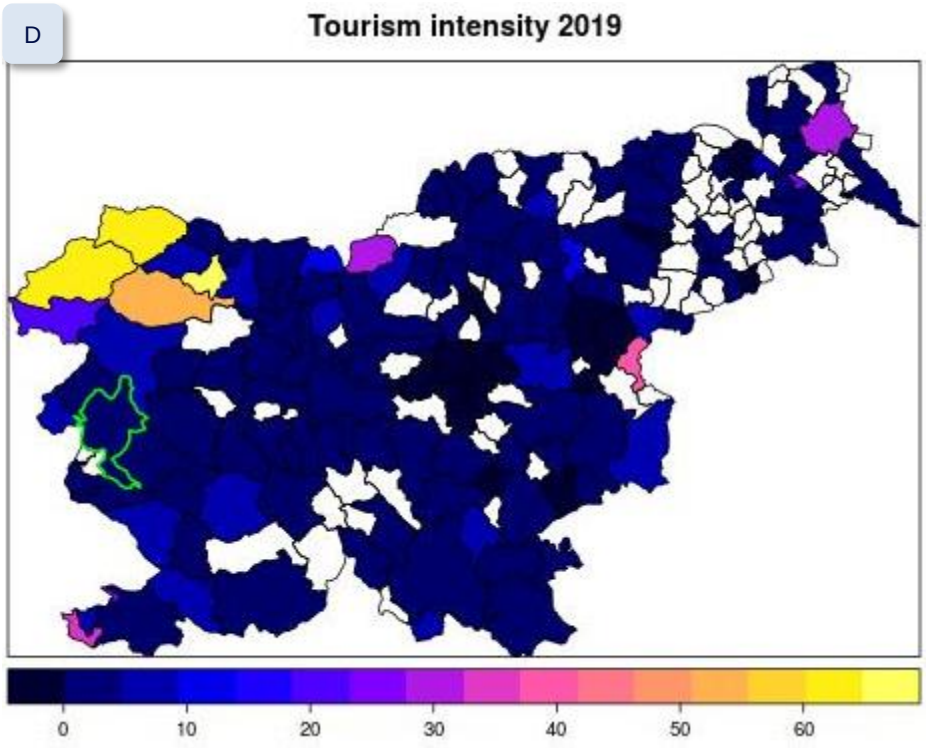


Source: Consortium 2020

For the given visualisation in Figure 3.15 the following description is provided on the dashboard in form of notes on the graph:

Notes on the density graphs
Each blue dot represents the combination of the two selected indicators of all municipalities available in the database for the displayed year. The big black dot represents the selected municipality. The density is calculated using a two-dimensional kernel density estimation. Red areas highlight dense areas of municipalities, yellow ones are sparsely populated. A municipality located within/outside the red area is a common/uncommon municipality.
CLICK after new indicator selection/to start from 1st year
Click this button a) after you selected new indicators or a new municipality, or b) if you like to start from the first year for which data is available in the database.
Refresh/plot next year
Click this button a) after you reset your indicator or municipality selection, or b) to plot the next year for the same selection. Scales on both axes are held constant to allow for comparison on a yearly basis.

Figure 3.16: Visualisation example for a spatial benchmark (Nova Gorica)



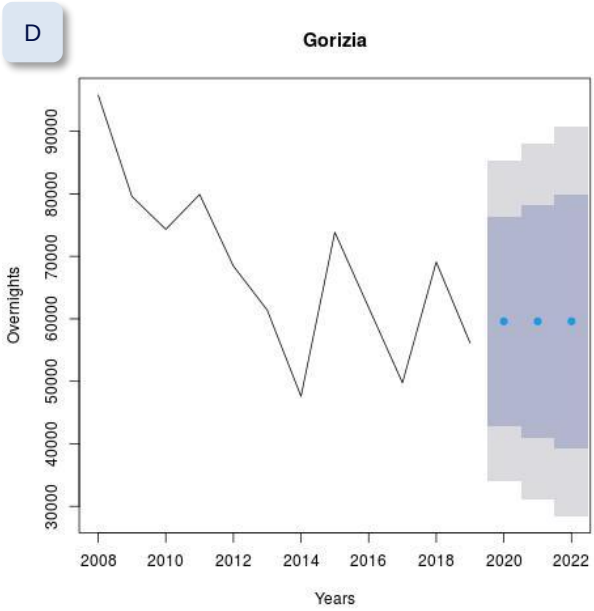
Source: Consortium 2020

For the given visualisation in Figure 3.16 the following description is provided on the dashboard in form of notes on the graph:

Notes on the maps:
The colour key is determined based on the value of the selected indicator. The lower/higher the score of each municipality on the selected indicator, the darker/brighter the colour. No data is available for white coloured municipalities. Two consecutive years are displayed next to each other for comparison purposes on a yearly basis (if available). The selected municipality is highlighted with a green border and can be changed anytime.
CLICK after new indicator selection/to start from 1st year
Click this button a) after you selected an indicator or b) if you like to start from the first year for which data is available in the database.
Refresh and plot next year
Click this button a) after you reset your indicator or municipality selection, or b) to plot the next year for the same selection.

In the time series graphs of the Shiny dashboard, a **forecasting solution** is integrated to predict the future developments of the indicators (see Figure 3.17).

Figure 3.17: Visualisation example for prediction of overnights (three years) (Gorizia)



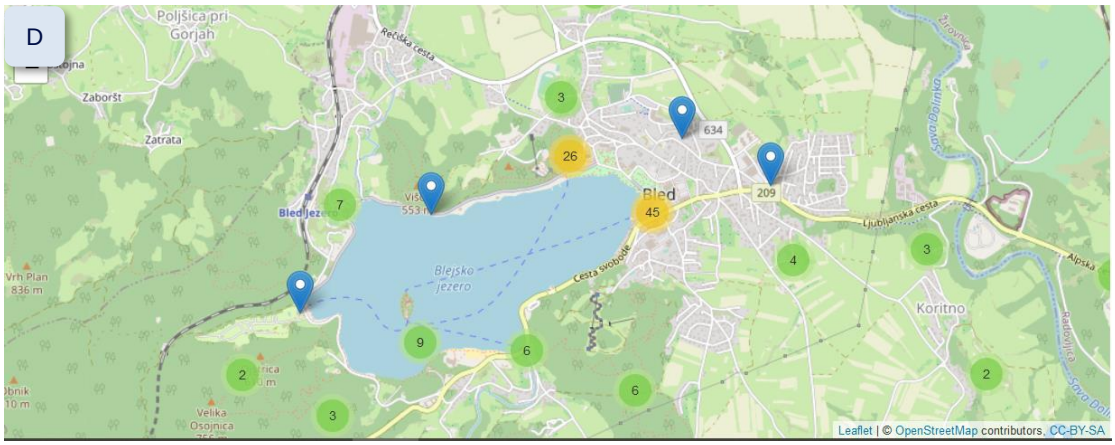
Source: Consortium 2020

For the given visualisation in Figure 3.17 the following description is provided on the dashboard in form of notes on the graph (references are excluded here but available in the dashboard):

Note on the forecast graphs:
Out-of-sample forecasts are produced using the "forecast" package for R and its "forecast" function (Hyndman and Khandakar, 2008; Hyndman et al., 2020). In more detail, point and interval forecasts (80% and 95% confidence intervals) are calculated for a forecast horizon of three periods ahead, while being robust against missing values and outliers in the forecast variable. The forecast model employed is selected automatically from a range of 30 possible specifications of the univariate Error Trend Seasonal (ETS) forecast model class by minimizing the Corrected Akaike Information Criterion (AICc), which is suitable for small samples. The ETS forecast model class, which comprises all traditional exponential smoothing models, is a state-space framework consisting of one signal equation for the forecast variable, as well as of one up to three state equations for the unobservable components of the forecast variable. The parameters of the different ETS specifications are estimated using maximum likelihood methods.

Touristic hotspot analysis helps to understand how tourists behave and what tourists like or dislike. Different features are integrated in the dashboard which are presented in the visualisations below.

Figure 3.18: Visualisation example for Touristic OpenStreetMap (OSM) Points-of Interest (POI) (Bled and surrounding region)

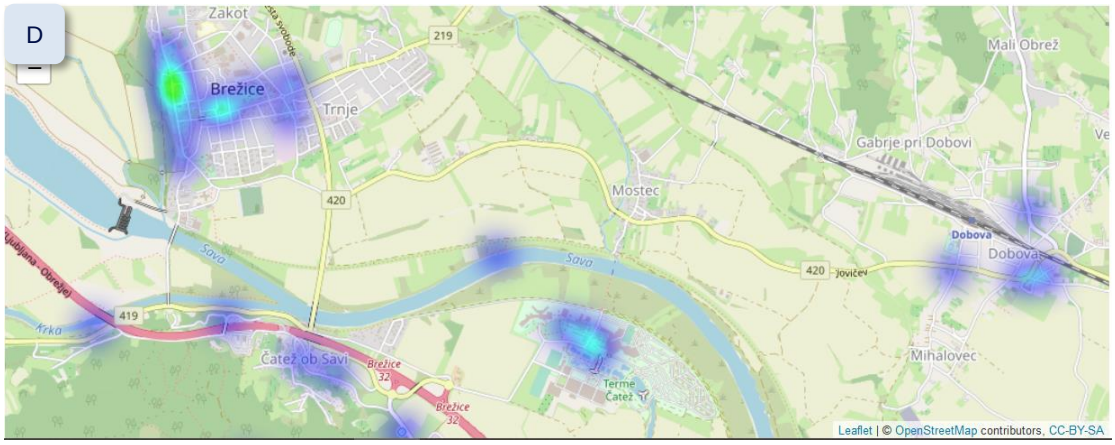


Source: Consortium 2020

For the given visualisation in Figure 3.18 the following description is provided on the dashboard in form of notes on the graph:

Notes on the map:
The absolute number of tourism-related OpenStreetMap (OSM) Points-of-Interest (POIs) are displayed. Mouse-over these numbers shows the area in which the respective number of OSM-POIs are contained. Zooming-in/-out can be done by clicking on the plus/minus sign, or by turning the mouse wheel up/down to display smaller/larger regions and their number of POIs. As soon as blue flags are visible, mouse-over will show the category of the POI and a name (if available). The following categories are included based on a pre-selection of tourism-relevant OSM-POIs: campsites, restaurants, bars, guesthouses, memorials, artwork, fountains, monuments, pubs, viewpoints, observation towers, tourist infos, castles, attractions, cafes, theatres, wayside shrines, arts centres, town halls, hostels, travel agents, museums, caravan sites, fast food restaurants, ruins, picnic sites, stadiums, department stores, parks, archaeological places, water works, bicycle rentals, food courts, bed and breakfast (B&Bs), theme parks, gift shops, motels, biergartens, malls, nightclubs, and golf courses.

Figure 3.19: Visualisation example touristic OSM POI hotspots (Brežice)



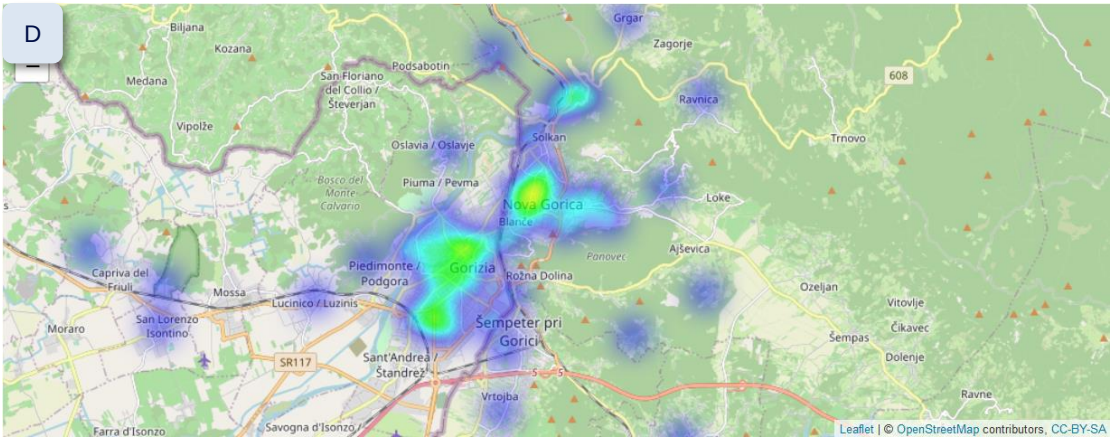
Source: Consortium 2020

For the given visualisation in Figure 3.19 the following description is provided on the dashboard in form of notes on the graph:

Notes on the map:
The density of tourism-related OpenStreetMap (OSM) Points-of-Interest (POIs) is displayed. Zooming-in/-out can be done by clicking on the plus/minus sign, or by turning the mouse

wheel up/down to display smaller/larger regions and their POI densities. Red areas highlight dense areas of OSM POIs, yellow ones are sparsely populated. The following categories are included based on a pre-selection of tourism-relevant OSM-POIs: campsites, restaurants, bars, guesthouses, memorials, artwork, fountains, monuments, pubs, viewpoints, observation towers, tourist infos, castles, attractions, cafes, theatres, wayside shrines, arts centres, town halls, hostels, travel agents, museums, caravan sites, fast food restaurants, ruins, picnic sites, stadiums, department stores, parks, archaeological places, water works, bicycle rentals, food courts, bed and breakfast (B&Bs), theme parks, gift shops, motels, biergartens, malls, night-clubs, and golf courses.

Figure 3.20: Visualisation example Instagram post hotspot (Nova Gorica – Gorizia)



Source: Consortium 2020

The following analyses of big data (social media platform data) is available in the open source dashboard:

As the number of pictures and comments posted on Instagram is dependent on the number of tourists/visitors visiting the destination, the frequency of geo-tagged posts and comments will be used to present tourist flows in

(a) ...a cross-sectional way aggregated over a long time period to identify hot spots in the case study destinations.

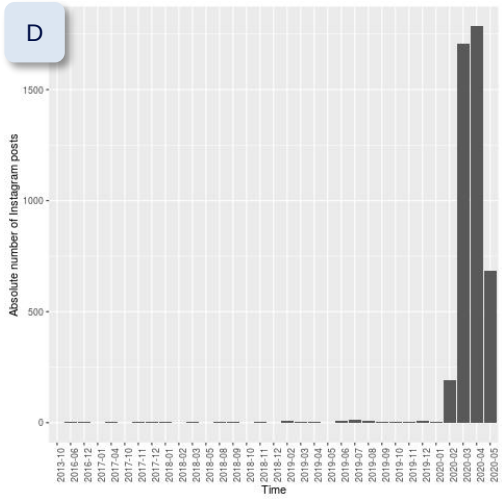
(b) ...a longitudinal way to get an impression on how the tourist flows develop over a certain time period.

Figure 3.21 and Figure 3.22 are example for visualisations based on Instagram data on the dashboard.

For the given visualisation in Figure 3.22 the following description is provided on the dashboard in form of notes on the graph:

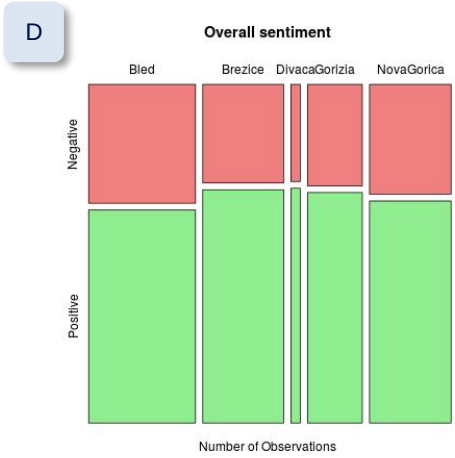
Notes on the mosaic plot:
The plot displays the ratio between positive and negative statements for each municipality. The broadness of each bar (each municipality) represents the number of emotive terms. The broader the bar, the more emotive terms were detected by the sentiment algorithm in the Instagram posts. Hence, the broader the bar, the more reliable the positive-negative-ratio for the respective municipality. At least one municipality has to be selected. Multiple ones are possible at the same time.

Figure 3.21: Instagram post timeseries (Bled)



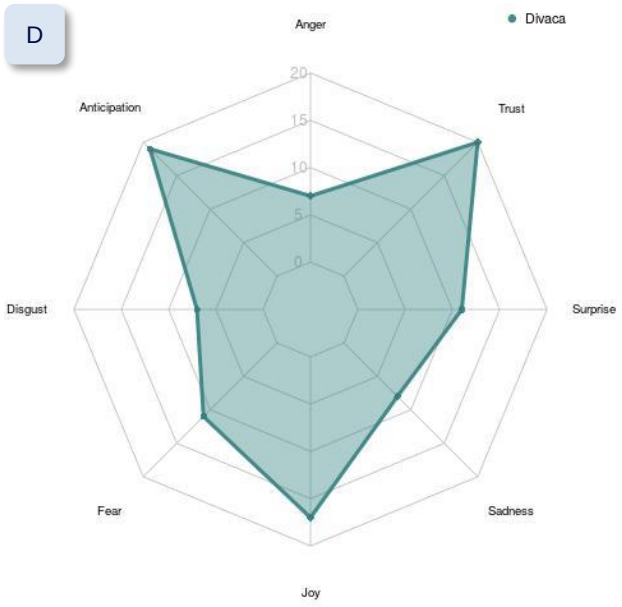
Source: Consortium 2020

Figure 3.22: Overall sentiment



Source: Consortium 2020

Figure 3.23: Basic emotions



Source: Consortium 2020

For the given visualisation in Figure 3.23 the following description is provided on the dashboard in form of notes on the graph:

Notes on the radar/spider chart:
This visual tool allows comparison of multiple variables on a regular two-dimensional plane encoding entities with different colours. The number of axes corresponds to the number of indicators being equally distanced. The chart has eight axes corresponding to primary emotions comparable to Plutchik's wheel of emotions. For each axis an emotional score is determined from the Instagram data and displayed as vertices of a polygon. If "Absolute number of emotive terms" is chosen, the absolute number of terms for each sentiment is displayed with 25%-steps from one grid to another. If "Relative percentages" is chosen, the eight basic emotions are divided by their sum. This results in relative percentages for each basic emotion displayed with 25%-steps from one grid to another. The centre of the graph (the so-called origin) equals zero terms/percent -> no occurrence of this emotion, the outer border equals the maximum number of terms/percentages over all emotions out of all chosen municipalities.

4 Overview of the case study results

4.1 Introduction

The implementation of case studies has a twofold purpose: 1) to pilot the application of the methodology and 2) to provide policy-recommendations for destination stakeholders. The experience gained during the implementation of the methodology allows to introduce necessary adjustments and improvements to the five steps. Case studies have culminated in valuable policy inputs for stakeholders with regard to steering tourism in their destinations. In addition, this work has also lead to overarching recommendations relevant at the EU level and for stakeholders in other destinations.

Destination-relevant findings have been captured in case study reports. These reports follow a structure corresponding to the methodological approach presented in section 3. Complete case study reports are attached in the annex and are available as separate, stand-alone documents.

The sections below provide a summary of most significant findings so far per case study destination. As per agreement with the ESPON EGTC, instead of leaflets per case study destination, a document with conclusions and application at the EU level has been provided.

4.2 Overview of case study findings

4.2.1 Bled

Overview of the socioeconomic context

The destination “Bled” covers the whole area of the Municipality Bled. It is located in the Upper Carniolan (Gorenjska) region in northwest Slovenia. In 2018, Bled’s population was about 8,000 people (SORS. 2020a). The population trend is negative and the municipality is demographically endangered. The educational structure of the population of the municipality and the region is rather good, whereas the average monthly net earnings of employees are slightly below the national average. As much as 13.3% of all enterprise revenues is generated in tourism (including hotels) while 20.1% of all people employed in the municipality worked in the tourism and hospitality industry (JJA, 2020) (the data, however, does not include the Sava Hotels & resorts, registered outside the municipality). 36.4% of the territory is designated as Natura 2000 area thus a considerable part is protected. The western part of the municipality is located in Triglav National Park. In 2019, the region contributed 25.7% of all overnight stays in Slovenia.

Overview of destination’s tourism carrying capacity issues

Bled is striving for a better balance between environmental, socio-cultural and economic pillars. As defined in its tourism strategy (OB, 2019), Bled is primarily a “must see” destination, but the vision is to be a “must experience” destination. This approach aims for a prolongation of the stay of tourists, attracting “high value” visitors, increasing daily spend, and redirecting the flows to better manage capacities.

Bled is one of the three Slovenian destinations with over one million overnight stays, with 95.41% of foreign overnights and 2.22 days average stay in 2019 (SORS, 2020c). The number of overnight stays doubled from 540,480 in 2008 to 1,132,574 in 2019. However, the trend in the average length of stay is negative as it has dropped from 2.52 days in 2008 to 2.22 in 2019 (the Slovene average in 2019 is 2.53 days). Bled has had a capacity of 8,747 beds in 2018 (7,483 with camping places excluded), an increase from 5,297 in 2009 (OB, 2019). The number has exceeded 9,000 beds in 2019. The number of hotel beds has stayed nearly the same in the period from 2009 to 2018 (an increase from 2,379 in 2009 to 2,578 in 2018), but the number of private rooms and apartments has nearly tripled.

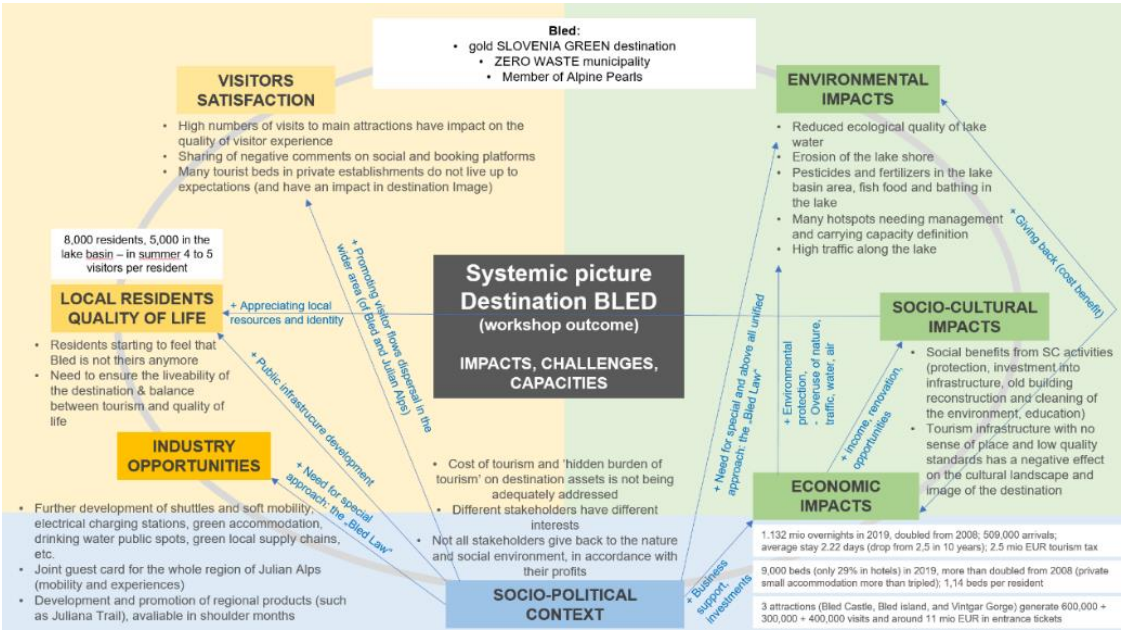
Next to the increasing number of tourists staying in Bled, also a large number of same-day visitors has caused certain challenges. On warmer days, especially over the weekend, there is an additional influx of domestic same-day visitors. The numbers of day visitors to Bled in high season is about 10,000 per day, in addition to some 10,000 overnight tourists. Hence, the ratio between tourists and the local population on these days is around 2-3 to 1. Furthermore, with tourism growth in the wider area of the Julian Alps, visitors and beds have increased also in the neighbouring destinations and most of these tourists may also travel to Bled, intensifying the aforementioned challenges.

The carrying capacity of the destination has so far not been systematically and strategically addressed. Two to three hotspots in the destination are already facing the need for carrying capacity evaluations and respective measures, but only in certain periods of the year. These are the Vintgar Gorge, the Bled Island and the Bled Castle. There is a need for an integrated approach of tourism management. The Public Institute Triglav National Park is currently preparing a development and management action plan for the hotspots in the Triglav National Park. The new development strategy for the municipality aimed to address this topic, however with regard to the COVID-19 crises, the needs and situation has to be re-evaluated. With an expected drop in overnights in Bled in about 70%, the rebuilding of tourism will be one of the new priorities. The stakeholders agree that the situation presents a once-in-a-generation opportunity to rebalance tourism, and to re-think how to develop tourism in the future. Therefore, the focus should lie on establishing a balance between economic, environmental and social factors.

Systemic picture analysis

The most highlighted issues by stakeholders with regard to the development of the systemic picture have been the quality of the lake water and the socio-political aspect. Destination stakeholders have agreed that there is a need for a structured process, in which Bled would define the carrying capacity in some of the hotspots of the destination within the context of Bled as one destination. This would also require a definition of the activities the destination would like to pursue in certain locations. This process will be conducted in the new Bled 2030 strategy.

Figure 4.1: Systemic picture Bled – final (workshop outcome)



Source: Consortium, 2020.

Conclusions and recommendations for the destination's tourism carrying capacity

The main conclusion for the destination Bled is that its carrying capacity has already reached the area of tourism infrastructure. Arrivals steeply increased within the last couple of years while overnights decreased. Overall, this led to a situation where more tourists stay for a shorter period of time. In turn, this has consequences on the bed space capacity if crowding effects are mainly experienced during the weekend, as pointed out in the workshop. This leads to the following policy recommendation:

To define specific experience packages especially for tourism during the week. This opens windows of opportunities within the greater region Julian Alps where "cooperation" was identified as a pressing need.

Another conclusion from the workshop discussions is that Bled sees the external shock of COVID-19 as a possible chance to re-structure tourism. The destination seems to "suffer" from bus tourism which impacts the traffic infrastructure. Even before COVID-19, this put strains on the capacities of the destination. The "COVID"-situation shows that tourists stay longer in the destination, enjoy the city centre and demand new services. This leads to the following policy recommendation:

To provide specific services for tourists who want to experience Bled aside the hotspots. This includes specific infrastructure which invites tourists to linger at spots which allow, for example, a relaxing view of the lake.

If one of the needs focuses on balancing tourist inflows and residents satisfaction, then another conclusion must be to start a citizen participation process where residents are invited to share their concerns which would allow citizens to offer solutions from their point of view. This leads to the following policy recommendation:

To Initiate a broader stakeholder participation process where residents are invited to bring in new ideas and work together with the tourism industry and the municipality. This should be designed as a particular resident circle which should be ideally independent from already existing activities and processes like, for example, the Alpine Pearl activities.

4.2.2 Brežice

Overview of the socioeconomic context

Destination Brežice, in a wider perspective as a tourism destination, is a part of Posavje Region and a part of Thermal Pannonian Slovenia Macro Destination. As of 2018, about 24,000 people live in the municipality, which represent 1,15% of the national population and the population is decreasing. The municipality's ageing index for men and women is higher than the national average while the mean age of the population in Brežice is slightly higher than Slovenia, which puts the municipality demographically at risk. In addition, the population density in the municipality is 90 people per km^2, which is lower compared to the national average of 102. Brežice has more than 1,900 enterprises with about 7,100 persons employees. Among the working age population of 15-64, 10% are registered as unemployed which is 2% higher than the national average.

Overview of destination's tourism carrying capacity issues

With respect to tourism, in 2018, Brežice recorded a 4,2% increase in arrivals and a 3,3% increase in overnight stays, compared to 2017. This increase is attributed to the foreign arrivals (16,4% increase) and overnight stays (14,4% increase). On the other hand, the trend in domestic arrivals and stays is negative. Brežice recorded 8,8% less domestic arrivals and 9,6% less domestic overnight stays in the year 2018 compared to 2017. (SORS, 2020a; 2020b).

The destination is looking for ways to develop all-year tourism and is aware of the need to take into account the local economy, community, culture and environment. The main issues that Brežice is facing with regard to its carrying capacity is environmental protection and striving towards being a "green" destination. The management of the seasonal impact of tourism on drinking water consumption, the management of increased volume of wastewater treatment and the seasonal municipal waste collection activity solution have been therefore of a high priority. However, the priorities in the destination are expected to change drastically due to the Covid-19 pandemic.

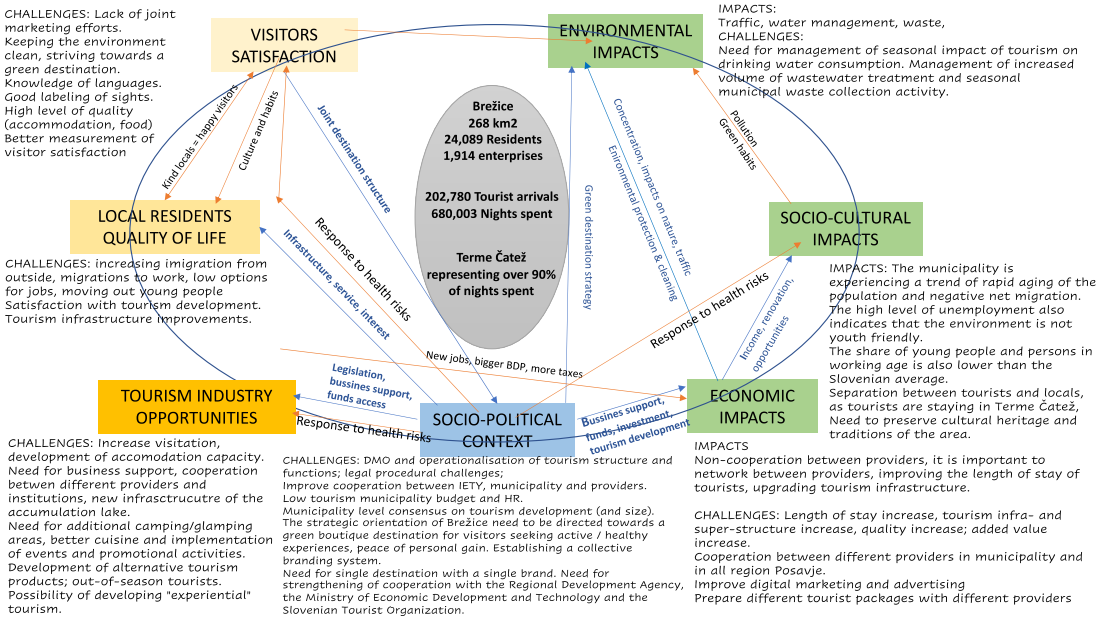
Tourism development cooperation between municipalities requires a dialogue and reaching a consensus. In 2019, the Municipality of Brežice and the Entrepreneurship Tourism and Youth Organization of Brežice (ETYO) presented a pilot project to establish a regional office of destination management. This body would provide comprehensive planning, organization, management, monitoring and evaluation of tourism development and marketing at the destinations of the Čatež and Posavje. The project has not been completed to date.

The project should help to enhance tourism infrastructure improvements and proper development of accommodation capacities as crucial for sustainable tourism management. Infrastructure development could also benefit from additional camping/glamping areas, better cuisine, the implementation of events and the development of alternative tourism products and out-of-season tourists. In addition, business support and cooperation betwen different providers and institutions has to be improved to tackle carrying capacity issues.

A systemic picture analysis

Destination stakeholders have emphasised the need to protect the natural environment. Also, the socio-cultural aspects of the destination have been thoroughly discussed. An economic dimension has been connected to industry opportunities and also in terms of its social aspects. Visitor satisfaction has been less focused, as Brežice appears not to have issues in these aspects.

Figure 4.2: Systemic picture – final workshop outcome



Source: Consortium, 2020.

Conclusions and recommendations for the destination's tourism carrying capacity

The main conclusion for the destination Brežice is that a better destination management is needed which could promote the entire Posavje region and bring about a critical mass. In order to reach this level, the stakeholders within the destination Brežice would need to start a regular dialogue ideally accompanied by a facilitator. This leads to the following policy recommendation:

To create a facilitator role with a moderating function (an institution) to build trust between actors and authorities as well as to initiate activities in order to promote the region.

Another conclusion from the workshop discussions is that Brežice suffers from out-migration which in turn weakens the destination's economic basis. The data in the dashboard confirmed the ageing process of the population which leads to substantial structural problems, as also

confirmed in the workshop. After lengthy discussions, the following policy recommendation can be formulated:

To undertake measures to retain young people and use their potential to strengthen tourism. This can be done, for example, by organising a tailor-made contest where young people in the region can contribute to the development of the destination. This would open windows of opportunities for innovative and creative ideas for broadening the scope of tourism in Brežice.

The stakeholder workshop brought a clear lack of communication between the stakeholders to the attention. The discussions showed how valuable information exchange and communication is for the development of the municipality. Thus, a policy recommendation targeting and improving the governance mechanisms needs to be formulated:

In order to balance public and private decision making, efficient governance mechanisms need to be build up which would help to define power relations and particular roles of single actors. This would help to define one common strategy and to see a benefit of having a strong tourism basis in the Terme Čatež and a great potential for cultural tourism with the Castle in Brežice at the same time.

4.2.3 Divača

Overview of the socioeconomic context

Divača belongs to Obalno-kraška statistical region that is home to 5.5% of Slovenian population and creates 5.6% of Slovenian GDP (data for 2018, SORS n.d.). With around 4,000 inhabitants, the small municipality contributes 3.6%to the region's total population, and in terms of economic indicator turnover of enterprises its share of the region's total is 1.5%.

Divača is a small municipality with only 8 public employees. Currently, the main tourism force is municipality's Development Centre which counts no more than two employees. It represents the destination in the national tourism organisational scheme of Slovenia. In future, Divača plans to create a new destination Karst with five municipalities. The project is currently in a process of legal establishment.

Overview of destination's tourism carrying capacity issues

In tourism terms, Divača records only 26,000 overnight stays, 378 tourist beds (SORS, n.d., data 2017; 121 beds in hotels, 100 beds in camps and 157 beds in other types of accommodation). However, its main attraction, the UNESCO site Škocjan Caves, welcomes around 200,000 visits annually. In 2018, the tourist average length of stay was 1.66 days per visitor, the tourism intensity was 6.6 overnight stays per inhabitant and the tourism density was 182 overnights per square kilometre.

Divača is a small scale destination and the socio-political capacity to address tourism related challenges is proportionally low. At the same time, Škocjan Caves have been already working on carrying capacity calculations for years. Exploring and increasing the carrying capacity

should be considered from the view of the municipality as well as the UNESCO site in particular. Exploring synergies with high visitations to the Škocjan Cave are also needed towards the benefit of other tourism forms in the destination.

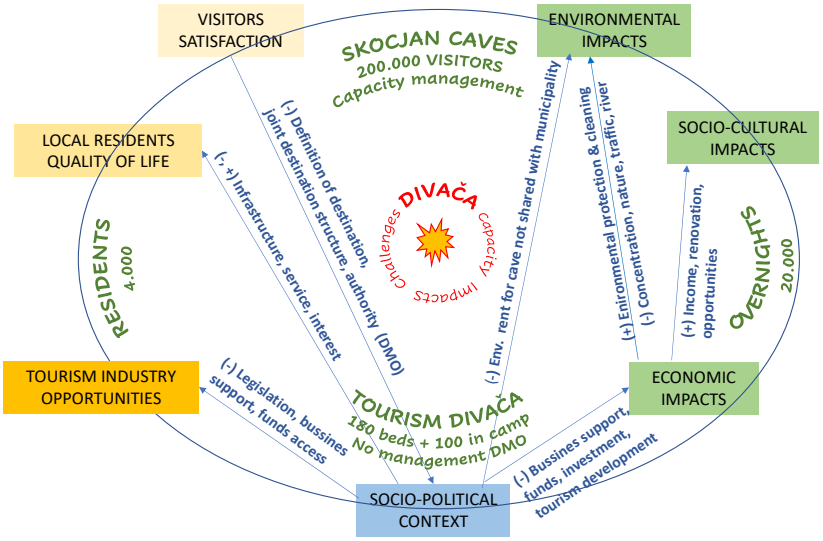
At the local level, there is a general awareness that capacity aspects must be carefully planned in tourism development. In this respect, the municipality needs a model, guidelines, actions/measures and best cases to learn from. The main strategic priorities, as already accepted by the destination's policy and strategic orientation (CPOEF, 2018), are to develop basic tourism infrastructure such as gastronomy suppliers, tourist accommodation (small boutique facilities); create commercial tourism products based on nature and wellness and to increase the length of the stay as well as average daily spending, thus increase the volume of tourism business (and benefits).

Systemic picture analysis

The most important aspects recorded in the systemic picture based on the cooperation with stakeholders are the following:

- tourism brings a strong protection and sustainability focus, projects and funds, especially through the Škocjan Caves protection structures (UNESCO WHL, RAMSAR, MAB, national). Negative tourism impacts refer to fragile environment, pollution of the River Reka, industry and waste disposal impact on water quality, noise and other impacts from transport.
- tourism brings jobs for guides (Škocjan Cave employ 50 to 60 guides, there are 25 tourism farms, 15 pubs and tourist agencies for cycling, guiding and outdoor activities). Events are organised by local residents, by tourism and cultural associations. Other positive tourism impacts are social benefits from Parc Škocjan Caves activities (protection, investment into infrastructure, old building reconstruction and cleaning of the environment, education).

Figure 4.3: Systemic picture Divača – final workshop outcome



Source: Consortium, 2020.

- While there is a high volume of visitors (with its positive and negative impacts) for one big scale attraction only Škocjan Caves, other attractions are too small and their impacts are

limited. Tourism and visitation bring few positive impacts and these are mainly locally restricted
- Capacity and power of the tourism infrastructure is low, especially in terms of organisation, fund access, support and investment in tourism.

Conclusions and recommendations for the destination's tourism carrying capacity

The main conclusion for the destination is clearly that there is a strong need for better communication and coordination between the different stakeholders often at different spatial levels. For instance, the national level should enter into stronger discussions with the **Škocjan Caves park, the regional level, and the local level.** This leads to the following policy recommendation:

To establish a platform for stakeholders to directly communicate and to initiate projects for the destination and the surrounding region. The newly established DMO could take over the role of a facilitator, launching different processes with the involvement of different stakeholders.

Another important conclusion from the workshop discussions is that the destination needs to become aware of the different experiences that the region offers for visitors and residents. There is a lot of potential to educate and train both residents and visitors to see the natural beauty as a regional peculiarity. Especially due to the COVID-19 pandemic, stakeholders have identified the need to activate common forces to connect and coordinate efforts. This leads to the following policy recommendation:

To define regional identity on the basis of Karst tourism and to create specific experience-based products for tourists and visitors alike.

Stakeholders have concluded that one of the weaknesses in the destination is a lack of existing interlinkages between tourism and other sectors. This leads to a lack of identification of residents with tourism products, a lack of knowledge of existing products on the side of non-residents as well as a lack of entrepreneurial ideas for tourism. The following policy recommendation can be offered:

To foster a stronger integration of the tourism sector with other sectors (e.g. local farmers). For example, local agricultural products(e.g. organic, sustainable) could be integrated into the experiences, in order to make them better known for non-residents and to foster entrepreneurship.

4.2.4 Gorizia/Nova Gorica

Overview of the socioeconomic context

The case study Gorizia – Nova Gorica is characterized by a cross-border urban agglomeration with the two municipalities: Gorizia in Italy and Nova Gorica in Slovenia. The Italian stakeholders defined the destination Gorizia – Nova Gorica as a cross-border destination which has a great potential due to the two surrounding regions. In contrast, Slovenian stakeholders defined

the destination as the area of the City Municipality Nova Gorica[7] (Mestna občina Nova Gorica, MONG).

The population of the municipality of Gorizia counts 34,336 residents in 2019, while the province with the same name 139,403 (31st December 2018). Gorizia city's density is 832.1 inhabitants per km^2 (2018) while the province holds 299 inhabitants per km^2 (31st December 2018). The city spreads over 41,2632 km^2, while the province over 466.02 km^2. The municipality of Gorizia reflects the national Italian trend of an ageing population and a steady economic struggle. The average age is 48.1 (rank 2,109 among the 7,914 municipalities in Italy). The population of Nova Gorica counts currently 31,691 inhabitants (which ranks Nova Gorica 9th among Slovenian municipalities). The population density was 113 people per km^2, which was higher than the national average of 102, and high above the regional average of 55.5. The Goriška statistical region had 6% of Slovenia's population in 2018. It is the second least densely populated region. The municipality faces stagnation of population and above average aging. It measures 280 km^2 (which represents 12% of Goriška Statistical Region and 1.4% of Slovenia), which ranks it 10th among Slovenian municipalities.

The business development in Gorizia is characterized by a slow but steady decrease in absolute numbers (2009: 2,629; 2013: 2,517). In Nova Gorica, average monthly gross earnings per person employed by legal persons were about 1% lower than the annual average of monthly earnings for Slovenia; the net earnings were the same as the national average.

Overview of destination's tourism carrying capacity issues

On the tourism market, the destination functions at different levels: Until recently (2019), tourism in the City Municipality Nova Gorica has been organised through the Tourist Association of Nova Gorica. There are currently new organisational structures under development where a newly established joint DMO manages the destination Nova Gorica and Vipava Valley (the area of three municipalities), but marketing-wise the DMO defines and promotes the destination as the whole Vipava Valley.

In 2019, 24,353 domestic and foreign tourists arrived at Gorizia, spending 51,489 overnight stays altogether (all annual data for 2019 include observations until November 2019 only). This resulted in an average duration of stay of 2.1 nights. While this number was approximately the same for all tourists (2.1 nights for domestic tourists and 2.2 nights for foreign tourists, respectively), the domestic Italian market presented by far the most important source of Gorizia tourism, with 74% of all arrivals and 73% of all overnights. Although the average duration of stay rose slightly from 2017 to 2018, the share of domestic tourists has been equally high in the past, with domestic overnights representing "only" 69% of all overnights in 2018 being an exception. Given the shortness of the time series, it is, however, not possible to judge whether this was a one-off effect or not. The number of overnight stays in Nova Gorica has been slowly

[7] *ISO 3166-2:SI code for Nova Gorica is SI-084.*

growing from 146,367 in 2008 to 193,824 in 2019. The same concerns arrivals, as their figures grew from 76,505 in 2008 to 102,981 in 2019. However, the year 2019 recorded 9.5% less overnight stays than 2018. The trend of the average length of stay has remained rather constant – it has only slightly decreased, from 1.9 days in 2008 to 1.88 in 2019 (the Slovenian average in 2019 was 2.53 days). The percentage of foreign overnight stays was 91.5% (in 2019).

Overall, the carrying capacity has to be assessed beyond the municipality level as it is relevant for the entire cross-border region. Since May 2011, Nova Gorica has been joined together with Gorizia (Comune di Gorizia) in Italy and Šempeter – Vrtojba in a common trans-border metropolitan zone, administered by a joint administration board European Grouping of Territorial Cooperation (EGTC GO/EZTS GO). The EGTC GO was established to identify and cope with common challenges in order to strengthen the cross-border territory.

Stakeholders in both municipalities identified the need to further develop their individual destination offers towards a cross-border offer. It has also been emphasized that the cross-border region has a considerable potential but is currently underexploited and underdeveloped. Participants claimed that even though there are no more physical borders between the cities of Gorizia – Nova Gorica, there are psychological barriers. Despite this, stakeholders have strongly agreed about the potential of cross-border joint products of Gorizia-Nova Gorica – especially with cultural and historical background (tours, trails, stories, products, packages). It was mentioned that people/organisations in tourism do not know each other and do not work together yet. Furthermore, there is too little cooperation on a day-to-day basis in tourism (especially outside the EU funded projects). Some tourism hotspots are currently emerging on the Slovenian side, however, there are no major tourist flows in the region and there is the perception that more could be attracted.

A part of exploring this cross-border potential for tourism is the joint application for the European Capital of Culture (ECC) 2025. One of the foreseen projects is the urban regeneration of Piazza Transalpina/Trg Evrope, with the construction of a transcultural centre to be located exactly on the state border and with the foundations in both states. This project plays an essential role in the candidacy of Nova Gorica and Gorizia[8]. If the candidacy will be successful, then the most pressing issue will be the lack of accommodation in Gorizia. Stakeholders believe that the joint candidacy for ECC 2025 has been an important step forward and can bring many benefits in the future. However, in order to strengthen the cooperation of Nova Gorica with Gorizia, as well as other destinations (Beda, Soča Valley, and Vipava Valley), it is necessary to launch a professional DMO organisation.

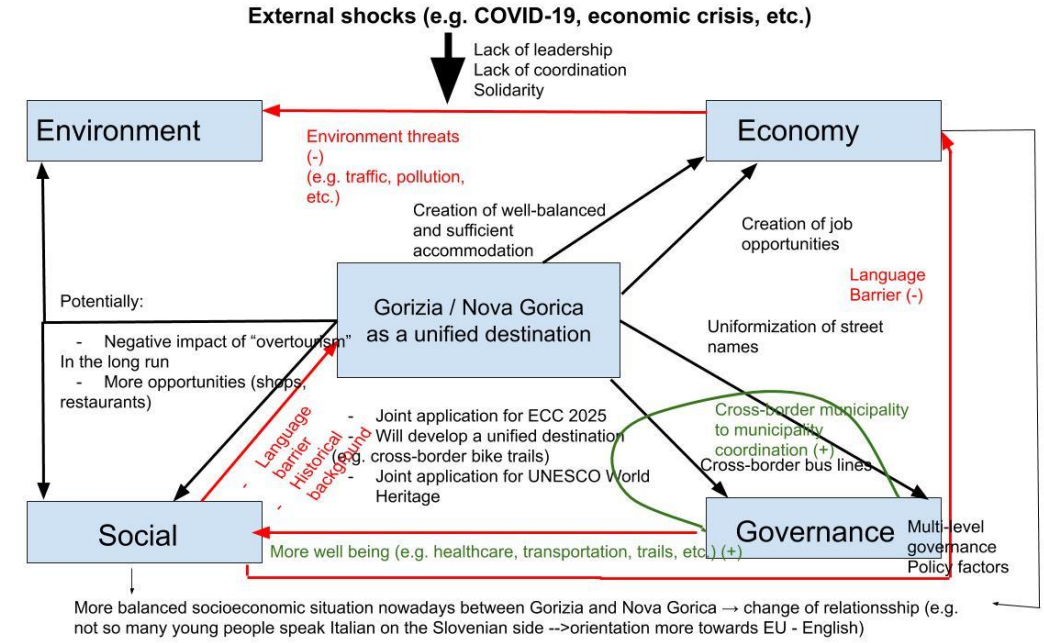
[8] See: https://euro-go.eu/en/notizie-ed-eventi/eventi/concorso-internazionale-di-idee-la-riqualificazione-urbanistica-dellarea-della-piazza-transalpina/

Systemic picture analysis

Gorizia

Italian stakeholders claimed that, so far, tourism has no negative impacts. However, impacts on the environmental should be monitored, especially if the unified destination will develop more coordinated activities which will definitely induce more traffic. The social dimension is perceived as the challenging factor when it comes to the development of a unified destination. More particularly, the language barrier is perceived as a real problem. Similarly, the governance dimension has been mentioned as the core factor, which would need to be changed in the future in order to promote and implement a unified destination. The need for multilevel governance, which would help to harmonize national and local decisions had been addressed in the context of a lack of leadership and the wish for more coordination at the EU level. The COVID-19 pandemic has been identified as external shock. The threat of closing borders is especially pronounced in the Gorizia – Nova Gorica.

Figure 4.4: Final systemic picture – Gorizia



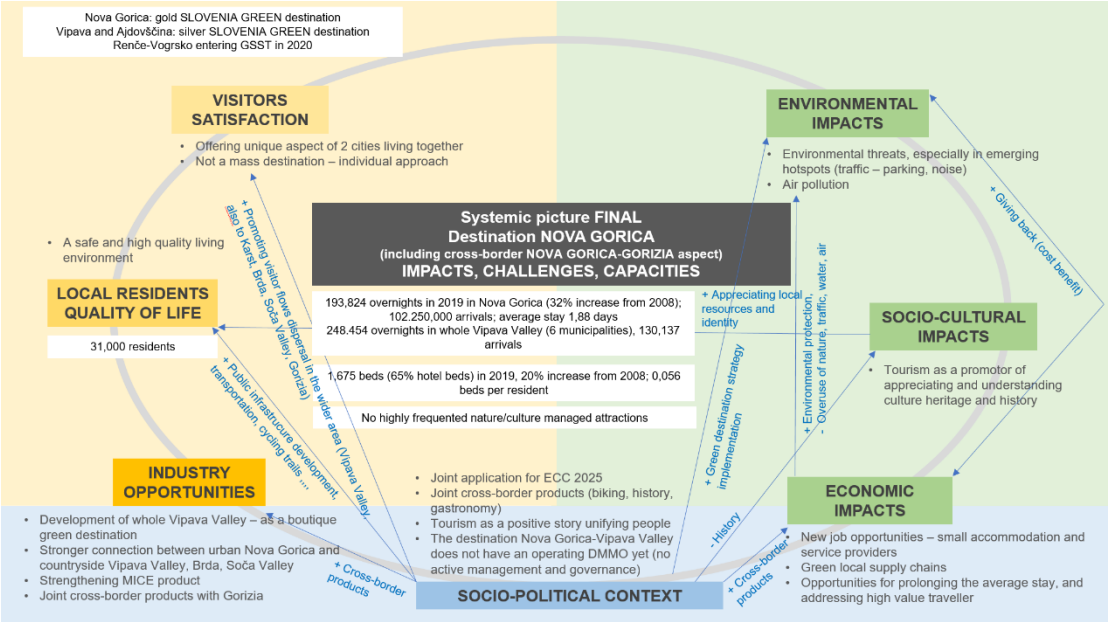
Source: Consortium, 2020.

Nova Gorica

The most highlighted issue by stakeholders from Nova Gorica has been the need for accelerated development of leisure products (outdoor, sports tourism, wine and gastronomy) and incentives and smaller conference/congresses in the destination. Also the potential of wider destination of Vipava Valley has been emphasised. Similarly to its Italian neighbour, negative impacts of tourism are not present yet in the area. Hotspots are emerging as increasing number of visits are recorded in Solkanas as an entrance point into the Soča Valley and as a starting point for the Sabotin hill above Nova Gorica, also at Sv. Gora, Vodice and Preški vrh, in Vipavski

križ and at some other spots, such as Otliško okno and Nanos. An important part of the discussion was dedicated to the cross-border aspect of a joint destination Gorizia – Nova Gorica.

Figure 4.5: Final systemic picture – Nova Gorica



Source: Consortium, 2020.

Conclusions and recommendations for the destination's tourism carrying capacity

The stakeholder workshop was used to confront stakeholders with the two different perceptions of the potential cross-border destination. The visualizations helped stakeholders to understand how important monitoring of certain indicators is, but it also helped to understand the lack of cooperation and coordination which leaves the potential of tourism unexploited. Therefore, the main conclusion is that stakeholder involvement especially in a "divided" cross-border setting can help to initiate more coordinated processes. It remains open if and how stakeholders will put that into practice.

To Initiate a moderated stakeholder involvement process with the aim of defining areas for tourism coordination. This process should be guided by an accepted cross-border institution which would function as a bridging institution.

Another conclusion from the workshop discussions is that there are already cross-border projects existing which are not explicitly defined as tourism projects. However, they focus on certain tourism-related activities, e.g. cross-border cycling paths, which could potentially be used as basic infrastructure for broader tourism packages including culinary, cultural, and nature-based elements. These developments could be used to promote the touristic potential, emphasising the historical and cultural specificities of the Gorizia – Nova Gorica region. This leads to the following policy recommendation:

To develop specific tourism packages for cross-border experiences to emphasize the historically sensitive position of the region based on the existing cross-border projects. A similar process would need to be initiated for MICE tourism in order to strengthen Gorizia – Novia Gorica's position in this highly competitive market.

Sustainability was identified as a bridging element and offers many opportunities for cross-border activities. This leads to the following policy recommendation:

The coordinated stakeholder process should be used to develop specific areas for developing sustainable tourism in a cross-border region. A selection of specific products from the region, for example craftwork, traditional products or cultural products could lead to sustainable product lines. Certainty form of private sector participation would need to be developed in order to provide a solid financial basis.

5 Conclusions and recommendations

Specific case study recommendations were formulated for each case study destination and they are available in the case study reports. The work in the project allows to deduce additional types of recommendations that are transferable or applicable to all destinations. They concern different governance levels, often explicitly addressing a relationship and cooperation between them. Such general recommendations are described in sections below.

5.1 Conclusions concerning understanding of carrying capacity in tourism

Carrying capacity as a fluid concept

The methodology was built on the assumption that carrying capacity is not a number that can be calculated. This assumption was tested and validated. Even if data would be available to calculate such number, it would not provide a sufficient picture of carrying capacity. This understanding can only be developed with involvement of inputs from local actors and stakeholders who are aware of issues relevant to carrying capacity in a specific destination. Any calculation should be analysed with such stakeholders in order to provide an interpretation in the light of carrying capacity for the specific destination.

The perception of a destination

A destination can be interpreted in various ways. A destination can be a sightseeing site, a town, a city, a park or an entire region. These, however, are likely connected. Tourists can be motivated to visit a city or a town due to a specific site however, while visiting this site, they will also benefit from attractions and infrastructure available in the town, city or even in the wider region. Thus, it is necessary to understand this multi-dimensional concept of a destination as well as interrelations between different territorial perceptions of a destination. One crucial lesson learnt from the application of the method was that the self-perception of destinations moves towards a more reginal territorial concept as soon as carrying capacity is understood in a more holistic way. Destinations tend to see the necessity to include a wider territorial setting in their planning and assessments in order to accommodate tourism in its regional setting. – So one finding from the application of the method was that in all cases – although the territorial focus has been the municipality at the outset – we ended up in a regional perspective (LAU/NUTS3) as the most practicable granulation for assessing tourism development and its carrying capacity.

Understanding carrying capacity in tourism in a wider framework of regional development

The above conclusion is important as it highlights interrelations between different territorial entities and the flow and impact of tourists. In this context, it is important to emphasise also the strong relation between tourism and regional development. Tourism is linked with socio-economic situation in destinations. Both tourism and regional development impact and mutually

reinforce each other. Socio-economic development can enhance tourism capacities and tourism offer, while the impact of tourism has important consequences for regional development and may require significant adjustments in development strategies. For example, local and regional authorities may have to react to impacts of tourism on the environment or on the conflicts with local population. At the same time, local and regional infrastructures may have to be adjusted in order to increase touristic attractiveness. This suggests that it is necessary to perceive tourism development and destination management in connection with regional development.

5.2 Conclusions concerning the application of the methodology

The necessary involvement of stakeholders

The five steps of the methodology foresee the involvement of local stakeholders at different points. Piloting the application of the methodology has confirmed that their presence is very important as their understanding of destinations cannot be substituted by desk research. Local stakeholders are relevant both for purposes of providing inputs for understanding the issues concerning carrying capacity as well as for interpreting statements about carrying capacity. The application of the methodology should comply with the participative approach embraced as it has proved to be very beneficial.

Carrying capacity methodology as process-oriented approach

The methodology consists of a set of logically connected steps. The application of a methodology is a process that gradually explores and reveals certain issues about the tourism development in a destination. Even though the final outcome provides valuable information and guidance, both experts and stakeholders gain important knowledge at every step through exchange of information and perspectives. Through this cooperation and the participative process, particularly local stakeholders gain new perspectives, and skills while, at the same time, developing the ownership over the process and the results.

The differentiation between needs/actions and recommendations

Step 5 has been designed to develop different types of policy statements. Each need, which reflects the work in early steps, is complemented by a respective examples of action. These are complemented by policy recommendations. The differentiation between specific actions and more general policy recommendations is not only of a pragmatic character as it captures more specific, hands-on perspective and a more general policy orientation. It also provides inputs for different governance levels were actions are relevant for local stakeholders while the addressees of policy recommendations are regional and local authorities.

5.2.1 Conclusions and recommendations concerning data

Indicators are means not ends

The review of different methodologies has exposed a strong orientation towards indicators. However, without a methodology and a specific application idea, indicators alone cannot provide appropriate statements about carrying capacity or any tourist destination development. A disadvantage of many existing methodologies is that they offer indicators which are either not measurable or not realistically applied and monitored by authorities. This significantly lowers their usability and application in reality. Thus, while also basing on indicators, the approach here has been focused on selecting measurable indicators and outlining how to use them. What follows, next to their relevance for capturing carrying capacity, another basic requirement for such indicators was their measurability. This should result in a more practical and applicable methodology.

The importance of data collection and monitoring

As in many other contexts, the importance of consistent data collection at relevant territorial levels cannot be overstated. Indicator data can only be used for providing information when it is available and monitored. It is a basis for quantitative calculations and information that is a cornerstone of any methodology. Monitoring systems can provide not only statements about carrying capacity situation but also allow for their constant monitoring and provide the possibility of a relatively swift reaction and adjustment to changing situations. For this purpose, it is recommended that authorities at any levels work closely with statistical offices to facilitate and to mainstream the processes of data collection and monitoring.

5.3 Transferable recommendations from case studies

Case study work has resulted in recommendations on addressing carrying capacity problems in destinations. Some of these findings could be useful for other European destinations. In order to formulate such transferable recommendations, it is necessary to highlight that all four case studies have different types of carrying capacity problems. Therefore, they offer different categories of recommendations.

Destinations suffering from rapidly increasing numbers of tourists (based on Bled)

In many destinations, tourist numbers are growing rapidly which puts under pressure local infrastructures, environment and population. Based on the experience in Bled, such destinations should manage the flows of tourists in a way that leads to a more even distribution and mitigates their negative effects. As in case of Bled, this could be done by increasing tourist interest in non-hotspot sites which should lead to a more symmetrical spread of tourists. Moreover, sudden influx of tourists, especially linked to a high seasonality, can lead to a conflict with local populations. In such cases, it is vital to ensure the approval of locals by means of participative engagement into tourism activities and implementation of a common vision.

Destinations still defining their offer (based on Brežice)

There are many destinations which are experiencing mixed patterns of yet undefined tourism development. For example, the numbers of domestic tourists in Brežice are decreasing, while the numbers of international tourists are increasing. Many such destinations are receiving some interest but have not yet reached a critical mass to become a popular destination based on certain defined offer. The upside of such phenomenon is that, while increasing their tourism potential, such places have an opportunity to consciously steer their development as they pro-actively reach out to tourists based on the offer that they have defined. This contrasts somewhat with destinations such as Bled, which have been attracting tourists due to endogenous factors (such as natural sites like the Lake of Bled). Thus, Brežice has the opportunity to develop in a more controlled manner. As in case of Brežice, certain point of attraction, such as terme, can be used to promote the destination, highlighting its other attractions and emphasising the sustainable nature of their tourism offer.

However, despite efforts, such destinations may not be able to have a sufficient force. For this reason, they would benefit greatly from cooperation, professional branding and DMO support as well as from improving their socio-economic situation. In case of Brežice, the latter would mean measures to retain young people.

Destinations with underdeveloped potential (based on Divača)

Even more than destinations such as Brežice, there are destinations such as Divača which are even further from reaching critical mass. Divača is interested in increasing its touristic potential due to being in a close proximity to Skocjan Caves which is a touristic hotspot. However, in itself, the municipality has little involvement with tourism and is striving to become a destination. It could be perceived as entirely contrasting with destinations that suffer from over tourism, such as Bled. In cases such as Divača, cooperation, branding, DMO support and simultaneous improvement of socio-economic situation is even more significant than in the case of Brežice. Such activities can help destinations like Divača develop its offer and become attractive. In this context, particularly cooperation with neighbouring hotspots, such as Skocjan Caves, but also wider regions and other destinations may be particularly beneficial to direct flows of tourists. In order to attract these tourists, appropriate branding and offer development is necessary.

Cross-border destinations (based on Nova Gorica – Gorizia)

As Europe is a continent with many countries and many borders, cross-border cooperation is a very important cornerstone of not only the Cohesion Policy, but also individual development of countries and regions. Nova Gorica – Gorizia is an example of a place that has literally been divided and polarised by a border. Across European borders, there are many cross-border cities and regions with different historical and cultural heritage. They could be strengthened not only through socio-economic cooperation but also, and/or simultaneously, through cooperation on tourism. In such contexts, typical cross-border development projects may increase tourism

offer as they work to reduce border effects and facilitate flows between borders. Thus, the specific tourism potential of such cooperation should be simultaneously explored. Cities and regions across borders would benefit from reflecting on how their cooperation and cross-border development would benefit from cross-border tourism development. This consideration is valid also the other way around: how would the cross-border development benefit from cross-border development projects. As in other types of destinations, cooperation is vital.

Transversal recommendations

Cooperation with other destinations

Cooperation is a very important element of destination development in different types of carrying capacity problems. It offers symbiotic benefits for destinations suffering from over- and under-tourism. For example, places such as Bled suffering from tourism influx can decrease their pressure by redirecting tourist flows to less popular places. Destinations, such as Divača, benefit from reception of tourists crowding in highly popular sites, such as Skocjan Caves. Close cooperation can help smartly steer tourist flows. Moreover, cooperation between authorities and tourism providers alike can also help define tourism offer and increase the attractiveness of destinations. Wider cooperation in a regional context would likely also strengthen attractiveness of involved destinations.

Importance of local population

Tourism at any scale can exert pressure on local populations. Not only populations in overwhelmed places, but also populations in small localities unaccustomed to tourists may struggle with visitors. As local populations are the hosts offering services and infrastructure that attracts tourists, it is necessary that they are comfortable with their role as hosts. Conflicts should be mitigated and tourism development should be undertaken participatively and in consensus with local populations.

Importance of improving the socioeconomic and environmental situation

Case studies have confirmed that tourism is affected by a wide range of socio-economic and environmental issues and vice versa. Tourism cannot be perceived in isolation from socio-economic development but should be understood as an integral part of it. Socio-economic and environmental problems that affect a destination may constitute a challenge to exploring tourism potential. For example, pollution may discourage tourists from visiting and may increase their negative perception of a destination. In other cases, tourism development may also help alleviate or even reverse some socio-economic problems. For example, increased branding, new employment opportunities in services may help retain local population and counteract depopulation.

References

AJPES. 2020. Register nastanitvenih obratov (RNO). AJPES. Retrieved 25.2., from https://www.ajpes.si/RNO/Ajpes.RNO/vpogledIskanje

CPOEF (2018): Analiza strateških tokov gostov na destinaciji Kras z vključenim razvojnim in trženjskim načrtom za destinacijo Kras, za obdobje 2019-2024 (Analysis of strategic tourism flows for destination Karst with development and marketing plan for Kras for 2019-2024. Izdaja 15. 12. 2018. Center poslovne odličnosti Ekonomske fakultete, Ljubljana. Retrieved 20.2.2020 from:https://www.miren-kostanjevica.si/wp-content/uploads/2019/02/Analiza-states%CC%8Ckih-turistic%CC%8Cnih-tokov-na-destinaciji-Kras-z-vkljuc%CC%8Cenim-razvojnim-in-trz%CC%8Censkim-nac%CC%8Crtom-2019-2024.pdf

Demographics Italian Database of the Italian National Statistics Open Data, http://demo.istat.it/, (Retrieved on the 22nd of March 2020)

European Commission (n.d.) European Tourism Indicators System for sustainable destination management. Available at: https://ec.europa.eu/growth/sectors/tourism/offer/sustainable/indicators_en (accessed 25 May 2019).

European Union (2016) The European tourism indicator system. ETIS toolkit for sustainable destination management. Luxembourg: Publications Office of the European Union.

González-Guerrero G, Robles AKO, Pérez MEV, Ibarra RM and Martínez TC (2016) The application of the tourist carrying capacity technique and its critical analysis for tourism planning. Tourism Planning & Development 13(1): 72–87.

Gössling S, Scott D and Hall CM (2015) Inter-market variability in CO2 emission-intensities in tourism: Implications for destination marketing and carbon management. Tourism Management 46: 203–212.

Green Destinations (2017) Green destinations standard & reporting system. Available at: http://greendestinations.org/wp-content/uploads/2017/11/Green-Destinations-Standard-1.4.2.pdf (accessed 30 November 2019).

Gunter U and Wöber K (2019) Estimating CO2 emissions of European city tourism by source market, travel distance, and transportation mode. Presentation at the 54th TRC Meeting, Palma de Mallorca, Spain (April 4-6, 2019).

Italian Chamber of Commerce Open Data, http://www.vg.camcom.gov.it/uffici/nome=Dati+statistici+sull%27economia+provinciale&id_po=7&id_ufficio=103 (Retrieved on the 22nd of March 2020)

Italian Ministry of Finance Open Data, https://www1.finanze.gov.it/finanze3/analisi_stat/index.php?search_class%5B0%5D=cCOMUNE&opendata=yes (Retrieved on the 22nd of March 2020)

Italian National Statistics Institute Open Data: http://dati.istat.it/, (Retrieved on the 22nd of March 2020)

JAA, 2020. Julian Als Tourism Development Plan 2025. Julian Alps Association. Internal document.

Jurado EN, Damian IM and Fernández-Morales A (2013) Carrying capacity model applied in coastal destinations. Annals of Tourism Research 43: 1–19.

Lenzen M, Sun YY, Faturay F, Ting YP, Geschke A and Malik A (2018) The carbon footprint of global tourism. Nature Climate Change 8: 522–528.

Liu, B. (2012). Sentiment analysis and opinion mining. Synthesis Lectures on Human Language Technologies, 5(1), 1-167.

McKinsey & Company and World Travel & Tourism Council (2017) Coping with success. Managing overcrowding in tourism destinations. Available at: https://www.wttc.org/about/media-centre/press-releases/press-releases/2017/tourism-overcrowding/(accessed 25 May, 2019).

MGRTRS (2017). The Strategy for Sustainable Growth of Slovenian Tourism 2017-2021. Retrieved 27.2., from: *https://www.slovenia.info/uploads/publikacije/the_2017-2021_strategy_for_the_sustainable_growth_of_slovenian_tourism_eng_web.pdf*

MONG (2016). Trajnostna urbana strategija Nova Gorica 2020. Nova Gorica: Mestna občina Nova Gorica. Retrieved 28.2.2020, from https://www.nova-gorica.si/trajnostna-urbana-strategija-ng-2020/

Nixon, L. 2020. “An online image annotation service for destination image measurement”. ENTER 2020 eTourism conference, Guildford, Surrey, January 2020

OA-OV (2016). Strategy of tourism development of Vipava Valley in the area of municipalities of Ajdovščina and Vipava 2016-2030. Ajdoviščina: Občina Ajdoviščina. Vipava: Občina Viprava. Retrieved 28.2.2020, from https://www.vipava.si/novice/2016092113010579/Strategija-razvoja-turizma-Vipavske-doline-na-obmo%C4%8Dju-ob%C4%8Din-Ajdov%C5%A1%C4%8Dina-in-Vipava-2016-2030/.

OB, 2019. Razvojni program Občine Bled 2009–2020; Ocena razvojnega položaja občine in poročilo o uresničevanju ciljev in projektov do leta 2018. Bled: Občina Bled, internal document.

Önder I and Zekan B (2019) Urban tourism development in Europe: A double-edged sword for cities? Book chapter submitted for publication.

Önder I, Wöber K and Zekan B (2017) Towards a sustainable urban tourism development in Europe: The role of benchmarking and tourism management information systems – a partial model of destination competitiveness. Tourism Economics 23(2): 243–259.

Pang, B., & Lee, L. (2008). Opinion mining and sentiment analysis. Foundations and Trends in Information Retrieval, 2(1-2), 1-135.

Peeters P, Gössling S, Klijs J, Milano C, Novelli M, Dijkmans C, Eijgelaar E, Hartman S, Heslinga J, Isaac R, Mitas O, Moretti S, Nawijn J, Papp B and Postma A (2018) Research for TRAN Committee – Overtourism: impact and possible policy responses. European Parliament, Policy Department for Structural and Cohesion Policies, Brussels.

Ranaweera, E.H., & Rajapakse, C. (2016). Instagram sentiment analysis: Discovering tourists' perception about Sri Lanka as a tourist destination. In: Proceedings of the International Research Symposium on Pure and Applied Sciences (IRSPAS 2016), Faculty of Science, University of Kelaniya, Sri Lanka, p. 92.

Roland Berger (2018) Protecting your city from overtourism. European city tourism study 2018. Available at: https://www.rolandberger.com/en/Publications/Overtourism-in-Europe's-cities.html (accessed 7 April 2019).

SORS (n.d.). Municipality Divača. Retrieved 25.2.2020 from https://www.stat.si/obcine/en/2016/Municip/Index/26

SORS, 2020a. Arrivals and overnight stays of domestic and foreign tourists, municipalities, Slovenia, annually. Retrieved 25.2., from: https://pxweb.stat.si/SiStatDb/pxweb/en/20_Ekonomsko/20_Ekonomsko__21_gostinstvo_turizem__01_nastanitev__02_21645_nastanitev_letno/2164525S.px/

SORS, 2020b. Tourist arrivals and overnight stays by groups of tourist accommodations and countries, municipalities, Slovenia, annual data until 2017. Retrieved 25.2., from: https://pxweb.stat.si/SiStatDb/pxweb/en/20_Ekonomsko/20_Ekonomsko__21_gostinstvo_turizem__90_arhiv__05_nastanitev_let/2164507S.px/

SORS, 2020h. Tourist arrivals and overnight stays by groups of tourist accommodations and countries, municipalities, Slovenia, annual data until 2017. Retrieved 25.2., from: https://pxweb.stat.si/SiStatDb/pxweb/en/20_Ekonomsko/20_Ekonomsko__21_gostinstvo_turizem__90_arhiv__05_nastanitev_let/2164507S.px/

SORS. 2020c. Municipality Bled. Retrieved 10.4., from: https://www.stat.si/obcine/en/Municip/Index/6

SORS. 2020d. Gorenjska region. Retrieved 10.4., from: https://www.stat.si/obcine/en/Region/Index/9

SORS. 2020e. Arrivals and overnight stays of domestic and foreign tourists, municipalities, Slovenia, monthly data until December 2019. Retrieved 25.2., from: https://pxweb.stat.si/SiStatDb/pxweb/sl/20_Ekonomsko/20_Ekonomsko__21_gostinstvo_turizem__01_nastanitev__01_21644_nastanitev_mesecno/?tablelist=true

SORS. 2020f. Municipality Nova Gorica. Retrieved 10.4., from: https://www.stat.si/obcine/en/Municip/Index/112

SORS. 2020g. Goriška region. Retrieved 10.4., from: https://www.stat.si/obcine/en/Region/Index/11

SORS. 2020i. Arrivals and overnight stays of domestic and foreign tourists, municipalities, Slovenia, annually. Retrieved 25.2., from: *https://pxweb.stat.si/SiStatDb/pxweb/en/20_Ekonomsko/20_Ekonomsko__21_gostinstvo_turizem__01_nastanitev__02_21645_nastanitev_letno/2164525S.px/*

University of St. Gallen (2017) St. Gallen model for destination management. Available at: http://www.advances-destinationmanagement.com/sgdm (accessed 25 May 2019).

UNWTO (2014) Global Benchmarking for City Tourism Measurement. AM Reports, Vol. 10. Madrid: UNWTO. Available at: http://cf.cdn.unwto.org/sites/all/files/pdf/global_benchmarking_hr.pdf (accessed 1 December 2019).

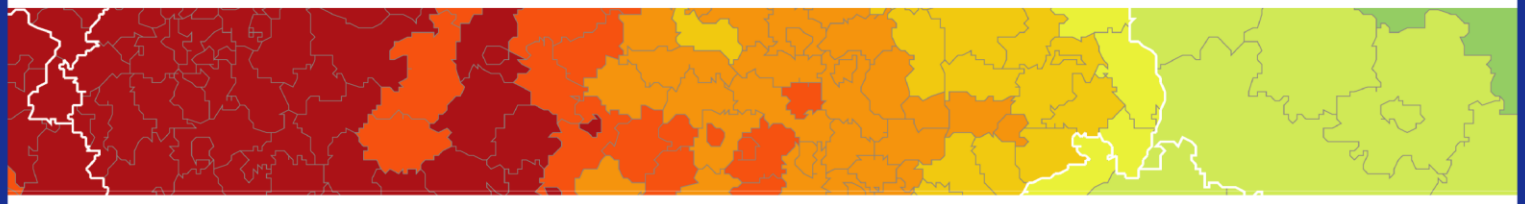
UNWTO (2018) "Overtourism"? Understanding and managing urban tourism growth beyond perceptions. Executive summary. Madrid, Spain: UNWTO. UNWTO (2019) "Overtourism"? Understanding and managing urban tourism growth beyond perceptions. Volume 2: Case studies. Madrid, Spain: UNWTO.

WEF (2019) The travel & tourism competitiveness report 2019. Available at: http://www3.weforum.org/docs/WEF_TTCR_2019.pdf (accessed 26 November 2019).

List of annexes

(*separately)*

- Synthesis Report
- Case study annex
- Website content
- Dashboard Manual
- Methodology Handbook
- PowerPoint presentation



ESPON 2020 – More information

ESPON EGTC
4 rue Erasme, L-1468 Luxembourg - Grand Duchy of Luxembourg
Phone: +352 20 600 280
Email: **info@espon.eu**
www.espon.eu, **Twitter**, **LinkedIn**, **YouTube**

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway and Switzerland.