Harmonizing Sustainable Tourism and Mobility: A Framework for Integrated Co-planning

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Abstract

The integration of sustainable tourism and mobility planning is crucial for addressing the complex challenges of environmental conservation, socio-economic development, and community well-being in touristic destinations. This paper introduces the SUSTOURMOB (Sustainable Tourism and Mobility) cycle, a strategy designed to support common sustainable development goals through a transnational approach. Drawing on principles of collaboration and stakeholder engagement, the strategy aims to facilitate co-planning processes that incorporate sustainable mobility solutions into tourism development initiatives. The SUSTOURMOB planning cycle, initially generated for serving Adriatic – Ionian Region destinations, is characterized by iterative analysis, development, testing, evaluation, monitoring, and improvement stages, provides a structured framework for decision-makers to navigate challenges and capitalize on opportunities in the sustainable tourism and mobility sectors. Market trends, technological advancements, policy changes, and crisis management considerations underscore the importance of periodic strategy updates to ensure alignment with evolving circumstances. The strategy's mission statement emphasizes the symbiotic relationship between sustainable tourism and mobility, with a commitment to achieving sustainable development goals. Through ongoing collaboration and adaptation, the SUSTOURMOB strategy offers a pathway towards sustainable tourism development that benefits communities, economies, and the environment.

Keywords

tourism, mobility, integrated planning, engagement, strategy

1 Introduction

The intersections between sustainable tourism and mobility planning have garnered increased attention from policymakers, researchers, and practitioners alike from a very early stage (Pellegrino, 2021; Chen et al., 2022; Duval, 2020; Page, 2005; Prideaux, 2000). As supported by Olszewski-Strzyżowski, (2022), transportation systems play a crucial role in facilitating tourism by providing the means for tourists to travel to and within destinations, while from the other side, transport systems and destinations' daily operation can be heavily affected by tourism flows (Cavallaro et al., 2017). Sustainable tourism, characterized by its commitment to minimizing negative impacts on the environment, culture, and local communities, has emerged as a critical area for global development (Zolfani et al., 2015; World Tourism Organization, 2019). Concurrently, the transportation sector, particularly in tourist destinations, plays a pivotal role in facilitating the movement of visitors, goods, and services, yet often contributes significantly to environ-mental degradation and congestion if traffic management measures are not in place (Aguiló et al., 2012; Stefanica, 2017).

The rapid growth of tourism worldwide, fueled by factors such as globalization, technological advancements, and rising disposable incomes, has led to unprecedented challenges. These challenges include environmental degradation, over-tourism, congestion, and socio-cultural disruptions in destination communities (Verhun and Bondarchuk, 2022; Von Bergner and Lohmann, 2014). Additionally, the traditional approach to transportation planning often prioritizes vehicular traffic over sustainable modes of transportation, exacerbating these challenges when we talk about popular touristic destinations (Myrovali and Morfoulaki, 2023; Speakman, 2005; Nakamura and Abe, 2016).

Recognizing the intertwined causal nature of tourism and transportation, there is a growing imperative to integrate sustainable practices into both domains. By adopting an integrated approach, stakeholders can harness synergies between sustainable tourism development and transportation planning to mitigate negative impacts, enhance visitor experiences, and promote long-term sustainability. As destinations seek to balance tourism growth with environmental preservation and local community well-being, the integration of sustainable mobility strategies into tourism planning has emerged as a critical focus. This entails not only facilitating access to tourist attractions but also minimizing the environmental impact of transportation infrastructure and operations. By adopting a holistic approach that considers both tourism and mobility needs, stakeholders can work towards creating more resilient and sustainable destinations for the future (Scuttari et al., 2013; Mrazovic et al., 2017; Li et al., 2017). This integration is an inherent aspect of what is often referred to as the concept of a 'smart city' – a vision that emphasizes the seamless integration of various functionalities and planning strategies to enhance the quality of life for all residents and visitors. By incorporating sustainable tourism and mobility planning into the framework of smart city initiatives, cities can strive for more efficient resource utilization, reduced congestion, and improved air quality, among other benefits. Furthermore, this approach emphasizes the importance of equal rights and access to services for both tourists and citizens. It involves designing infrastructure and services that cater to the needs of all individuals, regardless of their status as visitors or locals. This includes accessible transportation options, well-connected public spaces, and amenities that enhance the overall experience for everyone. Moreover, the integration of sustainable tourism and mobility planning contributes to environmental upgrades within cities. By promoting the use of clean transportation modes and reducing reliance on fossil fuels, cities can mitigate pollution and greenhouse gas emissions, thereby improving air quality and overall environmental health. This, in turn, creates more attractive and livable urban environments for residents and visitors alike (Jasrotia and Gangotia, 2018; Buhalis and Amaranggana, 2013; Habeeb and Weli, 2020).

This study aims to facilitate researchers, planners, and competent authorities by proposing a comprehensive framework for integrating sustainable tourism and transport planning, emphasizing the crucial aspect of engagement. By conducting SWOT analyses, engaging stakeholders, and synthesizing user feedback, we seek to develop a guide for investing in sustainable integrated tourism and transport planning that balances the needs of tourists, residents, and the environment. The significance of this research lies in its potential to sensitize responsible authorities to mobilize citizens, tourists, and stakeholders to actively participate in co-planning processes, fostering collaboration and ownership over sustainable development initiatives.

This article is structured as follows: following this introductory section, we review relevant literature on sustainable tourism and transportation planning and on engagement in planning. Subsequently, we present the study area upon which the initial concept of the proposed strategy was built and then we outline the methodology employed. The following session presents the proposed framework. Finally, we will discuss the implications of our findings, offer recommendations for future research, and conclude with reflections on the significance of integrated sustainable tourism and transport planning.

2 Literature review

Sustainability, as a concept, is a model-vision that aims for the best economic outcome for both humans and the natural environment, in both the present and the indefinite future. The goal of sustainability is to harmonize human activities with the environment in which they live or which they visit, ensuring both quality of life for all people and the preservation of nature in the present and future.

The first references to sustainability and sustainable development date back many years. In 1987, the World Commission on Environment and Development, defined sustainability as 'meeting the needs of the present without compromising the ability of future generations to meet their own needs' (Keeble, 1988). Years passing, the notion of sustainability was incorporated into planning guidelines and strategies development respecting the sustainable development goals (SDGs) that serve as a comprehensive framework aimed at enhancing the well-being of populations globally while addressing the adverse impacts of human activities on the environment, particularly those related to climate change:

- SDG 13, titled "Climate action," specifically focuses on taking urgent measures to combat climate change and its impacts. This goal emphasizes the need to integrate climate change mitigation and adaptation strategies into national policies, planning, and initiatives across various sectors.

- SDG 14, "Life below water," underscores the importance of conserving and sustainably using marine and coastal resources. This goal aims to address the challenges facing oceans, seas, and marine ecosystems, including pollution, overfishing, and habitat destruction.
- Similarly, SDG 15, "Life on land," highlights the significance of conserving, restoring, and sustainably managing terrestrial ecosystems, forests, biodiversity, and land resources.

Sustainable development is built upon a framework of pillars and principles, with three primary pillars: the economy, the society, and the environment. The establishment of these pillars has been the result of a gradual evolution over time. Initially, the concept of sustainable development did not explicitly incorporate the societal pillar although including concepts like justice, gender equity, and participatory decision-making. However, towards the late 1990s, there was a recognition of the importance of including societal considerations, which act as a connecting bridge between the economic and environmental dimensions of sustainable development (Dimadama, 2008; Tomislav, 2018; Boström, 2012). This addition reflects a growing understanding of the intricate interplay between human societies, economic activities, and environmental health in achieving sustainability goals. The latter is even more intensive when we refer to complex interrelated issues faced in daily operations of destinations. In both tourism and mobility industries, there's a recognition of the need to integrate measures for sustainable development, considering the social, economic, and environmental dimensions. For instance, in tourism, there's an increasing emphasis on responsible travel practices, community engagement, and cultural preservation to minimize negative impacts on local communities and ecosystems. Similarly, in transport, efforts are being made to promote cleaner and more efficient modes of transportation, reduce carbon emissions, and improve accessibility while considering social equity and environmental sustainability. These initiatives highlight the evolving approach toward sustainability, where holistic considerations are key to addressing complex challenges across various sectors.

2.1 Foundations of sustainable tourism

Sustainability has been a growing concern within the tourism industry since recognition of the adverse effects of unmanaged tourism flows came early too. Beginning in the mid to late 1980s, there was a growing realization of the detrimental impacts of tourism on destinations, coupled with the rise of environmentalism and 'green' consciousness (Cooper, 2005). This led to a reassessment of the role and value placed on tourism, as it became evident that tourism growth could not continue at its present rate without addressing these impacts. During Cape Town Conference on Responsible Tourism in 2002 (Cape Town Declaration on Responsible Tourism, 2002), representatives spanning various sectors, including tourism operators, conservation authorities, government bodies, NGOs, and tourism professionals, from 20 countries worldwide endeavored to address the critical issue of Responsible Tourism in Destinations. This collective endeavor stems from the recognition of significant discussions stressing the multifaceted dimensions of sustainable development and the need to prioritize the welfare of indigenous peoples and local communities. Central to the discussions is the endorsement of the World Tourism Organization's Global Code of Ethics, aimed at fostering responsible, sustainable, and inclusive tourism practices while reflecting a commitment to advancing sustainable tourism and reducing poverty. Drawing inspiration from the Rio Earth Summit (1992) (United Nations, 1992) and the subsequent World Summit on Sustainable Development in Johannesburg (2002) (United Nations, 2002), there was a renewed dedication to sustainability, economic development, and poverty alleviation. Advocacy was directed towards the adoption of practical guidelines and the integration of responsible practices at all levels, emphasizing transparent reporting, multi-stakeholder collaboration, and government support. Through collective action and partnership, the goal set was to shape destinations that embody the principles of Responsible Tourism, creating better places for all – both tourists and citizens, at all levels. Moving forward, the United Nations Conference on Sustainable Development – Rio+20 provided a platform for elevating the profile of sustainable tourism on the global agenda and catalyzing action to harness its potential for sustainable development. It reaffirmed the role of tourism as a driver of economic growth, environmental protection, and social inclusion, while highlighting the need for concerted efforts to ensure that tourism contributes to the achievement of sustainable development goals (La Viña et al., 2003; Roblek et al., 2021).

Having presented over the years and based on the progress and new trends, different terms as responsible tourism, green tourism, eco-tourism, the most comprehensive definition is that Sustainable Tourism refers to the

implementation of sustainable practices within the tourism industry, aiming to acknowledge and address all impacts of tourism, whether positive or negative. This form of tourism fully considers its present and future economic, social, and environmental effects while also addressing the requirements of visitors, the industry, the environment, and host communities.

Coming to the European level, as pointed by Estol and Font, (2016), the development of a European tourism policy has followed a distinct path compared to other European policies. Unlike sectors like agriculture, tourism initially received limited policy attention and its policy-making process was largely opportunistic, serving to align national policies with European Commission (European Commission, 1993) objectives for enhancing EU competitiveness. The emergence of sustainable development principles in various treaties marked a turning point, laying the foundation for a more coordinated European approach to tourism. Fig. 1 presents the most recent milestones in EU tourism policy.

We can summarize that investing in sustainable destinations is important for several reasons:

COM (91) 97 final
Community action plan to assist tourism

COM (95) 97 final
Green Paper on "the role of the Union in the field of tourism"

COM (2001) 665 final
Communication on "working together for the future of European Tourism"

COM (2001) 668 final
Report on "follow-up of the European council of 21 September: the situation in the European Tourism sector"

COM (2003) 716 final
Communication on "Basic orientations for the sustainability of European Tourism"

COM (2006) 134 final
Communication on "a renewed EU tourism policy: Towards a Stronger Partnership for European Tourism"

COM (2007) 621 final
Communication on "Agenda for a sustainable and competitive European Tourism"

2010 communication Europe, the World's N°1 tourist destination: A new political framework for tourism in Europe

2014 communication A European Strategy for more growth and jobs in coastal and maritime tourism

Update of the 2020 European Industrial Strategy

Transition pathway for tourism (Feb. 2022)

European agenda for tourism 2030 (Dec. 2022)

Fig. 1 Main milestones in EU sustainable tourism shift

- Environmental conservation: Sustainable tourism practices help preserve natural resources, protect ecosystems, and reduce pollution and waste. By minimizing negative environmental impacts, destinations can maintain their attractiveness and ecological integrity for future visitors.
- Cultural preservation: Sustainable tourism promotes respect for local cultures, traditions, and heritage. It encourages authentic experiences that benefit local communities and support cultural preservation efforts.
- Economic benefits: Sustainable tourism can contribute to local economies by creating jobs, generating income for small businesses, and supporting community development initiatives. By investing in sustainable tourism, destinations can stimulate economic growth while minimizing social inequalities and maximizing benefits for local residents.
- Resilience and adaptation: Sustainable tourism practices enhance destination resilience to environmental and socio-economic changes. By diversifying tourism products, promoting sustainable infrastructure development, and engaging in risk management strategies, destinations can better adapt to evolving market trends and external shocks.
- Competitive advantage: Investing in sustainability can give destinations a competitive edge in the global tourism market. Travelers are increasingly seeking authentic, environmentally responsible, and socially conscious experiences. By marketing themselves as sustainable destinations, communities can attract environmentally conscious tourists and differentiate themselves from competitors (González-Reverté, 2019; Ciro et al., 2019; Mondéjar-Jiménez and Ferrari, 2022; Marin and Jafari, 2002; Berry and Ladkin, 1997; Yeoman et al., 2007; Manzoor et al., 2019; Baloch et al., 2023).

With the primary goal to minimize adverse effects while maximizing benefits to destinations, communities, and the environment, tourism stakeholders are facing tourism planning co-creational challenges.

2.2 Foundations of sustainable mobility
For sustainable urban mobility, there hasn't been a universally accepted definition to date. Instead, the concept has been interpreted in various ways due to its broad scope and the multiple sectors it encompasses. Many researchers and organizations have attempted to define sustainable
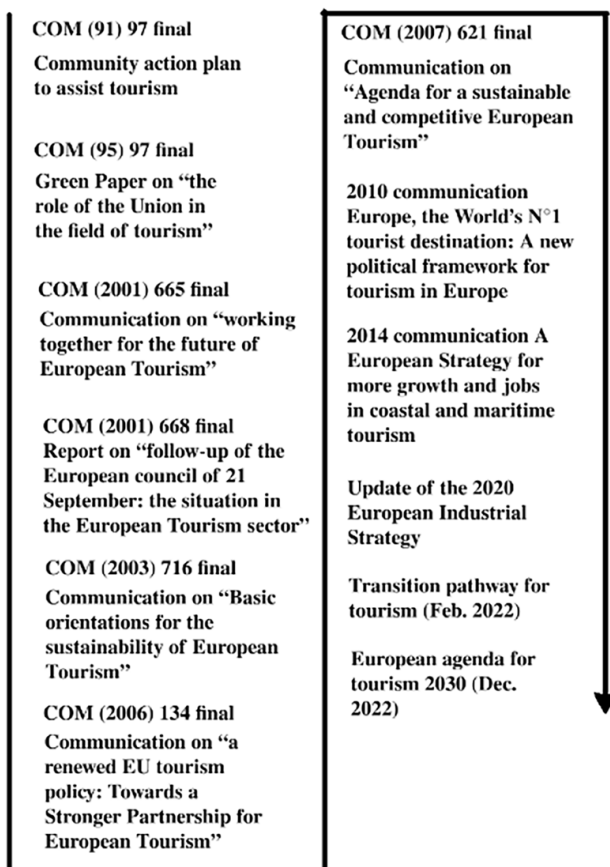
urban mobility, always influenced by their scientific field – whether social, economic, environmental, or transportation – and their theoretical background. Due to this fact, some definitions have a more economic orientation, while others emphasize the environmental dimension more (Beatley, 1995).

The first main milestone of European Commission on sustainable mobility starts with the 'White Paper – European transport policy for 2010: time to decide' (European Commission, 2001) (having, however, basis on earlier EU documents) while considering as milestones the guidelines for sustainable urban mobility as presented in the Fig. 2.

The European Union Council of Ministers of Transport defined the sustainable transportation system as one that meets the basic access and development needs of individuals, companies, and society safely and in a manner consistent with human and eco-system health. It promotes equity within and between successive generations. Additionally, it emphasizes affordability, fairness, and efficiency, offering a choice of transport modes and supporting a competitive economy and balanced regional development. Furthermore, it aims to limit emissions and waste within the planet's capacity to absorb them, using renewable resources at sustainable rates and minimizing the impact on land use and noise generation (OECD, 2005).

A very important dimension comes from Banister (2008) that emphasizes the importance of enlarging public discourse and empowering stakeholders through interactive and participatory processes. It is suggested that broad

coalitions, involving specialists, researchers, academics, practitioners, policymakers, and activists from various relevant fields, should be formed to foster a real debate about sustainable mobility. Achieving sustainable mobility requires a willingness to change and collective responsibility, overcoming dependence on cars and addressing internalized costs of delay and congestion. And while measures to achieve sustainable mobility are known and implemented to varying degrees of success, understanding the reasons behind effective implementation is crucial.

Today, the primary goal in the EU is to achieve a significant reduction in greenhouse gas emissions from the transport sector, aiming for a 90% reduction by 2050 as part of the European Green Deal. This entails prioritizing sustainable transport options that are more affordable, accessible, healthier, and cleaner for users. Designing mobility systems through a more sustainable and people-centered philosophy is an integral part of urban planning in modern and environmentally friendly cities. Within this framework, movements relate to many of the characteristics of the three pillars of sustainable development. Specifically:

In the environmental pillar, the relationship refers to:
- the impacts of passenger and freight urban transportation on the environment (atmospheric pollution, noise),
- promoting environmentally friendly modes of transportation,
- covering an area with transportation infrastructure,
- allocating space for gentle forms of movement,
- energy consumption.
- In the economic pillar, the relationship refers to:
- investments to improve or upgrade the urban transportation system,
- residents' expenses for their mobility (e.g., urban transport fares),
- the contribution of transportation to the local economy,
- the economic footprint of traffic accidents.
- In the social pillar, the relationship refers to:
- how residents, workers, and visitors move to and from an area, as well as within it, sustainably (public transportation, walking, cycling),
- providing mobility options for all population groups,
- serving individuals with special needs and vulnerable social groups more broadly (e.g., efficient access to transportation infrastructure),
- reducing traffic accidents.

1992
The Future Development of the Common Transport Policy: A Global Approach to the Construction of a Community Framework for Sustainable Mobility - White Paper. COM (92) 494 final

1993
Commission White Paper on Growth, competitiveness, and employment (1993)

2001
White Paper - European transport policy for 2010: time to decide

2006
Keep Europe moving - Sustainable mobility for our continent. Mid-term review of the 2001 White Paper

2007
Green Paper "Towards a new culture for urban mobility"

2009
Action Plan on Urban Mobility

2011
Roadmap to a Single European Transport Area - Towards a competitive and resource efficient transport system

2013
Guidelines for Sustainable Urban Mobility Planning

2019
EU Green Deal & New Guidelines for Sustainable Urban Mobility Planning

2021
THE NEW EUROPEAN Urban Mobility Framework

Made with VISME

Fig. 2 Main milestones in EU sustainable transport shift

As derives from the above, sustainable urban mobility is the modern version of traditional transportation planning, with an emphasis on sustainable modes and transportation models. It has a people-centered approach and emphasizes less energy-intensive modes of transportation and the quality of the urban environment. Furthermore, a particularly significant characteristic of this modern approach to urban planning is that it is governed by an interdisciplinary approach, where transportation and mobility are linked to related sciences and subjects such as spatial planning, land use, architecture, energy, social policy.

2.3 Engagement in sustainable tourism – mobility planning

Tourism and mobility planning are integral components of sustainable urban development, involving a multitude of stakeholders with diverse interests and perspectives. As highlighted by recent research, the active involvement of stakeholders is paramount in ensuring the effectiveness and legitimacy of planning strategies (Bramwell and Lane, 2000). Furthermore, it has been emphasized that all stakeholders, including tourists, local communities, and various stakeholder groups, should be considered equal and valid in the decision-making process (Donaldson and Preston, 1995; European Commission, (2004)).

The engagement of tourists, local communities, and stakeholder groups in the planning and decision-making processes of tourism and mobility is crucial for fostering effective communication, addressing diverse needs, and ensuring the long-term interests of the communities are safeguarded (Javier and Elazigue, 2011; Le Pira et al., 2018). This is particularly significant as it directly impacts various aspects such as the travel experience of tourists, business models, marketing plans, investment opportunities, and the daily lives of citizens.

The relationship between tourism and mobility is deeply intertwined, as mobility plays a pivotal role in facilitating leisure travel and entertainment activities, thus serving as a fundamental condition for tourism (La Rocca, 2015). The concepts of mobility provide insights into the broader patterns of tourist flows and individual life trajectories, highlighting the interconnected nature of these sectors and their potential to mutually promote more sustainable lifestyles (Mihalic, 2016; Grieco, 2015).

Research indicates that the involvement of diverse stakeholders in tourism planning leads to more effective, equitable, and legitimate strategies, considering both the specific interests of tourism destination communities and broader

societal interests (Murphy, 1988; Simmons, 1994). It has also been underscored that local communities should be shielded from the adverse impacts of tourism while simultaneously benefiting from its development, emphasizing the need for their active participation in the planning and development processes (Jurowski et al., 1997; Rivera and Gutierrez, 2019; Roxas et al., 2020; Heslinga et al., 2021). This active involvement of residents in tourism planning not only enhances the legitimacy of planning institutions but also contributes to the production of essential knowledge required for informed decision-making (Faehnle, 2014; Forester, 1993). Moreover, the coordination and collaboration of various stakeholders, including local authorities, visitors, residents, industry operators, and tourism businesses, are vital for achieving sustainability and ensuring the equitable distribution of tourism benefits (Yu, 2012; Björk, 2000; Angelkova et al., 2012).

The assessment of tourism development from the perspective of visitors is deemed essential for the participatory management of sustainable tourism destinations, emphasizing the need to consider visitors' perspectives and personal experiences (Grybovych, 2012; Clausen and Gyimóthy, 2016). Additionally, the consideration of diverse stakeholder expectations during the planning process is crucial for the development of cooperative models that promote sustainable tourism (Byrd, 2007; Bhat and Gaur, 2012; Peric and Djurkin, 2014).

3 The study area

The study area, encompassing the Adriatic and Ionian basins, represents a diverse and culturally rich region known for its natural beauty and historical significance. With a population exceeding 70 million people, it serves as a hub for tourism, attracting visitors from around the world. (Fig. 3).

Despite its popularity, the tourism sector in this area faces challenges related to infrastructure, environmental

Fig. 3 The study area

sustainability, and cultural preservation. While the region boasts many of the top EU destinations, there is a recognized need for better management and coordination of tourism activities to maximize their economic and social advantages even as minimizing adverse influences on the surroundings and nearby communities. Sustainable tourism practices are essential to ensure the long-term viability of the industry and the preservation of the region's unique heritage. Efforts to promote sustainable tourism growth require collaboration among various stakeholders, including government agencies, local communities, businesses, and non-profit organizations. By working together, stakeholders can develop and implement strategies that balance economic development with environmental conservation and cultural preservation (European Commission, (2014)).

In addition to sustainable tourism, there is a growing recognition of the importance of integrating mobility planning into overall regional development strategies. Effective transportation systems are essential for supporting tourism activities, providing visitors with access to attractions and amenities while minimizing congestion and environmental pollution. As from the above, there is a clear need for coordinated action to promote sustainable tourism and mobility planning in the Adriatic-Ionian region. By addressing these issues collectively, stakeholders can create a more resilient and vibrant tourism industry that benefits both visitors and residents.

Specifically, a consortium of 10 destinations within the region, comprising Thessaloniki, Preveza, and Igoumenitsa in Greece, Ravenna and Grado-Aquileia in Italy, Ljubljana in Slovenia, Zadar in Croatia, Tivat in Montenegro, Berat in Albania, and Belgrade in Serbia, collectively referred to as the SUSTOURISMO cases, actively engaged in extensive deliberations centered on the promotion of sustainable tourism. This initiative emphasized the integration of sustainable mobility practices and the adoption of active modes of transport and lifestyles to enhance the overall sustainability of tourism activities within these destinations (in the framework of SUSTOURISMO Interreg ADRION 2014–2020 project (Sustourismo Project Interreg Adrion 2020c), Del. T1.4.1 & Output: SUSTOURISMO strategy) (Sustourismo Project Interreg Adrion 2020d).

4 Methods
In the current paper, an explanatory case study methodology was applied, which is considered appropriate for dealing with complex issues like sustainable planning (Noor, 2008; Tellis, 1997). Starting from understanding the current situation in the ADRION Region tourism

and mobility initiatives, authors are concluding on generalized recommendations using as base the Sustainable Urban Mobility Plan cycle (Rupprecht Consult, 2019). More specifically, the steps followed to reach the proposal of SUSTOURMOB cycle, the integrated sustainable tourism and mobility planning cycle proposal are based on an explanatory case study approach that involves examining a specific case (in this case, sustainable planning in the ADRION Region tourism and mobility initiatives) to gain a deeper understanding of the underlying factors and dynamics involved. The methodological steps undertaken were:

Step 1: Understanding the current situation
The first step of the methodology followed involved a comprehensive analysis of the ADRION Region's existing tourism and mobility planning landscape. This included:

Document review: Policy documents on tourism and sustainable tourism-mobility planning, prior research outputs, and project reports (SUSTOURISMO T1.1.1 and T1.4.1) (Sustourismo Project Interreg Adrion, 2020a; 2020c) were reviewed to establish a baseline understanding of current sustainable practices and gaps.

- Stakeholder mapping: Stakeholders per area were identified using a systematic approach that included local authorities, transport providers, tourism agencies, and community representatives.
- SWOT analysis: Each participating area's Strengths, Weaknesses, Opportunities, and Threats related to tourism and mobility were examined collaboratively with stakeholders to identify actionable gaps and opportunities.

Step 2: Drawing generalized recommendations
The recommendations in this study were grounded in the sustainable urban mobility plan (SUMP) cycle, a well-established and widely recognized framework in the field of transportation planning. The SUMP cycle is considered a flagship methodology due to its structured, iterative, and participatory approach, which has been successfully applied in various urban and regional contexts to promote sustainable mobility solutions. Given the inherent interrelationship between transportation and tourism, the SUMP cycle was identified as an ideal foundation for developing an integrated tourism-mobility planning framework.

The SUMP cycle offers several advantages that align with the objectives of integrated tourism-mobility planning as its structured and iterative approach, the need to co-plan and not simple plan by decision makers, the inherent link among planning, testing, monitoring and re-planning.

The adaptation of the SUMP cycle for tourism-mobility integration involved tailoring its phases and principles to account for the specific needs and challenges of tourism destinations, such as seasonal demand fluctuations, visitor behavior, and the interplay between tourist and resident mobility needs.

Step 3: Validation of the above findings through a stakeholder's survey

To validate the finding, targeted questionnaires were designed and administered to stakeholders, addressing the feasibility, impact, and acceptance of proposed actions.

In total, the 10 partners of the SUSTOURISMO project, representing 10 ADRION areas, through a workshop with stakeholders (Fig. 4) including policymakers, transport operators, tourism companies and organizations and local businesses validated the generalized recommendations.

The validation took place in a form of discussion at this laboratory of stakeholders. Topics of discussion;

- Importance of integrating sustainable mobility solutions with sustainable tourism practices in the ADRION region.
- Key challenges in aligning tourism and mobility planning specific to stakeholders' areas.
- Effectiveness of the proposed SUSTOURMOB Planning cycle framework in addressing the current challenges in the region.
- Potential of integrated touristic packages combining green mobility options to attract tourists.
- Suggestions for additional measures or actions to encourage responsible tourism behaviors.
- Benefits of incorporating smart solutions, such as apps, for tourists and locals.

Fig. 4 SUSTOURISMO partners and supporters
[SUSTOURISMO output 1.1]
(Sustourismo Project Interreg Adrion 2020e)

- Identification of barriers to collaboration and possible solutions to overcome them.
- Alignment of the SUSTOURMOB framework with global sustainability goals.
- Suggestions for additional elements to enhance the framework's adaptability to region-specific challenges and needs.
- Importance of monitoring and periodic updates to the framework for its long-term success.

5 Results
5.1 Screening (Step 1) results
The ADRION Region boasts a varied landscape, marked by notable developmental variations among its destinations. Despite these disparities, common challenges arise in promoting sustainable mobility and encouraging environmentally conscious visitor behavior. Despite the introduction of innovative soft mobility projects, private vehicles remain the preferred mode of transport for most visitors, driven by perceived benefits in travel time and comfort. This reliance exacerbates environmental degradation and impacts the quality of life for residents. Visitor characteristics indicate a prevalence of car ownership and a preference for independent travel, underscoring the necessity for tailored solutions to promote sustainable transport alternatives (SUSTOURISMO Del. T1.3.1) (Sustourismo Project Interreg Adrion 2020b). Additionally, visitor preferences, including reliance on online information and willingness to engage with touristic mobile apps, suggest the potential for technology-driven interventions to influence mobility patterns.

Local citizens and tourist needs' identification surveys provided also valuable insights into visitor preferences for walking, biking, and other sustainable activities, laying the groundwork for customized interventions aimed at enhancing visitor mobility experiences while advancing sustainability objectives.

Key aspects identified in the SWOT analysis (based on policies review, desktop research for current tourism and mobility needs and gaps, and the real view of the locals and tourists from the initial needs' identification surveys) of the involved cases supported the understanding of needs and proposed steps:

- The upward trend in tourist arrivals and revenues at the national level underscores the importance of handling cases as destinations and engaging in planning for special tourist groups.
- Seasonality and demand management necessitate consideration, emphasizing the need to address the

entire tourism ecosystem, including tourists, citizens, stakeholders, and decision-makers.

- There's a demand for new co-produced services and collaboration among cities or regions to foster increased synergies and cooperation for sustainable tourism and mobility development.
- Introduction of new technologies is sought to enhance tourism and mobility services, catering to the expectations of tech-savvy travelers.
- Collaborative networks among public and private sectors, academia, and research institutions are seen as crucial for fostering innovation and knowledge-sharing.
- Slow tourism growth, such as walking and cycling trips, holds potential for promoting cultural and historical heritage preservation and enhancing visitor engagement.
- Private funds are needed to support sustainable tourism and mobility initiatives, alongside optimal exploitation of financial resources and mechanisms for promoting sustainable practices.
- Learning from events like the COVID-19 pandemic is essential for restarting tourism in a structured and safer manner, necessitating inclusive planning.

A harmonized approach across tourism and transport sectors is vital to address shared challenges and leverage opportunities for sustainable mobility in the ADRION region. SUSTOURISMO cases have emphasized the need to enhance intermodal transport solutions, invest in efficient public transport services, develop bike lane networks, and promote active mobility.

5.2 Generalized recommendations (Step 2) results
Identifying numerous shared opportunities across project areas from the joint elaboration on case-specific SWOTs underscores the necessity for an integrated strategy on mobility and tourism to support sustainable destinations. Thus, the SUSTOURMOB cycle (Fig. 5) was proposed – a harmonized sustainable tourism-mobility planning framework. Its sequence of actions includes mapping stakeholders, co-analyzing the current situation, co-proposing solutions, and co-monitoring impact.

In the preparatory phase of developing the SUSTOURMOB plan, several key steps are involved:

- Involvement of a facilitator, often a local or regional authority, a development agency, or a tourism organization, known as a Visionaire, with support from research bodies on transport issues.
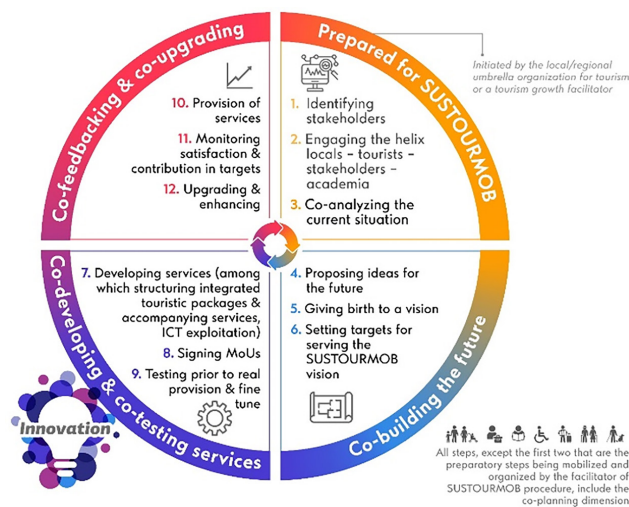

Fig. 5 SUSTOURMOB cycle; planning sustainable tourism and transport (SUSTOURISMO output; Strategy) (Sustourismo Project Interreg Adrion 2020d)

- Commitment from decision-makers to recognize the interconnectedness of sustainable tourism and mobility.
- Embracing a co-creation approach to decision-making in promoting sustainable tourism through sustainable mobility.

Prerequisites such as defining internal working structures, framing the geographical coverage of the plan, and collecting previous plans and initiatives are crucial before progressing to the main steps of the cycle. This comprehensive approach aims to support sustainable destinations through a holistic strategy integrating tourism and mobility.

The body of the planning cycle, comprising four phases and twelve steps, emphasizes the importance of stakeholder engagement, data-driven analysis, and a holistic approach to sustainable tourism and mobility planning and proposes the following:

Phase 1: Preparation
An essential step toward the success of any plan is identifying the key stakeholders involved in sustainable tourism and mobility. This includes local government authorities, tourism agencies, transportation providers, environmental organizations, community groups, and academic institutions. In the case of the SUSTOURMOB cycle, it's crucial to ensure a balanced mix of mobility-related stakeholders with tourism stakeholders. This includes involving the Transport Department of competent authorities at regional and local levels, as well as public and active transport providers such as e-scooters, shared bike, and e-bike companies in SUSTOURMOB planning.

Establishing a sustainable tourism living lab presents an excellent opportunity for collaborative SUSTOURMOB solutions development. Living labs, originating from product testing in the early 2000s, integrate citizens into the innovation development process, bridging the gap between research and real-life environments. While challenging to engage in the long term, tourism living labs involving tourists as stakeholders serve as promising starting points for joint development of sustainable solutions benefiting both tourists and local areas (Markopoulos and Rauterberg, 2000).

Central to collaborative planning is engaging locals and tourists in the development, execution, and monitoring of the plan and measures. Subsequently, analyzing the current state of tourism and mobility in the target area collaboratively is crucial. This involves considering factors such as transportation infrastructure, visitor behavior, environmental impact of tourism and mobility-related activities, as well as community and tourists' needs. Utilizing data-driven analysis and stakeholder insights to identify challenges, opportunities, and gaps in existing systems is vital. EUROSTAT and the World Tourism Organization (UNWTO) offer methodological frameworks for tourism statistics, aligning with UNWTO guidelines. These statistics include inbound tourism, domestic tourism, outbound tourism, tourism industries, employment, and macroeconomic indicators.

While most data at the national level is collected, there's a crucial need for micro-scale understanding of the tourism sector's impact at the city level. This detailed quantitative data, aligned with the broader vision of the area, is essential for enhancing the area's attractiveness to tourists. Furthermore, in line with SUSTOURMOB's sustainable planning objectives, tracking the tourism sector's contribution to sustainable development across economic, environmental, and social dimensions is necessary. This aligns with the UNWTO's initiative, Towards a Statistical Framework for Measuring the Sustainability of Tourism (MST)' which entails monitoring two SDG indicators from the Global indicator framework. Additionally, the European Commission's (European Commission, 2016), European Tourism Indicators System' (ETIS) aids areas in assessing their sustainability performance (European Commission, 2013).

Phase 2: Co-building the future

Brainstorming and generating innovative ideas for improving sustainable tourism and mobility in the region is the next step. The creativity and out-of-the-box thinking to explore potential solutions to identified challenges can be a game-changing dimension – advanced marketing techniques should be exploited to pursue locals and tourists receive their central position in planning (Morfoulaki et al., 2022). Following, development of a shared vision for the future of sustainable tourism and mobility, aligning with the area's wider objectives and stakeholder aspirations comes. Establishing specific, measurable, achievable, relevant, and time-bound (SMART) targets to guide the implementation of the shared vision is also critical for the success of the last phase of monitoring.

Phase 3: Co-developing and co-testing services

Collaborative working continues in the third phase of SUSTOURMOB cycle – design and development of sustainable tourism services, including integrated touristic packages mutually promoting sustainable transport, accompanying services, as well as information and communication technology (ICT) solutions should take place i.e., guided or self-guided walking or cycling tours for sightseeing, integrated tickets for public transport, gastronomy combined with e-scooters rental, sustainable accommodations promoting bike, recreational or cultural activities boosting sustainable transportation for reaching the Points of Interest (Sustourismo Del. T1.4.1) (Sustourismo Project Interreg Adrion 2020c). Focus on creating experiences that promote environmental stewardship, cultural preservation, and economic benefits for local communities were pointed as for high influence. Identifying the optimal funding scheme for the implementation of the measures is essential; funding can come from a unique source or can be realized through a combination of funding mechanisms i.e., private sector, EU funds, national and regional budget, PPP, contracts, city bonds (Werland and Rudolph, 2019).

Formalizing partnerships and agreements among stakeholders through memoranda of understanding (MoUs) to solidify commitments to sustainable tourism and mobility initiatives can be a way to support sustainability of measures. This cooperation should be based on clear roles, responsibilities, and expectations assignment to ensure effective collaboration and coordination.

Concluding this step, a very significant point is to conduct pilot tests of proposed services before real implementation to evaluate their effectiveness and identify areas for improvement. Gathering feedback from stakeholders, tourists, and locals to inform adjustments and refinements before full-scale implementation is also essential.

Phase 4: Co-feedbacking and co-upgrading

The last phase starts with rolling out sustainable tourism services based on the finalized plans and agreements,

ensuring alignment with the shared vision and targets. Monitoring success is probably the most important step for good service delivery and performance to ensure adherence to quality standards and sustainability principles. This continuous monitoring of visitors' and locals' satisfaction and environmental performance adds value in the assessment of the contribution of sustainable tourism services to achieving the established targets. The use of feedback and performance data to guide on-going improvements and enhancements to sustainable tourism services will support iterative refinement of the plan with a view to maximize the impact and sustainability outcomes over time.

5.3 Validation (step 3) results

Considering the shared opportunities and the need for collaborative efforts, an integrated strategy like SUSTOURMOB becomes crucial. SUSTOURISMO cases (partners and stakeholders as in Fig. 4) have agreed that providing a stable mobility and tourism co-planning framework and offering integrated touristic packages (combined services promoting responsible behaviors and green mobility) is what is needed. Furthermore they consider that technology-savvy travelers are the new target group so integrating smart solutions into apps like SUSTOURISMO can show the way forward.

SUSTOURMOB is estimated to provide a coordinated framework to address these opportunities, maximize synergies, and overcome common challenges. By adopting a holistic approach, the strategy fosters collaboration among the project areas, facilitate knowledge exchange, and optimize resource allocation to achieve sustainable tourism development and mobility solutions. The integrated nature of SUSTOURMOB ensures a unified approach that leverages the strengths of each area while promoting cross-case learning and cooperation.

By utilizing the SUSTOURMOB planning cycle, it is estimated that decision-makers are empowered to overcome obstacles, maintain focus, and enhance productivity. The mission is to co-build a clear direction by identifying needs, defining goals, and outlining actionable steps, ensuring motivation and commitment throughout the process. Through monitoring progress, the cycle enables effective tracking of goal achievement. With its comprehensive and cooperative approach of analysis, development, real testing, evaluation, monitoring, and improvement, SUSTOURMOB supports the transition and attainment of UNECE sustainable development goals within the sustainable mobility and tourism sectors.

The SUSTOURMOB cycle was designed with the initial contribution of promoting sustainable tourism hand in hand with mobility. The strategy vision is centered around integrating sustainable mobility solutions with sustainable tourism practices. This vision reflects the project's original goal of creating a symbiotic relationship between tourism and mobility, ensuring that both sectors work together to achieve sustainable development. The strategy vision considers ADRION as a whole. It is designed to address the unique challenges, opportunities, and characteristics of the area as derived through the project's activities.

Strategy vision update should follow the strategy's review and update progress proposed above and should be periodically evaluated and adjusted to account for changes in the internal and external environment. This review process will ensure that the strategy remains aligned with the original goal and can effectively respond to evolving circumstances, such as changes in market trends, technological advancements, policy shifts, and community needs. The review process, as the initial process followed, should involve active engagement and input from relevant stakeholders, including tourists, local communities, tourism authorities, mobility service providers, and other key actors. Their perspectives and insights should be considered when evaluating the strategy vision and its alignment with the original goal. By incorporating diverse viewpoints, the strategy can benefit from collective wisdom and ensure inclusivity in decision-making.

6 Discussion

The introduction of the SUSTOURMOB (sustainable tourism and mobility) strategy represents a basic step towards addressing the intertwined challenges of sustainable tourism and transportation in the Adriatic-Ionian area. By providing a generalized framework that emphasizes collaboration, stakeholder engagement, and integrated planning, the strategy offers a promising approach to promoting sustainable development across the region.

SUSTOURMOB cycle proposal emphasizes the importance of adopting an integrated approach to tourism, aligning with the Transition Pathway for Tourism and EU Agenda for Tourism 2030 that support integrated view of the tourism ecosystem and motivate on co-creational approached in tourism planning (European Commission, 2022; Council of the European Union (2022)). As such, the SUSTOURMOB cycle reinforces the commitment to sustainable and responsible tourism practices via sustainable transport actions, ultimately contributing to the achievement of broader tourism goals at regional and transnational levels.

The SUSTOURMOB planning cycle offers several notable benefits that can enhance decision-making and planning processes in the sustainable tourism and mobility sectors. By co-building a clear direction and highlighting actionable steps, the cycle fosters motivation, commitment, and productivity among stakeholders. Additionally, the emphasis on monitoring and continuous improvement with specific indicators (both in tourism and in transport sector) supports effective progress tracking and adaptation to changing circumstances, ultimately contributing to the achievement of sustainable development goals (Lozano-Oyola et al., 2012; Torres-Delgado and Saarinen, 2013; Zegras, 2006; Rassafi and Vaziri, 2005).

The need for frequently updating the strategy is imperative due to the dynamic nature of the tourism industry and the significant changes that can occur within this timeframe.

- Market trends and consumer behavior: Tourism is influenced by evolving market trends, unprecedented situations, and respective shifts in consumer behavior (Gössling et al., 2020; Smeral, 2007). Over a 5-year period, there can be significant changes in travelers' preferences, interests, and demands. Updating the strategy allows for aligning with these changing trends to ensure that the tourism offerings remain relevant and attractive to visitors.
- Technological advancements: The tourism industry is heavily impacted by technological advancements (Van Nuenen and Scarles, 2021; Buhalis et al., 2019). Within a 5-year timeframe for example, there can be significant advancements in areas such as digitalization, online booking platforms, mobile applications, and virtual reality experiences.
- Sustainability and environmental considerations: There is a growing global emphasis on sustainable tourism practices and environmental conservation. Within a 5-year period, there can be advancements in sustainability frameworks, regulations, and best practices. Updating the strategy enables the integration of the latest sustainability approaches, ensuring that tourism activities are aligned with current environmental standards and goals.
- Policy and regulatory changes: Tourism policies and regulations are subject to continuous review and modification. Over a 5-year period, there may be changes in government policies, regional regulations, or international agreements that impact the tourism industry. Updating the strategy allows for adapting to these changes and ensuring compliance with the latest guidelines.
- Economic and geopolitical shifts: Economic and geopolitical factors can significantly influence the tourism industry. Over a 5-year period, there may be economic fluctuations, currency exchange rate changes, political developments, or shifts in travel restrictions and visa policies. Updating the strategy enables the formulation of appropriate responses to these changes, ensuring the resilience and adaptability of the tourism sector.
- Crisis and disaster management: The occurrence of crises or disasters, such as natural disasters, health emergencies, or political instability, can have a profound impact on tourism. Within a 5-year timeframe, unforeseen events may necessitate adjustments to the strategy to effectively address crisis management and recovery strategies.

Based on the above considerations, it becomes evident that updating the strategy is essential to ensure its alignment with the evolving issue. This proactive approach helps to maintain the strategy's effectiveness, adaptability, and relevance in addressing the current and future challenges of the tourism industry.

The mission statement linked to the SUSTOURMOB cycle underscores its role in facilitating the transition towards sustainable development, as outlined by the United Nations Economic Commission for Europe (UNECE) sustainable development goals (SDGs). By integrating sustainable mobility solutions with tourism practices, the strategy contributes to the attainment of SDGs related to environmental conservation, socio-economic development, and community well-being.

Lastly, the iterative nature of the SUSTOURMOB strategy vision reflects a commitment to continuous improvement and adaptation. Through periodic reviews and updates, the strategy can remain responsive to evolving internal and external dynamics, including changes in market trends, technological advancements, policy shifts, and community needs.

7 Conclusions
The SUSTOURMOB strategy and planning cycle offer a robust framework for steering sustainable tourism and mobility initiatives in the Adriatic-Ionian region.

By systematically examining current trends, anticipating future challenges, and proactively shaping outcomes, the strategy enables stakeholders to exert influence on the trajectory of sustainable development. Through its emphasis on collaboration, stakeholder engagement, and continuous improvement, the strategy not only enhances awareness of environmental and societal needs but also provides a clear sense of direction and purpose for organizational objectives. Moreover, by plugging everyone into the system and establishing standards of accountability, the strategy fosters effective leadership and ensures the efficient allocation of resources. As we move forward, it is imperative to sustain the momentum and commitment towards implementing the strategy, ensuring its adaptability to changing circumstances and its efficacy in addressing the dynamic challenges of the tourism and transportation sectors. Through concerted action and cooperation, the vision of sustainable tourism hand in hand with mobility can be actualized, yielding enduring benefits for communities, economies, and the environment throughout the ADRION area and on a wider scale too.

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