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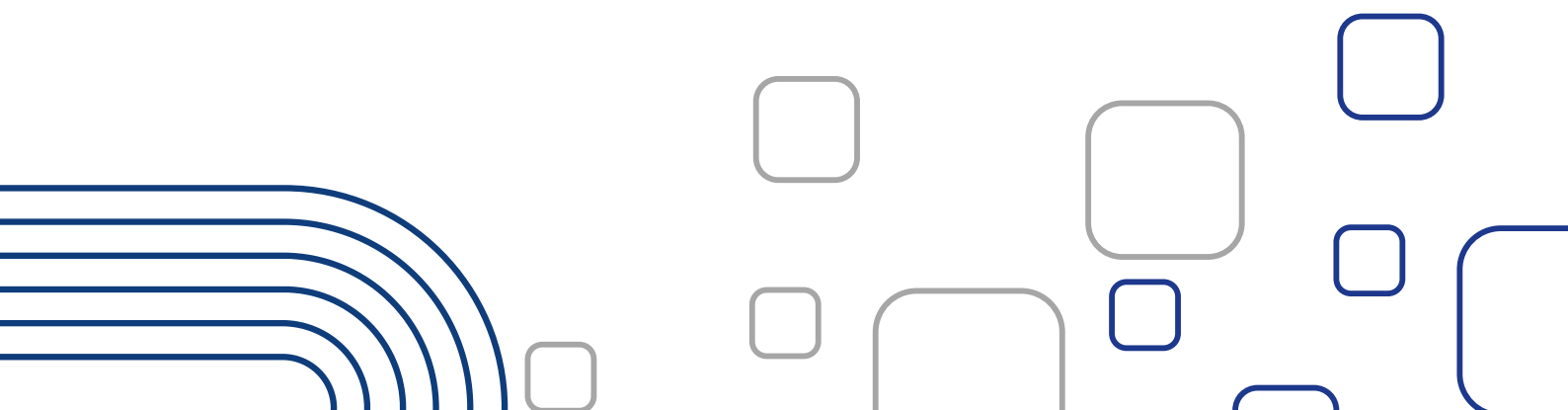
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NEXT Black Sea Basin

**ASSESSING COUNTRY AND REGION-
SPECIFIC NEEDS:
SUSTAINABILITY AND BLUE GROWTH
PERSPECTIVES**

SEASONALITY

**AS A CHALLENGE TO BLUE GROWTH
FOR BLACK SEA TOURISM**



This material was developed by the research team of Varna University of Management (Bulgaria). The primary research data was also contributed by the teams of the International Hellenic University (Greece), Moldova State University (Republic of Moldova), and the Istanbul Development Agency (Republic of Türkiye).

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Executive Summary

This Needs Assessment Report investigates the sustainability challenges caused by seasonality in tourism across the Black Sea Basin and identifies actionable solutions to support sustainability and blue growth. Conducted within the framework of the INTERSMARTS project and based on a common methodology combining desk research, expert interviews, focus groups, and public surveys, the report covers Bulgaria, Greece, the Republic of Moldova, and the Istanbul area in the Republic of Türkiye, and outlines practicable policy and business actions that can improve the sustainability performance of the tourism sector.

Seasonality remains a major barrier to sustainable tourism, generating significant challenges across environmental, social, and economic dimensions. It leads to high pressure on natural resources such as water, energy, and food, while contributing to environmental degradation through increased waste, pollution, and loss of biodiversity. Socially, it causes overcrowding and strains on public services, and economically, it results in inefficient use of infrastructure and labour market imbalances. Although these trends are common across regions, country-specific factors further complicate the picture. In *Bulgaria*, issues include overdevelopment, uncontrolled coastal construction, outdated infrastructure, and labour shortages during peak periods. *Greece* faces overuse of water and energy resources, insufficient promotion of off-season tourism, and weak enforcement of sustainability practices. *Moldova*, while constrained by limited resources and fragmented governance, benefits from strong public support for sustainable tourism initiatives. In *Türkiye's Istanbul area*, climate-related vulnerabilities, high tourist concentration, and the need for better integration of green and smart solutions are key challenges to address.

The survey about needs assessment has identified a range of good practices and innovative approaches emerging across the region in response to sustainability challenges. Key innovations include the use of smart technologies, such as mobile applications and sensors, to manage visitor flows and optimize resource consumption. Circular economy models are gaining traction through practices like local sourcing, recycling, and waste reduction. Investments in green infrastructure—such as sustainable transport systems and energy-efficient buildings—are also contributing to long-term resilience. Additionally, modular and thematic tourism offerings, including gastronomy experiences, eco-tourism, and cultural events during the off-season, are helping to diversify demand. Education and awareness initiatives targeting both tourists and local communities further reinforce the shift towards more responsible and sustainable tourism practices.

To enhance policy effectiveness in sustainable tourism, stronger coordination and enforcement mechanisms are essential across the region. In Bulgaria and Turkey, fragmented approaches and weak enforcement continue to undermine progress, as noted by experts. Greece benefits from supportive national and EU frameworks, but inconsistent implementation at the local level limits their impact. While Moldova enjoys positive public perception of sustainability efforts, experts emphasize the need for better strategic alignment and inter-institutional coordination. Policymakers should prioritize integrated, multi-level governance and capacity-building to ensure more coherent and effective outcomes.

To foster a more resilient and sustainable tourism model in the Black Sea region, a set of strategic, forward-looking actions is recommended. First, developing comprehensive off-season tourism strategies through product diversification—such as cultural, gastronomic, and eco-tourism—can help reduce pressure during peak months while supporting local economies year-round. Regional coordination will be key to maximizing synergies and ensuring a consistent visitor experience. Second, targeted investments in digital and green infrastructure, backed by EU and national funding mechanisms, are essential for modernizing the tourism offer and improving environmental performance. Third, the establishment and widespread promotion of sustainability standards and certification schemes, particularly those tailored to the needs and capacities of small and medium-sized enterprises (SMEs), will encourage broader adoption of responsible practices. Fourth, improving vertical and horizontal coordination among national, regional, and local stakeholders is critical to align policies, avoid fragmentation, and enhance implementation. Finally, the creation of integrated destination registers and tourism information systems—with a focus on alternative and special-interest tourism along the Black Sea coast—will support evidence-based planning, improve visitor management, and increase the visibility of lesser-known destinations. Together, these actions can significantly contribute to a more balanced, inclusive, and sustainable tourism future for the region.

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Abbreviations

CMA - Common Maritime Agenda (CMA) for the Black Sea

EC - European Commission

EU - European Union

BSB – Black Sea Basin

BSC – Black Sea Commission

BSO – Business-support organisation

GDP – Gross domestic product

FAO - Food and Agriculture Organisation

NAR – Needs assessment report

NGO – Non-governmental organization

NUTS Nomenclature of Units for Territorial Statistics

NUTS 2 --Second level of divisions created for statistical purposes

OECD – Organisation for Economic Cooperation and Development

SME – Small and medium enterprise (s)

SRIA - Strategic Research and Innovation Agenda for the Black Sea

UN - United Nations Organization

UNWTO - United Nations World Tourism Organization

Introduction

The Black Sea Basin has a significant blue-economy and blue-growth potential based on tourism thanks to the benevolent climate and unique mix of natural and anthropogenic resources. However, tourism sustainability is challenged by various factors, with seasonality being one of the most pressing ones. Seasonality entails fluctuations in visitor numbers and revenue, but more importantly in resource demand throughout the year, and often leads to inefficiencies and environmental pressures during peak periods. Thus, the seasonal nature of tourism demand in the Black Sea area affects economic stability, employment, infrastructure use, and sustainable development in the long run.

From the perspective of blue economy, tourism is considered basically as coastal and maritime tourism, including beach-based and recreation activities in the coastal areas on the one hand (swimming, surfing, aquariums, etc.) and water-based activities with landside facilities (e.g. boating, yachting, cruising, nautical sports) (European Commission, 2014; European Commission, 2024). However, nowadays the traditional forms of coastal and maritime tourism begin to take a multitude of varied forms, including nature-based and eco-tourism, cultural tourism, health and wellness recreation, wildlife activities, and so on (World Bank, 2020). From a larger perspective, the freshwater and riverbank tourism activities that geographically are connected with sea and oceans basins also belong to the blue economy and affect it (OECD, 2024). The holistic perspective is particularly relevant for the Black Sea Basin given the geographical and anthropogenic specifics. Hence, this perspective is adopted in the applied research practices of the project *INTERSMARTS: Interdisciplinary Solutions for Smart Sustainable Tourism and Services for Blue Growth in the Black Sea Basin*, supported by the NEXT Black Sea Basin Programme, in whose frame this work is developed.

This needs assessment report surveys the challenges before sustainability and blue growth caused by *seasonality* from the perspectives of the different stakeholders in tourism and services and outlines possible solutions (directions) coming from interdisciplinarity and technology uptake. The needs assessment was performed via primary and desk research following a common methodology and covered four countries that compose the BSB area, namely Bulgaria, Greece, Republic of Moldova, and the Istanbul region of the Republic of Türkiye. Still, some of its findings have references for the whole basin.

The report starts with a synthetic overview of the academic research and main strategic policy documents about the blue economy and blue growth implications for tourism. Based on these six research perspectives for evaluating the effects of seasonality on the sustainability of tourism were identified, including *the challenges, current state, adopted solutions in business and communities, effectiveness of policies and regulations, local communities' perspective, and future needs*. The field research examined experts' and the

general public's opinions from the six perspectives and took out common directions for problem-solving and action to promote the resilience and sustainability of tourism given the blue economy. By consolidating current knowledge, the report provides a foundation for understanding the broader context of seasonality's effects. It highlights potential pathways for fostering balanced and sustainable tourism development in the Black Sea region.

I. Methodology

Needs assessment is a critical planning tool used to identify problems and develop effective, goal-oriented solutions to improve policies and coordinated actions. By clearly defining challenges, it ensures that resources are effectively directed toward feasible interventions that enhance performance and desired outcomes. In the INTERSMARTS project, needs assessments focus on four key sustainability challenges that are studied by the project partners based on their research interests and complementary expertise, defined also as a task-force domains of the INTERSMARTS Network, and namely: (i) overdevelopment – by the Moldova State University; (ii) seasonality – by the Varna University of Management, (iii) pollution and waste – by the International Hellenic University and low innovation absorption – by the Istanbul Development Agency. The resulting Needs Assessment Reports are to propose state-of-art strategies for addressing these challenges, leveraging state-of-the-art research from project partners and empirical data collected with civic researchers, all aimed at fostering blue growth.

The needs methodology in INTERSMARTS comprises three key phases that were implemented continuously and in parallel on all four sustainability challenges identified by the project: (1) literature review and desk research, (2) field research, and (3) development of a needs assessment report. The process integrates collaborative contributions from all partners, focusing on sustainability in blue tourism, coastal/riverside resource management, and innovation promotion.

The literature review has aimed to review how the project problem issues are explored in academic research, strategies, and policies related to blue tourism sustainability at international, national, and regional levels. The main policy-related determinants of the needs assessment, including six research perspectives or lenses for field research, namely the challenges, current state, adopted solutions in business and communities, effectiveness of policies and regulations, local communities' perspective, and future needs were outlined based on the literature review and desk research. Accordingly, field research questionnaires for focus groups, in-depth interviews and a general survey of the public opinion were elaborated.

The literature review was completed simultaneously in the period October 1st to 31st, 2024 by all INTERSMARTS partner institutions.

The field research gathered primary data from the INTERSMARTS project target groups, including higher education institutions, SMEs, public authorities, NGOs, and other relevant interest groups. It was necessary to explore the local contexts, practical insights, and interpretation of the project problems. In addition, it gave out valuable interpretations and independent comments that added to the quality of the project analyses and recommendations.

The field research included three types of activities – focus groups, in-depth interviews and on-line surveys for the general public. The focus groups were organized on a national basis – one event per project partner country – and presented guided discussions with the interested participants on 12 main (through the lens challenges, adopted solutions and effectiveness) and 8 optional (through the lens future needs and local communities) or on sets of 3 main and 2 optional questions per challenge. The focus groups were held on 12.12.2025 in the Moldova State University with 10 participants, on 18.12.2024 in the Varna University of Management with 15 participants, on 26.12.2024 at the Istanbul Development Agency with 13 participants and on 13.02.2025 in the International Hellenic University with 8 participants.

The in-depth interviews gathered the insights of established experts from academia and practice on all four project problems and along the six research dimensions following a 24-question template. The interviews were conducted in parallel in all project countries from November 1st, 2024, to January 15th, 2025. In Bulgaria, 17 experts were interviewed, including 1 representative of the academia, 1 public-authority representative, 2 NGO representatives, and 13 representatives of hotels, restaurants, guesthouses, and special-interest attractions. In the Republic of Moldova, 15 experts were interviewed, including 3 public-authority representatives, 3 NGO representatives, 2 BSO representatives, and 7 business representatives. In the Republic of Türkiye, 16 experts were interviewed, including 7 representatives of the public administration, 2 representatives of the academia, 4 business representatives, and 3 NGO representatives. In Greece, 19 persons were interviewed, including 16 business representatives, an NGO representative, a local authority representative, and a ministry representative.

The general public survey was performed via the distribution of an online questionnaire with 20 closed questions (5 per theme) again in parallel in all project countries from November 1st, 2024, to January 15th, 2025. It was completed by 323 persons in Bulgaria, Greece, the Republic of Moldova, and Türkiye. The survey respondents in Bulgaria included persons from Ukraine, the respondents in the Republic of Moldova – from Romania, and the respondents from Greece – from Bulgaria. The general survey in Türkiye included only national residents. Still, the cross-border profile of some of the general survey participants allows a more holistic regional perception of the problems that have been reviewed in this need assessment.

The approach and reporting process on the survey data collection included that each partner conducted surveys on four key themes within their country, summarized the results, and shared their findings. All partners ensured a diverse representation of target groups without strict proportional adherence to avoid bias. Next, task force leaders consolidated the data for their respective themes into specialized Needs Assessment Reports (NARs), which include summarized findings from literature reviews, focus groups,

interviews, and surveys. Finally, the final reports underwent a collaborative review by all partners to validate the accuracy and completeness of the information.

As a task-force leader on seasonality solutions (See INTERSMARTS Network Portfolio, <https://intersmarts.eu/aims-and-structure>), Varna University of Management performs needs analysis on seasonality as a challenge to blue growth for Black Sea tourism.

II. General overview of tourism and related services in the Black Sea Basin and INTERSMARTS Countries

The Black Sea region has a permanent population of roughly 17.5 million inhabitants, to which 6–8 million tourists are added each year in the pre-pandemic period and with the numbers in the process of recovery and in some cases even excess in comparison to the pre-pandemic years (European Commission, 2022). The region includes both well-established and emerging tourism destinations, each at different stages of development in terms of infrastructure, connectivity, and brand recognition (UNWTO, 2019). Between 2000 and 2018, international arrivals to the region grew an average of 6% per year in the region, above Europe's 3% growth and the world's average of 4% per year (UNWTO, 2019), however, the positive trend was considerably affected by the COVID-19 crisis and the war in Ukraine with all their strongly negative social, economic and environmental implications. The coastal zone of the Black Sea littoral states includes both land and sea areas, forming a highly intricate social-ecological system. This system evolves and operates under the influence of various interlinked factors such as political, social, environmental, economic, cultural, governance, and more. The socio-economic development of coastal communities relies on the utilization of valuable natural resources, including land, water, and their mineral, biological, and recreational components. Additionally, the prosperity of these communities is significantly influenced by socio-economic trends at both national and international levels (BSC, 2019).

Concretely, tourism and related services in the countries, represented in the INTERSMARTS Project are marked with the following main features:

Bulgaria

Bulgaria's tourism industry is a vital part of the national economy giving approximately 6,5% of the national GDP in 2023 and 7% in 2024, benefiting from the country's strategic location between Europe and Asia. Bulgaria offers diverse attractions, from Black Sea beach resorts to historic countryside towns, drawing visitors interested in cultural experiences, local cuisine, and historical sites.

From a territorial perspective, the two Bulgarian NUTS 2 regions that belong to the Black Sea Basin and generally form the Bulgarian Black Sea Region are the Northeast (BG33) and South-eastern (BG34). The Bulgarian Black Sea regions attract the majority of the international tourists arriving in the country. The North-eastern region, with Varna as the leading district, accounts for 23.4% of the total nights spent in the country and 74,9% of them are spent by foreign tourists (EUROSTAT, 2024). The South-eastern region, with Burgas as the leading district, accounts for 38.8% of the total nights spent in the country and 63,5% of them are spent by foreign tourists. The Bulgarian Industrial Association reports that 20.98% of the accommodation and catering enterprises and 25% of tourism agents in Bulgaria are registered in the Black Sea regions. Seasonality is a definite feature of the coastal tourism sector with the Northeast and Southeast regions accounting for over 60% of the nights spent on yearly basis in the county, which is the highest level in the EU (EUROSTAT, 2024). Sustainable tourism is on the rise, with growing interest in eco-friendly accommodations and outdoor activities like hiking and skiing. Digital booking platforms have made travel planning more convenient, while government initiatives to promote year-round tourism have increased off-season visits, especially for winter sports. The market is projected to grow at a consistent pace, with a compound annual growth rate of 3.77% between 2025 and 2029. The package holidays segment is anticipated to be the largest, reaching in revenue by 2025 as the number of users in this segment is forecasted to grow from 56.9% in 2025 to 63.4% in 2029 (Statista, 2024).

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Greece

Greece's rich ancient cultural heritage, renowned archaeological sites, and numerous beaches and islands make it one of the world's top tourist destinations. Like many Mediterranean countries, Greece's economy is heavily dependent on tourism, with the sector contributing over 19 percent to the country's GDP in 2023—the third-highest share among EU nations, following Portugal and Croatia. In terms of employment, the combined direct, indirect, and induced effects of travel and tourism supported over 800,000 jobs in Greece that year, with projections indicating this number could surpass one million by 2034. Two Greek NUTS 2 regions belonging to the Black Sea Basin, namely Eastern Macedonia and Thrace (EL51) and Central Macedonia (EL52) develop accordingly.

High seasonality is a marked feature of Greek tourism with the two BSB regions showing rates that are not very different from those in Bulgaria: in Eastern Macedonia and Thrace 54,2% of accommodation nights were spent in the two peak month of the season, and in Central Macedonia – 49,6% (EUROSTAT, 2024). While international tourist arrivals have exceeded pre-pandemic levels, outbound tourism from Greece has been slower to

recover, with the number of Greek travellers going abroad in 2023 still about 20 percent lower than in 2019. (Statista, 2024)

Republic of Moldova

Moldova is committed to the sustainable development of its tourism sector and the valorisation of its unique natural and anthropogenic resources. It is connected to the Black Sea Basin through its belonging to the Danube River Basin, including the Prut, Yalpugh, and Cahul sub-basins. Notable natural features include Lakes Manta and Beleu, two of the largest lakes in the lower Prut Basin near the Danube. Thus, the whole territory of the Republic of Moldova falls in the Black Sea Basin. Tourism sector provides between 3,3 and 3,7% of the national GDP. Priority is given to rural, wine, and cultural (festival) tourism. Still, tourism development has been severely challenged by the pandemic and military conflict in Ukraine that goes directly to its border. These problems entail inter alia security and environmental and resilience challenges. After a period of growth between 2010 and 2019, the average number of inbound and domestic visitors per inhabitant in Moldova steeply decreased in 2020 and 2021 to the levels in 2015 (Statista, 2024).

Republic of Türkiye

Türkiye's unique geographical position, bridging Europe and Asia, has long made it a cultural crossroads where diverse civilizations have flourished. Its rich heritage, combined with vibrant cities, stunning landscapes, and remarkable archaeological sites, makes it a compelling destination for travellers seeking a blend of Eastern and Western influences. The tourism sector has been developing and provided approximately 12% of the GDP in the 2023. In recent years, there has been a noticeable shift in tourist preferences, with visitors increasingly seeking authentic and immersive experiences beyond traditional attractions.

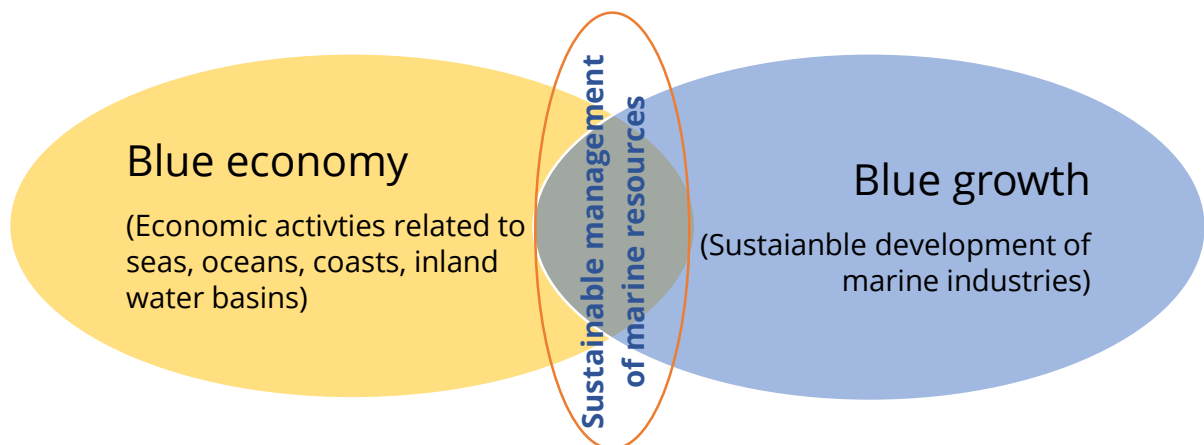
This trend has driven interest in off-the-beaten-path destinations that offer deeper cultural connections. The sustainability drive entails a rise in green hotels, sustainable tour operators, and initiatives to protect natural and cultural heritage. Additionally, strong government support and investment in infrastructure—such as improved transportation networks and upgraded accommodations—are enhancing the overall visitor experience and driving growth in the sector (Statista, 2024). Considering Türkiye's diverse geographical and economic scale, the INTERSMARTS project primarily concentrates on Istanbul and its neighbouring regions that are connected to the Black Sea. Otherwise, a larger number of regions belong to the Black Sea Basin, namely TR10 (İstanbul), TR21 (Tekirdağ, Edirne, Kırklareli), TR42 (Kocaeli, Sakarya, Düzce, Bolu, Yalova), TR81 (Zonguldak, Karabük, Bartın), TR82 (Kastamonu, Çankırı, Sinop), TR83 (Samsun, Tokat, Çorum, Amasya) and TR90 (Trabzon, Ordu, Giresun, Rize, Artvin, Gümüşhane)

III. Needs Assessment

Concepts and definitions

The concepts of the blue economy and blue growth focus on sustainable development through the responsible use of oceans and seas (European Commission, 2012; World Bank, 2020). These ideas highlight the importance of managing the intricate interplay between marine-related social and ecological systems holistically (Eikeset, et al., 2018). While blue growth refers to the sustainable advancement of marine industries, the blue economy encompasses economic activities linked to oceans, seas, and coasts, spanning both established and emerging sectors (European Commission, 2021). The EU Blue Growth Strategy identifies five key marine-related sectors as drivers of sustainable growth: aquaculture, tourism, marine biotechnology, ocean energy, and seabed mining. Among these, sustainable tourism plays a pivotal role in blue growth strategies by fostering economic progress while preserving marine and coastal ecosystems (European Commission, 2021). All marine forms of tourism, coastal tourism and freshwater tourism activities are considered to belong to the blue economy and to contribute towards sustainable economic practices in these areas (Picken, 2023).

Chart 1: Relationship between Blue economy and blue growth



Source: own elaboration based on European Commission (2012, 2021); Council of the European Union (2017); World Bank (2020); Eikeset et al. (2018); Picken (2023).

Blue growth refers to the development based on the sustainable use of the oceans and seas (Council of the European Union, 2017; World Bank, 2020) and emphasizes the need

for holistic management of the complex marine-related social and ecological systems (Eikeset, et al., 2018). Though it is considered to originate from the principles of sustainable development (Eikeset, et al., 2018), its distinct application is linked to more recent advancements in policy and research. Postulation of blue growth as associated with the responsible use of ocean-, sea- and inland-water-related resources is considered to start at the UN Conference on Sustainable Development in Rio de Janeiro, Brazil, in 2012. During this event, the Food and Agriculture Organization (FAO) emphasized to the international community that maintaining a healthy ocean ecosystem through sustainable farming and fishing practices is essential for achieving blue growth (Eikeset, et al., 2018). Further, in 2012 the EU launched its Blue Growth Strategy outlining the maritime sector's role in achieving smart, sustainable, and inclusive growth and recognizing that tailored approaches had to be taken about Europe's seven sea basins, including the Black Sea (European Commission, 2012).

For over twenty years the European Union has been actively fostering economic growth through the sustainable use of oceans and seas (i.e. blue growth) both through community policies and through targeted cooperation with established international organizations at supranational level such as the World Bank. The Integrated Maritime Policy of the European Union steps on the interconnectedness between industries and human activities related to the sea to promote coordinated and transparent planning decision-making processes across EU sectoral policies on maritime activities, including through sea basin and macro-regional strategies (European Commission, 2007; World Bank, 2020).

In the Black Sea Area¹, the blue-growth development approach was introduced in policy-making following the 2018 Burgas Ministerial Declaration "Towards a Common Maritime Agenda for the Black Sea", endorsed by seven countries in the region and formalized in the Common Maritime Agenda (CMA) for the Black Sea in 2019. The CMA for the Black Sea Basin aims at achieving healthy marine and coastal ecosystems; a competitive, innovative, and sustainable blue economy for the Black Sea, and at fostering Investment in the Black Sea blue economy. The Strategic Research and Innovation Agenda for the Black Sea (SRIA) is the scientific pillar of the CMA, which provides valuable data to inform science-based decision-making. The implementation of the CMA as well as the EU Blue Growth Strategy refers to the transposition of their goals into national sectoral and cross-sectoral policies of Member States and associated investment of resources to drive the planned improvements in real terms.

Policy-making at the global and EU level refers to blue growth and blue economy as integrated concepts. Blue growth defines the process of sustainable development of

¹ For the purposes of this needs assessment the Black Sea Area or Basin is considered to include the countries and regions, identified in the (Interreg VI-B) NEXT Black Sea Basin Programme Documents

marine-related industries while blue economy refers to the economic activities related to the oceans, seas, and coasts, including a range of established and emerging sectors (European Commission, 2021). EU Blue Growth Strategy has identified five marine-related sectors as potential champions for sustainable growth - aquaculture, tourism, marine biotechnology, ocean energy, and seabed mining, hence the focus on these sectors from the macro-regional perspective, including the CMA for the Black Sea Basin.

Discussion at policy-making and research level

Although blue growth and blue economy have been discussed for over a decade, there is still no clear definition of these terms, either in policies (as mentioned earlier) or in academic research, which remains a major challenge (Ertör & Hadjimichael, 2020). Policy documents refer more often to the perspective of expansion of the economic and social capacity when defining targets for a blue economy and blue growth. The European Commission Blue Growth Strategy refers to the potential of marine and maritime sectors to drive sustainable economic recovery via new jobs, innovation, and sustainability (European Commission, 2015). The World Bank recognises the potential to achieve economic and social progress while advocating for a balance between utilizing ocean resources for economic gain and preserving the health of marine ecosystems (World Bank; United Nations Department of Economic and Social Affairs, 2017). Scholars argue that while the economic perspective is often viewed as dominant in policy documents, substantial research emphasizes the sustainability perspective and highlights the necessity of potential growth limitations to preserve the marine environment's natural resources because of environmental and social justice (Ertör & Hadjimichael, 2020). Hence, a need for a holistic approach when analysing the blue economy and blue growth in the context of a particular territory.

Framework policy-making about blue economy and growth for the Black Sea Basin stems from the CMA and the research framework is based on SRIA. At the same time, many concrete policy implementations are based on the national policy documents and legislative norms of the countries and regions that belong to the Black Sea Basin. For the time being few research initiatives focusing on the Black Sea Basin refer to the blue growth and blue economy reconfirming the arguments from the international research community about the need for common conceptualization and taxonomy on these issues. In addition, the policy-making is still in the process of upgrading and revision to address the main challenges and priorities of blue growth accordingly (World Bank, 2020; European Commission, 2024). The blue economy should be approached holistically, but it's equally important to examine individual sectors and activities to understand their unique opportunities and challenges. This sector-specific focus allows for grassroots contributions to shaping blue economy policies (European Commission, 2021). *Against this*

background this needs assessment considers blue economy and blue growth in the Black Sea Basin from the perspective of enhancing economic activities and competitions in environmentally sustainable, preserving, restoring, and socially inclusive ways through innovation and targeted investment and consider bottom-up approaches to solving the regional problems.

Tourism and Blue Economy Challenges

Different academic and practical research projects have surveyed challenges about blue growth associated with the tourism sector. Despite the versatile approaches, what the majority of these projects have in common is the emphasis on contextualization (Balestracci & Sciacca, 2023), meaning that the severity of the challenges refers to the specific areas under revision despite the common traits. As sustainable marine tourism scholarship shows, tourism can simultaneously be a pioneer of human-ocean relations, a driver of innovation, a promoter of oceanic stewardship, and a guardian of this resource-rich territory (Picken, 2023). The growth impact of tourism depends on how it is implemented as it often alters the natural landscapes and environment based on which it attracts visitors. Research shows that many nations prioritize economic growth over environmental protection, leading to rapid, unchecked tourism development that threatens fragile ecosystems. Negative consequences include overcrowding, poor waste management, habitat destruction, beach erosion, overfishing, and pollution. Specific impacts include increased water and energy use, deforestation, disruption of wildlife, solid waste accumulation, aesthetic degradation, and ecosystem disturbances (Zahedi, 2008; Balestracci & Sciacca, 2023).

Similarly, sustainable coastal and maritime tourism is one of the five priorities of the EU Blue Growth Strategy (European Commission, 2012). Although the assessment of the tourism impact is among the main goals defined by the UN and EU strategies, challenges persist in implementing comprehensive, scientifically robust environmental impact assessments and monitoring programs. These challenges are often due to limited funding and time constraints, which can compromise the quality and effectiveness of such evaluations (Davenport & Davenport, 2008; European Commission, 2021). For instance, a 2021 report by the European Court of Auditors highlighted that while the EU's tourism sector faces significant challenges related to its green transformation, there have been mixed results in the sustainability of projects, partly attributed to shortcomings in initial project planning and needs assessments (European Court of Auditors, 2021).

The background documents for the CMA for the Black Sea Basin, the territorial analysis of the Interreg NEXT Black Sea Basin Programme 2021-2027 as well as regional research (Golumbeanu, et al., 2014; Haller & Tacu Hârșan, 2023) outline the main blue-growth

challenges for Black Tourism Sector. Based on this and following a pre-project feasibility study, the main challenge areas for needs assessment about blue-growth of Black Sea tourism were identified as overdevelopment, pollution, seasonality, and insufficient knowledge absorption. The focus in this report is particularly on seasonality, which is quite often omitted in region-related research about sustainability (Haller & Tacu Hârșan, 2023). The focus on seasonality is also essential as tourism in the Black Sea Basin is highly seasonal with the regions in Bulgaria and Romania having the highest seasonality ratio in Europe as mentioned (EUROSTAT, 2024).

Chart 2: Blue-growth challenges in Black Sea Tourism



Source: own elaboration based on Zahedi (2008); European Commission (2012, 2021); Davenport & Davenport (2008); European Court of Auditors (2021); Golumbeanu et al. (2014); Haller & Tacu Hârșan (2023); EUROSTAT (2024); Balestracci & Sciacca (2023); Picken (2023).

Seasonality and Sustainability

Seasonality is recognized as one of the most serious challenges to sustainability in tourism as it aggravates the environmental impact of the sector along with economic and social problems (Vodenska, 2020). The conflict between seasonality and sustainability in tourism arises from the uneven distribution of tourism activities throughout the year, which can lead to both environmental and economic challenges. Mass tourism, characterized by large concentrations of tourists in small areas over short periods, is often linked to significant environmental challenges. During peak seasons, the sudden influx of tourists often overwhelms local infrastructure, causes overcrowding, and puts excessive pressure on natural resources, such as water, energy, and waste management systems. This concentrated demand accelerates environmental degradation, including habitat

destruction and pollution (Davenport & Davenport, 2008; Hall, 2001). Unregulated tourism development and unsustainable tourist flows risk undermining the ecosystem services provided by coastal environments, which can, in turn, negatively affect the tourism industry itself (Drius, et al., 2019).

Conversely, during off-seasons, reduced tourism activity can result in economic instability for local communities, as businesses struggle to maintain operations and employment opportunities decline. This cycle makes it difficult to implement sustainable practices consistently, as the focus often shifts to maximizing profits during peak periods without considering long-term environmental and economic impacts.

Tourism is deeply influenced by climate and highly sensitive to its changes, with coastal destinations being some of the most at risk (Gössling, Scott, Hall, Ceron, & Dubois, 2012). It is crucial to recognize that destinations focusing solely on a single type of tourism or those heavily reliant on mass tourism – as the sun-sand sea destinations – are particularly susceptible to the challenges of seasonality. Such specialization or dependence often leads to pronounced fluctuations in visitor numbers throughout the year, resulting in uneven economic activity. During peak seasons, these destinations may face issues such as overcrowding, strain on local resources, and environmental degradation. Conversely, in off-peak periods, they often struggle with reduced revenue, underutilized infrastructure, and unemployment. This heightened vulnerability underscores the importance of diversifying tourism offerings and adopting sustainable practices to mitigate the adverse effects of seasonality.

Due to geographic and climate determinants Black Sea tourism is highly seasonal and concentrated during the months from May to September, with strong reliance on the coastal and maritime activities with limited winter attractions. The significant climate change allows for an extended high summer season (Vodenska, 2020), and an increasing number of alternative off-season attractions have been developed in recent years. However, these efforts have not yet been sufficient to significantly alter the industry's overall profile.

Effects of Seasonality on the Sustainability of Tourism in the INTERSMARTS Countries

The effects of seasonality on the sustainability of tourism in the INTERSMARTS countries are analysed based on field research conducted simultaneously in Bulgaria, Greece, the Republic of Moldova, and the Republic of Türkiye. The survey questions and the profiles of the respondents are presented as annexes to this report and substantiate the validity

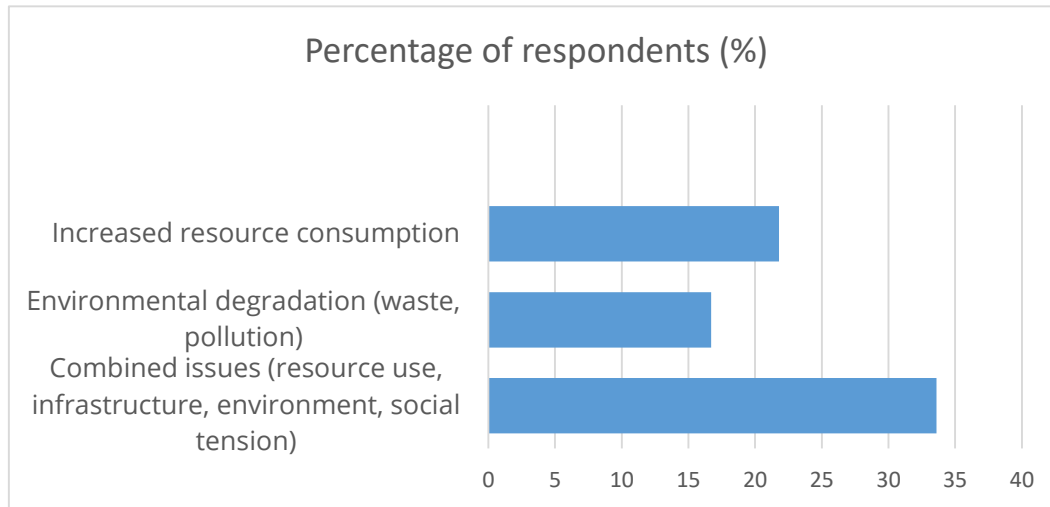
of the primary information on which the conclusions are based. The research identified both common and distinct challenges and solutions, leading to the formulation of policy recommendations. Conducting the field research in parallel provided diverse and complementary perspectives, allowing for a deeper investigation of the issue and the development of tailored approaches specific to each country and the Black Sea Basin.

Bulgaria

General public perception is that increased resource consumption (water, energy, food), the concentration of people leading to heightened social tensions, degradation of the natural and man-made environment (also via waste generation and pollution), and strain on infrastructure and inefficient use thereof are jointly the most serious **challenge** to the sustainability of tourism sector in view of seasonality (34.6% of the respondents). If an issue is to be taken out as most problematic this is the increased resource consumption (21,8% of the respondents), followed by the degradation of natural and man-made environment, including waste generation and pollution (16,7% of the respondents).

In addition, the focus group participants consider that the main challenges in managing the negative effects of seasonality in tourism stem from insufficient communication between citizens and the responsible authorities, leading to poorly coordinated efforts and ineffective solutions. The sector professionals and experts add that rapid tourism development along the Black Sea coast has led to the construction of numerous resort complexes and aparthotels, often exceeding existing infrastructure capacity. Many remain unoccupied, and overbuilding has reduced the appeal of resort areas. Seasonal fluctuations concentrate tourists in short periods, straining resources and public services, especially in cities like Varna, where the population doubles in peak season, overwhelming transportation, water, and air quality. While some seaside hotels implement sustainable practices, such as resource-monitoring systems and controlled vehicle access, public beaches suffer from overcrowding and poor maintenance. Measures are needed to regulate beach concessionaires and improve infrastructure to balance tourism growth with sustainability and residents' quality of life. Labour shortages during peak season, particularly after the pandemic, were also emphasised as a serious problem. The pandemic drove many ad hoc and temporary workers to other businesses that offer part-time flexible employment and home-office. This entailed the need to attract employees from non-EU countries and in many cases resulted in lowering the services and sustainability standards as the people without the necessary qualification, awareness and expertise had to be employed to «save» the season.

Chart 3: Main challenges to sustainability of tourism caused by seasonality in Bulgaria



Source: (own elaboration)

Regarding the **current implementation of practices to mitigate unsustainability** and their effectiveness, the general public perception is that resource-saving and waste reduction practices, organizing restoration or conservation projects during the off-season periods, ethical consumption and supply of food, ethical employment and flexible workforce management, and diversification of offerings with a focus on special-interest tourism are equally important to manage the impact of seasonality on the sustainability of tourism and services (39,7% of the respondents). If a practice needs to be placed first, this should be a diversification of offerings and focus on special-interest tourism (nominated by 19,2% of the respondents), followed by resource-saving and waste-reduction practices (17,9% of the respondents).

The focus group participants recognized that local authorities pose efforts and resources on marketing initiatives for the diversification of their offerings. Despite this, the efficiency of the efforts is decreased by fragmented information, ad hoc approaches and the need for better coordination at regional level.

Accordingly, the sector professionals commented on a 2023 funding initiative that supported marketing activities for tourism services in 21 Black Sea municipalities, aiming to enhance tourism promotion and extend the season that did not bring the desired results by 2024. A main problem in this regard is the lack of up-to-date general register of the alternative/special-interest tourism attractions that function in the area. The 90% of interviewees commented on the insufficient control over hotel construction in unregulated zones, poor transport connectivity between resorts and cultural or eco-tourism sites, and inadequate water and sewage systems, insufficient numbers of

wastewater treatment plants to support growing resorts, illegal destruction of dunes and deforestation in the seaside areas, particularly in the southern parts of the coast.

The experts recognized that a number of individual initiatives have been in place such as restricting car access to beaches and attractions during peak seasons and using electric transport within resorts, but they occur ad hoc. However, parking shortages remain a widespread concern. Some establishments are reallocating staff between facilities with varying seasonal demands to reduce resource use – again on a case-by-case basis.

It was recognised by the interviewees that some business support organisations indirectly support sustainability with their informational and educational activities - a good example being the Burgas Tourism Chamber, which prepares an annual summary analysis of the tourist season in the Burgas region and provided valuable input for managers to organize and plan their services accordingly.

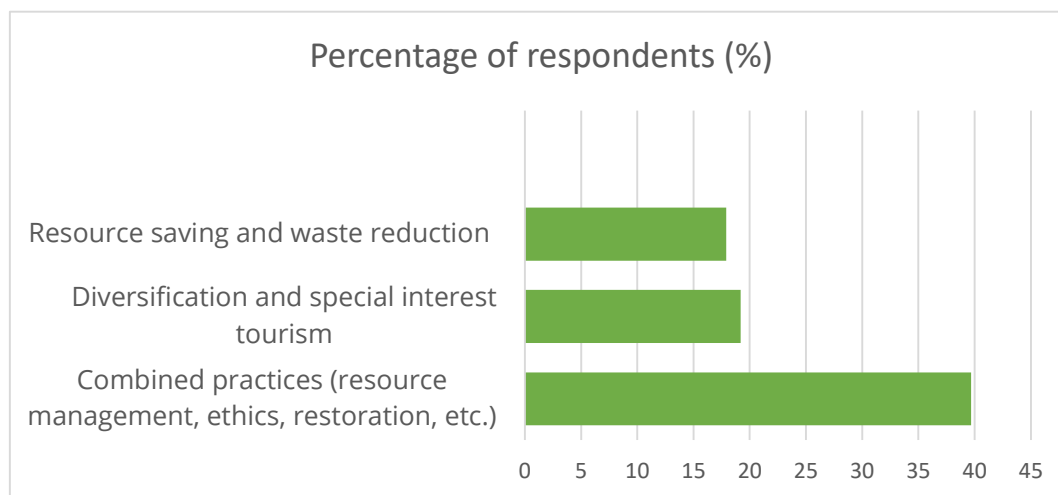
Considering the **solutions and innovations** that can best support sustainable tourism in light of seasonality, the general perception is that the circular use of resources, eco-friendly (green) infrastructure, pop-up or modular tourism, promoting off-season experiences through virtual tourism and AI, renewable energy-powered tourism services and transportation, smart technologies to manage tourist flows, demand, resource use and consumption must be utilized together (33,3% of the respondents). Further, the smart technologies to manage tourist flows are considered most efficient (17,9% of the respondents), followed by eco-friendly infrastructure (16,7%) and circular use of resources (12,8%).

Focus groups participants commented that sustainability in Black Sea tourism during peak seasons can be improved through a mix of technological and organizational solutions. Technological measures should include implementing photovoltaic panels, smart energy management, water reuse systems, waste separation, and digital tools like apps for managing tourist flows to reduce congestion. Organizationally, training staff on sustainable practices, engaging tourists in environmental initiatives, supporting the local economy by sourcing products locally, and promoting off-season tourism are essential. By combining these strategies with effective management and eco-friendly practices, the region can reduce its environmental impact while boosting the competitiveness and sustainability of the tourism sector.

The interviewed experts discussed that many tourism facilities and resorts in fact adopt sustainable management strategies that also include responsible organizational behaviour. These include using locally sourced products, implementing responsible purchasing policies, and utilizing certified high-quality materials, guests are invited to opt out of daily towel changes and food waste, sustainable transportation options, such as bicycles for area tours, offering of filtered water instead of bottled water, recycling cooking

oils, separating waste collection, usage of recycled materials. Many practices that have been considered new a couple of years ago are implemented in the facilities on micro-level. The interviewees mentioned various technological and organizational solutions implemented to optimize resource use, including solar energy systems, energy-efficient appliances, recycled materials, composting, and waste management. They also utilize mineral waters from local sources for drinking and spa treatments, "smart" technologies for controlling utilities, and extensive digitization in tourism services. Online booking systems for accommodations, dining, and additional services further enhance resource efficiency. In order to retain the skilled personnel, many businesses provide trainings during the off-peak season or transfer staff among different establishments to provide year-round employment. These measures contribute positively to both the financial performance of tourism businesses and the optimal use of resources.

Chart 4: Solutions to sustainability issues of tourism caused by seasonality in Bulgaria



Source: (own elaboration)

The **current policies** in supporting sustainable tourism are considered neither effective not ineffective by 39% of the respondents and somewhat effective by 28,6 % of the respondents and 13% consider them ineffective. This means that the general perception of the policies is rather neutral to slightly positive. This may also be explained with the fact that policy-making documents usually do not fall in the interest of common people and it might be difficult to comment on them without preliminary preparation.

On the contrary, the interviewed experts were much more critical towards the sustainability policies for tourism. More than 50% of the interviewed business representatives believe that organizational and management strategies for addressing sustainability challenges are not adequately applied at the state and local government levels. The experts commented on a lack of consistency in sectoral policies and the development of tourism services at both sectoral and national levels, with marine and

coastal areas managed in different and often contradictory ways. The experts noted that though some of the policies are bound to be effective, their successful implementation requires regulatory and organizational problem-solving by local authorities and regulatory bodies. For example, while waste separation is well-organized in resort complexes, it is not implemented in small settlements near the coast. The accumulation of construction waste around resort complexes and the lack of facilities for processing solid waste further hinder the effectiveness of waste separation measures. Composting or disposing of biological waste is regulated without consideration of its impracticality for small dining establishments. Solar energy production is not linked to mechanisms for selling surplus energy, among other issues

Considering the **future needs and perspectives of the local communities** about the effects of seasonality on the sustainability of the Black Sea Tourism, the interviewed experts emphasized that local authorities and regulatory bodies hold primary responsibility for ensuring environmental protection and sustainable resource use in this seasonal market. They noted that uncontrolled overdevelopment along Bulgaria's Black Sea coast, including the construction of hundreds of new hotels, does not foster economic growth but rather drives tourists away. This is reflected in the stagnant or declining number of overnight stays, with seaside hotels often operating below full capacity even during the peak summer season. They suggested that a comprehensive re-evaluation of Bulgaria's National Tourism Development Strategy (2014-2030) is necessary, considering new realities and changing tourist preferences. Economic growth should be pursued by offering innovative, high-quality tourism services and creating an environmentally friendly setting - clean air, clean seas, improved public transport infrastructure, and access to attractions - while integrating seaside tourism with other forms of tourism. Improved coordination among different levels of governance is crucial, along with promoting sustainable infrastructure solutions, funding green projects, and recognizing and publicizing these initiatives as much as possible.

The main findings about the evaluation of the effects of seasonality on the sustainability of tourism in the two Bulgarian Black Sea regions, performed in the INTERSMARTS project are summarized in Table 1 below:

Table 1: Seasonality's Impact on Tourism Sustainability in the Bulgarian Black Sea Regions

Dimension	Impact
Challenges	<ul style="list-style-type: none"> Increased resource consumption, social tensions, environmental degradation, and infrastructure strain together challenge tourism sustainability Insufficient communication between citizens and authorities, leading to poorly coordinated efforts to manage seasonality's negative effects.

Dimension	Impact
	<ul style="list-style-type: none"> • Rapid tourism development along the coast has resulted in overbuilding, exceeding infrastructure capacity, and leaving many resort complexes and aparthotels unoccupied, reducing the area's appeal • Seasonal tourism concentration strains resources and public services, requiring better regulation and infrastructure improvements to balance growth and sustainability. • Seasonal occupation entails severe labour shortages – particularly after the COVID-19 pandemic
Current state and practices	<ul style="list-style-type: none"> • Resource-saving, waste reduction practices, off-season conservation projects, ethical consumption, and workforce management together are key to managing seasonality's impact on sustainability • Local authorities invest in marketing efforts to diversify tourism offerings but face challenges due to fragmented information, ad hoc approaches, and a lack of coordination at the regional level. • Still transport infrastructure and inadequate control over construction and environmental protection remain significant issues. • Individual sustainability efforts are in place at the micro(business) level, as well as in some communities (settlements)
Adopted Solutions and Innovations	<ul style="list-style-type: none"> • Sustainable tourism solutions must integrate circular resource use, eco-friendly infrastructure, modular tourism, off-season experiences through virtual tourism, renewable energy, and smart technologies to manage flows and resource use • Smart technologies to manage tourist flows are considered the most efficient solution, followed by eco-friendly infrastructure • Both technological and organizational solutions improve sustainability • Many tourism facilities already implement sustainable practices, including using locally sourced products, energy-efficient systems, waste management, and digital tools like online booking, which positively impact both resource use and financial performance.
Effectiveness of policies and regulations	<ul style="list-style-type: none"> • Sustainability strategies are not adequately implemented by state and local authorities, citing inconsistency and contradictory management of coastal areas • Policies can be effective with better coordination
Local communities' perspective and future needs	<ul style="list-style-type: none"> • Local authorities and regulatory bodies are seen as responsible for ensuring environmental protection and sustainable resource use, particularly in managing seasonality impacts. • Innovative, high-quality tourism services and creating an environmentally friendly setting - clean air, clean seas, public transport infrastructure, and access to attractions - while integrating seaside tourism with other forms of tourism

Source: (own elaboration)

Greece

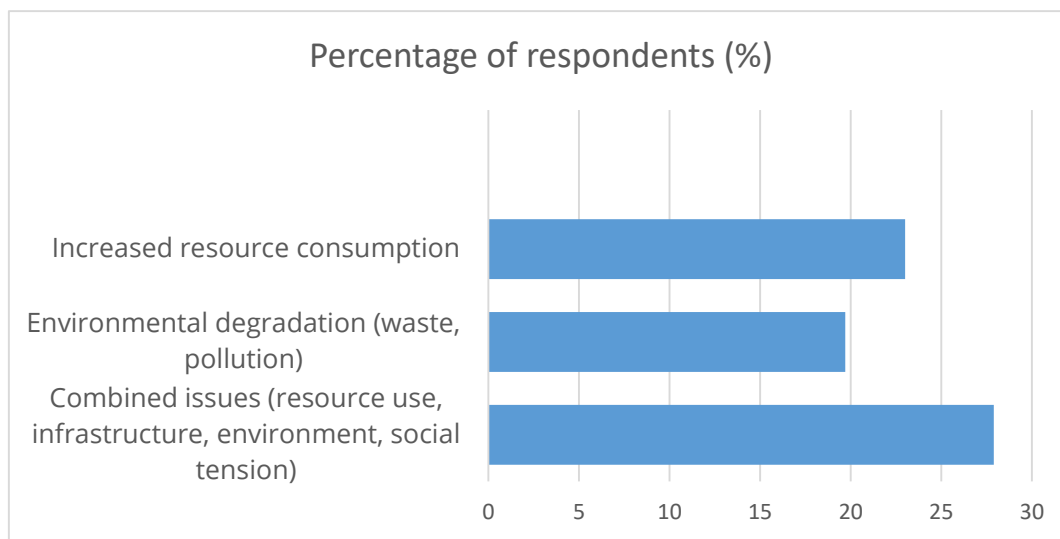
General public perception is that increased resource consumption (water, energy, food), the concentration of people leading to heightened social tensions, degradation of the natural and man-made environment (also via waste generation and pollution), and strain on infrastructure and inefficient use thereof are jointly the most serious **challenge** to the sustainability of tourism sector given seasonality (27,9% of the respondents). If an issue needs to be taken out as most problematic this is the increased resource consumption – water, energy, food (23% of the respondents), followed by degradation of natural and man-made environment (19,7% of the respondents) and the increased concentration of people – tourists, employees, and local citizens – which may lead to heightened social tensions (18 % of the respondents).

Further, the focus group participants consider that the main challenges in managing the negative effects are the overconsumption of water and energy during the peak seasons, leading to shortages and overburdening local infrastructure, as the facilities rely a lot on air-conditioning for cooling and do not have energy-efficient cooling systems. The problem is aggravated as businesses tend to prioritise short-term profit to long-term investment in resource-saving technologies. Additionally, off-season underutilization of infrastructure drives up maintenance costs. Focus group members outlined that waste management becomes a major issue in tourism hotspots, where peak-season waste overwhelms local systems, leading to pollution in beaches, trails, and reserves. Clean-up efforts struggle to keep pace, and many businesses deprioritize waste reduction outside peak months, hindering the development of sustainable solutions like composting and recycling programs. Seasonal tourism jobs create employment instability, causing skilled workers to leave for permanent positions in other sectors. This lack of continuity makes it difficult to sustain long-term environmental initiatives, as businesses struggle to maintain programs year-round. Additionally, training and awareness efforts must restart each season, hindering lasting progress in sustainability. Seasonal tourism closures lead to inefficient resource use and financial losses, as hotels and facilities shut down in winter. Municipalities struggle to justify maintaining infrastructure like waste treatment plants during low seasons, causing rising maintenance costs and deprioritization of sustainability projects. Local businesses also suffer, making it harder to invest in long-term sustainable initiatives.

The interviewed experts highlighted seasonality is one of the biggest challenges for the tourism sector in Northern Greece, particularly affecting areas such as Thessaloniki, Halkidiki and the popular mountainous destinations of Macedonia. Main acute problems refer to deterioration of air-quality due heavy traffic and CO2 emissions (particularly in Thessaloniki and Halkidiki). Further, in the coastal areas of Halkidiki, the large influx of tourists leads to increased marine pollution from waste, plastic and untreated sewage. Excessive water demand for tourist facilities and holiday homes in summer puts pressure on local water supply infrastructure, reducing water resources. Other acute problems

refer to uncontrolled building for tourism leading to the destruction of natural landscapes and the loss of protected areas; absence of organised waste management plans in tourist areas leads to pollution of natural sites; sharp increase in the number of tourists during the summer months in Halkidiki and island destinations creates an overload of transport network; misbalanced income for the businesses demotivates them to invest in sustainability solutions.

Chart 4: Main challenges to sustainability of tourism caused by seasonality in Greece



Source: (own elaboration)

The general public's perception of effectiveness of the **current implementation of practices to mitigate unsustainability** is that resource-saving and waste reduction, including energy and water works best (nominated by 24,6% of the respondents). Together resource-saving and waste reduction practices, organizing restoration or conservation projects during the off-season periods, ethical consumption and supply of food, ethical employment and flexible workforce management, and diversification of offerings with a focus on special-interest tourism are equally important to manage the impact of seasonality on the sustainability of tourism and services (23% of the respondents) with organizing restoration or conservation projects during the off-season periods and ethical consumption taking equal attention (16,4% of the respondents).

Focus group members mentioned that during peak seasons, local authorities enforce stricter waste collection schedules, but outdated infrastructure limits effectiveness. Hotels and resorts implement some water-saving technologies like low-flow faucets and greywater recycling, yet peak-season demand still strains local water resources. While these efforts provide some relief, they remain reactive rather than proactive, highlighting the need for long-term investments in advanced water treatment and large-scale waste management solutions. Tourism businesses offer discounts and alternative experiences like wellness retreats and cultural festivals to attract off-season visitors, but limited

marketing reduces their impact. Stronger promotion is needed to maximize their effectiveness. To manage overcrowding, some cities implement visitor caps and promote alternative destinations, while businesses hire local workers for seasonal jobs. However, balancing tourism growth with sustainability remains challenging, and more efforts are needed to offer year-round employment in tourism sectors. Local governments and businesses work together on environmental awareness campaigns and invest in sustainable infrastructure through public-private partnerships. While successful, these initiatives need long-term commitment and enforcement to maintain sustainability priorities.

The interviewed experts mentioned that various practices have been implemented to reduce the environmental impact of tourism, such as enhancing waste management, strengthening recycling, maintaining green spaces, reducing carbon footprints through electric buses, and applying energy-saving technologies in hotels and public spaces. Additionally, efforts to manage seasonality include promoting alternative forms of tourism (e.g., gastronomic, cultural, agri-tourism), spreading visitors across less traditional destinations, and creating strategies to attract tourists during off-peak periods with incentives like discounts and events. However, challenges remain, such as inadequate infrastructure in remote areas, insufficient promotion of alternative activities, and the need for better planning of tourist flows and seasonal demand management. Improved public transport and integrated information campaigns are also needed to better distribute tourism throughout the year.

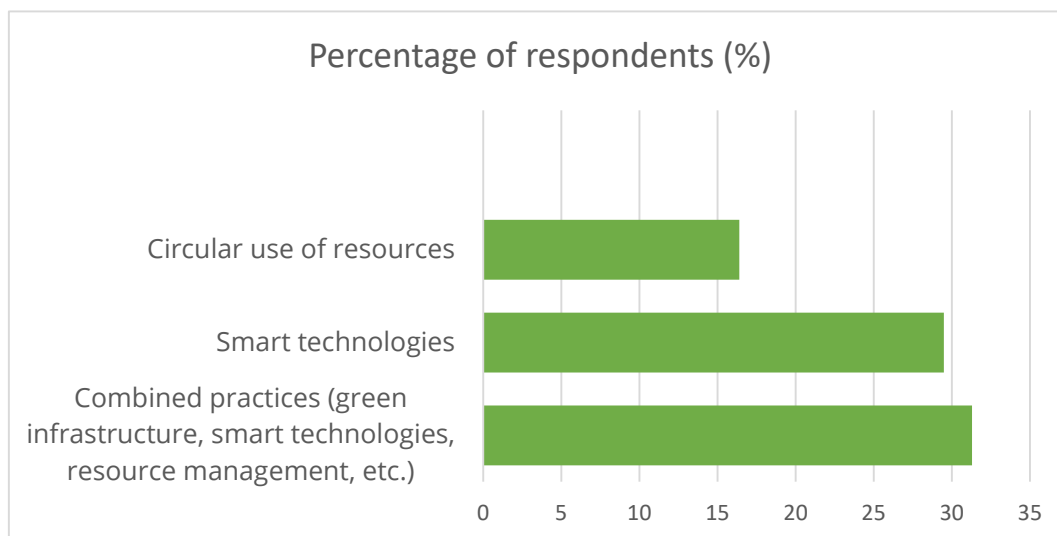
Studying the **solutions and innovations** that can best support sustainable tourism in light of seasonality, the general perception is that the circular use of resources, eco-friendly (green) infrastructure, pop-up or modular tourism, promoting off-season experiences through virtual tourism and AI, renewable energy-powered tourism services and transportation, smart technologies to manage tourist flows, demand, resource use and consumption must be utilized together (31,1 % of the respondents). Further, the smart technologies to manage tourist flows are considered most efficient (29,5% of the respondents), followed by circular use of resources (16,4%).

Focus group discussions emphasized that hotels and resorts can improve sustainability through smart energy and water management systems, such as automated meters and sensors that optimize energy use during peak months, leading to up to 30% energy reduction. Adoption of renewable energy sources like solar panels and geothermal energy, along with battery storage systems, helps reduce grid reliance and provides long-term cost savings. AI-powered waste management, including smart bins and food waste tracking systems, can also significantly reduce waste, with pilot projects showing up to 20% food waste reduction. Non-technological solutions include continuous staff training, sustainability certifications like Green Key and ISO 14001, and visitor education programs that promote eco-friendly behaviours. Collaboration with local authorities and businesses

further enhances sustainability by improving waste management and sourcing materials responsibly, strengthening both the community and the tourism sector.

In the in-depth interviews, hoteliers reported that technological solutions, such as smart energy systems, lighting sensors, automated air conditioners, and water-saving units, have significantly reduced electricity and water consumption, lowering operating costs. Solar panels and renewable energy further boost sustainability, while digital reservation systems optimize infrastructure management. Organizational solutions like staff training in sustainability, recycling systems, and sourcing products from local, eco-friendly suppliers also contribute to cost reduction and improve the hotel's "green" reputation. These practices not only reduce costs but also attract environmentally conscious tourists, supporting long-term sustainability in the industry.

Chart 6: Solutions to sustainability issues of tourism caused by seasonality in Greece



Source: (own elaboration)

The **effectiveness of the current policies and regulations in mitigating the effects of seasonality** on is considered as somewhat effective by the vast majority of the respondents (39,3%) or neutral – neither effective, nor ineffective (27,9% of the respondents). Still almost one fifth of the respondents evaluate the policies positively – 16,4% as effective and 8,2% as very effective.

The focus group participants commented that policies such as the EU Blue Growth Strategy and Greece’s National Strategy for Sustainable Tourism have set clear objectives for environmental protection and sustainability in the tourism sector and that availability of EU funding for green projects has helped some businesses transition to renewable energy and better waste management systems. It was recognized that these policies have increased awareness among tourism operators, but implementation is inconsistent across regions, especially in highly seasonal destinations. It was further mentioned that

green certifications (e.g., Green Key, Blue Flag) incentivize businesses to comply with sustainable practices, reducing environmental harm and that public funding and tax incentives for certified businesses encourage some level of compliance. A drawback is that the certifications are voluntary, and many smaller businesses do not see them as financially viable. Other comments referred to that policies focus on managing peak-season impacts, but there is little guidance on making tourism sustainable year-round. Without strategies to extend the tourism season, policies addressing seasonality remain reactive rather than proactive. An issue is the compliance with environmental regulations and related enforcement in high-tourism areas and monitoring that remain weak. The need for localization and regionalization of the policy objectives was mentioned as well as for better collaboration between policymakers, businesses, and community groups to avoid the gaps in policy execution.

The interviewed experts highlighted positive policies such as energy-saving subsidies for solar panels and heat pumps, hotel recycling initiatives, and strengthened sustainability certifications (e.g., Green Key, ISO 14001). The mandatory elimination of single-use plastics in tourism businesses helps reduce waste, while some hotels offer incentives for responsible water and electricity consumption. However, respondents noted areas for improvement, including limited tax breaks for sustainable investments, which hinder small businesses, and slow upgrades to public infrastructure, affecting resource management. Hoteliers suggest enhancing policies through increased renewable energy subsidies and staff training programs to accelerate Greek tourism's transition to sustainability.

Considering the **future needs and local communities' perspectives**, the focus group commented that high tourist demand during peak months strains local water and electricity supplies, leading to shortages and occasional power outages, especially in islands and coastal regions. Businesses prioritize visitor satisfaction over conservation, making sustainable resource management difficult. Waste production surges, overwhelming collection and recycling systems, while limited municipal resources contribute to long-term pollution. Over-tourism also damages cultural sites, coastal areas, and infrastructure designed for smaller populations. However, the off-season allows ecosystems to recover and provides municipalities time for repairs, upgrades, and sustainability initiatives without disruption.

Respondents emphasized that tourism-driven economic growth can align with sustainable resource use through strategic investments and policies. Expanding alternative tourism sectors — such as agri-tourism, gastronomy, conferences, and ecotourism — can help reduce seasonality, ensuring stable revenues while preventing excessive resource consumption. Implementing energy—and water-saving technologies in hotels, alongside investments in renewable energy, can minimize the sector's environmental impact. Tax incentives for businesses adopting sustainable practices would further support this transition.

State and EU financial programs are crucial to helping tourism businesses invest in green technologies without excessive costs. Additionally, hoteliers highlight the need for improved infrastructure management — including upgrades to water, sewerage, and public transport networks — as well as staff training in sustainable practices. Strengthening local production and fostering collaboration with small businesses could also lower tourism’s environmental impact while benefiting local communities.

The main findings about the evaluation of the effects of seasonality on the sustainability of tourism in the two Greek Black Sea Basin regions, performed in the INTERSMARTS project are summarized in Table 2 below:

Table 2: Seasonality's Impact on Tourism Sustainability in the Greek Regions in the Black Sea Basin

Dimension	Impact
Challenges	<ul style="list-style-type: none"> • Degradation of natural and man-made environments, overcrowding, and social tensions • Excessive water and energy use, causing shortages and straining infrastructure, with businesses prioritizing short-term profits over sustainable investments • Overwhelming waste during peak months, leading to pollution in natural areas. Many businesses deprioritize waste reduction in the off-season, limiting long-term solutions • Lack of workforce continuity, making it difficult to implement sustainability programs year-round, as training must restart each season. • Seasonal closures of hotels and facilities result in inefficient resource use and financial losses • Air pollution, marine pollution, and excessive water demand, while tourism-driven construction harms natural landscapes and protected areas
Current state and practices	<ul style="list-style-type: none"> • Resource-saving and waste reduction (energy and water) are considered the most crucial, while rehabilitation projects and ethical employment are considered equally important • Peak-season waste management struggles with outdated infrastructure, and water-saving technologies in hotels fail to meet peak demands, highlighting the need for long-term investments • Businesses offer discounts and alternative tourism experiences to attract off-season visitors, but limited marketing reduces their effectiveness. Promoting alternative destinations help manage overcrowding • Balancing tourism growth with sustainability is difficult, and there is a need for more year-round employment in the tourism sector and better promotion of alternative activities • Inadequate infrastructure in remote areas, lack of integrated promotion, and poor planning of tourist flows need to be addressed for better distribution of tourism and sustainability management

Dimension	Impact
Adopted Solutions and Innovations	<ul style="list-style-type: none"> • Sustainable tourism solutions must integrate circular resource use, eco-friendly infrastructure, modular tourism, off-season experiences through virtual tourism, renewable energy, and smart technologies to manage flows and resource use • Smart technologies to manage tourist flows are considered the most efficient solution, followed by circular use of resources • Smart systems in hotels, such as automated meters, sensors, and renewable energy reduce energy and water consumption, cutting costs. • AI-powered waste management as smart bins and food waste tracking systems reduce waste by up to 20%. • Staff training, sustainability certifications, and visitor education foster eco-friendly behaviours and sustainability • Working with local authorities and businesses improves waste management and responsible sourcing, benefiting both community and tourism
Effectiveness of policies and regulations	<ul style="list-style-type: none"> • Most respondents find policies somewhat effective or neutral • EU and national strategies aid sustainability but vary by region and location in implementation • Green certifications help but remain voluntary and costly for small businesses • Policies focus on peak seasons, lacking year-round sustainability strategies • Weak enforcement of environmental regulations in high-tourism areas. • Experts recommend more incentives for renewables, staff training, tax incentives
Local communities' perspective and future needs	<ul style="list-style-type: none"> • Peak tourism strains water, electricity, and waste systems, leading to shortages and pollution • Over-tourism damages cultural sites, coastal areas, and infrastructure designed for locals • The off-season allows ecosystems to recover and enables municipal repairs and upgrades • Expanding alternative tourism (agri-tourism, ecotourism, gastronomy) can reduce seasonality • Investments in green technologies, infrastructure upgrades, and local business collaboration can support sustainable tourism.

Source: (own elaboration)

Republic of Moldova

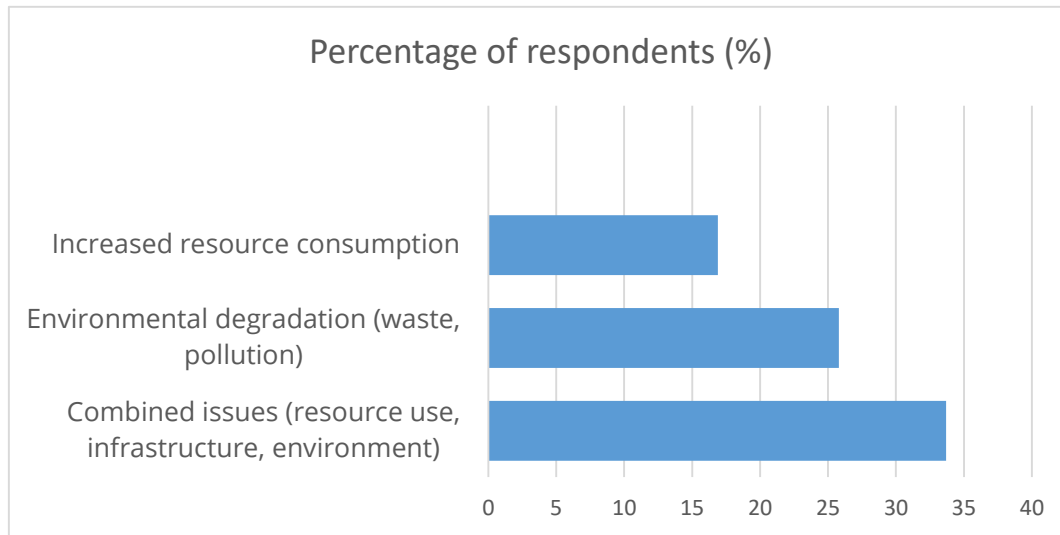
The general public perceives that the most significant **challenge** to the sustainability of the tourism sector is the combined effect of increased resource consumption (water, energy, food), overcrowding leading to social tensions, environmental degradation (including waste generation and pollution), and the strain on infrastructure, along with its

inefficient use (33,7% of the respondents). Aside from this, the most problematic issues that are singled out are the degradation of the natural and man-made environment (taken out by 25,8% of the respondents) and the increased resource consumption (16.9%).

Further, the focus group participants consider that peak seasons strain resources and generate waste, while off-seasons create financial difficulties and challenge companies' survival. However, low-demand periods also present an opportunity to implement sustainable practices, train staff, and improve infrastructure.

The interviewed experts highlighted diverse perspectives on the impact of seasonality on tourism sustainability, with challenges varying across the private, public, and non-governmental sectors. Private sector respondents stressed the difficulties in maintaining operations during the off-season due to high costs and low demand, while public sector representatives noted infrastructure strain in peak periods. NGOs discussed waste management issues and the need for circular economy solutions, whereas tourism clusters highlighted overcrowding and the lack of reliable data for policy-making.

Chart 7: Main challenges to sustainability of tourism caused by seasonality in the Republic of Moldova



Source: (own elaboration)

Regarding the **current implementation of practices to mitigate unsustainability** and their effectiveness, the general public perception is that resource conservation and waste reduction practices are most important in managing seasonality impact on sustainability in tourism (29.2% of the respondents). However, almost a similar number of people (28.1% of the respondents) consider that resource-saving and waste reduction practices,

organizing restoration or conservation projects during the off-season periods, ethical consumption and supply of food, ethical employment and flexible workforce management, and diversification of offerings with a focus on special-interest tourism are of equal significance. Diversification of offerings is taken out third (13,5% of the responses).

Focus group participants added that well-organized reservation systems help better planning to avoid overcrowding, while in the off-season, a collaboration between regions and creating joint tourist packages can help attract visitors. It was discussed that entrepreneurs must work together to ensure accommodation availability during large events, informing tourists through various sources to improve accessibility. Camping was considered as an effective alternative for accommodation during high-demand periods, offering both eco-friendly and flexible lodging solutions.

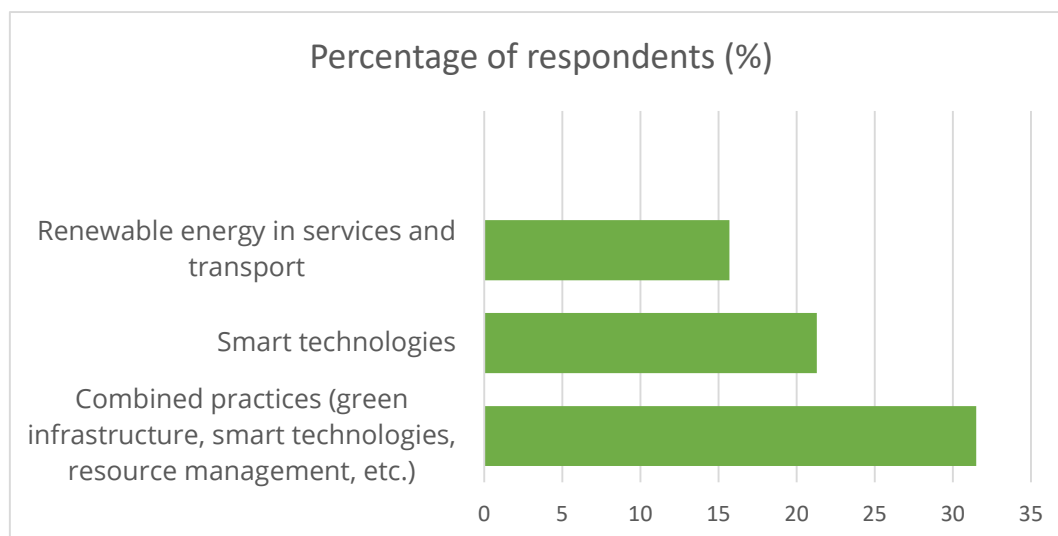
The interviewed experts commented that managing tourism and seasonality requires interventions at a central governmental level (for the public authority representatives). Business agents and NGOs engage in sustainability practices and initiatives to raise the environmental awareness of tourists, but sporadically and without coordination. Public institutions tend to focus on strategic planning and regulation, but without sufficient resources for implementation. NGOs and the private sector demonstrate more active involvement in local and collaborative initiatives, but the lack of a well-defined national framework limits their impact.

The **solutions and innovations** that can best support sustainable tourism in light of seasonality in Moldova refer to the combination of the circular use of resources, eco-friendly (green) infrastructure, pop-up or modular tourism, promoting off-season experiences through virtual tourism and AI, renewable energy-powered tourism services and transportation, smart technologies to manage tourist flows, demand, resource use, and consumption must be utilized together according to the general public opinion (31,5% of the respondents). Further, the smart technologies to manage tourist flows are considered the most efficient (21,3% of the respondents), followed by renewable energy-powered tourism services and transportation (15,7%) and green infrastructure (14,6%).

The discussions in the focus group reconfirmed the need for a solid information infrastructure that is a barrier to the sustainable development of tourism in the Republic of Moldova as the lack of detailed and updated information about destinations, attractions, and activities discourages tourists from exploring lesser-known areas, thus concentrating the tourist flow in certain locations.

The interviewed experts emphasized the importance of the marketing strategies and their adaptation to favour off-season tourism. Thematic events, gastronomic activities, and other ad-hoc special interest events are organized to mitigate seasonality-caused consternations and distribute the developmental effects of tourism in a more balanced way. They mentioned that composting plants, rainwater harvesting, photovoltaic panels, and energy management systems are some of the adopted solutions in business to improve sustainability. Additionally, non-governmental organizations and the private sector emphasize educational initiatives, local community partnerships, and automation systems to reduce resource consumption. However, the widespread adoption of these solutions is hindered by financial barriers, lack of national strategy, underdeveloped infrastructure, and insufficient institutional support.

Chart 8: Solutions to sustainability issues of tourism caused by seasonality in the Republic of Moldova



Source: (own elaboration)

The general perception of the **public policies supporting sustainable tourism** in Moldova is highly positive as the largest share of the survey respondents (30.3%) nominated them as “effective” and 19,1 % even as “Very effective”. Another 27% rate them as neither effective nor ineffective and 22.5% as somewhat effective.

However, the interviewed experts noted that the public sector shows a fragmented approach to policy implementation, with significant differences between local and national levels, stressing the need to improve the legislative framework and quality standards. It was discussed that entrepreneurs in rural areas highlight the difficulties in mobilizing resources and involving local actors. Finally, the experts commented that while there are notable initiatives such as the National Tourism Development Strategy 2020-

2025 and support for tourism SMEs, their implementation is often hampered by limited resources and insufficient monitoring. In addition, differences between local and national capacities and priorities lead to discrepancies in implementation. In the focus group, it was discussed that The lack of a unified vision and a coherent strategy has led to a fragmentation of efforts and inefficient use of resources. Further, it was commented that in Moldova, the approach is still sectoral, with each actor focusing on its own projects. A shift towards an integrated approach is needed, taking into account all aspects of tourism development. The differences with the general public perception may be due to the perception lens as the people are evaluating the general spirit of the documents while the experts are going deep in the implementation.

The discussion of the **future needs and local communities' perspectives** in the focus group focused on juxtaposing development and sustainability. It was mentioned that the influx of visitors, especially in peak seasons, raises challenges such as the need for improved waste collection, environmental maintenance, and sustainable water management. A key issue was the inadequate wastewater treatment in many expanding guesthouses, leading to environmental degradation. To ensure long-term sustainability, local authorities must balance economic benefits with infrastructure improvements and environmental protection measures. Further, it was commented that compared to other countries, the Republic of Moldova invests less in promoting sustainable tourism and obtaining international certifications. It is necessary to prioritize investments in tourism without prioritizing certain investments in an area or a tourist destination, and including having much greater financial support to develop this sustainable approach.

Several experts mentioned the need to educate tourists and local communities on resource-saving and waste reduction. Financial support is considered essential to support the implementation of green technologies and the diversification of the tourism offer given the financial difficulties encountered by economic operators and the importance of strategic planning to pay back investments in infrastructure and technologies. Other experts emphasized that before addressing sustainability, it is necessary to develop tourism to a level where its economic impact is significant, pointing out that tourism development is insufficient in some regions, making it difficult to prioritize environmental protection.

The main findings about the evaluation of the effects of seasonality on the sustainability of tourism in the Republic of Moldova, performed in the INTERSMARTS project are summarized in Table 3 below:

Table 3: Seasonality's Impact on Tourism Sustainability in the Republic of Moldova

Dimension	Impact
Challenges	<ul style="list-style-type: none"> • The biggest one is the combined impact of high resource consumption, overcrowding, environmental degradation, and infrastructure strain • Peak seasons put pressure on resources and generate waste, while off-seasons create financial difficulties, though they also offer opportunities for sustainability initiatives, staff training, and infrastructure improvements. • The clashing perspectives of private sector struggles with off-season viability' and the public sector infrastructure strain, could be reconciled with circular economy solutions. • Lack of reliable data, for policy-making to support sustainable tourism
Current state and practices	<ul style="list-style-type: none"> • The general public views resource conservation and waste reduction as the most important practices for managing seasonality in tourism sustainability, followed closely by a combination of restoration projects, ethical employment, and diversification of offerings. • Well-organized reservation systems can prevent overcrowding and suggested regional collaboration and joint tourist packages to attract visitors during the off-season. • Camping was highlighted as a flexible and eco-friendly accommodation solution during peak seasons, helping to address capacity shortages during large events • While public authorities focus on strategic planning, they lack resources for implementation, and sustainability efforts from businesses and NGOs remain uncoordinated due to the absence of a national framework
Adopted Solutions and Innovations	<ul style="list-style-type: none"> • The most effective solutions for sustainable tourism in Moldova include circular resource use, green infrastructure, modular tourism, virtual tourism, AI, renewable energy-powered services, and smart technologies, with the latter being considered the most efficient • The lack of a solid information infrastructure, which limits tourist exploration and concentrates visitor flows in specific areas. • Strong marketing strategies are needed to promote off-season tourism and suggested thematic events, gastronomic experiences, and special-interest activities to balance tourism development. • Lack of financial support hinders the adoption of technological solutions
Effectiveness of policies and regulations	<ul style="list-style-type: none"> • Public perception of policies supporting sustainable tourism in Moldova is generally positive. • Experts, however, noted a fragmented approach to policy implementation, with significant differences between local and national levels and challenges in mobilizing resources, particularly in rural areas. • While initiatives like the National Tourism Development Strategy 2020-2025 exist, experts highlighted that limited resources, insufficient monitoring, and lack of coordination hinder effective implementation
Local communities' perspective and future needs	<ul style="list-style-type: none"> • Need for the local authorities to balance economic benefits with sustainability. • Moldova invests less in promoting sustainable tourism compared to other countries and greater financial support is needed for sustainable

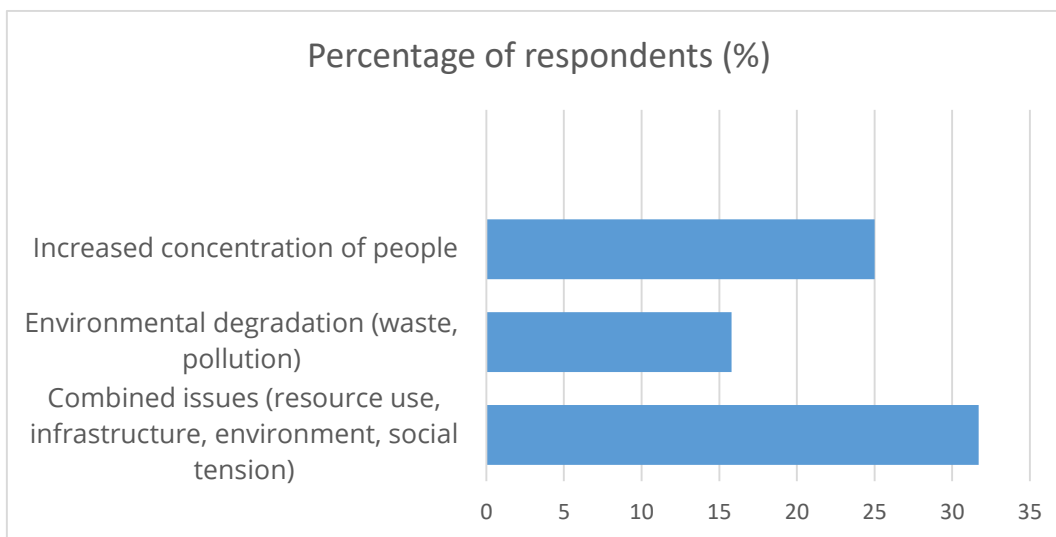
Dimension	Impact
	tourism development, along with strategic planning and broader investment across destinations. <ul style="list-style-type: none"> Financial difficulties faced by operators and the need for targeted financial support for green technologies and tourism diversification

Source: (own elaboration)

Republic of Türkiye

The general public perceives that the most significant **challenge** to the sustainability of the tourism sector is the joint impact of increased resource consumption (water, energy, food), overcrowding leading to social tensions, environmental degradation (including waste generation and pollution), and the strain on infrastructure, along with its inefficient use (31,7% of the responses). Aside from this, the most problematic issues that are singled out are the increased concentration of people (25.0%), degradation of the natural and man-made environment (15,8 %) and the increased resource consumption (15,0 % of the responses).

Chart 9: Main challenges to sustainability of tourism caused by seasonality in the Istanbul Area of Türkiye



Source: (own elaboration)

The focus group participants discussed that climate change disrupts ecosystems, leading to species extinction or displacement, and affects the sustainability of natural resources, making their future accessibility challenging. Rising temperatures, irregular rainfall, drought, and soil erosion reduce agricultural productivity and disrupt the water cycle, impacting the distribution and quantity of water resources. Ocean acidification and rising

water temperatures threaten marine ecosystems, particularly coral reefs and fish populations, endangering the sustainability of marine-derived food and resources. The tourism sector faces significant challenges from climate change and environmental sustainability as the peak and off-peak seasons change. Excessive use of environmental resources and tourism's contributions to climate change necessitate new strategies and increased stakeholder collaboration. Environmental challenges from climate change impact tourism through direct environmental factors and the industry's adaptation to these changes. In that some particular problems were taken out such as:

- Extreme weather events (such as droughts and floods) and changing city weather conditions due to climate change negatively impact tourism by influencing travellers' decisions and disrupting vacation plans
- Biodiversity and ecosystem changes diminish the appeal of the destinations.
- Climate change complicates efficient water and energy use in tourism, harming resource sustainability and negatively impacting living conditions for both locals and tourists through issues like extreme heat and water scarcity.

The interviewed experts commented that Istanbul's geographical and climatic diversity presents environmental challenges, including air and marine pollution, irregular rainfall, and biodiversity threats, exacerbated by seasonal tourism. Concentrated summer tourism strains natural resources, increasing carbon emissions, waste, and water consumption, impacting dam levels and infrastructure. Heat islands and sudden weather changes further raise energy demand. To promote sustainability, measures like water recycling, energy efficiency in tourism facilities, revised billing policies, expanded 24/7 public transport, and green certification programs for hotels are recommended to balance resource use and environmental conservation.

Considering the **effectiveness of the current practices and measures to mitigate seasonality's effect** on sustainability, the general public perceives that resource-saving and waste reduction practices, organizing restoration or conservation projects during the off-season periods, ethical consumption and supply of food, ethical employment and flexible workforce management, and diversification of offerings with a focus on special-interest tourism are equally important to manage the impact of seasonality on the sustainability of tourism and services (23,0% of the responses). However, in the set of practices all are evaluated almost equally effective to deal with seasonality challenges with resource saving and waste reduction (20,1%), taking a little priority, followed by ethical consumption (16,5 %).

The focus group participants commented that the rise in tourism from spring to summer in Istanbul strains energy, infrastructure, and natural resources, making sustainability measures like green hotels, eco-friendly transport, and waste management crucial. Many

hotels have adopted resource-efficient practices, aligning with national and local policies. Addressing seasonality challenges requires long-term planning, stronger stakeholder collaboration, and a balanced tourism approach. The public sector's regulatory role, the private sector's innovation, and civil society's awareness are key to sustainable tourism. A comprehensive, coordinated strategy is essential to protect resources, distribute tourism more evenly, and mitigate seasonal impacts.

The interviewed experts commented that environmentally friendly practices such as waste management, the preservation of green spaces, and the reduction of carbon footprints in transportation are in place. Additionally, alternative types of tourism are being encouraged to attract tourists during off-peak seasons. However, promotional activities and better management of regional diversity are necessary. Although seasonal fluctuations in tourist numbers are less pronounced in Istanbul compared to other cities in Türkiye, themes should be created in areas beyond cultural and religious tourism, such as gastronomy, health, congress, yacht, cruise, sports, and art tourism, to achieve a more balanced distribution.

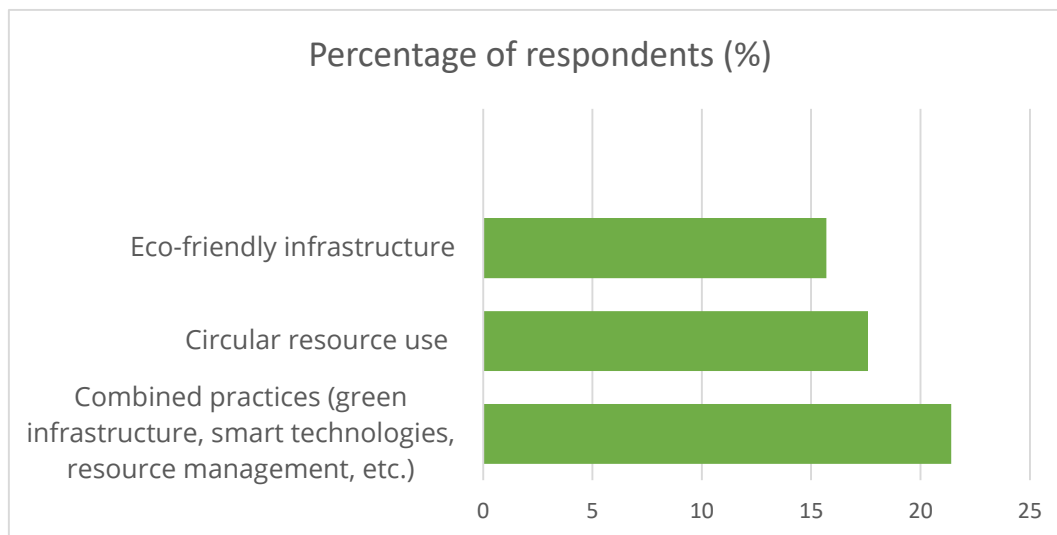
In this context, various activities are being carried out by local governments, municipalities, and public institutions. For example, during the summer season, when tourism is at its peak, efforts are being made to map heat islands and create shaded areas, and work is underway on the Green City Action Plan. Additionally, efforts are being made to achieve water and energy savings in hotels and public institutions.

The general public opinion about the **solutions and innovations** that can best support sustainable tourism in light of seasonality in the Black-Sea related areas of Türkiye does not consider only one option as particularly effective. The combination of the circular use of resources, eco-friendly (green) infrastructure, pop-up or modular tourism, promoting off-season experiences through virtual tourism and AI, renewable energy-powered tourism services and transportation, smart technologies to manage tourist flows, demand, resource use, and consumption must be utilized together according to the survey results (21,4% of the responses). Circular use of resources (17,6%) and eco-friendly infrastructure (17,0%) and smart technologies (14,5%) alone are also considered as efficient solutions.

The focus group participants discussed that promoting digital technology for efficient resource use, establishing eco-friendly certification programs, and conducting educational campaigns are crucial strategies to enhance sustainable tourism and encourage environmentally friendly behaviours among visitors.

The interviewed experts emphasized that to address sustainability challenges from seasonal tourism, various institutions in Istanbul are implementing organizational and managerial strategies. The Istanbul Metropolitan Municipality's Climate Change Action Plan focuses on reducing greenhouse gas emissions, increasing energy efficiency, and promoting renewable energy. Seasonal tourism peaks strain transportation, prompting expansions in the railroad network, adjusted service schedules, bicycle lanes, and electric vehicle use. Infrastructure in tourist-dense areas, especially the historic peninsula, is being improved through traffic regulations and pedestrianization. Additionally, energy-efficient architecture, green building certifications, shaded areas, and climate-conscious landscaping help mitigate climate change effects and promote sustainable urban living. It was commented that many tourism establishments use solutions such as energy management systems, smart lighting and climate control systems, waste management, and green certification programs that contribute to the more efficient use of resources such as energy, water, and materials; however, their efforts need to be integrated and multiplied. In addition, local governments and public institutions are designing various policies and measures to ensure resource diversity and efficiency while striving to establish sectoral standards. In this context, various certification initiatives are being implemented, particularly for tourism facilities.

Chart 10: Solutions to sustainability issues of tourism caused by seasonality in the Istanbul Area of Türkiye



Source: (own elaboration)

The general perception of the **public policies supporting sustainable tourism** in Türkiye is that they are somewhat ineffective (41,3% of the responses) or neutral to efficiency (20,0%). However, the number of those who find these policies ineffective is quite large – 27,5% of the responses, which indicates a room for improvement.

The experts suggested revising regulatory mechanisms to encourage more tourism enterprises to obtain sustainability certifications and expanding incentive policies to a wider range of businesses. With rising electricity consumption during peak summer tourism, effective energy use and resource management are crucial. To support this, a building-citizen guide is being developed to promote solar power adoption, alongside measures to expand residential rooftop solar systems and implement green transformation incentives.

Regarding the **future needs and local communities' perspectives** the focus group commented that despite positive trends in stakeholder measures, a more integrated approach is necessary to ensure sustainable tourism, emphasizing policy strengthening, local participation, and technological advancements. Effective sustainability requires stronger coordination among governments, local administrations, the tourism sector, and environmental organizations, alongside continuous monitoring and comprehensive data collection to address climate change impacts. Stakeholders emphasize the need for widespread implementation of measures to prevent overconsumption and environmental pollution, advocating for standards to facilitate green certification. They suggest increasing smart city applications in water and energy management, promoting diverse tourism activities year-round, and encouraging other tourism types beyond religious and cultural tourism to balance seasonal tourism. This approach aims to achieve long-term sustainability by reducing mass tourism's negative impacts, leveraging technology for efficient resource management (such as IoT sensors and data analytics), and promoting environmentally friendly practices in the tourism industry.

The interviewed sector professionals suggest expanding measures to prevent overconsumption and environmental pollution, emphasizing the need for standards to facilitate green certification. They advocate for increasing smart city applications in water and energy management, promoting year-round local tourism activities, and encouraging diverse tourism types in Istanbul to mitigate the negative effects of mass tourism. Conducting social impact analyses in high-density tourism areas is also recommended to develop policies that balance conservation and utilization. To achieve a balance in tourism, eco-friendly incentives, off-season promotions, support for alternative tourism types, and a holistic approach to environmental sustainability are essential.

The main findings about the evaluation of the effects of seasonality on the sustainability of tourism in Türkiye, performed in the INTERSMARTS project are summarized in Table 4 below:

Table 4: Seasonality's Impact on Tourism Sustainability in the Istanbul Area of Türkiye

Dimension	Impact
Challenges	<ul style="list-style-type: none"> • Combined impact of resource overuse, overcrowding, environmental damage, and infrastructure strain, with increased concentration of people highlighted as key concerns • Climate change impacts ecosystems, reducing agricultural productivity and marine resource sustainability, posing significant challenges for the tourism sector • Extreme weather events and biodiversity changes diminish tourist appeal, complicate efficient resource use, and harm living conditions for both locals and tourists • Istanbul's environmental challenges due to climate diversity and seasonal tourism strain natural resources, necessitating sustainability measures such as water recycling, energy efficiency, and green certification for hotels
Current state and practices	<ul style="list-style-type: none"> • The public views resource-saving, waste reduction, off-season conservation projects, ethical consumption and employment, and tourism diversification as equally important for managing seasonality's impact on sustainability, with resource-saving, waste reduction and ethical consumption slightly prioritized. • Pressure on energy, infrastructure, and natural resources, requires more green hotels, eco-friendly transport, waste management, long-term planning and stakeholder collaboration. • Eco-friendly practices like waste management, green spaces, and low-carbon transport are in place, with efforts to promote alternative tourism (e.g., gastronomy, health, and cruise tourism) for a balanced visitor distribution. • Local authorities are implementing the Green City Action Plan, mapping heat islands, creating shaded areas, and promoting water and energy conservation in hotels and public institutions
Adopted Solutions and Innovations	<ul style="list-style-type: none"> • All solutions about circular resource use, green infrastructure, modular tourism, renewable energy-powered services, and smart technologies, are equally effective to deal with seasonality issues as to the general public • The Istanbul Metropolitan Municipality's Climate Change Action Plan promotes emissions reduction, energy efficiency, and renewable energy, while local governments develop policies for resource efficiency and sectoral standards. • Expanding the railroad network, bicycle lanes, electric vehicle use, and pedestrianization efforts help manage tourism peaks, particularly in high-density areas like the historic peninsula • Energy-efficient architecture, smart energy systems, waste management, green certifications, and climate-conscious landscaping enhance sustainability, but efforts need broader integration and scaling

Dimension	Impact
Effectiveness of policies and regulations	<ul style="list-style-type: none"> Public perception of policies supporting sustainable tourism in Türkiye is mixed and generally considered as somewhat effective with a large share of negative evaluation Experts recommend revising regulations to boost sustainability certifications in tourism and expanding incentives to a broader range of businesses, emphasizing efficient energy use and resource management during peak tourism seasons. Need to develop a building-citizen guide to promote solar power adoption and expanding residential rooftop solar systems alongside green transformation incentives
Local communities' perspective and future needs	<ul style="list-style-type: none"> Need for an integrated approach, focusing on policy strengthening, local participation, technological advancements, and coordination among governments, local administrations, the tourism sector, and environmental organizations. Widespread implementation of measures to prevent overconsumption and environmental pollution, along with standards for green certification Promotion of smart city applications in water and energy management, year-round diverse tourism activities, and tourism types beyond religious and cultural tourism to balance seasonal tourism is essential. Eco-friendly incentives, off-season promotions, support for alternative tourism types, and a holistic approach to environmental sustainability are necessary to mitigate the negative impacts of mass tourism

Source: (own elaboration)

Cross-country Comparison

Juxtaposing the results derived from the field survey on the effects of seasonality has revealed a broad spectrum of both shared characteristics and notable divergences among the countries and regions under examination. While many commonalities were identified—such as recurring challenges, policy gaps, and adaptive practices—several region-specific differences also emerged, reflecting local environmental, socio-economic, and institutional contexts. These variances not only highlight the complexity of seasonality's impact but also present valuable opportunities for cross-regional learning and the transfer of best practices.

To facilitate a comprehensive understanding of these patterns, Table 5 offers a comparative summary of the survey findings. This table organizes the data by delineating key shared issues while simultaneously emphasizing the primary differences that distinguish one region or country from another. These differences serve as critical entry points for mutual learning, enabling stakeholders to identify areas where knowledge exchange and collaborative policy development can drive improvement beyond national borders.

Table 5: Comparative Grid Analysis of Seasonality's Impact on Tourism Sustainability

Dimension	Bulgaria	Greece	Republic of Moldova	Republic of Türkiye
Challenges	<ul style="list-style-type: none"> • Combined effect of increased resource consumption, social tensions, environmental degradation, and infrastructure • Insufficient communication and coordination • Overbuilding, exceeding infrastructure capacity, but low occupation. • Need for better regulation and infrastructure improvements. • Labour shortages 	<ul style="list-style-type: none"> • Combined effect of increased resource consumption, social tensions, environmental degradation, and infrastructure • Pollution due to increased traffic, overbuilding and water shortages, lack of waste management plans • Short-term vision of business due to financial misbalances • Workforce instability hinders sustainability efforts (training starts from zero each season) 	<ul style="list-style-type: none"> • Combined effect of increased resource consumption, social tensions, environmental degradation, and infrastructure • Peak season strain on resources and off-season financial difficulties • Clashing perspectives of private and public interests • Lack of reliable data for policy-making. 	<ul style="list-style-type: none"> • Combined effect of increased resource consumption, social tensions, environmental degradation, and infrastructure • Concentration of people • Ecosystem deterioration affecting human activities • Extremities in weather decrease tourism appeal • Strain on resources.
Current state and practices	<ul style="list-style-type: none"> • Resource-saving, waste reduction practices, off-season conservation projects, ethical consumption, and workforce management together are key to managing seasonality's impact on sustainability 	<ul style="list-style-type: none"> • Resource-saving and waste reduction practices are crucial, ethical consumption and rehabilitation are equally important • Investment in outdated infrastructure and water-saving technologies is needed 	<ul style="list-style-type: none"> • Resource conservation and waste reduction are the most important practices for managing seasonality in tourism sustainability. • Need for well-organized reservation systems 	<ul style="list-style-type: none"> • Resource-saving, waste reduction practices, off-season conservation projects, ethical consumption, and workforce management are equally important to managing seasonality's

Dimension	Bulgaria	Greece	Republic of Moldova	Republic of Türkiye
	<ul style="list-style-type: none"> Marketing to diversify tourism offerings but fragmented information and coordination Need to improve infrastructure and construction control Sustainability at micro and community levels 	<ul style="list-style-type: none"> Limited marketing reduces the impact of off-season tourism. Year-round employment and better activity promotion are a must Improved infrastructure, promotion, and planning to enhance tourism distribution 	<ul style="list-style-type: none"> Ad hoc accommodation solutions to manage peaks (shared, camping, etc.) Need for resources for policy implementation and coordination 	<p>impact on sustainability</p> <ul style="list-style-type: none"> Ethical consumption Pressure on energy, infrastructure, and natural resources, requires more coordination. Eco-friendly practices with efforts to promote alternative tourism Local authorities are planning for sustainability
Adopted Solutions and Innovations	<ul style="list-style-type: none"> Sustainable tourism solutions must integrate circular resource use, eco-friendly infrastructure, modular tourism, off-season experiences through virtual tourism, renewable energy, and smart technologies to manage flows and resource use Priority to smart technologies 	<ul style="list-style-type: none"> Sustainable tourism solutions must integrate circular resource use, eco-friendly infrastructure, modular tourism, off-season experiences through virtual tourism, renewable energy, and smart technologies to manage flows and resource use Priority to smart technologies and circular resource use 	<ul style="list-style-type: none"> The most effective solutions for sustainable tourism include circular resource use, green infrastructure, modular tourism, virtual tourism, AI, renewable energy-powered services, and smart technologies, with the latter being considered the most efficient 	<ul style="list-style-type: none"> Sustainable tourism solutions must integrate circular resource use, eco-friendly infrastructure, modular tourism, off-season experiences through virtual tourism, renewable energy, and smart technologies to manage flows and resource use

Dimension	Bulgaria	Greece	Republic of Moldova	Republic of Türkiye
	<ul style="list-style-type: none"> Both technological and organizational solutions Companies implement sustainable practices, which positively impact both resource use and financial performance. 	<ul style="list-style-type: none"> Smart hotel and AI waste management systems can make the difference Non-tech solutions: staff training, sustainability certifications, and visitor education promote eco-friendly behaviours Partnering with local authorities and businesses improves waste management and sourcing. 	<ul style="list-style-type: none"> The lack of a solid information infrastructure. Strong marketing strategies are needed to promote off-season tourism. Lack of financial support hinders the adoption of technological solutions 	<ul style="list-style-type: none"> Local governments develop policies for resource efficiency and sectoral standards. Sustainable transport solutions and pedestrianization. Energy-efficient design, waste management, and green certifications need broader integration.
Effectiveness of policies and regulations	<ul style="list-style-type: none"> Sustainability strategies and legislation need to be synchronized. Policies can be effective with better coordination 	<ul style="list-style-type: none"> Public perception of policies' effectiveness is slightly positive to neutral Implementation variance Policies focus on peak seasons, lacking year-round sustainability strategies. Need for better enforcement of the regulations Experts recommend more incentives for renewables, staff training, tax incentives. 	<ul style="list-style-type: none"> Public perception of sustainable tourism policies is positive, but the experts find many deficiencies therein. Fragmented implementation and resource mobilization challenges, especially in rural areas. Limited resources, monitoring, and coordination hinder National Tourism Strategy. 	<ul style="list-style-type: none"> Public perception of policies supporting sustainable tourism in Türkiye urges for improvement Need to revise regulations to expand sustainability certifications and incentives. Need to create a guide to promote solar power and green incentives

Dimension	Bulgaria	Greece	Republic of Moldova	Republic of Türkiye
Local communities perspective and future needs	<ul style="list-style-type: none"> Local authorities are responsible for environmental protection and seasonality management Focus on innovative tourism services, eco-friendly settings, and integrated tourism 	<ul style="list-style-type: none"> Over-tourism damages sites, coastal areas, and infrastructure also for the locals Attention on off-season activities and alternative tourism is needed Investments in green technologies, infrastructure upgrades, and local business collaboration can support sustainable tourism. 	<ul style="list-style-type: none"> Local authorities must balance economic benefits with sustainability. Greater financial support is needed for sustainable tourism development, strategic planning and broader investment in destinations. Tourism operators need financial support for green technologies and tourism diversification. 	<ul style="list-style-type: none"> Need for integrated approach with strengthened policies, local participation, and coordination Measures to prevent overconsumption and pollution, with green certification standards. Promote smart city solutions, diverse year-round tourism, and balanced seasonal tourism Eco-friendly incentives, off-season promotions, and alternative tourism to combat mass tourism impacts

Source: (own elaboration)

A comprehensive analysis was conducted across the five interrelated research perspectives, each contributing a critical dimension to the overall understanding of seasonality and its multifaceted impacts, including (i) the specific nature and scope of the challenges posed by seasonality; (ii) the effectiveness and adequacy of existing policies and regulatory frameworks; (iii) the current state and dynamics of approaches adopted in practice; (iv) the range of adaptive strategies and solutions adopted by businesses and local communities; and (v) the perceptions, experiences, and expectations of local populations, particularly in relation to long-term resilience and development.

This multidimensional framework enabled a nuanced examination that goes beyond surface-level comparisons, allowing for a deeper understanding of both structural conditions and context-specific responses. Drawing upon the insights gained from each of these thematic areas, a set of general policy outlines and strategic recommendations has been formulated. These are presented in the final chapter of the report, offering guidance for future policy development and cross-border collaboration.

- **Challenges**

In all four countries, it is considered that the challenges for the sustainability and environmental resilience of tourism caused by seasonality are integrated and should be considered together. The strain on tourism and environmental resources leading to ecosystem deterioration, caused by seasonality is recognised in all countries. In Bulgaria and Greece, the labour shortages and job instability undermine the managerial effort to improve the sustainability of the enterprises. In Greece and Moldova, the prioritisation of short-term profits and financial volatility explains the insufficient sustainability performance of the tourism business. In Greece and Türkiye, the high concentration of people is a particular threat is further associated with increased traffic and pollution during the peak seasons. For Bulgaria and Greece overbuilding and misbalanced use of tourism infrastructures. Bulgaria has a specific problem with discrepancies in regulations and insufficient enforcement, together with Greece. Moldova has a problem with reliable data-generation that hinders effective policy-making towards sustainability.

The possible innovative solutions towards these challenges suggested in the field survey refer to:

- Dynamic pricing for utilities, charging higher rates for excessive consumption during peak seasons to encourage responsible use
- Offering of off-season training programs to keep tourism employees engaged and upskilled in sustainability practice
- Combined or shared employment of staff across different establishments and services (wellness, gastronomy, cultural) to create year-round employment
- Public-private partnerships to improve waste collection efficiency and ensure recycling facilities operate beyond peak months

- Engagement of business and attraction managers in the planning process at municipal level to manage the accessibility in a sustainable way
- Financial support and/or tax breaks for the adoption of resource-saving technologies and environmental certification with associated organization of businesses in tourism facilities
- Citizen control over the overdevelopment in natural and cultural-heritage sites.

The social impacts of seasonality are especially evident in Greece, where unregulated tourism development has altered the cultural identity of certain communities. Local residents have voiced concerns over the decline of traditional neighbourhoods, as the influx of tourists into residential areas often generates a sense of insecurity and disrupts established ways of life. This growing tension highlights the challenges of balancing tourism growth with the preservation of local culture and social cohesion.

- **Effectiveness of the current practices and measures to mitigate seasonality's effect**

In Bulgaria, Moldova and Türkiye resource-saving, waste-reduction practices, off-season conservation projects, ethical consumption, and workforce management are equally important to managing seasonality's impact on sustainability, while in Greece the focus is on resource-saving and waste-reduction practices. In Greece and Türkiye, ethical consumption is particularly important – hence the need to educate tourists as long as service providers. In Bulgaria and Greece, the experts call for better marketing to improve the awareness and attractiveness of the existing off-season and alternative tourism offerings. In Bulgaria, Greece and Türkiye better coordination of planning is requested. In Moldova more resources for better planning are needed.

The possible solution for the improvement of the effectiveness of the current practices refer to:

- Innovative marketing campaigns in the off-season periods
- Public-private partnerships and commitments on behalf of both business and community
- Encouraging businesses to share staff, facilities, and equipment (e.g., hotels partnering with conference centres or cultural institutions) to create year-round employment and reduce costs
- Rotational staffing or skill diversification programs, allowing workers to transition between tourism-related industries, such as food service, retail, or cultural activities, during off-peak months
- Alternative use of tourism facilities during off-season periods – e.g. as temporary co-working spaces

- AI-and big-data driven pricing and tourism prediction of demand patterns and adjust operations, marketing, and staffing accordingly to improve efficiency and sustainability.

For example, in Türkiye attention is placed on the expansion of certification programs that promote energy savings and increase carbon footprint measurements was also emphasized. Training hotel staff on energy-saving practices and providing guests with digital materials encouraging energy conservation have been particularly recommended for both SMEs and large tourism chains. In Bulgaria, Albena Resort Complex set an excellent example for a circular business model by establishing their own food-production farms for in-complex catering, biogas energy systems, electrical mobility within the complex and offer diversification across the seasons combined with staff training, and so on.

- **Adopted Solutions and Innovations**

Businesses in all four countries rely on innovative practices and solutions to mitigate the effects of seasonality. In all countries, sustainable tourism solutions must integrate circular resource use, eco-friendly infrastructure, modular tourism, off-season experiences through virtual tourism, renewable energy, and smart technologies to manage flows and resource use. Aside from this, in Bulgaria, Greece and Moldova smart technologies are considered as the particularly efficient, while in Türkiye, the preference goes to the circular use of resources. In Bulgaria, small tourism companies are more eager to implement innovative solutions and are convinced that these innovation bring them financial benefits. Examples include no-personnel hotels (fully automatized services), smart-hotel franchise where all facilities are controlled via digital applications, vessels and facilities powered by solar batteries, excursions based on e-bikes, recycling of food-waste for energy, co-generation of energy in hotels and restaurant complexes, and other. In Greece, the innovative practices refer to automated monitoring systems to track and optimize energy and water usage during peak months, sensors to adjust conditioning and lighting based on occupancy, reducing unnecessary energy consumption, AI-powered food waste tracking systems in restaurants and hotels help kitchens reduce overproduction and manage surplus food efficiently, promotion of the certification systems such as Green Key and ISO 14001. In Türkiye, attention is focused on sustainable urban planning and transport solutions, the pedestrianization of tourist areas, energy-efficient design of tourism facilities, integrated waste management, and green certification. In Moldova there is an urge for more public financing for the adoption of innovations and targeted marketing, as well more investment on on-line booking systems

In addition to the existing practices, the experts that participated in the field research suggested:

- Smart waste collection bins with sensors can optimize garbage collection schedules and prevent overflowing bins in high-traffic tourist areas

- Interactive digital platforms or in-room QR codes can educate visitors on how their actions impact the environment
- Automated services for cleaning or watering to reduce the concentration of people and reduce low-skilled labour in tourism facilities
- Installation of green roofs and walls (plants-based) to reduce energy consumption
- Water-efficient landscaping and greywater recycling systems for irrigation of tourism facilities.

When joining forces, many public and private sectors can promptly improve the current situation in smooth and efficient ways. For example, the Zero Waste Project implemented in Türkiye marks a significant milestone in waste management. In this context, many hotels, restaurants, and tourism businesses have accelerated their efforts to separate and recycle waste. Smart tourism applications, energy-efficient infrastructure, and digitized visitor management systems can significantly reduce the environmental footprint of the sector. The rapid adoption of these technologies should be encouraged.

In Greece, the Municipality of Thessaloniki has enhanced its waste management system through the installation of underground bins and the acquisition of new waste collection vehicles. The city also boasts a recycling rate of 27%, surpassing the national average of 21%, positioning Thessaloniki as a leader in recycling and resource conservation. Moreover, the integration of green spaces into the urban landscape—such as green roofs and community gardens—supports biodiversity and contributes to improved living conditions for residents. These efforts not only advance environmental sustainability but also foster greater civic engagement in the protection and enhancement of the urban environment.

- **Effectiveness of policies and regulations**

In all countries there is a recognition that improvement and better coordination in the localisation and implementation of the existing policies is needed. A common issue is the lagging behind of public institutions and sector in terms of technological advancement in comparison to the private business sectors – hence the delays in some policy reforms. In Bulgaria, the need for coordination and synchronisations was underlined. In Greece, it was mentioned that policy-making focuses on peak seasons, leaving the year-round sustainability aside. In Bulgaria, Greece and Moldova the fragmented implementation of the policies is taken out as a main issue. In Türkiye, the experts comment on the needs revise regulations to expand sustainability certifications and incentives and to develop guidelines of the enterprise to improve their sustainability performance.

The use of EU cohesion funds (as is the case of Greece) and targeted government donations (as is the case of Türkiye) for investment in energy and resource efficiency combined with higher requirement for green and sustainability certification of tourism entities can lead to visible practical implementation of the overarching policy targets.

- **Local communities' perspective and future needs**

In all four countries the role of local authorities in framing and managing the sustainability performance of the tourism sector is recognised. They are expected to create the conditions for better performance and incentives for greening the sector. There is a marked difference among the perceptions in the three countries that rely on mass tourism in their coastal regions, namely Bulgaria, Greece and Türkiye, and the Republic of Moldova, where tourism is still not a priority sector of the economy. In Bulgaria and Greece, hoteliers stress the need for better management of infrastructure (upgrading water supply, sewerage and public transport networks) and training programmes for staff to adopt more responsible practices. In Bulgaria, business representatives demand more flexible food-origin regimes in public catering that will allow the food supply from small local businesses that would shorten the supply chains and help to reduce the environmental food print of tourism activities, while strengthening local communities. In Bulgaria, composting or disposing of biological waste is regulated without consideration of its impracticality for small dining establishments. Solar energy production is not linked to mechanisms for selling surplus energy, among other issues. In Türkiye the experts suggest smart city applications in water and energy management to be increased to balance seasonal tourism. Moreover, social impact analyses should be conducted in high-density tourism areas to develop policies that ensure a balance between conservation and utilization. In Moldova, several experts emphasized that before addressing sustainability, it is necessary to develop tourism to a level where its economic impact is significant as tourism development is insufficient in some regions, making it difficult to prioritize environmental protection. There have been recommendations for improving the accessibility to tourism attractions and public investments support for sustainability.

IV. Policy and Activity Recommendations

Seasonality in tourism across the Black Sea Basin and particularly in Bulgaria, Greece, Türkiye, and the Republic of Moldova poses persistent challenges to sustainability, including environmental degradation, infrastructure strain, labour shortages, economic volatility, and policy fragmentation. These impacts undermine long-term resilience and threaten the socio-ecological balance of tourism-dependent regions.

The analysis confirms that blue growth is to be integrated tacitly or silently in the future development of Black Sea tourism and should be considered as a priority in the policy-making on local, regional and national level. As the needs assessment report examined the challenges to sustainability and blue growth posed by seasonality from the perspectives of various tourism and service sector stakeholders, the following perspectives for policy reforms can be suggested for the surveyed countries and the Black Sea Basin as a whole:

- **Sustainable Resource Management and Infrastructure Development**, including (i) introducing stricter regulations on resource consumption, including water and energy efficiency requirements for businesses, (ii) public investment in smart infrastructure projects that balance tourism growth with environmental sustainability, (iii) developing public-private partnerships to upgrade wastewater treatment, waste management, and renewable energy adoption.
- **Strengthening Governance and Coordination**, including (i) effective communication among stakeholders, including government, businesses, and local communities, and (ii) activating tourism councils to align local strategies with national policies and improve collaboration. Improving vertical and horizontal coordination among national, regional, and municipal authorities, particularly in Bulgaria and Moldova, and revising policies to include off-season and low-density tourism in national strategies, as highlighted in Greece and Türkiye.
- **Controlling** overdevelopment and optimizing Infrastructure Use, including (i) implementing stricter zoning and land-use regulations to prevent overbuilding in sensitive areas, (ii) introduce dynamic capacity planning to match infrastructure with actual tourism demand and avoid underutilization and (iii) repurposing of underutilized buildings for off-season or alternative tourism uses. Developing local sustainability action plans tailored to the specific carrying capacities and socio-economic conditions of tourism destinations and establishing **public-private coordination bodies** to manage local infrastructure planning, monitor policy impact, and guide sustainable tourism development.
- **Addressing Labour Shortages and Workforce Management**, including (i) vocational training programs tailored to the tourism and hospitality sector. (ii) incentives for seasonal workers, such as tax breaks, housing support, and year-round employment and (iii) promoting fair wages and working conditions to attract and retain skilled workers.
- **Promoting Resource Efficiency and Sustainable Practices**, including (i) supporting businesses in adopting circular economy principles, including waste reduction and ethical consumption, (ii) fund off-season conservation projects that involve local communities in maintaining and restoring natural and cultural heritage sites. And (iii) encourage businesses to implement sustainability certification programs.
- **Diversifying Tourism Offerings and Improving Marketing Coordination**, including (i) developing and promote alternative tourism products, such as ecotourism, wellness tourism, and cultural tourism, to reduce seasonal dependence., (ii) creating centralized digital platforms for tourism information to improve coordination and visibility, and (iii)

supporting local businesses in adopting data-driven marketing strategies for targeted outreach.

- **Enhancing Construction Control and Infrastructure Oversight**, including (i) strengthen monitoring of infrastructure projects to ensure sustainability and resilience, (ii) encouraging green building practices through incentives and certification programs and (iii) promoting pedestrianisation and zero-emission mobility such as cycling.
- **Supporting Sustainability at Local and Community Levels**, including (i) introducing community-led tourism initiatives that distribute economic benefits more equitably, (ii) financial support for small businesses and cooperatives focused on sustainable tourism., (iii) foster community engagement in decision-making processes to ensure that tourism development aligns with local needs and values.

Within the current practice in the tourism business and destination communities following the discussions in the focus groups and expert insights within the INTERSMARST project sets of feasible, interdisciplinary, and smart directions can be outlined to support sustainability-oriented transformations were outlined. These sets have been thematically organised as follows based on their intended impacts as:

Mitigating peak-season environmental strain and improving efficiency year-round

- Dynamic pricing for utilities during high-demand periods to encourage responsible consumption (energy, water);
- AI-driven monitoring and forecasting tools for tourist flows, utility usage, and waste management, allowing real-time adjustments and predictive planning;
- Developing modular infrastructural elements in tourism buildings such as co-working spaces in off-seasons, multi-functional public spaces) for optimal facility use across seasons;
- Incentivize green infrastructure, such as green roofs, energy-efficient building design, and greywater recycling systems;
- Implementation of smart city technologies, particularly in Türkiye and Bulgaria, for managing water, energy, traffic, and waste during peak periods.

Fostering circularity and eco-innovation in business

- Wider use of circular resource practices such as food waste composting, reuse of greywater, on-site renewable energy systems, short-supply chains and resource to local produce in catering;

- Introducing green certification programs such as ISO 14001, Green Key and others through subsidies and recognition schemes, especially in underperforming regions like Moldova;
- Automation and digitization of tourism services to reduce labour strain and improve energy efficiency - e.g. via automated cleaning, smart lighting, food waste measuring;
- Shared facilities and workforce arrangements among businesses to maintain employment year-round and lower operational costs.

Promoting behavioural change and foster demand for sustainable tourism options

- Launching interactive digital tools (e.g., QR codes, mobile apps) in hotels and attractions to raise visitor awareness of sustainability impacts;
- Promoting ethical and responsible tourism education for both providers and consumers, particularly in Greece and Türkiye;
- Seasonally targeted marketing campaigns that showcase alternative, off-season experiences and low-impact travel options;
- Investing in data-driven tourism intelligence systems to support evidence-based decision-making, especially in data-deficient areas like Moldova.

Providing for local community benefits

- Facilitating community participation in tourism planning, especially in overdeveloped or culturally sensitive areas;
- Supporting flexible procurement policies that enable tourism businesses to source food and services from small local producers;
- Training and reskilling programs for tourism workers during the off-season, focused on green practices, customer experience, and digital skills;
- Introduce impact assessments to ensure a fair balance between conservation and tourism, especially in densely visited areas (e.g., Türkiye's coastal zones);
- Support for regional platforms for the exchange of best practices, tools, and technologies in managing seasonality and sustainability across borders targeting common Black Sea Basin challenges.

These recommendations are based on collective knowledge sharing and aim to move beyond fragmented, reactive policies toward a cohesive, smart, and adaptive tourism model. Emphasizing inclusivity, data-informed governance, and interdisciplinary solutions will be essential to tackle seasonality sustainably and to ensure resilience across the Black Sea Basin.

Annex 1: Survey Questions

QUESTIONS FOR THE FOCUS GROUP

Section "Seasonality"

1. Effectiveness of Seasonality-Mitigating Practices:

What measures do different stakeholders in tourism take to control the sustainability challenges (e.g. environmental, economic and social) during peak and off-peak seasons? Can you comment on the efficiency of these measures?

2. Challenges in Combating the Negative Effects of Seasonality:

What are the key challenges in managing the negative effects of seasonality in tourism, particularly concerning resource efficiency and minimizing environmental impact? How do these seasonal fluctuations affect your ability to implement sustainable practices year-round?

3. Adopting Smart Technologies and Innovation in to Mitigate the Negative Effect of Seasonality:

Which technological and/or non-technological (organizational) solutions that can help with improving the sustainability performance of tourist enterprises during peak seasons?

Extra questions

4. Future Needs and Policy Development:

How effective are the current policies in promoting sustainable tourism and blue growth, considering the seasonal nature of tourism?

5. Local Communities and Tourists

In what ways does seasonality affect or benefit local infrastructure and resources? How does the influx of tourist affect the sustainability efforts of local communities?

INTERVIEW QUESTIONS

Section “Seasonality”

1. How do you evaluate the actions taken by different stakeholders in tourism to maintain or improve sustainable use of resources and mitigate negative effects on the environment given the seasonality fluctuations? What aspects need improvement? (Current Practices/State)
2. What are the main environmental challenges and barriers to sustainability posed by seasonality and how they are addressed in your area of operation or in the sector in general? (Challenges)
3. What organisational and managerial strategies are adopted to cope with the sustainability challenges posed by seasonality (environmental, economic, social)? What is the impact of these solutions? (Managerial Solutions)
4. Do you know any technological and/or non-technological (organizational) solutions that can help with sustaining the resource-efficiency of tourism business? What is the impact of these solutions? (Technological Solutions)
5. Do you consider that policies and regulations support sustainable tourism in the Black Sea Basin? What changes would you recommend in this regard? (Policies and Regulations)
6. How can economic growth in tourism and services be balanced with the need for environmental protection and sustainable resource use in a seasonal market? What support is needed about this? (Future needs)

QUESTIONS FOR THE GENERAL SURVEY

Section “Seasonality”

1. What measures are most important to manage the impact of seasonality on the sustainability of tourism and services? (Current Practices/State)
 - a. Resource-saving and waste reduction practices (energy and water)
 - b. Ethical consumption and supply of food
 - c. Ethical employment and flexible workforce management
 - d. Diversification of offerings and focus on special-interest tourism
 - e. Organizing restoration or conservation projects during the off-season periods
 - f. All of the above

2. What is the biggest sustainability challenge due to seasonality in tourism?
(Challenges)
 - a. Increased concentration of people – tourists, employees, local citizens – which may lead to heightened social tensions
 - b. Increased resource consumption – water, energy, food
 - c. Degradation of natural and man-made environment – also via waste generation and pollution
 - d. Strain on infrastructure and inefficient use thereof
 - e. All of the above

3. What innovations can best support sustainable tourism in light of seasonality?
(Solutions)
 - a. Smart technologies to manage tourist flows, demand, resource use and consumption
 - b. Eco-friendly (green) infrastructure
 - c. Circular use of resources
 - d. Renewable energy-powered tourism services and transportation
 - e. Promoting off-season experiences through virtual tourism and AI
 - f. Pop-Up or modular tourism services
 - g. All of the above

4. How effective do you find the current policies in supporting sustainable tourism?
(Policies and Regulations)
 - a. Very effective
 - b. Effective
 - c. Neither effective, nor non-effective
 - d. Somewhat effective
 - e. Not effective

Annex 2: Respondents' Profiles

FOCUS GROUPS

Bulgaria

	<i>Organization /Institution</i>	<i>Position</i>	<i>Sector and target group</i>	<i>Experience (Years)</i>
1	Tour Agent	Manager	Business/SME	>10
2	Tour Agent	Expert	Business/SME	>10
3	Hotel 2*	Expert	Business/SME	>10
4	Restaurant	Manager	Business/SME	>10
5	Hotel and Restaurant Complex	Manager	Business/SME	>10
6	Facility Company	Owner	Business/SME	>10
7	Association	Chair	NGO	>10
8	University	Researcher/educator	HEI and research	>10
9	University	Researcher/educator	HEI and research	>10
10	University	Researcher/educator	HEI and research	>10
11	University	Researcher/educator	HEI and research	>10
12	University	Researcher/educator	HEI and research	>10
13	University	Expert	HEI and research	>5
14	University	Expert	HEI and research	>5
15	University	Expert	HEI and research	>3

Greece

	<i>Organization /Institution</i>	<i>Position</i>	<i>Sector and target group</i>	<i>Experience (Years)</i>
1	Association of Tour Guides	Member	NGO	>10
2	Hotel 3*	Manager	Business/SME	>10
3	Hotel 3*	Manger	Business/SME	>10
4	Hotel 3*	Manager	Business/SME	>10
5	Hotel 4*	Manager	Business/SME	>10
6	Hotel 5*	Manager	Business/SME	>10
7	Travel Agent	Owner	Business/SME	>10
8	Tour Operator	Manager	Business/SME	>10

Republic of Moldova

	<i>Organization /Institution</i>	<i>Position</i>	<i>Sector and target group</i>	<i>Experience (Years)</i>
1	Ministry	Secretary General	National public authority	>10
2	Cluster	Expert	NGO	>10
3	Tourism Complex	Administrator	Business/SME	>10
4	Tourism Complex	Specialist	Business/SME	>10

5	Environmental NGO	President	NGO	>10
6	Local Initiative Group	Director	NGO	>10
7	International NGO	Coordinator	NGO	>10
8	Research Institute	Scientific research coordinator	HEI and research	>10
9	Government Agency	Head of directorates	National public authority	>10
10	Environmental Enterprise	Expert	Business/SME	>10

Türkiye

	<i>Organization /Institution</i>	<i>Position</i>	<i>Sector and target group</i>	<i>Experience (Years)</i>
1	Provincial Directorate of a Ministry	Expert	Regional Public Authority	>10
2	Municipality	Expert	Local Public Authority	>10
	Municipality	Expert	Local Public Authority	>10
3	Hotel Association	Expert	Business Support Organisation	>10
4	Chamber	Expert	Business Support Organisation	>10
5	University	Researcher/Educator	HEI and Research	>10
6	University	Researcher/Educator	HEI and Research	>10
7	University	Researcher/Educator	HEI and Research	>10
8	Development Agency	Expert	Business Support Organisation	>10
9	Development Agency	Expert	Business Support Organisation	>10
10	Development Agency	Expert	Business Support Organisation	>10
11	Development Agency	Expert	Business Support Organisation	>10
12	Development Agency	Expert	Business Support Organisation	>10
13	Development Agency	Expert	Business Support Organisation	>10

IN-DEPTH INTERVIEWS

Bulgaria

	<i>Organization /Institution</i>	<i>Position</i>	<i>Sector and target group</i>	<i>Experience (Years)</i>
1	ApartHotel	Manager	Business/SME	>10

2	Tourist Attraction	Manager	Local Authority	Public	>10
3	Eco-complex	Expert	Business/SME		6-10
4	Eco-park	Manager	Business/SME		3-5
5	Tour Agent	Manager	Business/SME		>10
6	Hotel***	Manager	Business/SME		>10
7	Guest House	Owner	Business/SME		>10
8	University	Researcher/educator	HEI and research		>10
9	Tourist Attraction	Expert	Business/SME		>10
10	Hotel	Manager	Business/SME		>10
11	Restaurant	Manager	Business/SME		6-10
12	Eco and spa resort complex	Manager	Business/SME		>10
13	Eco-village	Manager	Business/SME		>10
14	Glamping Association	Member	Business Support Organisation/NGO		>10
15	Regional Cluster	Board member	Business Support Organisation/NGO		>10
16	Guest House	Administrator	Business/SME		<3
17	Guest House	Administrator	Business/SME		6-10

Greece

	<i>Organization /Institution</i>	<i>Position</i>	<i>Sector and target group</i>		<i>Experience (Years)</i>
1	Ministry	Expert	National authority	public	>10
2	Municipality	Expert	Local Authority	Public	<3
3	Hostel	Expert	Business/SME		>10
4	Association of Tour Guides	Expert	NGO		>10
5	Hotel 3*	Owner	Business/SME		>10
6	Hotel 3*	Expert	Business/SME		>10
7	Hotel 3*	Expert	Business/SME		>10
8	Hotel 3*	Expert	Business/SME		>10
9	Hotel 3*	Expert	Business/SME		>10
10	Hotel 4*	Expert	Business/SME		>10
11	Hotel 4*	Expert	Business/SME		>10
12	Hotel 5*	Expert	Business/SME		>10
13	Hotel 5*	Expert	Business/SME		>10
14	Travel Agent	Expert	Business/SME		>10
15	Travel Agent	Expert	Business/SME		>10
16	Tour Operator	Manager	Business/SME		>10
17	Tour Operator	Manager	Business/SME		>10
18	Airlines	Manager	Business/SME		>10
19	Shipping Company	Manager	Business/SME		<3

Republic of Moldova

	<i>Organization /Institution</i>	<i>Position</i>	<i>Sector and target group</i>	<i>Experience (Years)</i>
1	Guest House	Expert	Business/SME	<3
2	Municipality	Deputy Mayor	Local Public Authority	>10
3	Cluster	Development consultant	Business Support Organisation	<3
4	District Council	Head of Directorate	Regional Public Authority	<3
5	Stakeholder NGO	Director	NGO	>10
6	Training Centre	Director	NGO	>10
7	Cluster	Director	Business Support Organisation	6-10
8	Guest House	Administrator	Business/SME	<3
9	Environmental Protection Inspectorate	Inspector	Regional Public Authority	3-5
10	Guest House	Owner	Business/SME	>10
11	Tour Agent	Expert	Business/SME	>10
12	Guest House	Administrator	Business/SME	3-5
13	Resort Complex	Manager	Business/SME	>10
14	National Association	Consultant	Business Support Organisation	>10
15	Social Initiative Centre	Administrator	NGO	6-10

Türkiye

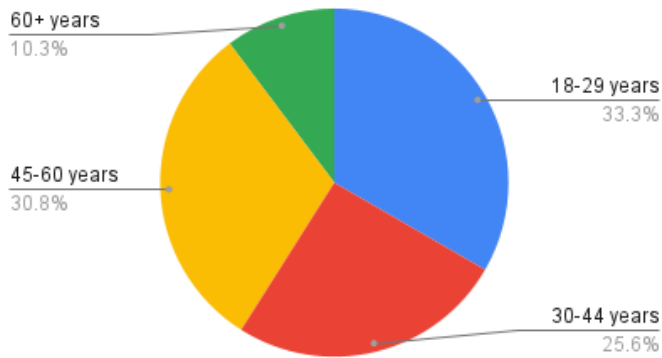
	<i>Organization /Institution</i>	<i>Position</i>	<i>Sector and target group</i>	<i>Experience (Years)</i>
1	Budgeting Authority	Expert	National public authority	> 10
2	Ministry	Expert	National public authority	6-10
3	Tour Operator	General Manager	Business/SME	> 10
4	Tour Operator		Business/SME	
5	International Organization	Project Manager	NGO	> 10
6	Municipal department for waste management	Senior Environmental Engineer	Local Public Authority	3-5
7	Tour guides Chamber	Board Member	NGO	> 10
8	Tour Operator	Expert	Business/SME	< 3

9	Scientific and Technological Council	Researcher	HEI and research	> 10
10	Provincial Directorate	Vice Director	Regional public authority	> 10
11	Municipal Unit	Expert	Local Public Authority	> 10
12	Municipal Unit for Climate change	Regional Planner	Local Public Authority	> 10
13	Association of Travel Agencies	Expert	Business Support Organisation	> 10
14	Development Agency	Expert	Business Support Organisation	> 10
15	University	Researcher/educator	HEI and research	6-10
16	Tech Company	Founder	Business/SME	> 10

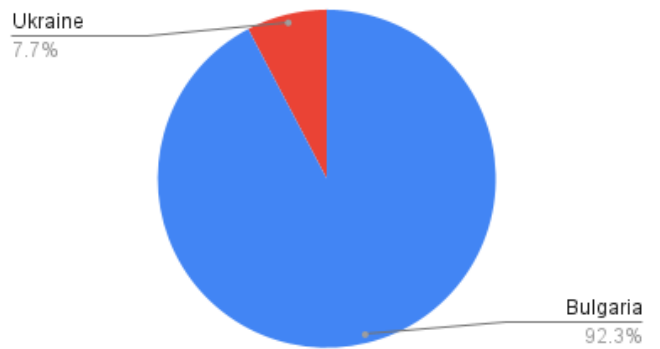
GENERAL SURVEY

Bulgaria

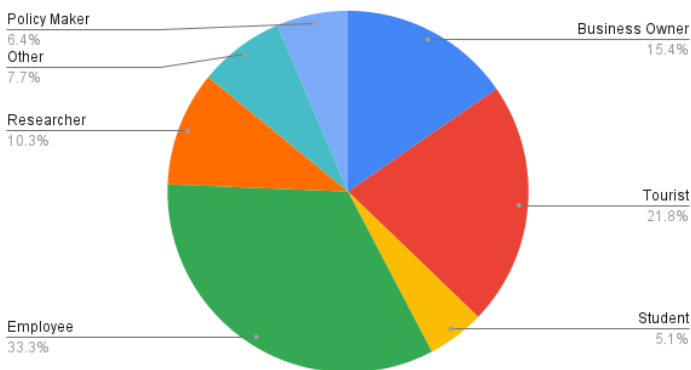
Age of the Respondents



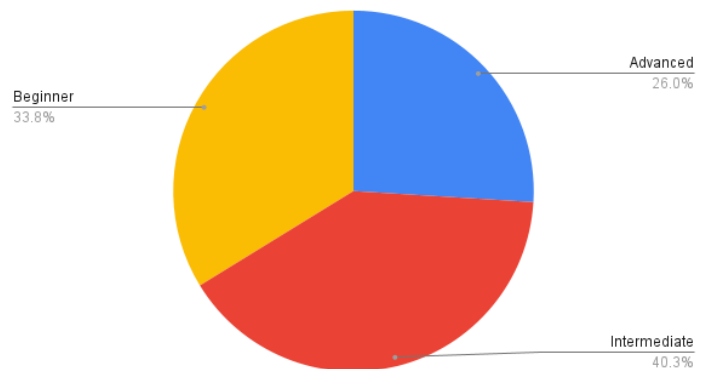
Country of Residence



Role in Tourism Sector

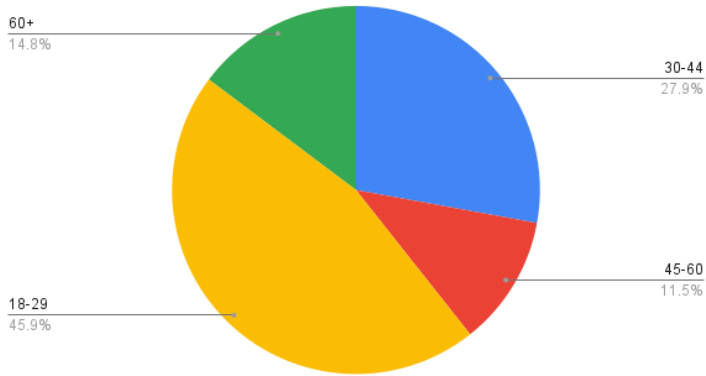


Level of Experience in Tourism/Sustainability

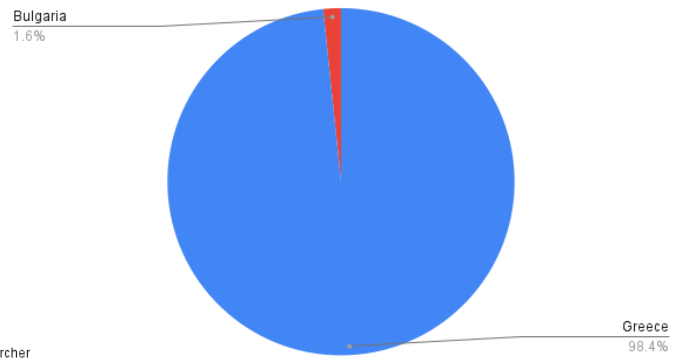


Greece

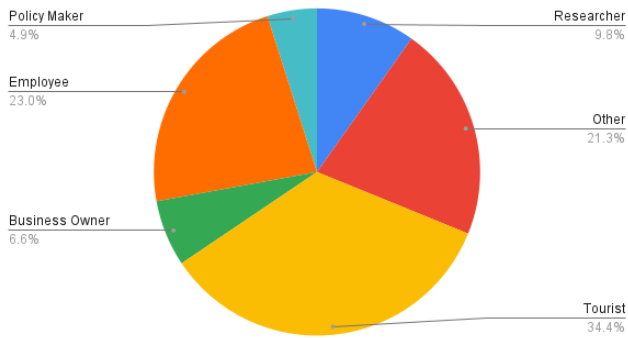
Age of the Respondents



Country of Residence

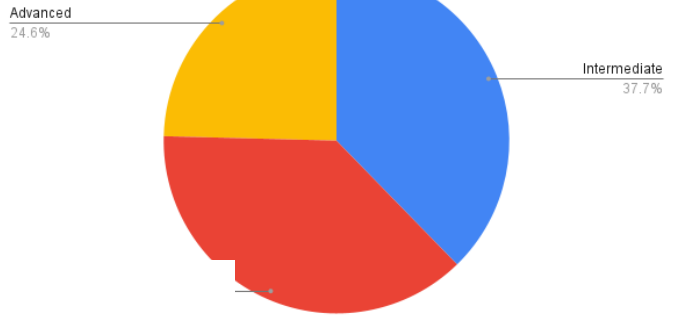


Role in Tourism Sector



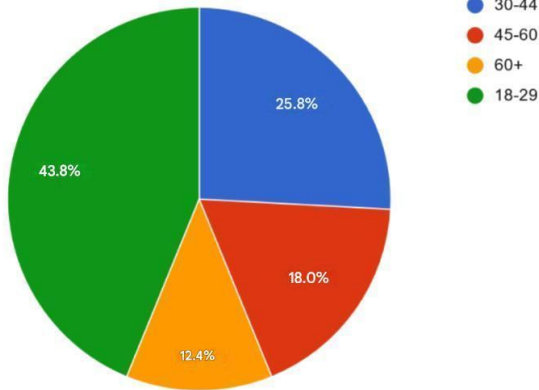
Republic of Moldova

Level of Experience in Tourism/Sustainability



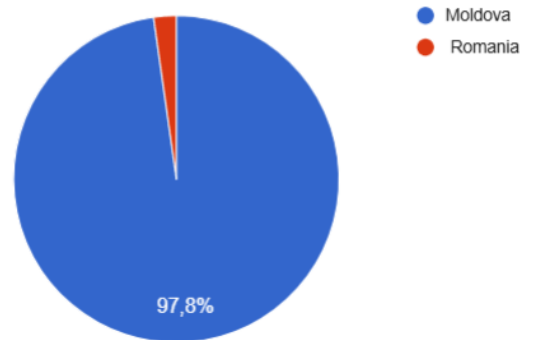
Age group

89 responses



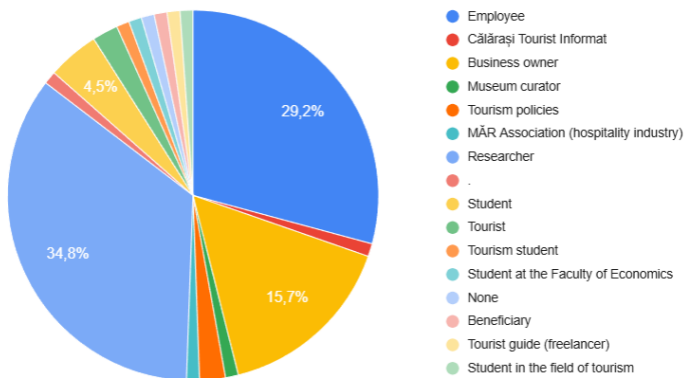
Country of residence

89 responses



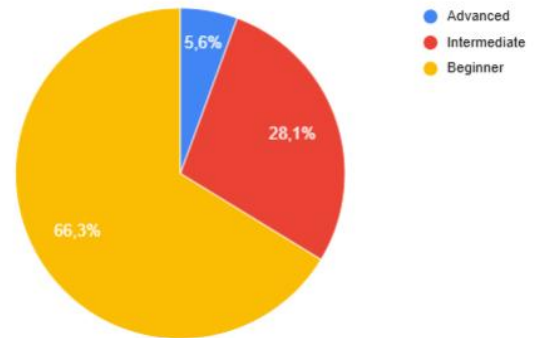
The role in the tourism sector

89 responses



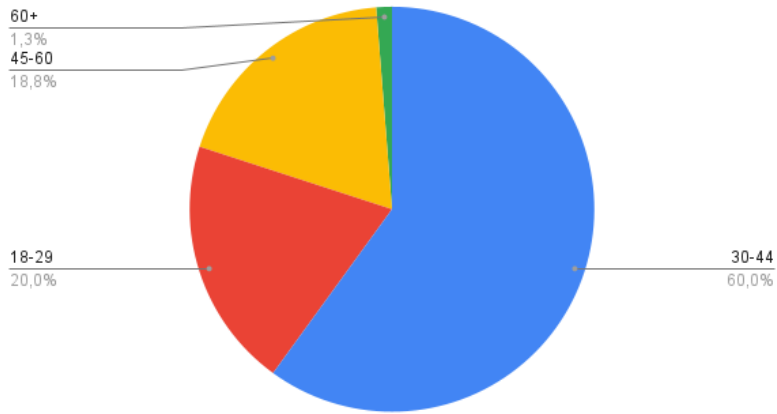
Level of experience in tourism/sustainability

89 responses

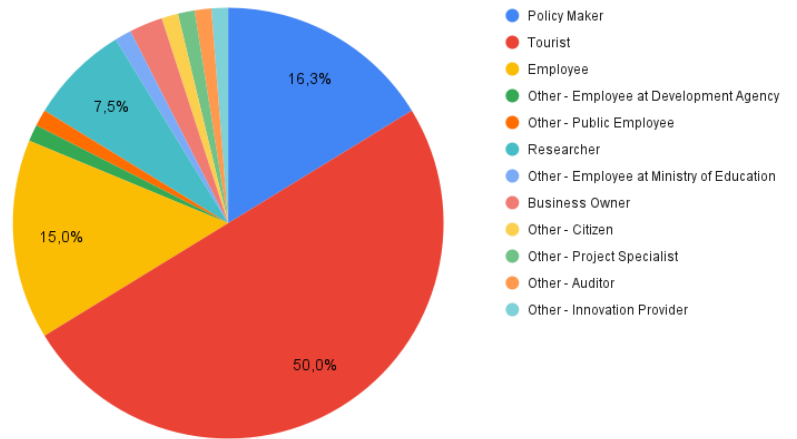


Republic of Türkiye

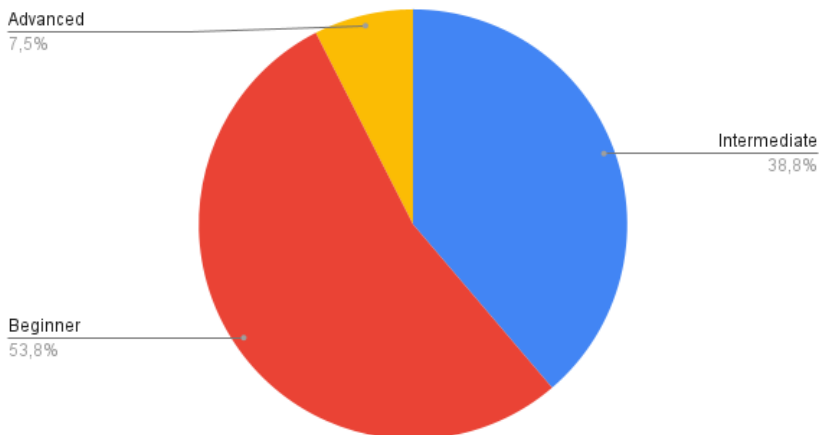
Age Group of the Respondents



Role in Tourism Sector



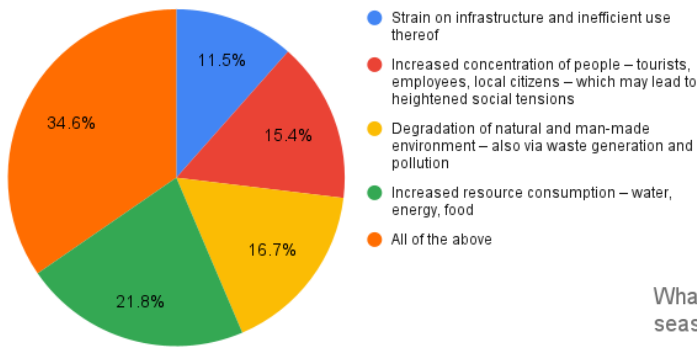
Level of Experience in Tourism/Sustainability



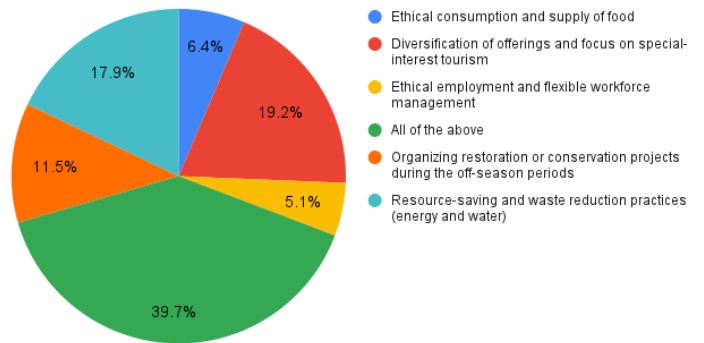
Annex 3: General Survey

Bulgaria

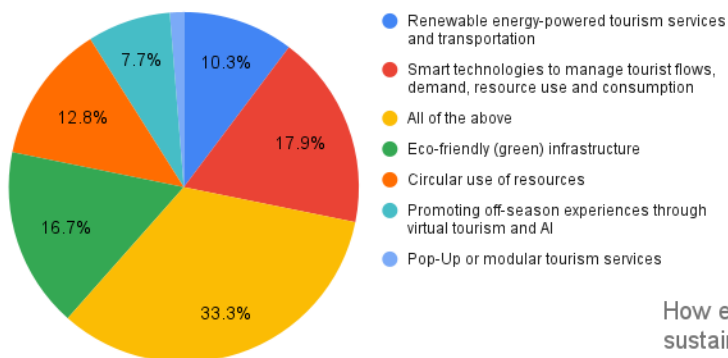
What is the biggest sustainability challenge due to seasonality in tourism?



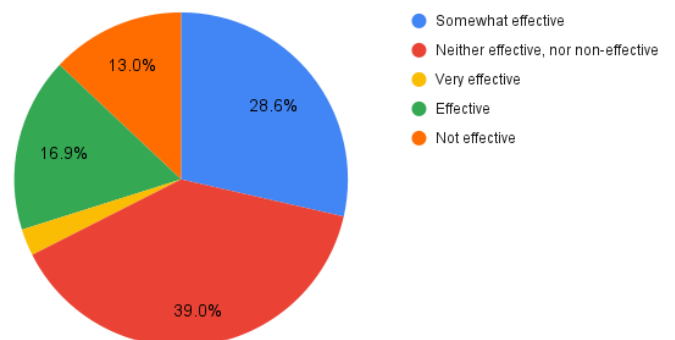
What measures are most important to manage the impact of seasonality on the sustainability of tourism and services?



What innovations can best support sustainable tourism in light of seasonality?

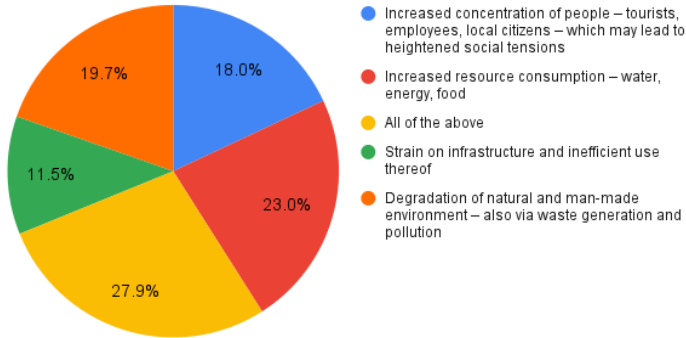


How effective do you find the current policies in supporting sustainable tourism?

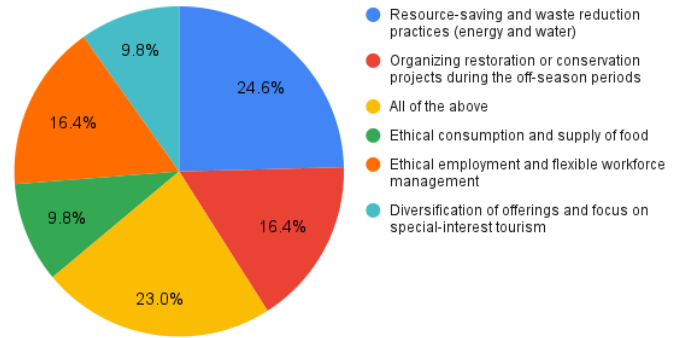


Greece

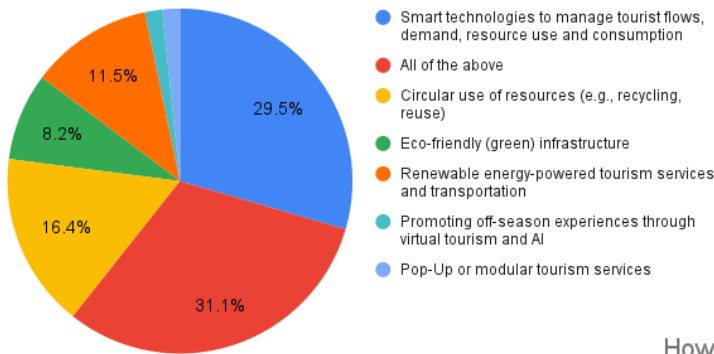
What is the biggest sustainability challenge due to seasonality in tourism?



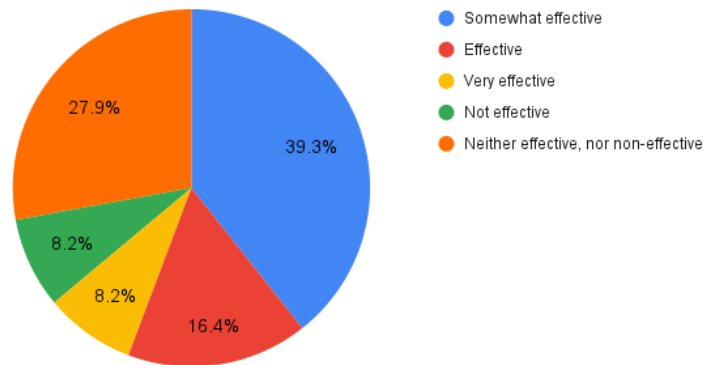
What measures are most important to manage the impact of seasonality on the sustainability of tourism and services?



What innovations can best support sustainable tourism in light of seasonality?



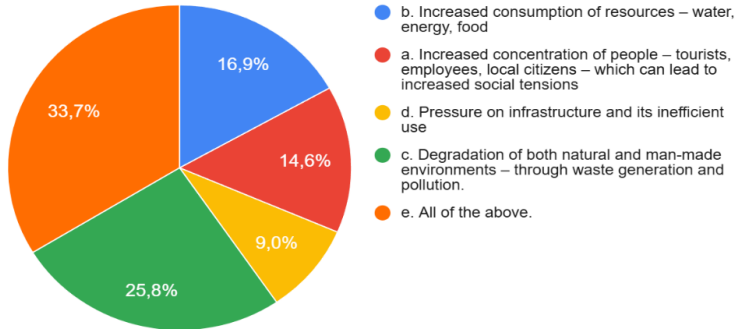
How effective do you find the current policies in supporting sustainable tourism?



Republic of Moldova

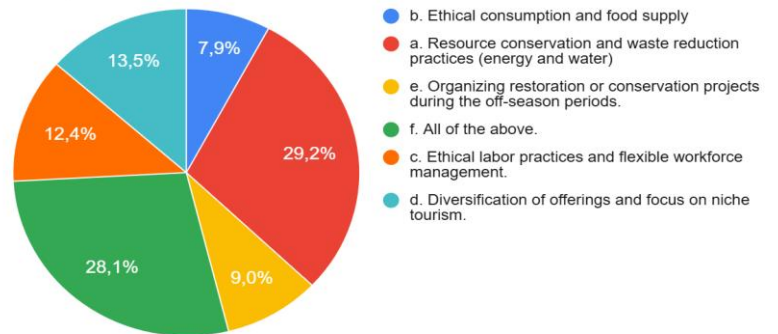
What is the biggest sustainability challenge caused by seasonality in tourism?

89 responses



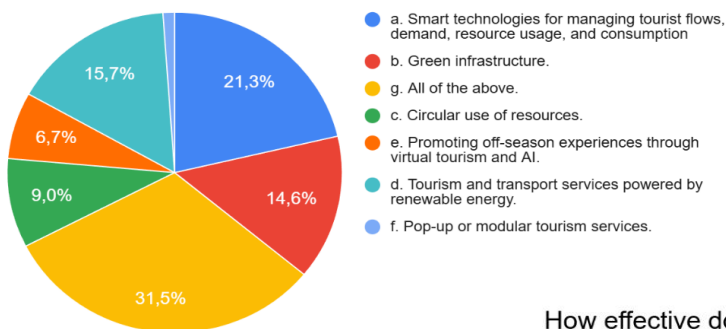
What are the most important measures to manage the impact of seasonality on the sustainability of tourism and services?

89 responses



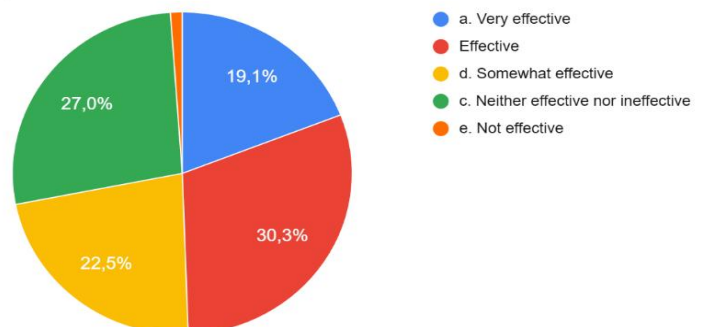
What innovations can best support sustainable tourism during peak season?

89 responses



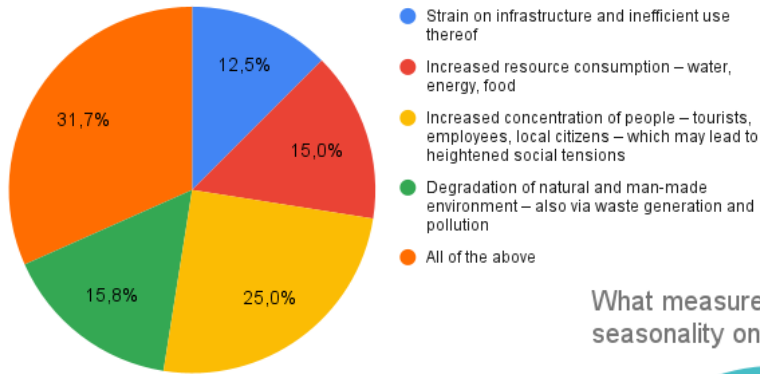
How effective do you consider current policies in supporting sustainable tourism?

89 responses

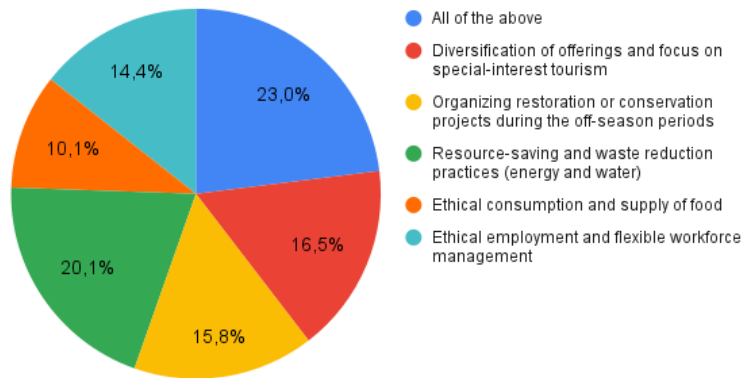


Republic of Türkiye

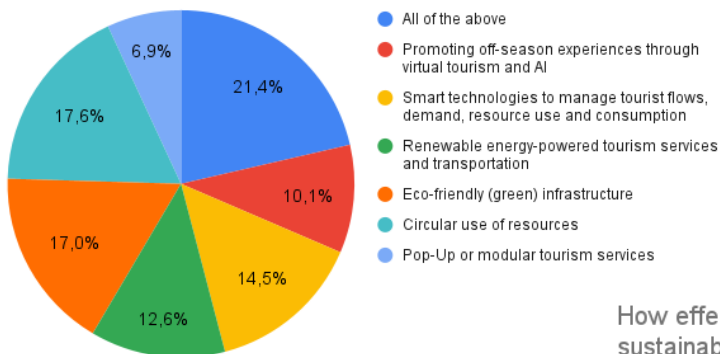
What is the biggest sustainability challenge due to seasonality in tourism?



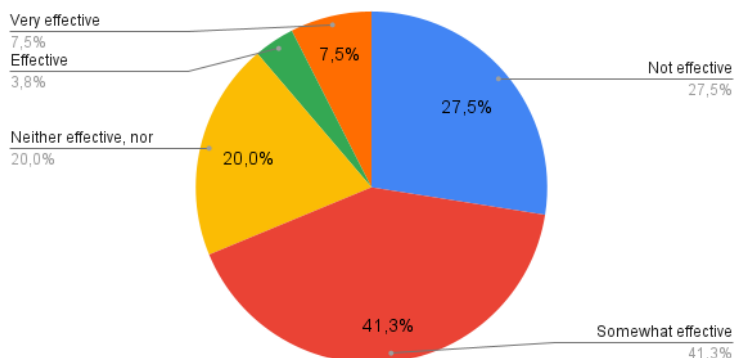
What measures are most important to manage the impact of seasonality on the sustainability of tourism and services?



What innovations can best support sustainable tourism in light of seasonality?



How effective do you find the current policies in supporting sustainable tourism?



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