Research, Development and Education in Tourism

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Edited by

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Cambridge Scholars Publishing

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This book first published 2019

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN (10): 1-5275-3719-6
ISBN (13): 978-1-5275-3719-4

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INTRODUCTION

The present collection contains papers from the 15th International Conference of the IBS (International Business School) held on 15-16 June 2018 in Sofia, Bulgaria. The conference submitted a platform for discussions of current trends, innovative models, practical challenges and possible decisions in the field of tourism, as a priority strategic sector in the national economy of Bulgaria. The topical framework of the conference covered a wide range of issues, such as:

- International trade and labor market outcomes;
- The political, economic and social consequences of globalization;
- Migration and social mobility within and across countries;
- Educational attainment and skill development in a globalized world;
- The changing nature of work in the digital economy;
- Inequality, inclusion and gender in the global economy;
- Institutional quality and governance in a comparative perspective;
- Globalization and its impact on the environment; and
- The role of automation and robots in shaping labor markets.

The papers in the collection reflect on discussions related to a number of aspects, which appear to be crucial for the current development of sustainable tourism. At the center of highlights are tourism policies on national image creation, accounting hotel policies, environmental, in particular climatic changes and their influence on tourism development; emotional profiles of SPA and Wellness tourists; key factors influencing regional tourism development – medical tourism and cultural education; innovative methods of learning Business English, Critical Pedagogy as a new educational perspective, environmental education; a number of financial issues like revenue and profitability of sales, financial variables affecting the liquidity of tourism companies, etc.

At the strategic level, taking into account the Bulgarian context, the challenges of **climate change and global warming** are explored as responsible for the substantial changes in Tourism and recreation at all

levels. The importance of awareness and concrete measures and solutions is proposed.

At the national level, the topic for tourism policy is extended to the Lithuanian context with a focus on the **destination's national image creation and major challenges for the new emerging tourist destinations** on the current tourism map. **Destination development** is explored also at a lower level – the City of Plovdiv, taking into account opportunities resulting from being selected as the European Capital of Culture 2019. The main focus is on stakeholders and the potential impacts for destination development enhancement.

At the regional level, **rural tourism** in Bulgaria is studied taking into account the territorial distribution of allocations of financial resources in the Blagoevgrad region. In-depth analysis of project funded investments is presented as a major engine of rural tourism development. At the same level and perspective, **medical tourism is researched as a prerequisite for regional development in Lithuania.** Health tourism is evaluated both from the customer point of view as well as from the destination's resources to deliver and supply it.

The **development of the Black Sea destination** at the regional level in Bulgaria is studied as an alternative and an opportunity to renew the campsite infrastructure and attractions of **youth tourists** as a specific market segment. The **emotional profiles of tourists in SPA and Wellness tourism** are evaluated, revealing the most important tendencies for Bulgaria as a precondition of serving and attracting this specific type of tourist. At the destination level, **local identity** is researched as an attraction adding value to the boutique hotels in the city of Varna. Presented is an innovation in search of attracting and satisfying demanding contemporary tourists.

Accountancy policies in the hotel industry in Bulgaria are studied as a management instrument and a tool for competitiveness. The **financial variables as determinants of efficiency** and financial management of tourism companies are also highlighted, making a comparison between three countries – Bulgaria, the Czech Republic and Poland. **Revenue analysis and profitability of sales** of tourist services are examined from the methodological and feasibility approach delivering different results and needs for management decisions.

Digitalization as a major transformation in the field of tourism marketing is a topic studying the challenges and opportunities of social media marketing, such as the creation of a stable relationship with customers. The **recreational experiences** of tourists are studied through the comparative analysis of postcards from the 1960s and modern social media

and social network publications, related to the oldest Bulgarian resort of St. Constantine and Helena.

Education is also in focus for Tourism development. **Environmental education** is considered as fundamental for educational sustainability in the area of Tourism and for the Bulgarian educational system. The study explores the case study of Rila National Park. The education topic is extended with the presentation of empirical results from **innovative learning methods in business English**.

CHAPTER ONE

CLIMATE CHANGE AND TOURISM ADAPTATION IN BULGARIA

MARIA VODENSKA

Abstract

At present climate change and global warming are among the greatest challenges before mankind. Climate change scenarios predict a greater frequency of already observed extreme weather phenomena including heatwaves, intense rainfall, seaside floods and tornadoes. Climate change will cause substantial changes in tourism and recreation at global, regional and local levels. It is expected that ski-zones will become ineffective economically and summer temperatures will be higher than acceptable from biophysical point of view thresholds. The rise in sea level will bring about the loss of seaside territories. In order to adapt to climate change and its potential impacts on tourism it is highly recommended that in Bulgaria an awareness raising campaign is implemented with the objective of stressing the importance of climate change and its potential impact on tourism and recreation among all stakeholders in the tourism sector.

Keywords*: climate change, adaptation, tourism, recreation*

Introduction

Bulgaria is situated in one of the regions that are particularly vulnerable to climate change (mainly through temperature increase and extreme precipitation) and to the increased frequency of climate change-related extreme events, such as droughts and floods. The risks inflicted by climate change-related events may lead to loss of human life or cause considerable damage, affecting economic growth and prosperity, both nationally and trans-boundary.

Consensus exists in the scientific community that climate change is likely to increase the frequency and magnitude of extreme weather events. In Bulgaria this frequency has increased significantly over the past decades. The most common hydrometeorological and natural hazards are extreme precipitation and temperatures, storms, floods, wildfires, landslides, and droughts. The vulnerability of Bulgaria's population and businesses to the impacts of climate change is accelerated by a relatively high degree of poverty in the most affected areas, the continuing concentration of the country's population in several industrial and urban regions, and the various consequences of the transition from a state-controlled economy to a free-market economy.

Literature Review

Scientific projections indicate that global temperature will rise between 1.8°C and 4°C by 2100, with the temperature increase in Europe expected to be even higher than the estimated global average.

Research conducted by the Department of Meteorology, the National Institute of Meteorology and Hydrology, the Bulgarian Academy of Sciences (NIMH-BAS), projects an increase in annual air temperature in Bulgaria of between 0.7°C and 1.8°C by 2020. Even warmer temperatures are expected by 2050 and 2080, with projected increases between 1.6°C and 3.1°C and between 2.9°C and 4.1°C, respectively. Generally, the temperature increase is expected to be more significant during the summer season (from July to September).

With regard to the expected changes in rainfall patterns, a reduction in precipitation is likely, leading to a significant reduction of the total water reserves in the country. In this regard, projections suggest a decrease in precipitation by approximately 10 per cent by 2020, 15 per cent by 2050, and up to 30-40 per cent by 2080. In most climate change scenarios, rainfall during the winter months is likely to increase by the end of the century, but a significant decrease in rainfall during the summer months is expected to offset this increase.

According to the available climate change scenarios for Bulgaria, there is a trend toward increased frequency of extreme events and disasters, as demonstrated by frequent occurrences of heavy rainfall, heat and cold waves, floods and droughts, hurricane winds, forest fires, and landslides.

Bulgaria's tourism industry is highly weather-driven and extremely seasonal. Particularly vulnerable are the two most developed tourism types – a rainy summer will affect beach tourism and occupancy rates at seaside resorts, whereas a lack of snow can have a severe impact on the revenues

from ski tourism.

Bulgaria is also vulnerable to climate change-related risks stemming from extreme events such as heatwaves, extreme rainfall events, and coastal flooding (Kreft et al. 2016). These are events that cannot be foreseen, and can significantly affect tourist activities, and will have repercussions for short-term travel behavior (day trips and short breaks), earlier departures (visitors returning home), and longer-term destination choice.

Methodology

In recent years, Bulgaria has been subject to more frequent extreme weather events such as storms, including tornadoes, and associated phenomena such as prolonged and intense rainfall leading to floods. Extreme weather also included hail events and heatwaves. According to the environmental group Germanwatch's Global Climate Risk Index (CRI) (2015) Bulgaria was among the countries most affected by extreme weather events in 2014 – the country is ranked sixth after Serbia, Afghanistan, Bosnia and Herzegovina, the Philippines, and Pakistan. Some of these events caused unfavorable phenomena such as avalanches, landslides, and coastal erosion which are endangering tourism activities in various parts of the country.

Tornadoes are increasingly frequent at the Bulgarian seashore, endangering the tourism sector and the tourism resorts. As an example, in the summer of 2014 a tornado struck Bulgaria's Black Sea resort town of Sozopol, while simultaneous floods were "drowning" the country. The number of tornadoes in Bulgaria in the last 10 to 15 years has significantly increased (Bocheva and Simeonov 2015). During the period 2001-2014, a total of 55 tornadoes were observed within 48 days, most often around Sofia and along the Black Sea coast. However, the average frequency of tornadoes in Bulgaria is lower, at 3.9 events per year. Most tornadoes (91 per cent) occur between April and September; with a further concentration in June and July. Waterspouts, or vortex phenomena occurring over water, have been observed mostly between June and September, during the main tourist season.

In the winter and spring (mid-May) of 2015 Bulgaria was again hit by more than 10 severe floods all over the country which mostly affected its northern parts. Its northeastern regions, where several of the main Bulgarian seaside resorts are situated – Zlatni Pyasatsi, Albena and Kamchiya – were particularly affected. In Varna's Asparuhovo neighborhood, 13 people died in the floods that hit on June 20 and the entire region suffered damage worth millions of Bulgarian leva, including damage to tourist buildings (Palazov

2016).

A longer-term issue that increases the risk of coastal flooding is sea level rise which is caused by general climate changes in the world (for example glaciers melting, increased precipitation, and so on). Worldwide, the rate of sea level rise has accelerated to more than 3 mm per year since the 1990s (IPCC 2014). As the Black Sea is an inland sea, the mean values of average sea level rise are lower and have been estimated in the last few decades to vary between 1.5 mm per year and 3 mm per year (Kubryakov et al. 2016). An analysis by Allenbach et al. (2015) showed that sea level rise will have highly significant impacts on the Black Sea beaches; for a 0.5 m sea level rise, 56 per cent of all beaches are projected to retreat by 50 per cent of their maximum width. For a 0.82 m sea level rise (the high Intergovernmental Panel for Climate Change [IPCC] estimate for the period 2081-2100) about 41 per cent are projected to retreat by their entire maximum width, whereas for a 1 m sea level rise about 51 per cent of all Black Sea beaches are projected to retreat by (being drowned or shifted landward by) their entire maximum width. A long-term future scenario shows that a 1 m sea level rise would affect Varna Bay, Kamchiya River resort, Burgas town, Sunny beach resort, Pomorie town, and the coastline between Albena resort and Kranevo village. About 20 per cent of the Bulgarian coast (83 km of 412 km) has been identified as flood-prone territories vulnerable to sea level rise (Rutty and Scott 2010). There is already evidence (Peychev and Dimitrov 2012) of increased erosion, storm surges, and flooding in low-lying areas. Furthermore, these problems have been exacerbated due to rapidly growing coastal population pressure, leading to the poorly planned development of the hazard-prone areas.

Landslides characteristic of Northern Bulgaria and the mountain regions are related to increased rainfalls and floods (caused by climate change). Landslides are unevenly distributed in Bulgaria mostly along the Danube shoreline. Landslides also occur along the northern Black Sea coast with potentially highly significant implications for tourism facilities, infrastructure and buildings. As an example, a vast landslide destroyed the panoramic road from Varna to the Zlatni Pyassatzi resort and at present, there is no direct connection between the city and the resort. Some hotels were left without any access and some even slid down to the seashore and are now out of use. In 2017 (cutting date December 31, 2017) 2,137 landslides were recorded in Bulgaria, more than half of which were in the Danube region (1,113) followed by the inner parts of the country (644). The fewest landslides (380) were registered along the seaside. Only in March 2017, more than 1,800 landslides were recorded because of heavy rains in the whole country, one of them blocking the road to the winter ski resort of Pamporovo and another

one hitting the seaside resort of Zlatni Pyassatzi.

Two heat waves have been observed in 2007 and 2011, with temperatures reaching absolute maximum values of 38°C to 40°C, lasting for a week in 2007. Similar temperatures were measured in the summer of 2015. Temperatures such as these are well above the optimal temperature range for beach tourism (Rutty and Scott 2010).

The danger of avalanches in Bulgaria's mountain region is high. Yet, there are no official statistics of avalanches in the country.

In Bulgaria, rockfalls occur primarily on steep or vertical mountain slopes which have specific lithological structures and physical properties of the constituent rocks. The risk areas are especially the marginal escarpments of northeast Bulgaria's plateaus (including the Black Sea coast), the East Rhodope Mountains, the high mountain zones of the Rila and Rhodope massif, and the Western Stara Planina. All of these are popular tourism areas and rockfalls present a real threat to tourists and tourism buildings and infrastructure (roads are often blocked).

The impact of these events on tourism is insufficiently understood. Most of the damage was registered in urban areas (Sofia and Varna). The tourist sector (both public and private) has not undertaken any preventive actions against extreme weather events. The measures taken are predominantly reactive (mostly infra- and superstructure repair works).

Extreme events and weather patterns can influence perceptions and may lead to the cancellation of already booked holidays. More often, extreme events will occur without warning. This may cause positive or negative emotions (Gössling, Steiger, and Abegg 2016). Adaptive responses can include the cancellation of holidays (leaving the destination), spatial substitution (moving to another location), or the focus on different activities within the destination. Negative experiences can also influence longer-term demand responses, though this does not necessarily mean that tourists will not return. Extreme events are consequently only one of the many aspects guiding tourist behavior.

Findings

The potential direct risks and opportunities that normally come with weather events can be summarized for the tourism sector in Bulgaria as shown in Table 1.

Table 1 Climate change adaptation – potential direct risks and opportunities for the tourism sector

	Risks	Opportunities
Higher temperature (including heat spells and heatwaves)	Lower number of tourists in midsummer season	Prolonged summer season (in spring and autumn months) – for seaside tourism
	Health problems with tourists in midsummer season – heat and solar strokes, high blood pressure, and so on	Prolonged shoulder seasons – for all tourism types
	Need for more cooling systems in summer – higher energy consumption	Less need for heating energy in winter and shoulder seasons
	Higher water needs – water shortage	-
	Shorter average stay	-
	Avalanches in winter	-
Lower temperatures (including cold spells and cold waves)	Health problems with tourists – frost bite in winter	-
	Lower number of tourists in all other seasons	-
	Shorter average stay	-
More precipitation and humidity	Lower number of tourists	Increase in agricultural produce
	Shorter summer and shoulder seasons	-
	Shorter average stay	-
	Landslides	-
	Damage to tourist infrastructure	-
	Worse conditions for any outdoor recreation activities	-
	Avalanches in winter	-
Droughts	Water shortage for tourists' needs	-
	Shorter average stay	-
	Lower number of tourists	-

Increase of winds and storms	Lower number of tourists	-
	Health problems with tourists	-
	Shorter average stay	-
	Damage of tourist infrastructure	-
Water shortage	Lower number of tourists	-
	Shorter average stay	-
	Shorter tourist season	-
Energy shortage	Shorter average stay	-
	Shorter tourist season	-
	Lower number of tourists	-
Short snow cover	Lower number of tourists	Longer shoulder seasons
	Shorter average stay	Development of new tourism products in mountain resorts
	Shorter tourist season	-
Floods	Shorter average stay	-
	Shorter tourist season	-
	Lower number of tourists	-
	Damage of tourist infrastructure	-
	Worse access to tourism destinations	-
Avalanches	Shorter average stay	-
	Lower number of tourists	-
	Damage of tourist infrastructure	-
	Worse access to tourism destinations	-
Landslides	Damage of tourist infra and superstructure	-
	Worse access to tourism destinations	-
	Lower number of tourists	-

Source: Author's vision

Summer tourism

Summer is the most popular time to engage in coastal tourism and recreation in the Mediterranean region of southeast Europe where Bulgaria is situated. European statistics show that August is the most popular month

for travel to southeast Europe (UNWTO 1993). The concern is that with rising temperatures and associated biophysical stress (temperatures above 40°C and high humidity), a share of tourists can be expected to shift their vacation to the shoulder season. This is an option specifically interesting for travelers without children at school. High temperatures put older travelers and young children at a higher risk of heat exhaustion. Resorts may consequently become less attractive in summer. Climate change scenarios for Bulgaria show that by 2020, June will be almost as warm as July and/or August currently are.

An indirect effect of climate change related to summer tourism is that without mitigation and adaptation, coastal erosion linked to sea level rise can endanger recreation and tourism activities in coastal destinations. There are also flood risks that can seriously damage tourism resorts, buildings, and infrastructure along the sea coast.

The analysis of trends in the annual distribution of international tourist visits and nights spent by foreigners and Bulgarians, shows a significant extension of the summer tourist season since 2000, mainly at the expense of the spring months. For domestic tourists, the increase is expected to start from February. And while autumn visits and overnight stays by foreigners almost do not increase, the number of overnight stays, registered by Bulgarians in autumn and winter (including December) shows a significant increase.

It can be expected that climate change in Bulgaria in the summer will create preconditions for a substantial extension of the tourist season. In fact, all countries bordering the Black Sea (Bulgaria, Romania, Ukraine, Russia, and Georgia) could expect beneficial effects in the shoulder summer tourist season.

For the most part, tourism is unlikely to develop "differently" because of climate change until 2030, unless there are heatwaves or other extreme weather events, which affect short-term behavior (mostly day tourism, which paradoxically may increase beach tourism, for cooling down in the sea). However, there may be daily changes, more tourists in the morning and evening, fewer in the middle of the day. Air-conditioning requirements in hotels may increase. In the longer-term future, after periods of consecutive "hot" summers (exceeding 35°C for prolonged periods of time), it is possible that a considerable share of elderly travelers will reconsider their destination choice or the timing of their visit.

Nevertheless, these conditions could lead to a reduction of some traditional tourist markets from western and northern Europe with a growing share of elderly population who cannot endure the high summer temperatures. Furthermore, the prospects of spending the summer holidays

in their home countries are expected to become more attractive. The UK Vulnerability Assessment Report concludes that "warmer temperatures may encourage … increased numbers of visitors to the UK's national parks, beaches and open spaces. It may affect peoples' choice of travel destination, both in displacing UK foreign travel and encouraging tourists from overseas" (ASC 2016). This may lead to a certain decrease of summer tourists from the United Kingdom to Bulgaria.

Winter tourism

Higher temperatures have a significant effect on snow and ice. Higher winter temperatures mean higher snow lines, thinner ice on lakes, and shorter durations of snowfall. Global warming directly endangers the duration of the winter season around the world, the quality of the experience of tourists, and the variety of sports and other winter activities (Scott, Hall, and Stefan 2012). Globally, the permanent late-summer snow line in mountainous regions has risen by about 200 m, compared to the 1960s (David Suzuki Foundation 2009). Particularly low-lying ski resorts and other activities related to winter tourism are already affected by climate change, with potential direct negative impacts on local communities that depend on the jobs and revenue generated by this type of tourism. In scenarios of unmitigated climate change, more than half of the ski season in the world may disappear, with a few exceptions in the highest mountain resorts (David Suzuki Foundation 2009).

Even with snow cannons now being employed in most ski areas, many resorts will see a falling number of skiable days, which will question their financial viability. In the winter of 2014, Bulgaria's mountain resort of Chepelare (situated at an altitude of 1,232 m) failed to register any profit because of the high cost of snow-making. The lack of snow resulted in a decrease of tourist numbers. In a negative cycle of events, this prompted the resort to reduce ski pass prices to a minimum.

Climate projections for Bulgaria indicate a continuous decline in winter snowfall and the earlier melting of snow. Rainfall events can affect snow quality and the perceptions of holidaymakers. This will have a substantial negative impact on ski resorts, especially those in lower mountain regions.

A 2009 study of Borovets resort within the Climate Change and Variability: Impact on Central and Eastern Europe (CLAVIER) project (Jacob and Horanvi 2009) shows that in principle, the resort will have enough snow for skiers in the future (the ski tracks being completely covered by snow with no barren places on them), although there is a steady declining trend in the number of snow days and snow thickness (most

pronounced at an altitude of 2,500 m). Risks are however, implied in year-to-year variability and by the period 2020-2050, periods of two to six consecutive years of poor snow conditions are expected.

While the economic impact of these developments on the regional and local economy may be modest up to 2030, any year can potentially incur substantial losses. In the long run, effects are likely to be largely negative, depending on global mitigation efforts, specific snow conditions, marketing policies, and tourist demand responses. The worst possible scenario is a cycle of "bad" winters that will force hotels to give up operations.

The analysis of the dynamics of international visits and overnight stays registered by foreigners and Bulgarians confirms the pessimistic forecast for Bulgarian winter tourism. A positive upward trend during the period from October to February can be noted for both international visits and nights spent by foreigners. The number of nights spent by Bulgarians shows a significant increase during this period but does not reach the values of the main tourist season. However, overall guest nights are projected to grow; hence, they may strengthen the business situation as a whole. It may even be easier for businesses to maintain operations at a steady level than to plan for a second, very short peak. The risk here is probably more embedded in the insecurity of the situation (potentially very little snow).

Projections of climate change suggest that winter tourism will be far more significantly affected than other types of tourism in Bulgaria. This would have largely negative outcomes for local communities depending on the jobs and revenues generated by winter tourism.

Water shortage in Bulgarian resorts

Threats for summer tourism in Bulgaria lie in the indirect impacts of climate change resulting in water shortages. According to estimates (Gössling 2015), direct and indirect water usage for tourism varies between 4,600 liters and 12,000 liters per guest night, with direct water usage for gardens and pools often exceeding hundreds of liters per guest night. This is a quantity several times greater than that used by locals and can contribute to local water scarcity. Water shortages in Bulgaria have also been observed in flood-prone areas, because of limited water distribution systems that are also insufficiently maintained. In summer, water shortages can result from limited rainfall. Water-related problems already exist, as in competing destinations such as Cyprus, Turkey, and Greece. Cyprus in particular has already experienced water supply and electricity disruptions in summer (Sofroniou and Bishop 2014). Water shortages in Bulgarian resorts, mainly in coastal areas, have been reported in the Bulgarian media.

Additional stress on water supply is exerted by the existing golf courses (GCs) along the Black Sea – it is known that their maintenance requires a lot of water which even now is scarce in these regions. There are three (GCs) along the Black Sea coast and they are all situated to the north of Varna – Black Sea Rama GC, Thracian Cliffs GC, and Lighthouse GC. Another GC (Pirin Golf GC) is near the winter ski resort of Bansko in the Rila Mountain and two others are situated near the capital, Sofia – St. Sofia GC and Pravets GC. The specific water situation in these areas is unclear, but it is likely that the GCs contribute significantly to water consumption (Gössling, Hall, and Scott 2015).

Water shortages are not uncommon in Bulgaria, because of limited precipitation, as well as technical problems associated with pipe maintenance and leakage. The problem was identified two decades ago (Knight, Velev and Staneva 1995), but very modest steps have been sporadically taken to alleviate it in separate regions of the country.

Water shortages and the inability to provide the required amounts for the needs of all sectors lead to the occurrence, and sometimes, the deepening of conflicts over water (especially with agriculture). Peak water consumption in tourism coincides with that of agriculture, the population, the energy sector and nature. It also coincides with summer droughts, which are expected to become more severe under scenarios of climate change.

A significant problem is the inefficient use of water resources. For instance, an estimated 10 per cent of all water is lost because of insufficient maintenance of pipelines and an equally large share is used for the irrigation of gardens, specifically lawns. The total industrial consumption is nearly twice as high as in advanced industrial countries. Agriculture, the major user of fresh water, relies on inefficient irrigation systems.

In mountain regions, climate change will lead to an earlier melting of an increasingly smaller amount of snow and ice, thus putting water supplies at risk during extended periods of the year.

Power cuts (blackouts because of overconsumption and the breaking down of the grid) in Bulgarian seaside resorts were reported for the first time in the summer of 2010, because of the electricity demand for air-conditioning exceeding production.

Discussion

Most European countries have called for the mainstreaming of adaptation into sectoral and cross-sectoral policies and a focus particularly on soft adaptation policies, such as awareness-raising (EEA 2014). After the adoption of a National Adaptation Strategy and Action Plan in Bulgaria it

will be easier to adapt national measures into sectoral adaptation policies. Based on the previous analysis the adaptation options for the tourism sector in Bulgaria are discussed in the following sections.

Development of a sectoral climate change policy

This should include the development of the NAS and Action Plan for CCA in the tourism sector identifying who is responsible for the actions included in it and setting feasible deadlines for their implementation.

Provision of a comprehensive legal framework

The EEA outlines the following key areas in setting the national adaptation policy process – public and policy awareness of the need for adaptation; knowledge generation and use; planning adaptation; coordination of adaptation; stakeholder involvement; implementation of adaptation; transnational cooperation; monitoring, reporting and evaluation. Different countries have different approaches to policymaking so the best way is to take the best international practices and incorporate them into the tourism adaptation policy process and implementation.

The main implementing organization of the Climate Change Adaptation Strategy in regard to the tourism sector, is the Ministry of Tourism. It is recommended that Strategy development and the coordination of the formal processes involving the development of the CCP and the legal framework for all adaptation actions and measures within the sector are supervised by the MT.

This can include regulatory documents in which adaptation measures implemented by the private sector are compulsory, or there can be various tax concessions for companies implementing recommended adaptation measures. This will help all stakeholder groups in developing, implementing, evaluating and updating any tourism adaptation plans and/or initiatives in which they will be involved.

These activities can be further enhanced by information seminars for the national professional organizations in the tourism sector: tour operators and travel agencies' associations (ABTTA and BATA), the hoteliers' and restaurateurs' association (BHRA), the tour guides' association, special interest associations (for example BAAT), and so on. The OTRMs (Organizations for Tourist Regions Management) will play a crucial role in monitoring climate change effects on tourism locally (in the destinations) so they will need a special kind of training in monitoring, reporting and interpreting the identified indicators. It is suggested that while the MT will

be responsible for general political and legal issues, specific work on the implementation and monitoring of adaptation measures should be carried out locally by the OTRMs and the existing regional tourism associations (considering the different climatic conditions, types of tourism and indicators to be monitored).

Awareness raising on climate change and its impacts on the sector

This activity should cover all tourism stakeholders (at this stage mainly on the supply side) – governmental and non-governmental organizations, the tourism private sector, tourism associations and organizations, municipalities, OTRMs, the local population, and so on**.** Communication tools for the awareness raising process must be developed and implemented for each stakeholder group.

Studies that have examined the climate change risk appraisal among policymakers and tourism practitioners have consistently found low awareness of climate change and little evidence of long-term strategic planning in anticipation of future changes in climate. The tourism sector has also figured less prominently than some other economic sectors in government climate change assessments and is not explicitly addressed in many adaptation frameworks. The same situation was established in Bulgaria by a study conducted in 2015 (Kerezieva 2016).

Awareness of CCA among local tourism operators has generally been found to be relatively low in the implementation of mitigation measures. Consequently, there is a real need for the effective communication of climate change science. Scientists need to work better with NGOs and the government to develop tools that the private sector can use to mitigate and adapt at the business level and at regional and local scales.

Development of monitoring indicators

Monitoring systems and tools will help stakeholders to be informed on a regular basis about climate change, its impact on tourism and the effect of adaptation activities. Based on this information, stakeholders will be able to review their action plans and adjust them to any observed changes. Two groups of indicators can be distinguished – climate related ones and tourism related indicators.

Any new indicators must be measurable or easily accessible, and the necessary organization and procedure for their gathering, processing and monitoring must be created. The responsible authorities and/or bodies for

the task must be identified and legal documents binding them to the activities must be developed and duly adopted. The indicators should be determined centrally (by the MT) to ensure compatibility and comparability of results. The results obtained should serve for monitoring the effects of climate change in the tourist regions and for adjusting the implemented CCA activities. Also, they will be used by the OTRMs in the decision process of developing new tourism products within the regions.

Strengthening the sector knowledge base

This adaptation option would in the first place bring about better-informed decision-making and policymaking and better knowledge on effective adaptation. This can include:

Decision-making and policymaking support tools and assessments, including on the costs and benefits of impacts and adaptation

There is a need to develop tools and decision-making frameworks that can effectively inform and support adaptation policies and strategies, particularly at the relevant scales and at aggregated levels (municipal, national). Such tools can include information and communication technology (ICT) and other instruments, along with economic analyses.

Knowledge on effective adaptation

An enlarged pool of adaptation and mitigation case studies is needed to transfer knowledge on topics such as the identification of adaptation options and criteria for their selection, decision-making frameworks and the integration of adaptation within routine planning, cost-efficient combinations of measures, as well as more general issues of governance and timing.

Regional and sub-sectoral assessment of adaptive capacity

While the potential range of climate change impacts in the tourism sector is broadly understood, there is a more limited understanding of the adaptive capacity of destination communities. The adaptive capacity of the tourism industry in Bulgaria and its subsectors should thus be assessed. The UNWTO (UNWTO, UNEP, and WMO 2008) has determined the sub-sectoral adaptive capacity to be high for tourists, medium for the

intermediary subsector (tour operators, travel agents, transportation providers – airlines, railways), and low for destinations in general, i.e., hotels, resorts, attraction operators, and local communities.

Capacity-building

The scientific community (in close cooperation with the government and NGOs) must develop appropriate tools for the induction of the private sector (tour operators, hotel and restaurant businesses, and so on) to the problems of climate change and its effects on Bulgarian tourism and the possible adaptation and mitigation actions. Further education and training courses and programs are to be developed and introduced for the proper implementation of these actions at a business level and at regional and local scales.

Steps should be taken to introduce special programs in universities and colleges focusing on climate change impacts on tourism, adaptation actions and their management at different levels. This activity should involve the Ministry of Education and Science which can recommend actions to the educational institutions, as well as through a direct dialogue between the MT and leading university tourism departments. Master of Science programs are most suitable for this purpose because they can bring together specialists from various backgrounds. Also, special courses and subjects in this regard can be introduced in the tourism bachelor programs of all educational institutions.

Specific adaptation measures

Following (or parallel to) the above six steps, some specific adaptation measures must be developed and implemented, including the development of new products, new destinations, new packages of higher quality, new market segmentation, and new marketing policies.

Summer tourism

In the Eastern Bulgarian seaside region, for example, the likely reduction of tourism during the hotter midsummer months may be compensated by promoting changes in the temporal pattern of seaside tourism, for example, by encouraging visitors during the cooler months. If the tourist period is extended to May and September, the negative impacts of the heat of July and August can largely be offset, resulting in minor overall changes in arrivals by the year 2030. Notably, this also requires a re-

thinking of growth scenarios and associated plans for infrastructure developments, which are often modeled on peak demand.

Climatic conditions will improve across Europe during the current shoulder seasons (spring and autumn), prolonging the beach season. At the same time, competition among tourist seaside regions during shoulder seasons will increase. One strategy that can be implemented by the participating private sector operators is to offer higher quality services and diversified tourism packages (with the development of more additional services and products) with greater flexibility. A mitigation measure which can be successfully introduced in summer resorts is the usage of emissions-free transport – bicycles, electric carts, and so on.

Specific vertical adaptation actions can include improved water management and more efficient water use, protection of surface and groundwater quality, implementation of appropriate water pricing to reflect scarcity and environmental costs, an early warning system (at first in the national resorts) for extreme weather events, a shift from large-scale/coastal tourism to special interest tourism, investment in infrastructure/technologies to upgrade facilities to face increased temperature and water/energy shortages, diversification of activities and attractions in seaside resorts offered for shoulder summer seasons, and changes in land planning and the legal framework governing construction with a view to reducing the risk of flooding.

Winter ski tourism

Tourists may adapt to altered climatic conditions by changing the timing of their holiday, the destination (snow security), or by giving up skiing altogether (Font and Hindley 2017).

Besides technical adaptation strategies to increase snow reliability (for example snow-making or slope development) another prospective adaptation strategy is to develop an all-year tourism product. In such a scenario, most skiing areas would see a rise in summer overnight stays due to improved climatic conditions. Even if such a strategy is successful, it is however, likely that losses in winter would outweigh an increase in the summer season. Further improvements in the relative attractiveness of these regions are needed, otherwise they are in danger of facing a decline in overnight stays and tourism revenues. Stakeholders must differentiate their tourism offers and strengthen seasonal diversification.

For Bulgarian winter ski tourism, snow-making is not a feasible adaptation strategy, because Bulgaria faces growing water shortages and very high energy costs. Snow-making is energy- and water-intensive.

Where fossil fuel is used to generate this energy, it will speed up global warming, further aggravating winter sports conditions. Snow-making can be implemented in limited areas and will undoubtedly lead to higher prices and lower competitiveness. An alternative would be to work with operators on the introduction of new products and services (SPA and wellness, hiking, climbing, special well-being programs, and so on) which will increase overnight stays and revenue generation outside the winter season, thus compensating for the inevitable decrease in winter skiing holidays.

A lack of snow can be counteracted by snow-making, using ski slopes and infrastructure located at higher altitudes more intensively, or migrating the existing infrastructure to higher altitudes; diversifying the offers to capture a different segment of the tourism industry (for example business travel, spas and wellness); developing north-facing slopes; tree planting to protect slopes; and introducing an early warning system for extreme weather events in winter resorts.

Other long-term adaptation options are the following:

- Diversification of activities and revenue sources in winter (excluding skiing), for example promotion of wellness-centers in the mountain region;
- Development of four-seasons tourism, to reduce dependency on snow;
- Concentration of winter sports in top destinations;
- Regional coordination of investments;
- Broadening of the basis for financing beyond cable-car businesses (for example cooperation with communities);
- Shift to slopes in less climate-sensitive regions (for example higher elevations);
- Closing of inefficient slopes;
- Improvements in snow production; and
- Diversification into economic activities other than tourism.

New tourism types (products) and destinations

One tourism adaptation strategy which cannot be implemented in the short run, but which will have the greatest impact not only on CCA but on many other aspects of tourism development in Bulgaria (for example seasonality and territorial imbalance) is the overall diversification of Bulgarian tourism in two interrelated directions – (a) new tourism products, and (b) new tourism destinations.

New tourism products can be developed in Bulgaria, but so far only isolated attempts at their development have been made. Among these are various types of *cultural tourism* (historic, archeological, special route tourism); wine and culinary tourism; special events (festivals, competitions, and so on) tourism; religious tourism, and so on.

SPA tourism is another important alternative segment. Bulgaria holds the second place in Europe by the number of its mineral springs – over 1,600. The hottest geyser in Europe – 103ºC – is in Bulgaria in the town of Sapareva banya at the foot of the Rila Mountain. At present this tourism type is in fifth place in the Bulgarian tourism offer and generates 11 per cent of all tourism revenues. There are enormous opportunities for the development of existing and new SPA destinations, the main obstacles for their development being legal (ownership) issues and the outdated infrastructure. Besides traditional SPA tourism products, programs for *wellness and well-being tourism* are an area that can be further exploited by the private sector and promoted by tourism offices in many Bulgarian destinations in the interior of the country. These tourism types can be developed in new and existing mountain destinations at lower altitudes which are most likely to suffer from future climate changes. Bulgaria is known for its unspoiled nature and for the purity of its rivers and lakes. Another relevant segment is *rural tourism*, with various options to develop organic or local food products.

New tourism destinations may be identified in the inner parts of Bulgaria outside traditional seaside and winter mountain tourism destinations. This can be considered as a task of the newly constituted OTRMs whose objective will be tourism developments outside the most popular resorts in places with underdeveloped conditions and resources within the nine tourist regions in the country. This can be financed by public-private partnerships with the municipalities in the region and from various national and international programs (for example the EU OPs). The OTRMs, together with local authorities should initiate actions ensuring the efficient use of resources, including land, water reserves, and energy, and replace fossil fuel consuming vehicles at the local level with more eco-friendly means of transportation (for example electric vehicles, bicycles, and public transportation). Moreover, the production and use of local inputs with a smaller environmental footprint need to be strengthened, which would also serve the purpose of diversifying the tourism product. Local businesses, directly or indirectly involved with tourism, can be encouraged to improve their environmental performance. Local governments and public service providers can also play a role in this process by offering incentives, encouraging social responsibility, and supporting innovation.

New tourist segment identification and development

Efforts should be made to attract new tourism market segments, particularly elderly and retired people, and more affluent visitors. Elderly people will visit destinations with less extreme climate conditions (that is, not seaside and high mountain resorts) and will make their visits outside pronounced peak tourist seasons, thus helping to prolong the season, fight seasonal employment, and develop new tourism products and destinations. More affluent visitors will spend more, and hence compensate for the decline in overall tourist numbers and revenues in summer and in winter. For ensuring the second option though, certain efforts in improving tourism services and tourism products in general must be made.

The implementation of these adaptation measures lies mainly in the domain of the tourism industry; all previously mentioned actions (I–VI) will need to be discussed with private sector bodies, associations, and chambers of tourism and commerce. Some actions could be implemented through *private-public partnerships* – municipalities and OTRMs can provide information about climate change (by monitoring the relevant indicators, doing or sponsoring research, and so on) and based on this develop various adaptation actions, which in turn can be financed by the private sector. Thus, they can collaborate and unite their efforts in achieving joint objectives and goals at the local level. The EU offers a variety of opportunities for funding various tourism projects related to new products and new destinations development. Table 2 summarizes the framework of the tourism adaptation options in Bulgaria.

Table 2 Priority, time and budget for tourism sector adaptation actions in Bulgaria

Action	Priority	Time horizon	Estimated costs	Budget - sources	Executing body
Tourism Adaptation Policy development	High	2020	None	-	MT
Legal Framework development	High	2020	None	-	MT, Ministry of Justice (MJ), Ministry of Finance (MF)
Awareness raising - Communication campaign development	High	2020-2025	Medium	State budget and EU programs	MT

- Awareness raising implementation					
Monitoring Indicators development	High	2022	None	-	Scientific institutions, universities
Knowledge base	High	2018-2030	Medium	State budget and EU programs	Scientific institutions, universities, OTRMs, government organizations, NSI, professional organizations, NGOs
Capacity building - Adaptive capacity assessment - Capacity development (training, education)	High	2018-2030	Medium	State budget and EU programs	MT, OTRMs, municipalities, professional organizations, NGOs
Specific adaptation measures	High	2019-2030	High	EU programs and private financing	Private sector, professional organizations, NGOs, OTRMs, municipalities, MT

Source: Author's vision.

Conclusion

The chapter highlights the importance of various measures to initiate CCA in the economically important tourism sector in Bulgaria. These include:

Awareness building

Climate change is a reality and already affects tourism. In Bulgaria, this includes weather extremes, declining snow reliability, and storms, with repercussions for tourist arrivals and behavior, and holiday satisfaction. It is important that more stakeholders become aware of the challenges implied in climate change, as well as adaptation risks and opportunities. The

mainstreaming of information about climate change vulnerabilities and the sector's contribution to climate change is of great significance to increase the overall level of preparedness.

Data collection and statistics

To manage the tourism system, it is necessary to understand markets and tourist demand responses in adverse situations. Data should be collected on arrivals and transport modes used, market shares, length of stay, spending, and flexibility in these parameters between countries and tourist types. It is equally important to understand how tourists react to extreme events, as analogues for the future in which such events may become more frequent and intense. Collected data can be analyzed to better manage existing tourism products and develop new ones, increase length of stay and spending, and encourage holidays during the shoulder season.

Innovation

To preemptively engage with adaptation, attempts should be made to diversify the tourism product in Bulgaria. This may include new products and activities, the development of new regional destinations for tourism, marketing attempts focused on the increasingly more attractive shoulder season, length of stay, and spending opportunities. Together, these measures contribute to a more stable tourism product that is less susceptible to extreme events and longer-term changes in climate. It may also be desirable to explore low-carbon tourism pathways to reduce the sector's contribution to climate change, in wider accordance with the Paris Agreement.

Governance

The challenge of climate change can only be met with the cooperation of the public and private sectors. The MT, in cooperation with other ministries and government bodies, has a key role in initiating the process of developing a sectoral CCP for tourism, which emphasizes awareness building, data collection, and innovation. By taking the lead in the development of policies toward this goal, the MT should coordinate a process focused on policy definition, as well as grant acquisition and funding opportunities. This process should begin immediately.

It should be noted that the proposed adaptation measures are developed in the right direction but, overall, they cannot be implemented within the timeline set in the analysis. This is caused, in terms of financial resources,