

# Climate Change and Tourism in the Western Balkans

INFORMATION FOR STAKEHOLDERS





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This report provides a general overview of the impacts of climate change on tourism in the Western Balkans, based on desk research and literature review. The target audience is practitioners in the tourism sector and environmental management, as well as civil society organizations.

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# Introduction: Common Trends Across the Region

Climate change is predicted to impact the Western Balkans in multifaceted and interconnected ways. While the specific impacts vary across and within countries, the region shares many geophysical and socio-economic factors which impact and are impacted by climate change. Tourism in the Western Balkans is on the rise in recent years, representing an important economic sector for the growth of many of these nations. Therefore, it is of paramount importance to understand the future impacts of climate change and explore ways to adapt and increase the resilience of the tourism sector. Paths forward in terms of adaptation methods and the tourism sector vary between and within countries; however, there are some general trends. For instance, impacts on agriculture due to drought, flooding, and increased temperature will need to be addressed across the region in order to sustainably manage food demand among locals and tourists. Additionally, the Western Balkans as a whole can prioritize increased education and awareness regarding sustainable tourism as well as nature-based adaptation methods to address priority areas. The countries which make up the Western Balkans – Albania, Bosnia and Herzegovina, Kosovo (under UNSCR 1244/99), Montenegro, North Macedonia and Serbia – also share mountain ranges, river basins, and coastal ecosystems, meaning joint action is important in protecting and nurturing nature-based tourism potential.

## Regional Challenges

- **Wildfires**

Wildfires increased by 21% between 2011 and 2021 across the Western Balkans, with over 1500 fires in 2021 alone ([World Bank, 2024](#))

- **Heat Waves**

Heat related deaths are projected to be 5-10% higher by 2100 ([World Bank, 2024](#))

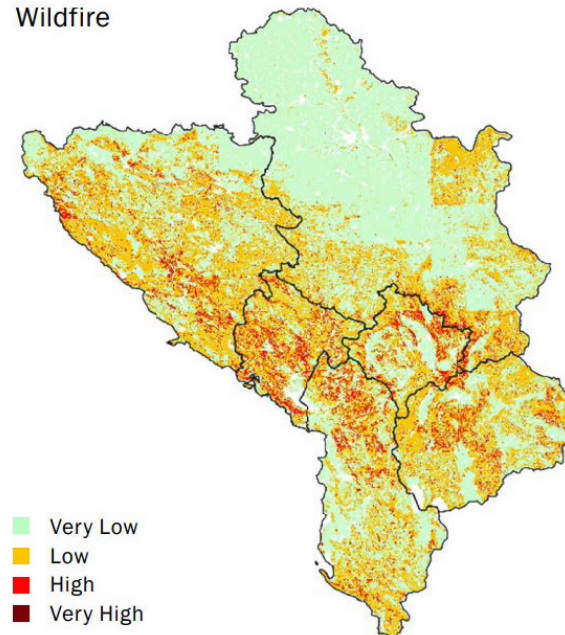
- **Agriculture**

This sector is negatively impacted by wild fires, extreme heat, drought, landslides, and other climatic factors. This has implications for food security, water resources, and livelihoods across the region.

- **The Cost of Inaction**

The region has already experienced the destructive force of natural disasters — and these events will continue to increase in severity and frequency due to climate change. Implementing adaptation measures now is a more strategic long term investment, rather than paying the price once disasters strike.

Wildfire



← Map of current wildfire risk across the Western Balkans mountainous regions, expected to increase due to climate change. Source: World Bank Group, “Country Climate and Development Report: Western Balkans 6”, 2024, page 10.

## Criteria for Selecting Highlighted Actors

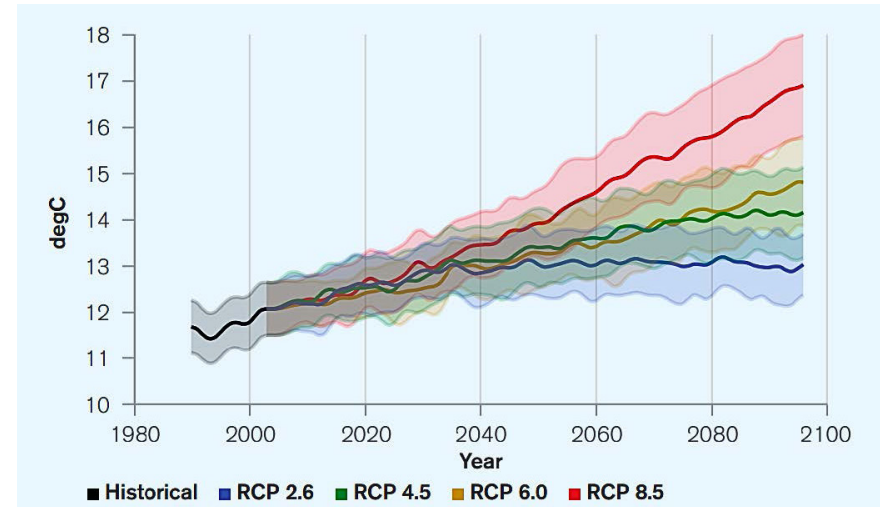
The “highlighted actors” selected for each country are intended to represent major and/or unique players in the tourism sector. Specific attention is given to those with notable nature-based tourism as well as those with the most significant projected impacts from climate change. As such, this section of the document is not intended to provide a holistic overview of the entire tourism industry in any given country, but rather, to provide a snap shot of interesting and relevant cases at the intersection of tourism, nature, and climate change.

# Albania

Albania is situated between Montenegro, Kosovo, North Macedonia, Greece, and the Adriatic Sea, providing 470 km of coastline. Approximately 70% of the land in Albania is made up of mountainous areas, the majority of which consists of pastures and forests, serving as an important resource for food and goods. As climate change progresses, Albania's mountains are becoming increasingly impacted by erosion. Similarly, climate change is likely to increase shoreline erosion, potentially impacting the beaches and coastal infrastructure. In general, temperatures across Albania are likely to increase, which brings both positive and negative impacts. For instance, the growing season and tourist season will theoretically lengthen; however, these potential benefits may be negated by negative climate impacts.

Intense heat may discourage tourists from visiting during the hottest period (currently during peak tourist season), and crop yields, including agro-tourism, may be negatively impacted by increased erosion, droughts, floods, and other climate-induced phenomena. Tourism is becoming an increasingly important economic driver in Albania, especially in the southern coast. Albania's natural beauty attracted 4.5 million tourists in 2016, primarily throughout the peak season of June to September. The natural beauty of the country provides ample opportunity for nature-based tourism; however, implementing adaptation measures is crucial in supporting this sector's continued success.

## Climate Change Trends in a Nutshell



↑ Past and projected average temperatures in Albania, with predicted values based on the various Representative Concentration Pathways (RCPs). Source: [World Bank Group, 2021, page 10](#).



↑ Map showing current flooding risk (left) and wildfire risk (right) in Albania, demonstrating the existing vulnerabilities exacerbated by climate change. Source: [World Bank Group, 2021, page 14](#).

## Climate Change Impacts on Tourism



Changes in water availability, increased droughts, and increased flooding are all relevant climate change impacts. Tourist water demand is typically higher than that of local residents.



Increased temperatures may make tourism in the summer less popular; however, this also has the potential to expand the peak tourist season into the fall and spring.



Increased erosion in the mountainous regions and coastlines may damage infrastructure, natural spaces, and amenities utilised by tourists.



Sea level rise and storms have the potential to damage coastal tourism infrastructure (i.e. beaches, sea-side restaurants, etc.) and archaeological sites.

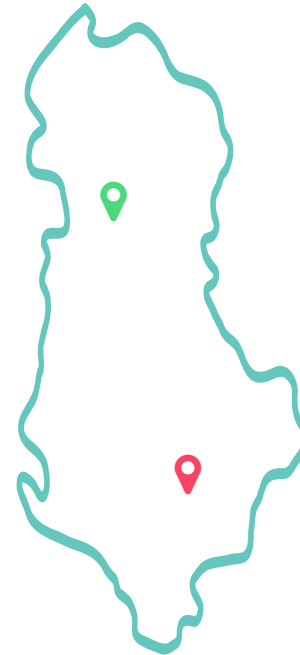
## Highlighted Actors

### [Vjosa Wild River National Park](#)

- Albania's second largest water system, and one of the few intact river systems in Europe
- A dedicated managed nature reserve, and popular site for tourism
- The focal site of Albania's *Vulnerability and Adaptation Assessment* in the fourth National Communication to the UNFCCC
  - Significant data and predictions available to implement strategic adaptation measures
- Co-funded by the IUCN, Patagonia, and the Ministry of Tourism and the Environment

### [Albanian Tour Operator Association \(ATOA\)](#)

- Describes themselves as the “professional voice for the Albanian tourism industry”
- Members consist of important tour operators and travel agencies in Albania
- Often televised to discuss challenges within the tourism sector
- Aims to foster growth and a positive and sustainable tourism sector through serving as a bridge between governmental bodies and the private sector
- Climate adaptation is currently not discussed much, providing an avenue for growth



## Additional Stakeholders

Governmental Bodies	Inter & Non-Governmental Organisations	Educational Institutions	Private Sector Actors
<ul style="list-style-type: none"> <li>Ministry of Tourism and the Environment</li> <li>National Institute of Cultural Monuments</li> <li>Ministry of Agriculture and Rural Development</li> </ul>	<ul style="list-style-type: none"> <li>International Union for Conservation of Nature (IUCN)</li> <li>United Nations Development Program (UNDP), Global Environment Facility (GEF)</li> <li>Resource Environmental Center (REC) Albania</li> <li><a href="#">Eco Albania</a></li> </ul>	<ul style="list-style-type: none"> <li>Agricultural University of Tirana</li> <li>University of Tirana (Faculty of Natural Sciences)</li> <li>Polytechnic University of Tirana (Institute of Energy, Water and Environment, Geosciences Institute, etc.)</li> <li><a href="#">Institute for Environmental Policy in Albania</a></li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Elite Travel Group</a></li> <li>Patagonia (co-funder for Vjosa National Park)</li> <li><a href="#">Albania Turism</a></li> <li><a href="#">Nature Experience Albania</a></li> </ul>

## Recommendations

- **Creative solutions for water usage**

Tourist accommodation providers can explore options such as **salt-water swimming pools** and **greywater filtration systems** in order to reduce stresses on local fresh water supply.

- **Coastal Resilience**

Both **technical (grey) infrastructure** (seawalls, levees, storm water management systems) and **nature-based (green) solutions** (coastal ecosystem restoration, wetland restoration) should be explored to protect coastal amenities (restaurants, hotels, beaches, archaeological sites) from the increased risks of sea level rise, flooding, and erosion.

- **Education & Leadership**

Alongside government initiatives, the **private sector** can play an important role in providing education and resources regarding climate change adaptation methods and sustainable tourism. The **Albanian Tour Operator Association (ATOA)** is one such organisation that already engages with many tourism stakeholders, as well as the general public.

- **Continued Monitoring and Assessment**

The assessment of vulnerability and adaptation measures in the managed nature reserve **Vjosa Wild River National Park** serves as a positive example of how nature-based tourism destinations can co-exist with ecologically important spaces. The dynamic and co-management approach of this park could be an effective model for other stakeholders to follow.

- **Improved hydrometeorological and climate services**

With the support of the GCF-GIZ project, WMO and other partners, Albania is upgrading its national hydro-meteorological system to make it modern, user-friendly and client-oriented. The tourism and environmental management are among the main users of the system. The UNEP Climate-proofing project can provide further support.

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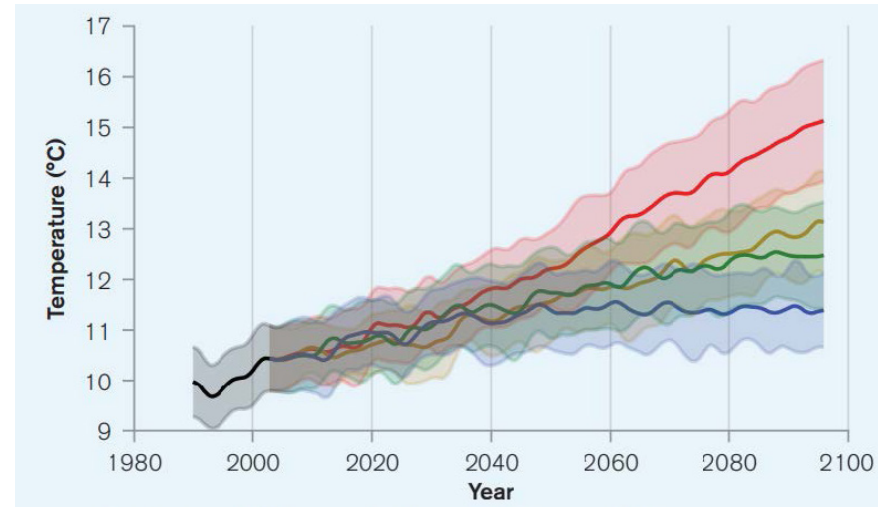
# Bosnia & Herzegovina

Bosnia and Herzegovina borders Serbia, Croatia, Montenegro, and a small sliver of coastline on the Adriatic sea. This country is very bio-diverse, with the Dinaric Alps representing a habitat for endemic species. This mountain range also influences the country's climate, creating slightly colder conditions compared to other countries bordering the Adriatic Sea and attracts ski-based tourism, particularly within the "Olympic" Mountains (especially, Bjelašnica and Jahorina).

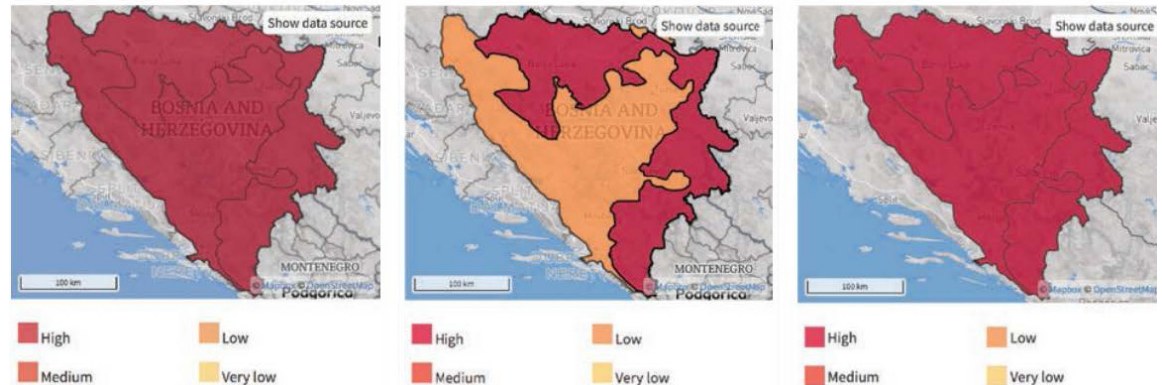
Climate change is projected to have negative impacts in the mountainous areas, influencing both ecosystems and the winter tourism industry. Warmer temperatures may reduce snowfall and subsequently shorten the ski season; however, this could also create opportunities to expand into other forms of outdoor adventure tourism.

Bosnia and Herzegovina has a history of extreme weather events which have resulted in infrastructural damages and loss of life. The 2004, 2014 and 2024 flooding events are prime examples of the disruptions that are predicted to increase in frequency and severity as climate change progresses. This carries implications not only for tourism, but for the daily lives of residents. Alongside the risk of flooding, the country is vulnerable to forest fires, decreased tree health, droughts, and increased agricultural pests in the northern regions. The tourism industry in Bosnia and Herzegovina is largely driven by nature-based tourism, providing further reason bolstering the importance of climate change adaptation. Bosnia and Herzegovina's tourism industry still has significant room for growth in terms of climate education and adaptation.

## Climate Change Trends in a Nutshell



↑ Past and projected average temperatures in Bosnia and Herzegovina, with predicted values based on the various Representative Concentration Pathways (RCPs). Source: [World Bank Group, 2021, page 9.](#)



↑ Map showing current river flooding risk (left), landslide risk (center), and wildfire risk (right) in Bosnia and Herzegovina, demonstrating the existing vulnerabilities exacerbated by climate change. Source: [World Bank Group, 2021, page 13.](#)

## Climate Change Impacts on Tourism



Bosnia and Herzegovina's endemic species and ecosystems are important ecologically, and hold potential for increased nature-focused tourism. This biodiversity (especially in the mountains) is vulnerable to temperature increase, wildfires and other climate change impacts.



Both flooding and droughts are predicted to increase, posing a threat to infrastructure, water supply, and safety. These factors all have negative impacts on the growth of tourism.



Increased frequency and severity of forest fires may damage infrastructure and nature sites popular among nature-focused tourists, as well as create undesirable air quality conditions.



A decrease in snow fall will likely negatively impact Bosnia and Herzegovina's winter ski industry due to less mountain snow cover and a shorter ski season overall.

## Highlighted Actors

### [River Una National Park](#)

- Bosnia and Herzegovina's largest national park at 19,800 hectares, yet relatively few tourists visit due to its somewhat remote location
- Consists of many rivers, canyons, rapids, waterfalls, lush forests, and biodiversity
- Historic monasteries and mosques provide further touristic potential
- A hub for nature-focused tourist activities, such as hiking, kayaking, swimming, fishing, and biking

- Involved in several environmental projects, such as the EU-funded EcoSUSTAIN aimed at "improved scientific, technological and managerial knowledge base" and the SavaTies program aimed at reducing invasive species
- Environmental education resources available on their website

### [Jahorina Ski Resort](#)

- Located in the Dinaric Alps, less than an hour from Sarajevo airport
- Leading tourist destination in Bosnia and Herzegovina
- The site of some ski events at the 1984 Sarajevo Winter Olympics
- 52 km of ski slopes
- Ski season generally spans from early December until the end of March
- Partnerships developed with other winter sport organisations in the region (Montenegro Ski Resorts, Association of Slovenian Cable Cars – GIZ, etc.) to allow members to ski at other Balkan ski resorts
- Utilises the "SnowFactory" technology to supplement natural snow fall and ensure ideal ski conditions



## Additional Stakeholders

Governmental Bodies	Inter & Non-Governmental Organisations	Educational Institutions	Private Sector Actors
<ul style="list-style-type: none"> <li>• Ministry of Spatial Planning, Construction and Ecology of Republika Srpska</li> <li>• Federal Ministry of Environment and Tourism</li> <li>• Department for Spatial Planning &amp; Legal-Property Affairs of Brcko District</li> <li>• Foreign Trade Chamber of Bosnia and Herzegovina (Discover BiH tourism website development)</li> <li>• Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina</li> </ul>	<ul style="list-style-type: none"> <li>• International Union for Conservation of Nature (IUCN)</li> <li>• United Nations Development Program (UNDP)</li> <li>• Global Environment Facility (GEF)</li> <li>• Stockholm Environment Institute</li> </ul>	<ul style="list-style-type: none"> <li>• University of Sarajevo (Natural Sciences, Mathematics and Bio-Technical Sciences Group)</li> <li>• University of Banja Luka (Faculty of Natural Sciences &amp; Mathematics, Faculty of Agriculture)</li> </ul>	<ul style="list-style-type: none"> <li>• Tourism BiH (and associated partner organisations)</li> <li>• <a href="#">Bosnia4U</a></li> <li>• <a href="#">VisitingBosnia</a></li> <li>• <a href="#">Travel-Bosnia</a></li> </ul>

## Recommendations

- **Expansion of tourism activities**

Due to the negative impacts on Bosnia and Herzegovina's winter ski tourism industry, it is important to diversify what is available for visitors. Considering the picturesque landscapes, biodiversity, and mountain ranges, developing a stronger **mountain biking, hiking and adventure tourism** is a strong option.

- **Strategic Investment**

While climate adaptation necessitates governmental investments, the **private sector** has a role to play as well. For instance, Jahorina Ski Resort can invest in **high-efficiency snow making & farming technology** coupled with **renewable energy** to maintain high quality conditions without increasing negative impacts.

- **Increasing Awareness**

Many players within Bosnia and Herzegovina's tourism industry are not sufficiently informed regarding potential climate change impacts and adaptation measures, highlighting the need for **increased education** led by governmental and non-governmental bodies, including the River Una National Park.

- **Data Availability**

Bosnia and Herzegovina needs a higher **quality location-specific data** in order to design and implement effective climate change adaptation measures. This includes climate risk data, forest quality information, comprehensive land use data, and agricultural statistics. In part this task could be addressed by climate-proof project implemented by UNEP.

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\* Additional sources linked throughout the report

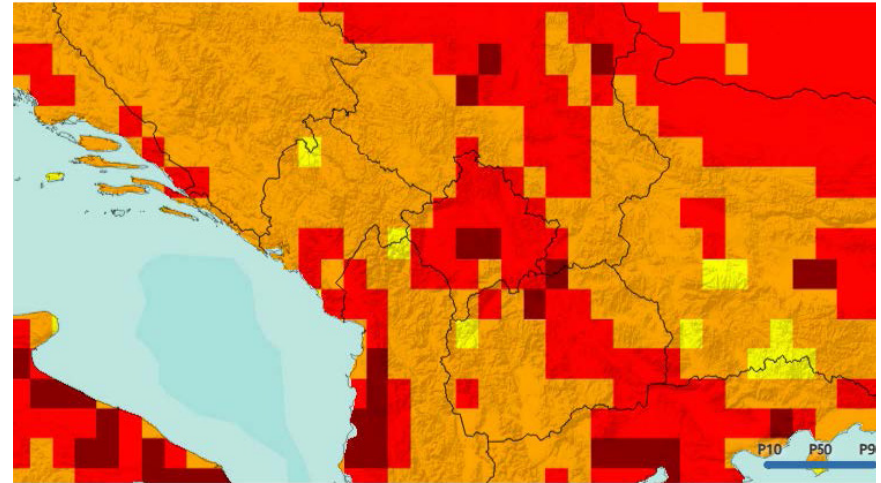
# Kosovo

Kosovo (under UNSCR1244/99) is a partially recognized landlocked nation nestled in between Montenegro, Serbia, North Macedonia, and Albania. It is the smallest nation in the Western Balkans with the lowest GDP per person. Kosovo is still largely reliant on coal as an energy source, which carries environmental and social risks that may discourage tourism (namely water and air pollution). Despite limited resources and comparatively slower development, Kosovo carries significant potential in terms of nature-based tourism. The region has mountains spanning much of its borders, including the Šar Mountains, the Kopaonik and the Accursed Mountain Range, which are all designated parks (though the management is not always under Kosovo's control)

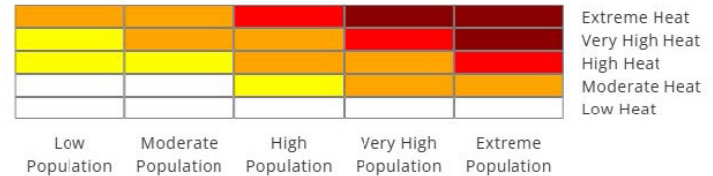
Warming trends associated with climate change are especially prominent at higher elevations, which will likely have negative impacts to ski destinations as well as the endemic species. The region is also vulnerable to forest fires, landslides, droughts, and floods which can negatively impact infrastructure and slow the development of the tourism industry. As Kosovo is not recognized under the UN, the reporting and monitoring systems are not conducted directly under the UNFCCC. This, combined with less location-specific data availability, highlights necessary gaps to fill in order to adapt to climate change as best as possible.

## Climate Change Trends in a Nutshell

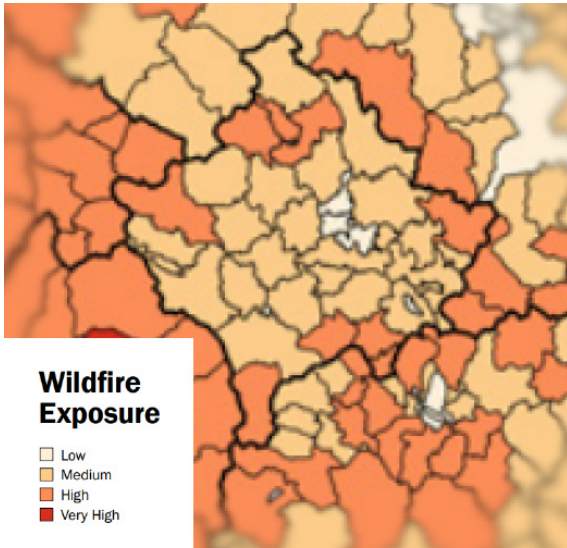
Categorization of Temperature-Based Heat + Population Risk Categorization for 2080-2099; Kosovo; (Ref. Period: 1995-2014), SSP5-8.5, 50th percentile



### RISK FACTOR CATEGORIZATION



↑ Map of heat risk risk across Kosovo, considering temperature and population. Source: [Climate Change Knowledge Portal, 2021](#)



← Map of the wildfire risk in across Kosovo. Source: [World Bank, 2024, page 39](#)

## Climate Change Impacts on Tourism



Droughts and floods are projected to increase in Kosovo as climate change progresses, putting further stress on infrastructure, water resources, and other amenities necessary for growth of the tourism sector.



Increased frequency and severity of forest fires may damage infrastructure and ecosystems popular among nature-focused tourists, as well as create undesirable air quality conditions.



Increased warming in the mountain areas may negatively impact biodiversity, potentially affecting nature-focused tourism, if not actions are taken.



A decrease in snow fall will likely negatively impact Kosovo's winter ski industry due to less mountain snow cover and a shorter ski season overall.

## Highlighted Actors

### [Balkan Natural Adventure](#)

- Swiss-Kosovar Tour Operator focused primarily on sustainable nature-based tourism in Kosovo, Albania, and Montenegro
- Based in Pejë, but operates across the region
- Holds a Travelife Sustainability Certificate (ISO 26000)
- Provides hiking, rock climbing, skiing, caving, and cultural expeditions
  - Year-round tourism
- Highlighted by The Guardian, the Financial Times, and other media outlets

### [The Bear Sanctuary](#)

- 16 hectares of habitat for rescued bears, currently housing 20 bears
- Tours, educational programs, and youth programs
- Run by Four Paws International NGO
- 20 km from Prishtina
- Several cooperation projects around the world (Bulgaria, Austria, Vietnam, Borneo, the Netherlands, South Africa, etc.) which focused on various species



## Additional Stakeholders

Governmental Bodies	Inter & Non-Governmental Organisations	Educational Institutions	Private Sector Actors
<ul style="list-style-type: none"> <li>• Ministry of Environment, Spatial Planning and Infrastructure (MESP)</li> <li>• Department of Tourism</li> <li>• Ministry of Agriculture, Forestry and Rural Development</li> <li>• Kosovo Agency for Environmental Protection (KEPA)</li> </ul>	<ul style="list-style-type: none"> <li>• International Union for Conservation of Nature (IUCN)</li> <li>• United Nations Development Program (UNDP)</li> <li>• Global Environment Facility (GEF)</li> <li>• <a href="#">Sustainability Leadership Kosova</a></li> </ul>	<ul style="list-style-type: none"> <li>• University of Pristina (Faculty of Mathematics and Natural Sciences, Faculty of Agriculture)</li> <li>• University of Prizren (Faculty of Life and Environmental Sciences)</li> <li>• <a href="#">Center for Education and Development of Environment</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Destination Kosovo</a></li> <li>• <a href="#">Be In Kosovo</a></li> <li>• <a href="#">Kosovo Info</a></li> <li>• Brezovica ski resort</li> </ul>

## Recommendations

- **Cleaner Energy**

Kosovo has the opportunity to develop sustainable tourism from early on in the sector's development, and a key facet of this is the energy system. Tourism stakeholders should consider **investing in renewable energy** as opposed to relying on the traditional coal-powered energy, as it is a better long term financial, environmental, and social choice.

- **Increased Collaboration**

Although Kosovo has limited political power, existing organisations are capable to support climate adaptation measures. For instance, The Bear Sanctuary has potential to assist in environmental research via **data collection**, as well as **implementation of nature-based solutions and education**. This is especially promising considering The Bear Sanctuary's existing connections with other environmental projects, and the site's leadership by an international NGO. Mountain tourism leaders such as Balkan Natural Adventures can continue to raise awareness regarding the **importance of sustainable tourism and climate impacts**, and therefore influence tourists and the tourism industry in Kosovo in a positive manner. As this company has gained international attention other actors in the tourism industry can participate in experience exchange, take notice and form individual and collaborative sustainability initiatives.

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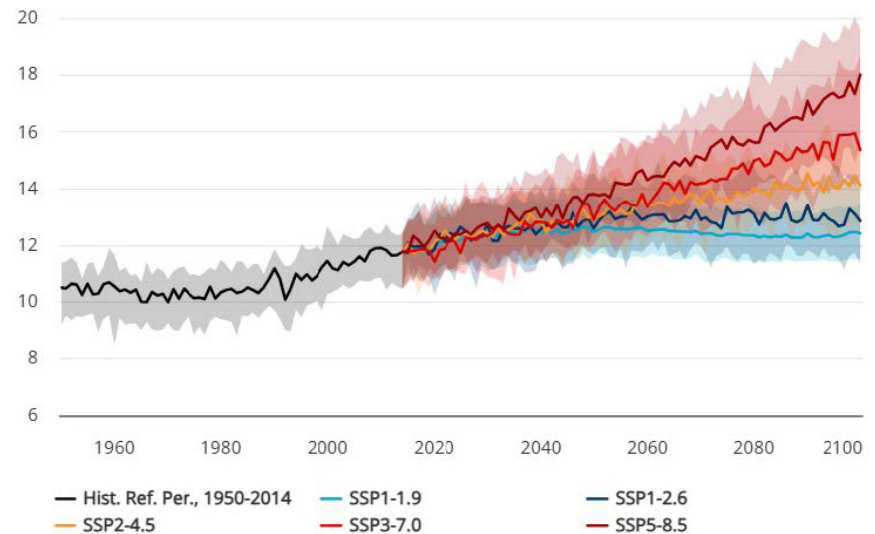
\* Additional sources linked throughout the report

# Serbia

Serbia is a landlocked country bordering Bosnia and Herzegovina, Montenegro, Kosovo (*Serbia does not recognize Kosovo as an independent state and considers it as the autonomous province*), Romania, Bulgaria, and Hungary. Serbia has both mountainous regions, including the Zlatibor and Balkan ranges, and fertile plains, providing a diverse landscape. The Iron Gate (Djerdap) Gorge and Danube River are other popular attractions for nature-based tourism here. Additionally, cultural tourism (especially the Medieval Orthodox Monasteries) has historically been popular. Both natural and cultural tourism sites could be impacted by climate impacts, including flooding, heat waves and erosion.

Serbia is likely to face water scarcity as climate change progresses, particularly because the regions with the greatest water demand are also at the increased risk of drought and groundwater depletion. Furthermore, soil erosion is an important issue, especially within the basins of Pčinja and Dragovištica, and South Morava. While tourism may not be a key driver of the Serbian economy, it is nonetheless important to address potential climate change concerns as they relate to the intersections between tourism and other sectors.

## Climate Change Trends in a Nutshell



↑ Past and projected average temperatures in Serbia, with predicted values based on the various Shared Socioeconomic Pathways (SSP). Source: [Climate Change Knowledge Portal, 2021](#).

- Under trend growth, riverine flooding expected to decrease Serbia's 2050 GDP by 15% ([World Bank Group, 2024, xi](#))
  - This is the most significant impact from flooding on any economy in the Western Balkans
- Temperature increases likely to increase risk of vector- water-borne diseases ([World Bank Group, 2024, 7](#))
- Over half of all emissions in the Western Balkans come from Serbia ([World Bank Group, 2024, 19](#))

## Climate Change Impacts on Tourism



Droughts, reduced rainfall, and reduction of groundwater are likely climate impacts in Serbia. These factors all may have negative impacts on the tourism industry.



Erosion is predicted to become an increasingly disruptive issue, especially in the basins of Pčinja and Dragovištica, and South Morava.



Temperature increases will impact the region, especially within urban areas, which accounts for the majority of Serbia's population and serve as popular tourist destinations.

## Highlighted Actors

### [Bačko Podunavlje](#)

- A designated UNESCO Biosphere Reserve
- Dubbed “the Amazon of Serbia”
- Along the Danube River
- Spans over 176,600 hectares
- Historic villages are present throughout the otherwise natural space, presenting ideal opportunity for natural and cultural tourism
- Rich in flora and fauna
- Well preserved wetland area
- This biosphere reserve spans five countries (Serbia, Hungary, Austria, Slovenia, and Croatia), linking together 13 protected areas
- Integrates space for ecosystem services with opportunities for tourism, agriculture, renewable energy, and fishing

### [Derdap National Park & Iron Gates Gorge](#)

- Longest natural gorge in Europe
- The park size is 64,000 hectares
- Hub of historic and natural tourism
  - Serbian archaeological site Lepenski Vir located at the park
- One of Serbia's most visited destination
- Hydroelectric dam created a popular man-made lake
- Accessible by car and boat



## Additional Stakeholders

Governmental Bodies	Inter & Non-Governmental Organisations	Educational Institutions	Private Sector Actors
<ul style="list-style-type: none"> <li>• Ministry of Environmental Protection (MEP)</li> <li>• Serbian Environmental Protection Agency</li> <li>• Ministry of Tourism and Youth</li> <li>• The Tourism Organisation of Serbia (TOS)</li> </ul>	<ul style="list-style-type: none"> <li>• International Union for Conservation of Nature (IUCN)</li> <li>• United Nations Development Program (UNDP), Global Environment Facility (GEF)</li> <li>• <a href="#">Young Researchers of Serbia</a> (MLADI ISTRAŽIVAČI SRBIJE)</li> <li>• <a href="#">NALED</a></li> </ul>	<ul style="list-style-type: none"> <li>• University of Belgrade (Faculties of Natural Sciences)</li> <li>• University of Novi Sad (Faculty of Science, the Institute of Lowland Forestry and Environment)</li> <li>• University of Kragujevac (Faculty of Hotel Management &amp; Tourism)</li> <li>• <a href="#">Environmental Protection Research Group</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Serbia.com</a></li> <li>• <a href="#">Experience Serbia</a></li> <li>• <a href="#">Visit Serbia</a></li> </ul>

## Recommendations

- **Focus on Nature-Based Tourism**

Given the attractive landscapes of Serbia, **ecosystem preservation** and **integration with the tourism industry** should be a high priority. Both Đerdap National Park & Iron Gates Gorge and Bačko Podunavlje are popular tourist destinations for nature-focused tourism.

- **Increased Education and Public Awareness**

**Education is an important facet of climate change adaptation**, especially in terms of responses to disasters such as flooding and wildfires which will increase in frequency and severity as climate change progresses.

Although tourism is not a key sector of the Serbian economy, building a sustainable sector will help to **foster resilience in the face of climate change** impacts.

- **Shifting to Cleaner Energy, Improving Resource Efficiency**

By **investing further in renewable energy and waste minimization and recycling** across both the public and private sector, Serbia can bolster its energy security and resource efficiency. Tourism operators can attract climate-conscious tourists through nature-friendly measures, including renewables, waste recycling, and conservation measures, to demonstrate strides in sustainability.

- **Water Usage**

Considering the changes to water resources brought on by climate change, it is important for Serbia to **prioritize sustainable water use**. This goes hand-in-hand with **education** as well as implementation of **efficient technologies** whenever possible.

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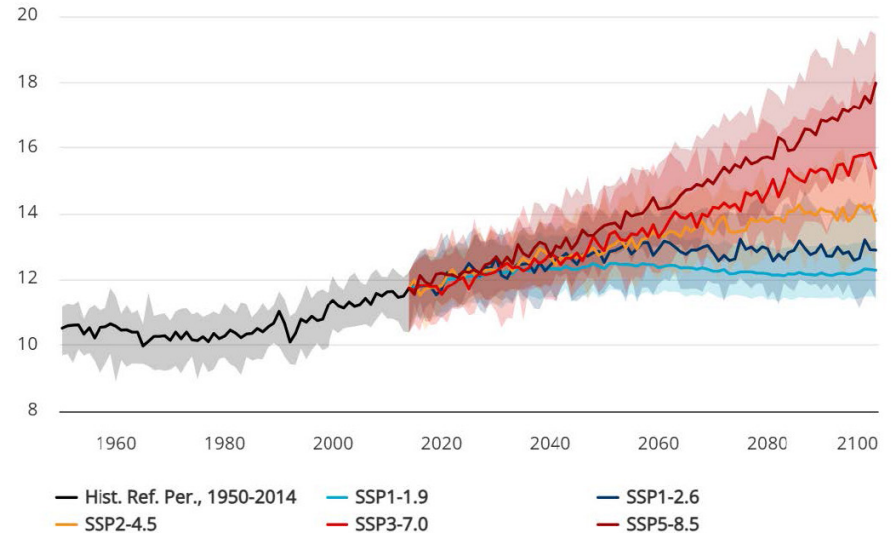
\* Additional sources linked throughout the report

# North Macedonia

North Macedonia is a landlocked nation bordering Serbia, Kosovo, Bulgaria, Greece, and Albania. The country is blessed with rich biodiversity and endemic species, lakes, hot springs, and scenic mountains. Despite the high potential for nature-based tourism in North Macedonia, this sector is under-developed. However, it has been growing in recent years, particularly cultural tourism, nature-based tourism, and wine-related tourism. Considering the growth of tourism alongside climate change progressions, North Macedonia has an opportunity to develop a sustainable tourism sector which works alongside climate adaptation rather than against it.

In addition to increasing likelihood of natural disasters in general, North Macedonia will likely face increased forest fires which have the potential to negatively impact ecosystems, the built environment, air quality, and the general attractiveness of the country as a tourist destination. Wildfires can also decrease soil quality and increase erosion, which are already issues of note near the Šar Mountain due to deforestation and overgrazing. Additionally, North Macedonia is projected to experience less precipitation and more frequent droughts, while also seeing increasing flash floods due to more intense rainfall. The multitude of factors impacting North Macedonia highlight the importance of increased resilience across sectors, including the growing tourism sector.

## Climate Change Trends in a Nutshell



↑ Past and projected average temperatures in North Macedonia, with predicted values based on the various Shared Socioeconomic Pathways (SSP). Source: [Climate Change Knowledge Portal, 2021](#).

- “North Macedonia could face economic damages of up to 4 percent of its gross domestic product (GDP) by 2050” due to climate change impacts ([World Bank, 2024](#))
- Approximately \$6.4 billion USD in investments is necessary over the next decade to meet adaptation needs ([World Bank, 2024](#))
- Flooding in 2015 alone cost North Macedonia over \$107 million USD in economic losses, in addition to significant impacts on people and the environment ([World Bank, 2024, page 3](#))
  - Although climate adaptation and resilience efforts can be costly, the cost of inaction will be higher

## Climate Change Impacts on Tourism



North Macedonia has high species richness and unique landscapes which may be negatively impacted by climate change. This, in turn, reduces the potential for nature-focused tourism.



North Macedonia is becoming increasingly susceptible to flash floods, droughts, and other natural disasters. This will likely damage infrastructure and potentially discourage tourism.



Increased frequency and severity of forest fires may damage infrastructure and ecosystems popular among nature-based tourists, as well as create undesirable air quality conditions.

## Highlighted Actors

### [Ohrid Lake & Galicica National Park](#)

- Galicica National Park has many hiking trails and scenic roads through meadows, and grants lake views (Lake Ohrid and Lake Prespa) popular among tourists
  - Hiking tours are popular here
- Lake Ohrid is a UNESCO World Heritage Site, and home to an estimated 200 endemic species
- There are also old towns in the vicinity, providing both historic/cultural tourism opportunities and nature-based tourism

### [Maleševo Mountain](#)

- Popular ski destination
- Dubbed “Little Switzerland”
- Part of the Osogovo-Belasitsa mountains
- Home to over 120 natural springs and a popular lake
- Diversity of both flora and fauna
- Visitors boast about the clean air, fresh ingredients, and high quality local dishes
- Forests cover over half of the region
- Local population is becoming increasingly opposed to large-scale tourism development projects which harm the natural environment



## Additional Stakeholders

Governmental Bodies	Inter & Non-Governmental Organisations	Educational Institutions	Private Sector Actors
<ul style="list-style-type: none"> <li>Ministry of Environment &amp; Physical Planning (MOEPP), National Parks Administration</li> <li>Ministry of Labor and Social Policy</li> <li>Agency for Promotion and Support of Tourism</li> </ul>	<ul style="list-style-type: none"> <li>International Union for Conservation of Nature (IUCN)</li> <li>United Nations Development Program (UNDP), Global Environment Facility (GEF)</li> <li><a href="#">Foundation Open Society North Macedonia</a></li> </ul>	<ul style="list-style-type: none"> <li>Goce Delčev University of Štip (Faculty of Tourism and Business Logistics, Faculty of Agriculture)</li> <li>Ss. Cyril and Methodius University of Skopje (Faculty of Natural Science, Institute of Agriculture)</li> <li>St. Clement of Ohrid University of Bitola (Faculty of Tourism and Catering)</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">NationalParks.MK</a></li> <li><a href="#">Visit Macedonia</a></li> <li><a href="#">North Macedonia Tourism Press</a></li> </ul>

## Recommendations

- **Prioritization of Sustainable Tourism**

Considering the resistance against large-scale tourism development in the Maleševo Mountain region, focus can be on **developing an environmentally and socially acceptable tourism industry** which preserves the existing nature beauty.

- This can be supported by increasing education for stakeholders in the tourism industry, as well as among tourists visiting (for example, advertising the **“Leave No Trace”** principle at hiking trails)
- Additionally, attention can be placed on **sustainable accommodation and transportation** options in and around prime tourist locations such as Ohrid Lake & Galicica National Park (ie. energy-efficient and renewable power for hotels, electric vehicles, walkable and bikeable infrastructure surrounding popular destinations).
- Protecting ecosystem health is another key aspect of maintaining sustainable tourism prospects in North Macedonia, which can be supported through continued data collection and monitoring, increased education for tourists, and good maintenance of natural spaces.

- **Disaster Preparedness**

Considering North Macedonia’s aforementioned vulnerability to climate change events, **it is important that local infrastructure, citizens, and visitors are prepared to respond.** In terms of infrastructure, flood protection, nature-based solutions, and wildfire monitoring and control are useful options.

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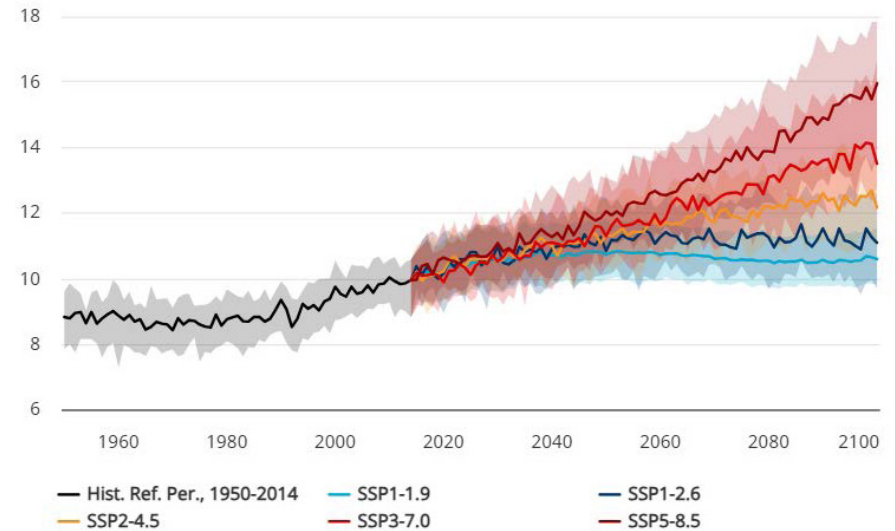
\* Additional sources linked throughout the report

# Montenegro

Montenegro borders Croatia, Bosnia and Herzegovina, Kosovo, Albania, and a coastline of 240 km along the Adriatic Sea. Montenegro, meaning “black mountain” named after Mount Loveen, consists largely of mountains and karst landscapes. About 60% of Montenegro is covered with mountain forests. The low lying regions make up the majority of the suitable agricultural lands. Local food production could be negatively impacted by climate change as these regions are vulnerable to flooding as climate change progresses. In addition, Montenegro is likely to face droughts, water scarcity, and decreased snowfall, which each carry impacts for local communities and the tourist industry. Relatedly, warming sea temperatures may impact the fishing industry.

While not a main driver of tourism, the ski industry in Montenegro is likely to face difficulties as winter temperatures increase and snowfall decreases. Landslides and forest fires are also projected to increase in Montenegro, adding an extra layer of natural hazards impacting the country. Montenegro is a well-established tourist destination for beach vacations, historical sightseeing and nature-based activities. With its location along the Adriatic Sea, Montenegro has several port cities popular for cruise ships, accelerating the growth of the tourist industry. Increasing coastal erosion has the potential to negatively impact coastal infrastructure and tourist amenities. Tourism is a leading industry in Montenegro, and adapting to climate change and fostering sustainable nature-focused tourism is of paramount importance moving forward. In 1991, Montenegro declared itself as the ecological state.

## Climate Change Trends in a Nutshell



↑ Past and projected average temperatures in Montenegro, with predicted values based on the various Shared Socioeconomic Pathways (SSP). Source: [Climate Change Knowledge Portal, 2021](#).

- “In 2022, droughts led to €100 million in losses for hydroelectric power generation in Montenegro” ([World Bank, 2024, page 8](#)), a trend expected to continue (and potentially worsen) due to climate change
- Key climate change hazards (river flooding, heat, and droughts) are predicted to cause a loss of over 8% of Montenegro’s 2050 GDP under trend growth scenario ([World Bank, 2024, page 59](#))
  - In addition to the above factors, wildfires are also likely to impact Montenegro’s socioeconomic state negatively

## Climate Change Impacts on Tourism



The risk of drought will become increasingly prevalent across Montenegro, especially within agricultural regions (Zeta-Bjelopavlići, Ulcinj) and during peak-tourist season. Water resources will need to be managed effectively in order to enable continued tourism.



Considering the forested landscape of Montenegro, forest fires pose a concern for the protection of ecosystems and infrastructure, both of which are important for the tourism sector.



Increased temperatures may make tourism in the summer months less popular; however, this could also lead to an elongated coastal tourist season. Warmer temperatures will have a negative impact on the winter sport tourism in the Montenegro's mountainous areas.



Sea level rise has the potential to damage coastal tourism infrastructure, including hotels, restaurants, ship infrastructure, and beaches.

## Highlighted Actors

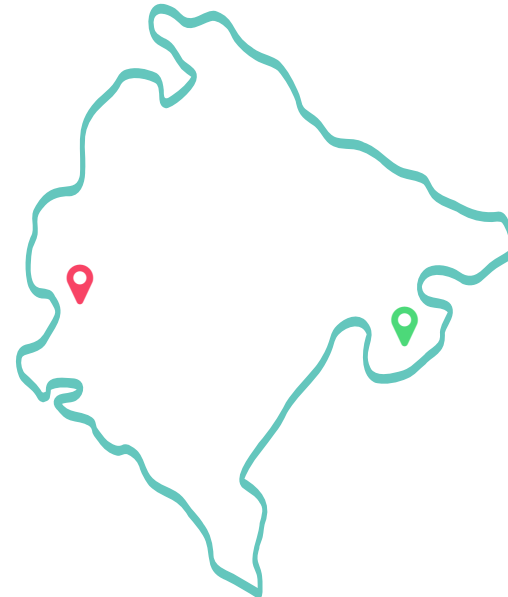
### 📍 Port of Kotor (LUKA KOTOR)

- Dubbed the “Gateway to Montenegro”
- Although the port itself has been in use since at least the 12th century, the port as a business entity was founded in 1988
- Situated directly in front of the UNESCO-recognized historic segment of Kotor
- Received approximately 500 cruise ships and 1000 yachts annually
- Primarily for tourism use

- Adheres to various environmental and quality standards ( ISO 9001 and ISO 14001)
- Assessed comprehensively under the Global Sustainable Tourism Council

### 📍 Prokletije National Park

- Established in 2009
- Mountain destination aimed at tourists seeking more challenging environment-related experiences (climbing, skiing, canyoning, hiking, fly fishing, etc).
- Popular in winter, spring, and summer
- Includes multiple scenic glacial lakes
- Multiple historic mosques and monasteries within the national park boundaries
- Wild roaming goats throughout the park
- Home to over 1700 species of plants, one of which is a species of wild garlic which tourists often sample



## Additional Stakeholders

Governmental Bodies	Inter & Non-Governmental Organisations	Educational Institutions	Private Sector Actors
<ul style="list-style-type: none"> <li>• Ministry of Sustainable Development &amp; Tourism (MSDT)</li> <li>• Ministry of Agriculture and Urban Development</li> <li>• Ministry of Ecology, Spatial Planning, and Urbanism</li> <li>• National Tourism Organisation of Montenegro</li> </ul>	<ul style="list-style-type: none"> <li>• International Union for Conservation of Nature (IUCN)</li> <li>• United Nations Development Program (UNDP), Global Environment Facility (GEF)</li> <li>• <a href="#">Resource Environmental Community (REC) Montenegro</a></li> <li>• <a href="#">FORS Montenegro</a></li> </ul>	<ul style="list-style-type: none"> <li>• University of Montenegro (Faculty of Natural Science, Faculty of Tourism and Hotel Management)</li> <li>• University of Donja Gorica (Faculty of Culture and Tourism, Hotel Management)</li> <li>• Mediterranean University (Faculty of Tourism)</li> <li>• <a href="#">Center for Climate Change, Natural Resources and Energy</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="#">Visit Montenegro</a></li> <li>• <a href="#">MontenegroCom</a></li> <li>• <a href="#">Zeta Travel</a></li> <li>• <a href="#">Lets Go to Montenegro</a></li> </ul>

## Recommendations

- **Diversification of Funding**

Considering the popularity of tourism via cruise ships and yachts to Montenegro, the country could **explore alternative funding** to better support implementation of sustainability and disaster resilience measures in tourism.

- For instance, greater engagement with international NGOs, collaborations across sectors, implementation of a tourist tax, and government incentives for the private sector to operate in a more environmentally friendly and climate-smart manner.

- **Tourism Diversification**

Sea level rise and other coastal climate impacts could present future challenges for tourism. To offset these potential impacts, Montenegro can increase development of **alternative tourism destinations**, such as Prokletije and others.

Similarly, **nature-based tourism** opportunities can be further supported in order to allow for tourism in the region regardless of the season. Given the immense natural beauty and ecosystem diversity, this option is promising, so long as the ecosystems themselves are protected and maintained sustainably.

- **Addressing Coastal Concerns**

Given the importance of coastal tourism hubs such as the Port of Kotor, it is vital that infrastructure is implemented to **protect against shoreline erosion** and beach destruction. To best align with Montenegro's identity as an "ecological state" alongside their sustainable tourism prospects, **nature-based solutions for coastal infrastructure** should be further explored.

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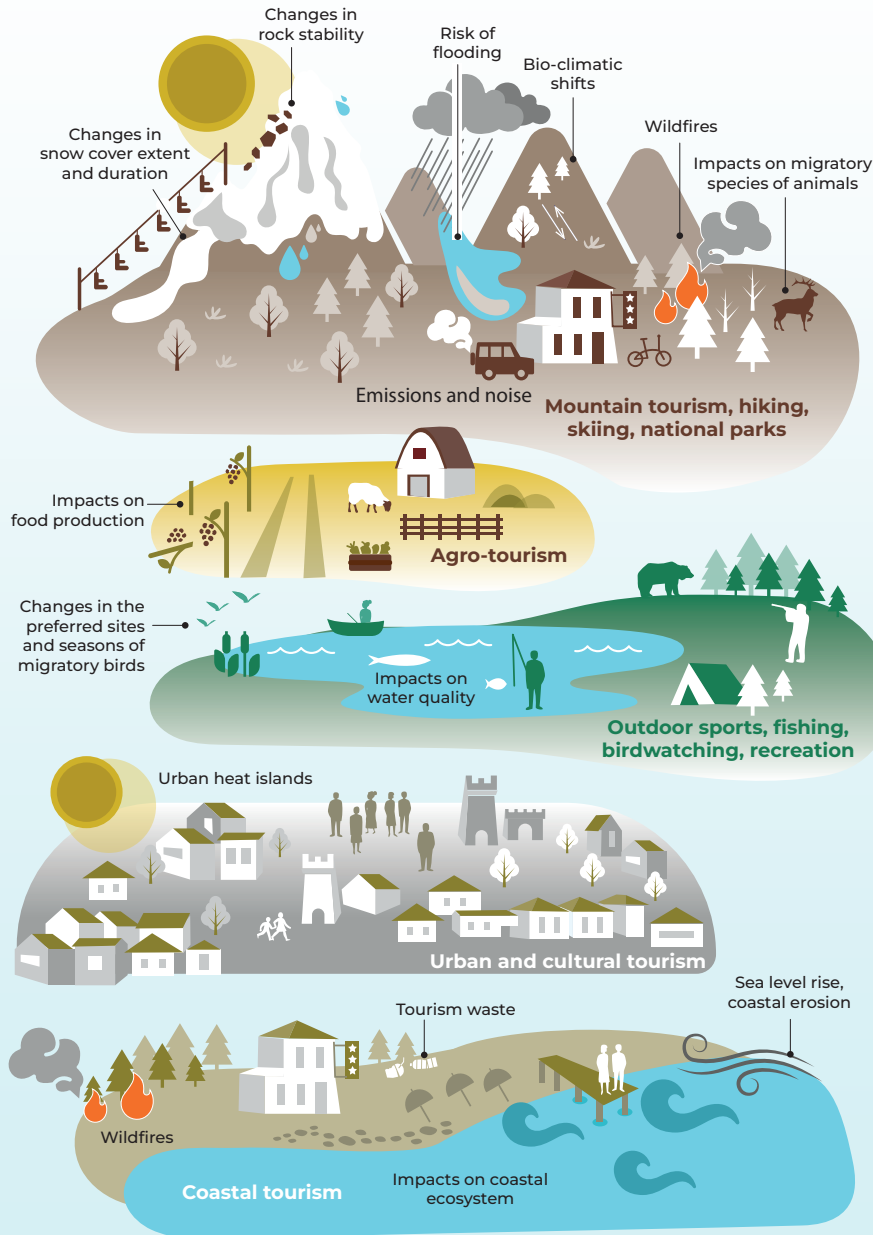
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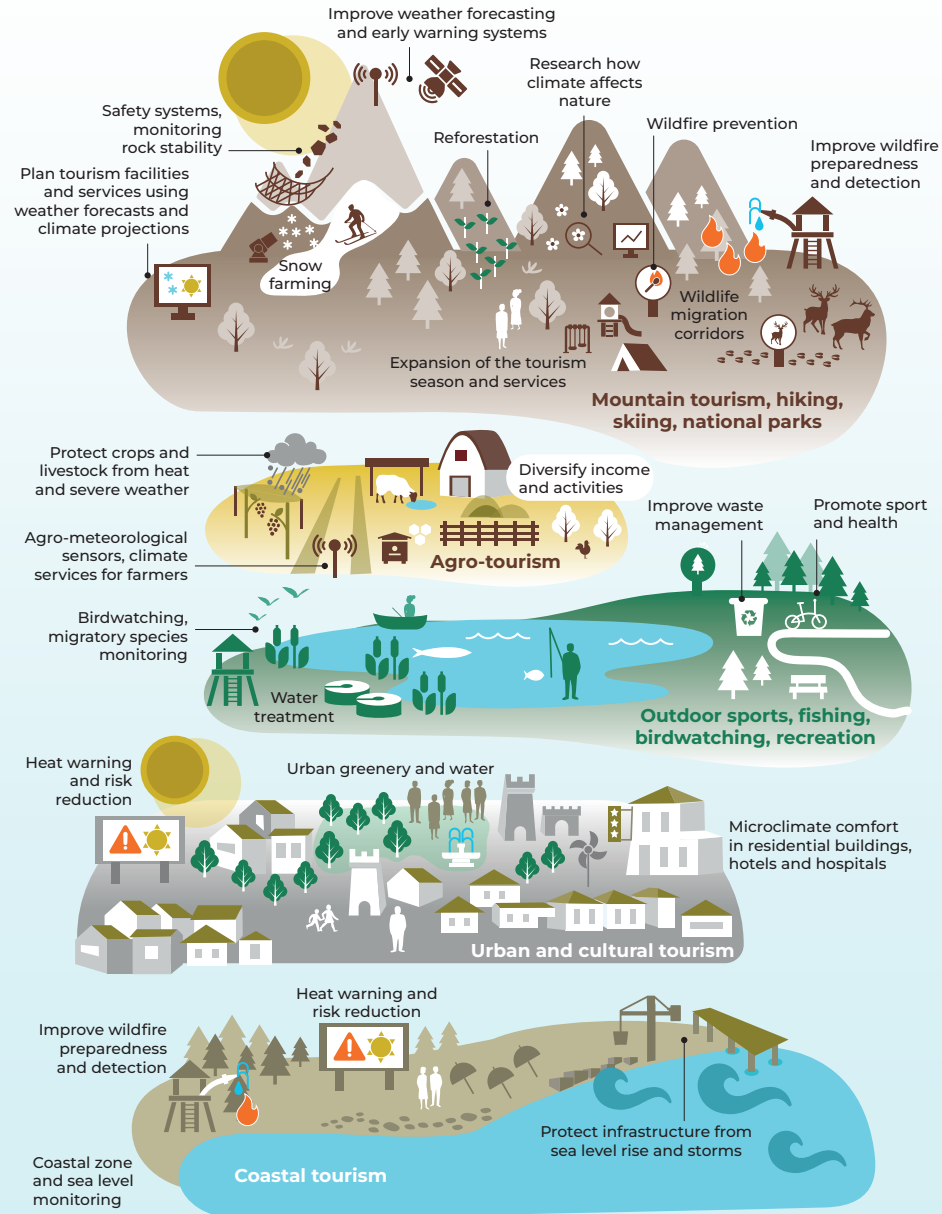
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\* Additional sources linked throughout the report

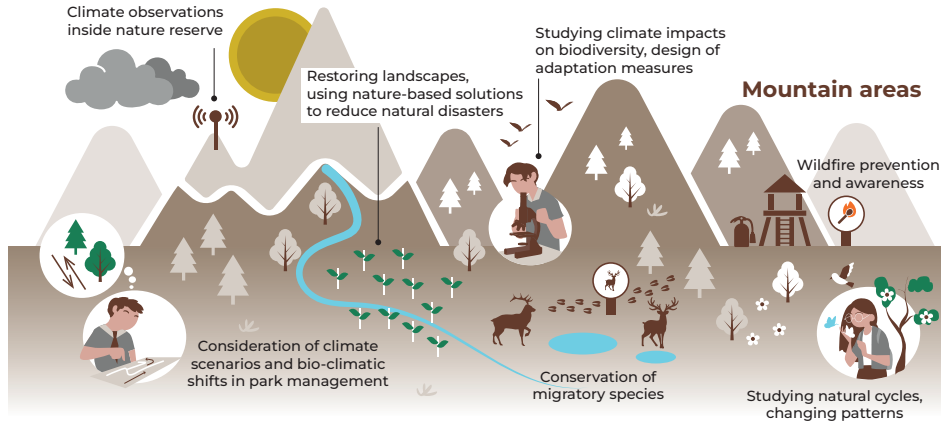
# Climate change impacts on tourism and national parks



# Climate-proofing measures in tourism and national parks



# Climate-smart management of vulnerable ecosystems and protected areas



## Planning and desk studies



## Coastal and water zones

