**switchasia**  Funded by the European Union

# The Missing Link: Unlocking Sustainable Tourism through Green Procurement

## 1. EXECUTIVE SUMMARY

The global travel and tourism sector, a cornerstone of economic prosperity (contributing some 10% of global GDP), faces mounting sustainability challenges. Rapid growth in this sector – projected to reach 1.8 billion tourists by 2030[1] – has intensified environmental pressures, including water scarcity, greenhouse gas (GHG) emissions, and ecosystem degradation. Green procurement, the practice of sourcing environment-friendly products and services, is emerging as a strategic tool to reconcile the economic benefits of tourism with planetary boundaries. By prioritising sustainable supply chains, renewable energy, and circular economy principles, the sector can reduce its environmental footprint while enhancing resilience and competitiveness. This report outlines key sustainability challenges in the tourism industry and advocates adopting green procurement practices when addressing critical challenges.

## 2. INTRODUCTION

According to the World Travel and Tourism Council (WTTC), tourism is one of the fastest-growing industries, accounting for 10% (direct contribution, 3%) of global GDP, and employing 330 million people worldwide in 2023.[2] Globally, the number of tourists is expected to rise from 1.442 billion in 2018 to 1.8 billion by 2030. Total investment in the travel and tourism sector grew by 13% to reach more than USD 1.0 trillion in 2023.[3] Together with the economic footprint tourism creates, it also plays a vital role in strengthening local economies through job creation and revenue generation, preserving cultural heritage, and promoting community pride and cross-cultural understanding.

This strong growth trajectory was momentarily disrupted by the unprecedented impact of the COVID-19 pandemic, which led to a sharp decline (70% ) in international tourist arrivals. However, the sector has shown remarkable resilience, rebounding swiftly and currently approaching pre-pandemic levels of activity. As global tourism investment and activity regain momentum, with projected annual spending growth of 7% over the next decade,[4] the industry is now repositioning itself not only as a symbol of recovery and adaptability but also as a central pillar of global socio-economic development, highlighting the urgency of embedding sustainability at the core of future growth.

---

1   UNWTO (2025), Enabling Framework for Tourism Investment: Drivers and Challenges Shaping Investment in Tourism.
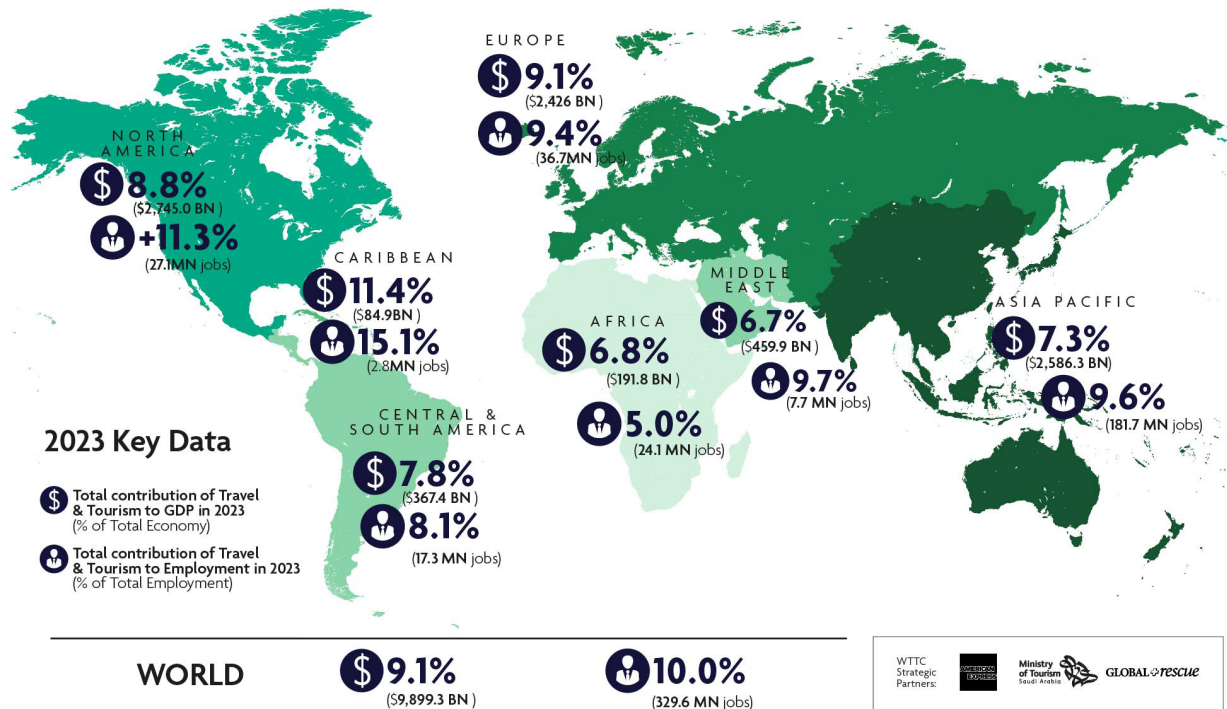2   WTTC (2024), Travel & Tourism Economic Impact 2024: Global Trends.
3   Ibid.
4   World Economic Forum (2025), Future of Travel and Tourism: Embracing Sustainable and Inclusive Growth.

**TRAVEL & TOURISM: ECONOMIC IMPACT 2024[1]**

WORLD TRAVEL & TOURISM COUNCIL

1. All values are in constant 2023 prices & exchange rates. As reported in March 2024

**EUROPE**
$ 9.1% ($2,426 BN )
9.4% (36.7MN jobs)

**NORTH AMERICA**
$ 8.8% ($2,745.0 BN)
+11.3% (27.1MN jobs)

**CARIBBEAN**
$ 11.4% ($84.9BN )
15.1% (2.8MN jobs)

**MIDDLE EAST**
$ 6.7% ($459.9 BN )
9.7% (7.7 MN jobs)

**AFRICA**
$ 6.8% ($191.8 BN )
5.0% (24.1 MN jobs)

**ASIA PACIFIC**
$ 7.3% ($2,586.3 BN)
9.6% (181.7 MN jobs)

**CENTRAL & SOUTH AMERICA**
$ 7.8% ($367.4 BN )
8.1% (17.3 MN jobs)

**2023 Key Data**

$ Total contribution of Travel & Tourism to GDP in 2023 (% of Total Economy)

Total contribution of Travel & Tourism to Employment in 2023 (% of Total Employment)

**WORLD**
$ 9.1% ($9,899.3 BN )
10.0% (329.6 MN jobs)

WTTC Strategic Partners: AMERICAN EXPRESS | Ministry of Tourism Saudi Arabia | GLOBAL rescue

---

In spite of this positive assessment, however, the impressive economic growth and rapid recovery of the tourism sector have come at a significant environmental cost. The sector is responsible for an estimated **8−9% of global $CO_2$ emissions**,[5] exerts considerable pressure on freshwater resources, particularly in already water-stressed regions, and contributes to biodiversity loss through land degradation, pollution, and habitat disruption. As tourism expands, especially in response to rising global incomes, its environmental footprint is expected to grow disproportionately. Moreover, climate change poses a direct threat to tourism-dependent economies, increasing the frequency of extreme weather events, accelerating coastal erosion, and straining natural resources. Without careful management, these pressures risk undermining the very elements that make destinations attractive – natural beauty, cultural heritage, and vibrant local communities. Therefore, aligning tourism growth with sustainable resource use is critical to avoid long-term consequences such as ecological degradation, reduced visitor satisfaction, and negative repercussions on local economies and societies.

Nevertheless, tourism also holds significant potential to be a catalyst for environmental preservation and sustainable development, if guided by the right policies and investments. By actively protecting and enhancing the ecosystems it relies on, the sector can generate not only economic value but also long-term socio-environmental benefits for host communities. Within this context, Green Public Procurement (GPP) emerges as a strategic tool to operationalise sustainability in the tourism value chain. GPP enables both public authorities and private operators to reduce environmental impact, while also responding to growing consumer demand for more responsible travel – highlighted by the fact that **76% of travellers now prefer eco-friendly options**.[6] By integrating sustainability criteria into purchasing decisions, the sector can steer supply chains toward greener alternatives, drive innovation, and support climate-resilient infrastructure and services.

This report explores how strategic procurement can be leveraged to advance systemic sustainability in tourism, and thus contribute to a more inclusive, resilient, and environmentally responsible future.

---

5    An, Khatib, 2023, Climate Change and Travel: Harmonizing to Abate Impact, *Curr Infect Dis Rep*. 2023; 25(4): 77-85. doi: 10.1007/s11908-023-00799-4. Epub 2023 Mar 1. PMID: 36987459; PMCID: PMC9975868.

6    World Economic Forum, 2023, Survey of travellers finds 76% want more sustainable options. Free download available at https://www.weforum.org/stories/2023/04/survey-of-travelers-finds-76-want-more-sustainable-options/

## 3. KEY SUSTAINABILITY CHALLENGES IN THE TOURISM SECTOR

Tourism faces multiple sustainability challenges that threaten both the environment and the long-term viability of the sector. One major issue is *water scarcity and pollution*. Although tourism uses less than 1% of global water[7], demand is concentrated in dry seasons and water-stressed regions, such as the Mediterranean Basin. Activities like desalination and excessive groundwater extraction for hotels and golf courses contribute to water quality degradation and saltwater intrusion into aquifers.

*Greenhouse gas (GHG) emissions* from tourism are rising rapidly. From 2009 to 2019, emissions grew by 3.5% annually – double the global average – reaching nearly 9% of global emissions. Transport, particularly aviation, accounts for the bulk of this footprint. With the demand in tourism expected to expand nearly 50% by 2030, the sector could see GHG emissions double every 20 years without more effective, systemic actions.

*Resource depletion and biodiversity loss* are also significant concerns. Tourism drives demand for land, food, timber, and seafood, and it strains ecosystems and natural resources. Infrastructure development often consumes carbon-absorbing land and degrades the natural beauty that tourist destinations depend on to attract visitors. These pressures can undermine local livelihoods and tourism's long-term competitiveness.

The sector is also highly *vulnerable to climate change*. Rising temperatures, sea-level rise, and extreme weather events already affect tourist flows and infrastructure. Recent examples include booking cancellations in India due to low snowfall, and heat-induced closures of landmarks in Europe. Small Island Developing States (SIDS), where tourism contributes up to 50% of GDP, are especially at risk. As revenues decline, governments may struggle to invest in needed adaptation measures, creating a vicious cycle of declining resilience.

Finally, *plastic waste* from tourism – particularly single-use plastics – poses growing threats to coastal and marine ecosystems. Destinations like the Mediterranean experience seasonal surges in plastic pollution during peak travel, compromising biodiversity and the attractiveness of tourist sites.

Addressing these challenges requires urgent, integrated policy and planning efforts to ensure that tourism contributes to, rather than undermines, sustainable development. More information on the sustainability issues associated with tourism can be found in the Annex, below.

## 4. GREEN PUBLIC PROCUREMENT (GPP) AS A STRATEGIC TOOL FOR ADVANCING SUSTAINABILITY IN TOURISM

Amid growing concerns over the environmental and social impact of tourism, there is increasing momentum to transform the sector's value chain towards low-carbon, resource-efficient, circular models through Sustainable Consumption and Production (SCP) practices. Within this context, Green Public Procurement (GPP) is emerging as a powerful lever to transition the travel and tourism industry into a more sustainable, inclusive, and resilient sector. Once seen as a routine administrative function focused solely on cost-efficiency, institutional procurement has evolved into a strategic instrument – one that considers the life-cycle effects of products, works, and services, while integrating social equity and environmental sustainability into purchasing decisions. While the term 'GPP' is typically associated with public sector purchasing, the underlying concept is equally applicable to all forms of institutional procurement, including corporate procurement. It now plays a pivotal role in aligning both public and corporate spending with broader national and global commitments, including SDG 12.7 on sustainable public procurement.

This holistic, sustainability-focused approach to procurement is particularly relevant in the tourism sector, where decisions must account for environmental consequences, health and safety concerns, local regulatory environments, and cultural sensitivities – all of which influence the feasibility and acceptability of greener alternatives. In this context, GPP can directly address a range of pressing issues, such as:

- **Water scarcity and pollution**, by suitably designing contracts for purchase of water-efficient equipment and systems, and requiring proper wastewater treatment in hotels and resorts
- **GHG emissions**, through procurement of low-carbon transport, energy-efficient appliances, and sustainable construction materials

---

7   S. Gössling (2013) Tourism and water: interrelationships and management Global Water Forum (2013)

- **Climate vulnerability**, by investing in climate-resilient infrastructure and services in fragile coastal and island destinations
- **Resource depletion and biodiversity loss**, by sourcing sustainable food, avoiding deforestation-linked products, and supporting local, eco-certified suppliers
- **Plastic pollution**, by limiting the use of single-use plastics in hospitality and tour operations, and by promoting circular alternatives.

Globally, both governments and corporates have recognised the potential of the 'power of procurement' to drive sustainable changes. UNEP's report *Transforming Tourism through Sustainable Procurement* further underscores how procurement can influence tourism's environmental performance.[8] For instance, hotels that have shifted to unbleached bed linen have achieved notable environmental benefits, including a 32% reduction in GHG emissions, 42% less energy consumption, and 28% less water use over the product's lifecycle. These examples underscore how strategic procurement choices –  such as minimising plastic use or sourcing environmentally responsible products –  can contribute meaningfully to sustainability goals. Encouragingly, a growing number of stakeholders are beginning to act on this potential.

Although the tourism sector is largely driven by private operators, it remains strongly influenced by public investment in infrastructure and services. This situation creates significant opportunities to leverage both public and private procurement for accelerating sustainable results. Public procurement, in particular, can set benchmarks for sustainability by integrating green criteria into tenders for infrastructure, accommodation, catering, and tourism events. At the same time, the private sector, unencumbered by public procurement regulations, has the agility to adopt innovative and forward-thinking practices that align with global sustainability standards and respond swiftly to market shifts.

Ultimately, meeting the complex sustainability challenges facing the tourism sector requires coordinated action across the entire value chain. GPP offers a structured, transparent, and scalable approach to embedding sustainability into purchasing decisions –  transforming how the sector operates. By aligning procurement with environmental and social priorities, tourism can reduce its ecological footprint, enhance climate resilience, support inclusive economic growth, and protect the natural and cultural assets that will make destinations valuable for generations to come.

## 6. CASE STUDIES AND SECTORAL INITIATIVES

In 2019, UNEP released the report *Transforming Tourism through Sustainable Procurement*, establishing a compelling case for integrating sustainability into procurement practices within the tourism sector. The report emphasises that by embedding sustainability requirements into purchasing processes, corporate buyers can send strong market signals and actively steer supply chains toward more sustainable practices. **Greenhouse gas emissions, energy consumption, water use, and waste generation** are identified as the primary environmental impact issues –  closely linked to the provision of food and beverages, the operation of basic utilities, and the delivery of quality guest experiences.

To illustrate how green procurement can be implemented in real life by corporate owners, the *Transforming Tourism* report presents 16 case studies from around the world, organised under four thematic areas: circular procurement practices, sustainable procurement of food and beverages, energy-efficient electrical appliances, and the reduction of single-use plastic products. These examples demonstrate how strategic procurement can support environmental goals while enhancing operational efficiency and guest satisfaction in the tourism sector.

The Sustainable Procurement Platform can be accessed for additional valuable case studies on green and sustainable procurement. While these case studies may not specifically focus on the tourism sector, they offer useful insights and inspiration for corporate purchasers within the travel and tourism industry.

The Global Business Travel Association (GBTA), a non-profit organisation with over 8,500 members across six continents, has released a Sustainable Procurement Standards. The Standards outlines key factors that buyers should consider during the procurement process to gain a comprehensive understanding of a hotel's ESG (environmental, social, and governance) performance. It also advises guests to choose hotels

---

8    UNEP, 2019, Transforming Tourism through Sustainable Procurement, UNEP, Paris, France.

certified by the [Global Sustainable Tourism Council (GSTC)](#), such as those bearing [EarthCheck](#) or [Green Key](#) labels. However, the guidance remains limited in scope – it is notably brief and lacks practical case studies demonstrating real-world applications of sustainable procurement and the tangible sustainability benefits achieved.

[Green Tourism](#), one of the leading sustainability certification for travel, tourism and hospitality businesses, has a [Sustainable Procurement Guide](#) that provides guidance on why sustainable procurement is important for the tourism sector; it provides a checklist for getting started on the sustainable procurement journey.

At the global level, the [United Nations World Tourism Organization (UNWTO)](#) works with member countries to enhance the resilience and sustainability of the tourism sector through various initiatives focused on biodiversity, climate action, plastic pollution, and resource efficiency. It has supported countries in adopting sustainable tourism policies that contribute to the achievement of SDG 12 on sustainable consumption and production. However, these policies currently do not fully leverage the potential of GPP as a tool to advance sustainability goals. Given its mandate and global reach, UNWTO could play a pivotal role in mainstreaming GPP into national sustainable tourism policies, thereby strengthening the sector's contribution to environmental and socio-economic sustainability. Through the [Global Tourism Plastics Initiative](#), led by UNEP and UNWTO in collaboration with the Ellen MacArthur Foundation, governments, industry and citizens are taking action to reduce plastic pollution in the tourism industry.

ASEAN is also committed to responsible, sustainable, inclusive and balanced tourism development, contributing significantly to the socio-economic well-being of ASEAN people. It has developed the [ASEAN Tourism Strategic Plan 2016–2025](#). Among the various Strategic Directions outlined in the report, Strategic Direction 2 focuses on ensuring sustainable and inclusive tourism development in the ASEAN countries. [Eco-union](#), a not-for-profit organisation, has produced a [Guide to Climate Adaptation Strategies in Tourist Destinations](#) for coastal, island and mountain destinations. However, this guideline falls short of a strategy to leverage procurement to achieve climate adaptation strategies.

In August 2023, [SWITCH-Asia launched a regional Technical Advisory](#) projects to promote Sustainable/ Green Public Procurement (S/GPP) as a strategic lever for advancing broader sustainability goals across seven countries in the Asia-Pacific region. As part of this effort, several resources have been developed to support and track the progress of S/GPP implementation. Complementing this initiative, SWITCH-Asia is also supporting a Technical Advisory on *Strategic Foresight for Tourism with a Food Angle* in Central Asia. This project aims to foster circularity and sustainability in the tourism sector by promoting local and sustainable food production, enriching tourism experiences, and enhancing the overall attractiveness of destinations. Another notable Technical Advisory, *Sustainable Tourism Enhancement in the Pacific (STEP)*, focuses on promoting a resource-efficient tourism sector in the Pacific. It seeks to support the development of national action plans and a regional roadmap to guide the sustainable tourism transformation in Pacific Island nations.

In light of these studies, it is increasingly clear that green procurement is being recognised as a strategic lever for driving meaningful change. While important progress has been made – through reports like UNEP's *Transforming Tourism through Sustainable Procurement*, guidance from organisations like GBTA and Green Tourism, and regional strategies such as the ASEAN Tourism Strategic Plan, SWITCH Asia Technical Advisory in Central Asia and Pacific on tourism – there remains a critical gap in fully leveraging procurement as a tool for sustainability, climate resilience, and inclusive development.

## 7. CHALLENGES TO IMPLEMENTING GPP

Despite some progress in implementing GPP within the tourism sector, corporate purchasers continue to face significant challenges in fully understanding the concept and integrating sustainability considerations into their procurement decisions. As a result, purchasing practices often default to traditional cost-driven approaches, overlooking the long-term environmental and social consequences of their choices. Drawing on international experiences in GPP implementation, the following section outlines some of the most notable challenges that hinder the broader adoption of GPP in the tourism industry.

### 7.1. Lack of awareness and strategic recognition

One of the most fundamental barriers to implementing GPP in the tourism sector is the limited recognition among industry leaders, tourism associations, and decision-makers that procurement can serve as a strategic

tool for mitigating the sustainability risks faced by industry. While some initiatives have been taken in this area by UNEP, GBTA, GSTC, and others, many stakeholders still view procurement merely as an operational function rather than as a strategic lever to influence supply chains, reduce environmental impact, and support local economies. This lack of awareness has created a disconnect between sustainability goals – such as reducing emissions, conserving water, and minimising waste – and the actual procurement practices on the ground. Cultivating this recognition is a critical first step in unlocking the transformative potential of GPP and embedding sustainability across the sector.

## 7.2. Higher upfront cost, especially for SMEs

The higher upfront costs associated with sustainable alternatives act as a significant deterrent to GPP adoption, particularly for small and medium-sized enterprises (SMEs), which make up about 80%[9] of the tourism sector. Even small increases in initial investment can strain cash flow and limit profitability, making it difficult for SMEs to prioritise sustainability, and this despite potential long-term savings. Without targeted financial incentives, subsidies, or clear return-on-investment frameworks, small businesses may remain reluctant to adopt green products and services. Addressing this financial barrier is key to ensuring inclusive and widespread GPP implementation across the tourism value chain.

## 7.3. Limited capacity and skills of procurers

A lack of capacity among procurement professionals is another major obstacle to mainstreaming GPP in tourism. Many procurers lack the training, tools, and access to reliable data needed to assess the life-cycle impact and make informed sustainability-focused purchasing decisions. This skills gap is compounded by the absence of sector-specific guidelines and standardised sustainability criteria, particularly tailored to the tourism context. As a result, procurement often defaults to conventional, cost-driven practices. Building the capacity of procurement personnel – through training programs, knowledge-sharing platforms, and practical guidance – is essential to enabling more strategic and sustainable procurement decisions.

## 7.4. Limited public sector influence in a private-sector dominated industry

Since the tourism industry is driven predominantly by private stakeholders, this structure limits the government's direct influence over sustainability practices. Private entities typically prioritise profitability over public goods and may lack the incentives to align their operations with broader environmental and social objectives. In the absence of robust public frameworks, sustainability efforts can become fragmented, voluntary, and inconsistent, hindering meaningful progress across the sector.

## 7.5. The enabling role of government

Despite these limitations, governments can play a critical enabling role to foster GPP implementation. As policy-makers, regulators, and conveners, they can shape the sustainability landscape of the tourism sector by developing clear policies, offering incentives, and creating supportive regulatory environments. Governments can also lead by example through green public procurement in tourism infrastructure and services, setting benchmarks that influence private sector behaviour. Moreover, they can foster public-private partnerships, support international standardisation, and invest in capacity-building initiatives, and thus ensure that sustainability becomes a core part of tourism development strategies and operations.

## 8. RECOMMENDATIONS FOR STAKEHOLDERS

As a sector deeply intertwined with natural ecosystems, resource consumption, and local communities, tourism stands to benefit immensely from integrating green and sustainable procurement practices at scale. Stakeholders across the value chain – from governments and international organisations to businesses and travellers – must collaborate to embed sustainability criteria into procurement decisions, support innovation, and mainstream these practices into policy and daily operations. Doing so will not only reduce the sector's environmental footprint but also enhance its long-term competitiveness, resilience, and contribution to global sustainable development goals.

---

9    *WTTC launches 'Together in Travel' to empower Small and Medium Enterprises in the global Travel & Tourism sector,* 10 October 2024. Available at https://wttc.org/news-article/wttc-launches-together-in-travel-to-empower-small-and-medium-enterprises-in-the-global-travel-and-tourism-sector#:~:text=Some%20data%20suggests%20up%20to,can%20optimise%20productivity%20and%20impact.

The following table provides the actionable recommendations to address challenges identified above in Section 8.

| Challenges to GPP implementation | Recommendations |
|---|---|
| **Lack of awareness and strategic recognition** | • Launch targeted awareness campaigns for tourism industry leaders, associations, and procurement officers on the strategic role of GPP in advancing sustainability and reducing operational risks.<br>• Incorporate GPP into national and regional tourism policies, sustainability standards, and destination certification frameworks to formally recognise its value.<br>• Develop sector-specific GPP case studies and success stories to demonstrate real-world impact and inspire industry buy-in.<br>• Engage tourism industry influencers and business networks (e.g. hotel chains, tourism boards, industry forums) to act as GPP champions and promote its strategic relevance. |
| **Higher upfront cost, especially for SMEs** | • Introduce financial incentives and subsidies for SMEs adopting sustainable products, such as eco-certifications, tax credits, or grants for green upgrades.<br>• Promote pooled or cooperative procurement models that allow SMEs to benefit from economies of scale when purchasing sustainable goods and services.<br>• Provide tools to calculate life-cycle costs and long-term savings to help SMEs make informed investment decisions in sustainable alternatives. |
| **Limited capacity and skills of procurers** | • Design and deliver dedicated training programs on green procurement tailored for the tourism sector.<br>• Develop sector-specific guidelines and standardised sustainability criteria tailored to the tourism context.<br>• Develop and disseminate practical toolkits and checklists with tourism-specific sustainability indicators and procurement templates.<br>• Create an online knowledge-sharing platform or community of practice for tourism procurers to exchange best practices, tools, and experiences.<br>• Integrate sustainability modules into tourism and hospitality education curricula, especially for procurement and supply-chain management professionals. |
| **Limited public sector influence in a private-sector dominated industry** | • Strengthen public-private collaboration platforms where both sectors co-create sustainability goals and align procurement strategies.<br>• Encourage voluntary sustainability commitments through recognition schemes, public endorsements, and awards for businesses adopting GPP practices.<br>• Leverage public procurement in tourism infrastructure and destination development to set sustainability benchmarks and influence private sector norms.<br>• Facilitate access to sustainability-linked procurement data and standards, making it easier for private stakeholders to align with public sustainability goals. |

| The enabling role of government | • Develop national GPP action plans specifically for the tourism sector, aligned with SDG 12.7 and national climate/biodiversity targets.<br>• Mandate sustainability criteria in public tenders related to tourism infrastructure, services, and events.<br>• Incorporate GPP requirements into public funding or licensing conditions for tourism businesses and projects.<br>• Support harmonisation of sustainability standards and certification schemes (e.g. GSTC) across jurisdictions to reduce complexity and promote consistency.<br>• Facilitate regional collaboration and knowledge exchange to support coordinated GPP adoption among countries with shared tourism markets (e.g. ASEAN, Mediterranean, Caribbean). |
|---|---|

## 9. CONCLUSION

The travel and tourism sector stands at a pivotal moment. Unchecked growth risks causing lasting environmental degradation, while the adoption of sustainable practices offers a clear pathway to long-term resilience and competitiveness. Green procurement is not merely a matter of corporate responsibility – it is a strategic necessity. By embedding sustainability into supply chains and procurement processes, the sector can significantly reduce its carbon footprint, safeguard fragile ecosystems, and align with the growing demand for environmentally and socially responsible travel.

Governments at all levels – national, regional, and local – have a critical role to play in shaping this transformation. Through well-crafted policies and incentive structures, public authorities can accelerate the shift toward sustainable tourism models, support innovation, and promote the uptake of clean technologies and circular business practices. Furthermore, governments are uniquely positioned to facilitate international cooperation, harmonise standards, and ensure that sustainability and inclusivity are at the core of tourism development strategies.

Collaboration between the public and private sectors is essential to unlock the full potential of green procurement and drive meaningful change across the value chain. The future of tourism hinges on our collective ability to act decisively. By embracing green procurement today, we lay the foundation for a more resilient, inclusive, and environmentally responsible tourism sector that contributes to global climate and development goals.

www.switch-asia.eu

EU SWITCH-Asia Programme
@EUSWITCHAsia

SWITCH-Asia
@SWITCHAsia

SWITCH-Asia Official
@switch-asia-official

## 1. Water scarcity and pollution

Although the global tourism industry accounts for a relatively modest share of total water consumption (often estimated at less than 1%[10])  the impact of this sector is disproportionately high due to seasonal and geographic factors. Tourism activity typically peaks during the summer months, which coincide with the driest period of the year in many regions. This seasonal surge in demand places additional stress on already scarce water resources, especially in areas where crops also requires increased irrigation during this season. Moreover, tourism is often concentrated in regions that are naturally water-stressed, such as the Mediterranean basin, where limited freshwater availability exacerbates competition among sectors.

In addition tourism affects the quality of the water. Desalinating ocean water with energy intensive reverse osmosis technology has become the primary source of potable water at many destinations.[11] Untreated brine from these desalinisation facilities might be discarded and released into the environment, mainly the sea, posing a threat to the coastal eco-system. Globally, it is estimated that less than 10% of collected wastewater is treated before release, contributing to water pollution and ecosystem degradation.[12] Additionally, excessive freshwater extraction to meet the needs of tourists –  such as for hotels, swimming pools, and golf courses –  can lead to saltwater intrusion into coastal aquifers, further threatening the sustainability of local water supplies.

## 2. Greenhouse Gas Emissions (GHGs)

Despite growing momentum toward sustainability in the tourism sector, GHG emissions from the industry have continued to rise at an alarming rate. Between 2009 and 2019, emissions grew by 3.5% annually – twice the global average –  reaching 5.2 Gt $CO_2$-e or approximately 8.8% of total global GHG emissions by 2019.[13] Transportation alone accounts for up to 75% of tourism's total GHG emissions, with aviation being the largest contributor, responsible for approximately 40% of that total.[14] If this trend continues, tourism-related emissions are projected to double every 20 years.

Tourism being a highly income-elastic sector, consumer demand for tourism is likely to grow more rapidly than for most other goods and services. Consequently, the sector is expected to become one of the leading contributors to global greenhouse gas (GHG) emissions because of continued expansion. According to the World Tourism Organisation International Transport Forum, the number of international and domestic tourists is likely to grow by 50% and 49% respectively between 2016 and 2030,[15] further amplifying the sector's environmental footprint. This trajectory highlights the urgent need for more effective and systemic sustainability measures that go beyond voluntary initiatives and incremental improvements.

## 3. Resource depletion and biodiversity loss

The impact of tourism activities and infrastructure development extends far beyond visible environmental changes: it also places significant and often underestimated pressure on natural resources and ecosystem services. These include the use of cropland to produce food and fibre for tourists and hospitality operations, grazing land to support the demand for meat-based diets, forests for timber and wood products used in construction and hospitality, and fishing grounds – both marine and inland – to meet the rising appetite for seafood. In addition, tourism-driven development consumes built-up land for hotels, resorts, roads, and other infrastructure, while requiring vast areas of carbon uptake land, namely forests, cropland and vegetated areas which are needed to absorb the $CO_2$ emitted by transport, energy use, and other fossil fuel-dependent activities.[16]

10    Gössling, S., 2013, Tourism and water: interrelationships and management Global Water Forum. https://www.globalwaterforum.org/2013/07/16/tourism-and-water-interrelationships-and-management/

11    Zhu, Kun, 2023, Impact of water-tourism-ecosystem nexus on the sustainable development of eco-city, *Water Supply* 23 (5): 2233-2247. https://doi.org/10.2166/ws.2023.123

12    Zhao, J.,  Li, S.-M., 2018, The impact of tourism development on the environment in China, *Acta Scientifica Malaysia*, 2 (1), pp. 1-4, 10.26480/asm.01.2018.01.04

13    Sun, YY., Faturay, F., Lenzen, M. *et al.*, 2024, Drivers of global tourism carbon emissions. *Nature Communications* 15, 10384. https://doi.org/10.1038/s41467-024-54582-7

14    AN, Khatib, 2023, Climate Change and Travel: Harmonizing to Abate Impact. *Curr Infect Dis Rep.* 25(4):77-85. doi: 10.1007/s11908-023-00799-4. Epub 2023 Mar 1. PMID: 36987459; PMCID: PMC9975868.

15    UN World Tourist Organization, Transport-related CO2 Emissions of the Tourism Sector – Modelling Results, 2019, 10.18111/9789284416660, Available at https://www.sciencedirect.com/science/article/pii/S0959652623027269#bib107

16    Borucke, M. et al., 2013, Accounting for demand and supply of the biosphere's regenerative capacity: The National Footprint Accounts' underlying methodology and framework, *Ecological Indicators* 24, January, 518-533

These hidden environmental costs have far-reaching ramifications. They can degrade the very ecosystems that support local communities, and thus undermine livelihoods, food security, and the quality of life. At the same time, they directly affect the long-term competitiveness of tourism destinations, which often rely on pristine natural landscapes and rich biodiversity to attract visitors. Such shifts can result in serious economic consequences for regions and countries heavily reliant on tourism,[17] underscoring the urgent need to integrate sustainability into every facet of tourism development and planning such as accommodation, construction, food & beverages, transport, and various services.

## 4. Climate vulnerability

Despite being one of the largest contributors to global GHG emissions, the tourism sector is itself highly vulnerable to the impact of climate change. It is directly exposed to physical effects such as sea-level rise and rising temperatures, as well as indirect consequences like shifting water availability, increased frequency of extreme weather events, and the spread of climate-sensitive diseases. These phenomena already pose significant risks to popular travel destinations, particularly in regions that are highly climate-sensitive or economically dependent on tourism.

In Indonesia, a study found that every 1% increase in temperature and relative humidity results in a decline in international tourist arrivals by 1.37% and 0.59%, respectively.[18] Similar results can be seen in other regions as well. For example, in the winter of 2024, reduced snowfall in Gulmarg, India, led to mass cancellations of domestic and international bookings, leaving 70% of houseboats unoccupied[19] and significantly affecting the livelihoods of those who rely on tourism-related services. Similarly, in 2023, extreme heatwaves sweeping across southern Europe forced authorities in Athens, Greece, to take the unprecedented step of closing the Acropolis – one of the region's most iconic tourist attractions – for the safety of visitors.[20]

The consequences could be far more severe for tourism-dependent economies such as Small Island Developing States (SIDS), which earn high gross revenues from tourism. According to WTTC data, the tourism sector on average accounts for almost 30% of GDP in the SIDS, reaching over 50% for the Maldives, Seychelles, St. Kitts and Nevis, and Grenada.[21] These countries are particularly at risk from a decline in tourist numbers due to climate-induced changes such as the increasing frequency and severity of storms, sea level rise, cyclones, floods, wildfires, and droughts – repercussions that could be devastating. A vicious cycle may emerge: as climate-related damage leads to reduced tourist arrivals and revenue, governments may find it increasingly difficult to finance the repair, maintenance, and adaptation measures needed to protect tourism infrastructure and natural heritage, further undermining the resilience and attractiveness of these destinations.

## 5. Generation of plastic waste

The tourism industry contributes significantly to plastic pollution, particularly in coastal and marine regions that attract large numbers of visitors. Much of this pollution originates from the widespread use of single-use plastics such as water bottles, food containers, straws, and plastic bags, and by tourists and businesses alike. These items are often favoured for convenience and hygiene, especially in destinations lacking robust waste management systems. During peak travel seasons, the volume of plastic waste can surge dramatically. In the Mediterranean, for instance, over 200 million tourists visit each summer, resulting in a seasonal spike of up to 40% in plastic waste entering the sea.[22] Similar results are likely in other major tourist hubs, particularly in SIDS and coastal regions where ecosystems are already vulnerable.

Plastic pollution not only harms biodiversity but also reduces the aesthetic and recreational value of destinations, leading to potential declines in tourist arrivals, reputational damage, and increased costs for local authorities tasked with clean-up. Over time, these pressures may jeopardise the economic sustainability of tourism, especially in regions where this sector constitutes a major share of GDP and employment.

17   Becken S., 2013, A review of tourism and climate change as an evolving knowledge domain, Tourism Management Perspectives 6, April, 53-62.
18   Susanto, J., et al. 2020, The impacts of climate variables and climate-related extreme events on island country's tourism: Evidence from Indonesia, Journal of Cleaner Production 276. Available at https://doi.org/10.1016/j.jclepro.2020.124204
19   Khan, M.F., Riyaz, R. 2025, Surviving the Climate Crisis, Available at https://brighterkashmir.com/surviving-the-climate-crisis
20   World Economic Forum, Rising global temperatures are already affecting the tourism industry - here's how. Available at https://www.weforum.org/stories/2023/08/temperatures-tourism-climate-impact/
21   UN Trade and Development, 2020, Impact of COVID-19 on tourism in small island developing states. Available at https://unctad.org/news/impact-covid-19-tourism-small-island-developing-states#:~:text=On%20average%2C%20the%20tourism%20sector,approximately%20%2430%20billion%20per%20year.
22   WWF Report 2018, Out of the Plastic Trap: Saving the Mediterranean from Plastic Pollution. Available at https://awsassets.panda.org/downloads/a4_plastics_med_web_08june_new.pdf