

World Sustainability Series

Walter Leal Filho *Editor*

# COVID-19: Paving the Way for a More Sustainable World



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# COVID-19 and Sustainable Tourism



Wendy M. Purcell, O'Shannon Burns, and Allison Voss

**Abstract** The dual health and economic crises of the COVID-19 pandemic have thrown the disruptive forces acting on the travel and tourism (T&T) sector into sharp relief, drawing attention to the interconnected and hyper-dependent nature of sustainability, health and business. Lockdowns and social distancing strategies effectively closed and could ultimately decimate the sector. With the pandemic affording people and planet some short-term relief from T&T's impact on communities, destinations and the environment, this is the time to re-imagine the sector. Looking ahead, a range of approaches to advance sustainable T&T could help it 'build back better', attenuating its negative impacts and advancing the contribution T&T makes to global citizenship and to a more balanced economy and equitable society. T&T business leaders are widening their view of sustainability beyond immediate operational impact to consider the broader systems in which they operate, adopting sustainability leadership practices for the twenty-first century and beyond. COVID-19 represents a 'teachable moment' for the T&T sector to accelerate sustainability, paying greater attention to the trade-offs and dilemmas presented by its activities. Indeed, T&T has enormous potential to educate the traveler and drive fulfilment of the Sustainable Development Goals. We propose that adopting the 'Culture of Health' framework could serve to fast track the sector's move to sustainable T&T, supported by conscious consumerism and greater governmental oversight.

**Keywords** Travel and tourism · Sustainability · Culture of Health · Sustainable tourism · Disruption · Transformational change

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W. M. Purcell (✉)

Harvard T.H. Chan School of Public Health, Harvard University, 401 Park Drive, 4th Floor West, Suite 406, PO Box 15677, Boston, MA 02215, USA

e-mail: [wpurcell@hsph.harvard.edu](mailto:wpurcell@hsph.harvard.edu)

O. Burns

Harvard Division of Continuing Education, Harvard University, Cambridge, USA

A. Voss

Harvard Kennedy School, Harvard University, Cambridge, USA

e-mail: [allison\\_voss@student.hks.harvard.edu](mailto:allison_voss@student.hks.harvard.edu)

# 1 The World's Fastest Growing Sector Comes to a Halt: Travel & Tourism Macro-Trends and COVID-19's Impact

Travel is fatal to prejudice, bigotry, and narrow-mindedness, and many of our people need it sorely on these accounts. Broad, wholesome, charitable views of men and things cannot be acquired by vegetating in one little corner of the earth all one's lifetime. Mark Twain<sup>1</sup>

The United Nations World Tourism Organization (UNWTO), defines tourism as “*a social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes*” (UNWTO 2010). Before the pandemic struck, travel and tourism (T&T) was one of the world's largest and fastest growing economic sectors, with last decade marking the first time that more than one billion people crossed an international border as a visitor in a single year (McCaul 2020). The T&T sector is comprised of a range of disparate and inter-connected industries, with small and medium enterprises (SMEs) representing 80% of the sector (Pololikashvili 2020), involving interactions among residents, visitors, administration of the destinations and the companies that integrate and operate in them (Azcarate et al. 2019). This complex value chain comprises six key segments that drive overall performance:

- **Aviation and Airports:** New and expanded airports and airline routes fueled growth in tourism, opening up new destinations. Low-cost airlines (e.g., Ryanair, easyJet) made travel cheaper and T&T more accessible (Johnson 2018), with 4.4 billion passengers estimated to have traveled by air in 2018 (IATA 2019). Greenhouse gas (GHG) emissions from aviation were estimated to triple by 2050, representing 25% of the global carbon budget (Graver et al. 2019).
- **Cruise Lines:** Some 28.5 million passengers traveled with cruise companies in 2018, and a record number of new berths were added to the global fleet in 2019 (Cruise Lines International Association 2019).
- **Destinations:** Destinations represent the critical environmental and cultural assets that attract travelers, with Destination Management Organizations (DMOs) working with national, state and/or local governments on marketing. Issues linked to improper waste management, depletion of water resources and ‘overtourism’—the situation in which a place exceeds its carrying capacity (UNWTO 2018a, b)—have all come to the fore with destinations needing to master plan around place and consider local impacts of T&T (Epler-Wood et al. 2019).
- **Hotels and Accommodation:** Two primary business models make up the hotel sector, namely branded franchise hotels, and small independent hotels, the latter representing some 60–70% of the industry worldwide (Stringam and Partlow 2016). Airbnb, as a platform business, has served to disrupt the accommodation offer in the sector—now with 150 million users and 7 million listings (iProperty Management 2020).

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<sup>1</sup>In *The Innocents Abroad* by Mark Twain (1869). London: Collins Clear-type Press.

- **Sales and Booking Platforms:** Technology has facilitated the development of online travel agencies and booking platforms that are transforming T&T, allowing airlines, accommodation providers, and small tourism businesses to sell direct to the consumer. Technology increases the complexity of the travel supply chain, making collective sustainability efforts more challenging.
- **Tour Operators:** Tour operators curate package and bespoke T&T experiences, bringing together accommodation, food and beverage, transportation and local transfers, excursions and activities, and guides.

Issues relating to COVID-19 are affecting the traveler experience across the T&T value chain. Deciding whether to leave home at all now includes a careful consideration of health risks, safety, affordability and other factors as they relate to the journey, stay and experiences at the destination. We have therefore focused our efforts on exploring COVID-19 and sustainable T&T as it pertains to transport, accommodation and destinations; these parts of the T&T ecosystem also present the most significant opportunities to advance sustainability in the sector. We undertook an extensive literature review, which was critically evaluated and emergent themes identified. We also drew on our extensive network of global T&T leaders to ensure the literature was situated in context.

Over the past decade and before the crisis, growth of the T&T sector was championed as a “*key driver for socio-economic progress*” (Euractiv 2019), because of its significant contribution to the development of local economies and its sizeable contribution to GDP in many countries. The World Travel and Tourism Council (WTTC), which represents private T&T companies, highlighted the sector’s input to global GDP at 10.3% in 2019 (WTTC 2020). The sector contributed over US\$8.9 trillion to the global economy in 2019, supporting one in 10 jobs (330 million) worldwide and one in five new jobs over the last five years, with 3.5% growth in 2019 compared to the global economy at 2.5% (WTTC 2020). The sector represented nearly 30% of total service exports and was core to the economy of many nations. In 2019, domestic tourism represented 71.3% of total tourism spend, business travel 21.4% and leisure travel 78.6%, with a high proportion of women in employment and a high dependency on natural and cultural resources (WTTC 2020). With 1.5 billion international tourist arrivals in 2019 and an additional one billion people forecast to join the global middle class by 2030, international travel was predicted to grow by some 35% (Lonely Planet 2016), with 1.8 billion international arrivals by 2030 and domestic tourism up to four times this figure (UNWTO 2016, 2017). The T&T sector has seen six decades of consistent growth (OECD 2020a, b, c), with tourism outpacing the United Nations (UN) growth projections over the period 2010–2019 and 45% of international travel arrivals to emerging economies<sup>2</sup> in 2017 (UNWTO 2018a). Late 2019 forecasts predicted that these trends would continue, with tourism arrivals forecast to grow 3–4% globally in 2020, despite a number of expected economic, political, and health disruptions (UNWTO 2019a, b). These international tourism statistics only capture a small part of the picture—a growing number of domestic tourists dominate

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<sup>2</sup>Classification based on International Monetary Fund criteria.

travel destinations like China and the United States (US), for example, just 3.3% of person-trips<sup>3</sup> in the US are international arrivals (U.S. Travel Association 2020). With budget airlines (e.g. WizzAir, Spirit) lowering the costs of travel, disruptive technology creating platforms for accommodation (e.g. Airbnb), and travel searches making it easier to plan a trip (e.g., Google Travel), the T&T growth curve looked set to continue unabated before the pandemic.

Against these confident T&T global growth figures, there were however mounting concerns about the extractive nature of the sector and its detrimental impact on people and planet. T&T macro-trends hide the dependency of some countries and destinations on its income and the effects that a poorly designed and managed sector can have on place and local communities. With the infrastructure supporting T&T linked to other economic sectors, from food and farming to energy and public health, the sector can strain natural and societal resources. The risk of infectious diseases, water scarcity, environmental degradation, carbon emissions, waste, worker health, deforestation, deregulation, decentralization, privatization, and the fragmentation of power are just some of the global sustainability issues in the T&T sector (Sustainability Leaders Project 2019). In recent years, new terms have been coined to draw attention to these issues, including ‘flygskam’ or ‘flight shaming’ (Quick 2019) and ‘overtourism’ (Rafat 2018). While travelers explore all areas of the globe, the international arrivals of just 20 countries combined exceeds that of the rest of the world (McKinsey and WTTC 2017). Overtourism has severe consequences in some destinations, for example, Boracay island in the Philippines was closed to tourists in an effort to minimize harm (Alexander 2019), while citizens in Amsterdam and Venice protested to draw attention to their concerns (Henley 2020). The over-popularity of certain destinations, from Thailand’s Koh Khai islands and Peru’s Machu Picchu to various European and US cities amplified the negative environmental and social impacts of T&T. While destinations and T&T businesses responded by adopting traveler dispersion policies and moves to shift traveler behavior by targeting higher-value overnight travelers rather than day-trippers (McKinsey and WTTC 2017), a more concerted approach is needed.

The detrimental impacts of the T&T sector have prompted many stakeholders to warn of worsening conditions if appropriate steps are not taken. The WTTC’s report ‘Connecting Global Climate Action’ (WTTC 2015) drew attention to existing research on the environmental footprint of T&T. It proposed the sector take a lead, stating the next 20 years “...will be characterized by the sector fully integrating climate change and related issues into business strategy, supporting the global transition to a low carbon economy, and strengthening resilience at a local level against climate risks.” (WTTC 2015). WTTC went on to make public commitments with its members towards carbon reduction and agreed a common agenda for climate action in T&T in accord with the United Nations Framework on Climate Change (WTTC 2015). The United Nations Environment Program 2050 forecast the impact

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<sup>3</sup>Person-trip is defined as one person on a trip away from home overnight in paid accommodations or on a day or overnight trip to places 50 miles or more [one-way] away from home (Source: US Travel Association).

of tourism, highlighting the requirement for T&T to adopt sustainability practices, with energy consumption predicted to increase by 154%, GHG by 131%, water consumption by 152% and solid waste by 251% by 2050 (United Nations Environment Program 2050 (UNEP) 2017). Private T&T businesses and governments play an important role in addressing these challenges and driving sustainable T&T; however, their efforts have historically been limited in scope. While some are making concerted efforts to integrate sustainable practices into their operations, performance and reporting it typically remains confined to the corporate social responsibility agenda and is not mainstreamed into either business strategy or the traveler's experience. Similarly, national sustainability or low carbon strategies are lacking, with just 11% of national T&T objectives related to sustainability (UNWTO 2019a).

There are many perceived barriers to the pursuit of strategic sustainability in business, such as low consumer demand, policies failing to drive enough market incentives, short-termism of financial markets, among others. However, it is essential that the T&T sector adopts sustainability across all its domains. Given Brundtland's definition of sustainability states, "... *development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*" (World Commission on Environment and Development 1987), T&T needs to adopt sustainability wholeheartedly across:

- the environment: making optimal use of resources, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity;
- the socio-cultural axes: respecting the values and customs of host communities, conserving their built and living heritage and traditional values, and contributing to inter-cultural understanding and tolerance; and
- the economy: ensuring viable, long-term economic operations, providing benefits equitably to all stakeholders, including employment and contributing to poverty alleviation (UNEP & World Tourism Organization 2005).

Historically, some positive steps to establish sustainability governance in the sector have been taken. In 2008, the United Nations Foundation, UNWTO, UNEP, and the Rainforest Alliance developed the Global Sustainable Tourism Criteria (GSTC) to establish the "*minimum requirements that any tourism business or public destination management authorities should aspire to reach to protect and sustain the world's natural and cultural resources while ensuring tourism meets its potential as a tool for poverty alleviation*" (GSTC 2020). However, there is still no universally accepted sustainability standard or certification for T&T, perhaps reflecting the complexity of the sector, and the adoption of sustainability has been slow with only a few companies and destinations embracing it strategically and holistically. Conscious consumers have pushed the industry forward on some issues, such as single-use plastics (UNEP 2020), but sectoral motivations have largely been reactive. Although the importance of sustainable T&T and destination management has come into sharp focus, the sector as a whole still appears to lack meaningful commitment to sustainable tourism development across its various domains (Mullis 2017).

## 2 React and/or Adapt: Travel & Tourism's Responses to the Pandemic and Re-Opening Efforts

Sustainability is essential for tourism to be compatible with the fragile environment... while providing benefits and opportunities to communities, which gives a key role to innovation to harmonize these objectives. Manuel Butler, UNWTO Executive Director<sup>4</sup>

In January 2020, the first cases of COVID-19 were reported; by mid-March, as the virus spread, borders began closing across the world. Governments implemented quarantine measures—with 91% of the world's population living in countries that limited or forbid entry to noncitizens or non-residents (Connor 2020). International T&T effectively stopped as COVID-19 cases rose worldwide. By May 2020, a UNWTO report noted that every destination in the world had implemented travel restrictions, and 75% of those restrictions completely halted international tourism UNWTO (2020a). By July 2020, many governments continue to require quarantine, with international tourism arrivals forecast to decrease 60–80% in 2020 (UNWTO 2020a), making T&T one of the sectors most impacted by COVID-19. In the US alone, travel spending in 2020 will likely drop by US\$300 billion, translating into a loss of nearly a trillion dollars in economic output (Oxford Economics 2020). COVID-19 highlighted the impact of the T&T sector on communities, in both positive and negative ways. While grounded flights resulted in improved air quality and locals were again able to enjoy their neighborhoods free of tour buses and day-trippers, this also meant no income for millions around the world who rely on T&T for their livelihoods. Lockdown measures, designed to preserve health and health systems, led to some temporary environmental benefits, including global carbon dioxide emission levels down by 8% in March and April (Le Quére et al. 2020).

The T&T sector responded to the pandemic in various ways, with government-led stimulus packages and worker furlough support, and individuals taking personal action to protect their health. Global hotels were at 29% occupancy compared to 72% in 2019 (Dalrymple et al. 2020), and some chains leaned into help. For example, the 'Hospitality for Hope' initiative saw more than 15,000 hotels sign up for the American Hotel and Lodging Association campaign to match hotels with government agencies in need, offering temporary housing for emergency and health care workers amid the pandemic (Simon 2020). Hilton and Marriott donated 1 M rooms to front-line workers (Hilton 2020; Clabaugh 2020), Melia hotels transformed one of its properties into a hospital for mild COVID patients (Majorca Daily Bulletin 2020), and Indian Hotels Company provided millions of meals to healthcare and migrant workers (IHCL 2020). Many airports closed entirely, others shut one or more terminals and airlines suspended operations or cancelled a significant proportion of flights, with seat miles for US airlines down by 71% in April 2020 (Curley et al. 2020; Dalrymple et al. 2020). To adapt to the COVID-19 crisis, airlines have shut down and/or altered routes and frequency, with the number of seats offered by airlines in 2020 expected

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<sup>4</sup><https://www.unwto.org/snow-and-mountain-tourism-industry-professionals-to-discuss-links-between-tourism-sustainability-and-innovation>, February 2020.

to be 42–52% less than originally planned (ICAO 2020). Most airlines laid off staff, with Air Canada letting go of 50% of its staff (CBC 2020), Lufthansa shedding some 22,000 employees (Reuters 2020), and United Airlines announcing plans to lay off 36,000 employees by October 2020 (Josephs 2020). Meeting future needs for more flexibility, for example in airline ticketing, could cost 4% of 2019 revenues at US\$40 billion (Dalrymple et al. 2020). The resultant decline in world passenger traffic is forecast to be seven to 17 times larger than during the global financial crisis of 2008 (Boin et al. 2020).

Many governments, recognizing the economic impact of the T&T sector, were quick to announce bailout and stimulus packages, for example, Hong Kong bailed out Cathay Pacific at US\$5 billion (BBC 2020), and the US passenger airlines called for US\$50 billion to survive the crisis (Financial Times 2020). Typically bailouts did not come with any ‘green recovery’ requirements, except in a few countries, for example, France tied their bailout package to emission reduction targets for Air France requiring the airline to cut back on 40% of its domestic flights (Dunn 2020). However, early analysis already suggests that these ‘green’ measures might not have the lasting impact on emissions that is needed to reduce climate change (Keating 2020). Governments also implemented a myriad of reopening strategies to attract tourists to return, from superior hygiene to stipends to encourage travel. For example, the SG Clean plan was launched by Singapore’s National Environment Agency in February 2020 (National Environment Agency 2020) to send a strong signal that tourism businesses should take cleanliness and hygiene very seriously for locals and visitors alike. Elsewhere, the use of data was identified as a core strategy, for example, Iceland did not initiate a lockdown, opting instead for extreme tracing and quarantine measures using biotech firm deCODE for contact tracing; the official tracing app was in use by 40% of the population in Iceland by June 2020 (Kolbert 2020). Others adopted strict quarantine measures, for example, Hawaii’s 14-day quarantine came with severe penalties including jail for transgressors (Sampson 2020). Some offered to take care of travelers who got sick, for example the Cyprus government committed to look after travelers who tested positive during their stay, as well as their families and close contacts (Hadjicostis 2020). Other nations are extending payments to entice travelers, for example, Sicily announced in April 2020 that it would pay a portion of travelers’ trip costs (Wilson 2020), and Switzerland offered a 200 euro voucher for citizens to spend while exploring the country (Broom 2020).

Recovery of the T&T sector from the pandemic’s impact will vary based on governmental, company and individual responses to both the health and economic crises, the perceptions of risk and behavioral changes due to business and leisure practices adopted in the lockdown. Some regions are implementing ‘travel bubbles’ between places with low prevalence of COVID-19, where people may travel across borders without quarantine (Mzezewa 2020). The European Union was the first to implement such an approach (Palmer 2020); the US, which has struggled to accurately track and contain the pandemic, was notably excluded from the bubble. A trans-Tasman bubble between Australia and New Zealand has been debated (Derwin 2020; Locker 2020), and countries in Asia and South America are exploring similar policies



(Andina 2020; Pinandita 2020). Some forecasts predict that group and volume travel will be the last to rebound after domestic and regional tourism (E-Tourism Frontiers 2020). McKinsey & Company (Krishnan et al. 2020) predicts normal hospitality operations and demand levels will not return to pre-COVID-19 levels until 2023 at the earliest. Additional waves of the virus could halt or curtail reopening strategies, bringing additional disruptions to the sector. As the sector grapples with adopting stringent health and safety protocols, the future may see borders open and close as the number and geography of COVID-19 cases fluctuate. For example, a June 12, 2020 report (Enger et al. 2020) signaled China's travel recovery, but just three days later, a massive spike in COVID-19 cases in Beijing effectively halted traveler plans. These fluctuations, as well as enhanced contact tracing and social distancing protocols, will demand greater flexibility and rapid response within the T&T sector and may demand greater regulatory oversight. Overall, these recovery strategies largely focus on traveler health and safety rather than efforts to reimagine a more sustainable future for T&T (Osbourne 2020).

The uncertainty and economic consequences brought on by the pandemic have put at risk 100–120 million T&T jobs around the world (UNWTO 2020a). This loss is particularly devastating in destinations where the sector contributes significantly to GDP. A recent UN report highlighted the exposure of Small Island Developing States given their deep reliance on tourism, noting that impacts would fall disproportionately on women and informal workers (Coke-Hamilton 2020). For example, T&T represents over 90% of total GDP in Macau, 74% in Aruba and over 50% in the Maldives and the British and US Virgin Islands (United Nations Conference on Trade and Development 2020). The T&T sector contributes 8.5% of Africa's total GDP and the pandemic will likely result in the loss of 2 million direct and indirect tourism jobs (Ighobor 2020). In Asia, the UN estimates that 15.3 million workers' jobs and livelihoods are at risk, and that 75% of these workers hold informal jobs that are especially vulnerable (International Labour Organization 2020). Thus, as the T&T sector plays a critical role for millions around the world, governments, private sector, local communities, and travelers have a critical role to play in shaping the future of T&T (Higgins-Desbiolles 2019). Re-framing sustainable T&T will therefore require a delicate balance of people, planet and prosperity.

### **3 Building Back Better: Reimagining Sustainable Travel and Tourism**

From a sustainability point of view, all political and economic systems have failed. But humanity has not yet failed. Greta Thunberg<sup>5</sup>

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<sup>5</sup>Thunberg, Greta. "No 'green deal' will be ambitious enough to save the planet." *Time* 20 Jul. 2020: 67. Print.

A recent OECD report on COVID-19 recovery (OECD 2020a) warned against policies and programs that return the world to ‘business as usual’ and instead recommends the recovery, whatever shape or duration, be leveraged as a mechanism to ‘build back better’. If ever there was a crisis that taught the world about health and the fragility of our economic model, it was COVID-19 as we collectively repressed the economy to save lives. The impact of the pandemic demands we consider new ways to sustain business and health. We propose that adopting the ‘Culture of Health’<sup>6</sup> framework (Quelch and Boudreau 2016), which places well-being as a strategic business priority, could accelerate sustainable T&T. Quelch’s argument that “*Every company, knowingly or unknowingly, impacts public health...*” (Quelch and Boudreau 2016) is ostensibly an agenda for sustainability and connects health and business across four domains:

- Environment: how businesses impacts the environment;
- Community: how much business invests in the health of its communities;
- Employees, including supply chain: how business treats its employees and supply chain workers, and
- Consumers: how businesses deliver products and services to consumers.

Environmental, Social and Governance (ESG) frameworks focus primarily on metrics related to the environment, with any consideration of health typically limited to employee health; by adding Consumer and Community as equally important pillars (Quelch and Boudreau 2016) the framework widens the lens of how business might envision more sustainable practices. In a world post the COVID-19 pandemic, those businesses that take the health of people and the natural world as core strategic agendas are poised to pivot more powerfully and emerge not just more environmentally and socially sustainable, but also more economically viable (Paun 2020).

By focusing on sustainability as well-being, inclusivity, emissions reductions, slowing biodiversity loss, creating circular supply chains, and increasing resiliency in addition to recovering economies and livelihoods (OECD 2020a), T&T has the opportunity to re-imagine itself. Positive trends that support a more responsible future include localism, with travelers exploring closer to home. Destinations too are adopting social distancing measures, with fewer people allowed in any one place, for example, Machu Pichu stated it will reduce numbers by 75% when it reopens in July 2020 (Merco Press 2020). Interestingly, virtual tourism is predicted to increase with those in lockdown enjoying online experiences (Chen 2020), but whether this then translates to seeking a real-life travel experience is as yet unknown. Overall, governments and destinations may end up embracing sustainability by default through a reduced volume, higher value strategy to manage T&T as they reopen. On the other hand, the negative side effects of exclusivity, inequity and higher carbon footprint

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<sup>6</sup>Culture of Health <https://www.hsph.harvard.edu/news/hsph-in-the-news/companies-culture-of-health/> is a study supported by the Robert Wood Johnson Foundation under the grant No. 74275 ‘Building a Culture of Health: A Business Leadership Imperative’ and is a joint initiative between the Harvard Chan School of Public Health and the Harvard Business School.

may take root in the sector. The likelihood of people avoiding shared mobility solutions, such as buses and ride shares, turning instead to their own cars may worsen air quality. T&T may again become the reserve of the only those with sufficient disposable income to afford socially distanced T&T and who can cover the associated costs of increased health risks. While private jet flights decreased by some 70% in April 2020, with places such as the Seychelles and the Maldives open only to such flights (Skirka 2020; Thani 2020), levels had recovered to near pre-COVID levels by July 2020 (Powley and Bushey 2020). Tradeoffs within T&T need to accommodate the impact on people, planet and prosperity and balance the desire to travel with that of health and safety, seeking to secure economic interests against preserving the quality of life in a destination and globally. Figure 1 captures some predicted near-term (1–3 years) outcomes of COVID-19 across the T&T sector mapped against the four pillars of the ‘Culture of Health’ framework (Quelch and Boudreau, 2016).

Within the **environment pillar**, pricing should reflect the true impact of T&T recognizing the positive contribution the sector makes to conservation efforts against the negative impacts, including carbon emissions, freshwater supply, waste management and overtourism on communities, cultural and heritage artefacts and ways of living (UNWTO 2018a, b). Many biodiversity and conservation efforts have been realized because of T&T activities and revenue. Although ecotourism emerged in the 1990s as a niche alternative to mainstream T&T, today it is seen as a key driver of biodiversity and ecosystem health, contributing some US\$120 billion to global GDP in 2018 (WTTC 2019). Some travel companies have expanded their purview beyond



**Fig. 1** Forecasting the impact (1–3 years) of COVID-19 on the Travel & Tourism sector using the ‘Culture of Health’ framework

simply packaging tourism experiences and are actively managing the ecosystems upon which their businesses rely. For example, African safari company Wilderness Safaris has helped to conserve 2.3 million hectares of wildlife areas across six African countries, committing to its preservation despite the cessation of T&T due to COVID-19 (Wilderness Safaris 2017; Austin et al. 2020). As countries develop strategies to recover the T&T sector, those companies and regions critical to maintaining biodiversity hotspots should be prioritized. However, we may see mitigating strategies aimed at dealing with COVID-19, from increased use of personal cars for local road trips, to more widespread usage of single-use plastics and toxic chemical cleaning products, leading to greater environmental damage.

Prior to the pandemic, ‘flight shaming’ brought significant attention to aviation and the T&T sector’s contributions to GHG emissions (Quick 2019). Simultaneously, the UN’s International Civil Aviation Organization—ICAO (ICAO 2020) made significant progress toward establishing global emissions reduction targets for commercial aviation, identifying technologies and operational efficiencies, launching the CORSIA carbon offsetting and reduction scheme, and engaging states to report and reduce emissions. Upholding these frameworks and commitments is critical as the world tackles climate change (Bremner 2020; Carrington 2020). Efforts to de-carbonize T&T must be accelerated, with government bailout funds linked to green economy requirements including hotel retrofits, circularity, renewable energy projects and clean transport. In the last recession, environmental regulations were relaxed to get the economy back on track; given the economic impact of COVID-19 is predicted to be harsher than the 2008 crash (The World Bank 2020), this is a threat. Both China and the US have rolled back environmental regulations and, coupled with the lobbying effects of the aviation and automotive industries, have retreated from CO<sub>2</sub> emission targets (Carrington 2020). In contrast, the European Commission plans to recover the EU economy by funding sectors that will also help the region tackle climate change (Carrington 2020). The T&T industry should leverage recovery policy and financing mechanisms and instruments to accelerate sustainability across the sector. Early signs are promising, for example, the UNWTO partnered with the International Finance Corporation to promote green finance and infrastructure improvements within the T&T sector (UNWTO 2020b). These are good first steps for a broader shift to sustainable T&T, but much more is needed if global carbon targets are to be met. Overall, there is a significant need for multinational and global coordination, with frameworks and policies aimed at creating a more holistic sustainability approach for the T&T sector. Further research is needed to develop a ‘true’ cost for T&T, for example using impact weighted accounting principles (Serafeim et al. 2020) or total impact measurements (PWC 2020) that seek to extend ESG reporting and, we propose here, adding in health as a key metric.

Within **the community pillar**, the T&T sector could see changes that seek to address those concerns relating to overtourism, prioritizing the needs of local residents and the importance of preserving local history, culture and traditions, with fewer tourists and/or better management of visitor flow. Abrupt lockdowns and slow reopening of borders have highlighted how important it is for countries to diversify

their economies beyond a reliance on T&T revenue, in particular those destinations heavily reliant on international tourism. Because of increased travel times, due to stricter health and safety compliance, social distancing measures, and border restrictions, international travel will be slower to rebound. As such, governments and T&T operators will look to develop and spur demand among domestic travelers. For example, Costa Rica's President Carlos Alvarado announced in July an increased number of long weekends through 2024 in an attempt to spur domestic travel (The Tico Times 2020). A return to localism, allowing citizens to explore their own countries and its different communities, can serve to reduce not only the carbon footprint of air travel, but also fight against what has been called a 'tourist monoculture', one in which all tourist experiences become the same globally (Perelli 2007). Moreover, as some tourists may have an increased ability to work from home in the future, there could be a rise in 'slow' tourism,<sup>7</sup> one in which the average trip length increases, with travelers looking to spend more time getting to know the community of their destination and seeking out more local experiences (Callot 2013). Leaning into this potential trend, Barbados' Prime Minister Mia Amor Mottley announced in July 2020 a new visa that allows visitors to stay up to 12-months and work remotely (Holcombe 2020). Overall, communities living in tourist destinations will look to restrict tourist numbers, encourage domestic and regional travel and create experiences that honor and respect local culture.

Within **the employees and supply chain pillar**, COVID-19 has highlighted the nature of T&T jobs and the lack of protection and benefits for some who work in the sector. The pandemic has also brought to the forefront the importance of health benefits and protection for workers in T&T who put their lives at risk to be in contact with domestic and international travelers. Job losses will likely continue as the sector shifts and makes changes to reopen; however, there may be new job opportunities in cleaning, and health and wellness, as tourists prioritize cleanliness as well as trips that offer peace and tranquility after this time of unexpected change. The next months and years will be challenging for workers in T&T as roles pivot and significant cuts are made to hiring. The pandemic has had an outsized effect on SMEs that support tourism destinations (OECD 2020b), with supply chain engagement and investment now key to rebuilding T&T. This could help reduce environmental impacts, with increased attention to local sourcing and shorter more resilient supply chains that empower vulnerable groups.

Within **the consumer pillar**, tourists themselves make decisions about where to travel, when, why and how—all of which will change depending on their risk tolerance, affordability, and particular needs and desires. With many destinations, like Machu Pichu taking this moment to restrict visitor numbers, the cost of travel could rise as destinations lean into a lower volume, higher price model. A shift in this direction could mean that travelers may take fewer trips and/or travel less

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<sup>7</sup>Slow tourism "is about slowing down the rate of tourism and a guarantee of rediscovering oneself (the physiological and the psychological); it is about low greenhouse gas emissions and it is a synonym of patience, peace of mind, deeper experiences, improved cultural understanding and knowledge" (Callot 2013).

internationally, focusing more locally and within their region. Given the attention paid to the ‘relief’ destinations experienced during COVID-19, travelers may look to spend their T&T dollars with ‘responsible’ companies and embrace more conscious consumerism. While virtual travel can provide one outlet for responsible ‘travel’, the enduring desire for T&T—to connect with people and places—is unlikely to diminish. A McKinsey survey conducted shortly after China reopened showed growth in domestic tourism numbers and a desire to travel in the next few months (Enger et al. 2020). Overall, tourists as consumers can play a much larger role in making T&T more sustainable, being more conscious of their ‘footprint’ and examining the sustainability credentials of T&T companies.

A key player that impacts across **all four pillars** of the ‘Culture of Health’ are DMOs. To date, tourism has largely been managed by DMOs that focus on increasing tourist volumes, tourism employment, and the amount of money spent in the destination. Going forward, DMOs should broaden their purview to a more holistic focus on destination management that prioritizes and advances sustainable T&T. Master planning must be undertaken to guard against overtourism and ensure the invisible burden of the sector—the additional cost of protecting and managing destination assets—is priced in and/or ameliorated (Epler-Wood et al. 2019). Additionally, COVID-19 has highlighted the importance of economic resilience and the need to address tourism dependency such that local industries, including important craft and artisanal business, are not overtaken by T&T as the sole source of income over the long-term. DMOs will need to engage multi-actor stakeholder groups to support strategic planning across the different industries and businesses that together create a traveler experience. Technology offers a significant advantage to better aggregate, monitor, and report data that is essential to destination planning, for example, geographic information systems can be used to help local communities, and governments create dynamic sustainable tourism plans (Epler-Wood et al. 2019). Moreover, recent initiatives to use 5G to track and trace health needs could also be utilized to manage tourist flows more effectively if appropriate privacy is safeguarded; this may become even more important as domestic T&T increases as predicted. Resultant destination stewardship plans should seek to capture the long-term environmental, social and economic viability of place and can be a powerful means to progress more sustainable T&T. For example, Visit California was the first state and largest DMO to develop a destination stewardship plan (Farr 2019). In addition to examining how tourism could effectively contribute to California’s economy and preserve natural and cultural assets, Visit California seeks to enhance the visitor experience and the quality of life for local residents (Farr 2019).

Finally, **sustainability leadership** plays a critical role in shaping, carrying out, and communicating sustainable T&T changes. Reframing sustainability as a goal for today was a focus for T&T leaders in 2019, who with WTTC focused on Sustainability Leadership (WTTC & Harvard University 2019). Emergent company-wide sustainability initiatives illustrate the approaches and frameworks that could be adopted more widely across the sector. For example, the ‘Make Travel Matter’ agenda, created by the TreadRight Foundation of The Travel Corporation (Treadright 2020), represents an integrated sustainability strategy across 40 different brands in

the group focused on people, planet and wildlife. Another example is Intrepid Group, which is the largest travel company to achieve B Corp certification (Intrepid 2020); this required the assessment of 23 associated companies across the globe and independent analysis of the company's sustainability practices. The UNWTO has called on the sector to balance business survival through the COVID-19 pandemic with the longer-term goals of protecting ecosystems, and to making a fuller contribution to climate change (UNWTO 2020a, b, c). This transition to a more sustainable T&T sector will depend heavily upon strategic partnerships along the value chain and must prioritize inclusive participatory approaches to implement recovery plans.

## 4 Conclusions

The global health crisis of the COVID-19 pandemic illustrates how human health and the health of our planet are connected; planetary health, which refers to the human health impacts of human-caused disruptions to the Earth's natural systems, must be at the forefront of our agenda for sustainable T&T. Safeguarding fragile communities and ecosystems and creating a healthier future and economy for all parts of society to thrive must be a shared purpose within the sector and its global stakeholder community. While a welcome respite, savoring clean air over Beijing, clean water in Venice or traffic free roads in London, imposing human inactivity is not an answer to progressing a more sustainable T&T sector. We need to clean up that activity and 'degrow' T&T (Higgins-Desbiolles et al. 2019) as part of economies based on well-being over solely profit-driven goals. The collective global urgency to tackle COVID-19 might be contrasted unfavorably with that needed to address climate change, but the pandemic shows us that we have an inherent leadership and change capacity once we gather humanity around the problem and work collectively with a global mindset.

**What might it take for T&T to rebound in a more sustainable manner?** As the pandemic served to all but close the sector (de Bellaigue 2020), we have been afforded a unique opportunity to advance sustainability with deliberate re-opening strategies that seek to attenuate the negative and extractive effects of T&T activities and advance its positive impacts. The desire for T&T is not going away, and we are already seeing demand begin to recover (Boin et al. 2020), but the sector may look very different in the coming decades as health of customers, employees and those in the supply chain, community and the environment come to the fore. With business travelers learning the opportunities afforded by digital connectivity for relationship building and trade, as well as the benefits to mental and physical well-being of reduced international travel, leisure travelers look to hyper-local experiences to break the monotony of lockdown life, setting the stage for a lower-carbon footprint, more sustainable sector. In the run up to COVID-19, there were already mounting pressures on the sector, with place-based interventions from closing destinations to allow for environmental recovery to the so-called 'Greta effect'—overall, highlighting the fact that the pre-COVID-19 'normal' for T&T was not sustainable.

**Can the climate emergency and the health crisis of the pandemic collide to drive more sustainable T&T?** The need to re-open the sector while reducing carbon emissions is a difficult dichotomy as we seek to balance environmental, social and economic domains. There is an opportunity now to reset and refocus, with T&T prioritizing the United Nations 2030 Agenda (United Nations General Assembly (UNGA) 2015) both to assure long-term resilience of the sector as well as to make its fullest contribution to sustainable development. Leadership at all levels, but especially among CEOs and global T&T organizations, can help guide the attention of the sector's actions toward the next normal (Levy et al. 2020). Given the challenges of the T&T sector, 'building back better' is essential but may not be enough to save our planet, our communities, and ourselves. Therefore, we must reimagine and reinvent new ways for sustainable T&T, a future where travelers stay closer to home, pay for the true cost of their environmental and social footprint and act with a greater awareness of the people and planet around them.

Embracing a '**Culture of Health**' (Quelch and Boudreau 2016), is proposed as a way for the T&T sector to make important strides in sustainability as well as position itself for a world after the COVID-19 pandemic. A move away from crowded places, to explore the great outdoors in parks and trails, offers a way for the positive impact of nature on well-being to be championed, which serves to reinforce the need to protect our planet. The T&T sector can be a force for good, a means to promote deep cross-cultural understanding, global citizenship and personal development—revealing our shared humanity as well as the beauty and fragility of our world. With nature and culture T&T's most valuable assets, careful stewardship involving all stakeholders is needed, working in concert with appropriate governmental oversight and conscious personal choices and behaviors. The T&T sector itself recognizes both its important contribution to the global economy and the need to accelerate its sustainability plans in response to growing concerns among conscious consumers, locals subject to the ravages of unplanned destination growth, and macro-interests related to climate change and equity. T&T enterprises must now embrace rigorous sustainability frameworks used in other sectors, integrating triple-bottom line accounting and sustainability management systems that ensure companies track and report results transparently. Sustainability should define the foundation for the next normal in T&T post the COVID-19 crisis, as travelers are more aware of the impact their choices and behaviors have on our world. Purpose-driven T&T was already emerging as travelers intentionally seek to grow and engage with the world in new ways, with rises in immersive, experiential and community-based experiences for education and learning (Daniel 2018; Warren 2019).

**COVID-19 is a moment of crisis for T&T**, re-shaping the sector in real-time and placing unprecedented demands on all stakeholders. Accelerating pre-COVID trends in the sector, in particular a focus on sustainability and well-being, the pandemic represents an opportunity to make T&T better. The sector went into the crisis with spectacular growth figures and strong forecasts. However, this was accompanied by growing public unease about its impact on destinations, the over-reliance of some countries on T&T receipts and major concerns about its environmental impact.



Seeking to navigate these volatile, uncertain, complex and ambiguous times—so-called VUCA conditions—sustainability can be positioned as a major driver of T&T’s future. As one of the largest sectors in the world, embracing the ‘Culture of Health’ framework as a lens to view the various domains of T&T could accelerate sustainable T&T and help the sector reimagine itself in line with the SDGs. The T&T sector is not a monolithic sector, nor are the nations involved uniformly eager to add more regulations to international bodies or public health organizations. However, sustainable T&T demands more coordination, oversight, surveillance, and planning than ever before. This is a time for a new social contract to be forged with the T&T sector, with sustainability a driver of radical transformation. By acting to protect people and planet over the long-term, the T&T sector can create and sustain shared value, making its fullest contribution to fulfilling the SDGs and a world where “*no-one will be left behind*” (UNGA 2015).

## References

- Alexander B (2019) Closure of Boracay Island. Conservation Guide. January 11, 2019. Retrieved from <https://www.conservationguide.org/news/closure-of-boracay-island>
- Andina (2020) Peru: Cusco proposes cross-border travel to resume tourism in Machu Picchu. Andina Agencia Peruana de Noticias. Retrieved from <https://andina.pe/ingles/noticia-peru-cusco-proposes-crossborder-travel-to-resume-tourism-in-machu-picchu-801390.aspx>
- Austin JE, Epler-Wood M, Leonard HB (2020) Wilderness Safaris: responses to the COVID-19 crisis. HBS Case Study, July 17 2020. Retrieved from <https://hbsp.harvard.edu/cases/>
- Azcarate T, Benaya J, Nerilli G, Juster A (2019) A guide to sustainable tourism. RED. Madrid. ISBN: 978-84-09-19768-2
- BBC (2020) Coronavirus: Cathay Pacific gets \$5bn state-backed bailout. Retrieved from <https://www.bbc.com/news/business-52960684>
- de Bellaigue C (2020) The end of tourism? Guardian, June 18, 2020. Retrieved from <https://www.theguardian.com/travel/2020/jun/18/end-of-tourism-coronavirus-pandemic-travel-industry>
- Boin R, Cosmas A, Dichter A, Wittkamp N (2020) A new approach in tracking travel demand. McKinsey & Company Travel, Transport & Logistics, April 2020. Retrieved from <https://www.mckinsey.com/industries/travel-logistics-and-transport-infrastructure/our-insights/a-new-approach-in-tracking-travel-demand#:~:text=The%20traditional%20booking%20funnel%2C%20in,much%20shorter%20timelines%20than%20before>
- Broom D (2020). These countries are looking to subsidize holidays after COVID-19. World Economic Forum, June 4, 2020. Retrieved from <https://www.weforum.org/agenda/2020/06/coronavirus-tourism-government-subsidies-sicily-japan/>
- Bremner C (2020) Travel 2040: climate emergency to force a revolution in the industry. Euromonitor Int. June 2020. Retrieved from <https://go.euromonitor.com/white-paper-travel-2020-travel2040.html>
- Callot P (2013) Slow Tourism. In: Idowu SO, Capaldi N, Zu L, Gupta AD (eds) Encyclopedia of corporate social responsibility. Springer, Berlin, Heidelberg
- Carrington D (2020) EU green recovery package sets a marker for the world. The Guardian. May 28, 2020. Retrieved from <https://www.theguardian.com/environment/2020/may/28/eu-green-recovery-package-sets-a-marker-for-the-world>
- CBC (2020) Air Canada to lay off 20,000 workers as pandemic collapses travel industry. Retrieved from <https://www.cbc.ca/news/business/air-canada-layoffs-1.5572596>

- Chen A (2020) Is virtual travel here to stay, even after the pandemic subsides? April 20, 2020. Retrieved from <https://www.nationalgeographic.com/travel/2020/04/can-virtual-reality-replace-real-tourism-during-pandemic-and-beyond/>
- Clabaugh J (2020) Marriott to join Hilton in offering rooms to front-line health care workers during coronavirus pandemic. WTOP News. Retrieved from <https://wtop.com/coronavirus/2020/04/marriott-joins-hilton-in-offering-rooms-to-front-line-healthcare-workers/>
- Coke-Hamilton P (2020) Impact of COVID-19 on tourism in small island developing states. United Nations Conference on Trade and Development. Retrieved from [https://unctad.org/en/pages/new\\_sdetails.aspx?OriginalVersionID=2341](https://unctad.org/en/pages/new_sdetails.aspx?OriginalVersionID=2341)
- Cruise Lines International Association Inc. (2019) 2019 Cruise trends & industry outlook. Cruise Lines International Association. Retrieved from [https://cruising.org/-/media/research-updates/research/clia-2019-state-of-the-industry-presentation-\(1\).pdf](https://cruising.org/-/media/research-updates/research/clia-2019-state-of-the-industry-presentation-(1).pdf)
- Connor P (2020) More than nine-in-ten people worldwide live in countries with travel restrictions amid COVID-19. Pew Research Center (blog). April 1, 2020. Retrieved from <https://www.pewresearch.org/fact-tank/2020/04/01/more-than-nine-in-ten-people-worldwide-live-in-countries-with-travel-restrictions-amid-covid-19/>
- Curley A, Krishnan V, Riedel R, Saxon S (2020) Coronavirus: Airlines brace for severe turbulence. McKinsey & Company Travel, Transport & Logistics, April 2020. Retrieved from <https://www.mckinsey.com/industries/travel-logistics-and-transport-infrastructure/our-insights/coronavirus-airlines-brace-for-severe-turbulence>
- Dalrymple M, Mann R, Peters M, Seltzman N (2020) Make it better, not just safer: the opportunity to reinvent travel. McKinsey & Company Travel, Logistics & Transport Infrastructure Practice. June 2020. Retrieved from <https://www.mckinsey.com/industries/travel-logistics-and-transport-infrastructure/our-insights/make-it-better-not-just-safer-the-opportunity-to-reinvent-travel>
- Daniel D (2018) Transformative travel' is the industry's latest twist on making vacations more meaningful. Washington Post, July 12, 2018. Retrieved from [https://www.washingtonpost.com/lifestyle/travel/why-just-go-on-vacation-when-you-can-have-a-life-changing-experience/2018/07/11/a2886b6c-7eee-11e8-bb6b-c1cb691f1402\\_story.html](https://www.washingtonpost.com/lifestyle/travel/why-just-go-on-vacation-when-you-can-have-a-life-changing-experience/2018/07/11/a2886b6c-7eee-11e8-bb6b-c1cb691f1402_story.html)
- Derwin J (2020) Jacinda Ardern says New Zealand 'can't risk' a travel bubble with Australia just yet, as Victoria's COVID-19 outbreak continues. Business Insider. July 6, 2020. Retrieved from <https://www.businessinsider.com.au/australia-new-zealand-travel-bubble-september-victoria-covid19-2020-7>
- Dunn K (2020) Climate conditions on airline government bailouts are rare—and the coronavirus likely won't be an exception. Fortune, June 26, 2020. Retrieved from <https://fortune.com/2020/06/26/airline-bailouts-climate-conditions-coronavirus/>
- Enger W, Saxon S, Suo P, Yu J (2020) China's travel recovery gains steam: How families are planning their summer vacations. McKinsey & Company, June 2020. Retrieved from <https://www.mckinsey.com/featured-insights/china/chinas-travel-recovery-gains-steam-how-families-are-planning-their-summer-vacations> July 6, 2020
- Epler-Wood M, Milstein M, Ahamed-Broadhurst K (2019) Destinations at risk: the invisible burden of tourism. The Travel Foundation. Retrieved from <https://www.thetravelfoundation.org.uk/invisible-burden/>
- E-Tourism Frontiers (2020) Tourism phases of recovery diagram. Retrieved from <http://www.e-tourismfrontiers.com/what-we-do/research/>
- Euractiv (2019) Tourism—a key driver for socio-economic progress. Retrieved from <https://events.euractiv.com/event/info/tourism-a-key-driver-for-socio-economic-progress>
- Farr LJM (2019) Visit California spearheads DMO trend toward destination stewardship. Retrieved from <https://thetravelvertical.com/2019/09/03/visit-california-spearheads-dmo-trend-toward-destination-stewardship/>
- Financial Times (2020) US airlines call for \$50bn in emergency support to survive crisis. Retrieved from <https://www.ft.com/content/b775ce72-67ac-11ea-800d-da70cff6e4d3>
- Global Sustainable Tourism Council (2020) What is the GSTC? Retrieved from <https://www.gstcouncil.org/about/about-us/>

- Graver B, Zhang K, Rutherford D (2019) CO<sub>2</sub> emissions from commercial aviation, 2018. The International Council on Clean Transportation. Retrieved from [https://theicct.org/sites/default/files/publications/ICCT\\_CO2-commercial-aviation-2018\\_20190918.pdf](https://theicct.org/sites/default/files/publications/ICCT_CO2-commercial-aviation-2018_20190918.pdf)
- Hadjicostis M (2020) Cyprus pledges to cover costs for virus-hit tourists. May 27, 2020. Retrieved from <https://apnews.com/fad64eb5fcc1ea79ad94770936b2dc9a>
- Henley J (2020) Overtourism in Europe's historic cities sparks backlash. The Guardian, January 25, 2020, sec. World news. Retrieved from <https://www.theguardian.com/world/2020/jan/25/overtourism-in-europe-historic-cities-sparks-backlash>
- Higgins-Desbiolles F (2019) Has tourism had its day? RSA J 2:39. Retrieved from <https://medium.com/rsa-journal/has-tourism-had-its-day-4c534b2b5e58>
- Higgins-Desbiolles F, Carnicelli S, Krolikowski C, Wijesinghe G, Boluk K (2019) Degrowing tourism: rethinking tourism. J Sustain Tour. <https://doi.org/10.1080/09669582.2019.1601732> Published online: 22 Apr 2019. Retrieved from [https://www.researchgate.net/publication/332565985\\_Degrowing\\_tourism\\_rethinking\\_tourism](https://www.researchgate.net/publication/332565985_Degrowing_tourism_rethinking_tourism)
- Hilton (2020) Hilton and American Express to donate up to 1 Million rooms to frontline medical professionals during COVID-19 crisis. Hilton Press Center. April 6, 2020. Retrieved from <https://newsroom.hilton.com/corporate/news/hilton-american-express-team-up-to-donate-rooms>
- Holcombe M (2020) Working from home can soon mean working in Barbados for up to a year. CNN, July 14, 2020. Retrieved from <https://www.cnn.com/travel/article/barbados-coronavirus-work-from-home-trnd/index.html>
- IATA (2019) WATS: 4.4bn traveled by air in 2018. IATA, August 1, 2019. Retrieved from <https://airlines.iata.org/news/wats-44bn-traveled-by-air-in-2018%C2%A0>
- ICAO (2020) Effects of novel coronavirus (COVID-19) on civil aviation: economic impact analysis. Retrieved from [https://www.icao.int/sustainability/Documents/COVID-19/ICAO\\_Coronavirus\\_Econ\\_Impact.pdf](https://www.icao.int/sustainability/Documents/COVID-19/ICAO_Coronavirus_Econ_Impact.pdf)
- Ighobor K (2020) AU study: COVID-19 could cost Africa \$500 billion, damage tourism and aviation sectors. United Nations: Africa Renewal, April 15 2020. Retrieved from <https://www.un.org/africarenewal/magazine/au-study-covid-19-could-cost-africa-500-billion-damage-tourism-and-aviation-sectors>
- IHCL (2020) IHCL exceeds 1 Million meals offered to healthcare providers and migrant workers. Taj. April 30, 2020. Retrieved from <https://www.ihcltata.com/ihcl/press-room/IHCL-exceeds-1-million-meals-offered-to-healthcare-providers-and-migrant-workers/>
- iProperty Management (2020) Airbnb Statistics. iPropertyManagement, March 2020. Retrieved from <https://ipropertymanagement.com/research/airbnb-statistics>
- International Labour Organization (2020) COVID-19 and employment in the tourism sector: impact and response in Asia and the Pacific. International Labour Organization, April 24, 2020. Retrieved from [https://www.ilo.org/asia/publications/issue-briefs/WCMS\\_742664/lang--en/index.htm](https://www.ilo.org/asia/publications/issue-briefs/WCMS_742664/lang--en/index.htm)
- Intrepid (2020) B corp. Retrieved from <https://www.intrepidtravel.com/us/b-corp>
- Johnson K (2018) How low-cost airlines are changing the face of air travel. Business Insider. Retrieved from <https://www.businessinsider.com/how-low-cost-airlines-are-changing-the-face-of-air-travel-2018-7>
- Josephs L (2020) United warns 36,000 employees of potential job cuts as pandemic roils travel demand. CNBC. Retrieved from <https://www.cnbc.com/2020/07/08/coronavirus-united-braces-36000-employees-for-job-cuts-as-pandemic-roils-travel-demand.html>
- Kolbert E (2020) How Iceland beat the coronavirus. The New Yorker. June 1, 2020. Retrieved from <https://www.newyorker.com/magazine/2020/06/08/how-iceland-beat-the-coronavirus>
- Keating D (2020) Has Covid-19 extended aviation's free pass to pollute? Power Technology Energy News and Market Analysis. July 8, 2020. Retrieved from <https://www.power-technology.com/features/has-covid-19-extended-aviations-free-pass-to-pollute/>
- Krishnan V, Mann R, Seitzman N, Wittkamp N (2020) Hospitality and COVID-19: how long until 'no vacancy' for US hotels? McKinsey & Company Travel, Transport & Logistics, April 2020. Retrieved from <https://www.mckinsey.com/industries/travel-logistics-and-transport-infrastructure/our-insights/hospitality-and-covid-19-how-long-until-no-vacancy-for-us-hotels>

- Le Quéré C, Jackson RB, Jones MW (2020) Temporary reduction in daily global CO<sub>2</sub> emissions during the COVID-19 forced confinement. *Nat Clim Chang* 10:647–653. Retrieved from <https://doi-org.ezp-prod1.hul.harvard.edu/10.1038/s41558-020-0797-x>
- Levy C, Mieszala J-C, Mysore M, Samandari H (2020) Coronavirus: 15 emerging themes for boards and executive teams. McKinsey & Company Risk, June 2020. Retrieved from <https://www.mckinsey.com/business-functions/risk/our-insights/coronavirus-15-emerging-themes-for-boards-and-executive-teams>
- Locker M (2020) Five to know about travel bubbles. *Smithsonian Mag*, May 28, 2020. Retrieved from <https://www.smithsonianmag.com/travel/five-things-know-about-travel-bubbles-180974983/>
- Lonely Planet (2016) International travel set to increase by 35% over the next decade. Lonely Planet. June 2016. Retrieved from <https://www.lonelyplanet.com/articles/international-travel-increase-next-decade>
- Majorca Daily Bulletin (2020) Meliá Palma Bay hotel becomes a hospital. *Majorca Daily Bulletin* April 24, 2020. Retrieved from <https://www.majorcadailybulletin.com/news/local/2020/03/24/64561/melia-palma-bay-hotel-becomes-hospital.html>
- McCaul J (2020) 5 things that will define tourism in 2020. *Resonance*. Retrieved from <https://resonanceco.com/insights/5-things-that-will-define-tourism-in-2020/>
- McKinsey & Company and the World Travel and Tourism Council (2017) Coping with success: managing overcrowding in tourism destinations. Retrieved from <https://www.mckinsey.com/industries/travel-logistics-and-transport-infrastructure/our-insights/coping-with-success-managing-overcrowding-in-tourism-destinations>
- Mercopress (2020) Machu Picchu reopens in July but with a sharp reduction in daily visitors. *Mercopress* June 15, 2020. Retrieved from <https://en.mercopress.com/2020/06/15/machu-picchu-reopens-in-july-but-with-a-sharp-reduction-in-daily-visitors>
- Mullis B (2017) The growth paradox: can tourism ever be sustainable? *World Economic Forum*. Retrieved from <https://www.weforum.org/agenda/2017/08/the-growth-paradox-can-tourism-ever-be-sustainable/>
- Mzezewa T (2020) 3 Baltic States announced a ‘travel bubble.’ What is it and could it work in the U.S.? *New York Times*. Retrieved from <https://www.nytimes.com/2020/04/29/travel/coronavirus-travel-bubble.html>
- National Environment Agency (2020) “SG Clean” campaign launched to rally public and businesses to work together to keep Singapore clean. Retrieved from <https://www.nea.gov.sg/media/news/news/index/sg-clean-campaign-launched-to-rally-public-and-businesses-to-work-together-to-keep-singapore-clean>
- OECD (2020) OECD tourism trends and policies 2020. OECD, March 4, 2020. Retrieved from <https://www.oecd.org/cfe/tourism/oecd-tourism-trends-and-policies-20767773.htm>
- OECD (2020a) Building back better: a sustainable, resilient recovery after COVID-19. OECD, June 5, 2020. Retrieved from <http://www.oecd.org/coronavirus/policy-responses/building-back-better-a-sustainable-resilient-recovery-after-covid-19-52b869f5/>
- OECD (2020b) Tourism policy responses to the coronavirus (COVID-19). OECD, June 2, 2020. Retrieved from <https://www.oecd.org/coronavirus/policy-responses/tourism-policy-responses-to-the-coronavirus-covid-19-6466aa20/>
- Osbourne J (2020) The future of travel: how the industry will change after the pandemic. *New York Times*, May 2020. Retrieved from <https://www.nytimes.com/interactive/2020/05/06/travel/coronavirus-travel-questions.html>
- Oxford Economics (2020) The economic impact of the coronavirus due to travel losses: 2020 Analysis. Retrieved from [https://www.ustravel.org/sites/default/files/media\\_root/document/Coronavirus\\_2020\\_Impacts\\_WEB.pdf](https://www.ustravel.org/sites/default/files/media_root/document/Coronavirus_2020_Impacts_WEB.pdf)
- Palmer E (2020) For much of Europe, reopening day is here. *New York Times*, June 12, 2020. Retrieved from <https://www.nytimes.com/2020/06/12/travel/reopening-europe-caribbean-virus.html>

- Paun A (2020) ESG Stocks Did Best in COVID-19. HSBC Insights, March 27, 2020. Retrieved from <https://www.gbm.hsbc.com/insights/global-research/esg-stocks-did-best-in-corona-slump>
- Perelli C (2007) Governing tourism monoculture: Mediterranean mass tourism destinations and governance networks. *Tour Polit*. Retrieved from [https://www.academia.edu/23403475/Governing\\_Tourism\\_Monoculture\\_Mediterranean\\_Mass\\_Tourism\\_Destinations\\_and\\_Governance\\_Networks](https://www.academia.edu/23403475/Governing_Tourism_Monoculture_Mediterranean_Mass_Tourism_Destinations_and_Governance_Networks)
- Pinandita A (2020) Indonesia proposes regional travel corridor at ASEAN summit. Retrieved from *The Jakarta Post*, June 26 2020. Retrieved from <https://www.thejakartapost.com/seasia/2020/06/26/indonesia-proposes-regional-travel-corridor-at-asean-summit.html>
- Pololikashvili Z (2020) COVID-19 statement from Secretary-General of World Tourism Organization. UN World Tourism Organization, March 17, 2020. Retrieved from <https://www.unwto.org/news/covid-19-statement-zurab-pololikashvili>
- Powley T, Bushey C (2020) Wealthy switch to private jets to avoid coronavirus. *Financ Times*, July 25, 2020. Retrieved from <https://www.ft.com/content/063785d0-ed9a-4eae-b4ba-8a56cf59e905>
- PWC (2020) Total impact measurement & management. Retrieved from <https://www.pwc.com/gx/en/services/sustainability/total-impact-measurement-management.html>
- Quelch JA, Boudreau EC (2016) *Building a culture of health: a new imperative for business*. Springer International Publishing AG, Basel
- Quick M (2019) Flygskam. Retrieved from <https://www.bbc.com/worklife/article/20190718-flygskam>
- Rafat A (2018) The genesis of overtourism: why we came up with the term and what's happened since. *Skift*, August 14, 2018. Retrieved from <https://skift.com/2018/08/14/the-genesis-of-overtourism-why-we-came-up-with-the-term-and-whats-happened-since/>
- Reuters (2020) Lufthansa seeking cuts equivalent to 22,000 positions. Retrieved from <https://www.reuters.com/article/us-lufthansa-restructuring/lufthansa-seeking-cuts-equivalent-to-22000-positions-idUSKBN23M2M1>
- Sampson H (2020) Hawaii isn't messing around when it comes to enforcing tourist quarantines. *Washington Post*, May 20, 2020. Retrieved from <https://www.washingtonpost.com/travel/2020/05/20/hawaii-isnt-messing-around-when-it-comes-enforcing-tourist-quarantines/>
- Serafeim G, Trinh K, Zochowski R (2020) A framework for product impact weighted accounts. *Harvard Business School*, February 18, 2020. Retrieved from [https://www.hbs.edu/faculty/Publication%20Files/20-076\\_2e82d088-8dbd-4a4d-844c-60b6617a2799.pdf](https://www.hbs.edu/faculty/Publication%20Files/20-076_2e82d088-8dbd-4a4d-844c-60b6617a2799.pdf)
- Simon E (2020) 15,000 hotels sign up for AH&LA's hospitality for hope drive. *Hotel Manag*, April 6, 2020. Retrieved from <https://www.hotelmanagement.net/operate/15-000-hotels-sign-up-for-ah-la-s-hospitality-for-hope-drive>
- Skirka H (2020) The Seychelles has reopened to tourists—but only to those travelling by private jet. *The Natl*, June 3, 2020. Retrieved from <https://www.thenational.ae/lifestyle/travel/the-seychelles-has-reopened-to-tourists-but-only-to-those-travelling-by-private-jet-1.1028188>
- Stringam BB, Partlow CG (2016) *A profile of the hospitality industry*. Business Expert Press LLC, New York
- Sustainability Leaders Project (2019) Sustainable tourism trends and challenges in 2019: expert panel. Retrieved from <https://sustainability-leaders.com/sustainable-tourism-trends-challenges-2019/>
- Thani D (2020) India's wealthy are still planning their travels—and they're taking to private jets. *Condé Nast Traveller India*. July 1, 2020. Retrieved from <https://www.cntraveller.in/story/india-wealthy-planning-travels-private-jets-cost-booking-holiday-maldives-rajasthan-kerala/>
- The Tico Times (2020) Costa Rica passes law creating more long weekends through 2024. Retrieved from <https://ticotimes.net/2020/07/17/costa-rica-passes-law-creating-more-long-weekends-through-2024>
- The World Bank (2020) COVID-19 to plunge global economy into worst recession since World War II. Retrieved from <https://www.worldbank.org/en/news/press-release/2020/06/08/covid-19-to-plunge-global-economy-into-worst-recession-since-world-war-ii>
- Treadright (2020) Make travel matter. Retrieved from <https://www.treadright.org/>

- United Nations Conference on Trade and Development (2020) COVID-19 and Tourism: assessing the economic consequences. Retrieved from <https://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=2810>
- United Nations Environment Programme & World Tourism Organization (2005) Making tourism more sustainable: a guide for policy makers. URI <http://hdl.handle.net/20.500.11822/8741>. Retrieved from <https://www.unwto.org/sustainable-development> and <http://wedocs.unep.org/handle/20.500.11822/8741>
- United Nations General Assembly (2015) Transforming our world: the 2030 agenda for sustainable development. UN General Assembly Retrieved from <https://www.refworld.org/docid/57b6e3e44.html>
- UNEP (2017) Assessing global resource use. Retrieved from <https://www.unenvironment.org/news-and-stories/press-release/resource-use-expected-double-2050-better-natural-resource-use> and <https://www.resourcepanel.org/reports/assessing-global-resource-use>
- UNEP (2020) Tourism to tackle plastic pollution with new commitment. Retrieved from <https://www.unenvironment.org/news-and-stories/story/tourism-tackle-plastic-pollution-new-commitment>
- United Nations World Tourism Organization (2010) Retrieved from <https://www.unwto.org/glossary-tourism-terms>
- UNWTO (2016) UNWTO tourism highlights: 2016 Edition. Retrieved from <https://www.e-unwto.org/doi/pdf/10.18111/9789284418145>
- UNWTO (2017) World could see 1.8 billion tourists by 2030—UN Agency. UN News, December 27, 2017. Retrieved from <https://news.un.org/en/story/2017/12/640512-world-could-see-1-8-billion-tourists-2030-un-agency>
- UNWTO (2018) Overtourism? Understanding and managing urban tourism growth beyond perceptions. Retrieved from <https://www.e-unwto.org/doi/pdf/10.18111/9789284420070>
- UNWTO (2018a) UNWTO tourism highlights: 2018 Edition. Retrieved from <https://www.e-unwto.org/doi/pdf/10.18111/9789284419876>
- UNWTO (2019) International tourism growth continues to outpace the global economy. Retrieved from: <https://www.unwto.org/international-tourism-growth-continues-to-outpace-the-economy#:~:text=1.5%20billion%20international%20tourist%20arrivals%20were%20recorded%20in%202019%2C%20globally.&text=Looking%20ahead%2C%20growth%20of%203,the%20same%20level%20of%202019>
- UNWTO (2019a) Transforming tourism for climate action. Retrieved from <https://www.unwto.org/one-planet-stp-cop25>
- UNWTO (2020) Covid-19: putting people first. Retrieved from <https://www.unwto.org/tourism-covid-19>
- UNWTO (2020a) International tourist numbers could fall 60–80% in 2020. Retrieved from <https://www.unwto.org/news/covid-19-international-tourist-numbers-could-fall-60-80-in-2020>
- UNWTO (2020b) Green investments for sustainable tourism. Retrieved from <https://www.unwto.org/green-investments-for-sustainable-tourism>
- U.S. Travel Association (2020) U.S. Travel Answer Sheet. U.S. Travel Association. Retrieved from <https://www.ustravel.org/answersheet>
- Warren K (2019) Living like a local was the big travel trend 5 years ago. Now, travelers want their experiences to be life-changing, and it's ushering in a new era of 'transformational travel'. *Business Insider*, September 1, 2019. Retrieved from <https://www.businessinsider.com/transformational-travel-experiential-luxury-safari-trends-2019-8>
- Wilderness Safaris (2017) Wilderness safaris—biodiversity conservation 2017. May 22, 2017. Retrieved from <https://wilderness-safaris.com/blog/posts/wilderness-safaris-biodiversity-conservation-2017>
- Wilson A (2020) Sicily to subsidise post-Covid holidays as Italy ponders reopening to tourists. *The Guardian*, May 5, 2020. Retrieved from <https://www.theguardian.com/travel/2020/may/05/sicily-to-subsidise-post-covid-holidays-as-italy-considers-reopening-to-tourists>

- World Commission on Environment and Development (1987) *Our common future*. Oxford University Press, Oxford
- World Travel and Tourism Council (2015) *Travel and tourism 2015: connecting global climate action*. WTTC, London
- WTTC & Harvard University (2019) *Responsible travel and tourism with Harvard University*. Retrieved from <https://wttc.org/News-Article/WTTC-ushers-in-new-critical-collaboration-with-Harvard-T-H-Chan-School-of-Public-Health>
- WTTC (2019) *Economic impact reports*. Retrieved from <https://wttc.org/Research/Economic-Impact>
- WTTC (2020) *Global Economic Impact & Trends 2020*. Retrieved from <https://wttc.org/Research/Economic-Impact>

**Dr. Wendy Purcell** PhD FRSA. Harvard T.H. Chan School of Public Health, Harvard University. Leads research on global leadership and governance for sustainable transformation in higher education and business sectors, including Travel & Tourism, the Auto industry, and the Aviation sector; she directs the Sustainable Development Solutions Group. Wendy is Emeritus Professor and President Vice-Chancellor Emerita of a UK university (2007–2015), taking it to the top 1% of world universities and 1st ‘green’ UK university. She is a Council Member United Nations University, Member Association of American Universities and Colleges, was a Non-Executive Director UK Government’s Department of Business, Innovation and Skills and is Expert Adviser and Board member to global Boards and charities. Wendy’s purpose lies in transforming lives through education and research in pursuit of social equity, the knowledge economy and sustainable development. She has authored over 100 academic publications, book chapters, books and patent filings. Editor Sustainability special issue ‘Sustainable Higher Education and Leadership’, co-editor textbook ‘Handbook on Sustainability in Higher Education: an Agenda for Transformational Change’ and series editor ‘Higher Education and the Sustainable Development Goals’

**Ms. O’Shannon Burns**. Harvard Division of Continuing Education. Sustainability and tourism professional with experience in program management and development. Practitioner of science-based models for sustainable tourism development. Curator of travel experiences that foster authentic cultural interaction, support local economies, and innovate sustainable tourism. Developed conservation-, storytelling-, and education-focused programming. Driven by the belief that travel can transform our understanding of the world, build community, and help create a more sustainable, equitable, and resilient planet.

**Ms. Allison Voss**. Harvard Kennedy School. Finance professional with experience working in sustainable land use and agriculture investments, anti-money laundering and combating the financing of terrorism, small and medium-sized enterprise (SME) finance, and investment banking in the Middle East, Latin America, Africa and the U.S.