



Note

Tourism and Climate Change in the context of Covid-19

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Summary

COVID 19 pandemic has led to unparalleled losses in the travel and tourism industry, however, its consequences to the climate change remain unclear. Tourism and climate change are being increasingly studied as concepts influencing and interacting with each other. Covid-19 however, presents itself as an external factor which can potentially change the larger context in which the two are situated, raising important issues about tourism's economic importance versus its environmental impact. In this setting, the Note aims to present an overview and analysis of these issues to contribute to the efforts to rebuild tourism sustainably and possible action points for developing countries dependent on tourism in particular.

Introduction

The ongoing Covid 19 pandemic has brought several pressing issues to the forefront, demanding a multi-disciplinary perspective for each problem. An economic question needs also be seen from the standpoint of environment, for instance. Given the economic slump that most countries in the world are grappling with today, it is being said increasingly that the current circumstances must be viewed as an opportunity to re-establish a more sustainable way of life, harmonising economic, environmental and social dimensions.

An extremely important global sector i.e. travel and tourism is faced with unprecedented losses due to the pandemic as the entire industry came to a standstill almost instantly. The crash in this sector has affected millions of jobs and livelihoods, both directly and indirectly. Despite being largely discussed from an economic viewpoint, tourism bears immense consequences for the environment. Only recently has the interaction between tourism and climate-change drawn its rightful attention.

Tourism has not only taken a sharp hit due to coronavirus but has always remained ill-prepared to adjust to climate change. Multiple countries are heavily dependent on tourism as their chief source of revenue and employment, but at the same time, tourist activities take a heavy toll on the environment.

It is in this backdrop that this paper examines the interlinkages between climate change, tourism and Covid-19. It starts by exploring tourism's importance to economies, especially for developing countries and its impact on climate-change. It further discusses the impact of covid on tourism and climate-change and analyses whether the current country-efforts to revive

tourism are well in line with the objective of "rebuilding sustainably".

Tourism's contribution to the Economy

Tourism is pivotal to the economic growth and export revenue of all countries. In 2019, tourism represented 10.3% of global GDP and ten percent of global employment.¹ It is the world's third largest export category, representing 45% of the total services exports in developing countries alone.²

Table 1: Travel and tourism relative contribution to GDP

Countries	% of Total GDP (2019)
Macau	91.3
Aruba	73.6
British Virgin Islands	57.0
Maldives	56.6
US Virgin Islands	55.5
Bahamas	43.3
Antigua and Barbuda	42.7
St Lucia	40.7
Grenada	40.5
Seychelles	40.5

Source: Global Economic Impacts & Trends 2020, WTTC

Table 2: Travel and tourism relative contribution to employment

Countries	% of Total Employment (2019)
Antigua and Barbuda	90.7
Aruba	84.3
St Lucia	78.1
US Virgin Islands	68.8
British Virgin Islands	66.4
Macau	65.5
Maldives	59.6
St Kitts and Nevis	59.1
Bahamas	52.2
Anguilla	51.3

Source: Global Economic Impacts & Trends 2020, WTTC

¹ World Tourism Organization (UNWTO) and International Transport Forum (ITF), 2020. *Transport-Related CO2 Emissions Of The Tourism Sector modelling Results*. [online] Madrid: UNWTO. Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284416660>

² UNWTO, 2020. *Supporting Jobs And Economies Through Travel & Tourism*. [online] UNWTO. Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284421633>

The tourism sector is labour intensive and also has a multiplier effect on other related sectors such as transport, hospitality etc. These forward and backward linkages generate a number of job opportunities particularly for women and youth, including a substantial number of informal jobs. Between 2010-2018, employment across all economic sectors grew by 11% but in accommodation and restaurants alone by 35%.³

Over the years, Small Island Developing States (SIDS) have built their economies with a heavy focus on tourism as the main contributor. They have grown at six percent per year, surpassing the world average of five percent in the last decade.⁴ Their economies are heavily reliant on tourism as the chief source of revenue as well as foreign exchange. In 13 of the 38 SIDS, tourism makes up more than 50% of their total exports.⁵ For countries of St. Lucia, Palau, Bahamas & Maldives this figure lies between 80-90%.⁶

According to World Travel and Tourism Council (WTTC), in relative terms, SIDS comprised the top ten countries with largest contribution of travel and tourism to GDP as well as the largest contribution to employment in 2019, as can be seen in tables 1 and 2 respectively. In absolute terms however, developed and larger developing countries (USA, Japan, Germany, China etc) were responsible for largest contribution to GDP, but the share of employment was a mixed-bag, largely dominated by Asian countries.⁷ These figures buttress the importance of tourism to island-nation economies.

In addition to its critical importance for SIDS, tourism is also an important contributor to the GDP of many developed and developing countries alike. In Jordan, Spain and Croatia, tourism contributes to more than 10% of their national GDP.⁸ Several countries in the Asia-Pacific region continue to witness a surge in the travel and tourism industry, recording the second-largest volume of international tourist receipts and the largest global outbound tourism expenditure in 2017, most of which was spent intra-regionally.⁹ The richer, more developed East-Asian nations make up around two-thirds of Asia's travel and tourism GDP, which is attributable to good infrastructure, enabling environment and favourable travel policies, including a heavy focus on environmental sustainability. The emphasis on sustainable policies is visibly lacking in other parts of Asia.¹⁰ Australia's tourism sector contributes 2.6% to its GDP, providing about half a million tourist jobs.¹¹ However, the wildfires in 2019 costed the economy US\$ 3 billion, followed by 10-20% decline in traveller's bookings, creating a deep dent in the tourism industry as well as raising serious concerns on climate-change.¹²

International tourism is more discussed due to its ability to generate export revenue, but a larger share of travellers and spending has been recorded at the domestic level.¹³ The domestic tourism market is six times larger than the international one.¹⁴ Mainly, USA, China and India have the largest number of domestic tourist trips, owing to their large size and population.¹⁵ But in

³ Ibid

⁴ UNWTO, 2020. *UNWTO World Tourism Barometer May 2020*. [online] Madrid: UNWTO. Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284421930>

⁵ Ibid

⁶ Ibid

⁷ World Travel & Tourism Council, 2020. *Travel & Tourism, Global Economic Impact and Trends 2020*. [online] World Travel & Tourism Council. Available at: <https://wtcc.org/Research/Economic-Impact>

⁸ UNWTO, 2020. *UNWTO World Tourism Barometer May 2020*. [online] Madrid: UNWTO. Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284421930>

⁹ Travel and Tourism Competitiveness Report 2019.

2020. *Asia-Pacific*. [online] Available at: <https://reports.weforum.org/travel-and-tourism-competitiveness-report-2019/regional-profiles/asia/>

¹⁰ Ibid

¹¹ Government of Australia, Department of Resources, Energy & Tourism, 2010. *2020 Tourism Industry Potential... A Scenario for Growth*. Government of Australia. Available at <https://www.tourism.australia.com/content/dam/assets/document/1/6/x/6/3/2002539.pdf>

¹² Financial Express, 2020. Australia will lose billions of dollars in tourism revenue: Australian Tourism Export Council. [online] Available at: <https://www.financialexpress.com/lifestyle/travel-tourism/australia-will-lose-billions-of-dollars-in-tourism-revenue-australian-tourism-export-council/1826408/>

¹³ UNWTO, 2020. *Understanding Domestic Tourism And Seizing Its Opportunities*. UNWTO Briefing Note – Tourism and Covid-19, Issue 3. [online] UNWTO. Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284422111>

¹⁴ Ibid

¹⁵ Ibid

terms of domestic tourism trips per capita per year, developed countries such as USA (five trips), Australia & Spain (four trips) and Korea and France (three trips) top the list.¹⁶ Malaysia, Russia, Thailand, Mexico and Turkey are also important domestic markets for tourism. According to a study by UNWTO in 73 countries, 21 reported their domestic arrivals share between 80-99% of the total trips in 2018, recording higher expenditure on domestic trips than inbound tourism.¹⁷

Wildlife tourism is also an essential contributor to countries' economies. An estimated \$142 million is generated as entrance fees for protected areas in 14 African countries.¹⁸ In 2016, a study estimated that a tourist's one-night stay in a high-end South African wildlife lodge indirectly benefits 14 people in the surrounding community in addition to those benefiting directly.¹⁹ Thus, it is well established that tourism holds paramount importance for the global economy.

However, the economy is just one of the pillars being affected by tourism. The other, often overlooked segment is climate change. Being a service that is immediately consumed, people often neglect the linkages of their tourist activities across sectors and the impact it generates on the environment over the long-term. The following section highlights this nexus and also aids in understanding the current emphasis and need for a sustainable recovery of the tourism sector post-covid-19.

Tourism and Climate-Change Nexus

Research on the tourism-climate-change nexus first gained ground in the mid-1980s where the potential impacts of climate-change on tourism were explored, especially on coastal tourism and winter-sports. In the 1990s however, tourism was identified as a contributor to climate-change, particularly emissions from aviation; post which scholarship on their interrelationship was given greater attention.^{20,21}

The nexus between the two can be viewed as a negative cyclical relationship. Climate-change causes direct and salient impacts on the geographic and seasonal demand of tourism. Studies have indicated demand for international travel to tropical, sub-tropical and some middle-eastern countries might decline, with tourists from temperate countries adapting their travel plans to the changing climate, shifting to domestic tourism instead.²² Such changes impose adaptation challenges (on both the demand and supply-side), especially for developing countries in regions vulnerable to climate change.²³

However, tourism itself is impacting climate-change. The tourism industry is rapidly expanding with the number of international tourists growing at a rate of 3-5% per year.²⁴ The increase in tourism's carbon footprint between 2009-13 accounted for eight percent of the global

¹⁶ Ibid

¹⁷ Ibid

¹⁸ UNWTO, 2015. *Towards Measuring The Economic Value Of Wildlife Watching Tourism In Africa- Briefing Paper*. [online] Madrid: UNWTO. Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284416752>

¹⁹ University of Cape Town News, 2016. Southern African tourism: the 'multiplier' effect. [online] Available at: <https://www.news.uct.ac.za/article/-2016-11-29-southern-african-tourism-the-multiplier-effect>

²⁰ Scott, D., Hall, C. and Gössling, S., 2012. *Tourism And Climate Change*. London: Routledge. Available at: <https://books.google.ch/books?hl=fr&lr=&id=wDPbCgAAQBAJ&oi=fnd&pg=PP1&dq=tourism+and+climate+change&ots=eiHzVr>

[WwsX&sig=Y88Op01vUOJ0UPIYJe-81fvReXA&redir_esc=y#v=onepage&q&f=false](https://www.researchgate.net/profile/Colin_Hall5/publication/236018302_International_Tourism_and_Climate_Change/links/5a509dc4a6fdcc769001ce17/International-Tourism-and-Climate-Change.pdf)

²¹ Scott, D., Gössling, S. and Hall, C., 2012. International tourism and climate change. *Wiley Interdisciplinary Reviews: Climate Change*, [online] 3(3), pp.213-232. Available at: https://www.researchgate.net/profile/Colin_Hall5/publication/236018302_International_Tourism_and_Climate_Change/links/5a509dc4a6fdcc769001ce17/International-Tourism-and-Climate-Change.pdf

²² Ibid

²³ Ibid

²⁴ Dunne, D., 2020. *Tourism Responsible For 8% Of Global Greenhouse Gas Emissions, Study Finds*. [online] Carbon Brief. Available at: <https://www.carbonbrief.org/tourism-responsible-for-8-of-global-greenhouse-gas-emissions-study-finds>

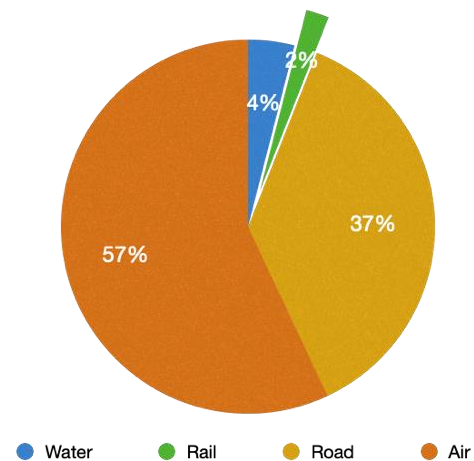
Greenhouse Gas (GHG) emissions.²⁵ In 2016, transport-related tourism emissions alone contributed to five percent of all man-made CO₂ emissions.²⁶

The impact of tourism on the environment encompasses not only the immediate impact arising from travelling, but also the system-wide effects impacting the broader environment.²⁷ These system-wide effects can be understood along the increasingly complex tourism value-chain, which includes myriad activities taking place in both the inbound and outbound countries.²⁸ Transportation, accommodation, food & beverage and leisure activities, despite creating crucial indirect linkages essential for economic development, are all substantially carbon-intensive stages of the value-chain.

The most widely discussed source of tourism-related emissions is transportation, as 70% of all aircraft emissions consist of CO₂.²⁹ Aviation emissions depend heavily on the type of airplane and the distance travelled.³⁰ Despite improvements in fuel efficiency and aircraft technology, aviation sector remains unable to sustainably cater to the growing demand.³¹

The most popular mode of transport for tourism is Air (57%), followed by Road (37%), Water (4%) and Rail (2%) as shown in Figure 1.³²

Figure 1: Tourism mode of transport



Source: UNWTO, *Tourism Highlights 2018*

CO₂ emissions per passenger kilometer (pkm) vary substantially across different modes. Figure 2 shows that currently, cars represent the most carbon-intensive mode of transport, followed by airplanes. However, by 2030, due to increasing vehicle electrification and improvements in fuel efficiency, car-emissions will decline, with aviation becoming the most carbon intensive mode. Rails will continue to remain the least carbon-intensive, even in the future, closely followed by bus.³³ Tourism's dependency on air as its chief mode of transport holds dire consequences for the environment.

²⁵ Ibid

²⁶ UNWTO. 2020. *Transforming Tourism For Climate Action*. [online] Available at: <https://www.unwto.org/sustainable-development/climate-change>

²⁷ Scott, D., Hall, C. and Gössling, S., 2012. *Tourism And Climate Change*. London: Routledge. Available at : https://books.google.ch/books?hl=fr&lr=&id=wDPbCgAAQBAJ&oi=fnd&pg=PP1&dq=tourism+and+climate+change&ots=eiHzVrWwsX&sig=Y88Op01vUOJ0UPIYJe-81fvReXA&redir_esc=y#v=onepage&q&f=false

²⁸ 2020. *Aid For Trade And Value Chains In Tourism*. [ebook] WTO, UNWTO, OECD. Available at: https://www.wto.org/english/tratop_e/devel_e/a4t_e/global_rev13prog_e/tourism_28june.pdf

²⁹ Hall, C., Gössling, S. and Scott, D., 2015. *The Routledge Handbook Of Tourism And Sustainability*. London: Routledge.

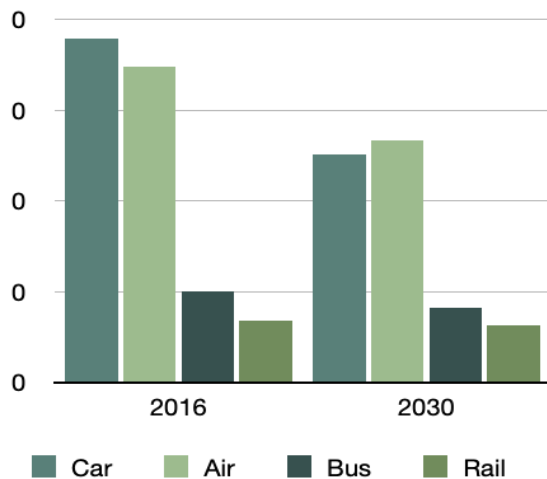
³⁰ World Tourism Organization (UNWTO) and International Transport Forum (ITF), 2020. *Transport-Related CO2 Emissions Of The Tourism Sector modelling Results*. [online] Madrid: UNWTO. Available at: <https://www.e-unwto.org/doi/pdf/10.18111/9789284416660>

³¹ Hall, C., Gössling, S. and Scott, D., 2015. *The Routledge Handbook Of Tourism And Sustainability*. London: Routledge.

³² UNWTO, 2020. *UNWTO Tourism Highlights 2018 Edition*. [online] UNWTO. Available at: <https://www.e-unwto.org/doi/pdf/10.18111/9789284419876>

³³ World Tourism Organization (UNWTO) and International Transport Forum (ITF), 2020. *Transport-Related CO2 Emissions Of The Tourism Sector modelling Results*. [online] Madrid: UNWTO. Available at: <https://www.e-unwto.org/doi/pdf/10.18111/9789284416660>

Figure 2: Global average CO₂ emissions per passenger kilometre



Source: UNWTO, Modelling Results 2019

Tourist activities however also rely on direct or indirect use of a number of other natural resources which ultimately impact climate change. In terms of its indirect use, water is used intensively in fuel production and refining. Approximately 3-6 gallons of water is required to produce 1 gallon of gasoline³⁴ and 2500L of water is required to produce 1L of liquid biofuel.³⁵ A round trip from Paris to New York generates roughly the same level of emissions as an average person does by heating their home for one year in the EU.³⁶ Food production requires between 2000-5000L water per person per day to support human diet.³⁷

The tourism industry is heavily reliant on fresh water both for hygienic (showers, toilets) as well as recreational purposes (spas, water sports, pools etc.).³⁸ On average, an international tourist consumes 300L of water directly per day than 160L which would normally be consumed while staying at home.³⁹ In addition to concerns of usage, tourism is also suspected to influence overall water quality. Evidence indicates that most of sewage systems of coastal cities, small island states and Mediterranean countries are not connected to water-treatment plants but are instead discharged directly into the sea.⁴⁰ Incorporating the indirect water use is essential to accurately predict a tourist's water footprint.

The change in land use for tourism purposes is visibly observed as increased construction of accommodation but also indirectly in supportive infrastructure such as airports, railways, roads, shopping centres, golf-courses etc. Land use per bed is dependent on the accommodation type, ranging from 30m² for hostels to 4580m² for five-star hotels.⁴¹ In general, the land-use per person has been increasing over the years.

Anthropogenic changes in land-use, such as deforestation or urbanisation disturbs the land. The soil and vegetation which are carbon-sinks, holding CO₂ and methane, are triggered to release these gases, contributing to a higher concentration of GHG in the atmosphere.⁴² Globally, CO₂ emissions from land-use changes comprise 18% of total annual emissions, with

³⁴ Water Footprint Calculator. 2017. *Energy Production and The Water Footprint Of Energy*. [online] Available at: <https://www.watercalculator.org/footprint/the-water-footprint-of-energy/>

³⁵ UNESCO. 2020. *World Water Assessment Programme (UNESCO WWAP)*. [online] Available at: <http://www.unesco.org/new/en/natural-sciences/environment/water/wwap/facts-and-figures/all-facts-wwdr3/fact-7-water-biofuel/>

³⁶ European Commission. 2020. *Reducing Emissions from Aviation*. [online] Available at: https://ec.europa.eu/clima/policies/transport/aviation_en

³⁷ Hall, C., Gössling, S. and Scott, D., 2015. *The Routledge Handbook Of Tourism And Sustainability*. London: Routledge.

³⁸ Ibid

³⁹ Gössling, S., Peeters, P., Hall, C. M., Ceron, J.-P., Dubois, G.,

Lehmann, L. V., & Scott, D. (2012). *Tourism and water use: Supply, demand, and security. An international review. Tourism Management*, 33(1), 1–15. doi:10.1016/j.tourman.2011.03.015

⁴⁰ Ibid

⁴¹ Gössling, S., & Peeters, P. (2015). *Assessing tourism's global environmental impact 1900–2050. Journal of Sustainable Tourism*, 23(5), 639–659. doi:10.1080/09669582.2015.1008500

⁴² The Environmental Literacy Council. 2015. *Land Use Changes & Climate - The Environmental Literacy Council*. [online] Available at: <https://enviroliteracy.org/air-climate-weather/climate/land-use-changes-climate/#:~:text=Land%20use%20and%20land%20use,contribute%20to%20overall%20climate%20change.&text=When%20the%20land%20is%20disturbed,which%20contribute%20to%20global%20warming.>

over 60% coming from less developed countries.⁴³ Although, a positive development has been the expansion of protected land for ecotourism services, the numerous changes in land-use to cater to the growing tourism demand have been largely detrimental to the environment.

All of these changes due to human consumption need to be recorded to accurately measure the impact on climate change. Two such variants of the consumption-based emissions accounting principle are Residence-Based Accounting (RBA, emissions caused by citizens in-country holidays) and Destination-Based Accounting (DBA, tourists visiting the country).⁴⁴ This distinction is important in understanding the country-trends of tourism's carbon footprint.

Countries such as USA, China, Germany, India, Mexico, Brazil and Japan have the highest carbon-footprint under RBA, with maximum emissions resulting from domestic travel. However, per capita carbon-footprint calculations under DBA features small island states with the highest emissions. It is interesting to note that between 30-80% of the national emissions in countries such as Maldives, Mauritius, Cyprus and Seychelles are caused by international tourists.⁴⁵

Research indicates that the global carbon movement originating from travel is largely a high-income affair. This means that both high-income countries and high-income individuals contribute much more to the global carbon footprint. A 10% increase in per capita GDP brings about a 13% increase in individual carbon footprint.⁴⁶ Approximately 50% of the global tourism footprint is caused by travel between countries with a per

capita GDP higher than US\$25,000.⁴⁷ This indicates that most developing countries and SIDS tend to host rather than generate individual carbon-emissions in the tourism sector.

Other forms of tourism such as cruise/maritime also contribute significantly to climate change, their key outputs being water and air pollutants, including GHGs. This is primarily because most ships use 'bunker fuel' which is more harmful than gasoline.⁴⁸ An average cruise produces 169kg of CO₂ per passenger per day.⁴⁹ Aviation and shipping emissions have increased by nearly 130% and 32% respectively in the last 20 years, the fastest in the transport sector.⁵⁰

Recognising the considerably paradoxical effect of tourism activity on the economy and the environment situates countries in a complex state. This predicament is more pronounced for developing countries who are not only heavily dependent on tourism for revenue but are also lacking sophisticated resources to mitigate climate-change. Coronavirus, however, presents itself as an external factor, which can potentially change the larger context in which the two are situated. In an attempt to map out what the pandemic means for these two, the following sections explore the impact of covid on tourism activity and climate-change.

Impact of Covid-19 on Tourism

The pandemic has severely impacted tourism services. The UNWTO estimates a decline of 58-78% in international tourist arrivals for the year, with 100-200 million direct tourism jobs at risk.⁵¹ Travel and tourism GDP losses are estimated to

⁴³ Ibid

⁴⁴ Lenzen, M., Sun, Y., Faturay, F., Ting, Y., Geschke, A. and Malik, A., 2018. The carbon footprint of global tourism. *Nature Climate Change*, [online] 8(6), pp.522-528. Available at: https://www.researchgate.net/publication/324992370_The_carbon_footprint_of_global_tourism

⁴⁵ Ibid

⁴⁶ Ibid

⁴⁷ Ibid

⁴⁸ Carić, H., 2011. Cruising Tourism Environmental Impacts: Case Study of Dubrovnik, Croatia. *Journal of Coastal Research*, [online] 61(Special Issue No. 61.), pp.104-113. Available at: <https://www.jstor.org/stable/41510783?mag=the->

[high-environmental-costs-of-cruise-ships&seq=1#metadata_info_tab_contents](#)

⁴⁹ Ibid

⁵⁰ European Parliament News. 2020. *Emissions from Planes and Ships: Facts and Figures (Infographic) | News | European Parliament*. [online] Available at: <https://www.europarl.europa.eu/news/en/headlines/society/20191129STO67756/emissions-from-planes-and-ships-facts-and-figures-infographic>

⁵¹ UNWTO, 2020. *UNWTO World Tourism Barometer May 2020*. [online] Madrid: UNWTO. Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284421930>

be US\$3.4 trillion for the baseline scenario and US\$5.5 trillion for the downside scenario.⁵² Analysis of previous global health crisis by WTTC indicates an average recovery period of travel demand as 19 months, however given the continuously evolving covid-situation, this may not be the case this time.⁵³

Regionally, the worst-hit from covid was Asia-Pacific (35% decline in arrivals in Q1), followed by Europe (19%) and America (15%).⁵⁴ As of June 22, 513 companies in the restaurant industry, 297 in transportation and 117 aviation companies had filed for bankruptcy.⁵⁵ According to the ILO, women comprise 54% of the accommodation and food services sector, which is most at risk in the tourism industry after the pandemic. In countries such as Haiti, the number rises to more than 70%. Tourism also employs almost twice as many youth than in other sectors.⁵⁶

As of May 2020, the most affected countries, namely USA, Germany, China and Spain among others, were also the countries with high shares of domestic tourism.⁵⁷ This indicates that these countries might enjoy higher levels of consumer confidence, enabling a faster recovery in the early stages of travel normalisation when international travel restrictions are still in place.

In mid-March, there was a 31% decline in the google travel searches corresponding to the previous year, however as of august-end, the decline has reduced to 10%, indicating people's

openness for travel. Accommodation and transportation are the trending keywords and 'adventure' stands out as the leading recovering segment for tourism.⁵⁸ Interestingly, hotel occupancy rates were not hit as strongly as airline bookings, indicating a switch to other modes of transport.⁵⁹

The immense loss of jobs and livelihoods stemming from this sector places considerable responsibility on countries to provide swift and tenable support to all involved stakeholders. The impact of covid on the environment, however, has not been so drastically negative.

Impact of Covid-19 on Environment & Climate-Change

Owing to the lockdowns, a dramatic six percent decline in energy demand in 2020 (seven times the decline after the 2008 crisis), is projected.⁶⁰ However, this impact is dependent on the duration and stringency of the lockdown as well as efforts to invest in green energy infrastructure. 60% of the global oil demand comes from mobility and aviation. Facing unprecedented reductions in these sectors, the global oil demand is expected to plummet by nine percent and power generation from coal has fallen by 37%.^{61,62}

Oil and coal are the main sources of NO₂ pollution, which is the largest environmental health threat in Europe. However, studies find 40% reduction in

⁵² World Travel & Tourism Council, 2020. *Travel & Tourism, Global Economic Impact and Trends 2020*. [online] World Travel & Tourism Council. Available at: <https://wtcc.org/Research/Economic-Impact>

⁵³ WTTC News, 2020. Containing the spread of panic is as important as stopping the coronavirus itself, says WTTC. [online] Available at: <https://wtcc.org/News-Article/Containing-the-spread-of-panic-is-as-important-as-stopping-the-coronavirus-itself-says-WTTC>

⁵⁴ UNWTO, 2020. *UNWTO World Tourism Barometer May 2020*. [online] Madrid: UNWTO. Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284421930>

⁵⁵ WTTC & Oliver Wyman, 2020. *To Recovery and Beyond: The Future Of Travel & Tourism In The Wake Of Covid-19*. [online] WTTC & Oliver Wyman. Available at: <https://wtcc.org/Research/To-Recovery-Beyond>

⁵⁶ Ibid

⁵⁷ UNWTO, 2020. *UNWTO World Tourism Barometer May 2020*. [online] Madrid: UNWTO. Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284421930>

⁵⁸ WTTC. 2020. *Travel Demand Recovery Dashboard | World Travel & Tourism Council (WTTC)*. [online] Available at: <https://wtcc.org/Initiatives/Recovery-Dashboard>

⁵⁹ Ibid

⁶⁰ International Energy Agency, 2020. *Global Energy Demand To Plunge This Year As A Result Of The Biggest Shock Since The Second World War*. [online] Available at: <https://www.iea.org/news/global-energy-demand-to-plunge-this-year-as-a-result-of-the-biggest-shock-since-the-second-world-war>

⁶¹ International Energy Agency, 2020. *Global Energy Review 2020*. [online] Available at: https://www.connaissancedesenergies.org/sites/default/files/pdf-actualites/Global_Energy_Review_2020.pdf

⁶² Myllyvirta, L. and Thieriot, H., 2020. *11,000 Air Pollution-Related Deaths Avoided in Europe as Coal, Oil Consumption Plummet*. [online] Centre for Research on Energy and Clean Air. Available at: <https://energyandcleanair.org/wp/wp-content/uploads/2020/04/CREA-Europe-COVID-impacts.pdf>

levels of NO₂, resulting in 11,000 fewer deaths from polluted air.⁶³ China has also witnessed a drop in NO₂ levels which is equivalent to removal of 192,000 cars.⁶⁴ Several other places including South Korea, Italy and New Delhi noted significant cutbacks in PM2.5 (Particulate Matter) levels.⁶⁵ Despite these reductions, a rebound in pollution levels has been noted, mainly due to resumption of industrial activity.⁶⁶

Despite largely positive effects on air quality, increase in illegal poaching and fishing has been recorded in several areas, mainly due to the loss of livelihoods.^{67,68} In essence, wildlife tourists, to some extent, play a central role in their protection. Lockdowns and travel restrictions have undoubtedly come as a respite to earth, however, the onus of restoring economic balance might put countries in a dilemma of choosing speedy or sustainable recovery.

Covid-19 Impact on Tourism and Country Responses

According to the UNWTO study of 220 countries, 167 have reported adopting certain fiscal, monetary or job support and training measures to mitigate the adverse effects of the shock.⁶⁹ Europe and Asia-Pacific have however taken the

lead in efforts to restart tourism.

A number of measures particularly for the tourism sector have been adopted by some countries which focus more on uplifting domestic tourism. A combination of financial incentives, widespread marketing and promotion as well as public-private collaborations to create new tourism products are being carried out in many countries.⁷⁰ Capacity building and training workshops to enhance professional skills of workers in contact with tourists, creation of tailored tourist products and new marketing channels are being undertaken to boost domestic tourism. Credit guarantees and preferential conditions for tourism-business loans (especially for SMEs and self-employed) and incentive programs to support airlines have been initiated.⁷¹

Greece (Tourism for All) and Italy (Bonus Vacanze) have launched packages wherein the government is subsidising the cost of travel or stay for lower-income groups.⁷² Several European countries have released tourist vouchers for domestic citizens.⁷³ Government of Thailand's stimulus scheme 'We Travel Together' subsidises upto 40% of lodging, food and air ticket expenses.⁷⁴ Seychelles has announced an Unemployment Relief Fund to aid job retention.⁷⁵ Turkey has reduced value-added tax on its domestic flights

⁶³ World Economic Forum. 2020. *11,000 Deaths Avoided During Lockdown In Europe – Thanks To Cleaner Air*. [online] Available at: <https://www.weforum.org/agenda/2020/05/coronavirus-lockdown-cuts-air-pollution-deaths-avoided/>

⁶⁴ World Economic Forum. 2020. *Here'S How Lockdowns Have Improved Air Quality Around The World*. [online] Available at: <https://www.weforum.org/agenda/2020/04/coronavirus-lockdowns-air-pollution>

⁶⁵ World Economic Forum. 2020. *This Is The Effect Coronavirus Has Had On Air Pollution All Across The World*. [online] Available at: <https://www.weforum.org/agenda/2020/04/coronavirus-covid19-air-pollution-environment-nature-lockdown>

⁶⁶ Reuters, 2020. China sees post-lockdown rise in air pollution: study. [online] Available at: <https://uk.reuters.com/article/us-health-coronavirus-china-pollution/china-sees-post-lockdown-rise-in-air-pollution-study-idUKKBN22U09E>

⁶⁷ EcoWatch, 2020. Satellite Data Indicate Illegal Fishing Surged in Philippines During COVID-19 Lockdown. [online] Available at: <https://www.ecowatch.com/illegal-fishing-philippines-2646162839.html?rebellitem=1#rebellitem1>

⁶⁸ BBC, 2020. The wild animals at risk in lockdown. [online] Available at: <https://www.bbc.com/future/article/20200520-the-link-between-animals-and-covid-19>

⁶⁹ UNWTO. 2020. *Policy Measures*. [online] Available at: <https://www.unwto.org/covid-19-measures-to-support-travel-tourism>

⁷⁰ UNWTO, 2020. *Understanding Domestic Tourism and Seizing Its Opportunities*. UNWTO Briefing Note – Tourism and Covid-19, Issue 3. [online] Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284422111>

⁷¹ UNWTO. 2020. *How Are Countries Supporting Tourism Recovery?* UNWTO Briefing Note – Tourism and Covid-19, Issue 1. [online] Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284421893>

⁷² The Local, 2020. Why the Italian government might give you upto €500 to go on holiday in Italy. [online] Available at: <https://www.thelocal.it/20200515/why-the-italian-government-might-give-you-up-to-500-to-go-on-holiday-in-italy>

⁷³ Romania (Tourist Holiday Pass), Iceland (Travel Gift), Poland and Slovenia (family vouchers) have been launched to promote domestic tourism. Retrieved from <https://www.e-unwto.org/doi/epdf/10.18111/9789284422111>

⁷⁴ Government of Thailand. 2020. [online] Available at: <https://www.xn--12c1bik6bbd8ab6hd1b5jc6ita.com/information>

⁷⁵ UNWTO. 2020. *How Are Countries Supporting Tourism Recovery?* UNWTO Briefing Note – Tourism and Covid-19, Issue 1. [online] Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284421893>

from 18% to 1% for the next three months.⁷⁶ Egypt has postponed rent payment of all tourist establishments in archaeological sites until tourism resumes safely.⁷⁷

Almost all countries have undertaken national marketing and promotional campaigns and some are also promoting virtual tourism.⁷⁸ Costa Rica is integrating its wellness tourism domestically, and Peru and Jordan are encouraging ecological and cultural tourism. Austria's government is providing financial support packages to airlines who invest in efficient technologies to reduce their carbon emissions and noise pollution levels.⁷⁹

In an attempt to restart tourism, most countries are first taking the route of boosting consumer confidence by building communication channels. Portugal is providing companies with a "clean and safe" label indicating that health and hygiene protocols are followed; Germany has created a corona-navigator website for all tourism stakeholders; and Peru has built a special website for sharing strategic information with tourism entrepreneurs.⁸⁰ Estonia has also created a digital immunity passport that enables people to share their immunity status and also build consumer confidence.⁸¹ This exercise is indeed extremely relevant since the recovery of the tourism sector is partly contingent on consumer behaviour and expectations.

It can be observed that almost all of the efforts to restore tourism are economic measures, which is expected and required as an immediate control

action. Concurrently, it must be kept in mind that mere economic recovery will not be sustainable. UNWTO mentions the necessity of mainstreaming environmental sustainability in all stimulus packages and a transition to circular economy, however strengthened efforts need to be undertaken to highlight the same.⁸²

No specific multilateral action in the segment of climate-change and tourism exists at the moment. Adoption of United Nations Framework Convention on Climate Change (UNFCCC) in 1994, which provided a general framework of action; signing of Kyoto Protocol in 1997 where few developed countries agreed to reduce emissions and now onto to the Paris Agreement, have only yielded insufficient results.⁸³ Given tourism's major impact on climate change, there is a need to revisit multilateral negotiations with a special focus on adaptation and mitigation for this sector.

Sustainable Recovery: Towards a Positive Tourism-Climate Change-Economy Nexus

Undoubtedly, promoting economic and sustainable recovery for tourism requires enormous resources, making it even more difficult for developing countries; but it is vital to understand that it does not have to be a trade-off. Covid has pushed more people in poverty, has made the already vulnerable more vulnerable and is feared to have undone the progress made so

⁷⁶ KPMG. 2020. *Turkey: Tax Developments in Response To COVID-19*. [online] Available at: <https://home.kpmg/xx/en/home/insights/2020/04/turkey-tax-developments-in-response-to-covid-19.html>

⁷⁷ UNWTO. 2020. *How Are Countries Supporting Tourism Recovery?* UNWTO Briefing Note – Tourism and Covid-19, Issue 1. [online] Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284421893>

⁷⁸ UNWTO, 2020. *Understanding Domestic Tourism and Seizing Its Opportunities*. UNWTO Briefing Note – Tourism and Covid-19, Issue 3. [online] Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284422111>

⁷⁹ Aviation24.be. 2020. *Austrian Airlines to Get 600 Million Euro Rescue Package from Austrian Government and Lufthansa - Aviation24.Be*. [online] Available at: <https://www.aviation24.be/airlines/lufthansa-group/austrian-airlines/austrian-airlines-to-get-600-million-euro-rescue-package/>

⁸⁰ UNWTO. 2020. *How are Countries Supporting Tourism Recovery?* UNWTO Briefing Note – Tourism and Covid-19, Issue 1. [online] Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284421893>

⁸¹ Reuters, 2020. *Estonia starts testing digital immunity passport for workplaces*. [online] Available at: <https://www.reuters.com/article/health-coronavirus-estonia-digital/estonia-starts-testing-digital-immunity-passport-for-workplaces-idINKBN22W0GE>

⁸² UNWTO, 2020. *Supporting Jobs and Economies Through Travel & Tourism*. [online] UNWTO. Available at: <https://www.e-unwto.org/doi/epdf/10.18111/9789284421633>

⁸³ Vox. 2020. *The Paris Climate Agreement Is At Risk Of Falling Apart In The 2020s*. [online] Available at: <https://www.vox.com/energy-and-environment/2019/11/5/20947289/paris-climate-agreement-2020s-breakdown-trump>

far towards achieving multiple SDGs. This loss of progress necessitates attaching importance to economic survival, but simultaneously, it is important to remember that it is not enough to declare this as an opportunity to rebuild sustainably, but also to act on it.

Even if countries do have an environment-friendly component to their policies, the same is not emphasized as much. The necessity to incorporate an environmental angle right from the beginning must not be underestimated. Although there is no 'one-size fits all' solution, here are a few recommendations/action points for all countries to advance towards sustainable recovery of the tourism sector.

Immediate/Short-term efforts

● *Selective promotion to encourage sustainable action*

Most countries in their attempts to revive the tourism industry are subsidising air travel or customers themselves are switching to road travel, both of which are carbon-intensive transport modes. Countries are encouraged to enact policies that prioritise or provide greater incentives to travel by rail, which is a much less carbon-intensive mode.

● *Benefit from increased consumer awareness regarding sustainable tourism*

The pandemic has to some extent made people more sensitive to nature. 58% consumers say they are thinking more about the environment since covid-19.⁸⁴ Utilising this enhanced awareness to advocate public scrutiny and accountability will be crucial in advancing towards

an eco-friendly tourism practice.

● *Revisit recuperation techniques for tourism in previous crisis periods*

Even though the current global crisis is different in many ways from previous crisis episodes, reflecting on the resilience of the tourism sector in the context of each country will be a helpful exercise. For example, following the 2015 Nepal earthquake, adventure travel recovered the fastest.⁸⁵ Owing to differences in cultures, nationalities and risk-taking behaviour, countries might have different recovery rates. Business travel has also shown speedy recovery in earlier episodes of economic and health crisis.⁸⁶ Thus mapping out what works best for each country now will enable a smoother recovery.

● *Conducting landscape study to examine consumer behaviour*

Countries must undertake surveys and studies to assess consumer expectations and behaviour regarding travel. As travel restrictions relax in a post-covid world, tourists will tread cautiously, at least initially targeting destinations closer to home. For instance, 77% of Chinese travellers preferred domestic travel within three months of the peak crisis,⁸⁷ and 70% of North Americans would book trips even during covid if changes/cancellations were not charged.⁸⁸ Understanding the local behaviours will enable countries to adopt suitable domestic tourism promotion strategies.

⁸⁴ WTTC & Oliver Wyman, 2020. *To Recovery and Beyond: The Future of Travel & Tourism in The Wake of Covid-19*.

[online] WTTC & Oliver Wyman. Available at: <https://wttc.org/Research/To-Recovery-Beyond>

⁸⁵ WTTC & Global+Rescue, 2020. *Crisis Readiness*. [online] WTTC. Available at: https://www.globalrescue.com/grmkt_resources/pdfs/Crisis-Readiness-Final.pdf

⁸⁶ Net, H., 2020. *Global Business Travel Will Not Be Killed Off by Coronavirus – New Research*. [online] Hospitality Net. Available at: <https://www.hospitalitynet.org/news/4100174.html>

⁸⁷ 2020. *Chinese Travellers Favor Domestic Destinations*. [online] Oliver Wyman. Available at: <https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2020/apr/chinese-travelers-favor-domestic-destinations.pdf>

⁸⁸ WTTC & Oliver Wyman, 2020. *To Recovery and Beyond: The Future of Travel & Tourism in The Wake of Covid-19*. [online] WTTC & Oliver Wyman. Available at: <https://wttc.org/Research/To-Recovery-Beyond>

Medium/Long-term efforts

● *Profit from the tourism value chain*

Countries can explore ways of transitioning towards a circular economy in the tourism value chain. High interconnectedness across sectors ensure that implementation of sustainable policies in related sectors such as hospitality, recreation, transport etc. will assist in reducing tourism's overall carbon footprint. Programs to reduce climate-change must cut across multiple sectors.

● *Forging partnerships*

Given the interlinked nature of the tourism industry and involvement of a wide range of stakeholders, a crucial element of recovery includes building alliances with all sectors and players; airlines, hotels, transport, financial, public and private sector, environmental groups etc. to promote innovative schemes and packages that benefit them all. Special rewards to tourists based on sustainable holiday activities or points-based prizes which promote sustainability can be collectively decided upon.

● *Promoting innovation*

Necessity is the cradle of invention. Countries can consider imposing sustainability requirements for airlines, hotels or destination targets to encourage innovation and resourcefulness. The government can also step-in to incentivise green solutions. For instance, Austria's support to its airline (mentioned above) is a step in the right direction. Investment in green tech and R&D is also imperative.

● *Sustainable destination management*

Providing tourism industry stakeholders financial and technical assistance in building green infrastructure, better measurement and monitoring systems that keep regular track of their carbon-footprint will be very important. To carry this out, developing countries will benefit from the support of developed countries which are already advancing in this sphere.



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