Tourism, Brexit and the climate crisis: on intersecting crises and their effects.

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Biographical Note

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Abstract

'Net-zero emissions' has emerged as a common international response to tackling a protracted global environmental crisis. Climate change has functioned, and continues to take place, simultaneously to other crises of different types, durations and geographical scales. While progress has been made in understanding tourism in climate change policy and vice versa, there has been very little work on how tourism features in approaches to addressing other major crises and how these may impact on climate change ambitions. This paper addresses this lacuna by examining how tourism features in concurrent UK government approaches to the climate crisis and to a political crisis, Brexit, between 2016 and 2019, with special reference to aviation as a major pivot between the two. Existing tourism studies have mainly focused on environmental crises in isolation. This paper argues for greater investigation and consideration of the positioning, coincidence and interaction effects among different forms and scales of crises. Through the Tourism Sector Deal, tourism has been cast as a source of economic growth and resilience after Brexit but, heavily depending on aviation emissions, it has significant potential to confound the UK government's ambitions for net-zero Emissions.

Keywords

Tourism, climate change, environmental crisis, political crisis, Brexit.

Introduction

Tourism scholarship on climate change has developed remarkably. Despite early tardiness in addressing one of the most pressing environmental crises facing humankind (Hall and Gössling 2006), within a decade an extensive body of knowledge had emerged (Scott et al 2012; Gössling et al

2013). Yet for all the worthy academic endeavour, this has not always been accompanied in the tourism sector by proportionate progress in policy, practice and leadership towards limiting emissions levels (Gössling and Scott 2018; Scott et al 2016). Perhaps more alarming still, sustained growth in travel and tourism has continued to be the dominant paradigm (Higgins-Desboilles et al. 2019). Yet, delaying action on climate change does not postpone its effects (Stern 2007). Recent public discourse, including conspicuous public displays of interest in climate change by organisations like Extinction Rebellion (Taylor 2019), has advocated renewed action. Climate change has been depicted variously as a 'crisis' (Chadwick 2019), 'panic' (Thunberg 2019), or an 'emergency' (Gilding 2019) because, as Gilding (2019: 25) notes, 'the response necessary to address and reduce the risk to an acceptable level requires an abnormal level of urgency, mobilisation and action'.

Conceptualising climate change as a crisis confronts inertia and complacency. It also strongly implies that climate change should be read through the inter-disciplinary lens of crises, catastrophes and disasters. Several reviews point a maturing body of tourism scholarship in this space (Mair et al 2016; Aliperti et al 2019; Ritchie and Jiang 2019) that has largely evolved separately to that on climate change. From this it is clear that environmental crises, more generally, have mostly been studied as discrete events (Ritchie 2009, Ritchie and Jiang 2019). Yet, as a long-term concern that transcends international borders, climate change has operated, and continues to function, simultaneously to other crises of different types, durations and geographical scales. While the position of tourism in climate change policy (and vice versa) continues to attract attention (Scott and Becken 2010; Moyle et al. 2018; Becken et al. 2020), very little work has considered how tourism features in approaches to address other major crises and how these may impact on achieving ambitions for limiting future climate change.

This paper addresses this lacuna by examining how tourism was located in simultaneous approaches to tackling the climate crisis and a political crisis -Brexit- in the United Kingdom (UK) from 2016 to 2019. Special attention is afforded to aviation as a major pivot between the two. Specifically, this paper investigates the implications of the Tourism Sector Deal (TSD, HMG 2019a),

which cast tourism as a sector capable of growth in the post-Brexit economy, in the light of the UK government's commitment to net-zero Emissions by 2050 (HMG 2019b). Although it may lead to a reorganisation of European tourism, Brexit has not been the subject of extensive tourism analysis. Even the one main exception (Hall 2020) overlooks the TSD, its role and its consequences. The paper covers the period between June 2016 and December 2019; that is, from when the UK voted to leave the European Union (EU) to the month in which it finally left the EU. In some respects, it presents a historical account of how an approach to policy and strategy to mitigate the economic effects of a political crisis have the potential to frustrate efforts to tackling climate change. As later sections make clear, some of the medium-term (2025) targets remain in place and the subsequent global public health crisis in fact strengthens the principal argument in favour of greater efforts to examine intersecting crises and their coincident effects.

Literature Review

Tourism and Climate Change Policy

Identifying climate change as a crisis raises questions of where and how have there been attempts by government to address it through policy and accompanying strategy, and how does tourism feature? Within policy and policy-making, tourism occupies a distinct position. While tourism can have its own dedicated policy and strategy, a considerable body of policy pertains or relates to tourism in some way (Hall and Jenkins 1995). The latter may include but is not restricted to policy on trade, migration, transport, employment, and even climate change. The same may be said of climate change in so far as there is distinctive and dedicated climate change policy as well as a raft other policies addressing and/or potentially affecting climate change to one degree or another, including tourism, travel and transport policy. This is further complicated in the sense that adaptation and mitigation represent distinctive aspects of the response to climate change, they often require dedicated interventions and, although they should both be considered within integrated policy, this is not always the case (Becken et al 2020). Furthermore, as Landauer et al

(2018) make clear, tourism policy has the potential to impact on the nature and ambitions of climate change policy just as climate change policy has considerable potential to influence the form and aspirations of tourism policy. All too often though, the policy actors and documentation in the two domains pay insufficient attention to one another.

Not surprisingly then, several recent contributions have underscored the importance of taking a more detailed approach to the tourism-climate change nexus in policy, and they have confirmed the sense of ambivalence among, and lack of integration between, the two domains. Through an examination of 101 policy documents for 61 countries over a 17-year period, Becken et al (2020: 1603) concluded that 'climate change has not yet become a priority for tourism policy makers'. They also noted important geographical variations in the level of the relationship evident in policy for what is, after all, intended to tackle an issue of global significance. Moreover, there were major disparities in coverage of mitigation when compared to adaptation. Moyle et al (2018) took a different longitudinal approach but drew similar conclusions. They examined how tourism policy has adapted to climate change over a 15-year period by drawing on 477 policy and planning documents from Australia at the national, state, regional and local levels. Identifying a range of opportunities by which tourism can contribute to 'the more sustainable management of climate change' (Moyle et al. 2018: 703), they observed a variable level of attention to climate change from what they described as 'lip-service' to more fully engaged and extensive treatments. Although climate change is a multi-decadal issue, climate change policy implementation in Australia has been related to, influenced and in some cases limited by federal election timescales. A mismatch has existed between the planning and policy horizons required for effective policy making and implementation on climate change and for tourism.

Such a view points to how as policy domains tourism and climate change are characterized by multi-scalar governance. As a result, there are often calls for greater policy integration as a next step in practice, not least because siloed approaches and the challenges of aligning policy ambitions and operating periods frustrate progress. For instance, Landauer et al. (2018) illustrate what may be

possible if the Nordic countries work closer across their internal and international frontiers in a more collective approach. Several studies consider the implications of further integration through a social politics of climate change policy formulation via participatory processes (Becken and Clapcott 2011; Klint et al 2012). Yet, as Santos-Lacueva and Velasco Gonzalez (2018) point out, there is often more attention devoted to the policies themselves and the processes of formulation, than to the actions and outcomes that follow.

An observation of this nature highlights that several dominant features have started to emerge in the body of knowledge on the tourism-climate change nexus in policy. For instance, an assumption in calls for greater integration has been, quite understandably, that this is a more desirable outcome and it presents the opportunity to act in a more concerted and sustained way towards tackling climate change. In fact, most contributions have tended to imply the desirability of greater institutional and policy thickness around the tourism-climate change nexus over time (Moyle et al 2018; Becken et al 2020). As Santos-Lacueva and Velasco Gonzalez (2018: 1708) have made clear though, greater policy coherence -not just integration- delivers greater robustness. For Spain and Catalonia, their analysis revealed an imbalance in attention between the two domains (tourism, climate change), different conceptions of the issues, and the lack of -what they termed- 'stable mechanisms' for achieving greater policy coherence.

In this context, stability may be interpreted as the greater continuity and longevity of issues in policy. It may also refer to the turnover of policy actors and the changes in thinking that follow them. In turn, this raises an important potential counterpoint. Most existing studies overlook the possibility -however unlikely- of the tourism-climate change nexus becoming more strained, challenged or dissipating over time. However, in principle, policy agendas can change as may policy actors' priorities such that climate change may not enjoy the status it once did. Whether real (i.e. actual) or manifest in non-inclusion in policy texts but the subject of action 'behind the scenes', the notion of de-emphasis and its potential consequences have not featured in the current (tourism) body of knowledge. In highlighting the absence of attention on action and outcomes, Santos-

Lacueva and Velasco Gonzalez (2018: 1716, after Gössling et al 2010) expose another gap; that of a failure to work through the possible implications of targets and other forms of policy aspiration for one another in both domains (tourism and climate change). For instance, they point to 'little acknowledgement of tourism's own impacts, even when continued GHG emissions from tourism is [sic] estimated'. To this it might be added there has been little interest in whether the emissions targets set for tourism or by the sector itself are appropriate and achievable (Gössling et al 2010).

Thus, what becomes clear from these accounts is that a causal connection is routinely made between tourism tourism and climate change policy, yet there has been little critical or sustained examination of the effects on one another nor the effects of policy responses in other domains. Where there has been detailed inspection of the interface between tourism policy and climate change policy, it has largely focused on these two domains overtly (tourism and climate change), without recourse to how emergent policy pertaining to them (in other domains) might affect the achievement of the respective original ambitions.

Tourism, crises and catastrophes

To further the critique, much discussion of the tourism-climate change nexus has been against a backdrop of 'business-as-usual'. It is positioned by relative macro-economic stability in which the growth of tourism is interpreted as a long-term trend or even paradigm (Higgins-Desboilles et al 2019). Research on the tourism-climate change nexus appears to have overlooked the effects that particular events and episodes -and where appropriate the policy responses and interventions that accompany them- have on the relationship. The change in tone of public discourse, noted above, frames climate change as a crisis, emergency or panic. Reading climate change through the lens of the inter-disciplinary body of knowledge on crises, catastrophes and disasters becomes, therefore, instructive. For instance, as Ritchie (2009: 6) notes, a crisis 'is, to some extent, self-inflicted through problems such as inept management structures and practices or a failure to adapt to change'.

Several attempts have been made to survey this maturing body of knowledge as it relates to tourism and hospitality (Mair et al. 2014; Brown et al. 2017; Jiang et al. 2017; Aliperti et al. 2019). There is not opportunity to examine this in detail but several features are germane here. First, a major feature has been the mapping of such events, in terms of their focus (i.e. geographical scale and scope of effects on human activity), their temporality, and their anatomy in terms of stages. There has been much greater attention afforded to episodes primarily or predominantly described as environmental crises rather than to economic or political crises (Ritchie 2009; Ritchie and Jiang 2019). Second, through the case-study method, the principal approach has been to investigate the nature and consequences of discrete episodes and their effects in time and space (Ritchie and Jiang 2019). From a perspective of the crisis life cycle model, the recovery phase has been a primary focus (Mair et al. 2016; Aliperti et al. 2019). Most research has been post hoc, conducted after an event or episode (e.g. an earthquake, bush fire, Tsunami) focusing on its observable impacts, rather than before it occurs (i.e. contingency planning and risk management) or as it plays out. Indeed, one of the analytical opportunities the coronavirus pandemic, is to investigate a protracted crisis and its effects as it unfolds.

Third and connected, intersections and interactions between crisis and disaster events as they relate to the tourism sector have generally been overlooked. For Ritchie (2009: 51), 'interactive complexity' may have the potential to escalate conditions, create chain reactions and ripple effects, or to result in 'compound effects', as perspectives on flooding attest (Wahl et al. 2015). Difficulties in establishing causality and the awkwardness of linking crises of different types (e.g. environmental and economic) are possible reasons why there has not been more work in this space (Ritchie 2009: 51). Intersections of scale (i.e. local, regional, national, international), temporalities, and juxtaposing stages in the crisis life-cycle also mediate against. There are some notable exceptions, for instance on Foot-and-Mouth Disease (an environmental crisis) with 09/11 (a political crisis) during 2001 (Coles 2004) and a series of political and economic crises affecting Indonesia from 1997 to 2002 (Prideaux et al 2003). In the case of the former, 09/11 had mitigating effects on the tourism sector

in the UK after the damage caused by a major rural lockdown earlier in the year, while the latter demonstrated how existing approaches to forecasting were ill-equipped through the turbulence of events. Finally, it is important to note that there has been an imbalance in attention. The main line of causality has been to study the effects of crisis episodes on tourism, rather to view tourism as a vector for generating or exacerbating crisis episodes (Iaquinto 2020), for instance through the in the transmission, spread and propagation of viruses, diseases and pathogens (Hall 2010), such as Ebola (Novelli et al. 2018) and COVID-19 (Iaquinto 2020), or to peak oil as an energy crisis (Becken 2016).

Research Design and Method

As the previous section makes clear, although climate change has been depicted as a global environmental crisis, it is very rarely addressed in tourism scholarship through the lens of crises, catastrophes and disasters. This is despite calls stressing the need for much greater consideration of the risks and consequences associated with transitioning to a low-carbon economy (Ritchie and Jiang 2019). Difficulties in establishing causality as well as in mapping the intersections of events often at different stages in the crisis life-cycle, have frustrated attempts to examine their potentially confounding or compounding effects (Ritchie 2009). This represents an important lacuna. As climate change plays out over the next decades (for instance to 2050 as a key milestone), it will be coincident at certain points with several other crisis events and episodes. These will not necessarily be of the same spatial scale, temporality or with an overtly environmental focus, but they will have the potential to moderate, accelerate or retard efforts to tackle climate change. Very few, if any tourism studies have examined these potential interaction or moderating effects and their potential significance.

The contemporaneous nature of Brexit and Climate Change offers precisely this analytical opportunity, although Brexit is clearly going to be a much shorter crisis and more limited to the UK. Expert commentators broadly agree that Brexit is a 'political crisis' (Freedland 2019; Edgerton 2019) and their views are broadly consistent with academic perspectives of crises as 'self-inflicted', related

to ‘inept management structures’ and reflecting the ‘inability to adapt to change’ (Ritchie 2009: 4). This was perhaps most conspicuous in the UK's inability to depart from EU on the original date (29/03/2019) or after the first extension (31/10/2019) and the ongoing uncertainty about the nature of the future relationship with the EU and the potential effects on UK society, economy and environment (Hall 2020). Indeed, one of the great unknowns of Brexit following the conclusion of trade negotiations has been what will happen to environmental legislation and protection, in particular if there is a 'bonfire of regulations' (Hall 2020).

To address the position of tourism in the most recent approaches to tackling the climate crisis and Brexit in the UK, a two-stage method was employed. First, a text analysis was conducted on major tourism strategy and policy documents emerging from the UK government or its associated non-departmental public bodies -as major delivery agencies- with particular reference to climate change and Brexit as two concurrent crises. In the case of the latter, the search identified the Tourism Sector Deal (TSD). Although tourism is a devolved responsibility (see below), somewhat unusually this was agreed with the Westminster government and it articulated a UK-wide vision for the future of tourism to 2025. A similar exercise was conducted of documents emerging from the Climate Change Commission (CCC) which, as an independent statutory non-departmental public board, advises the UK government and the devolved administrations on climate change. Principal among these were documents that established the case for, the principles of, and the actions required to achieve, net-zero Emissions by 2050 as a means of tackling climate change. These were initially read for mentions of travel and tourism (including transport as a means of conveying visitors) and for Brexit, with particular reference to future economic policy. This was because this documentation -like the Stern Report (2007) before it- warns against delay and advocates action in the short-term (as well as medium- and long-term); that is, at exactly the time when Brexit will have its most disruptive effects (Hall 2020).

For both bodies of text, a more detailed reading of the content and discourses was undertaken using the principles espoused in Lukes' (1974) three lens for studying power, namely in

simplified terms: looking for what is on the agenda; what is excluded from the agenda; and the ideology behind the agenda. Although not without critiques and proposed modifications, Lukes' approach has been used across the social sciences and successfully in tourism studies as an analytical framework in investigations of public policy interventions and public affairs (cf. Coles and Church 2007; Hall 2007).

The Tourism Sector Deal and the net-zero documentation are explicit in target setting, neither makes reference to the other, and aviation-based emissions are pivotal to both. The Tourism Sector Deal encourages further additional travel and tourism, mainly in the form of international arrivals which may be assumed to be mostly by aviation (see below), in order to engineer greater growth and resilience in the post-Brexit economy. Thus, in the second stage of the analysis, the potential aviation-based emissions from the TSD were estimated using the UK government's usual method and compared to the three scenarios for emission reductions from aviation from the net-zero emissions documentation. Thus, the main research questions which the paper now turns to address, are what were the emissions implications from aviation associated with the TSD and how would the approach to growing tourism as a response to the Brexit crisis impact on the efforts to tackle the climate crisis?

Analysis: connecting crises

Tourism and Climate Change

Within the UK government, tourism and the visitor economy fall under the remit of the Department for Digital, Culture, Media and Sport (DDCMS) although tourism policy is also a responsibility for the devolved administrations, such that each country (Scotland, Wales, Northern Ireland and England) has 'localized priorities', budgets and administrations (HMG 2019a: 12). VisitBritain (VB) acts as an executive non-departmental public body (NDPB) for DDCMS charged with promoting Britain around the world and developing the UK visitor economy. Estimates for 2017 value the UK tourism sector as

worth £127 billion to the economy, employing around 3.1 million people. Accounting for 10% of GDP and exports of £29.8 billion per annum, it is the fourth largest service export (VB 2019a: 4).

[Insert Table 1 near here]

UK tourism policy prior to the referendum in 2016 and updated a year later, focused on broadly the same themes (Table 1). It has promulgated a longstanding pro-growth paradigm dating back to 1969 and the Development of Tourism Act as the initial legislative impetus for developing this activity in the UK (VB 2019b). Further growth in visitor numbers and visitor spend were desirable outcomes to be facilitated, *inter alia*, by improving the business environment, enhanced skills and training, regulatory reform, (domestic) transport infrastructure and continuous improvements in service quality (DCMS 2016; DDCMS 2017). By 2016 climate change had slipped from the policy agenda for tourism at the UK level, although it has remained present in policy for Wales (Welsh Government 2020) and more so Scotland (Scottish Tourism Alliance 2020) where the visitor economies are smaller. UK policy since the Brexit vote has reified this exclusion (Table 1).

The Tourism Sector Deal

Set against a backdrop of economic uncertainty post-Brexit, the UK government entered into dialogues with major stakeholders in several sectors -including tourism- that were perceived to be more resilient (BEIS 2019a; VB 2019a). These sectors also had the potential to grow the UK economy (and thereby also to mitigate some of the possible damage to other more vulnerable sectors). Under the auspices of the government's Modern Industrial Strategy, the 'Tourism Sector Deal' (TSD) was one of the first such agreements to be concluded (VB2019a; HMG 2019a).

First proposed in 2017 and eventually announced on 27 June 2019, the TSD rehearsed the same broad themes as the 2011 and 2016 policies (Table 2; DCMS 2011, 2016), restating regular goals such as improved productivity, enhanced competitiveness, greater innovation, better

regulation, and infrastructural improvements. The principal differences with its predecessors were the scale and rapidity of the growth targets which -in marketing hyperbole- were described as a 'step change' (VB 2019a: 3) and a 'game changer' (VB 2019a: 10). By 2025, the value of the sector would more than double to £268 billion; employment will grow to 3.8 million; productivity will increase by 1% yielding an extra £12 billion; and the UK would become Europe's fastest growing tourism sector (VB 2019a: 4). As an interesting form of cultural diplomacy, growth was expected from countries in the EU from which the UK would become politically divorced after Brexit.

Central to these ambitions were increased investment in surface access to airports where 73% of inbound visitors arrive and depart (VB 2019a: 9). From 38 million international visitors in 2018, the TSD adopted, endorsed and sought to realise current forecasts that there would be a 23% increase in inbound visitors (to 46.74 million) by 2025 while domestic tourism would increase by 3% per cent per annum to 2025 (HMG 2019a: 6). 1.8 million additional visits would be generated from the UK and Western Europe [sic], with forecast annual growth in overnight arrivals of 3.6% and 3.3% between 2016 and 2025, outstripping current performance at 1.6% and 2.4% respectively (VB 2019a: 5).

[Insert Table 2 near here]

The feasibility of these ambitions was contestable (HoC 2017; Kyte et al 2019; WTTC 2019), even before the coronavirus pandemic. Nevertheless, the TSD presented a shared vision and agreed targets between the UK government and major sector actors across the UK from 2020. Moreover, although each part of the UK has its own strategies *inter alia* for marketing, product development and quality assurance, forecasting and target-setting for 2012-2020 associated with VB's (2013: 4) strategy for inbound tourism has proved reasonably accurate at the national level; the UK has been on course to achieve projected growth in visitor numbers of 23% over the period to 40 million.

Several other features of this documentation and the related discourses are notable. First, its principal positioning (i.e. ideology) is to view Brexit and the trade liberalization that will follow as an opportunity for further expansion of the visitor economy. As a continuation of the growth paradigm since 1969 (VB 2019b), it eschews degrowth. Perhaps the closest it comes to acknowledging sustainable tourism is to encourage greater productivity to leverage the best returns from restricted resources. Continuing the trend from previous documents (Table 1), the TSD documentation makes no reference to climate change, the environmental footprint of the expansion it advocates, and the (additional) emissions it may generate as a reuslt (VB 2019a; HMG 2019a). This is despite tacitly assuming most of the growth in international arrivals will be by air and some brief remarks on ensuring adequate airport capacity, enhanced experiences and consumer rights. For 2018, the Office for National Statistics (ONS, 2020) recorded 76.7% of international visitors arrived by air.

Net-zero emissions: aviation as a vector for travel and tourism.

The absence of these topics is further highlighted by the nature and direction of public discourse on tackling climate change when it was launched in Spring 2019 and which it contradicts. For the TSD to achieve its aims, growth in arrivals will be required and, with it, increased (international) aviation and emissions. Concurrent suggestions from the CCC that UK citizens will have to travel less if transport-related emissions targets are to be achieved, were widely reported (Carmichael 2019; Carrington 2019; Wilson 2019). Several interventions to change personal travel behaviours among UK citizens -including taxes, duties, levies and rationing schemes (Carmichael 2019; Yedroudji 2019)- were mooted given the continued popularity of long-haul package holidays (ABTA 2019; Wilson 2019), the persistence of hypermobility (Kommenda 2019), and the potential for aviation to be the second largest source of emissions (c.26%) for each UK household in 2050 (ESC 2019: 6). Later in the Spring, the UK parliament's Environmental Audit Committee (2019) concluded its enquiry on sustainable tourism and the appetite for aviation was noted in the government response to its

findings. Interestingly, the government argued that the 'tourism sector will play an important role in contributing to reducing the UK's emissions....' while noting that UK passenger numbers are likely to increase to 435 million by 2050' and that 'the government supports the growth of aviation and the benefits this would deliver, provided that growth takes place in a sustainable way, with actions to mitigate the environmental impacts' (Whatley 2010, no pages). There was little explanation of how this might happen except to invoke its consultation on the future of UK aviation (Aviation 2050) which closed in October 2019 and on which there has been no further update since the 2019 Election (HMG 2020).

In fact, the publication of the TSD paralleled the emergence of new proposals for deep decarbonisation to address the climate crisis. Following the Intergovernmental Panel on Climate Change (IPCC 2018) report on the impact of global warming above 1.5^{o}c, the UK government invited the CCC to advise it on setting dates for net-zero emissions (HMG 2018a). Just over half a year later, in June 2019, the UK Parliament had legislated for this target followed by the Welsh Assembly and Scottish Parliament (HMG 2019a). Around the same time, the UK government announced that it had reduced greenhouse gas and carbon dioxide emissions by 44% and 39% respectively between 1990 and 2018 (BEIS 2019b). Amid continued criticism, the government still refused to account for emissions from international aviation and shipping in its targets (Laville 2019; CCC 2019a). Together they accounted for 10% of UK emissions in 2017 (CCC 2019c: 165): aviation comprised 7% (36.5 $MtCO_2e$), of which international aviation contributed 96% and domestic aviation just 4% (CCC 2019b: 166). In context, these are two times the per annum total reductions (15 $MtCO_2e$) in all emissions if the UK is to meet its net-zero emissions target by 2050 (CCC 2019c: 12). The executive's explanation was the continuing debate and uncertainty about how to measure and attribute emissions in trans-national supply chains, in particular disagreement within government about whether to include 'territorial' and 'consumption' in emissions declarations and targets (Schraer 2019). Following CCC advice (CCC 2019d, 2019c: 164), the government's position started to shift, to include international aviation and shipping in the 2050 target. In the CCC's (2019c) annual progress report to parliament

in July, UK action was noted as lagging behind that required to meet legally-binding emissions targets, and that longer-term strategies and milestones for aviation would have to be developed commensurate with net-zero ambitions.

Across this body of text, there was no reference to future planned growth in tourism more generally and to the Tourism Sector Deal in particular. Emissions associated with tourism and tourist consumption were integrated in, and not differentiated among in-country estimates for services and other activities (i.e. in accommodation or using hospitality). No basic distinction was made, for instance, in the form of emissions from international arrivals and domestic visitors. Evident from correspondence between the Chair of the CCC and the Secretary of State, the dominant ideology was that the UK should act, and seek to be recognised, as a world leader in tackling the global climate crisis (HMG 2019a, CCC 2019a). Delving deeper into the proposals, the CCC (2019d: 26) expected aviation 'to emit more than any other [sector] in 2050' despite opportunities to reduce emissions. Moreover, aviation emissions may be 'reduced by around 20% from today to 2050 through improvements to fuel efficiency, some use of sustainable biofuels, and by limiting demand growth to at most 25% above current levels' (CCC 2019a: 2).

[Insert Table 3 near here]

Three scenarios were offered by which the UK may meet or exceed the current 80% 2050 target for aviation (Table 3; see CCC 2019d: 141ff). In its 'low cost low regret' Core scenario, emissions were 'aligned with the Government's objective to keep 2050 emissions at or below 2005 levels (i.e. 37.5 $MtCO_2$)' as the *de facto* stabilisation point (CCC 2019d: 142); in effect in 2050 these would still be more than double the 1990 levels. Great attention was afforded the 'Further Ambition' scenario (cf. CCC 2019b, CCC2019d) which proposed a 20% lower level of emissions in 2050 than the Core scenario, delivering lower aviation emissions in 2050 than 2005 (whey they peaked) but still double the 1990 level. The most radical and challenging scenario was termed as 'Speculative Options'

relying on a wider range of technological advances and changes in demand, options for which were mostly conjectured but unspecified.

Regardless of scenario, international aviation will still be a major contributor of UK greenhouse gas emissions in 2050; the scenarios in Table 3 merely indicate the extent and they elaborate the assumptions. Notably the original discourse only refers obliquely to 'demand' for (international) aviation in the few instances where it is invoked. Clearly this term has multiple connotations including numbers of passengers, flights from the UK or demand for bunker fuels, the latter of which had acted as a basis for the UK government's calculation of emissions as per international (United Nations) reporting conventions (CCC 2019a: A5). Demand is not differentiated by origin of passenger, although the inference is that it means outbound trips from UK residents and return trips home from international visitors. Aviation is subject to a similarly broad classification: international and domestic, but the UK is only expected to account for, and act on, emissions from flights originating within its territory (CCC 2019a, 2019b).

Set against this fuzzy backdrop, the Core scenario included a 90% growth in demand for international aviation by 2050 above 2005 levels while the Further Ambition allowed for a 60% increase in passenger demand over the same period; that is 30% higher than current levels (Table 3; CCC 2019b: 182). Even the Speculative Options provided for some further growth of between 20 and 40% over 2005 levels (CCC 2019b: 174).

[Insert Table 4 near here]

Net Zero-Emissions and the Tourism Sector Deal

Table 4 presents an estimation of emissions based on inbound visits to the UK by international visitors and outbound visits abroad by UK residents in 2018, with forecasts to 2025 based on the TSD. In the absence of more detailed breakdowns (cf. HMG 2019a), future international demand is allocated by *pro rata* uplifts to 2018 patterns (ONS 2020), the latest data available at the time of the

research, based on 47.46 million predicted international visits in 2025, not the even more strident, later target of 49 million which VB (2020: 5) published. Table 4 uses the government's preferred method for reporting emissions at the organisational level (HMG 2018b; Davies and Dunk 2015). For each trip, this calculates emissions based on the Great Circle Distance (GCD, in km) multiplied by a relevant conversion factor for $kgCO_2e$ per passenger km (HMG 2018c). The GCD was calculated between London Heathrow and the principal air hub in the source market, with an 8% correction for indirect flights (HMG 2018b: 83); the 'Average Passenger' conversion factor was used, without a further compensation of 1.9 for radiative forcing given the uncertainty in guidance (HMG 2018b: 82); and arrival rates by air were factored-in (ONS 2020).

As noted above and as context, total emissions were estimated between 35 and 36.5 $MtCO_2e$ (in 2017) for 'international aviation' including both passenger and freight from UK, albeit derived from bunker fuel consumption (BEIS 2019b; CCC 2019b: 166). In 2018 and calculated this way (HMG 2019b), 37.905 million overseas visits to the UK and 71.733 million visits abroad by UK residents contributed 11.32 $MtCO_2e$ and 17.12 $MtCO_2e$ emissions respectively, or a total of 28.44 $MtCO_2e$. These estimates were limited by, *inter alia*, simplified GCDs by using principal air hubs; use of conversion factors not weighted by class of travel (HMG 2018c); and the coarseness of the travel data, including exclusion of 'catch-all' categories of 'Rest of the World' (ONS 2020), which was based on the UK Inbound questionnaire, not arrivals at the border.

If a simple linear trend is assumed, Table 4 demonstrates that each year around 0.37 $MtCO_2e$ emissions will be added by the growth of international visitors at the 3.3% per annum (compound) growth rate espoused by the TSD. In other words, if the TSD ambitions are fully realised in 2025, further additional emissions of 2.64 $MtCO_2e$ will be added which is equivalent to 17.6% of the yearly necessary saving. Cumulatively between 2018 and 2025 a further 10.44 $MtCO_2e$ of greenhouse gasses will have been added to the atmosphere provided no further (technological) savings or decoupling takes place. This excludes any increase in outbound UK-resident mobility or

domestic aviation which are not covered by the TSD. As noted above, it is equivalent to just over two-thirds of one entire year's emissions savings for the UK (CCC 2019c: 12).

Discussion

Broad calculations of this nature challenge the feasibility of the scenarios designed to tackling the climate crisis (Table 3). The Speculative Options seem even less likely when set against a long-term paradigm of sustained growth (VB 2019a, 2019b) while most of the growth in demand assumed by the Further Ambition scenario would be realised in the next seven years (HMG 2019a, VB 2019b), leaving little capacity for further growth from 2025 to 2050 (unless there are further significant technological or regulatory advances, for example). Most pertinently these calculations expose the possible compounding impacts of misaligned 'solutions' to current crises. Growth of the type, pace and duration anticipated by the TSD in the 2020s will take place well before many meaningful technological adaptations or voluntary regulatory innovations such as the United Nation's Corsia (Carbon Offsetting and Reduction Scheme for International Aviation) scheme comes full online. As Timperley (2019) reports, the scheme plans to begin its voluntary first phase only in 2024, with the mandatory second phase starting in 2027. Postponing action merely makes the problems of climate change more difficult and costly to address (Stern 2007).

Double standards appear to be operating. For instance, the Core Scenario is largely dismissed in the rhetoric of the text as unacceptable because it requires 'other sectors to reduce their emissions by 85% in order to meet the 80% target overall' (CCC 2019b: 173). Yet, were the forecast rises in aviation emissions associated with the TSD to occur by 2025, in the remainder of the period to 2050, there is a high likelihood of other sectors having to make far greater emissions savings still in order to offset aviation related tourism. Furthermore, although the UK government clearly desires the (economic) benefits from greater inbound travel and tourism as part of its post-Brexit industrial strategy (HMG 2019a), it is more reticent about the fuller environmental costs that follow and its obligations to curb (not encourage) emissions from aviation *per se* as a major

contributor to the climate crisis. Put another way, tourism growth in the UK from inbound (international) travel is effectively predicated on displacing half of the main externality. Currently, under the territorial approach to emissions, the UK government only accounts for emissions from flights originating in the UK. The short term increase in emissions –particularly if the TSD ambitions are fully realised- assumes that inbound trips can, should, and will be accounted for and actioned at some point, somehow, somewhere else in the world as part of the collective global effort (CCC 2019a: 1). Without articulating it explicitly, this must be by states where the trips to the UK originate and to which the emissions are subsequently attributed by international convention. This may be currently be of the order of 11.32 $MtCO_2e$ of emissions and the TSD may add 0.37 $MtCO_2e$ per annum to be accounted for elsewhere (Table 4).

Thus, action to mitigate Brexit as a political crisis has significant potential to confound, if not compound the effects of the climate crisis. Yet, there are further dilemmas when the implications of net-zero 'policy' are teased out. Politically the calculation would appear to be that the short-term focus on making Brexit a success is more important electorally than addressing the climate crisis playing out over the medium- to long-term. This juxtaposition of domestic and international scales and interests is placed in even sharper focus with the UK government's self-perceived global leadership, and its hosting of COP26, the 26th United Nations Climate Change Conference of the Parties in 2021 (Ares and Priestley 2020). Moreover, reducing demand for outbound travel by UK residents may be more practicable (CCC 2019a; 2019d; ESC 2019) and economically favourable than restricting inbound, international travel hence the discourse erring more towards modifying UK-citizens' travel behaviours. At 2018 levels, *pro rata* reductions in UK-resident outbound travel of 2.2% would be required to offset the increase in return flights by international visitors of 3.3% desired by the TSD (Table 4). Prior to the coronavirus pandemic, demand for international tourism from UK residents was resilient (ABTA 2019a), and outbound tourism was estimated to be worth £15.9 billion in (direct) Gross Value Added to the economy, or around 1% of UK Gross Domestic Product (ABTA 2019b). In contrast, spending from inbound visitors in 2018 was £22.9 billion (VB

2019c: 7). A simple calculation based on these parameters suggests that a demand adjustment in this manner may result in a significant net gain (c£355 million) for the economy (even excluding any UK outbound spend reinvested in domestic visitation).

Conclusion

This paper has examined how tourism has featured in responses to the climate and Brexit crises in the UK between 2016 and 2019. Reading climate change as an environmental crisis and alongside another crisis, is a reminder that there are important potential interaction effects between crises. Although UK-focused the paper has wider resonances. Many other states and legislatures around the world are on similar paths using a net-zero emissions approach (CCC 2019d: 22). Each has experienced or will continue to encounter, a range of additional crises that will mediate or moderate, confound or compound the effects of the climate crisis, most notably the unfolding coronavirus pandemic. Prior to this, the UK government was inadvertently 'sleep walking' its way towards perverse outcomes for the climate crisis from its disconnected, 'reform-as-usual' (Gilding 2019a: 25) approach to growing tourism after Brexit. By its adherence to the existing growth paradigm, the Tourism Sector Deal was (and remains - it has not been dropped) highly reliant on international travel, and aviation in particular. Hence it had (and still has) the potential to exacerbate the climate crisis by jeopardizing the UK's contribution to global emissions reductions. If fully realised the 2019 TSD may add a further 20.88 $MtCO_2e$ over its life-time from both inbound and outbound travel. The UK accounted share is equivalent to two-thirds of one year of total planned emissions savings from all activity, requiring other sectors to save more for the UK to achieve its overall net-zero targets.

The unlikely appearance of major impending emissions saving technologies during the period of the TSD has been largely accepted (CCC 2019b) while the introduction of carbon offsetting schemes for international aviation are only mandatory after 2027. Of course, the 2020 coronavirus pandemic has induced major reductions in demand for travel and tourism across the world. There

are two ways of interpreting this here relating to limitations of the study and the implications for future research. The first is that the targets set by the TSD may never be achieved and/or are in need of resetting. In other words, the paper may be perceived as limited by its historicity, as a historical analysis of what might have happened in the 'old normal', a warning about the dangers of disconnecting crises and governance. The second is that the main arguments are regrettably strengthened by the coronavirus pandemic and its effects. The paper has demonstrated the case for greater investigation and consideration of the positioning, coincidence and interaction effects among different forms and scales of crises. Since the empirical data collection was completed in 2019 a further crisis -a global public health crisis- has commenced mediated by, and impacting on, tourism mobilities; crucially, it has consequences for emissions and the climate crisis which are yet to be fully understood and hence are an imperative for future research.

The first interpretation may resonate for some. After all, in the wake of the initial outbreak and lockdowns, some have argued that the nature of travel and tourism will never be the same as before, a 'new normal' will establish itself, and there is opportunity for transformational 'green recovery' strategies (Lew et al. 2020). In fact, the latter would be another instance of where one crisis (climate change) is impacted by the outcomes from another (public health) in a more positive (environmental) direction, and provides further weight to the arguments presented here. Hence, the extent to which 'green recovery' strategies are developed, their nature and form, and their effects on travel and tourism (with a view to aviation and emissions) represent a major imperative for future research. Furthermore, the demise of the TSD -(or other tourism pro-growth strategies) should not be announced prematurely until more is known about the nature of bounce backs (Gallego and Font 2020). Since the coronavirus pandemic there has been considerable analysis in the UK, not always obvious in the public domain (VB 2020b), forecasting the possible pace and nature of recovery to 2019 demand-levels, on the feasibility of returning to projected growth rates and the likelihood of achieving five-year targets. Thus, the coronavirus pandemic as experienced in the UK may postpone growth and possibly modify its future trajectory; it may reduce the total

cumulative effects of the TSD on emissions over its life-time; however, there is still the distinct possibility of achieving the visitor targets for 2025 (and hence the in-year emissions levels) by another path. After all, the overall trend in the UK since 1969 has been for sustained growth in spite of, and in some cases because of, several other crises that have punctuated this period.

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Table 1: UK tourism policy documents and their positions on climate change since 2007

Year	Document	Government	Notes
2009	*Sustainable Tourism in England: A Framework for Action*	Labour	Elaboration of ideas from 2004 *Tomorrow's Tourism Today*, including an entire chapter on 'Climate Change and Tourism' and section on 'Climate's effect [sic] on tourism'.
2011	*Government Tourism Policy*	Conservative-Liberal Democrat	No mention of climate change. Notes in Section (6.2) on raising productivity, the potential of product improvement to address bad weather and improve business resilience.
2016	*Tourism Action Plan*	Conservative	No mention of climate change. Areas of emphasis: the tourism [operational] landscape; skills; regulation, transport; visa service, as part of the welcome.
2017	*Tourism Action Plan – One year on*	Conservative	No mention of climate change (or weather).
2019	*Tourism Sector Deal*	Conservative	No mention of climate change (or weather). Main areas of emphasis: increase in visitor numbers, productivity, and visitors of the future.

Sources: abridged from DCMS (2009, 2011, 2016), DDCMS (2017), HMG (2019a)

Table 2: Major Features of the Tourism Sector Deal (TSD)

Theme	Ambitions
Ideas	• Create data hub to understand visitor preferences in real time
People	• Additional 10k apprenticeship 'starts' per year by 2025 • £1million recruitment and retention programme • Increasing in-work training • Development of new T-level qualifications, for the sector
Infrastructure	• Additional 130k bedrooms by 2025, with 75% outside London to ensure benefits felt around country. • Investment in attractions and innovative products • Facilitate travel to and around UK (maritime and aviation strategies)
Business Environment	• New business event action plan • Support to go digital for the 200k small and medium sized enterprises in the sector. • Enhanced business support through the Great Britain Business Exchange.
Place	• Piloting up to five new Tourism Zones, to drive visitor numbers across the country, extend season, overcome local barriers. • Joint working to make UK most accessible destination in Europe, through a 33% increase in international visitors with disabilities.
Devolved Nations	• Continued co-ordination and joined-up working on devolved issues • Reform where issues not devolved (e.g. visas, immigration)

Source: adapted from HMG (2019a)

Table 3: Scenarios to get to net-zero emissions from international aviation.

Scenario	Emissions in 2050	Notes, including assumptions
Core	37.5 $MtCO_2$	• Fuel efficiency improvement of 0.9% pa • Limited use of sustainable biofuels (5% uptake in 2050) • Demand growth limited to 60% above 2005 levels
Further Ambition	30.4 $MtCO_2e$	• Combination of measures • Fuel efficiency improvement (1.4%pa), including some use of hybrid-electric aircraft in 2040s. • Limited use of sustainable biofuels (10% uptake in 2050) • Absence of true zero-carbon plane in 2050 • 25% growth in demand by 2050 compared to 2018 levels and 49% previous government forecast. • International 29.0 $MtCo_2e$, domestic 1.4 $MtCo_2e$.
Speculative Options	22.5 $MtCo_2e$ Near zero	Further Demand Constraint • Demand at broadly 2018 levels in 2050, to save 8 $MtCo_2e$ • Limiting demand at 20% and 40% above 2005 levels by 2050, save 4-8 $MtCo_2e$ respectively. Alternative Fuels • Synthetic carbon neutral fuels

Sources: adapted from CCC (2019a: 9-11; 2019b: 173-174; 2019d)

Table 4: Emissions estimates from international visits to the UK and outbound trips by UK residents

Territory	2018 arrivals (000s)	% arrivals by air	2018 Emissions (Mt CO2e)	2019 Emissions (Mt CO2e)	2025 Emissions (Mt CO2e)	2018 visits abroad (000s)	2018 Emissions (Mt CO2e)	Rank arrivals	Growth (Jul17-Jun18)	Rank visits abroad
EU15	19,951	70.32	1.04	1.07	1.28	45,723	3.66	1	-	1
EU Other	4,601	72.17	0.51	0.53	0.63	7,119	1.03	3	-	2
Other Europe	2,478	62.78	0.19	0.20	0.23	4,468	0.63	4	-	3
North America	4,728	87.77	3.32	3.43	4.09	4,015	3.22	2	-	4
Africa	602	88.04	0.47	0.48	0.58	2,261	1.47	9	-	6
Middle East / Gulf States	1,179	88.04	0.64	0.66	0.78	1,373	0.84	7	-	7
Asia	2,363	88.04	2.17	2.24	2.67	3,757	3.52	5	-	5
Australasia	1,219	88.04	2.25	2.32	2.77	454	0.90	6	-	10
Caribbean	129	88.04	0.10	0.10	0.12	971	0.79	10	-	9
Central and South America	649	88.04	0.65	0.67	0.80	1,007	1.04	8	-	8
Rest of the world	6	-	-	-	-	583	-			
Total World	**37,905**	**78.80**	**11.32**	**11.69**	**13.96**	**71,733**	**17.12**			
Selected markets (top 10 by number of overseas visits to UK)										
USA	3,877	87.77	2.80	2.89	3.45	3,472	2.85	1	2%	1
France	3,693	70.32	0.08	0.09	0.10	8,556	0.22	2	-8%	2
Germany	3,262	70.32	0.14	0.14	0.17	2,813	0.14	3	-4%	3
Irish Republic	2,782	70.32	0.08	0.08	0.10	3,218	0.11	4	-5%	4
Spain	2,530	70.32	0.23	0.24	0.29	15,618	1.66	5	8%	5
Netherlands	1,954	70.32	0.05	0.05	0.06	2,716	0.08	6	-3%	6
Poland	1,817	72.17	0.18	0.19	0.22	2,472	0.29	7	19%	7
Italy	1,808	70.32	0.17	0.18	0.21	4,325	0.47	8	-6%	8
Belgium	1,116	70.32	0.03	0.03	0.03	1,525	0.04	9	-23%	10
Australia	1,003	88.04	1.82	1.88	2.25	356	0.69	10	-15%	9
Sub-total	**23,843**	**-**	**5.58**	**5.77**	**6.89**	**45,071**	**6.54**			
% of Total World	**62.90**	**-**	**49.33**	**49.33**	**49.33**	**62.83**	**38.23**			

Source : author based on ONS (2020; Tables 8, 14, 16, 17, 21), VB (2019c), HMG (2018b, 2018c), Great Circle Mapper.