

2023

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### Recommended Citation

Hussain, Asif (2023) "Climate Change Commitments and Challenges to Achieve Regenerative Tourism: A Case of Aotearoa New Zealand," *Journal of Sustainability and Resilience*: Vol. 3 : Iss. 2 , Article 1. Available at: <https://digitalcommons.usf.edu/jsr/vol3/iss2/1>

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Publisher's Note: Journal of Sustainability and Resilience (JSR) (ISSN:2744-3620) is published bi-annually by the Sustainability and Resilience Institute (SRI) of New Zealand. The opinions expressed in this paper are those of the authors and do not necessarily reflect the official policy of SRI. SRI remains neutral about jurisdictional claims in published maps and institutional affiliations.

# Climate change commitments and challenges to achieve Regenerative Tourism: a case of Aotearoa New Zealand

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Received: 18/06/2023

Revised: 28/07/2023

Accepted: 31/07/2023

Published: 01/09/2023

**Abstract:** New Zealand heavily relies on nature-based tourism for its popular "100% pure New Zealand" brand. However, the country faces challenges in mitigating greenhouse gas (GHG) emissions due to the significant contribution of long-haul destination. Despite various environmentally friendly initiatives, the primary obstacle to achieving low-carbon and regenerative tourism lies in the fact that tourists must fly to reach New Zealand. In terms of per-capita aviation emissions, New Zealand ranks sixth for international and fourth for domestic aviation emissions among other countries. The tourism sector in New Zealand is particularly vulnerable to natural disasters, with a 54% increase in vulnerability. This leads to potential losses in terms of jobs, homes, lives, livelihoods, and hope for a better future. Global trends suggest a decrease in visitor numbers due to the impacts of climate change, making tourism one of the first industries to suffer during a disaster. Currently, New Zealand's efforts to address climate change are rated as "highly insufficient" compared to other OECD countries. To protect the endangered "100% pure New Zealand" brand, significant actions are necessary to promote the conservation and restoration of natural habitats. This paper highlights that the concept of "regenerative thinking" emerges as a potential solution to accelerate climate action in tourism by encouraging the private sector to re-brand, refocus, and enhance the capabilities of all stakeholders. However, reducing GHG emissions in the tourism industry poses challenges related to transparency, financing, and monitoring emissions, as the industry is predominantly driven by the private sector. While global commitments like the Glasgow Declaration serve as catalysts to increase urgency and the need for climate action in tourism, a transformative shift in the tourism system is required to empower stakeholders in transitioning to holistic regenerative tourism practices.

**Keywords:** climate change, nature-based tourism, New Zealand, regenerative tourism.

## 1. Introduction

New Zealand is a popular tourism destination and its "100% pure New Zealand" brand relies significantly on nature-based tourism. Before Covid-19, tourism was New Zealand's biggest export industry contributing 20.01% of GDP - 5.5% (direct) and 3.8% (indirect) (Tourism Industry Aotearoa, 2022). Climate change

is a threat to New Zealand's NBT destinations and the associated livelihoods (Kutzner, 2019; Scott, Hall, & Gössling, 2019; Shi-Jin & Lan-Yue, 2019). New Zealand announced a climate emergency in 2020 and aims to reduce greenhouse gas (GHG) emissions and become carbon neutral by 2050 (Shaw, 2020).

The reliance of tourism industries on aviation and automobiles, and the limited

public transport network in New Zealand possess a major challenge to reduce tourism-related GHG emissions (DOC, 2019). The GHG emissions are recorded through The GHG Inventory, which is “an official annual estimate of all human-generated greenhouse gas emissions and removals in New Zealand” (Ministry for the Environment, 2022). The inventory keeps the record of GHG emissions in New Zealand under the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol set by the Intergovernmental Panel on Climate Change (IPCC) under Kyoto Protocol, with 1990 as the baseline (Ministry for the Environment, 2022). When comparing New Zealand's achievement with other signatories (e.g. Australia and the United Kingdom) of the Paris Agreement, New Zealand's overall rating is highly insufficient both in terms of policy action and climate finance (Climate Action Tracker, 2023).

## 2. Climate Change and Nature-Based Tourism

Destinations around the world are facing the effects of climate change first-hand and it is argued that the biggest threat to the tourism industry in the 21<sup>st</sup> century is the phenomenon of climate change (Awojobi, 2017; Dube & Nhamo, 2018; Hall & Higham, 2005; Hussain & Fusté-Forné, 2023; Hussain, Fusté-Forné, & Simmons, 2021; Ngxongo, 2021). Destinations face extreme events in the form of floods, droughts, heatwaves, hurricanes, and wild/bushfires making it harder for tourists to plan their holidays and challenging for hosts to provide quality services, which are beyond their control (Arabadzhyan et al., 2021; Brunton, 2022; European Union Horizon, 2020; Hall & Boyd, 2005; Kutzner, 2019; Lenzen et al., 2018; Scott et al., 2019; Shi-Jin & Lan-Yue, 2019; Spenceley, 2005). Because of temperature increases and extreme weather events,

many destinations will see a decrease in visitor numbers making tourism amongst the first to suffer when a disaster occurs (European Union Horizon, 2020).

The irony is that the tourism industry is one of the most polluting industries in terms of carbon emissions, hence perpetuating global warming and natural disasters. Tourism contributes to around 8% of global GHG emissions with aviation, transportation and consumption of goods and services at 40%, 30% and 30% respectively (Lenzen et al., 2018). The Covid-19 pandemic led to a 7% reduction in GHG emissions globally in 2020 (CarbonBrief, 2020), providing a reference point but to achieve the goals of the Paris Agreement, the tourism industry required a 7% reduction in global emissions on an annual basis (UNFCCC, 2019).

By 2018, most countries agreed to limit global temperature to 1.5°C with parties progressively enhancing their Nationally Determined Contributions (NDCs) to manage the international carbon markets concerning Article 6 of the Paris Agreement 2015 (European Union Horizon, 2020; UNWTO, 2022). NDCs are at the heart of the Paris Agreement which requests countries to outline and communicate their post-2020 climate actions and efforts by each country to reduce gross GHG emissions and adapt to climate change (United Nations Climate Change, 2015).

The United Nations World Tourism Organization (UNWTO) argues that tourism is starting to reflect in NDCs, with references to tourism increasing from 41% (2019) to 46% (2021). However, these references also noted that the tourism sector's vulnerability has increased from 21% (2019) to 54% (2021) (UNWTO, 2022). To have an industry-wide impact the initiatives to reduce GHG emissions are challenging (UNWTO, 2023) and require the commitment of the entire tourism

system including industry-wise adaptation and mitigation strategies to maintain long-term tourism activities under a new climate regime (Wiebke, 2020a, 2020b). The tourism industry has no barriers to entry (Hussain, 2021) and the industry constitutes, mainly the private sector, and it would be challenging to reduce GHG emissions (UNWTO, 2023), calculate, monitor and encourage the private sector to become eco-efficient (Gössling, 2002; Gössling et al., 2005).

Tourism plays a vital role in economic growth and poverty alleviation. As of 2018, the tourism industry made up 10.4% (almost 9 trillion USD) of global GDP and creates 1 in 10 Jobs globally and brought financial freedom to Small Island Developing States (SIDS) (UNWTO, 2022). UNWTO estimates an increase in international and domestic arrivals from 20 billion to 37 billion by 2030 (UNWTO, 2022). The host communities that rely on tourism as their livelihood are vulnerable to climate change leading to potential losses of jobs, homes, lives, livelihoods, and hope for a better future (Ngxongo, 2021; UNWTO, 2022). According to the UNWTO and International Transport Forum's (ITF) latest research, transport-related CO<sub>2</sub> emissions from the tourism industry are forecasted to increase by 25% from 2016 levels and represent 5.3% of all man-made emissions in 2030 (UNWTO, 2023). According to the UNWTO:

“Inter-regional (across regions) travel, represents 20% of all travel and is almost exclusively (95%) done by air...Transport-related emissions from international tourism are expected to grow 45% from 2016 to 2030 (from 458 Mt CO<sub>2</sub> to 665 Mt CO<sub>2</sub>)” (UNWTO, 2023).

Similarly, “transport-related emissions from domestic tourism are expected to grow by 21% from 2016 to 2030 (from 913 Mt CO<sub>2</sub> to 1103 Mt CO<sub>2</sub>)” (UNWTO, 2023). At COP26, the Glasgow Declaration

was launched to coordinate a plan for tourism to support the global commitment to halve emissions by 2030 and achieve net zero by 2050 through planning, measuring, and reporting signatories' GHG emissions (UNWTO, 2021).

### **Glasgow Declaration and Regenerative Tourism Thinking in New Zealand**

Glasgow Declaration is a global commitment by cities and regions to act on climate change and promote sustainable development (UNWTO, 2021). The Declaration is based on the principles of the Paris Agreement (UNFCCC, 2020) to accelerate action to reduce GHG emissions and mitigate the impacts of climate change. The declaration sets guidelines for voluntary cooperation between countries, including the use of market mechanisms such as emissions trading and carbon credits to help countries achieve their GHG emissions reduction targets while promoting sustainable development. Glasgow Declaration acts as a catalyst for increased urgency and the need to accelerate climate action in tourism as climate actions in tourism are critical for the resilience of the tourism sector (UNWTO, 2022).

New Zealand declared a climate emergency in 2020 followed by Zero Carbon Act 2019 (Shaw, 2019, 2020). An independent Tourism Taskforce (the Taskforce) was established to lead the thinking and aspirations for the future of tourism in New Zealand. The Taskforce advised the government on changes required to enrich the industry and the well-being of New Zealanders (The Tourism Task Force, 2020). In the report, the Taskforce acknowledged “climate change impacts, adaptation and GHG emission reduction initiatives”(The Tourism Task Force, 2020, p. 22) and recommended systemic leadership change to enable high-value and low-impact visitors through regenerative tourism. Destinations, which are more

vulnerable to extreme events need to adapt to new ways of climate scenarios (Awojobi, 2017; Dube & Nhamo, 2018; Ngxongo, 2021) which may result in a new form of tourism such as regenerative tourism which has a low impact on the natural environment (Hussain, 2021, 2023; Hussain & Fusté-Forné, 2022; Hussain & Haley, 2022).

The Parliamentary Commissioner for the Environment (PCE) conducted investigations into the pressures and effects of tourism activity on New Zealand's environment published two reports and provided several policy recommendations with a focus on environmental degradation concerning tourism and climate change (Parliamentary Commissioner for the Environment, 2019, 2021). The PCE recommendations were focused on tourism-related aviation emissions, government tourism funding through a sustainable lens, introducing environmental and social conditionality, protecting wilderness and natural quiet in public conservation land and waters and stronger requirements for self-contained freedom camping and improved oversight of the certification process as noted by the Select Committee (Sage & Strange, 2022). The first report in 2019 suggested that "tourism can in some sense be regenerative if an appropriate set of management approaches are put in place" (Parliamentary Commissioner for the Environment, 2019, p. 96). Similarly, The Aotearoa Circle has recently launched 'the tourism sector climate change scenarios and adaptation roadmap, stressing the desire for directional change in the tourism system. The report demonstrated the scale of challenges and commitment to following regenerative tourism pathways (The Aotearoa Circle, 2023).

The Ministry of Business, Innovation & Employment (MBIE) New Zealand is actively advocating for 'regenerative tourism' (MBIE, 2019). According to MBIE (2019), "regenerative tourism ensures that

tourism gives back more to people and places than it takes. Tourism must add more than only economic value, it must actively enrich our communities and help protect and restore our environment." (MBIE, 2023). This approach is based on the principle of leaving a positive impact on the environment and local communities (Hussain, 2023). Several initiatives, including the 'Project Regenerative Tourism' of Sustainability and Resilience Institute New Zealand, are emerging "to promote regenerative tourism research and experience for the visitors to engage with the debate of regenerative tourism" (Sustainability and Resilience Institute, 2023). While MBIE is advocating the tourism industry to transition to a regenerative tourism model it is argued that the regenerative tourism thinking must be embedded in the destination management plan and the processes in developing the management plan (Hussain, 2023) and improve Mauri (life force) of a destination. Regenerative tourism ensures that communities are at the centre of decision-making and are equipped with resources and allows the visitor's economy to strengthen their local identity, and well-being, and connect visitors to their place (Hussain, 2023).

The Tourism Task Force also recommended that "destination plans be co-created with communities and to take a long-term view aligned with regenerative outcomes" (The Tourism Task Force, 2020, p. 24) to "enhances the capability of all stakeholders to thrive and evolve by creating net benefits across social, cultural, environmental and economic wellbeings; that is, tangible material and non-material benefits after all costs have been taken into account." (The Tourism Task Force, 2020, p. 50). In this regard, a Destination Management Plan (DMP) can play a vital role in addressing climate change and provide guidance and direction for sustainable, resilient, and responsible tourism practices in NBT. The DMPs aim

to identify the roles of the different stakeholders and manage a destination by identifying clear actions over a certain period (ChristchurchNZ, 2023; MBIE, 2019).

Regional Tourism Operators (RTO) in New Zealand have created DMPs using MBIE's Destination Management Guidelines 2020. In a seventy pages long guiding document, the word 'carbon-emission' appeared once, and 'climate change' counted twice – once in the background section and the other stating that, "climate change is affecting some locations, imposing the need for careful consideration, and planning to allow for adaptation over time. As travellers become more environmentally, socially and culturally conscious, they, too, are seeking experiences that enable them to act responsibly and minimise their impact" (MBIE, 2019, p. 58). Similarly, the word 'climate change' did not appear in the Request For Proposal (RFP) put forwarded by ChristchurchNZ on April 29, 2022, while 'sustainability' appeared once (ChristchurchNZ, 2022).

At an industry level, several initiatives promote and stress the urgency to address the climate change impacts on destinations (Tourism Industry Aotearoa, 2023). One such initiative is the 'Tourism Industry Association's Tourism Carbon Challenge'. The mission statement of the initiative states that: "The climate challenge is urgent and Aotearoa New Zealand's tourism industry must be a driver of change. We must act immediately to accurately measure our individual and collective carbon footprint, work together to significantly reduce carbon emissions by 2030 and be net zero carbon before 2050" (Tourism Carbon Challenge, 2023). Similarly, RTOs and TIA's Green Room project are working towards a zero carbon and regenerative future and transforming destinations such as the Bay of Plenty into carbon-neutral and waste-minimisation businesses (Tourism Bay of Plenty, 2023).

## **New Zealand Dependency on Long-Haul Tourism and GHG Emissions**

Long-haul destinations are significantly contributing to climate change (Durberry & Seetanah, 2015). New Zealand's tourism industry heavily relies on transportation (road, rail, air and marine) due to the physical isolation of New Zealand from the rest of the world making it challenging for the industry to mitigate GHG emissions. Because of the physical isolation of New Zealand, long-haul travel to New Zealand is going to be challenging. "The biggest barrier to regenerative tourism is the fact tourists have to fly to get here" (Macdonald, 2023). Consumers are becoming more aware of their carbon footprint as noted by Tourism Industry Aotearoa (TIA) chief executive Rebecca Ingram (Brunton, 2022). Despite the changing attitude of society towards responsible travel (Hall & Higham, 2005), tourism-related GHG emissions by land, water, or air remain a significant challenge to mitigate (Durberry & Seetanah, 2015). Tourism Adaptation Roadmap co-chair Laurissa Cooney argued that "this [climate change] is very real for the tourism sector. We're already facing extreme weather events which have a direct impact on our business, on the infrastructure, and the asset base that we need to invest in for the future to ensure our offering is still accessible, that people can still get to us, that our product is still going to be relevant in the future" (Brunton, 2022).

A study commissioned by Christchurch City Council suggested that transportation (road, rail and aviation) was the largest GHG emitter sector producing 54% of Christchurch's (including Banks Peninsula) total emissions "...with petrol and diesel use contributing to 73.4% of transportation sector's greenhouse emissions" (AECOM, 2020, p.2). When comparing the inventories between 2016/17 and 2018/19, Christchurch's total gross GHG emissions increased from 2,665,643 tCO<sub>2</sub>-e in

2016/17 to 2,723,016 tCO<sub>2</sub>-e in 2018/19, which is a rise of 2.2% (57,373 tCO<sub>2</sub>-e), with transport sector increased by 6.8% (159,904 tCO<sub>2</sub>-e). However, the Council's climate change mitigation and adaptation strategies in place have limited evidence that supports actions to mitigate the impacts of climate change on tourism destinations. In the Ōtautahi Christchurch Climate Resilience Strategy 2021 (a forty-page document), the word 'tourism' was used once stating 'Summer leisure and tourism season will be extended, but the ski season will be shorter, and glaciers will be disappearing' (p.32), shows the council's preparedness to address climate change impacts on the tourism industry.

Similarly, Queenstown recently developed DMP with a focus on regenerative tourism and aims to be carbon zero by 2030 which has the country's forth-busiest airport (Macdonald, 2023) and the airport's new master plan projected a growth of 3.2% per year exceeding the pre-pandemic peak by 2025 (Queenstown Airport, 2023). So far the aim to be 'carbon zero by 2030' is an aspirational motivation for climate action (Macdonald, 2023). Queenstown Lakes mayor, Glyn Lewers, wants to attract high-value and high-spending tourists with the new DMP. "For us, value means a tourist that gets involved with the community, stays longer and leaves the place as a better place" (Macdonald, 2023). Others argue to change New Zealand's marketing strategy and attract close markets such as the Australian market which has a 10% less carbon footprint per dollar spent as opposed to the European market and cruise tourism (Macdonald, 2023).

When comparing New Zealand with other countries in terms of per-capita aviation emissions, New Zealand is ranked sixth (6<sup>th</sup>) at 1 tonne CO<sub>2</sub> – about ten times the world average for international aviation emissions and ranked fourth (4<sup>th</sup>) for domestic aviation emissions (Global Sustainable Tourism Dashboard, 2021). It

is argued that a "national aviation action plan needs to be developed and implemented based on the 'Avoid/Shift/Improve' [ASI or A-S-I] framework in use in other areas of transportation planning" (Callister & McLachlan, 2023) to reduce the environmental impacts of transport (Roy, Some, Das, & Pathak, 2021). Bongardt et al. (2019) reported that "the A-S-I approach was initially developed in the early 1990s in Germany and first officially mentioned 1994 in the report of the German parliament's Enquete Commission. The approach serves as a way to structure policy measures to reduce the environmental impact of transport and thereby improve the quality of life in cities". New Zealand's overall rating in addressing climate change is 'highly insufficient' both in terms of policy and action and climate finance as compared to other countries such as Australia and the United Kingdom (Climate Action Tracker, 2023). So far policy actions remain unclear to ensure the Emissions Trading Scheme (ETS) is fit to prioritise gross GHG emissions without significant policy enhancement and focusing on reducing emissions from high emitting sectors such as agricultural methane emissions, which represents 40% of New Zealand emissions (Climate Action Tracker, 2023).

New Zealand could face a bill of \$24 billion in the years leading up to 2030 to meet climate change targets concerning the Paris Agreement to reduce net GHG emissions by 50 per cent below gross emission levels in 2005 to limit global warming to below 1.5°C (Climate Action Tracker, 2023; Neilson, 2023; New Zealand Government, 2023). To meet that target New Zealand's emissions must not exceed 571 MtCO<sub>2</sub>e (budgeted for NDCs), and New Zealand must purchase credits internationally, possibly at a higher cost due to competition, to offsets amounting to around 75–102 MtCO<sub>2</sub>e over time compared with any other OECD country (Climate Action Tracker,

2023; Neilson, 2023; New Zealand Government, 2023). “If all countries were to follow New Zealand’s approach, warming could reach over 3°C and up to 4°C.” (Climate Action Tracker, 2023). To address climate change impact scenarios a NBT destination requires a robust climate change adaptation plan and a strategic approach to increasing destination resilience, reducing vulnerabilities, and maintaining ecosystem services. To achieve such an outcome, a concrete national climate change adaptation plan is required to link climate change aspects of all DMPs to ensure regenerative healing to mitigate the impacts of climate change while ensuring social licensing for the tourism industry to operate.

#### 4. Conclusion

The tourism industry is both the victim and culprit of climate change and requires a systematic change in the tourism system to address the impacts of climate change on an NBT destination. To address the impacts of climate change, destinations must incorporate climate change adaptation and mitigation strategies to contribute toward NDCs. At the writing of this paper, New Zealand’s overall rating for addressing climate change is highly insufficient, however, the new emerging ‘regenerative thinking’ could potentially provide a solution and accelerate climate action in tourism by encouraging the private sector. While MBIE is advocating for regenerative tourism, tourism destinations will remain vulnerable to climate change unless the government, regional councils and RTOs provide technical and financial assistance to the tourism industry to transition towards ‘regenerative tourism’ and investing in climate-resilient tourism infrastructure making tourism future proof.

The main aspect of a resilient destination is determined by the efforts made at a destination to support and preserve local

cultures and economies and foster relationships between tourists, locals, and the environment. At the national level, the key challenge to reducing GHG emissions remains transparency, financing, calculating, and monitoring emissions as industry constitutes the private sector. This paper highlighted the fact that the ‘100% Pure New Zealand’ brand is in danger, which requires significant actions to promote the conservation and restoration of natural habitats. While global commitments such as the Glasgow Declaration can help target setting, encourage collaboration, and promote resilience, it is the destinations themselves, which must lead this global movement. Given the physical isolation of New Zealand and its poor regional transport infrastructure, New Zealand will struggle to achieve NDC goals.

Climate actions often focus on the ‘what’ and ‘why’ factors and lack details on ‘how’ to get there. New Zealand has shown strong sentiments toward regenerative tourism; however, it requires leadership and support for these voices, regenerative tourism businesses and early adapters that have led ‘regenerative tourism thinking’ thus far.

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### Author profile



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