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Review

Advancing Global Climate and Biodiversity Goals Through Regenerative Tourism

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Abstract: Tourism has a particular responsibility to contribute to climate and biodiversity goals because of its intense use of long-range transport and its strong dependence on natural capital as an asset. Tourism is a major contributor to the global economy, but also to greenhouse gas emissions. The severe impacts of the SARS-CoV-2 pandemic on the tourism sector triggered a search for enhanced resilience, replacing the past paradigm of "boosterism", and the dominant paradigm of "sustainable tourism". Sustainable tourism is no longer sufficient, and a shift towards a new paradigm of regenerative tourism is needed to address the environmental and societal challenges faced by the tourism industry. Here, the evidence pointing at the rise of regenerative tourism as a new paradigm is reviewed, the differential goals of regenerative, relative to sustainable tourism, are defined and actions along five domains of action are identified that can help tourism destinations embrace the transition toward the regenerative tourism paradigm. Regenerative tourism seeks to enhance the natural, cultural and social capital of destinations while creating net positive benefits for people and the planet. It emphasizes collaboration with local communities and an ambitious and holistic approach to sustainability, going beyond reducing negative impacts to creating positive ones. Regenerative tourism aligns the industry, the Paris Agreement, and the Convention on Biological Diversity, while advancing the delivery of the Sustainable Development Goals. The transition to regenerative tourism requires investments in technology and innovation, transparent collaboration, and a holistic focus on well-being for both people and the planet.

Keywords: sustainable tourism; regenerative tourism; boosterism; climate change; biodiversity; sustainable development goals

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1. Introduction

Society has trespassed, or is at risk of doing so, on a growing number of planetary boundaries that delineate the limits within which human well-being can be supported [1], as anticipated half a century ago by the exercise of the Club of Rome assessing the limits to growth [2]. The consequence is a planet on a course of collision between multiple crises impacting on the key underpinnings of human well-being, climate, biodiversity, and the associated food and water crises.

There are, at a high level, four main vectors delivering human impacts on the planet: energy and space use, manufacture and disposal of products, and food systems, all mostly driven by industrial processes. Hence, there is a growing focus on the responsibility of the private sector, businesses and industries in contributing to addressing these emergencies. A particular industry, tourism, is particularly exposed to these emergencies, as its business is critically dependent on providing leisure opportunities to individuals in healthy, appealing environments. The tourism industry bears, therefore, responsibility in acting to address these impacts as both a driver of impacts and a major beneficiary of remedial actions.

Travel and tourism (T&T) is one of the largest export industries globally and contributes significantly to the economy and job creation. The global number of travelers for tourism increased steadily since 1950 to reach 1.5 billion in 2019 (https://www.unwto.org/tourism-data/unwto-tourism-dashboard; accessed 5 October 2023), when travel and tourism accounted, directly and indirectly, for 10.3% of all jobs (334 million) and 10.4% of global GDP (USD 10 trillion), as well as 1 in every 5 new jobs created across the world during 2014–2019 (https://wttc.org/research/economic-impact; accessed 5 October 2023). However, tourism accounted for emissions totaling 4.5 $GtCO_2e$ in 2019, four times more than previously estimated, accounting for about 8% of global greenhouse gas emissions [3]. With a projected 3 to 5% annual growth, tourism was projected to double its contribution to the world's greenhouse gas emissions by 2030 [3]. This rapid growth led to the emergence and spread of the concept of overtourism, referring to destinations where perceived over-visitation causes irritation and annoyance of both tourists and, particularly, residents [4].

An assessment of trends in the ecological footprint of tourism across nations found a significant footprint, but that it depended on the economic status of the receiving country, where high income nations could deploy measures to reduce emissions and impacts on the environment [5]. Subsequent international analyses found that whereas tourism, as practices under the sustainability paradigm over the last decade, also has positive effects on the environment, the direct negative effects tend to exceed positive effects, resulting in an overall significantly negative impact [6]. A systematic bibliometric review also reported evidence for flaws in ecotourism and ecotourism, which may contribute to impacts on biodiversity, soil erosion, deteriorated air quality, the destruction of ancestral lands and corruption, among multiple documented impacts [7].

The SARS-CoV-19 pandemic rendered T&T one of the hardest hit sectors worldwide, with travelers and international spending plummeting to 0.4 billion people and by 69% in 2020 compared to 2019. Over 62 million jobs were lost in the sector globally due to the pandemic, particularly impacting small and medium-sized enterprises (SMEs), which account for 80% of all business in T&T [8].

Whereas the tourism industry had experienced global shocks earlier (Figure 1), the unprecedented magnitude of that delivered by SARS-CoV-2 challenged the existing models and mindset and provided an opportunity to rethink and reset the future of tourism in the face of global threats. Likewise, monitoring of conversations in social media during the pandemic focused attention on a rising concern on how tourism affects climate change and the environment, compounding negative attitudes toward leisure travel from growing eco-anxiety and expressions of hope for environmental regeneration, particularly among the younger sectors of society [9].

These conversations have been reflected in changing expectations of global travelers, with 83% now believing sustainable travel is vital and 69% expecting the travel industry to offer more sustainable options [8]. There is, therefore, a unique window of opportunity for tourism to embrace a new, necessary paradigm. Whereas much of the emerging literature that exists today examines the future business expectations of the tourism sector as new paradigms emerge, an alternative focus should address the role of tourism in environmental regeneration and how this can be reconciled with the business side of tourism.

The window of opportunity to develop a new paradigm for tourism is rapidly closing, as T&T recovers rapidly from the impact of the pandemic. International tourist arrivals reached an estimated 700 million tourists traveling internationally between January and July 2023, only 16% fewer than in 2019, boosted by strong results in Europe and the Middle East, compared to a 66% recovery level for the year 2022 overall (https://www.unwto.org (accessed on 10 August 2024)).

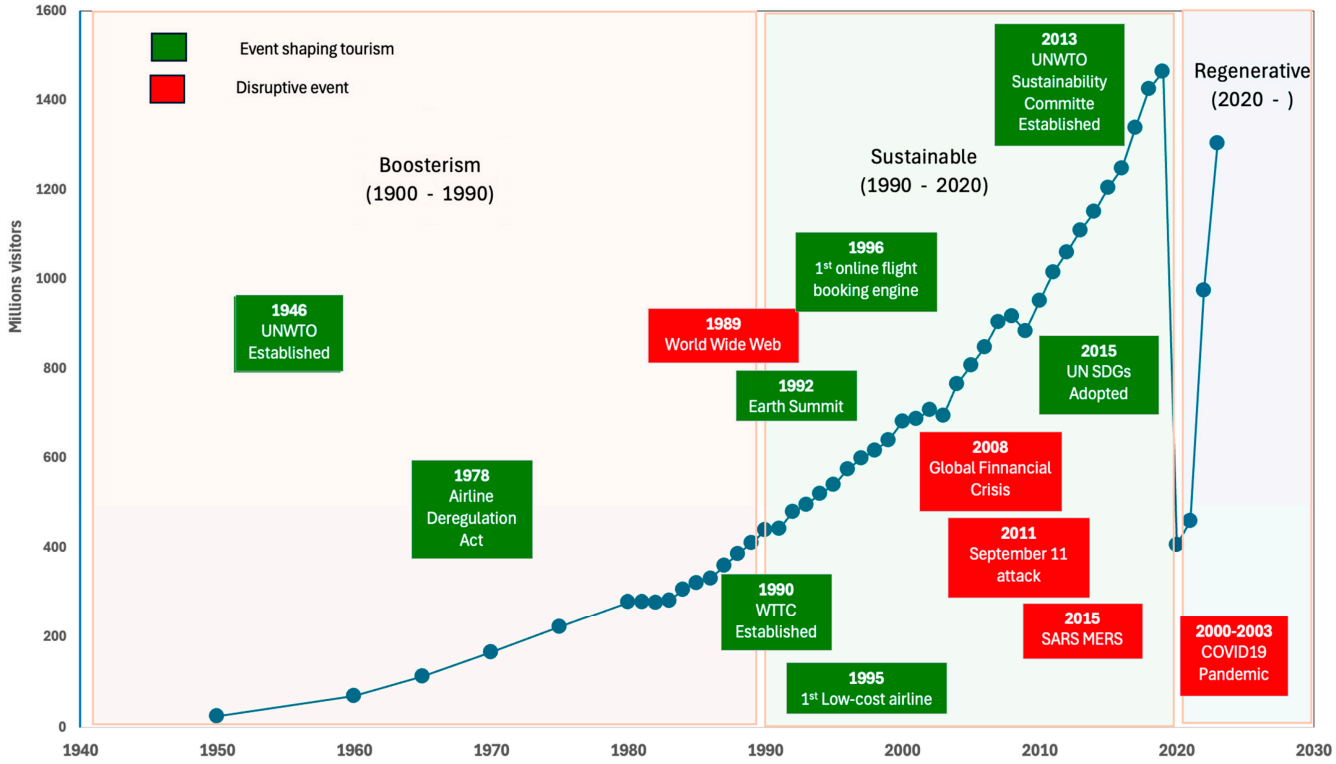

Figure 1. The global development of the tourism industry, represented by the rise in global volumes of tourist arrivals over time, differentiating the phases of tourism development (organ, green and blue boxes), the events that shaped the various paradigms that propelled this growth (green boxes), and the key disruptive events that impacted on the tourism industry (red boxes). Source of international tourist arrival data: UN World Tourism Organization (https://www.unwto.org/unwto-world-tourism-barometer-data; accessed 8 September 2024).

Here, we review the role of tourism in advancing climate and biodiversity action through the emerging paradigm of regenerative tourism. First, we examine how the driving paradigms changed as tourism spread. We then define the emerging paradigm of regenerative tourism, and address how this can help advance action on climate and biodiversity, along with the connected food and water crises. We then provide a road map to guide the tourism sector toward the transformation required to embrace the emerging paradigm of regenerative tourism, addressing both the needs of people and the planet.

2. Materials and Methods

We assessed the rise in global volumes of tourists from data provided by the UN World Tourism Organization (https://www.unwto.org/unwto-world-tourism-barometer-data, accessed 8 September 2024).

We assessed research effort on the topics of sustainable and regenerative tourism by retrieving the number of papers published annually on the subjects of "sustainable tourism" and "regenerative tourism" as retrieved from the Web of ScienceTM (accession date 18 June 2023). We also retrieved the annual mentions of "sustainable tourism" and "regenerative tourism" in media using Bloomberg AiQ, which assessed 30,000 sources and publishers worldwide, for the period May 2021 to May 2023.

3. Trajectories of Global Spread of Tourism and Paradigm Shifts

The modern tourism industry was born in the 1970s with the advent of paid holidays and affordable, long-distance air transport with the arrival of wide-bodied airliners like the Boeing 747 [10] (Figure 1). Tourism infrastructure mushroomed across the Mediterranean, Black Sea and Caribbean, followed by destinations in South-East Asia (Thailand, Indonesia,

The Philippines) and small island states, generating flows from temperate regions to coastal areas with benign climate, such as the Mediterranean region, and tropical climates.

The early development of tourism was guided by a desire to maximize income and market share, termed tourism "boosterism" [11], but evidence of vulnerabilities of destinations to environmental deterioration yielded to a paradigm of sustainable tourism [12], adopting the sustainability framework introduced in the Earth Summit of 1992 (Figure 1). Sustainable tourism was first mentioned in the scientific literature in 1993 and grew rapidly to peak at 2932 papers published in 2021, declining to 2620 papers published on the subject in 2022 (Figure 2). The 2005 Guidelines of the World Tourism Organization and Environmental Program of the UN recommend sustainable tourism to strive at (1) making optimal use of environmental resources, maintaining essential ecological processes and helping to conserve natural heritage and biodiversity; (2) respecting the socio-cultural authenticity of host communities and contributing to inter-cultural understanding and tolerance; and (3) ensuring viable, fair, long-term socio-economic benefits to all stakeholders [13]. However, by 2019, only 11% of nations had implemented sustainable tourism [12].

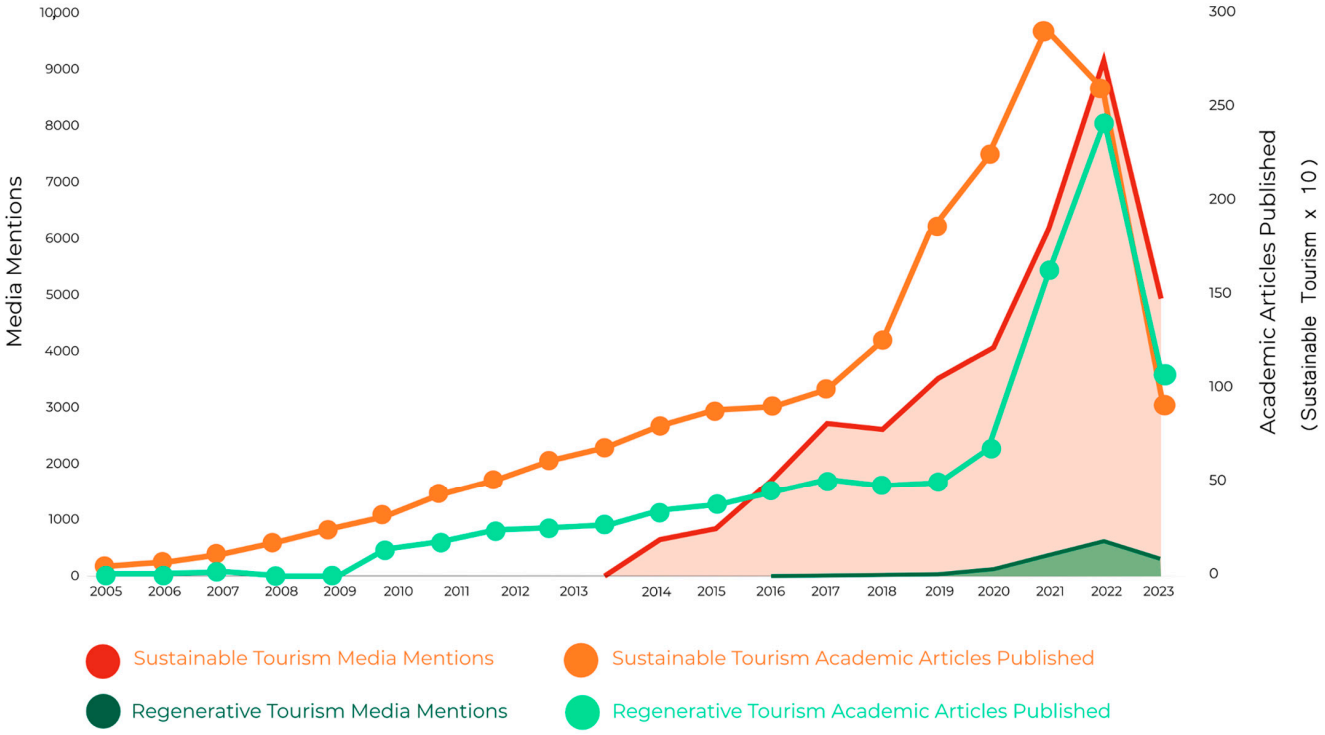

Figure 2. The number of papers published annually on the subjects of "sustainable tourism" and "regenerative tourism" as retrieved from the Web of ScienceTM (accession date 18 June 2023), and the annual mentions of "sustainable tourism" and "regenerative tourism" in media (source: Bloomberg AiQ30,000 and publishers worldwide, May 2021 to May 2023). Right axis needs be multiplied by 10 to yield the number of academic papers published on sustainable tourism.

4. The Emergence of Regenerative Tourism as a New Paradigm

Examination of both the published peer-reviewed literature and electronic media/conversations reveal that the exponential growth in the attention to sustainable tourism peaked in 2021 and experienced a sizable decline in 2022, concurrent with the arrival of the novel concept of regenerative tourism (Figure 2). Whereas much of the academic literature on tourism continues to focus on sustainability, the concept of regenerative tourism is an emerging paradigm that is gaining traction in the published literature [14,15] (Figure 2). Regenerative tourism first appeared in the peer-reviewed literature in 2007 and grew slowly as a research topic until 2021 when a large increase was evident, with 244 papers published on the concept in 2022 (Figure 2). In parallel, conversations about regenerative tourism

in the context of T&T in social and published media first appeared in 2016 but gained momentum in 2020 and rose six-fold in two years (Figure 2). The conversation about sustainable tourism in T&T in social and published media is dominated by sources in Europe and UN organizations (Figure S1), whereas those on regenerative tourism arose from sources around the Red Sea, prominently Saudi Arabia, followed by sources in the USA, particularly in Hawaii, and New Zealand (Figure S2).

Published papers characterize regenerative tourism as a model that aims to push beyond traditional sustainable approaches to focus on "giving back and contributing to the proactive regeneration of communities, cultures, heritage, places, landscapes, creating positive outcomes, not just 'doing less damage" [15]. These formulations translate the concept of regenerative development into the tourism sector. Regenerative development concepts first arose four decades ago in the context of agriculture [16], to extend a decade letter to the design of the built environment [17] and extending from regenerative design to tourism in the context of the role of tourism as a driver of urban regeneration [18,19]. Regenerative design originally aimed at participating with the environment by using the health of ecological systems as a basis for design, rather than simply doing "less bad", thereby creating a whole system of mutually beneficial relationships [17]. Extending regenerative thinking to tourism [20] recognizes the role of tourism to act as a vector of urban and rural regeneration, leading, in the present decade, to the formulation of the more encompassing concept of regenerative tourism that focuses not only on the regeneration of the built environment, but also on environment, biodiversity and communities [15].

The emergence of the concept of regenerative tourism was further propelled by the crisis delivered by the COVID-19 pandemic, which exposed massive vulnerabilities in the tourism operating system [21,22] and created new demands and expectations by tourists [23]. A regenerative tourism, therefore, arose as a response to the COVID-19 crises based on the belief that regenerative tourism will be more resilient to future shocks to the sector while being better capable to accommodate future expectations of tourism [24]. Regenerative tourism calls for a transformation of the sector going beyond sustainable and responsible tourism, not just the restoration or renewal of tourism [25].

5. Discussion: Defining and Implementing Regenerative Tourism

Regenerative tourism differs from sustainable tourism in that it serves its host community rather than the tourism industry alone, by giving back to that community and contributing more than it takes from it [26]. Based on the existing literature, we hereby define regenerative tourism as one that enhances the natural, cultural and social capital of a destination to create net positive benefits for people and the planet.

Regeneration is a key process of biological systems and refers to "the capacity to bring into existence again", allowing organisms and ecosystems to recover from and build resilience against external shocks [27]. Regenerative tourism requires a shift in social-ecological consciousness to acknowledge that visitors and destinations are part of a living system embedded in the natural environment. The outcome will be to embrace a collaborative operation that adheres to natural rules and principles. Regenerative tourism reframes the discussion to involve all stakeholders, adopting a holistic view of the system to deliver positive contributions to climate and biodiversity, and the nested problems of water and food, that support one health for people and planet. This requires a fundamental shift in ambition from a focus on reducing negative impacts of sustainable tourism to a focus on creating positive impacts. The goal is to go beyond net zero emissions or biodiversity impacts to achieve a net positive impact on people and the planet (Figure 3). Regenerative tourism also differs from alternative tourism models that advocate for de-growth as the only path to reconcile tourism with the pursue of sustainable development goal [28,29], by investing the returns of the tourism industry in achieving regenerative goals.

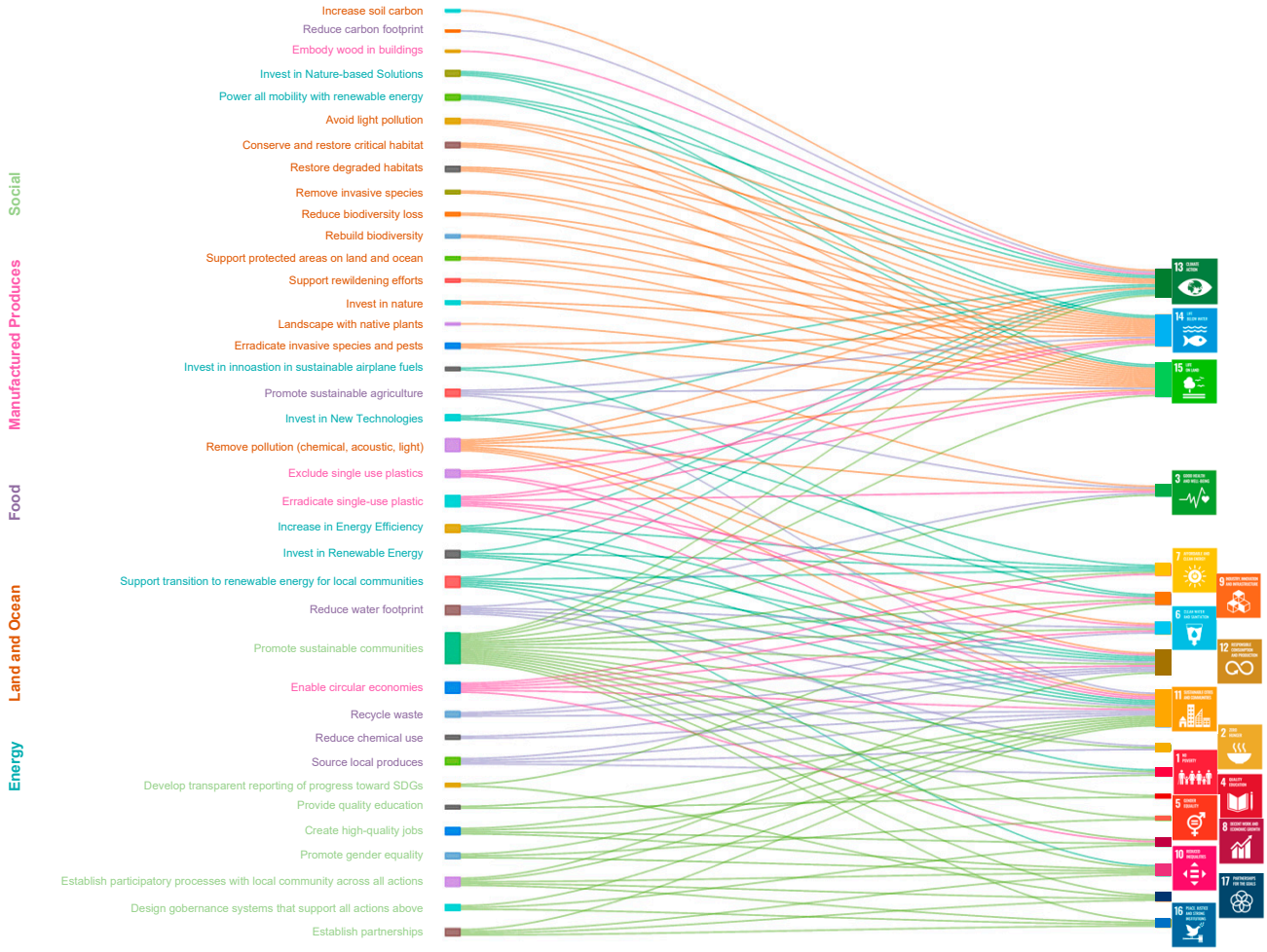

Figure 3. Sankey plot showing the potential contributions of actions within the five domains whereby regenerative tourism can help advance the UN Sustainable Development Goals (Social engagement, and consumption of Manufactured Products, Food, Land and Ocean Space and Energy).

A transition from sustainable tourism as a goal to the new paradigm of regenerative tourism requires transformative change involving business objectives, organizations, leadership and tourist behavior. Such transformative change may be rendered possible by the crisis the pandemic delivered to this industry. This transformation will ultimately create a long-term resilient business model, better equipped to weather future disruptive events, while making a positive impact on humanity by contributing to advancing global planetary goals (Figure 3).

5.1. Opportunities to Contribute to Climate Goals

There can be no sustainable tourism if we fail to address our global climate goals as tourism is centrally connected with climate change [30]. On the one hand, tourism is responsible for 8% to 11% of global greenhouse gas emissions, predicted to double by 2050 [8], thereby bearing an important responsibility in addressing the problem. On the other hand, tourism operations are particularly exposed to risks derived from growing extreme climate events. These include heat waves, sea level rise and coastal erosion, floods and droughts, along with disease spread with warming climates (e.g., malaria and dengue) [31,32]. Travel and food combined account for about two-thirds of GHG emissions from the tourism sector. Air travel, a hard-to-decarbonize sector, represents 17% of GHG emissions while other transport accounts for 30%. Food and beverage account for a further 17% of GHG emissions from the tourism sector [8].

Regenerative tourism should adopt early carbon neutrality goals. Once achieved, the ambition should be raised to target climate-positive goals that help advance the target of Article 4 of the Paris Agreement Article to reach a balance between emission of greenhouse gases and removal by sinks by mid-century. Surface transport and electricity needs should be fueled by renewable energy, powering energy-efficient systems. Nature-based solutions should be implemented locally to avoid emissions and remove atmospheric CO_2, also contributing to building climate adaptation capacity and resilience to extreme events [33]. A food and water strategy that aggressively reduces the carbon footprint of travelers is also required to achieve carbon neutrality.

Transport, particularly air transport, is a major component of greenhouse gas emissions from tourism, whereby contributing to emissions for leisure, i.e., tourism, has been referred to as a moral dilemma [34]. The burden of a shift to sustainable practices is placed upon destinations and tour operators, including tourist offices and long-haul transport services, particularly the aviation industry [35]. The International Civil Aviation Organization (ICAO) adopted the "Carbon Offsetting and Reduction Scheme for International Aviation" (CORSIA) with a goal for international aviation emissions of CO_2 to not surpass 2020 levels [36]. Useful benchmarks to enable tourism destinations to assess their progress toward low-carbon tourism have been proposed, along with recommendations to reduce the carbon footprint of air travel to tourism destinations [37]. Regenerative tourism should, therefore, (1) advocate for a transition to sustainable aviation fuels; (2) drive carbon-offset options provided by the carriers toward nature-based solution projects, as recommended by the Kunming-Montreal Global Biodiversity Framework (KMGBF, https://www.cbd.int/gbf/; accessed 5 October 2023), grounded at the destinations as these generate co-benefits for biodiversity and local communities [38]; (3) promote green infrastructures and systems, including the destination airport facilities, to enhance carbon emission mitigation strategies [37]; and (4) extend efforts to reduce greenhouse emissions to local communities, not just tourism developments. This can be achieved through incentives and direct investments in shared infrastructure, thereby producing spill-over climate mitigation benefits for the local community.

5.2. Opportunities to Contribute to Biodiversity Goals

The KMGBF sets five goals and 23 action-oriented targets, including stopping biodiversity losses, protecting 30% of land and ocean and restoring 30% of degraded habitats by 2030 (https://www.cbd.int/gbf/; accessed 5 October 2023). Its target 15 calls for governments seek to encourage and enable businesses to assess and disclose dependencies on biodiversity, inform consumers and reduce negative impacts while increasing positive impacts on biodiversity. Regenerative tourism provides a path for the tourism industry to respond to these obligations, while also being the main beneficiary of these efforts. Indeed, access to wildlife and healthy nature experiences is a major driver of why people travel and where they choose to go [38,39]. The actions required involve removing pressures, protecting nature and restoring habitats.

Causes of biodiversity loss include pressures derived from land-use change, pollution (chemical, acoustic, light) and introduction of existing species, along with climate change. Tourism destinations should strive at removing these pressures, reverting them in benefits in terms of the quality of the destination. Tourism destinations benefit from the proximity to protected areas and should, therefore, support and co-invest in these. For instance, well-managed marine protected areas have four times higher fish biomass than comparable fished areas, and even greater relative abundance of the most depleted and vulnerable taxa, with protected areas on land, both public and private, also supporting elevated abundance of wildlife [40,41]. Rewilding efforts, which target recovery of ecosystems to natural states, potentially including re-introduction of extirpated fauna, repair key ecosystem functions, leading to the stability and resilience of ecosystems [42,43], while also providing existing and spectacular guest experiences. Hence, tourism has been shown to provide incentives to rewilding efforts, for instance, by converting cattle farms to rewilding

areas [44]. Likewise, conservation may require efforts to eradicate invasive species. These are expensive and require long-term commitment but can generate major biodiversity benefits [45]. Indeed, eradication of invasive species, such as rats on islands, has been shown to lead to major gains in seabird populations [45,46] and deliver cascading benefits for connected systems such as coral reefs [47], while also removing sources of disease to humans. Hence, eradication of invasive species should be prioritized in regenerative tourism plans [48].

Nature-based solutions should be a particular focus of actions under regenerative tourism, as they contribute to achieving biodiversity goals while also advancing climate mitigation and adaptation goals. For instance, an active role of tourism resorts in coastal restoration, addressing mangroves, coral reefs, seagrass and salt-marshes, creates opportunities to experience a healthier nature. They also contribute to mitigating climate change, and enhancing coastal protection and beach stability, upon which many tourism resorts depend. Tourism resorts have indeed contributed to a significant fraction of coral reef restoration. This action was motivated by (1) the decline of coral reefs under local, but particularly, global bleaching events linked to climate change; (2) the importance of healthy coral reefs to the guest experience; and (3) the importance of coral reefs for shoreline defense, protecting beaches and infrastructure on which the developments depend [49].

However, local communities are often disconnected from restoration work promoted by tourism operators, whose motivation often focuses on returning value to the development rather than the local community. Tourism developers and operators should have strong incentives to work closely with local governments and communities to restore, conserve and enhance wildlife and habitats in ways that will greatly increase the appeal of their destination. Indeed, partnerships across actors, involving scientists, government, communities and private sector underpin conversation successes as they guarantee the permanence of the efforts [45]. Effective conservation requires resources and long-term commitment, which tourism developers and operators can help to provide, thereby overcoming major barriers to the achievement of global conservation and protection targets [48–50].

Hence, by investing in nature, regenerative tourism contributes to the KMGBF while improving business prospects and generating benefits for people. Healthy nature provides resilience to the tourism industry and the communities involved in regenerative tourism. The benefits include coastal defense provided by healthy seagrass, mangroves, salt-marshes and coral reefs, pest control and improved water quality and sanitation, and pollination services that benefit crops and landscaping efforts. Moreover, protected areas also buffer against climate change impacts, both on land [51] and in the oceans [52]. Well-conserved areas may also provide control against some pests and human pathogens that may reduce disease risks in tourism destinations [53]. Regenerative tourism advances, therefore, a convergence of interests between tourism, conservation and people [54].

The KMGBF Target 19 aims to increase the level of financial resources from all sources to implement national biodiversity strategies and action plans, mobilizing at least USD 200 billion per year by 2030. This may suffice to halt biodiversity loss [55] but is well below the investments required to achieve the restoration goals. As a major beneficiary of investments in nature, regenerative tourism can contribute substantially, along with other sectors, such as agriculture, seafood and insurance, to the financial resources committed under the KMGBF. Indeed, these represent about 2.8% of the 2019 contribution of tourism to global GDP. Investing in nature will enable reversion in enhancing the value of destinations and, therefore, represents a sound business proposition. However, the role of regenerative tourism should extend beyond one of being a source of resources for habitat restoration to one of actively engaging in restoration efforts.

5.3. Opportunities for Broader Impact Across SDGs

At the halfway-mark, progress towards achieving the SDGs has been mixed, with some goals making more progress than others [56]. However, the compounded SDG score stopped its progression since 2019 and declined in 2021, with major setbacks in key SDGs,

such as no poverty, zero hunger, and decent work and economic growth [56]. The decline in SDGs has been particularly abrupt in middle- and low-income nations, reflecting the drop in financing for the goals resulting from the concatenated crises of the COVID-19 pandemic and the war in Ukraine [56]. The SDGs that are related directly to tourism have not shown any meaningful progress. In fact, despite the "multidimensional threats" facing the world's oceans, SDG 14—life below water—continues to receive the least funding of any of the SDGs [57]. Failure to advance in SDGs over the past four years largely reflects lack of financing for the goals, as government budgets have been severely impacted by disruptive global events. Therefore, the contribution of the private sector is absolutely required to resume progress. In this context, regenerative tourism can be a major force driving progress toward the SDGs, guided by robust benefit-sharing principles. This requires identifying all relevant stakeholders, and ensuring equity through good governance, while mitigating impacts of tourism on local communities, such as increased local prices, loss of access to land, and people–wildlife conflict [58,59].

However, a recent review of contributions from tourism to SDGs concluded that sustainable tourism tends to overlook the dimension of governance compared to economic growth and social inclusion [55]. The review also showed a lack of engagement of tourism with advancing SDGs in partnership with communities, government and other businesses [55]. The findings also demonstrated that much of the focus on the role of tourism in advancing SDGs addresses European countries rather than the Global South, where SDGs are least advanced and most needed [59]. These findings provide an additional rationale for advancing toward a new, more inclusive paradigm of regenerative, rather than just "sustainable" tourism.

The tourism industry already plays a role in alleviating poverty (SDG 1) and providing decent work and economic growth (SDG 8), along with high-quality education (SDG 4) required for the jobs, particularly in developing nations (Figure 3). Tourism can also play a role in promoting gender equality (SDG 5) (Figure 3), with analysis in Europe showing tourism employs a higher proportion of women than the average for the EU economy [59]. However, SDG 5 does not refer to bulk numbers alone, but also quality indicators, which require the tourism sector to set both quantitative and qualitative gender targets [60]. The tourism industry is a significant consumer of resources and generates a large amount of waste, making it crucial to adopt sustainable and responsible practices. Accordingly, regenerative tourism has a responsibility in advancing responsible consumption and production (SDG 12), including sustainable agriculture (SDG 2) and consumption (SDG 12), clean water and sanitation (SDG 6), resilient infrastructure (SDG 9), and providing affordable and clean energy (SDG 7) in the communities where it operates (Figure 3). A regenerative approach to tourism is also designed to support healthy lives and promote well-being and sustainable livelihoods for both guests and the local community (SDG 3 and SDG 11) (Figure 3).

Whereas there is indeed a potential for regenerative tourism to advance most SDGs (Figure 3), a major limitation in assessing contributions from tourism toward SDGs is the failure to measure their implementation. This is due to the absence of data and accepted assessment methodologies that can be applied across destinations, including those in the Global South [61]. Developing inclusive, including communities, metrics and methodologies to assess contributions from tourism toward SDGs from a regenerative tourism perspective will be key, along with transparent reporting of underlying data [60,61].

5.4. Designing Regenerative Tourism Destinations

The design of destinations to adopt regenerative tourism requires a vision promoting positive mindsets and behaviors that leads to transformative governance enabling regenerative tourism. While the more traditional role of public policy and regulation has been to foster the tourism industry through market stimulus (e.g., subsidies, taxes), marketing and planning [62], in recent times, this role has evolved towards more corporate approaches, including less state-led intervention and more encouragement of public–private partnerships [63]. Good governance can make a significant contribution to sustainable

development [63,64] and this has been considered from two main perspectives: the role of public policy and the role of corporatization [64]. However, when we examine the role of governance in relation to regenerative destination tourism, researchers point to the need for better stakeholder-centric solutions, integrated networks, resilience, and transparency on sustainability performance (social, environmental and economic), among others [63,64]. Developing regenerative tourism requires (1) enabling regulation that fosters better commitment to regenerative tourism; (2) more accountability to report on the performance management of different targets; and (3) on the impact of tourism operations on social, environmental and economic sustainability. Tribe (2008) [65] and Higgins-Desbiolles (2021) [66] noted that critical research is essential for setting an agenda for ethical management, governance and coexistence with the wider world. Closely linked to the governance of destinations is the need for partnerships across sectors and enablers, which are best forged at the planning stage.

Tourism developments are guided by master plans, typically addressing elements of architecture, visitor journeys, mobility and utilities, where the environment often enters to avoid impacts or otherwise as "landscaping" elements. We submit that more comprehensive and participatory spatial planning approaches need to be adopted that integrate climate and biodiversity goals, along with targets for SDGs. These can be set as constraints through an iterative optimization process involving all stakeholders to yield optimized master plans that solve for multiple concurrent goals [48,67]. However, in many regions, development already occurred under past paradigms, either tourism "boosterism" or, at best, sustainable tourism. These developments then require retrofitting the tourism sector to move beyond corporate responsibility to embrace regenerative tourism, incorporating local communities in the process to accelerate the transition to efficiency, renewable power systems, and restoring nature, as well as pivoting on business goals and community engagement to deliver positive impacts across SDGs [67]. Regenerative tourism is not only socially responsible, but also a business opportunity for actors in the tourism industry. Moreover, we submit that regenerative tourism builds resilience in tourism, buffering against disruptive events such as those impacting on global tourism over the past years.

Building regenerative tourism destinations or retrofitting existing ones to embrace the new paradigm requires investing in technology and innovation [68]. Overcoming challenges requires promising start-ups and incubating moonshot ideas and accelerators that bring to life the next generation of technologies and approaches supporting regenerative tourism. Innovation has been a catalyst of the development of the tourism industry [68], improving the social and physical efficacy, mobility and accessibility of tourists, reducing risks and expanding novel experiences [68]. Innovation should be catalyzed by building transparent, open collaborative platforms that provide an open-source vault for all research, actionable ideas and sharing experiences.

6. Conclusions

Because of its weight on climate and biodiversity impacts and its dependencies on healthy nature, tourism has a particular responsibility to contribute to meeting our global goals for people and the planet. This was identified with the shift from the "boosterism" period of the tourism sector, focused on commercial growth, into "sustainability" in the 1990s. However, it has become apparent that sustainable tourism and more broadly, sustainability as a concept, is not proving successful in mitigating global challenges. Biodiversity loss and climate change, together with depletion of natural capital and pollution of land, oceans and the atmosphere have already compromised the access to essential resources to support the well-being of future generations. This is evidenced in the failure to remain on track to achieving the UN SDG goals as we pass the halfway-mark to achieve the goals [56]. The erosion of confidence in achieving these goals is evidenced by a shifting narrative in academia, scientific communities, political debates and in online conversation led by the public at large.

Hence, regenerative thinking is now being embraced across multiple sectors, such as agriculture and architecture and urban and rural design, as well as major policy frameworks. For instance, the Kunming-Montreal Global Biodiversity Framework sets, for the first time, regenerative goals for the decade under the Convention of Biodiversity, which are no longer simply aiming at preventing further loss.

We conclude that sustainable tourism is no longer an acceptable framework for an industry that is so rooted in a healthy environment and social and cultural capital. A more ambitious paradigm, that of regenerative tourism is required to bridge the growing gap and to face its responsibilities as well. Regenerative tourism is also likely to mitigate the risk global tourism, in its current form, faces, as it is already underperforming, highly vulnerable and heading towards breakdown. This vulnerability was exposed by the global events of recent years, including the pandemic, financial crises and wars. Its operating model is no longer fit for purpose and a shift from sustainability to regeneration is required to solve the legacy problems of tourism. This shift will propel tourism as a force for good that results in the holistic wellbeing of people and the planet.

In practice, this requires a mindset shift of tourism stakeholders to create a regenerative culture committed to positive change, replacing the prevalent focus on damage control. Implementing regenerative tourism may be easier for new developments, where the infrastructure basis and operating models are designed for purpose and may be more challenging for mature destinations that require retrofitting. Moreover, tourism does not exist in a vacuum, and is embedded in a social, economic and infrastructure fabric that can either propel regenerative tourism, if also evolving toward regenerative thinking and design, or else become a hurdle to implement regenerative tourism. An investment into key actionable areas is required to elicit this transition, including nature-based solutions, a transition to renewable energy sources and sustainable transport, implementation of circular waste and water management systems, adoption of regenerative agriculture and food production, and transition to sustainable supply chains. Policies such as reserving development areas for regenerative tourism businesses, and providing financial incentives, such as tax incentives and/or co-investments in specific projects aligned with the obligations of nations under UN Conventions, may be used to catalyze the transition to regenerative tourism, providing the multiple benefits it generates across SDGs.

However, the growing discussion around regenerative tourism in academia has remained conceptual. The focus has remained on the rationale and benefits compared to sustainable tourism or de-growth [20–24] and has not yet identified actionable initiatives that may help achieve the required transformative change. We identified five domains of action that can operationalize the transformation toward regenerative tourism of existing or planned destinations (Figure 3). Establishing metrics to assess progress along these actionable domains will be essential to ascertain whether regenerative tourism has been reached. Lack of metrics will preclude the assessment of whether economic, social, cultural and natural capital has been increased relative to the baseline. By implementing these actions under participatory governance approaches, regenerative tourism may build a resilient industry that collectively and individually contributes to accelerating the achievement of the UN SDGs and offering multiple benefits for people and planet.

Supplementary Materials: The following supporting information can be downloaded at: https://www.mdpi.com/article/10.3390/su16209133/s1, Figure S1: List of sources cited for media mentions on "sustainable tourism" (source: Bloomberg AiQ30,000 and publishers worldwide, May 2021 to May 2023); Figure S2: List of sources cited for media mentions on "regenerative tourism" (source: Bloomberg AiQ30,000 and publishers worldwide, May 2021 to May 2023).

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References

1. Steffen, W.; Richardson, K.; Rockström, J.; Cornell, S.E.; Fetzer, I.; Bennett, E.M.; Biggs, R.; Carpenter, S.R.; De Vries, W.; De Wit, C.A.; et al. Planetary boundaries: Guiding human development on a changing planet. *Science* **2015**, *347*, 1259855. [CrossRef] [PubMed]
2. Meadows, D.H.; Meadows, D.L.; Randers, J.; Behrens, W.W. *In Green Planet Blues*; Routledge: London, UK, 2018; pp. 25–29.
3. Lenzen, M.; Sun, Y.Y.; Faturay, F.; Ting, Y.P.; Geschke, A.; Malik, A. The carbon footprint of global tourism. *Nat. Clim. Chang.* **2018**, *8*, 522–528. [CrossRef]
4. Capocchi, A.; Vallone, C.; Pierotti, M.; Amaduzzi, A. Overtourism: A Literature Review to Assess Implications and Future Perspectives. *Sustainability* **2019**, *11*, 3303. [CrossRef]
5. Ozturk, I.; Al-Mulali, U.; Saboori, B. Investigating the environmental Kuznets curve hypothesis: The role of tourism and ecological footprint. *Environ. Sci. Pollut. Res.* **2016**, *23*, 1916–1928. [CrossRef] [PubMed]
6. Liu, Z.; Lan, J.; Chien, F.; Sadiq, M.; Nawaz, M.A. Role of tourism development in environmental degradation: A step towards emission reduction. *J. Environ. Manag.* **2022**, *303*, 114078. [CrossRef] [PubMed]
7. Shahbaz, M.; Bashir, M.F.; Bashir, M.A.; Shahzad, L. A bibliometric analysis and systematic literature review of tourism-environmental degradation nexus. *Environ. Sci. Pollut. Res.* **2021**, *28*, 58241–58257. [CrossRef]
8. World Travel & Tourism Council. *A Net Zero Roadmap for Travel & Tourism: Proposing a New Target Framework for the Travel & Tourism Sector*; World Travel & Tourism Council: London, UK, 2021.
9. Zhang, X.; Yang, Q.; Albaradei, S.; Lyu, X.; Alamro, H.; Salhi, A.; Ma, C.; Alshehri, M.; Jaber, I.I.; Tifratene, F.; et al. Rise and fall of the global conversation and shifting sentiments during the COVID-19 pandemic. *Humanit. Soc. Sci. Commun.* **2021**, *8*, 1–10. [CrossRef]
10. Sezgin, E.; Yolal, M. Golden age of mass tourism: Its history and development. In *Visions for Global Tourism Industry-Creating and Sustaining Competitive Strategies*; Intechopen: London, UK, 2012; pp. 73–90.
11. Hall, C.M. *Introduction to Tourism in Australia: Impacts, Planning and Development*; Longman Cheshire: Melbourne, Australia, 1991.
12. Hussain, A. A future of tourism industry: Conscious travel, destination recovery and regenerative tourism. *J. Sustain. Resil.* **2021**, *1*, 5.
13. United Nations Environment Programme & World Tourism Organization. *Making Tourism More Sustainable: A Guide for Policy Makers*; World Tourism Organization: Madrid, Spain, 2005; pp. 11–12.
14. Bellato, L.; Cheer, J.M. Inclusive and regenerative urban tourism: Capacity development perspectives. *Int. J. Tour. Cities* **2021**, *7*, 943–961. [CrossRef]
15. Duxbury, N.; Bakas, F.E.; Vinagre de Castro, T.; Silva, S. Creative tourism development models towards sustainable and regenerative tourism. *Sustainability* **2020**, *13*, 2. [CrossRef]
16. Francis, C.A.; Harwood, R.R.; Parr, J.F. The potential for regenerative agriculture in the developing world. *Am. J. Altern. Agric.* **1986**, *1*, 65–74. [CrossRef]
17. Lyle, J.T. *Regenerative Design for Sustainable Development*; John Wiley & Sons: Hoboken, NJ, USA, 1996.
18. Reed, B. Shifting from 'sustainability' to regeneration. *Build. Res. Inf.* **2007**, *35*, 674–680. [CrossRef]
19. Owen, C. Tourism and urban regeneration. *Cities* **1990**, *7*, 194–201. [CrossRef]
20. Bellato, L.; Pollock, A. Regenerative tourism: A state-of-the-art review. *Tour. Geogr.* **2023**, 1–10. [CrossRef]
21. Cave, J.; Dredge, D. Regenerative tourism needs diverse economic practices. In *Global Tourism and COVID-19*; Routledge: London, UK, 2021; pp. 49–59.
22. Shukla, P.S.; Shamurailatpam, S.D. Regenerative Tourism and Resilience in COVID-19 Pandemic: From Strategic Principles to Sustainability. In *Resilient and Sustainable Destinations after Disaster: Challenges and Strategies*; Emerald Publishing Limited: Bingley, UK, 2023; pp. 251–266.
23. Aschauer, W.; Egger, R. Transformations in tourism following COVID-19? A longitudinal study on the perceptions of tourists. *J. Tour. Futures*, 2023; *ahead of printing*. [CrossRef]
24. Tham, A.; Sharma, B. Regenerative tourism: Opportunities and challenges. *J. Responsible Tour. Manag.* **2023**, *3*, 15–23.
25. Ateljevic, I.; Sheldon, P.J. Guest editorial: Transformation and the regenerative future of tourism. *J. Tour. Futures* **2022**, *8*, 266–268. [CrossRef]
26. Muñoz, P.; Branzei, O. Regenerative organizations: Introduction to the special issue. *Organ. Environ.* **2021**, *34*, 507–516. [CrossRef]
27. Carlson, B.M. *Principles of Regenerative Biology*; Elsevier: Amsterdam, The Netherlands, 2011.
28. Canavan, B. Sustainable tourism: Development, decline and de-growth. Management issues from the Isle of Man. *J. Sustain. Tour.* **2014**, *22*, 127–147. [CrossRef]

29. Sharpley, R. Tourism, sustainable development and the theoretical divide: 20 years on. *J. Sustain. Tour.* **2020**, *28*, 1932–1946. [CrossRef]
30. Scott, D. Sustainable Tourism and the Grand Challenge of Climate Change. *Sustainability* **2021**, *13*, 1966. [CrossRef]
31. Lee, J.-S.; Farlow, A. The threat of climate change to non-dengue-endemic countries: Increasing risk of dengue transmission potential using climate and non-climate datasets. *BMC Public Health* **2019**, *19*, 1–7. [CrossRef]
32. Hales, S.; De Wet, N.; Maindonald, J.; Woodward, A. Potential effect of population and climate changes on global distribution of dengue fever: An empirical model. *Lancet* **2002**, *360*, 830–834. [CrossRef]
33. Pörtner, H.-O.; Scholes, R.J.; Arneth, A.; Barnes, D.K.A.; Burrows, M.T.; Diamond, S.E.; Duarte, C.M.; Kiessling, W.; Leadley, P.; Managi, S.; et al. Overcoming the coupled climate and biodiversity crises and their societal impacts. *Science* **2023**, *380*, eabl4881. [CrossRef] [PubMed]
34. Higham, J.; Ellis, E.; Maclaurin, J. Tourist aviation emissions: A problem of collective action. *J. Travel Res.* **2019**, *58*, 535–548. [CrossRef]
35. Filho, W.L.; Ng, A.W.; Sharifi, A.; Janová, J.; Özuyar, P.G.; Hemani, C.; Heyes, G.; Njau, D.; Rampasso, I. Global tourism, climate change and energy sustainability: Assessing carbon reduction mitigating measures from the aviation industry. *Sustain. Sci.* **2023**, *18*, 983–996. [CrossRef] [PubMed]
36. ICAO. Carbon Offsetting and Reduction Scheme for International Aviation. 2021. Available online: https://www.icao.int/environmental-protection/CORSIA/Pages/default.aspx (accessed on 10 August 2024).
37. Becken, S.; Shuker, J. A framework to help destinations manage carbon risk from aviation emissions. *Tour. Manag.* **2019**, *71*, 294–304. [CrossRef]
38. Blicharska, M.; Smithers, R.J.; Mikusiński, G.; Rönnbäck, P.; Harrison, P.A.; Nilsson, M.; Sutherland, W.J. Biodiversity's contributions to sustainable development. *Nat. Sustain.* **2019**, *2*, 1083–1093. [CrossRef]
39. Chung, M.G.; Dietz, T.; Liu, J. Global relationships between biodiversity and nature-based tourism in protected areas. *Ecosyst. Serv.* **2018**, *34*, 11–23. [CrossRef]
40. Edgar, G.J.; Stuart-Smith, R.D.; Willis, T.J.; Kininmonth, S.; Baker, S.C.; Banks, S.; Barrett, N.S.; Becerro, M.A.; Bernard, A.T.F.; Berkhout, J.; et al. Global conservation outcomes depend on marine protected areas with five key features. *Nature* **2014**, *506*, 216–220. [CrossRef]
41. Clements, H.S.; Kerley, G.I.; Cumming, G.S.; De Vos, A.; Cook, C.N. Privately protected areas provide key opportunities for the regional persistence of large-and medium-sized mammals. *J. Appl. Ecol.* **2019**, *56*, 537–546. [CrossRef]
42. Perino, A.; Pereira, H.M.; Navarro, L.M.; Fernández, N.; Bullock, J.M.; Ceauşu, S.; Cortés-Avizanda, A.; van Klink, R.; Kuemmerle, T.; Lomba, A.; et al. Rewilding complex ecosystems. *Science* **2019**, *364*, eaav5570. [CrossRef] [PubMed]
43. Lorimer, J.; Sandom, C.; Jepson, P.; Doughty, C.; Barua, M.; Kirby, K.J. Rewilding: Science, practice, and politics. *Annu. Rev. Environ. Resour.* **2015**, *40*, 39–62. [CrossRef]
44. Hoogendoorn, G.; Meintjes, D.; Kelso, C.; Fitchett, J. Tourism as an incentive for rewilding: The conversion from cattle to game farms in Limpopo province, South Africa. *J. Ecotourism* **2019**, *18*, 309–315. [CrossRef]
45. Rossbach, S.; Steckbauer, A.; Klein, S.G.; Arossa, S.; Geraldi, N.R.; Lim, K.K.; Martin, C.; Rossbach, F.I.; Shellard, M.J.; Valluzzi, L.; et al. A tide of change: What we can learn from stories of marine conservation success. *One Earth* **2023**, *6*, 505–518. [CrossRef]
46. Graham, N.A.; Wilson, S.K.; Carr, P.; Hoey, A.S.; Jennings, S.; MacNeil, M.A. Seabirds enhance coral reef productivity and functioning in the absence of invasive rats. *Nature* **2018**, *559*, 250–253. [CrossRef] [PubMed]
47. Blanco-Pimentel, M.; Evensen, N.R.; Cortés-Useche, C.; Calle-Triviño, J.; Barshis, D.J.; Galván, V.; Harms, E.; Morikawa, M.K. All-inclusive coral reef restoration: How the tourism sector can boost restoration efforts in the Caribbean. *Front. Mar. Sci.* **2022**, *9*, 931302. [CrossRef]
48. Chalastani, V.I.; Manetos, P.; Al-Suwailem, A.M.; Hale, J.A.; Vijayan, A.P.; Pagano, J.; Williamson, I.; Henshaw, S.D.; Albaseet, R.; Butt, F.; et al. Reconciling Tourism Development and Conservation Outcomes through Marine Spatial Planning for a Saudi Giga-Project in the Red Sea (The Red Sea Project, Vision 2030). *Front. Mar. Sci.* **2020**, *7*, 168. [CrossRef]
49. Gill, D.A.; Mascia, M.B.; Ahmadia, G.N.; Glew, L.; Lester, S.E.; Barnes, M.; Craigie, I.; Darling, E.S.; Free, C.M.; Geldmann, J.; et al. Capacity shortfalls hinder the performance of marine protected areas globally. *Nature* **2017**, *543*, 665–669. [CrossRef]
50. Appleton, M.R.; Courtiol, A.; Emerton, L.; Slade, J.L.; Tilker, A.; Warr, L.C.; Malvido, M.; Barborak, J.R.; de Bruin, L.; Chapple, R.; et al. Protected area personnel and ranger numbers are insufficient to deliver global expectations. *Nat. Sustain.* **2022**, *5*, 1100–1110. [CrossRef]
51. Lehikoinen, P.; Santangeli, A.; Jaatinen, K.; Rajasärkkä, A.; Lehikoinen, A. Protected areas act as a buffer against detrimental effects of climate change—Evidence from large-scale, long-term abundance data. *Glob. Chang. Biol.* **2019**, *25*, 304–313. [CrossRef] [PubMed]
52. Roberts, C.M.; O'Leary, B.C.; Mccauley, D.J.; Cury, P.M.; Duarte, C.M.; Lubchenco, J.; Pauly, D.; Sáenz-Arroyo, A.; Sumaila, U.R.; Wilson, R.W.; et al. Marine reserves can mitigate and promote adaptation to climate change. *Proc. Natl. Acad. Sci. USA* **2017**, *114*, 6167–6175. [CrossRef] [PubMed]
53. Keesing, F.; Ostfeld, R.S. Impacts of biodiversity and biodiversity loss on zoonotic diseases. *Proc. Natl. Acad. Sci. USA* **2021**, *118*, e2023540118. [CrossRef] [PubMed]
54. Vaughan, D. Tourism and Biodiversity: A Convergence of Interests? *Int. Aff.* **2000**, *76*, 283–297. [CrossRef]
55. Barbier, E.B.; Burgess, J.C.; Dean, T.J. How to pay for saving biodiversity. *Science* **2018**, *360*, 486–488. [CrossRef]

56. Sachs, J.D.; Kroll, C.; Lafortune, G.; Fuller, G.; Woelm, F. *Sustainable Development Report 2022*; Cambridge University Press: Cambridge, UK, 2022.
57. Snyman, S.; Bricker, K.S. *In Living on the Edge*; Routledge: London, UK, 2021; pp. 1–15.
58. Rasoolimanesh, S.M.; Ramakrishna, S.; Hall, C.M.; Esfandiar, K.; Seyfi, S. A systematic scoping review of sustainable tourism indicators in relation to the sustainable development goals. *J. Sustain. Tour.* **2023**, *31*, 1497–1517. [CrossRef]
59. Peña-Sánchez, A.R.; Ruiz-Chico, J.; Jiménez-García, M.; López-Sánchez, J.A. Tourism and the SDGs: An analysis of economic growth, decent employment, and gender equality in the European Union (2009–2018). *Sustainability* **2020**, *12*, 5480. [CrossRef]
60. Alarcón, D.M.; Cole, S. *In Activating Critical Thinking to Advance the Sustainable Development Goals in Tourism Systems*; Routledge: London, UK, 2021; pp. 57–73.
61. Asmelash, A.G.; Kumar, S. Assessing progress of tourism sustainability: Developing and validating sustainability indicators. *Tour. Manag.* **2019**, *71*, 67–83. [CrossRef]
62. Ruhanen, L. Local government: Facilitator or inhibitor of sustainable tourism development? *J. Sustain. Tour.* **2013**, *21*, 80–98. [CrossRef]
63. Bramwell, B.; Lane, B. Critical research on the governance of tourism and sustainability. *J. Sustain. Tour.* **2011**, *19*, 411–421. [CrossRef]
64. Bramwell, B. Participative planning and governance for sustainable tourism. *Tour. Recreat. Res.* **2010**, *35*, 239–249. [CrossRef]
65. Tribe, J. Tourism: A critical business. *J. Travel Res.* **2008**, *46*, 245–255. [CrossRef]
66. Higgins-Desbiolles, F. Socialising tourism for social and ecological justice after COVID-19. In *Global Tourism and COVID-19*; Routledge: London, UK, 2021; pp. 156–169.
67. Farsari, I. Exploring the nexus between sustainable tourism governance, resilience and complexity research. *Tour. Recreat. Res.* **2023**, *48*, 352–367. [CrossRef]
68. Hjalager, A.-M. 100 innovations that transformed tourism. *J. Travel Res.* **2015**, *54*, 3–21. [CrossRef]