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HIGH LEVEL PANEL *for*
A SUSTAINABLE
OCEAN ECONOMY

OPPORTUNITIES FOR TRANSFORMING COASTAL AND MARINE TOURISM

Towards Sustainability, Regeneration and Resilience

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About the Ocean Panel

The High Level Panel for a Sustainable Ocean Economy (Ocean Panel) is a unique initiative by 16 world leaders who are building momentum for a sustainable ocean economy in which effective protection, sustainable production and equitable prosperity go hand in hand. By enhancing humanity's relationship with the ocean, bridging ocean health and wealth, working with diverse stakeholders and harnessing the latest knowledge, the Ocean Panel aims to facilitate a better, more resilient future for people and the planet.

Established in September 2018, the Ocean Panel has been working with government, business, financial institutions, the science community and civil society to catalyse and scale bold, pragmatic solutions across policy, governance, technology and finance to ultimately develop an action agenda for transitioning to a sustainable ocean economy. Co-chaired by Norway and Palau, the Ocean Panel is the only ocean policy body made up of serving world leaders with the authority needed to trigger, amplify and accelerate action worldwide for ocean priorities. The Ocean Panel comprises members from Australia, Canada, Chile, Fiji, France, Ghana, Indonesia, Jamaica, Japan, Kenya, Mexico, Namibia, Norway, Palau, Portugal and the United States and is supported by the UN Secretary-General's Special Envoy for the Ocean. The Secretariat, based at World Resources Institute, supports with analytical work, communications and stakeholder engagement.

This report has been commissioned by the Ocean Panel as a contribution to the *Transformations for a Sustainable Ocean Economy: A Vision for Protection, Production and Prosperity* and following the recommendation of the Tourism Action Coalition for a Sustainable Ocean. This report aims to support the goal that by 2030 'coastal and ocean-based tourism is sustainable, resilient, addresses climate change, reduces pollution, supports ecosystem regeneration and biodiversity conservation and invests in local jobs and communities' (Ocean Panel 2020).

The purpose of this report is to analyse and interpret the meaning and implications of this goal for 2030 and identify opportunities for action to achieve this goal.

This report is an independent input to the Ocean Panel process and does not necessarily represent the thoughts or opinions of the Ocean Panel.

Foreword

In December 2020, the High Level Panel for a Sustainable Ocean Economy (Ocean Panel) released its *Transformations for a Sustainable Ocean Economy: A Vision for Protection, Production and Prosperity.*

One of the pillars of action within this ambitious roadmap for a sustainable ocean economy was for sustainable ocean-based tourism, establishing the goal that by 2030 "*Coastal and ocean-based tourism is sustainable, resilient, addresses climate change, reduces pollution, supports ecosystem regeneration and biodiversity conservation and invests in local jobs and communities*."

To support efforts to deliver on this goal, the Ocean Panel commissioned a body of knowledge on coastal and marine tourism, including this special report.

We've seen the devastating impacts that the global pandemic has had on tourism, particularly for small island and coastal communities. We've also seen cases where reduced pressure from mass tourism has resulted in recovery of coastal and marine ecosystems. The past few years has made a strong case for change. There is an urgent need to ensure the continued viability of this important sector while at the same time building its resilience to climate change, disasters, pollution, urbanisation and ecosystem degradation. We know that sustainable ocean-based tourism can restore and protect the ocean while delivering jobs and prosperity. However, achieving this ambitious vision requires strategic public and private investments.

This special report outlines an approach for sustainable coastal and marine tourism that increases the focus on regeneration and resilience. It contains inspiring examples of destinations and individual businesses shifting towards a more sustainable approach that helps to restore the local environment on which it depends, supports local economic prosperity, and protects and even revitalises local traditional and heritage.

I thank the authors for sharing their expertise and insights and contributing to this body of knowledge. I hope this is the start of an important conversation about the unique role that coastal and marine tourism plays in our global economy and the efforts that will be required to ensure generations from now are still able to sustainable enjoy the unique recreational benefits offered by the ocean and coastal environment.

Peter Haugan

Programme Director
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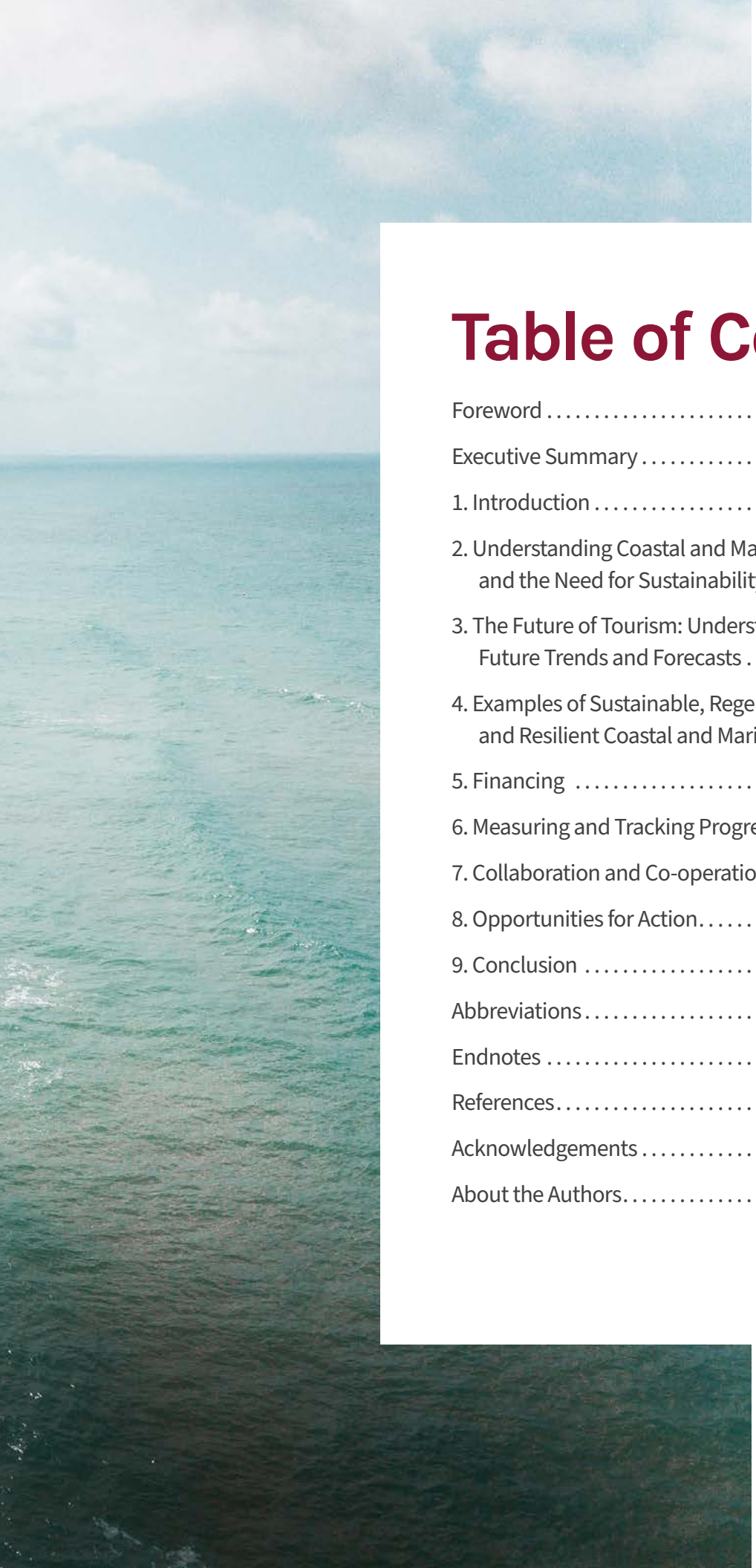

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Executive Summary

The natural resources that draw tourists to coastal and marine zones underpin the economies of most small island developing states and coastal destinations and provide myriad contributions to economic growth and human wellbeing. Yet, the health and beauty of these ecosystems - the very thing that draws people to coastal and marine destinations continues to be threatened by tourism itself. While the inherent balancing act of nature-based tourism has always been apparent, the unprecedented pause in global tourism induced by the pandemic has provided a unique opportunity to reassess and reset.

Highlights

- Coastal and marine tourism constitutes approximately 50 percent of all global tourism, equal to US$4.6 trillion or 5.2 percent of global gross domestic product (GDP). It is a vital component of the economy of small islands and coastal communities.
- The global pandemic highlighted the unique fragility of this sector, impacting the millions who depend on it for their livelihoods, underscoring the unsustainable pressure placed on coastal and marine ecosystems and calling into question the economic viability of the traditional model of mass tourism and unrestricted growth.
- Through a renewed focus on stimulating new high-quality economic opportunities for local communities, restoring the natural environment and revitalising cultural heritage and communities, tourism has the potential to be a key pillar in the transformation to a sustainable ocean economy—delivering on the vision for protection, production and prosperity.
- To deliver on this vision, destinations will need to overcome the sustainability challenges of the 20th century and adapt to the new challenges of climate change, biodiversity loss, evolving consumer preferences and global production and consumption systems. Transformation will require widespread
    - recognition of the underlying systemic causes of the current fragile, unsustainable state of coastal and marine ecosystems and the goods and services they provide;
    - recognition of the need to manage growing demand for tourism experiences as the global middle class continues to grow;
    - phasing out of practices and strategies that are no longer fit for the future;
    - implementation of new practices across the entire tourism value chain, including host and source tourism markets; and
    - proactive co-operation and collaboration across all tourism stakeholders to create business models to deliver sustainable tourism experiences.
- Numerous examples of innovation and leadership exist and provide evidence of success and proof-of-concept models that can be replicated. However, these examples are isolated and do not occur at the scale necessary for the systemic transformation that is needed to ensure the sector's sustainability.
- Changing patterns of behaviour and consumption suggest that tourists, as end users and drivers of demand, can serve as powerful agents of change. Exploring and capitalising on opportunities for tourists to support sustainable and regenerative forms of tourism through consumption, activities and funding will play an important role in transforming destinations and the industry at large towards a more sustainable model.
- Systemic change will not occur without significant long-term policy and regulatory commitments from governments to attract and support investments targeting sustainable and regenerative forms of tourism and provide the stability required by the private sector to confidently pursue new business models.
- This report provides a holistic assessment of the current state of coastal and marine tourism and draws on 32 case studies and examples from 23 countries to identify a set of priorities designed to help catalyse systemic change in destination-wide management through strategic investment and intervention by governments to support sustainable recovery from the global pandemic.
- It proposes a framework that encourages action simultaneously across three pillars:
    - Reducing the negative impacts of tourism on the local environment, economy and community
    - Regenerating ecosystems, local markets and communities
    - Building resilience to threats and future shocks and crises
- It provides a new comprehensive set of sustainability indicators incorporating the concepts of regeneration and resilience and tailored to the sustainability of coastal and marine tourism destinations to support governments to target appropriate investment for sustainability requirements and move beyond an over-reliance on GDP.
- Transformation will not be easy, but the long-term viability of the industry and the destinations and communities that rely on tourism will benefit greatly from the implementation of a reimagined model that is sustainable (considering economic, environmental and socio-cultural aspects of sustainability), regenerative (focus on rebuilding and restoring damaged or depleted ecosystems, communities and traditions) and capable of building resilience to future crises (such as climate change, disruptions to traditional travel patterns and potentially unsustainable levels of demand).
- The global pandemic has offered a circuit breaker to reflect on traditional forms of coastal and marine tourism that are no longer sustainable or viable and implement changes to reshape the sector. It has offered a unique and timely opportunity for bold action and political leadership.

Tourism constitutes the largest economic sector for most small island developing states (SIDS) and many coastal states. In a business-as-usual scenario, coastal and marine tourism was expected to represent the largest ocean economy sector by 2030 (measured by GDP) and employing approximately 8.5 million people, second only to small-scale fisheries in terms of employment (Tonazzini et al. 2019). It provides a vast array of important socio-economic opportunities for destinations, such as increased standards of living, employment and training opportunities, diversification for local communities and the socio-cultural benefits associated with interactions between people from differing cultural backgrounds. For the continued viability of tourism destinations and the livelihoods and wellbeing they support, coastal and marine tourism must continue to thrive.

Coastal and marine tourism is highly dependent on the quality of coastal and marine ecosystems to attract visitors, but the continued depletion and degradation of these natural assets is putting the sustainability and viability of the industry, along with the local communities that rely on it, at risk. One of the largest shares of the sector, coral reef tourism, attracts over 350 million people per year and has an estimated annual value of $36 billion, with over 70 countries and territories having 'million-dollar reefs'—reefs that generate over $1 million per square kilometre per year in tourism spending.

The current model of coastal and marine tourism is inherently unsustainable, characterised by high levels of economic leakage, seasonality and vulnerability to natural and economic shocks. Mass tourism in and around coastal cities leads to higher costs of living and relatively lower purchasing power for many locals. This situation is exacerbated by the seasonal nature of coastal and marine tourism, in particular in islands, contributing to job insecurity, low wages and high workload, affecting the wellbeing of locals and their access to resources. Additionally, the economic gains from tourism are not distributed equally, with large foreign companies and tour operators typically receiving disproportional benefits. When comparing the true socio-economic impacts, the costs of attracting and retaining mass tourism arrivals often outweigh the benefits.

Tourism is a highly emissions-intensive industry, contributing 8–11 percent of global greenhouse gas (GHG) emissions in 2013 (WTTC 2021b). Tourism has higher carbon intensity than major economic sectors such as manufacturing, construction and services (Lenzen et al. 2018). Globally, around 49 percent of tourism-related emissions are generated by transport and just over 6 percent by accommodation (WTTC 2021b). Tourism-related travel is a core contributor to this, particularly long-distance flights to reach remote coastal locations. The Intergovernmental Panel on Climate Change (2018, 2022) is increasingly emphasising the need for immediate actions to avoid future lock-in of high-carbon infrastructure as a necessary condition for achieving net-zero carbon dioxide (CO_2) emissions pledges. Systemic changes will be necessary to deliver successful climate mitigation, including net-zero pledges. Such systemic changes have the potential to disrupt existing arrangements in the tourism industry (Becken 2019).

The COVID-19 pandemic caused a major disruption in the tourism industry. The World Travel and Tourism Council has projected around 75 million job losses and a tourism-induced GDP reduction of more than $2 trillion globally (WTTC n.d.), with the true economic and human cost today incalculable. Between 2019 and 2020, global GDP reportedly declined by 3.4 percent (World Bank n.d.b), most heavily affecting those economies dependent on tourism. SIDS in the Caribbean and the Pacific and Indian Oceans have experienced huge economic disruptions due to the loss of international tourism, with the full recovery of long-haul tourism in question as tourists become more risk averse in their behaviour.

Recovery from the pandemic and emerging future trends offer both opportunities and challenges for the future of coastal and marine tourism. This report identifies six key trends that serve to disrupt and reconfigure the future of coastal and marine tourism, with the global pandemic recognised as a singular catalyst for change. Table ES-1 outlines the major risks and opportunities of the six key future trends: shifting demand and preferences; labour; population growth and dispersion; climate change; loss of coastal ecosystems; and the changing impact of technology in tourism.

Table ES-1. Major Future Global Trends and Implications for Coastal and Marine Tourism

	RISKS	OPPORTUNITIES
Shifting demand and preferences	▪ Travel systems will be restructured ▪ Diminished traveller confidence ▪ Increased cost of long-haul flights ▪ Travel 'shaming' and 'eco-guilt' ▪ Heightened complexity and localisation of entry requirements and transit hubs ▪ Virtual platforms replacing business travel ▪ Unprecedented numbers of tourists at domestic tourism sites ▪ Increased demand for tourism infrastructure in remote natural areas with low population density ▪ Increased pressure on natural resources in remote areas ▪ Increasing popularity of virtual reality tourism	▪ Greater domestic and regional travel ▪ Diversified domestic travel options ▪ Distribution of demand to reduce seasonality ▪ Increased tourism from proximate source markets as visitors travel closer to home ▪ Creation of hubs of 'residential tourism' ▪ Artificial reality and virtual tourism platforms ▪ People reconnecting to nature creates momentum for revival of ecosystems ▪ Increased demand for establishment of marine protected areas (MPAs) and for their effective management with stakeholder involvement ▪ Increased opportunities for ecotourism concessions in MPAs and in marine privately protected areas ▪ Emergence and growth of voluntourism and adventure tourism can be capitalised on through innovation ▪ Increased investment and livelihood opportunities for remote locations with low population density
Labour	▪ Decreased post-pandemic labour supply in hospitality services ▪ Increased cost of labour and importance of job satisfaction to attract and retain staff ▪ Increased seasonality due to climate change ▪ Limited availability of skilled workers in new remote locations	▪ Upskilling and training local hires to enhance employment satisfaction and job security leading to greater staff retention ▪ Increased ability to keep tourist receipts in-country and in-community ▪ Increased employment options for remote locations with low population density ▪ Reduced inequalities between expatriate and local wages ▪ Equal access to gainful and rewarding employment for women, minorities and people with disabilities
Population growth and dispersion	▪ Growth of global middle class and acceleration of coastal tourism markets ▪ Continued growth and creation of coastal megacities increases pressure on human and ecosystem health ▪ Population displacement and migration threaten tourism in coastal and marine areas	▪ Population expansion creates opportunities for new tourism hubs and demand ▪ Younger generations with different value systems and preferences for travel, albeit with lower purchasing power

Table ES-1. Major Future Global Trends and Implications for Coastal and Marine Tourism (Cont.)

	RISKS	OPPORTUNITIES
Climate change	▪ Increasing extreme weather, climate extremes and sea level rise ▪ Unpredictable influxes of sargassum ▪ Increased pressure to reduce emissions limits travel (travel shaming and cost of offsets) ▪ Declining health of coral reefs and coastal and marine ecosystems limits tourism appeal ▪ Declining dune ecosystems which protect coastal tourism infrastructure ▪ Potential large-scale unemployment due to destruction of coastal resort systems ▪ Coastal infrastructure at risk ▪ Cost of adaptation ▪ Decreased efficiency and sustainability as countries revert to siloed national solutions	▪ Increased focus and incentives for net zero will make long-haul travel more expensive and decrease mass tourism, increasing opportunities for low-volume, high-quality and high-spending tourism ▪ Investment opportunities in renewable water and energy technologies and circular economy solutions provide cost savings ▪ New demand for low- or zero-emissions forms of transport provides opportunities for innovative finance, improved efficiency and economic growth ▪ Increased demand for nature-based solutions for coastal protection and resilience to reduce costs and increase benefit
Loss of coastal ecosystems	▪ Accelerated decline in wildlife populations and species diversity ▪ Continued changes in behaviour of marine and coastal wildlife due to coastal development and increased marine activity ▪ Increased marine pollution (e.g. sewage, solid waste, single-use plastics)	▪ Payments for conservation management of marine and coastal natural resources ▪ Expanded MPAs with local participation ▪ Compatibility of nature-based marine tourism with other sustainable livelihoods based on marine resources (e.g. fishing and aquaculture) ▪ Improved research and awareness of impacts of tourism on marine and coastal biodiversity
Changing impact of technology	▪ Connection issues in remote destinations contribute to equity issues ▪ Exclusion or disadvantaging of some countries, businesses or travellers ▪ High investment needs in digital infrastructure may overshadow other investment needs ▪ Increased energy demand adds to shortages and costs ▪ Modernisation and industrialisation contribute to loss of traditional low-tech crafts, skills and overharvesting of renewable materials	▪ User-generated content and big data as a major source of information for tourism ▪ Greater data collection can improve decision-making and product development ▪ Improved management of destinations which collects and deploys data for measurement of sustainability across all indicators ▪ Improved understanding of booking and travel patterns, including travel intensity and seasonality ▪ Technology improvements support better waste, water and energy efficiency ▪ Improved ability for tourists to assess sustainability of destinations and travel options ▪ Improved deployment of sustainable infrastructure using climate finance

Source: Authors.

In December 2020 the High Level Panel for a Sustainable Ocean Economy (Ocean Panel) established the goal that by 2030 'coastal and ocean-based tourism is sustainable, resilient, addresses climate change, reduces pollution, supports ecosystem regeneration and biodiversity conservation and invests in local jobs and communities'. Responding to the emerging opportunities and challenges for coastal and marine tourism and vision articulated by the Ocean Panel, this report presents a framework for sustainable coastal and marine tourism that emphasises the importance of regeneration and resilience and balances action across the traditional environmental, economic and socio-cultural pillars of sustainability. This framework is articulated in Figure ES-1, along with examples of key outcomes across each element of the framework needed to deliver on the 2030 Goal articulated by the Ocean Panel.

Coastal and marine tourism remains highly impactful on the local environment, economy and community and culture. Sustainability must start with reducing these negative impacts and minimising tourism's footprint. Investments in sustainable infrastructure, such as recycling facilities, composting, sewerage and waste treatment facilities can dramatically reduce the impact of tourism activities as well as increase the value of a destination for tourists supported by climate and green financing mechanisms. Certifications have also proven highly effective in shifting behaviour and improving energy and water efficiency. At a destination-wide scale, utilising coastal zone management to site-intensive tourism activities and encouraging an ecosystem-centred approach to development has been effective.

The tourism industry, businesses, operators and tourists themselves need to take a far more active role in regeneration and restoration of the coastal and marine ecosystems on which the industry depends. Hotels and resorts can directly invest in marine privately protected areas (M-PPAs) and conservation efforts while enhancing the value of their own destination and providing value-added experiences for guests. Tourists themselves can be conscious and responsible travellers, selecting eco-friendly or nature-positive accommodations and tour operators, and they can participate in local restoration activities as part of their experience. At a destination-wide scale, pledges and user fees signed and paid upon arrival and digital technology are innovations being explored to shift tourist behaviour.

The concept of regeneration for coastal and marine tourism extends beyond ecosystems to encompass opportunities for economic regeneration, by investing in local education and training opportunities, and socio-cultural regeneration, by indigenous-led tourism and tourism that centers on local heritage and traditions. Coastal and marine tourism can rejuvenate local communities by providing high-quality jobs and long-term career paths, raising revenue for conservation and management of heritage sites and engaging with tradition, customs and local languages. Industry-led initiatives aimed at providing education for local communities (schooling as well as technical skills and training) and targeted employment opportunities for local communities have been effective. Tourism activities can also help maintain vital ecological knowledge, skills and information if authenticity is maintained. This ecological knowledge-based regenerative tourism plays a vital role for ocean ecology and the economic and social sustainability of coastal communities.

The long-term viability of coastal and marine destinations will require enhanced efforts now to improve resilience to events already well under way, such as climate change, and unexpected future shocks and crises. For many countries, this will mean marketing and developing products for domestic tourism to ensure product diversification, address issues of seasonality and appeal to a broader domestic audience. It also means that investments in tourism infrastructure, such as hotels and conference centers, should be designed to be multipurpose and adaptable to changing requirements. Insurance for investors against weather and other shocks and social safety nets will play an important role in de-risking some tourism destinations and activities. Destinations have an opportunity to improve resilience and foster regeneration using nature-based solutions for coastlines, such as restored and protected reef systems, mangroves and salt marshes. Tourism can provide a way forward for disaster-affected communities, supporting long-term resilience through connecting with tradition and culture. Sharing stories and culture is a form of resilience building and is regenerative in nature for the local community and cultural heritage while also providing an important source of income.

Figure ES-1. Outcomes for Sustainable, Regenerative and Resilient Coastal and Marine Tourism in 2030

SUSTAINABLE COASTAL AND MARINE TOURISM			
	ENVIRONMENTAL	**ECONOMIC**	**SOCIO-CULTURAL**
REDUCE IMPACTS	▪ Carbon-neutral destinations ▪ Carbon-neutral travel ▪ Energy- and water-efficient infrastructure ▪ Minimal single-use plastics ▪ Treatment of solid waste and sewerage ▪ Integrated coastal zone management	▪ Locally owned business and tour operators ▪ Minimum wage, benefits and working conditions for all employees ▪ High rates of local employment	▪ Traditional culture and heritage showcased ▪ Behavioural guidelines for all tourist sites and operators ▪ Inclusive and participatory destination management plans and strategies ▪ Human rights protected ▪ Child and female exploitation prevented
REGENERATE	▪ Renewable energy supports electrification for local community ▪ Rainwater and stormwater collection and treatment facilities provide water for local communities ▪ Composting facilities enrich local soil ▪ Tourists fund and engage restoration projects ▪ Marine protected areas (MPAs) and marine privately protected areas (M-PPAs) conserve biodiversity and marine life ▪ Coastal ecosystems improve local water quality and biodiversity ▪ Marine life repopulated where depleted	▪ User fees and visitor payments ▪ Long-term career paths enabled through apprenticeship, training and management programmes ▪ Microfinance funds small and medium enterprises, women and indigenous communities ▪ Majority of goods and services sourced locally	▪ Tourism revenue funds local education programmes ▪ Indigenous-owned and operated businesses flourish ▪ Guides and materials presented in local languages ▪ Cultural heritage sites restored ▪ Local knowledge systems and languages preserved
BUILD RESILIENCE	▪ MPA and M-PPA networks allow for migration of marine life ▪ Living coastal infrastructure (mangroves, shellfish and coral reefs) protects coasts, reduces flooding and erosion	▪ Conservation Trust Funds provide secure funding streams for MPAs ▪ Diverse tourism sector ▪ Active domestic tourism ▪ Balance between local staff and foreign hires at all levels and job types ▪ Early warning systems manage climate risk	▪ Adaptation and management plans for local heritage sites ▪ MPAs and M-PPAs managed by local people

Source: Authors.

Examples of innovation and leadership exist in all regions and across the spectrum of stakeholders engaged in coastal and marine tourism. However, these examples are not happening at an industry-wide scale yet. Leadership remains isolated to individuals wishing to see changes in their business model or local environment. There remains a significant gap in achieving transformation across destinations. The lessons learned from these early initiatives need to be shared, replicated and, where possible, scaled to have a broader impact on the sustainability of the industry.

National governments have an opportunity to create an environment that recognises the true economic value of culture, heritage and natural systems; focuses on quality rather than quantity; and allows for genuine partnerships and collaboration with local communities. This report identifies five priority opportunities for action to help catalyse destination-wide systemic changes in coastal and marine tourism as part of recovery efforts:

- Focus tourism policies, plans, product development and marketing on attracting visitors who wish to engage genuinely with the communities and destinations they visit and support in the regeneration of the local environment, economy and community.
- Develop strategies to increase sustainable and resilient financing for conservation and restoration activities, including MPA management and enforcement, leveraging user fees and environmental taxes and also building long-term solvency through the establishment and endowment of conservation trust funds to ensure conservation funding is resilient to downturns in visitation.
- Collect, integrate and maintain data on sustainability indicators, including through national ocean and tourism accounts, to inform local authorities on how to manage operational externalities, target appropriate investment for sustainability requirements and move beyond an over-reliance on GDP.
- Undertake value chain analysis to align strategies and interventions to eliminate leakage and boost local economic prosperity.
- Utilise co-operation and collaborative management arrangements, such as destination management structures, to promote engagement of all stakeholders in decision-making and implementation of tourism policies and plans, share expertise and resources and promote a common set of objectives.

A systemic transformation will also require tourists to be agents of change. Tourists themselves also have a vital role to play in demanding higher levels of social and environmental responsibility from the industry while at the same time exercising responsible consumption and favouring operators that meet sustainability standards. An emerging area for leadership by tourists is in avoiding air travel or at least choosing lower-emitting flights and accommodation options based on recent carbon calculators and carbon data transparency initiatives, such as Skyscanner and Google. The Palau Pledge and Ol'au Palau are examples of new and innovative ways to incentivise tourists to interact with the local community and culture and participate in local regeneration projects.

To finance a positive transformation of tourism, existing financial and incentive structures will need to be revised and many destinations will require new innovative financial mechanisms to ensure a just transition. Given the impact of the pandemic on the economies of many tourism-dependent islands and coastal destinations, new national funding packages, fiscal policies and non-traditional lending arrangements will be important. This paradigm shift will require investment and therefore monetary stimulus. Research has shown that tourists are willing to pay a lot more for access and improvements to high-quality coastal and marine resources. This underutilisation of tourist fees relative to their capacity suggests that a vast source of revenue for conservation initiatives and a potentially important tool for resource management is largely untapped. Levying bed taxes or entry fees to individual attractions can help raise revenues locally, and environmental taxes, climate finance and blue bonds for tourism investments provide growing opportunities at the national level.

Contribution to GDP alone is an insufficient metric for capturing something as multifaceted and complex as the long-term sustainability and viability of coastal and marine tourism. Establishing a baseline level of sustainability and measuring changes relative to that baseline are essential steps for destinations attempting to improve the sustainability of their coastal and marine tourism sector. This report outlines a comprehensive

set of indicators to help measure the environmental, economic and socio-cultural sustainability of coastal and marine tourism destinations. These indicators go beyond the initial set of indicators proposed in 2005 by the UN Environment Programme and UN World Tourism Organization, bringing in the concepts of regeneration and resilience and drawing on the more recent European Indicator Framework as well as other leading sources.

Transforming coastal and marine tourism to a more sustainable model will require unprecedented levels of co-operation and collaboration among all entities involved in and associated with tourism. Co-operation can enhance innovation, improve local capacity, protect shared natural resources and lower the costs of transitioning to sustainable practices. Risk-sharing mechanisms can encourage private investment in sustainable tourism projects. Destination stewardship councils and citizen science endeavours can be effective in fostering greater participation of local communities in decision-making, ownership of tourism operations and ultimately closing the equity gap. To incentivise and minimise risks for first movers, therefore avoiding a 'race to the bottom' for all destinations, regional co-operation and public-private partnerships offer a potential solution.

A number of key information gaps and challenges remain that should be prioritised for new research efforts. Further analysis and modelling are required to understand the benefits and costs of initiatives aimed at economic and socio-cultural sustainability and regeneration. There is an increasing body of evidence on the socio-economic benefits and costs of interventions aimed at environmental sustainability and regeneration, but analyses of interventions aimed at improving work quality and economic prosperity and those designed to revitalise local culture and heritage remain underserved. Travel to and from destinations remains a driver of impacts and requires greater political attention, as does the sustainability of the cruise industry.

Despite the enormous potential that the global pandemic offers for a reset, little change is evident so far. Where tourism is beginning to return, pent-up demand for 'business as usual' appears to be much higher than expected. Continued uncertainty surrounding recovery, coupled with complex regulatory requirements for travel, inconsistent and incomparable data and the highly localised nature of industry activity have hindered a unified response and systemic change in the long term.

The global pandemic has provided a timely period of reflection for the coastal and marine tourism sector regarding its real economic, social and environmental costs and the risks that a return to the pre-pandemic approach poses to the long-term viability of this sector. Unless the full costs of tourism are considered, the future of the industry will remain inherently unsustainable and uncertain. The traditional model of tourism is, and always has been, beset with high levels of economic leakage at the destination level and varying levels of seasonality, with too many destinations over-reliant on tourism and therefore reinforcing models of mass tourism when alternative, more sustainable and regenerative forms of tourism make more economic, social and environmental sense.

1. Introduction

Before the global pandemic, tourism was one of the fastest growing sectors in the world, supporting the livelihoods of millions of people. The global pandemic brought tourism to a standstill, highlighting the economic dependency of many coastal states, and making the flaws of the traditional model for coastal and marine tourism visible. As the world begins to recover and reopen, destinations will have the opportunity to use this moment to invest in a more sustainable model of coastal and marine tourism that focuses on regeneration and resilience to ensure the long-term environmental, economic and cultural well-being of coastal and island nations. This report provides a comprehensive synthesis of coastal and marine tourism, highlights the challenges of pre-pandemic model and provides a series of evidence-based interventions that offer opportunities for change.

1.1 Context

Prior to the COVID-19 pandemic, tourism was a significant proportion of the global economy, supporting the livelihoods of millions in addition to being one of the fastest-growing economic sectors in the world (UNWTO 2021a). The World Travel and Tourism Council (WTTC) estimated that in 2019 the total economic contribution of global travel and tourism (including its direct, indirect and induced impacts) was US$9.2 trillion, or 10.4 percent of global gross domestic product (GDP), and accounted for approximately 330 million, or 1 in 10, jobs worldwide (Guevara n.d.). Global tourism also contributed an estimated 1.5 billion international arrivals in 2019, who spent $1.5 trillion, representing 7 percent of global exports in goods and services (UNWTO 2021b). In a business-as-usual scenario, it was estimated that by 2030, tourism would contribute an additional $777 billion to the global economy and employ an additional 8.5 million people (OECD 2016; Dwyer 2018). Prior to the onset of COVID-19, the WTTC estimated that travel and tourism would generate 11.4 percent of the world's GDP in 2029 (Guevara n.d.). While such a target now seems unlikely to be realised, there remains potential for significant rapid growth across the sector as international travel and market demand re-establish themselves.

A total of 183 countries have coastlines and marine environments, with associated domestic and international tourism (Cicin-Sain et al. 2011; Cicin-Sain 2016). In 2017, approximately 50 percent of all international tourists travelled to coastal areas (UN 2017a), and in 2015 nearly 40 percent of Europeans listed their reason for travel as the sun or beach (European Commission 2016b; UN 2017a). Coastal and marine tourism is estimated to constitute 26 percent of the value generated by ocean-based industries by 2030 (OECD 2016).

The global pandemic brought international tourism to a standstill. The unprecedented closing of most borders highlighted the unique fragility of the traditional model for coastal and marine tourism. As a result of global travel bans and health and safety restrictions, the global tourism industry has suffered losses of nearly $4.5 trillion, with an estimated 62 million jobs being lost (WTTC 2021a). The Pacific suffered an 84 percent drop in tourist arrivals in 2020 compared to 2019, making it the worst-affected region in the world. The cruise industry lost 99.5 percent of its revenue (ICAO 2021). These impacts have been partially compensated by an increase in domestic tourism activity spurred by targeted marketing campaigns and incentive schemes, although tourism levels have remained well below pre-pandemic levels.

These losses were mostly felt by small enterprises, women and those in least developed countries and small island developing states (SIDS) because nearly nearly half of the 1 billion international tourists travel to emerging and developing economies (UNWTO 2013).

There have been many calls for a full 'reset' and 'transformation' in tourism in the post-pandemic era (Lew et al. 2020; Nepal 2020; Spenceley 2021). However, such a transition will be difficult and lengthy. Redefining tourism to achieve a responsible and just economic recovery will require widespread recognition and participation in procedural and distributive steps to inform restorative actions (Higgins-Desbiolles 2020a). Such an approach should ensure that those who have the least capacity to recover from the shocks caused by the pandemic are not left behind. This is vital when considering coastal and marine tourism given the impacts felt by the most vulnerable small island states and coastal communities.

However, the vulnerability of the coastal and marine tourism sector also provides the opportunity for change now. The COVID-19 crisis provides the impetus for governments to 'take an active role in designing and enforcing economic policies to address various problems that pure market forces cannot' (Stiglitz 2021). With appropriately channelled funding, capacity and governance structures, governments and leaders in the tourism sector can be agents of change, leveraging the pandemic as an opportunity to build resiliency to exogenous shocks while improving the wellbeing of those who rely on tourism. Importantly, in the absence of new or improved targeted interventions aimed at environmental and cultural regeneration and resilience, the return to unsustainable business as usual is all but guaranteed. Given the constraints, it seems clear that innovation and collaboration will be key to a sustainable post-pandemic recovery and reset (Becken and Kaur 2021; UNEP 2022).

The concept of sustainability and regeneration in tourism is not new. Many of the underlying principles and recommendations for governments and industry have not changed significantly over the past 30-plus years. However, never before have we had the opportunity and urgency that has been presented by the unprecedented standstill of global tourism and resulting shifts in demand. Border closures and international flight cancellations caused by the pandemic have significantly reduced pressure on local infrastructure and natural

ecosystems, spawned new markets related to domestic tourism and created new opportunities for local communities to assume roles historically held by foreign workers. The impending 'reopening' of tourism offers the clearest opportunity for destinations to purposefully shift the underlying tourism model. This call for change will be met with resistance. The unprecedented losses suffered by national economies, reductions in cash flow and shifts in the global workforce have caused many to argue that the role of tourism should be to develop recovery strategies that will reignite stalled economies and restart tourism enterprises as soon as possible (Higgins-Desbiolles 2020b). Any argument for a transformation must make both short- and long-term socio-economic sense while simultaneously recognising that difficult decisions are urgently needed. The challenge is to recover while advancing sustainability rather than returning to the traditional approach that allowed for uncontrolled growth with little consideration of the impacts on local communities and ecosystems.

1.2 About This Report

This report adopts a broad definition of *coastal and marine tourism,* focusing on destinations and operators. It draws from the 2017 UN World Tourism Organization (UNWTO) definition and defines *coastal tourism* as nearshore tourism activities such as swimming, surfing and diving and land-based tourism activities such as sunbathing, coastal hiking and driving, coastal heritage, recreation and sports activities which take place on or along the seashore. *Marine tourism* is defined as sea-based activities such as cruising, yachting, boating, recreational fishing, marine mammal watching (including whales and dolphins) and other nautical sports and includes their respective land-based services and infrastructure (UNWTO 2017).

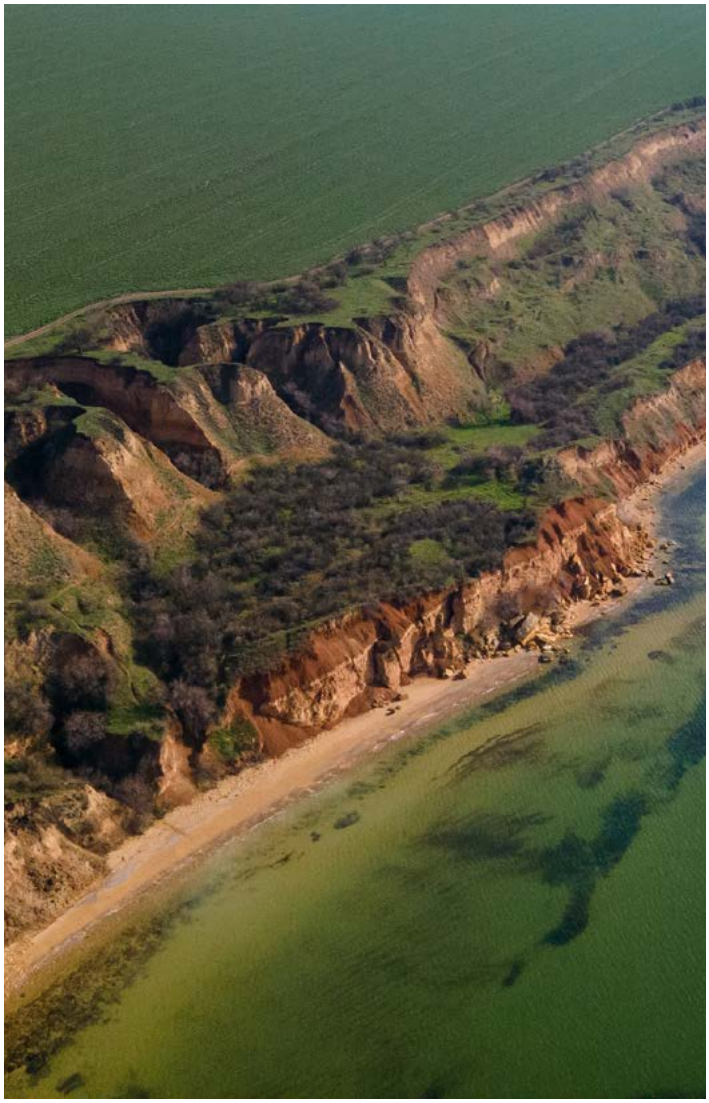
Given the size and complexity of the tourism industry, this report takes a place-based approach to the coastal and marine tourism industry, focusing on tourism destinations and the decisions that destinations can make to improve their sustainability. The authors recognise that travel to and from destinations is a significant aspect of modern tourism, in particular the cruise industry. The

cruise industry is one of the most significant subsectors of coastal and marine tourism. Industry data suggest that the cruise industry generates over $150 billion in economic activity annually (CLIA 2019). However, it is beyond the scope of this report to comprehensively address sustainability of the cruise industry as a whole. It addresses opportunities to improve the sustainability of cruise destinations, which will have impacts on the sustainability of the cruise industry, but it does not contain recommendations aimed at cruise line holding companies and operators. Box 2 in Section 2.2 provides a more in-depth look at the cruise industry and offers a limited set of recommendations to improve its sustainability.

This report synthesises available knowledge to understand the scope of coastal and marine tourism, its environmental, economic and social impact, both globally and locally, and future trends. A systematic literature review (SLR) was undertaken to identify all economic analysis and synthesis for coastal and marine tourism. The SLR followed the guidelines set out by Berrang-Ford et al. (2015) to identify, select and critically appraise relevant research (Greenhalgh and Peacock 2005; Petticrew and McCartney 2011; Berrang-Ford et al. 2015; Dewey and Drahota 2016; Markanday et al. 2019). The SLR follows a defined protocol where the criteria are clearly stated before the review is conducted. It is a comprehensive, transparent search conducted over multiple databases and grey literature that can be replicated and reproduced by other researchers. The SLR informing Section 4 in this report has highlighted a significant gap in research estimating benefit-cost ratios for measures or actions aimed at the economic and social/cultural pillars of sustainability. New analysis in these areas—particularly the assessment of direct and indirect employment opportunities associated with transitioning to a sustainable model of coastal and marine tourism—is encouraged to inform decisions that relate to the sector's contribution to socio-economic development.

Interviews were also held with Ocean Panel members to understand the unique challenges and opportunities being faced within their country context and region. These interviews helped inform the framing and narrative for this paper. Section 2 of this report provides an overview of the pre-pandemic coastal and marine tourism sector and proposes a new framework for sustainability as part of ensuring the long-term, post-pandemic viability of the sector. Section 3 analyses six key trends which will shape the future of coastal and marine tourism. Section 4 provides a set of case studies exemplifying leadership and innovation across three pillars of action to advance a shift to a sustainable model of coastal and marine tourism.

Sections 5, 6 and 7 consider three key enablers of any systemic shift towards sustainability: finance, measurement and tracking, and collaboration and co-operation. Section 8 presents a set of specific, actionable opportunities for destinations and individual industry members (e.g. hotels, resorts and operators) to prioritise the move towards a sustainable, resilient, regenerative and equitable future economy, and Section 9 concludes the report.



2. Understanding Coastal and Marine Tourism and the Need for Sustainability

This section provides an overview of the magnitude and economic value of the coastal and marine tourism sector, synthesising the latest economic data globally and in key regions. It then considers the reality of pre-pandemic mass tourism and the key challenges of continuing with business as usual before presenting a new framework to advance a more sustainable model for coastal and marine tourism.

2.1 The Size and Economic Significance of Coastal and Marine Tourism

This report estimates that approximately 50 percent of all tourism globally is coastal and marine (see Box 1 for methodology). This analysis aligns with Karani and Failler (2020), who found that one in every two global tourists visits coastal and marine areas, producing about $220 billion of ocean consumer products and services globally.

An October 2021 UN Conference on Trade and Development (UNCTAD) report estimated the export value of the sector to be much higher, at $1.12 trillion in 2018, based on visitors' expenditures on products and services globally, making tourism the largest ocean-based economic sector (UNCTAD 2021; see Figure 1). The coastal and marine tourism sector enjoyed a compounded annual growth rate of 5 percent between 2015 and 2018 (UNCTAD 2021), a positive trend that was halted due to the COVID-19 pandemic.

The Organisation for Economic Co-operation and Development (OECD) estimated the ocean economy value added in 2010 at 2.5 percent of global GDP (equal to $1.3 trillion) and over 30 million direct and full-time jobs (OECD 2016). Before the pandemic, the expectation was that the ocean-based economic output would double by 2030, reaching $3 trillion. Ocean-related activities are

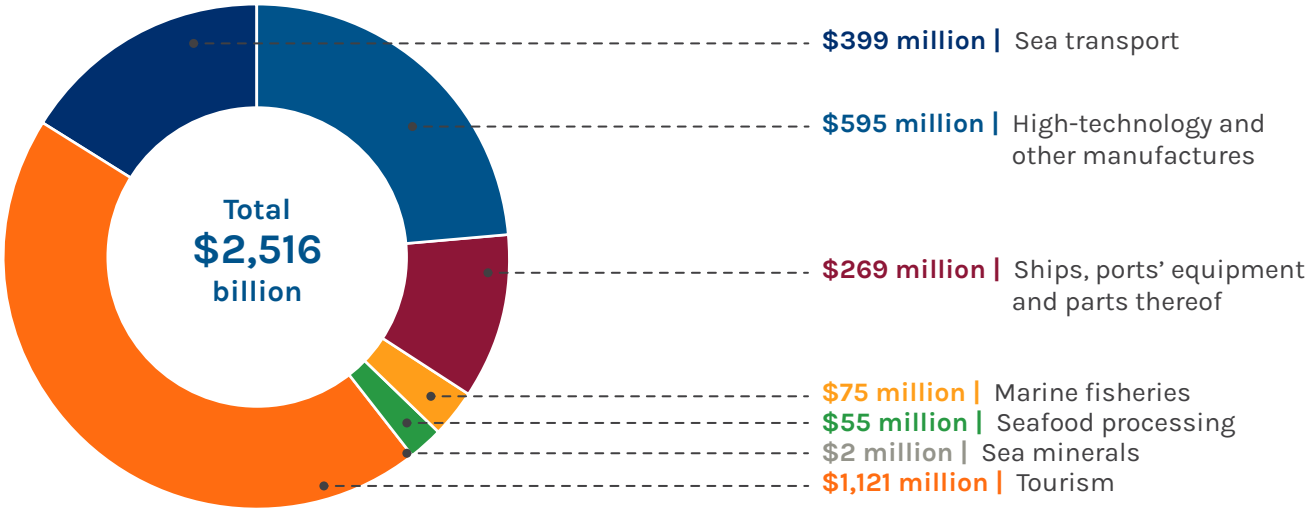
Box 1. How Much of Global Tourism Is Coastal and Marine?

This report provides an estimate for coastal and marine tourism as a percentage of total global tourism. Although measuring the exact percentage of tourism that is coastal/marine is fraught with difficulties associated with definition and measurement, an array of evidence suggests that at least 50 percent of all tourism infrastructure, impact, visitation and spending are coastal in nature.

This figure was estimated based on the spatial distribution of hotel rooms from the Global Accommodation Reference Database for 2014 and uploaded georeferenced Flickr photos (2005–12) for the 100 countries and territories with coral reefs. Hotels within 5 kilometres (km) of the shoreline and photos georeferenced to within 5 km of the shore or in the ocean were classified as 'coastal'. Over 20 million Flickr photos taken in coral reef countries were summarised as photo-user days (PUDs), which reflect the intensity of photo uploads in an area. Using an approach developed by Wood et al.,[a] PUDs are location-specific numbers signifying 'the total number of days, across all users, that each person took at least one photograph within each site'. For this work, PUDs were computed for an approximate 1 km (0.009 x 0.009 degree) gridded layer covering all coral reef jurisdictions. These included all inland territory and offshore waters to the exclusive economic zone boundary. This resulted in over 2 million total PUDs across all cells. The annual mean PUD per cell for the years 2005–12 was computed for use in the analysis. The Flickr photos are an indicator of the distribution of user activities, and the hotel data reflect location of visitor nights.[b] Across these 100 countries, over 55 percent of mapped hotel rooms were within 5 km of the coast. The percentage of 'coastal' hotel rooms and PUDs was summarised by country and then used to prorate visitation and tourist expenditure by country, prior to summarising across the 100 countries. In combing the percentage of coastal hotels with visitor expenditure, we estimate that 52 percent of visitor expenditure was 'coastal' in 2014. Using the same approach and factoring in PUDs, it is estimated that roughly 45 percent of tourist expenditure was coastal, but it seems plausible that this has increased over the past decade. As mentioned, this analysis only covers the 100 countries and territories with coral reefs (including all of Australia, China, India and the United States), but does not include Canada, Europe, New Zealand, Russia, South America south of Brazil and Ecuador, or West Africa. Of these, the most significant omission is Europe, which accounts for roughly half of visitors in 2019.[c] For Europe, a report by Skift[d] found that nearly two-thirds of Europeans demonstrate a preference for beach-based tourism, and statistics from the European Commission[e] found that more than four out of nine accommodation nights (more than 44 percent) are spent in coastal areas. Skift[f] also reports that coastal forms of tourism in the United States represent more than 80 percent of U.S. tourism receipts. Taken together, and considering the relatively conservative boundary of 5 km from the shore used to define coastal locations, this evidence suggests that roughly half (or more) of all tourism is coastal and marine in nature.

Sources: a. Wood et al. 2013; b. Mancini et al. 2018; c. UNWTO 2021c; d. Skift 2014; e. European Commission 2014; f. Skift 2014.

Figure 1. Ocean-based sector export value, 2018 ($ billion)



Source: UNCTAD 2021.

unevenly distributed across countries' income groups, with developing countries relying more on the ocean economy for income and jobs than OECD countries. For example, in some low-income countries and SIDS, tourism alone and other important ocean-based sectors can account for over 20 percent of GDP, compared to 2 percent for OECD countries. Alternatively, the OECD group had the fastest value-added growth in ocean-related activities of $200 billion from 2005 to 2015, followed by East Asia and the Pacific with $175 billion, countries in the Association of Southeast Asian Nations with nearly $50 billion, and approximately $19 billion for Latin America and the Caribbean (OECD 2016).

Countries vary in their reliance on tourism. For SIDS, the economic value of tourism represents, on average, 30 percent of GDP—twice the global average. Two out of three SIDS rely on tourism for 20 percent or more of their GDP. Tourism's economic impact is also associated with economic growth. Extensive empirical evidence corroborates the causal relationship between tourism growth and economic development anchored in the tourism-led growth hypothesis (Nunkoo et al. 2019). For this reason, tourism development became a key strategy in developing countries to regenerate and repurpose regional economies and a common mantra for jobs, growth, household income and poverty alleviation (Croes and Rivera 2016).

Tourism constitutes the largest economic sector for most SIDS and many coastal states. In 2019, SIDS earned $55 billion in exports from tourism (3 percent of the world total) and hosted 44 million international tourist arrivals. Tourism accounts for more than 30 percent of total exports in the majority of the 38 SIDS, and in some it is as high as 90 percent (UNWTO 2020b). SIDS in the Atlantic and Indian Oceans and South China Sea group accounted for 53 percent of the 44 million international tourists in 2019, whereas the Caribbean hosted 43 percent and the Pacific 4 percent. Three destinations represent about 60 percent of these arrivals: Singapore (34 percent), the Dominican Republic (15 percent) and Cuba (11 percent; UNWTO 2020c). However, international tourist arrivals declined by 47 percent in SIDS during January–April 2020. This dramatic reduction has translated into a massive loss of jobs and a sharp decline in foreign exchange and tax revenues, which in turn has reduced public spending capacity and the ability of governments to deploy the measures necessary to support livelihoods through the crisis. Women account for half of the work-

force in almost all SIDS, and they are particularly at risk, as are informal workers. The continued viability of these economies and the services that rely on that growth remains dependent on coastal and marine tourism continuing to thrive.

A critical component of coastal and marine tourism is coral reef tourism and accounts for a significant portion of tourism activities and revenues in many coastal destinations. In Belize, for example, about 64 percent of all tourist activities relate to reef tourism (UN-OHRLLS 2020). Overall, reef-based tourism represents more than 15 percent of GDP in at least 23 countries and territories, generating about 70 million trips (Gaines et al. 2019), involving more than 350 million tourists engaging in reef-based activities annually and producing an estimated annual value of $36 billion spread over 70 countries and territories (Spalding et al. 2017).

2.2 The Case for Change

Growth of the coastal and marine tourism sector has brought new socio-economic opportunities, such as increased standards of living, more employment and training opportunities, diversification for local communities and the socio-cultural benefits associated with interactions between people from differing cultural backgrounds. However, the negative impacts of the traditional model of unrestricted growth of the tourism sector were visible long before the global pandemic.

For island destinations, particularly SIDS, the sustainability of tourism has long been a crucial challenge. Islands are the top destination for coastal and marine tourism for millions of tourists every year. Islands have become increasingly dependent on tourism and yet the cost of managing tourism frequently outpaces the revenue generated and retained. Countries often accumulate public debt even as the tourism economy soars, according to traditional units of measurement. In the Maldives, for example, tourism grew to represent 80 percent of the economy, but its public account balances plummeted, leaving the nation in debt. Such 'operational externalities' generated by excess costs on public infrastructure leave nations without the financing required to manage tourism impacts, known as 'the Invisible Burden' (Epler Wood et al. 2019). Without careful management and infrastructure support, large numbers of tourists can put enormous stress on the local environment and community, including natural habitat loss, increased pollution and solid waste, and higher use of water and energy. An example of the scale of tourism that many SIDS face is the Caribbean island of Aruba, which has a population of 105,000 and land area around 178 square kilometres yet hosted over a million tourists in 2017 (Hampton and Jeyacheya 2020).

2.2.1 Greenhouse gas emissions

Prior to the COVID-19 pandemic, tourism was responsible for 8 percent of global emissions (4.5 gigatons [Gt] of carbon dioxide equivalent [CO_2e] in 2013) and given its growth prospects and high carbon intensity, tourism's share of global greenhouse gas (GHG) emissions was expected to increase by 25 percent compared to 2016 levels (Lenzen et al. 2018). Carbon emissions from tourism are associated with transporting tourists from their places of origin to destinations as well as the

carbon embodied in many goods and services produced to meet tourist demands. It is important to note that GHG emissions from domestic tourism outweigh those of international tourism in terms of tourist numbers—domestic tourism is six times larger than international tourism (UNWTO 2020b). Similarly, about 72 percent of the sector's emissions stem from the combustion of fossil fuels and land-use changes. Air travel alone is responsible for an estimated 20 percent of total emissions from tourism, yet international aviation and bunker shipping are excluded from the Paris Agreement. One of the most problematic findings of the Lenzen et al. (2018) emissions assessment is that the carbon intensity of tourism (1 kilogram [kg] of CO_2 per U.S. dollar of final demand) exceeds that of sectors such as manufacturing (0.8 $kgCO_2$ per U.S. dollar), construction (0.7 $kgCO_2$ per U.S. dollar), and the average of all economic sectors (0.75 $kgCO_2$ per U.S. dollar), making continued growth of tourism a stronger accelerator of anthropogenic climate change compared to equivalent growth in manufacturing, construction or services (Lenzen et al. 2018).

2.2.2 Vulnerability to climate impacts

Tourism's high carbon intensity lies in strong juxtaposition to its vulnerability to anthropogenic climate change. Coastal and marine tourism relies on environmentally fragile systems that are disproportionately vulnerable to a changing climate. Coastal and marine tourism relies on infrastructure located on or near the coastline, where it is exposed to storm surges from cyclones, flooding driven by sea level rise, and coastal erosion (Alvarez et al. 2022). Many tourist attractions and archaeological sites, including dozens of UN Educational, Scientific and Cultural Organization World Heritage Sites in the Mediterranean, and nearly half the resorts in the Caribbean are located in areas vulnerable to flooding from rising sea levels (Scott and Verkoeyen 2017; Reimann et al. 2018).

Warmer waters in the ocean provide a more suitable environment for marine pathogens such as the flesh-eating bacteria *Vibrio vulnificus*, whose range is expanding from tropical and subtropical regions into high-latitude locations, sickening tourists and residents bathing along coastlines as far north as the Baltic nations of northern Europe (Baker-Austin et al. 2017). Similarly, warmer ocean waters provide a more suitable environment for harmful algae blooms, which have also been expanding in range due to a combination of warmer waters and higher nutrient loads from human activities (Gobler 2020). Blooms and outbreaks have a deleterious impact on tourism by making coastal tourism activities dangerous to human health (Hoagland and Scatasta 2006). The combination of ocean warming and acidification is having a catastrophic impact on corals, and even under low-emissions scenarios, warm-water corals are expected to disappear from the planet by 2050 (Hoegh-Guldberg et al. 2017). Given the economic importance of natural and cultural attractions at risk due to climate change, it is a paradox that global tourism would seek to continue a carbon-intensive growth path which directly threatens the very attractions and infrastructure upon which the tourism industry relies.

The coastal and marine tourism sector is highly dependent on the health of the local marine environment. Coastal areas include some of the most biodiverse and fragile ecosystems on Earth, such as mangroves and coral reefs. These areas, and therefore the tourism sector itself, are highly vulnerable to climate change, pollution and hazardous waste spills, nutrient and sediment inputs, transfer of exotic species and algae blooms. Although these threats are global in scale, their effects on tourism development and the tourist experience vary widely by location. For example, in the Caribbean, one of the regions most vulnerable to climate change, 29 percent of resorts are within one meter of the high tide mark, and 60 percent are at risk of beach erosion from sea level rise (Scott et al. 2012).

2.2.3 Loss of coastal ecosystems

Coastal urbanisation and land-use change, largely driven by coastal tourism in many SIDS (Lakshmi and Shaji 2016), is responsible for the depletion of more than 90 percent of species considered important due to their commercial value or their importance in maintaining the structure and function of ecosystems; it is also responsible for the loss of 65 percent of seagrass and wetland habitat, degraded water quality and the assimilation of invasive species (Lotze et al. 2006). The transformation of coastal landscapes has also been shown to cause profound alterations in marine food webs (Henderson et al. 2020). In short, dream vacations in coastal destinations have been made possible through large-scale transformation of the coastal land-sea interface. However, the costs and negative externalities of tourism development have been traditionally neglected (Romano and

Zullo 2014), thereby masking the true costs of tourism development and providing an inflated picture of the net benefits of tourism.

Sandy beaches, which have become a core component in the idealised coastal vacation, provide an illustration of the hidden costs of tourism development. Sandy beaches occur naturally in certain geographies, but in many others they have been built after the conversion of native habitats such as sand dunes, wetlands and mangroves. In recent years, erosion of sandy beaches has intensified due to the confluence of sea level rise, reduced sediment budgets due to human transformation of watersheds (e.g. damming and dredging of rivers) and the urbanisation of coastal environments (Lim et al. 2021). Beaches are the equilibrium of seasonal erosion and accretion, and beach width is inherently dynamic. But sea level rise and coastal engineering alter natural patterns of sand movement, and even naturally occurring sandy beaches are losing sand. The loss of valuable beach area has motivated many destinations to maintain beach width through nourishment (Elko et al. 2021). Beach nourishment has its own suite of environmental issues. To meet the growing demand for sand, mining operations are expanding from the traditional terrestrial sand quarries and pits into extraction from rivers and seashores (UNEP 2019), which leads to higher rates of erosion of nearby coastlines (Work et al. 2004). Therefore, the availability of nearby replenishable sand deposits plays a critical role in the cost and feasibility of beach nourishment for coastal destinations (Qiu et al. 2020). In addition, the construction of hardened structures along the coastline designed to protect beaches, such as seawalls, groins and jetties, have been shown to exacerbate coastal erosion (Jones and Mangun 2001).

2.2.4 Economic dependency

In addition to supporting livelihoods, tourism also traditionally provides essential funding for governments to undertake conservation efforts, including the management and monitoring of marine protected areas (MPAs) through visitation taxes and permitting. For example, 50 percent of the conservation budget for the Tubbataha Reefs Natural Park in the Philippines depends on tourism (Hudson 2020). Mauritius experienced the deepest decline of visitor numbers to parks and outdoor spaces among 16 other small island states (Our World in Data 2020). The consequences of lower conservation budgets may include less funding for law enforcement and monitoring, leading to increases in wildlife crime and illegal resource extraction (e.g. logging, fishing). Having fewer tourists and operators present in protected areas also means fewer opportunities to witness and report illegal activities (Spenceley 2021), creating a situation in which tourism's natural assets are at risk of degradation.

2.2.5 Decent work and seasonality

Despite tourism's strong job performance globally, especially in SIDS, the industry faces challenges associated with decent work. According to the International Labour Organization (2017), the employment situation is characterised by low-quality jobs, temporary contracts, long working hours and low wages and benefits. Without appropriately directed policy action, these practices limit the benefits of economic development and job creation, leading to precarity, insecurities and economic inequality (Robinson et al. 2019). In many locations, coastal tourism is highly seasonal, owing to weather and temperature variations. This can limit the profitability of enterprises, the quality of jobs available and the benefit to local communities.

2.2.6 Economic leakage

A major concern pertaining to the economic impacts of tourism is leakage, which refers to the tourist revenues that leave the destination either due to foreign ownership or to pay for products or services outside of the destination, reducing the benefits to local economies. In cases such as the Maldives and the Caribbean, reports suggest that as much as 95 percent of the money made by tourism may leave host countries. Such economic leakage is a serious issue and occurs at all scales and sectors of tourism, from foreign tours to imported products in hotels.

In many destinations, zero-dollar tourism—low priced package tours that lure tourists to a particular destination—are significant sources of leakage because tourist dollars go directly to foreign owners of businesses rather than the local community. Leakage sources also include imports of materials and equipment for construction; consumer goods, particularly food and drinks; repatriation of profits earned by foreign investors; overseas promotional expenditures; and the service of external debt used to finance the development of hotels and

resorts. Some studies, including those from UNCTAD, indicate that the average import-related leakage for most developing countries today is between 40 percent and 50 percent of gross tourism earnings for small economies and between 10 percent and 20 percent for more advanced countries with diversified economies. Yet studies by Pratt (2015) and Croes (2022) provide a more nuanced view regarding leakage in small island destinations and point to the need for more accurate measurement. Pratt (2015) indicated that tourism can enhance welfare depending on the size of the tourism sector and leakages, and Croes (2022) empirically showed that leakage numbers used in the literature are exaggerated. A critical topic for future research is to ensure that leakage is adequately measured to provide evidence-based information to policymakers or to undertake more direct analysis of budgetary operational externalities caused by tourism and use this data to determine how to finance the protection of key items required for resilience and regeneration to protect the long-term good of local people at the destination level.

2.2.7 Social and cultural degradation

The additional use and demand on local resources can contribute to food insecurity, community displacement, dilution of culture and the degradation of cultural sites. In many cases, the revenue that tourism brings to a destination may not reach the local community—leaving a destination with the impacts of visitation and consumption of local resources without the economic benefit or cash flow to invest in rehabilitation or regeneration.

Box 2. Sustainability and the Cruise Industry

According to the UN World Tourism Organization and Asia-Pacific Tourism Exchange Center,[a] cruise tourism is a 'relatively young phenomenon' that emerged 50 years ago yet is outperforming general annual tourism growth at around 8 percent, being the fastest-growing type of leisure tourism.[b] Cruise tourism can also represent a significant percentage of overall tourism arrivals given that each passenger might visit multiple countries in one cruise itinerary. However, arrivals should not be confused with revenue generation because most cruise visitors will only spend a day in the destination and may not spend money at onshore locations if their day trip is pre-paid and part of the cruise itinerary. Moreover, there is very little data (and no requirement for transparency) on the share of passengers who actually disembark.

The number of people cruising has more than doubled, from 10.6 million passengers in 2004 to more than 22.3 million in 2015. The size of ships has also significantly increased, from a high of 3,500-passenger capacity in 2006 to vessels that now carry more than 6,000 guests and 2,500 crew members. Cruise ships are also visiting more remote destinations than ever before. The Cruise Lines Industry Association (CLIA) claims that 'cruising sustained 1,177,000 jobs equaling US$50.24 billion in wages and salaries and $150 billion total output worldwide in 2018'. Before the pandemic, CLIA projected 32 million passengers in 2020.[c]

The Caribbean accounts for a third of cruise tourism globally. Countries in this region, such as the Bahamas, Belize and the Cayman Islands, receive more than twice the number of cruise tourists than overnight visitors, resulting in cruise tourism dominating decisions regarding tourism infrastructure and development.[d]

Although cruise tourism can deliver significant numbers of tourists to destinations, the negative impacts of such mass tourism to the local environment and community need to be addressed. Cruise ships continue to increase in size and, when in port, dominate the landscape as a floating hotel that is often at odds with the destination itself. Cruise tourism introduces a significant number of visitors to a destination for a short period of time, causing concentrated and multiplied impacts.

In the pursuit for more sustainable travel, cruising has tended to fly under the radar of public scrutiny and has managed to steer clear of the pressures on flying—and the accompanying flight shame movement that advocates flying less. One problem of studying the cruise industry is the lack of transparency and the limited amount of environmental and emissions data. Estimating the carbon footprint of the cruise industry (and therefore coastal and marine tourism in general) is therefore difficult. To date, the cruise industry has been successful in avoiding data sharing and other global transparency initiatives, allowing the industry to continue to excuse itself from global emissions reduction initiatives.

On the environmental front, the cruise industry releases 300,000 gallons of sewage, 8 tons of solid waste, 25,000 gallons of oily bilge water and other by-products weekly to destinations and national waters, bringing about a multitude of stress on the marine environment and causing issues such as pollution and eutrophication.[e] World Wildlife Fund Canada research on the

Box 2. Sustainability and the Cruise Industry (Cont.)

waste streams from ships in Canadian waters show that unregulated 'open loop scrubbers,' are generating 34 times the volume of all other wastewater streams from all ships, or 97 percent of total wastewater going into Canadian seas. Open loop scrubber wastewater can have large amounts of heavy metals and polycyclic aromatic hydrocarbons. These chemicals can be toxic and reduce the ocean's ability to buffer climate change. Cruise ships, which installed open loop scrubbers in 2020, are now 66 percent of the total scrubber water waste flowing into Canadian waters.[f] Relevant infrastructure is needed to receive, host and resupply cruise ships at the destination ports of call—which are oftentimes more vulnerable and carry higher biodiversity value than air arrivals—creating the potential for irreversible harm as the impacts on locations, attractions and natural or cultural resources escalate.[g] Air and noise pollution may also cause health issues for locals at cruise destinations. However, impacts would differ for remote islands and major city hubs depending on infrastructure capacity and regulations. When cruise ships off-load solid waste on small islands, limited landfill capacity is taxed, so the garbage is often incinerated, creating significant local pollution and air-quality issues. Limited local water sources are often put under pressure from cruise ships, requiring the ships' water sources to be replenished as a condition of docking at the destination. This can leave the local community with limited or poor-quality potable water which in turn affects local health and wellbeing.

Dominated by three major corporations, Carnival, Royal Caribbean and Norwegian, the cruise industry operates under 'a profitable system'[h] called flags of convenience, which allows ships to sail in waters far from registered home ports, often away from official jurisdictions and reduced tax and safety regulations. It also allows the corporations to get away with paying low wages and having poor working conditions, potentially exploiting the developing countries.[i] This arrangement also limits their liability in situations where crimes occur onboard. Their legal obligation to uphold labour rights is also less stringent, reducing worker protections.[j] There have also been high-profile incidents of dumping plastic waste and other deliberate acts of pollution from cruise ships.[k]

Although a distinction is necessary between large cruise liners that drive mass cruise tourism and expedition cruising on much smaller vessels and other luxury variants, the myriad advantages of cruising centre on a number of pillars, including being favourably priced generally; potential for multidestination itineraries; and all-inclusive tariffs, including meals and activities, from casinos to cabaret, spas, swimming pools and shopping centres.

These attributes, although desirable for cruise passengers, lead to many socio-economic issues for the destinations themselves. There is much debate about the balance between the value of cruise passenger spending and costs related to infrastructure at ports and destinations that could amount to above $100 million.[l] The local community at destinations usually receives very little passenger spending because most spending occurs before the cruise or on board; the World Travel and Tourism Council uses the word *negligible* to describe the distribution of revenue and economic benefits from cruise tourism in the Caribbean, as it accounted for a mere 8–10 percent of total international tourism receipts.[m]

The availability of natural and cultural heritage drive the tourism demand for a destination. Congestion due to crowding, cultural heritage degradation due to poor management of large visitation and community disruption pose threats to the social capital of destinations.[n]

To ensure that the cruise industry is not left behind as destinations transition to a more sustainable approach and ensure that unavoidable forms of large-scale tourism are managed in harmony with local ecosystems, cultures and heritage, the following will be important for destinations to implement:

- Determine a long-term visitor use management framework that aims to maximise visitor benefits while ensuring and sustaining desired resource conditions and visitor experiences.[o]
- Establish carbon emissions standards and accounting requirements.[p]
- Negotiate cruise passenger fees commensurate with costs imposed on local resources and infrastructure.
- Monitor air, water and waste pollution carefully through environmental assessments, including the impacts of 'open loop scrubbers' which are the cause of the majority of wastewater coming from cruise ships both in ports and at sea.[q]
- Advance zero-emissions technologies and associated incentive structures, including port infrastructure which provides renewable energy electricity to ships to allow them to turn off their engines while in ports of call.

Cruise tourists themselves also have a vital role to play in demanding higher levels of social responsibility from the industry while at the same time exercising responsible consumption and favouring operators that can demonstrate transparent, ethical and trustworthy practices.[r]

Note: Exhaust cleaning systems were required as of January 2020 under the regulatory Convention for the Prevention of Marine Pollution from Ships to eliminate sulfur dioxide from smokestacks when ships burn heavy fuel oil.

Sources: a. UNWTO and APTEC 2016; b. Klein 2011; c. CLIA 2019; d. UNWTO and APTEC 2016; e. Epler Wood 2017; f. Vandermeer 2022; g. UNWTO and APTEC 2016; h. Resen et al. 2021, 93; i. Higgins-Desbiolles 2020a; Resen et al. 2021; j. de Grosbois 2014; k. Kennedy and Allen 2019; l. Klein 2011; m. Honey 2008; n. UNTWO and APTEC 2016; o. IVUMC 2016; p. Ramôa et al. 2019; q. Epler Wood 2017; Vandermeer 2022; r. Cheer 2020.

2.3 Transforming Coastal and Marine Tourism

The Ocean Panel's 2030 Goal articulates the need for coastal and marine tourism to be 'sustainable, resilient, address climate change, reduce pollution, support ecosystem regeneration and biodiversity conservation and invest in local jobs and communities' (Ocean Panel 2020).

Sustainable tourism is defined as 'tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities' (UNEP and UNWTO 2005).

Three dimensions or 'pillars' of sustainable development are now well recognised:

- **Environmental sustainability**, which means conserving and managing resources, especially those that are not renewable or are precious in terms of life support. It requires action to minimise pollution of air, land and water and to conserve biological diversity and natural heritage.
- **Economic sustainability**, which means generating prosperity at different levels of society and addressing the cost-effectiveness of all economic activity. Crucially, it is about the viability of enterprises and activities and their ability to be maintained in the long term.
- **Social sustainability**, which means respecting human rights and equal opportunities for all in society. It requires an equitable distribution of benefits, with a focus on alleviating poverty. There is an emphasis on local communities, maintaining and strengthening their life support systems, recognising and respecting different cultures and avoiding any form of exploitation. It also includes a strong focus on cultural sustainability (McIntyre 1993).

In the 2030 Agenda for Sustainable Development, Sustainable Development Goal (SDG) target 8.9 aims to, 'by 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products'. The importance of sustainable tourism is also highlighted in SDG 12.b, which aims to 'develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products'. Tourism is also identified as one of the tools that, by 2030, can 'increase the economic benefits to small island developing states (SIDS) and least developed countries' as outlined in SDG 14.7. The contribution of sustainable tourism to the SDGs goes much further than these three specific targets, however, supporting the achievement of all 16 SDGs as illustrated in Figure 3.

The global pandemic has served as a timely warning that the concept of sustainability must continue to evolve and respond to the increasing urgency of building resilience to major environmental and social crises. The 2030 Goal from the Ocean Panel emphasises the newer concepts of regeneration and resilience.

A regenerative approach to coastal and marine tourism positions tourism to not only reduce its impacts (along the lines of traditional notions of sustainability) but also to restore the harm done to the natural world to create the conditions necessary for life to flourish. A relatively straightforward example of regeneration is a reef restoration and protection programme run by a tourist resort. These programmes contribute to the regeneration of marine ecosystems and provide benefits for local communities and the visitors themselves. In terms of coastal and marine tourism, regenerative approaches also mean tourism is viewed as one facet of a whole approach to build community wellbeing and sustainability. A regenerative approach can provide a means of acknowledging and working through some of the underlying tensions that exist between tourism and other uses of the marine space, such as beach restrictions for local fishers. A regenerative approach would look at integrating tourism, fishing, agriculture, leisure, education and so forth in the interests of the community, economy and society as well as the ecology. It would also consider local leisure and recreation to be as important as tourist visitation. Such an approach requires an understanding of the wider system in which tourism operates and a different way of looking at the sustainability of, for example, a coastal resort. Thus, the concept of regenerative tourism inherently applies to all three aspects of sustainability. This wider perspective of restoring healthy systems offers new opportunities for tourism to work with communities, provide different

Figure 3. Contribution of Sustainable Coastal and Marine Tourism to the SDGs

Indirect contribution

1. No Poverty | Tourism economic impacts may help alleviate poverty.

2. Zero Hunger | Tourism can support sustainable agriculture.

3. Good Health and Wellbeing | Income generated from tourism can be invested to improve health services.

4. Quality Education | Tourism can help provide professional training, including to youth, women and people with special needs.

6. Clean Water and Sanitation | Infrastructure investment can provice clean water and sanitation to communities and create awareness and education on sanitation and hygiene.

7. Affordable and Clean Energy | Tourism can help promote investment into renewable energy, help reduce greenhouse gas emissions and help communities access energy.

Direct contribution

5. Gender Equality | Tourism can empower women by providing decent work.

8. Decent Work and Economic Growth | Tourism employs people, including women, young people and people in remote locations.

9. Industry, Innovation and Infrastructure | Tourism relies on, and often fosters, high-quality public and private infrastructure.

10. Reduced Inequity | Tourism that empowers local communities and is inclusive can increase equality.

11. Sustainable Cities and Communities | Tourism can promote sustainability, regeneration and accessibility and contribute to the preservation of natural and cultural assets.

12. Responsible Consumption and Production | There is an opportunity for tourism businesses to deliver responsible products and services.

13. Climate Action | Tourism has a responsibility to reduce its contribution to global greenhouse gas emissions.

14. Life below Water | Tourism can contribute to the protection of marine ecosystems.

15. Life on Land | Tourism can contribute to the conservation of terrestrial ecosystems.

16. Peace, Justice and Strong Institutions | Tourism brings people together and relies on safe and just institutions to facilitate the movement of people across borders.

17. Partnership for the Goals | Due to is global scale and cross-sectoral nature, tourism can strengthen partnerships.

Source: Adapted from Tourism for SDGs.

types of training and skill development, embrace local and traditional knowledge and practices and ensure that culture is deeply embedded and respected throughout the tourism value chain. This is notably different from portraying local culture simply as a means of attracting greater numbers of tourists.

There is a need to double down on efforts to integrate the concept of regeneration within a future model for sustainable coastal and marine tourism. Loehr and Becken (2021a) argue for a change to how we view the purpose of tourism. For example, instead of asking about what the tourism industry needs to grow, questions should be turned to 'how can tourism be a vehicle for positive change that benefits local communities and environments'. The fundamental notion of tourism making a positive contribution, that is 'regenerative' and 'healing' in nature, is a key condition for it to be sustainable in the long term (Pollock 2015, 2019). These values are quite specific to place, and as a result, the standardised approach to mass tourism is unlikely to deliver the regenerative outcomes that are required for destinations to genuinely benefit.

The concept of resilience has become an increasingly important element of sustainability. It has been used in tourism research to understand destinations' adaptive capacity with regard to global and local challenges, crises and disasters (Calgaro et al. 2014; Bhati et al. 2016; Filimonau and de Coteau 2019); organisational and business ability to cope with changes and shocks (Dahles and Prabawa Susilowati 2015); vulnerability and climate change (Espiner and Becken 2014); and planning and governance systems (Dredge 2019; Saarinen and Gill 2019). In the context of coastal and marine tourism, this includes resilience to climate change as well as resilience to future crises and shocks (economic downturns, natural disasters, global health) and shifting trends in demand. The above approach is very much in line with wider movements around regenerative economies, regenerative primary industries, and the imperative of restoring ecosystems to adapt to future climate impacts (see IPCC 2022). These themes are explored in more detail in Box 3.

Box 3. A Tale of Two Futures for Coastal Tourism

Future 1: Business as usual

A business-as-usual scenario can be characterised by the failure to achieve decarbonisation of the global economy and to halt further biodiversity loss globally and at the destination level, coupled with continuation of growth trends in tourism without drastic changes in mindsets, consumption patterns and carbon intensity of the sector. In such a scenario, coastal destinations will spend increasing amounts of money and energy to armour and nourish beaches, essentially fighting a losing battle against sea levels that are expected to rise by at least 30 centimetres in the next 28 years (by 2050). Thirty centimetres is the observed sea level rise during the last 100 years.[a]

The global population is undergoing a process of urbanisation, and most of the world's largest cities lie on or near the coastline.[b] As a result of climate change, these coastal districts will be more prone to flooding and thus more vulnerable to flooding impacts on infrastructure, the economy and human health.[c] Many coastal destinations already flood annually at high tides even in good weather, and storms can be catastrophic. Coastal flooding requires infrastructure to protect human assets in the flood zone, but providing this infrastructure comes at significant expense. Local geography can make some 'solutions' infeasible or prohibitively expensive. Due to sea level rise, the cost of protecting coastal assets will rise, and for many cities there will be a point where the costs of protecting assets will exceed the potential benefits of building more protection. Millions of people across the world will be faced with a choice between staying (or vacationing) in a city that floods recurrently (sometimes catastrophically) or migrating elsewhere.[d]

Sea level rise is driven in part by a warming of the ocean (as matter heats, it expands). Warmer waters are stressing warm-water corals across the entire planet, with losses of about 15 percent of live coral cover since 2009[e] and projections of much wider decline between 2040 and 2050.[f] In addition, pathogens and harmful algae thrive in warm water.[g] Human activities also result in increased nutrients in coastal waters, leading to eutrophication.[h] Eutrophication also acts as a driver of growth for microbial pathogens and harmful algae. The combination of human activities has led to global crises in the state of both coral reefs and seagrass.[i] Rising ocean temperatures have led to increases in maximum wind speed and rainfall rates in tropical cyclones.[j] In short, the future coastal tourism destination will have irreplaceably lost some of its most prised natural attractions, will become riskier for tourists and tourism operators and will face ever rising costs to maintain beaches and protect built infrastructure. The experience of the coastal tourist of the future will undoubtedly be different from what it is today.

Stony coral tissue loss disease (SCTLD) provides a glimpse of what the future may hold for vulnerable natural attractions. The disease emerged in 2014 in the Florida Reef Tract. Its causative agent is yet to be identified, but the disease has already spread to 20 territories in the western Atlantic Ocean.[k] The disease affects at least 24 species of scleractinian coral (reef-building corals) listed as endangered by the International Union for Conservation of Nature.[l] In 2014 and 2015, the emergence of SCTLD compounded with abnormally high summer water temperatures to induce mass bleaching and mortality events. In the wake of the disease, mortality in the reef tract has been so severe that it has changed ecosystem functions, and the recovery of the coral ecosystem is uncertain.[m] In response to this crisis, more than 60 government agencies, academic institutions and other organisations are working together to fight the disease. Although some of the response involves the expected research to identify the pathogen and find a cure, it also involves a desperate effort to search for and collect surviving corals for use as source material in strategic restoration efforts that also include beneficial species such as the long-spined sea urchin. Currently, more than 2,000 coral colonies are being cared for in 19 different facilities.[n]

Box 3. A Tale of Two Futures for Coastal Tourism (Cont.)

Future 2: Sustainable, regenerative and resilient tourism

Rather than spending fossil fuel energy and money to nourish beaches in a war against the rising ocean, destinations can restore native coastal ecosystems such as seagrass, shellfish reefs or mangroves.[o] These restored ecosystems enrich biodiversity, reduce erosion, serve as buffers against damage from storms, fix carbon and accumulate sediment, which also includes carbon.[p] Ecosystems where plants and wildlife thrive and serve as carbon sinks can be tourism attractions where visitors can interact with the ecosystem as part of their experience. Experiential elements can be centred around restoration of coral reefs and other ecosystems, with visitors paying to participate in the regeneration of marine and coastal ecosystems, and resorts offering the whole restoration experience, from the nursery on the resort grounds to the release of plants and animals in the wild. Seagrass beds, wetlands and oyster reefs can accumulate soil, reduce coastal erosion, capture carbon and be tourist attractions in addition to the traditional sandy beaches.

Regenerative coastal destinations are guided by mindsets where growth is not the main objective. Regenerative tourism must embrace the development of new tourism products, such as snorkelling in restored seagrass flats or voluntourism tours seeding coral colonies in promising sites. These restored ecosystems will also be the source of food and other products for new and renewed industries and traditional livelihoods. Regenerative destinations consider wastewater as a resource rather than a hazardous waste and implement treatment processes to harvest valuable components from wastewater, such as biofuels.[q] Acknowledging the true costs of water supply provision shows that there are large potential savings in reusing wastewater for non-drinking uses rather than treating it to drinking standards.[r] Similarly, the volume of municipal solid waste can be reduced by scaling up the local composting of organic waste, recycling[s] and development of biodegradable product packaging options.[t] Thus, regenerative destinations will be much closer to achieving a circular economy.[u]

Leaders in a regenerative destination are less concerned with the rate of growth of their destination's gross domestic product or tourist arrivals and more concerned with residents' wellbeing and ensuring that acceptable limits for each destination are not exceeded. They foster innovation in tourism products by ensuring that the destination's youth have access to education so that they may be the innovators of the future. Regeneration in nature is only possible through the duplication of information contained in

DNA. Cultural heritage, the blueprint of humanity, must also play a key role in regeneration of human communities. Thus, leaders of regenerative destinations understand that the future of the destination requires preserving the old ways of knowing so that they can inform the development of new ways of knowing.

Regenerative coastal destinations will rely heavily on the ingenuity of their residents and tourism operators. Unleashing ingenuity requires lowering the cost of failure, supporting local solutions with local knowledge and broadening access to opportunity. Building regenerative destinations will require new skills that leverage scientific and local knowledge, so education curricula that integrate heritage, science, innovation and entrepreneurship will be paramount. Governments have an opportunity to support innovation through incentives that soften the blow of failed business ideas and that rapidly and painlessly recycle the remains of failed businesses into the seeds of new ones. But entrepreneurship and individual innovation alone cannot build a regenerative destination. Inevitably, transformation to a regenerative destination will require the power of collective action. Adequate governance institutions and financial mechanisms can be developed to balance high costs in the short term with benefits that occur farther into the future than in our current planning horizons.

To become regenerative and resilient, destinations will need to overcome the sustainability challenges of the 20th century because they will face the challenges of a new era with different socio-economic and environmental drivers of change. Rather than wait for a 'silver-bullet' solution, these destinations recognise that regeneration requires an 'all-hands-on-deck' approach, where the scaling up of gradual changes can bring about major shifts towards sustainability, slowly but surely changing mindsets and behaviour.

Sources: a. Sweet et al. 2022; b. UN 2019; c. Habel et al. 2020; Wang et al. 2018; Hinkel et al. 2014; Khan et al. 2011; d. Hauer et al. 2020; McMichael et al. 2020; Robinson et al. 2020; e. GCRMN 2020; f. Hoegh-Guldberg et al. 2017; g. Gobler 2020; Baker-Austin et al. 2017; Bijma et al. 2013; h. Maúre et al. 2021; i. Bellwood et al. 2004; Orth et al. 2006; j. Abram et al. 2019; k. Roth et al. 2020; l. Muller et al. 2020; m. Walton et al. 2018; n. Parsons 2020; o. Moritsch et al. 2021; p. Greiner et al. 2013; q. Villarin and Merel 2020; Puyol et al. 2017; r. Adewumi et al. 2010; s. Kumar 2011; Farrell and Jones 2009; t. Degli-Innocenti 2021; Song et al. 2009; u. Korhonen et al. 2018.


NORWEGIAN BLISS

3. The Future of Tourism: Understanding Future Trends and Forecasts

To better understand the future of coastal and marine tourism, this section identifies a number of specific trends that serve to disrupt and reconfigure tourism, with the COVID-19 pandemic a singular catalyst for change. Many trends were in progress before the pandemic, but the sheer scale, depth and global reach of the pandemic is such that the future remains uncertain for tourism in many parts of the world. In addition to anticipated post-pandemic recovery, the ongoing threat of climate change and the historical mismanagement of tourism (i.e. overtourism), this section introduces the existential threat of rapid population growth and the implications for achieving more sustainable, regenerative and resilient forms of tourism.

3.1. Shifting Demand and Preferences

Although future projections for the post-pandemic recovery of tourism are widespread, future shifts in demand remain unknown and inherently uncertain, with the situation clearly worsened by the war in Ukraine in 2022 and the consequent disruptions to global trade and travel. There is little doubt that as an industry, travel was both a contributor to the spread of the pandemic and a major recipient of its negative impacts, with the financial and human loss attributed to severe travel restrictions and lockdowns bringing the entire industry to a standstill. With numerous varying, and often localised, lockdowns, mask mandates, travel restrictions, quarantines and mandatory testing, travel remains complicated with recovery highly volatile (Gössling and Schweiggart 2022). The county-by-county, region-by-region, state-by-state and/or province-by-province approach to recovery from the pandemic is understandable but has enforced a similar piecemeal approach to the recovery of tourism. Where recovery has been swift in some cases, the extent to which the industry is returning to a state of so-called normality is highly debated. For example, the increase in airfares as the industry reopens after a long dormant period and its embarkation on a decarbonisation pathway are both likely to significantly impact future travel trends, most notably long-haul travel trends.

The means by which the market assesses future travel risk is likely to be key to the speed and sustainability of the recovery (Wilson et al. 2020). In addition to traditional forms of health-based risk, psychological and social aspects of risk are now prevalent with travel 'shaming' not uncommon in the context of self-image or the very act of travelling in a time of uncertainty impacting social standing and reputation (see Adam 2015; Wang 2017; Flaherty and Holmes 2020; Zaman et al. 2021). In the future, tourists are likely to consider their own personal levels of acceptable risk and levels of immunity when deciding where to travel as well as the form of preferred transportation, accommodation, activities and provision of health care. Travel routes may also be impacted as transit hubs for international travel create an additional layer of complexity in the context of COVID-19 requirements.

Consistent with many previous crises and disasters, the recovery of tourism tends to follow a domestic-first and international-second pattern, with those destinations unable to benefit from a large local or domestic market at a clear disadvantage. This has certainly been true throughout the pandemic, with the 'bit-part' post-pandemic recovery likely to also favour more localised travel until the market comes to terms with the 'new normal' (Shin et al. 2022). As a destination traditionally reliant on long-haul international tourists, New Zealand is being supported by the national government's $400 million Tourism Recovery Fund to initiate more localised and more sustainable forms of tourism for the domestic tourist (OECD 2020), increasing opportunities to foster 'staycations', visit friends and relatives and enjoy the natural environment. All such forms of tourism should be considered as positive for coastal tourism which, in addition to accounting for roughly half of all international tourism, represents a significant percentage of domestic travel (Section 2).

As a result of quarantines, lockdowns and travel restrictions, the options of would-be tourists were heavily curtailed. Yet although many commercial attractions and entertainment venues had to shut their doors during the pandemic, outdoor recreation areas such as urban and rural parks and protected areas experienced high visitation because they allowed for social distancing protocols without interfering with the tourism experience. In many national parks in the United States, visitation numbers in 2020 were similar to those in 2019, with some parks reporting higher visitation over certain months in 2020 than in prior years (Kupfer et al. 2021). The availability of nature-based tourism during the pandemic, when many other tourism products were shuttered, is likely to have exposed many tourists to this segment for the first time. There are expectations that demand will remain high for nature-based tourism and, in particular, domestic nature-based tourism. This could add new levels of pressure for these ecosystems not accustomed to such high visitation rates.

3.2 Labour

Gössling and Schweiggart (2022) highlight several multi-faceted challenges for the industry in their review of the COVID-19 response to date. All sectors within the wider industry, namely airlines, accommodation, intermediaries and so forth, have experienced significant financial and job losses, bankruptcies and liquidations and a depletion of human capital stock that is anticipated to have longer-term implications as the labour force seeks more stable, less vulnerable forms of employment. The increase in salaries and benefits across the industry, most notably in the United States, to attract and retain labour is a much-needed response but one that is hindered by the psychological impact of people returning to work only to find frustrated, and increasingly impatient and rude, customers (Afaq et al. 2021; Sin et al. 2021).

Common across much of the industry is the need for greater levels of product diversification to accommodate the rapidly changing needs of the market, alternative means to accommodate a reduced and more expensive labour force and new approaches to marketing that cut through the noise of the external environment. This is especially so for business-related travel which has been particularly impacted by the surge of new technologies such as video conferencing platforms that accommodate virtual meetings to the detriment of face-to-face meetings and engagements. One unexpected positive outcome of COVID-19, however, is the extent to which these new virtual platforms have served as a catalyst for new forms of 'residential tourism' whereby extended visas are made available for those wishing to work remotely in places as diverse as Barbados, Costa Rica and Dubai. Projections for the future of work suggest that those locations that can remain ahead of the curve with the faster adoption of new technologies, including automation and artificial intelligence, a robust and secure digital infrastructure and a health care environment to support a remote-come-agile-hybrid workforce will represent the resilient communities of tomorrow (Lund et al. 2021).

3.3 Population Growth and Dispersion

One of the less critiqued challenges facing coastal and marine tourism, and the world generally, is that of population growth and the increasing urbanisation of the global population.

With the global population set to reach 9.9 billion in 2050, those areas experiencing unprecedented growth are primarily in sub-Saharan Africa and parts of Asia. In Asia, the already huge population of India is set to grow by 19 percent, Pakistan by 57 percent, Indonesia by 21 percent, the Philippines by 45 percent, Vietnam by 13 percent and Malaysia by 25 percent. In Africa, the population of Nigeria, already the most populous country in Western Africa, is projected to grow by 95 percent by 2050. Other ocean-based economies recording similar growth levels include Egypt (57 percent) with countries in Central America, such as Guatemala (53 percent), Nicaragua (29 percent), Costa Rica (20 percent), Honduras (28 percent) and Belize (50 percent), all anticipating significant growth between 2020 and 2050 (PRB n.d.). Tourism is already a significant economic activity for most of these countries. With such large increases in population, pressure will be forthcoming for governments to find suitable economic activity with less sustainable forms of tourism potentially serving as a short-term 'quick fix' when, in reality, serving as an unsustainable 'race to the bottom'.

This continued growth in population is significant for the future of coastal and marine tourism because it portends unsustainable levels of future demand. The coastal location of so many megacities is also significant because higher populations will put increasing demands on the natural resource base and will heighten resource competition between tourism and other industries (i.e. residential property, port infrastructure and commercial fishing) and between travellers and the local resident populations.

Arguably, population growth is not the problem. However, this growth is in areas exposed to flooding, with up to 60 countries anticipated as being heavily impacted by floods and severe weather by 2030 (Tellman et al. 2021). Along with 65 percent of the world's cities with populations above 2.5 million located on the coast (NOAA 2009), low-lying coastal cities are home to 10 percent

of the world's population and rising sea levels are an existential threat to their future existence (CIESIN 2019). The link between population growth and climate change represents an inescapable reality for much of the world, with severe implications for the future of tourism. Rising sea levels and the increasing threat of storms, hurricanes and typhoons will increasingly add to the existential threat of climate-driven population migration, thus causing serious population displacement in many coastal locations, including many that prosper from tourism.

3.4 Climate Change

In contrast to the fast pace of change caused by the COVID-19 pandemic, climate change represents a slow-moving but accelerating threat. This vast difference in perceived urgency is at least partially responsible for the reluctant response from many across the tourism industry to respond to climate change despite impacts being experienced in many coastal tourism locations.

Coastal and marine tourism is receiving greater international attention and pressure to reduce its emissions. According to the latest UNWTO and International Transport Forum research, tourism CO_2 emissions grew at least 60 percent from 2005 to 2016, with transport-related CO_2 causing 5 percent of global emissions in 2016 (UNWTO and ITF 2019).

In the 2014 report by the Intergovernmental Panel on Climate Change (IPCC), it was clearly mentioned that 'GHG emissions triggered by tourism significantly contribute to global anthropogenic CO_2 emissions' (IPCC 2014). Tourism contributed between 8 percent and 11 percent of global GHG emissions (WTTC 2021b) in 2013. Globally, around 49 percent of tourism-related emissions are generated by transport and just over 6 percent by accommodation (WTTC 2021b). A minority of long-distance frequent travellers by plane are responsible for the greater share of these emissions (Gössling and Humpe 2022).

The clear message coming from IPCC (2018, 2022) is for immediate actions to avoid future lock-in of high-carbon infrastructure as a necessary condition for achieving net-zero CO_2 emissions pledges. Systemic changes are becoming necessary to deliver successful climate mitigation, including net-zero pledges. Such systemic changes have the potential to disrupt existing arrangements and routines in the tourism industry (Becken 2019).

At the UN Climate Change Conference (COP26) in Glasgow, the UN Environment Programme (UNEP) and WTTC launched *A Net Zero Roadmap for Travel and Tourism* to support the tourism industry in reaching net zero by 2050 (One Planet Network 2021). The roadmap requires all signatories to deliver climate action plans which include a strong focus on regeneration to safeguard biodiversity, food security and water supply and to ensure the sector can support affected and at-risk communities in resilience building, adaptation and disaster response (One Planet Network 2021).

As awareness of carbon emissions associated with travel has increased, phenomena such as 'flight shame' and 'eco-guilt' have become a driver of changes in tourist preferences and social norms around air travel and tourism more generally (Mkono and Hughes 2020; Doran et al. 2021; Bahja et al. 2022). For example, recent survey research conducted before the COVID-19 pandemic in Germany indicates that there is broad support among potential travellers (roughly two-thirds of respondents) for market-based measures increasing the cost of flying as well as policies forcing airlines to reduce emissions and legislation abolishing subsidies (Gössling et al. 2020).

The online booking services Skyscanner and Google, for example, are the first two in a coalition of six major travel brands to collect and display flight emissions data at the point of booking (O'Neill 2021). Providing impact data in a standardised, consistent way will make it easier for consumers to make purchase decisions that limit their GHG emissions for flying. It is expected that hotels will be next, offering consumers a full picture of their GHG emissions for their entire trip. Projecting the future demand for coastal tourism is complex, but there is a growing consensus that increasing temperatures in mid-latitude countries, and an increasing propensity for storms in tropical areas, will result in the redirection of tourists towards SIDS and developing countries in tropical coastal regions. Box 4 looks at tourist preferences in Florida, United States.

From a benefit-cost perspective, as the seas continue rising, and the storms become more frequent and intense (and costly/dangerous), there will be a point when abandoning assets in what we know as the coastline, or the area where storm surge flooding can occur, will be the cheapest, most sensible option. In other words, as sea level rises, it becomes more costly to protect these assets with human-made infrastructure such as levees or seawalls (and risk management tools such as government-backed insurance). At some point, these costs will exceed the benefits society receives from keeping these assets in place (Alvarez and Huang 2021).

3.5 Biodiversity

Due to the confluence of population growth, urbanisation and development, coastal ecosystems have experienced some of the heaviest pressure for conversion of land use, including uses of submerged lands. Approximately one half of the planet's vegetated coastal habitats (e.g. mangrove forests, seagrass meadows, tidal marshes) have disappeared due to anthropogenic activities. The main drivers of loss include direct impacts such as dredging, harvesting, filling, dyking and draining as well as indirect impacts via climate change, such as sea level rise and extreme weather events (Macreadie et

Box 4. Tourist Responses to Climate Change: The Case of Florida, United States

With well over 100 million tourists each year, Florida is one of the world's most visited destinations; it is also one of the most vulnerable when it comes to climate change and sea level rise.[a] The impacts of climate change in Florida include flooding, saltwater intrusion, inundation of low-lying lands and erosion of beaches and barrier islands,[b] and three of the state's four major cities—Jacksonville, Miami and Tampa—are at risk of severe flooding from sea level rise.[c]

To counter this existential threat, numerous adaptation strategies are being implemented at the local level. However, high-cost climate-friendly infrastructure will not suffice in isolation. There is a need for climate change to be addressed at much wider state and federal levels. Rather than focus on the supply side of industry and government, Atzori et al.[d] examined the attitudes of tourists themselves as to what they perceived as viable adaptation options and how such options would impact their future travel patterns and propensity to visit Florida. In their survey of 432 respondents who had previously visited a beach/coastal destination in Florida, Atzori et al.[e] identified that, as expected, the bulk of visitation was leisure oriented, with Florida's beaches and coastlines providing the core vacation experience, with snorkelling, diving, jet skiing, fishing and the observation of wildlife key activities. Ample sunshine, sand quality, climate, beach size and comfortable water and air temperatures were the primary attractions, with a mean 27.78°C the perceived ideal temperature for a Florida vacation. With regard to visit intentions in response to climate change impacts, those serving as major catalysts for change include the outbreak of tropical diseases (remembering that this study was conducted pre-COVID-19), the disappearance of beaches, frequent flooding of streets, vanishing wildlife and greater intensity of storms throughout the year. When asked their preferences for climate adaptation measures, the most favoured option was reduced prices, not exactly a climate-friendly adaptation. Respondents also supported the creation of more climate-friendly marine protected areas and the preservation of Florida's wetlands. Beach nourishment strategies were considered to be most valid in the preservation of Florida's tourist appeal.

Interestingly, although attributing lower levels of importance to biodiversity attractions, more than 40 percent of those surveyed stated that they would visit an alternative destination if damage were severe, especially to coral reefs and marine wildlife. This incongruous outcome is explained by the average beach tourist wishing to enjoy the comforts and pleasures of Florida's coastline and at the same time acknowledging the significance and integral role played by marine wildlife and coastal habit in their overall visit experience, contributing greatly to the longer-term preservation of the coast as an appealing destination. This case highlights that where mass tourism exists, such as in most of Florida, tourists may not overtly identify sustainable forms of tourism as integral to their visit experience. They do acknowledge, however, that without a healthy and thriving natural environment and supporting ecosystems, their 'mass tourism' experience is less enjoyable and likely to instigate a change in behaviour. As identified by Becken and Hay,[f] among others, despite so much focus on what governments and industry can do to achieve sustainability, it is mostly the tourists themselves, more than any other stakeholder, who demonstrate the greatest capacity to adapt to the impacts of climate change and serve as a viable agent of change.

Sources: a. Noss 2011; b. Harrington and Walton 2008; c. Hauer et al. 2016; d, e. Atzori et al. 2018; f. Becken and Hay 2012.

al. 2017). Islands constitute an economic, social, cultural and strategic heritage that supports 20 percent of the global biodiversity (CBD n.d.).

There is a feedback loop between climate change and biodiversity loss in the ocean, as the expected biophysical changes in the ocean due to a warming and anoxia will exceed the survival limits of many known species, especially in high-latitude regions (Penn and Deutsch 2022). At the same time, the productivity and stability of all ecosystems are also supported by biodiversity (Worm et al. 2006), so the carbon stored in ecosystems (as biomass and soil carbon) is at risk of being released into the atmosphere because of a decline in biodiversity.

Coastal and marine tourism is highly dependent on the health of coastal and marine ecosystems. Biodiversity decline puts the economic viability of most coastal and marine destinations directly at risk. If past mass extinctions are used as a guide to calculate the rate at which normal evolutionary diversification processes could restore levels of biodiversity and ecosystem services, the wait is likely to be millions, or even tens of millions, of years (Ceballos and Ehrlich 2018).

3.6 The Changing Impact of Technology

Technology and technological change represent key drivers of change for all forms of tourism, with both playing a critical enabling role in enhancing levels of tourism sustainability. Although research on the actual measurement of sustainability across tourism remains sparse, the omnipresence of social networks has catapulted the role of user-generated content as a major source of information for big data. Texts in tweets and geotagged Instagram photos as well as traffic cameras, sensors and lasers all contribute to big data analytics with a small number of cities now adopting such techniques to obtain vital information for the measurement of sustainability (Perez Guilarte and Barreiro Quintáns 2019). Improved understanding of booking and travel patterns, including travel intensity and seasonality and the consequent impact on travel flows, contributes to the more effective and sustainable management of the tourist destination and helps overcome what, before the pandemic, was the ultimate challenge of excess demand, that of overtourism.

Technological advances in remote, aerial and terrestrial sensors are also being used to gather highly specific data on aquatic and terrestrial ecosystems and the interaction of humans with them, be they residents and/or tourists (Gale et al. 2017). Most valuable, perhaps, is the increasing use of longitudinal data from mobile devices which provides those responsible for limiting negative impacts of tourism the necessary real-time information to adjust travel flows, interactions with the natural environment and wildlife, energy use, carbon emissions, transportation services and the overall spatial aggregation of tourists (Kubo et al. 2020). The latter can also benefit from geotagging, with tourist photos on social media networks providing a rich information source. To date, however, although smart technologies and the use of technology generally is widely adopted in the management of cities, their use in so-called smart destinations is less evident with the transient nature of tourists providing a formidable challenge as compared to more permanent resident communities where sustainability initiatives often benefit from more established political support (Panse et al. 2021; Sorokina et al. 2022).

Technology is also of great importance for the management of land-use planning for tourism, which has long guided the allocation of city and rural resources for development, which can be tracked and guided by global information system (GIS) technology. GIS-driven master plans can measure and monitor the social, environmental and economic impacts of tourism, starting with baseline data that are updated regularly to yield actionable data on a wide range of questions—including where short-term rental facilities known as Airbnb are located and how sea level rise driven by climate change will impact commercial tourism development in the near and long term—and track socio-cultural sentiments around existing tourism facilities, plazas or other crowded locations. Such dynamic planning tools put the process into the hands of local residents, who traditionally have been called to public meetings but can now refer to data and maps online and view how tourism impacts change over time. Local authorities have lacked visualised planning on tourism growth and can undertake such planning with open-source GIS maps, known as Geodesign, which can be manipulated in real time as stakeholders discuss options for their destinations and see how their neighbourhoods and public spaces will be affected over time (Epler Wood et al 2019).

Technological advances in virtual and artificial reality are making it increasingly possible to live personalised experiences with greater added value that avoid mass tourism and reduce the impact of infrastructure on sensitive coastal and marine sites. There are already many opportunities to visit coastal and marine tourist spots virtually. Many of these experiences were catalysed as a result of the pandemic and travel restrictions. These include *David Attenborough's Great Barrier Reef*, which is an interactive experience that takes virtual travellers throughout thousands of kilometres of Australia's coastline. National Geographic unveiled a series of 360-degree videos that enable viewers to swim with leopard seals in Antarctica and watch sea turtles nest in Costa Rica.

Despite digitisation offering a potential solution for some highly sensitive areas, coastal- and nature-based areas are not always well covered by bandwidth. Tourists and suppliers may be disadvantaged if they lack sufficient digital infrastructure. The World Economic Forum measured information and communication technology (ICT) readiness as part of its travel and tourism competitiveness report (WEF 2017). In total, Asia and the Pacific scored 4.8 out of 7 points, with the top score of 6.6 received by Hong Kong. Countries with low ICT readiness scores include Pakistan (3), Bangladesh (3.3) and Laos (3.3). South Asia received a 3.5 average, which is well below the global average of 4.6. Innovative technologies are required to bring the benefits of technology and digitisation to more remote areas, particularly SIDS. Careful attention must be paid to the benefits of such approaches to avoid rehashing the experience of leakage but in digital form. Although technological advances could contribute to tourism resilience and increased sustainability, they should be propelled by proper technological infrastructure investment, strong data governance and robust data integration to policy.

4. Examples of Sustainable, Regenerative and Resilient Coastal and Marine Tourism

Many destinations and individual industry actors are already innovating and leading the way on sustainability. This section profiles leading examples and case studies of efforts across three key pillars of sustainability: reducing the negative impacts of tourism, reinvesting in and regenerating ecosystems, local markets and communities and building the resilience of the sector. Where it exists in the literature, cost benefit ratios and economic data are included for key interventions within each pillar of action.

To deliver on the outcome articulated by the Ocean Panel, this report proposes action across three pillars to support the transformation of the coastal and marine tourism sector by 2030:

1. **Reduce** the negative impacts of tourism on the environment, economy and community.
2. Reinvest in and **regenerate** ecosystems, local markets and communities.
3. Build **resilience** to future threats and future shocks and crises.

These pillars are not mutually exclusive; instead, they are interconnected and complementary elements of sustainable coastal and marine tourism as defined and outlined in Section 2 of this report.

This section explores key shifts within each pillar and examples of destination-wide or industry-led action within each. These examples are not exhaustive and are aimed at providing inspiration for a more sustainable coastal and marine tourism sector. Where possible, we identify relevant cost-benefit ratios for interventions based on the results of the SLR.

4.1 Reduce the Negative Impacts of Tourism on the Environment, Economy and Community

As a starting point for sustainability, there is a need to reduce the negative impacts of tourism on the local environment (e.g. pollution; unsustainable use of natural resources such as land, water and energy) and the cultural heritage of local populations (e.g. degradation of historic sites, dilution of culture).

This section explores examples of the following:

- Reducing GHG emissions and energy and water usage, including impacts from air, sea and ground travel to and from destinations
- Improving energy efficiency and reducing water consumption, including by shifting tourist behaviours
- Reducing pollution in coastal and marine areas, including solid waste, wastewater, runoff and plastics
- Minimising harmful impacts of high-use areas through development planning and coastal zone

management, including limits on high-occupancy tourism and resort sprawl in ecologically or culturally sensitive locations

- Minimising economic leakage by incentivising local business and employment opportunities
- Establishing and/or enforcing guidelines for use and behaviour to safeguard the tangible and intangible cultural heritage of local communities, including interpretive and informative signage, use of local guides and operators and limiting numbers of tourists at sensitive sites

4.1.1 Reduce GHG emissions

Immediate actions are required to avoid future lock-in of high-carbon infrastructure and sectors, such as tourism (IPCC 2018, 2022). As discussed previously, tourism constitutes a large share of global GHG emissions. Research by Scott et al. (2015) compared the potential costs associated with reducing emissions by the tourism sector by 50 percent by 2035 and by 70 percent by 2050. The cost of reaching the 50 percent target through strategic reduction and offsetting, although significant, represents less than 0.1 percent of the estimated global tourism economy in 2020 and 3.6 percent in 2050. Distributed equally among all tourists (international and domestic), the cost of making tourism a low-carbon sector is estimated at $11 per trip, equivalent to many of today's travel taxes or fees (Scott et al. 2015). Such a charge could be levied as an entry fee and promoted as the cost of offsetting the emissions associated with travel or as reflecting the costs of conservation or pollution-reduction measures at the destination.

A university-based sample study done by Amenta and Sanguinetti (2020) on the potential of promoting lower-emissions air travel by displaying related emissions information has received an 'impressive rate' of willingness to pay for flights with lower emissions, around $200 per ton of CO_2e saved. Their result coincides with findings from a past study with a non-university-based sample. Moreover, the study also found that there is a potential reduction in both carbon emissions and cost of institutional or corporate travel booking when booking platforms display emissions information prominently, leading the researchers to conclude that the 'nudge' of emissions display on booking platforms might lead to positive changes in institutions and the aviation industry (Amenta and Sanguinetti 2020). In the last quarter of 2021, Google added carbon emissions estimates to its flight search tool, including emissions for specific items in itineraries, such as seating selection, an improved metric from just being able to filter for lower average emissions which has been around for years (O'Neill 2021).

Palau, an island destination in the Pacific Ocean, is moving towards becoming carbon neutral. Led by the Palau Bureau of Tourism, Sustainable Travel International and Slow Food, the initiative focuses on the promotion of local food production to reduce food imports and their associated GHGs as well as the development of an online tourist carbon management programme where tourists can make carbon-offset contributions into blue carbon investments such as mangrove restoration. The programme is valued at $1 million annually (Palau Government 2020).

4.1.2 Improve energy efficiency and reduce water consumption

Reducing energy and water consumption can save money and increase profits while also being low-hanging fruit for destinations seeking to improve their sustainability. Initiatives to reduce resource consumption do not have to involve expensive upgrades or retrofits (Warren and Becken 2017). Changing standard operating procedures, providing training and creating awareness for all stakeholders (including guests) can achieve substantial savings (Warren et al. 2016). Dusit Hotel in Bangkok, for example, saved an annual 5.4 million litres of water (about $2,900) by changing its laundry process (Griffith University 2014). In Malaysia, the Marriott International hotel group's sheet and towel reuse programme led to savings of 11–17 percent of hot water (Kasimu et al. 2012), suggesting that a linen and towel reuse programme can help a 100-room facility with 75 percent occupancy save about $25,000 per year. According to the American Hotel and Lodging Association, simply offering guests the possibility of not washing towels and sheets every day reduces water, sewage, energy and labour costs by 17 percent and also increases the life span of towels and bed linens, thus reducing replacement costs. After installing a more efficient laundry facility, a hotel in Las Vegas (United States) saved between $135,000 and $218,000 per year on water heating (Nuwer 2014).

Other research suggests that the use of energy-saving heat pumps for hotel outdoor swimming pools generates a rate of return on investment of more than 50 percent (see the Hong Kong example in Chan and Lam [2003]). Research also suggests that increasing water and sewerage rates to be commensurate with environmental costs can lead to considerable savings for hotels in the amount of water used and wastewater generated (Chan et al. 2009). In one area of energy end use (lighting), the U.S. Environmental Protection Agency has found that for every $1.00 a hotel invests in energy-efficient improvements, it can expect a $6.27 benefit (Bohdanowicz et al. 2001).

These and other cost-saving measures associated with reduced impact on local resources are clear examples of opportunities for establishments or the public sector to invest in sustainability and earn positive rates of return (see Box 5). In cases where budgets are insufficient to cover start-up costs, innovative financing mechanisms such as blue or green bonds that rely on external investors can fill the gap (see Section 5).

4.1.3 Reduce pollution in coastal and marine areas

Pollution from solid waste and wastewater in coastal waters and the ocean has significant impacts on ecosystem function, human health and wellbeing and economic value. A study from the Langkawi Islands in Malaysia estimates that tourists generate almost twice the amount of solid waste per capita compared with locals (Shamshiry et al. 2011). In the Mediterranean, tourists have been responsible for a 40 percent increase in marine litter entering the Mediterranean Sea every summer, 95 percent of which is plastic (WWF-UK 2018).

Coastal and marine pollution can negatively affect destination image and tourist satisfaction and have severe impacts on the economic returns from tourism. For example, Fanshawe and Everard (2002) find that the accumulation of marine litter depressed tourism in western Sweden by between 1 percent and 5 percent, resulting in annual losses of approximately $22.5 million. In the United Kingdom, the annual costs of marine litter to the tourism sector range from $2.27 million (£1.5 million) to $626 million (£499 million; Van der Meulen et al.

Box 5. Reducing the Impact on Tranquilo Bay, Panama

Tranquilo Bay Eco Adventure Lodge is a hotel that focuses on nature tours, especially birding, set in the Panama jungle. Only 3.24 out of 80.9 hectares of land owned by the lodge has been developed, and 32.37 hectares are actively protected.[a] To manage its social and environmental impacts, Tranquilo Bay monitors its footprint using a comprehensive metric that includes wildlife, environmental practices, construction materials, fossil fuel use, community involvement and education. Sustainable practices include ensuring locally sourced food, including harvests from its own garden; reusable containers for guest lunches during excursions; and renewable or recyclable materials used for buildings. The lodge limits chemical use and has management strategies for responsible water use, water conservation and waste. Fossil fuel use is limited such that transportation to and from Isla Colón is available only on certain days. The mangroves around the property sequester three times the carbon emitted by the lodge. Employees also boatpool to work to reduce emissions.

Tranquilo Bay has committed itself to ensuring local prosperity. In 2019, 94 percent of its employees were local provincial residents, and under-represented groups compose 78 percent of the workforce and 50 percent of the management team. The local economy (within 100 kilometres of the lodge) retains 84 percent of the lodge's spending. By training employees for promotion to higher positions, the lodge builds local capacity.

The ecolodge works together with the Salt Creek Indigenous community in the creation of a reserve next to the Bastimentos National Marine Park, which will enhance tree protection, ensuring shelter for the Indigenous population in the forest. The lodge also supports national environmental initiatives by volunteering to be '*vigilantes de Bastimentos*', or 'supply guards', to enforce environmental protection laws and provide transportation for government agency inspection trips.

Source: a. Regenerative Travel n.d.e.

2014). On Goeje Island (Republic of Korea), marine litter resulted in a loss of over 560,000 tourists and up to $37 million in tourism revenues (Jang et al. 2014).

Numerous studies show that tourists prefer and are willing to pay for beaches and coastal areas that are free of litter and are less willing to return to polluted beaches (Ballance et al. 2000; Blakemore and Williams 2008; Beharry-Borg and Scarpa 2010; Birdir et al. 2013; Loomis and Santiago 2013; Schuhmann et al. 2016). A study for two Brazilian subtropical beaches found that 15 litter items per square metre would reduce local tourism income by 39.1 percent and deter 85 percent of users, causing up to $8.5 million in local losses (Krelling et al. 2017).

The impacts of marine debris extend beyond tourism to the broader marine economy. In the 21 economies of the Asia Pacific Rim, marine litter is estimated to cost marine industries $1.26 billion per year, with the cost to the tourism sector estimated at approximately $622 million per year (McIlgorm et al. 2008). Given the heavy reliance on tourist satisfaction and the cleanliness of the coastal and marine environment, upstream and downstream measures to reduce marine litter can be expected to generate positive economic returns. For example, across the North Pacific, the physical recovery and reuse of marine plastics for generating oil (pyrolysis), electricity (waste to energy) or new plastics (recycling) has been shown to provide social benefits[1] that are twice as large as social costs, implying that these measures are economically viable at the public scale (King 2018). Beach clean-up programmes also have been shown to generate favourable benefit-cost ratios. For example, in four study areas in the United States (Alabama; Delaware and Maryland; Ohio; and Orange County, California), the removal of beach debris is estimated to contribute $27.8–$206 million in economic value added, and the doubling of the debris would cost the local economies between $96.3 million and $304.5 million (NOAA 2019).

It is important to note that the costs of cleaning up marine litter can pose a burden on local budgets. Given that tourists contribute to coastal litter and benefit from its removal, taxes applied to the tourism sector and other recreational users of coastal areas are efficient and logical sources of funding for waste collection and treatment (UNEP 2017). In the long term, destinations should investigate alternative ways to reduce litter, such as extended producer responsibility or product substitution. Tourists can also be enlisted to contribute to physical clean-up efforts on coastlines through voluntourism initiatives, creating significant cost savings for destinations. Volunteer participation in two of the United Kingdom's largest clean-up schemes, Marine Conservation Society Beachwatch and Keep Scotland Beautiful National Spring Clean, produced economic value of approximately $173,500 (€131,000; UNEP 2017).

More broadly, contingent upon the availability of materials processing facilities and local markets for recycled products, recycling and solid waste management programmes adopted by private sector establishments can generate savings that exceed costs over a relatively short time horizon, potentially generating a net return with a benefit-cost ratio of 6:1.

Taxes and other restrictions on single-use plastics represent relatively strict policies for waste reduction, but they can also generate positive benefit-cost ratios (McIlgorm et al. 2008). Over 30 countries have introduced taxes or fees on plastics, and over 30 have introduced bans on single-use bags or bags with certain properties. Initiatives in the private sector include a commitment by the Accor hotel group to abolish the use of single-use plastics by 2022 in its 5,000 hotels in 21 countries (Accor 2020). Overall, these measures have significantly reduced plastic waste at relatively low cost to individual consumers (Newman et al. 2015).

The impact of sewage on coral reefs is even more serious than litter and waste, especially on fringing reefs (see Box 6 for a discussion of how Roatán Island and the Mesoamerican Reef have combatted this problem). A study in Thailand's Mu Koh Surin National Park found that sewage discharge and land-use change related to tourism activities lead to water quality degradation (increased inorganic nutrients and turbidity levels), resulting in substantial ecological changes in the form of reduced hard coral cover, among other effects (Reopanichkul et al. 2009). A similar conclusion was reached by Wear and Thurber (2015): they conducted a review that presents evidence that sewage discharges occur in the waters surrounding at least 104 of the 112 reef geographies (being especially widespread in the tropics), concluding that, although few published studies have examined the impact of sewage on the ground, those that have done so suggest negative effects on coral reefs.

Box 6. Wastewater Treatment, Water Quality and Tourism in Roatán Island, Honduras, and the Mesoamerican Reef

Roatán is the largest of the Bay Islands in Honduras, located about 65 kilometres off the Caribbean coast. Roatán's coral reefs are part of the Mesoamerican Reef—the largest barrier reef system in the Atlantic—and are protected through the Bay Islands National Marine Park. For much of its history, Roatán was a relatively unknown tourist destination with a small population and an economy based mostly on fishing. A tourism boom began in the mid-1990s, and the number of visitors has risen steadily from about 900 in 1970 to 1.5 million in 2020, of which nearly 1.4 million were cruise passengers.[a]

During the tourism boom, Roatán developed rapidly. An analysis of Landsat data from the U.S. National Aeronautics and Space Administration shows that the 'built area' on Roatán quadrupled between 1985 and 2014.[b] This boom has placed intense pressure on the local environment, not least of which the increase in sewerage and lack of a wastewater treatment plant (WWTP). Untreated sewage, including sediment, nutrient and biological pollutants, has a significant impact on the health of coral reefs by shielding sunlight, promoting the growth of macro-algal cover and increasing the incidence of coral diseases, jeopardising the economic viability of destinations such as Roatán which rely on attracting visitors for coastal and marine recreation.

As a result of a collaborative, community-based process, the West End WWTP was built in 2011. The plant, run by a local water board, provides secondary treatment to 98 percent of accessible homes and businesses in the West End, reducing the amount of raw sewage discharged into the environment by 133.2 million litres per year. This has resulted in a greater than 95 percent reduction in fecal bacteria and achieved compliance for nearshore water quality (WQ) standards for enterococci.[c] Beginning in 2017, the public beach in the West End (Half Moon Bay) began to consistently meet U.S. Environmental Protection Agency safe swimming standards for *Enterococcus*, a first for any populated beach in Honduras. The beach has now obtained an Ecological Blue Flag certification, an acknowledgement by the Honduran Ministry of Tourism and the Costa Rican Tourism Board that validates it as a beach with safe water for tourists.

Monitoring of WQ is a vital complement to treatment, allowing evaluation of progress and comparison to standards and facilitating decision-making to protect human and environmental health. Financial sustainability is also essential. Costs include both hard (built) infrastructure and soft expenses (governance, operation, maintenance and WQ monitoring), with the latter often presenting the most significant obstacle. Construction of the West End WWTP in 2011 cost approximately US$1.5 million, and maintenance and operation has cost roughly $3.5 million since 2012. Operating costs of Roatán's WWTP are mitigated through the use of 62 solar panels that reduce daytime energy consumption by 80 percent. The installation of water metres and pay-per-use fees generate revenue and incentivise lower use.

The West End example is a success story and is now being used as a basis for replication in other locations on Roatán. Based on the success in West End, the Honduran government allocated $1.5 million to support construction of the West Bay WWTP, and the land for the plant was donated by the West Bay Hotel Association, with advocacy and technical assistance provided by local non-profits such as the Healthy Reefs Initiative, Coral Reef Alliance and the Bay Islands Conservation Association Roatán. These success stories in Honduras can serve as a model for work in other locations in the Mesoamerican Reef and beyond. Key lessons learned include the following:

- **Understanding the problem.** WQ monitoring is critical to ensure water and sanitation issues are successfully addressed. WQ data, analysis and strategic sharing are pivotal to promote public and private investment in sanitation and enforcement of WQ regulations.
- **Managing the problem.** Bringing together political leaders and relevant agencies to act.
- **Financing the problem**. Identifying appropriate budgets based on operational externalities caused by tourism.
- **Importance of collaboration and stakeholder engagement.** Wastewater in tourist destinations is not always linked to a municipal provider. Given the costs associated with start-up and maintenance, collaborative involvement between government, tourism authorities, non-governmental organisations, community organisations and private sector establishments may be required.
- **Long-term financial viability.** In addition to the infrastructure development costs, it is essential to consider and plan for maintenance and operation costs as well as likely expansion, upgrades and improvements needed.
- **Utility rates.** Related to financial viability, potable water and wastewater treatment rates need to be transparently set. This process, as well as the benefits of improving wastewater treatment, must be effectively communicated to the community and system users.
- **Identification of efficient win-win technologies.** Waste-to-energy and water recapture technologies can help offset costs and provide environmental benefits.
- **Third-party assessments.** Third-party assessments are critical to identify the status of infrastructure as well as areas for improvement and future investment.

Sources: a. HIT 2021; b. Tuholske 2017; c. EPA 2011.

Research in Barbados suggests that even a 5 percent increase in the probability of a stomach infection from swimming in polluted seawater could result in devastating impacts on return visitation, with over 70 percent of respondents suggesting a lower likelihood of returning to Barbados under such conditions (Schuhmann, P., et al. 2019).

4.1.4 Minimise harmful impacts of high-use areas through development planning and coastal zone management

Zoning tools such as marine spatial plans, integrated ocean management and integrated coastal zone management plans can be highly effective in reducing the impact of tourism on a particular area. Often, allowing development in one location may be accompanied by restricting it in another. In these cases, a form of benefit sharing between areas where development is permitted and those where it is not can help avoid pressure to open all areas to some form of development, creating negative environmental impacts. Italian authorities have been quite successful in applying such an approach (see Box 7), and similar methods have been used in other countries through schemes referred to as transferable development rights (Markandya et al. 2008; Jay 2017).

Belize's integrated coastal zone management strategy and site-specific development guidelines are facilitating the improved management of the coast. The aim is to promote economic growth while protecting existing livelihoods and cultural and natural heritage. The strategy includes three scenarios that represent 25 years into a hypothetical future: the 'conservation scenario' projects the benefits to the population if conservation is prioritised; the 'development scenario' prioritises tourism and other types of development; and the 'informed management scenario'—which appears to be the most promising for achieving the country's multiple objectives—allows a tripling of tourism revenues, a 50 percent increase in coastal protection, a modest increase in fisheries revenues and an increase in biodiveristy (CZMAI 2016).

To avoid impacts on biodiversity, businesses need clear guidance and tools that help them identify important sites for biodiversity conservation. These sites need to be clearly mapped and identified using a common set of

Box 7. Using Multi-use Planning to Manage Conflicts in the Northern Adriatic Sea, Italy

In the northern Adriatic Sea, along the coast of Emilia-Romagna to the Veneto region of Italy, a Multi-Use in European Seas project recognised various uses of the highly contested ocean space[a] and examined the potential for coastal and marine tourism to be a driver of multi-use opportunities.[b] Tourism was proposed to be incorporated into fisheries, aquaculture, environmental protection and underwater cultural heritage[c] to enlarge the value of the associated synergies and advance sustainable tourism development.[d]

Of four combinations examined, pesca-tourism (within tourism-fisheries), where tourists board fishing vessels for recreational or educational purposes, was found to be the 'most promising', particularly involving small-scale fisheries.[e] Leveraging the increasing demand for 'experience-based tourism', the tourism-fisheries synergy can also involve other land-sea interactions, such as involving fishers in vessel tours or museum visits that promote local culture and traditions.[f] Positive outcomes from these multi-use activities include the diversification of visitor profiles, job creation, increasing local awareness of conservation objectives, beautification of the coastal area and improved satisfaction of visitor demand.

Takeaways from this case include the need for a forward-looking vision and strategic action plan focusing sustainability and environmental protection and the critical need for stakeholder involvement, engagement and consultation. An integrated tourism product connecting natural, environmental and historical resources and activities rests on an intersectoral network for the design and promotion of tourism offerings. Cautions include the need to foresee and address legal and administrative challenges created by capacity gaps and lack of collaboration between agencies and institutions.[g]

Sources: a. Schupp et al. 2019; b. MUSES n.d.; c. Sotiriadis and Shen 2020; d. MUSES n.d.; e, f. Castellani et al. 2017; g. Sotiriadis and Shen 2020.

criteria that are recognised globally. The Key Biodiversity Area (KBA) criteria provide such a tool that businesses can use. Businesses can access the KBA data (together with data on species and protected areas) through the Integrated Biodiversity Assessment Tool (BfN 2020).

The International Union for Conservation of Nature (IUCN) has developed a set of five biodiversity principles to promote the integration of biodiversity considerations into decision-making on the planning, siting and design of hotels and resorts. These principles focus on how biodiversity and associated social impacts can be better addressed in hotel and resort development and seek to provide guidance in the planning and construction stages of the hotel life cycle. They are targeted at all relevant stakeholders, including planning authorities, tourism development agencies, developers, investors, hotel managers and management companies, project managers and consultants, architects and construction firms (IUCN 2012).

4.1.5 Minimise economic leakage by incentivising local business and employment opportunities

Economic leakages can be reduced by increasing direct commercial linkages to local producers and tourism operators. For example, the community association for the sustainable management of natural resources Ahi Zamene Chemucane in Mozambique works with local communities to develop the area for sustainable tourism, and profits are reinvested back into the community. Similar initiatives exist in Cape Verde (e.g. through the Travel Foundation) and in the Mediterranean (thanks to IUCN's Mediterranean Experience of Eco-Tourism Network), among other places.

South Africa has taken a proactive role for fair trade in tourism, with measures such as the development of local products or the promotion of the sustainable use of local resources, among others (Spenceley et al. 2002). The iSimangaliso Wetland Park in South Africa also represents a paradigmatic case: there was a strong tradition of basket weaving, but women earned little from their work because they had limited access to markets. The iSimangaliso Wetland Park Authority brought in product

developers to advise the artisans on the latest decoration trends and colors to make their products more commercially attractive. Similar initiatives have been carried out, for example, in Dakar, Senegal.

The difficulties faced by private sector entities attempting to procure more local products are considerable in some destinations. For example, 61 percent of safari lodges interviewed in the Sabi Sands Game Reserve in South Africa reported that they had tried to purchase locally in the past, but their attempts had failed. Challenges included local entrepreneurs not holding the necessary health and safety certificates for food products (Rylance and Spenceley 2013). Tourism enterprises are also challenged by insufficient supply and diversity of local products, difficult access to local enterprises and unreliable supply due to limited transport options as well as meeting the quality standards required by clients (Spenceley et al. 2010; Rylance and Spenceley 2013). Linkages between tourism and key sectors, such as agriculture, are often underdeveloped and can limit the economic benefits associated with tourism. Tax legislation can also be a significant barrier for local producers. In some countries, small local producers with low annual turnover are either under the value-added tax threshold or cannot provide electronic receipts (are not registered, have no access to electricity and generally cannot afford the expensive equipment for tax receipts), thus hotels cannot buy from them because the associated costs are not recognised as expenses by tax authorities. Government support can help overcome these barriers. In addition to legislation reform (identified through value chain analysis), programmes aimed at expanding access to digital technologies, including solar power–charged electronic payment services, can support the engagement of these communities.

Detailed value chain analysis and mapping can be an effective method of identifying the most significant points of leakage in a local or national supply chain and targeting inventions accordingly (Box 8). Research also suggests that government intervention can be particularly effective: national policies on importing food and the availability and competitiveness of local supply chains are found to be the main determinant of whether or not hotels and large resort chains sourced in-country produce.

Typically seen as one of the most problematic areas for leakage in coastal tourism zones, all-inclusive resorts can take actions to mitigate leakage and promote sustainable

Box 8. Tourism Value Chain Mapping in the Seychelles

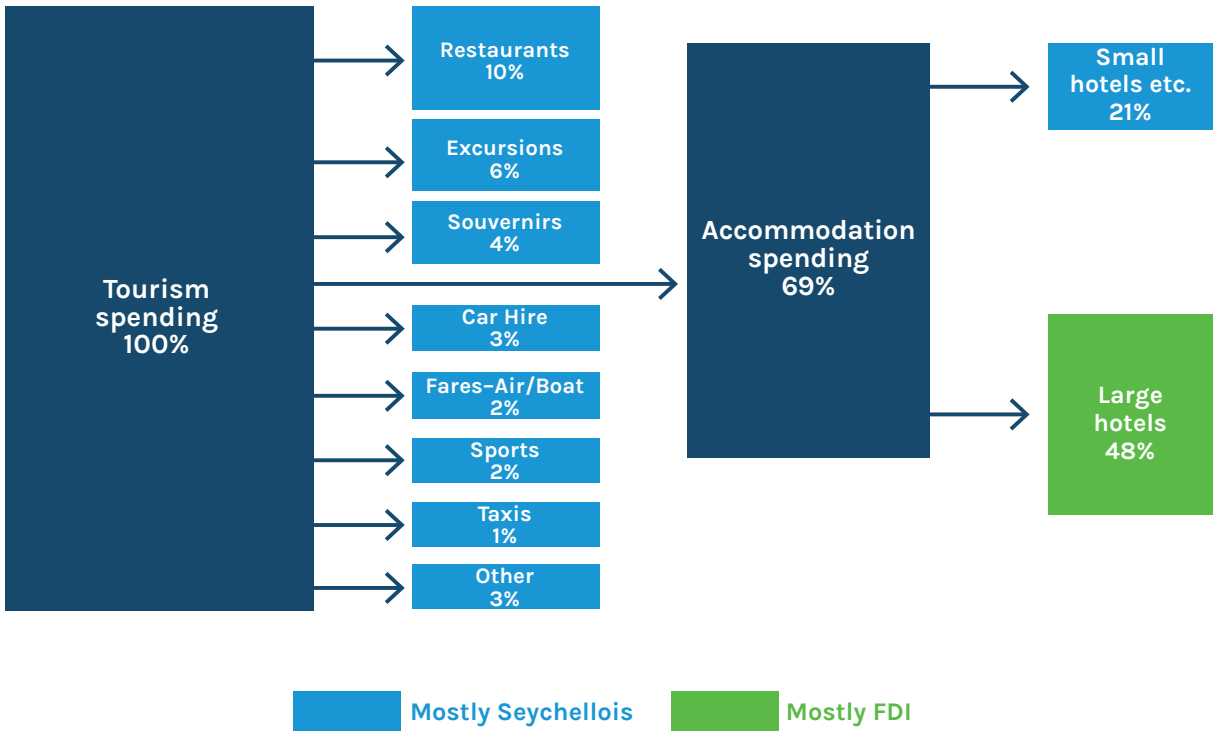
Tourism is the main pillar of the Seychelles economy, earning foreign exchange that enables the Seychelles to trade in the world economy. The National Statistics Bureau has calculated that the direct contribution to gross domestic product from tourism exceeds 25 percent, and a similar percentage applies to the Seychelles workforce. The government's strategy for the tourism industry is set out in its Seychelles Strategy 2017.

The aim is to attain self-sustaining economic growth by securing targeted increases in the number of tourist visits to the country and the amount spent by each tourist. The strategy positions the government as the facilitator for this growth. Self-sustaining growth will be achieved by improving the overall quality of the Seychelles tourism product and by refining the positioning of the destination on international tourism markets. To achieve these advances, the degree of direct and indirect local participation in all elements of the sector needs to be increased. To do this, value chain analysis (VCA) was used to analyse the transactions in the value chain to identify where opportunities lie for greater Seychellois participation and where there are opportunities for reducing leakage and thus retaining the 'hard-earned tourist dollar' in the Seychelles economy. The role of government intervention was also key to enable an understanding of what institutional, regulatory or resource constraints reduced historic levels of participation.

The policy of the Seychelles government has been that most business activities in the tourism industry are reserved for Seychellois. Large hotel projects, however, have needed large amounts of capital and are therefore foreign owned. About 60 percent of hotel rooms are foreign owned, and they generate the majority of the receipts in terms of accommodation receipts. Nearly half of tourist spending goes to the large hotel projects (see Figure B8). This is in contrast to Mauritius, where the initial capital for tourism development came from private sector Mauritian sources. The Maldives followed a different path, which involved leasing islands (all government owned) to investors, both Maldivian and foreign, but at annual lease rents which reflected the scarcity of the resort sites.

Box 8. Tourism Value Chain Mapping in the Seychelles (Cont.)

Figure B8: Example of the Seychelles Tourism Value Chain



Notes: FDI = foreign direct investment. The figure shows tourism receipts retained locally compared to those that accrue to foreign investors.

Source: McEwen and Bennett 2010, 2.

Based on the VCA, the primary opportunities from tourism for the Seychellois lie in more employment in the hotel and other tourism subsectors; more management, supervisory and technical positions, particularly in the hotel sector; and more business opportunities in new tourism accommodation and other tourism sectors.

Three specific interventions were proposed to help maximise uptake of these opportunities: the increased supply of local agricultural produce to the tourism sector, engineering-related training to increase salaries and wages for Seychellois employees, and additional support to micro and small businesses in tourism.

For the Seychelles, VCA was a diagnostic tool that provided a mechanism for drawing the attention of different stakeholders to the opportunities for improvement at different stages in the value chain and, arguably, as a catalyst for change.

Source: McEwen and Bennett 2010.

tourism. Sandals Negril Resort in Jamaica was the first organisation in the world to achieve EarthCheck's Master Status, demonstrating a commitment to the highest standards of environmental care and social contributions benefitting guests, staff and the local community. It has established a new model for all-inclusive resorts to avoid economic leakage, including sourcing the majority of its produce locally, working with local communities to promote and sell tours of the community by local people, inviting local craft vendors to sell their wares in the hotel free of cost, promoting local artists for entertainment, conducting lessons in schools about environmental and tourism issues, employing qualified local persons whenever possible and reserving summer holiday jobs for students from neighbouring areas.

4.1.6 Establish and/or enforce guidelines for use and behaviour to safeguard the tangible and intangible cultural heritage of local communities

Tourism initiatives targeting preservation of cultural traditions and practices must be managed to ensure that communities are protected and respected, avoiding the commodification and exploitation of local culture and heritage. Communities need to have a voice in the development of tourism activities, and governments should implement best-practice standards for cultural sites and events. More broadly, ethical standards for how the tourism industry uses culture for marketing and product development should be developed. Such standards should consider 'whose story it is to tell' and ensure that intellectual property rights are protected. The United Nations Educational, Scientific and Cultural Organization's Kit of the Convention for the Safeguarding of the Intangible Cultural Heritage provides a basis for understanding intangible cultural heritage (UNESCO n.d.).

4.2 Reinvest in and Regenerate the Ecosystems, Local Markets and Communities

To be sustainable, efforts must go beyond just minimising the negative impacts of tourism or ensuring revenue from tourism is retained locally. Coastal and marine tourism has the potential to improve the local environment, provide opportunities for economic prosperity and revive and sustain local communities and culture.

By taking a regenerative approach, coastal and marine tourism can serve as the foundation for a sustainable ocean economy by helping to shape a more prosperous and holistic destination that focuses on the wellbeing of the entire ecosystem.

This section explores examples of the following:

- Restoring coastal and marine ecosystems, including restoration of ecosystems to stimulate tourism or open up new tourism markets and restoration activities as a key part of a tourism offering
- Conserving and repopulating marine life, including whales, dolphins, sea turtles and local fish stocks
- Increasing skill capacities in local communities, including through training programmes and apprenticeships and ensuring equality in the workforce
- Enhancing and reviving cultural heritage, traditional knowledge and local identity, including indigenous tourism, restoration of local heritage sites and revitalisation of local language and culture

4.2.1 Restore coastal and marine ecosystems

The restoration of coastal and marine ecosystems, notably coral and shellfish reefs and mangroves, can offer significant additional tourism benefits and help diversify an existing tourist market (see Box 9 for examples from Fiji). It can also provide significant job creation for the local community. Restoration is a resource-intensive activity that requires multiple skills and professions. There is also increasing evidence of a shift in tourist demand and preference towards taking an active role in improving the natural assets of a destination, such as coral reef replanting.

With regard to habitat restoration, there are several studies that demonstrate the benefits of coastal restoration for tourism. An oyster and shellfish restoration project in North Carolina (United States) yielded significant economic value. With just over $20 million in government and private investments between 2010 and 2015, North Carolina's restoration and habitat enhancement activities supported over 202 hectares of habitat and produced expected benefits to commercial fishing, recreational fishing and water quality valued at $48 million through 2025. Each dollar invested in habitat enhancement activities therefore provided about $2.38 in benefits, yielding a 15-year benefit-cost ratio of 2.38 (Callihan et al. 2016). In another project, the installation of an oyster reef measuring 22 hectares at Half Moon Reef (Texas, United States) designed to enhance recreational fishing created employment for a dozen people, $465,000 in annual labour income and contributed $691,000 annually to GDP. The project induced $1.3 million in related economic activities, such as income from lodging, fuel and boat maintenance (Shepard et al. 2016).

Mangrove conservation and restoration have also been studied in some depth, with results suggesting that the costs of both options are much lower than the benefits of reduced damage to tourism, property and natural capital, carbon mitigation and fisheries productivity. A recent study estimated the economic value of the Mesoamerican Barrier Reef System, focusing on the values of tourism, fisheries, coastal protection and non-use values associated with biodiversity conservation and cultural traditions (Ruiz-Gauna et al. 2021). The annual benefits in avoided damages from shoreline protection amounted to $320–$438 million in 2020, whereas tourism-related value was $3,902 million per year for the region as a whole and fisheries-related value was $183 million annually. Non-use values were also very high.

Box 9. Enriching the Tourism Experience through Restoration, Fiji

Fiji's predominantly ocean-based tourism, which provided 38 percent of the country's gross domestic product and employed over 118,000 people in 2017, grinded to a halt in early 2020 because of the COVID-19 lockdowns.[a] As Fiji tourism reopens, the country and the industry are considering approaches needed to ensure the resilience, sustainability and wellbeing of their industry and stakeholders and the health and productivity of the marine environment.

Fiji's diverse coral reefs, spread over 10,000 square kilometres of protected coastlines, provide 75 percent of dietary protein for Fijians and serve as an important tourism attraction.[b] Despite their value, these highly threatened ecosystems are rapidly disappearing due to a combination of anthropogenic and natural threats, such as overfishing, coastal development and climate change.[c]

The future of Fiji's tourism depends on the success of the adaptation strategies the nation and the industry have in place to protect and restore the nation's marine ecosystems, in part through the creation of effective marine protected areas (MPAs).[d]

Shangri-La Yanuca Island Resort operates an ecologically, socially and financially rewarding marine education campaign. Stakeholders' knowledge and understanding of current and future drivers of ecosystem functions are used as the basis for management actions that sustain ecosystems and human wellbeing.[e] Guests invest time and energy into building fish houses made from rubble and broken coral pieces in reef areas around the hotel. Using GPS co-ordinates, guests can check on their fish house using Google Earth.

Across Fiji, partnerships between tourism operators, communities and interest groups such as divers and non-governmental organisations operate joint ventures, including the Narera Marine Reserve, the Vatu-i-Ra Conservation Park, the Barefoot Manta Island Resort, the Waivunia Marine Park and the Sema Shark Reef Marine Reserve.[f] These tourist destinations work under a variety of marine conservation agreements that commit partners to maintain the ecosystem services provided by these ecologically unique areas by protecting them from activities that threaten their sustainability. The agreements feature contractual commitments and voluntary agreements between partners to attain conservation targets, as illustrated in the following case.[g]

Tavarua Island Resort, on the southernmost island of the Mamanuca Group, is a renowned haven for surfers, with reefs such as Cloudbreak, Restaurants, Tavi Rights, Swimming Pools, Namotu Lefts, Wilkes and Desperations. Troubled by the degraded state of the coral reefs around the island, in 2017 the resort began to work with its partners to rehabilitate the coral reefs and the overfished coastal environment, enriching guest experiences and improving the wellbeing of local communities. Local chiefs on nearby Malolo Island and their communities endorsed the resort's declaration of a *tabu* ('no take area') around the resort, and in early 2022 they signed an agreement to declare an MPA in the five-year-old *tabu*. The resort acknowledged the chiefs' support of the regulation of fishing practices around the island and those of the local communities for adhering to and respecting the *tabu*. These stakeholders agree that their collaborative partnership is critical for properly managed natural ecosystems and functioning MPAs that can increase species diversity, fish size, density and overall biomass while providing important 'blue carbon' sinks, reducing climate change impacts and improving ocean health.[h] Local people employed by the resort share their knowledge and experience about the abundance that can be realised by maintaining healthy reefs within their communities and with neighbouring communities on Namotu.

The post-COVID-19 development plan for Tavarua is based on the understanding that it inhabits a small and sensitive island ecosystem. Rather than emphasising physical growth, the resort will pursue efficiency and the best guest experience by adapting and implementing sustainable initiatives, including the full use of solar, recycling of all refuse and wastewater, composting, energy/fuel efficiency and education for all stakeholders.

Sources: a. International Finance Corporation et al. 2020; Republic of Fiji 2021; b. Republic of Fiji 2021; c. Dutra et al. 2021; d. Republic of Fiji 2021; e. Reef Resilience Network 2022; f, g. Mangubhai et al. 2020; h. Dutra et al. 2021; Republic of Fiji 2021.

4.2.2 Conserve and repopulate marine life

A number of studies have illustrated the tourism benefits of target conservation efforts, including repopulation of marine life such as sharks, dolphins and sea turtles. Tourist interactions with wildlife must be managed carefully under strict guidance.

In Palau, shark diving was responsible for the generation of $1.2 million in salaries to the local community and $1.5 million in taxes to the government annually (Vianna et al. 2012). By contrast, if the population of approximately 100 sharks interacting with tourists at the most popular dive sites were caught by fishers, their economic value would be at most $10,800 (Vianna et al. 2012).

In the Maldives, research suggests that a hypothetical increase in the shark populations could raise diving trip demand by 15 percent, resulting in an additional dive tourists' welfare of $58 million per year above the status quo situation of $380 million (Box 10). Economic benefits for the local diving tourism industry and to the local tourism industry in general would be more than $6 million and $24 million annually, respectively. In scenarios where shark populations decline, diving tourists observe illegal fishing, or diving operators are not committed to shark conservation, the demand for diving trips could decline by up to 56 percent, causing economic losses of more than $24 million annually (Zimmerhackel et al. 2018).

In the district of Semporna, the most popular diving destination of Malaysia, shark diving tourism brought over $9.8 million in direct revenue to the district in 2012, generating over $2 million in direct taxes for the government and $1.4 million in wages for the local community. The implementation of a fee paid by divers could generate more than $2 million for the management and enforcement of a shark sanctuary each year (Vianna et al. 2018).

Dolphin watching generates significant economic benefits. For example, total annual expenditure by tourists engaged in dolphin watching in the Outer Channel of Chilika Lagoon (India) is $2,013,000 per year. This figure includes the direct primary expenditure of $1,076,000 per year and auxiliary expenditure by tourists to other businesses of $937,000 per year (D'Lima et al. 2016).

In Trinidad and Tobago, sea turtle encounters generate an annual value of approximately $863,000. Scuba divers are willing to pay, on average, more than $62 per dive for turtle sightings (per two tank dive for the first turtle encounter), suggesting that a single turtle need only be encountered twice in its lifetime for its value to scuba diving to exceed the market value of its meat and shell (Cazabon-Mannette et al. 2017). In addition, the average willingness to pay for turtle conservation among international visitors was $31.13, reflecting a significant non-use value associated with actions to prevent sea turtle extinction (Cazabon-Mannette et al. 2017).

Box 10. Economic Value of Whale Shark Conservation in South Ari Atoll, Maldives

Whale sharks attract large numbers of tourists, divers and snorkellers each year to South Ari Atoll in the Republic of Maldives. Yet without information regarding the use and economic extent of the attraction, it is difficult to prioritise conservation or implement effective management plans. Empirical recreational data and generalised mixed statistical models were used to conduct the first economic valuation (with direct spend as the primary proxy) of whale shark tourism in the Maldives. The study estimated that direct expenditures for whale shark–focused tourism in the South Ari Marine Protected Area (SAMPA) for 2012 and 2013 accounted for US$7.6 million and $9.4 million, respectively.[a] These expenditures are based on an estimate of 72,000–78,000 tourists who were involved in whale shark excursions annually. That substantial amount of income to resort owners and operators and tourism businesses in a relatively small area highlights the need to implement regulations and management that safeguard the sustainability of the industry by ensuring guest satisfaction and whale shark conservation. The creation of protected areas can motivate whale shark conservation. Not only can conservation preserve the habitat, but it also can increase community livelihoods. SAMPA was declared in 2009 as a 42-square-kilometre MPA. The whale sharks found in the area are mostly immature males. SAMPA provides a safe haven for whale sharks and the only place with year-round whale shark sightings. Key to effective management was a better understanding of whale shark behaviour. Resorts, such as the Banyan Tree, and citizen science programmes, such as the Olive Ridley Project, were involved in research and data gathering. Dive guides, liveaboards and marine biologists also contributed data. Information collected is uploaded to a database called the Bigfish network.

One of the main findings of this research and data gathering was that 67 percent of whale sharks have boat propeller injuries.[b] This led to adaptive management principles being implemented, including a code of conduct for visitors and code of conduct for boats. Now jet skis are not allowed, and there are certain speed limits. Because tourism was not active during the COVID-19 pandemic, this led to illegal shark fishing. Despite rangers being in the area, there is no active monitoring because there is no vessel, and patrolling by boat is costly. The Republic of Maldives's Environmental Protection Agency is looking for ways to work with telecom companies to use global systems and management technology to monitor vessels that are registered and establish some sort of quota system.

The following recommendations came out of the process:

- Use citizen science programmes and tourist support to gather data.
- Increase training and resources.
- Provide tourists with information on best practices.
- Integrate sustainable practices during service supplier selection process.
- Ensure tourists are comfortable in the water and are provided snorkelling course beforehand.

Source: a, b. Cagua et al. 2014.

4.2.3 Upskill local communities

The concept of regenerative tourism goes beyond ensuring that the local economy and people benefit from tourism and avoiding leakage (Section 4.1.5). It also requires governments and tourism businesses to invest in training, capacity building, apprenticeships and education programmes—opportunities that have been heightened by travel restrictions and border closures created by the global pandemic.

Jobs created through the tourism industry must provide a living wage and enable advancement opportunities within the sector for the local community. Where possible, most positions, including management, should be filled by the local community. Training and education opportunities should be provided by business to fill skills gaps, with long-term planning for the future employment of the local community.

Economic regeneration rests on strengthening the number and quality of local jobs created and supported by tourism, including the level of pay, conditions of service and availability to all without discrimination by gender, race or disability.

Many small, independent hotels are playing a leadership role in prioritising local community needs as an essential element of their business model and are developing tourism products that promote the prosperity of people, nature and culture. Regenerative Travel is a community

of independent hotels dedicated to regenerative tourism. Hotels are evaluated against six standards, including how the business honors the unique sense of place in the destination, their commitment to equity and inclusivity, their demonstration of responsible and ethical operations and their respect for local and global ecosystems (Regenerative Travel n.d.c). See Box 11 for examples.

A regenerative approach to tourism requires an increased focus on opportunities for training, capacity building and education (Box 12). The need for this aspect of sustainable tourism has been heightened by the pandemic, during which many locations have seen skilled labour migrate from tourism to other sectors. This effect has been acutely felt in marine tourism; with ongoing instability in the sector, skills shortages may persist for some time. Substantial investment in training can fill these resource gaps while enhancing long-term resilience to future shocks.

The impacts of the pandemic were amplified for women in informal economies, which include the accommodation, food services and souvenir categories (ILO 2020). Women constitute 90 percent of sellers and producers in souvenir businesses (Trupp and Sunanta 2017), and the halt of tourism led many female souvenir vendors to lose their livelihoods. Often, informal workers are excluded from government aid packages and have limited access to social and legal protection, which has rendered them some of the most vulnerable groups during crises. A regenerative approach to tourism necessitates bringing women out of the informal economy and providing

Box 11. Independent Hotels Focused on Regeneration

Blue Apple Beach, a boutique hotel and beach club located on the island of Tierra Bomba, Cartagena, Colombia, is a Regenerative Travel member and a Certified B Corporation. The beachfront resort was opened in 2016 by a female-led management team—which includes Black, Indigenous and people of color as well as lesbian, gay, bisexual, transgender and queer members—that embraces and advocates for diversity, equity and inclusion. The hotel sources locally and sustainably, from making its own granola, yoghurt and bread to buying artisanal local products and practicing sustainable fishing without endangering marine species.[a] Taking a people-focused approach to sustainability, Blue Apple Beach implemented a minimum wage that is 15 percent higher than the average in the country; it conducted a full supply chain assessment where each supplier was analysed to ensure alignment with the hotel's social and environmental impacts. It found that 60 percent of hotel expenses go to microenterprises and 30 percent to minority-owned businesses, and 85 percent of spending was within the country.[b] The hotel founded a non-profit social enterprise, Green Apple, which set up the first glass recycling operation on the coast of Colombia, diverting over 100 tons of waste from the landfill and providing long-term employment for local people, a majority being women.[c] Through a composting programme, 80 percent of food waste was diverted from the landfill by the end of 2021, and 65 percent of the hotel's energy has been sourced to solar.[d]

Another independent hotel, the Rockhouse Hotel located on the cliffs of Negril, Jamaica, invests one- third of its earnings in children's education through the Rockhouse Foundation, with US$7 million raised to date.[e] Its work involves renovating libraries, early childhood education in the Negril region, and a recent COVID-19 relief initiative.[f] The hotel also employs 100 percent locals, including musicians and artists who showcase Jamaican heritage to visitors.

In Belize, the Hamanasi Resort, a beachfront dive resort, has developed with a much lighter footprint than most in the region. The resort structures are sustainably designed, from maximising natural lighting to reduce energy consumption to using eco-friendly daily items for its guests and purchasing them in bulk to lower the transportation footprint.[g] Surrounded by nature, the resort advocates ecotourism and recognises the importance of habitat conservation. One of its projects reforested a section of threatened littoral forest, and many other projects centre on local employment and training. The resort also engages in extensive outreach in the community regarding health and wellbeing and children's education. Guest education on flora and fauna is led by guides certified by the Belize Tourism Board.[h]

Sources: a. Regenerative Travel n.d.a; b. Cox 2022; c. Fundación Green Apple n.d.; d. Cox 2022; e. Regenerative Travel n.d.d; f. Rockhouse Foundation n.d.; g. Regenerative Travel n.d.b; h. Hamanasi Adventure & Dive Resort n.d.

Box 12. Regeneration through the Creation of the Ayla Oasis and Makarem Academy, Jordan

In 2015, Ayla Village in Jordan received a loan of US$60 million from the European Bank for Reconstruction and Development in co-operation with two commercial banks providing $20 million each for redevelopment and operations. This financing eventually gave rise to the Ayla Oasis, a coastal destination by the Red Sea and near the city of Aqaba, where the World Heritage Sites Petra and Wadi Rum are located. Heavily polluted, the land was a mine site on the Israel-Jordan border, which was cleaned up, developed and turned into a major tourism destination. A total of 19,800 mines were cleared and 1.5 million square metres of valuable land was made available for a mix of leisure, commercial and residential development. De-mining has enabled the regeneration of an otherwise wasteland and has contributed to the 82.6 percent growth in the number of hotels in the area from 2006 to 2019.[a] Designed with sustainability in mind, the project included solar energy production, water efficiency and grey water recycling programmes. A 3.2-megawatt photovoltaic solar panel system was built to provide self-sustained irrigation to the golf course from the lagoons. The investment focuses on climate-resilient solutions that aim to reduce carbon emissions because Jordan faces severe water scarcity issues and heavily relies (95 percent) on energy imports.[b] Biodiversity conservation was a key objective under the Aqaba Ecotourism Development Plan, which ensured the positioning of Aqaba as a marine-friendly tourism destination where coral reefs and migratory birds are protected. Career development projects offered in the local community, including the creation of the Makarem Academy for training and upskilling of local workers, targeted the creation of more than 3,000 jobs across the hospitality sector, including employment opportunities for youth and women.[c]

Sources: a. GICHD 2021; b. EBRD 2016; c. GICHD 2021; EBRD n.d.

opportunities within the formal tourism sector, whether as entrepreneurs with registered businesses or in existing business establishments.

A community-based tourism project known as the Mothers of Creation Route in the Western Cape (South Africa) found that community-based tourism results in women seeing themselves as both economically and socially empowered (McCall and Mearns 2021). This project contributes to SDG 8, targets 8.8 and 8.9 through equal employment opportunities for women, which also allows them to better support their families and communities (McCall and Mearns 2021). Cultural visits that incorporate guided walks to reveal women's expertise in forest products, including medicinal plants, has also greatly enhanced local tourism and visitor satisfaction, particular for women (Scheyvens 2000).

Government-funded reskilling programmes can help rebuild local tourism sectors (ADB 2021). Digital competency training can be especially beneficial for women entrepreneurs in coastal and marine tourism by helping them showcase their services and products, accommodations and tours online and by improving their access to government programmes and services and credit from financial institutions.

4.2.4 Enhance and revive cultural heritage, traditional knowledge and local identity

Tourism can be a powerful tool to support communities to return to traditional culture, heritage and knowledge, reviving local languages and history and creating a sense of local identity. Regenerative and inclusive plans and strategies can target cultural identity and ownership by the local community.

Palau also just launched Ol'au Palau, a new initiative that will promote responsible tourism through a gaming app that requires travellers to complete eco-friendly measures. Developed by the creative agency Host/Havas, Ol'au Palau is a reward-based gaming app that teaches eco-friendly etiquette to visitors (Herrmann 2022). It uses a points-based system in which users unlock badges by completing tasks. To gain points, visitors to Palau will be required to carry out certain responsibilities involving simple or significant activities or personal interactions. In addition to environmental measures, such as using reef-safe sunscreen and avoiding single-use plastics, the app will incentivise and reward visits to culturally significant tourism sites (Herrmann 2022).

Diverse cultural traditions attract tourists, can create employment and build a sense of place, helping to build the value of destinations and enabling long-term resilience to change. Cultural and traditional practices can influence the sustainable management of resources through tourism governance and decision-making. Intangible cultural heritage—such as festivals and events—can support inclusive development. Culture is also susceptible to social and environmental changes and socio-economic trends (including depopulation, ageing, biodiversity loss and climate change). Box 13 highlights the value to tourism of keeping traditional ecological knowledge alive for the *ama* free divers in Japan.

Cultural benefits, such as sense of place, aesthetic pleasure and cultural identity, are bidirectional or multi-dimensional and contribute directly to revitalising local communities. Cultural services, along with provisioning services, are the most directly experienced and intuitively appreciated by people and have the most direct links to human wellbeing (Comberti et al. 2015) and are associated with the forging of local community identity and cohesion (Chakraborty and Gasparatos 2019). Box 14 explores New Zealand's experience in using 'Place DNA' to support the regeneration of local identity and culture.

Box 13. Keeping Traditional Ecological Knowledge through Tourism: Ama Tourism in Japan

Ama, which literally means 'sea women', free dive primarily to collect abalone (*awabi*) and sea snails (*sazae*), harvest seaweed and catch other small shore creatures. The term *ama* generally refers to female divers, and the practice appears in ancient literature. Equipment such as wetsuits and mechanised boats were introduced in the 1950s.

Ama are most populous in Shima (Mie prefecture), a region of Japan which was known for sea harvests offered to imperial households in ancient times. Ama are part of this history. The region is part of the Ise-Shima National Park, now designated as a Zero Carbon Park.[a]

According to a national survey, the ama population was 2,174 in 2011, nearly one-sixth of the 1931 figure of 12,426.[b] Decline is clear also in the regions of Toba and Shima, where the diminished population of ama is also ageing, with an average age above 65.7 years.

The Toba City Tourism Bureau has been promoting ama tourism, including tour activities with ama women, storytelling in ama huts and meals harvested and cooked by the women dressed in traditional costume. Ama huts are working places with a *kamado* (fireplace)[c] where women warm their bodies before and after dives, rest, eat, chat and exchange stories. Souvenir products include hand towels and scarfs with designs specific to ama culture, shrine charms, photographic books and postcards. 'Dive with ama' experiences are also available in some regions and seasons. Many women also run guesthouses. The bureau now works with these guesthouses by contributing a percentage of profits to outreach and conservation measures such as ocean clean up, education and training and releasing abalone and sea snail fry into the ocean.

It is important to note that the availability of ama tourism varies according to the diving season because they are 'practicing ama' (rather than 'show ama' or performers) and tourism is not simply a source of supplementary income but also helps to continue traditional ecological knowledge that has been maintained by women since the country's early history. The women's stories show their observation of environmental changes and their ethical understanding of the environment, which are expressed as harvesting rules and prohibitions, respect, fear and prayers.[d] Some of the product designs reflect these spiritual connections, such as a pentagram-and-lattice motif drawn with purple shell dye, talismans and lucky charms that the women carry during their dives.

Tourism activities such as the example of the ama can help maintain vital ecological knowledge, skills and information if authenticity is maintained. This ecological knowledge-based regenerative tourism plays a vital role for ocean ecology and the economic and social sustainability of the coastal communities.

Note: Started in 1934, Japan now has 34 national parks, 7 of which are promoting 'zero carbon' with a range of decarbonising measures.

Sources: a. Ministry of the Environment of Japan n.d.; b. Toba Sea-Folk Museum 2018; c. see JNTO 2022; d. Kato 2007a, 2007b, 2007c, 2019.

Box 14. Using 'Place DNA' in the Bay of Plenty

Tourism is an important sector for the New Zealand (Aotearoa) economy, and prior to the COVID-19 pandemic, it contributed over 20 percent of total exports.[a] Tourism is expected to continue to grow and become a vital part of the post-pandemic economic recovery.

Tourism in the Coastal Bay of Plenty (Te Moananui ā Toi) generates more than US$1 billion annually within the region (up 51 percent since 2009).[b] The area is also significant in Māori culture because it is recognised as the first place Māori people settled in the 12th century.[c] Tourists are often drawn to the area for an array of environmental and cultural opportunities.

Following continued increases in the volume of tourists, local residents expressed concerns and frustrations to the management trust regarding visitor pressure. The trust, Tāpoi Te Moananui ā Toi, or Tourism Bay of Plenty (TBOP), is jointly controlled by local councils and contributes to the development of the Bay of Plenty as a tourism destination. Following this feedback, it was recognised that for long-term tourism sustainability, the TBOP would need to strike the right balance, encouraging economic growth while mitigating environmental impacts, considering resident's quality of life and honouring the Māori culture.

In 2018, the TBOP sought to update its strategy from the traditional promotion of economic growth to one which ensures the benefits of tourism include environmental, social and cultural aspects. As such, it developed Te Hā Tāpoi ('The Love of Tourism'), a regenerative destination management plan with the help of local stakeholders, including the Māori community. The TBOP identified four pillars which make the area unique and make up the Bay of Plenty's tourism identity or 'Place DNA': Māori culture, the natural environment, the ocean and beaches and horticultural provenance. Its regenerative vision was supported by the guiding principles of hospitality, guardianship and unification in addition to education, co-operation and relationship management.[d]

The long-term goals outlined in The Love of Tourism initiative include **regeneration** that integrates Māori principles and ensures economic, social and environmental value adds, **community leadership** and management built on partnerships, engagement and co-management, **Place DNA and unique** whakapapa highlighting and growing community understanding of the four identity pillars, and **transformational visitor experiences** where tourists experience meaningful engagement and valuable connections.

The long-term goals of the TBOP are accompanied by a set of corresponding outcomes:

- **Long-term outcome 1:** Involves showing that tourism can be a regenerative force that sustains life, enables all life to thrive and fosters new life in a constantly regenerating environment.
- **Long-term outcome 2:** Presents 'our truth', a unifying story that supports regional values, pride and identity, staying true to its Place DNA.
- **Long-term outcome 3:** Understanding and managing the type, pace and volume of tourism that can be served with pride, dignity and passion without damaging the quality of the Bay of Plenty and while enabling its industry, communities, environment and guests to flourish.
- **Long-term outcome 4:** The right visitors are welcomed and engaged at the right time in the natural and authentic way that is not artificially designed for tourists; markets based on ecotourism and visitors seeking transformational experiences will be targeted.

The approach of the TBOP aligns with New Zealand's Tiaki Promise, a destination pledge in which tourists agree that while travelling, they will care for land, sea and nature, treading lightly and leaving no trace; travel safely, showing care and consideration for all; and respect culture, travelling with an open heart and mind.[e] As a result of regenerative and inclusive shifts, the Bay of Plenty is now considered to be one of the world's top 100 'green destinations'.[f]

Sources: a. Tourism New Zealand 2020; b. TBOP n.d.; c. Manatū Taonga Ministry for Culture and Heritage n.d.; d. TBOP 2021; e. Tiaki New Zealand 2018; f. Green Destinations 2020.

The importance of preserving traditional and cultural knowledge is further supported by the UN Declaration on the Rights of Indigenous People, which emphasises the right of the indigenous people to 'maintain, protect and develop the past, present and future manifestations of their cultures such as archaeological and historical sites' (UN 2017b). Indigenous communities are custodians of marine and coastal environments, hold unique Indigenous knowledge that can support the regeneration and health of marine and coastal ecosystems and have historically been dispossessed of such environments.

If responsibly and sustainably managed, indigenous tourism can help stimulate cultural exchange and revival, uplift employment, reduce poverty and lower rural-to-city migration (UNWTO 2019b). Planning and managing coastal tourism with rich indigenous culture requires a multistakeholder approach to ensure locals directly benefit. The World Indigenous Tourism Alliance was founded in 2012 to support greater opportunities for indigenous communities to be involved in tourism. It provides a forum for indigenous people to share their traditional experiences and values. Tourism presents an opportunity to rebalance the harmony between different peoples and between people and the environment (ADB 2021).

4.3 Build Resilience to Threats and Future Shocks and Crises

Resilience will be critical for the future of coastal and marine tourism. The concept of resilience in this context includes the capacity to withstand and quickly recover from both anticipated global changes, such as climate change and biodiversity loss, as well as unexpected future shocks and shifts in consumer demand or trends.

Encouraging multinational business to invest in local capacity and employment opportunities can have a significant effect on local prosperity and can build resilient workforces that are less vulnerable to border restrictions, work visas and global movement of staff. Diverse cultural traditions attract tourists, build the value of the destination and enable long-term resilience to change.

This section explores the following examples:

- Improving resilience of coastal infrastructure, including through nature-based solutions and multi-use infrastructure
- Establishing and expanding networks of MPAs to support adaptation of coastal ecosystems and marine life
- Diversifying tourist markets to reduce risk, including use of local supply chains, multiple offerings and strategies to encourage domestic tourism
- Building resilience through recovery to crises, including through community-based tourism for disaster-affected communities

4.3.1 Improve resilience of coastal infrastructure

Improving coastal protection is essential to prevent residential areas and businesses from being damaged or even destroyed by coastal erosion or flooding (e.g. from hurricanes or sea level rise).

A review by UNEP of the adaptation gap notes that nature-based solutions for adaptation can cost less than hard-engineered approaches for addressing climate hazards (Narayan et al. 2016; Reguero et al 2020). When well designed and implemented, they have the potential to generate larger returns (in a broad economic rather than financial sense) because of the multiple societal benefits they deliver in addition to reducing climate risks.

Coral reefs are one of the most important ecosystems for protecting coastal areas. Coral reefs can dissipate up to 97 percent of wave energy, providing the first line of defense against erosion and flooding. Reguero et al. (2020) quantified the risk reduction benefits of the Mesoamerican Reef in Quintana Roo (Mexico) for people, buildings and hotel infrastructure. Annual benefits were estimated at 4,600 people with reduced flooding, $42 million damage prevention for buildings ($16 million in

direct avoided flood damages and $26 million in averted indirect losses) and $20.8 million for hotel infrastructure in direct averted flood damages (indirect damages were not accounted for). The study also compared the risk reduction provided by coral reefs with the protection offered by dunes and the increase in coastal risk from sea level rise. Results demonstrate that the contribution of reef degradation to coastal risk is larger than the expected increase in risk from sea level rise. They also show that the spatial distribution of the risk reduction benefits from reefs differ for people and infrastructure—and, in particular, for hotels, which receive the most protection from reefs. These findings suggest that private sector tourism establishments in coastal destinations have a vested interest in coral reef protection and should be at least partially responsible for the associated resource needs (see Section 5).

The *Netherlands Climate Change Studies Assistance Programme-NCCSAP: Colombia* (IIMC 2003) analysed the feasibility of protecting the Colombian Caribbean coast from sea level rise. The present value cost of the additional measures of the protection strategy for each of the three cities was estimated at $558 million for a period of 100 years (2001–2100). The present value of benefits, including but not limited to tourism, amounted to $785 million over the same period, giving a benefit-cost ratio of 1.4.

Boxes 15 and 16 look at the benefits of two approaches to improving the resilience of coastal infrastructure. Box 15 looks at the benefits of shellfish restoration as a nature-based solution for coastal resilience based on projects in Australia and the United States, and Box 16 looks at multi-use infrastructure that delivers both improved coastal protection as well as access for tourists along the coast.

Box 15. Restoring Shellfish Reefs, Australia and the United States

In Australia, The Nature Conservancy, in partnership with state and commonwealth governments, has embarked upon a national programme to rebuild and restore Australia's lost shellfish reefs. Based on the results of existing pilot projects, scaling efforts to 60 reefs nationally will provide 850 new full-time jobs for local coastal communities, divert 7,000 square metres of shell waste from landfills, reduce coastal erosion and deliver the following annual benefits:

- Addition of 375 kilograms (kg) of new fish stocks, including high-value snapper, flathead and whiting
- Filtration of 2 billion litres of seawater (equivalent to the annual water use of 21,000 Australians)
- Removal of 225 kg of nutrient pollution (nitrogen and phosphorous) in coastal areas[a]

In 2011, the full suite of ecosystem services derived from natural oyster reefs in North America was conservatively estimated to be between US$5,500 and $99,000 per hectare per annum, with recovery of their restoration costs in 2–14 years.[b] These services include job creation and economic development, fish production, water filtration, coastal protection and habitat provision for marine species. The largest current initiative is the Chesapeake Bay Executive Order, which requires the oyster populations of 20 Chesapeake Bay tributaries to be restored by 2025. Three estuaries have been restored thus far, including 964 acres of restored reef at a projected total cost of $72.1 million. The resulting harvested biomass has the potential to contribute millions of dollars in additional sales for commercial seafood harvesters. This would be in addition to a wide range of other ecosystem services from restoring the reef (such as water purification, nitrogen sequestration and water and biogeochemical cycling), which could help recoup the cost of investment.[c]

Notes: The Chesapeake Bay Executive Order project focused on the first three tributaries in Maryland chosen for restoration: Harris Creek, Little Choptank River and Tred Avon River. The projected cost for achieving the total restoration acreage target was $72 million; actual costs incurred to this point have been $53 million. Knoche and Ihde (2018) used impact analysis for planning regional economic impact modelling software to calculate the economic effects for output, labour income, value added and employment. There are several limitations to ecological and regional impact modelling. For example, the ecological model implicitly assumes that catchability is constant and excludes key ecosystem services from oyster reefs. Although the authors did not carry out a benefit-cost analysis per se, based on the estimates calculated and the missing value of the ecosystem services, we ascertain the benefits are likely to outweigh the cost of investment.

Sources: a. TNC n.d.; b. Grabowski et al. 2012; c. Knoche and Ihde 2018.

Box 16. Multi-use Coastal Infrastructure, Barbados

Coastal infrastructure improvements undertaken in Barbados as part of its Coastal Infrastructure Programme (CIP) were designed and constructed for two purposes: to provide a reinforced structure to prevent damage to coastal properties and valuable tourist infrastructure and to provide a scenic promenade for recreation and lateral access along the coast. CIP projects in Barbados include a 1.2-kilometre boardwalk, revetment and headlands project on the South Coast, coastal infrastructure improvements on the West Coast and several associated capacity-building activities. As of 2018, expenses associated with these investments have totalled approximately $30.3 million, funded principally by the Barbados government and through loans from the Inter-American Development Bank. Undiscounted projections of recurring costs over a 30-year planning horizon range from approximately $32 million to $52 million, depending on inflation.

In terms of benefits, the projects have resulted in an increase in the number of person days of shoreline leisure. A stakeholder survey undertaken as part of a project evaluation found that 100 percent of respondents agreed or strongly agreed that the infrastructure projects were beneficial to Barbados, and 50 percent of business respondents indicated modest increases in monthly revenue (1–5 percent) from the projects. Research by Banerjee et al.[a] suggests that the investments in coastal infrastructure have had a positive impact on cultural and aesthetic ecosystem services for both tourists and residents and that both groups were willing to pay for the improvements.

Annual benefits from the projects to residents and visitors associated with improved access to coastal recreation opportunities were estimated to be $1.92 million for the South Coast project,[b] suggesting that recreational benefits from that project alone are enough to justify the costs. The infrastructure improvements also create benefits by lowering the risk of damage to coastal real estate and public infrastructure. Annual erosion mitigation benefits provided by the South Coast project are estimated to be $787,400, for a total of over $12.5 million over a 17-year span.[c]

Sources: a. Banerjee et al. 2018; b, c. Pipe 2010.

4.3.2 Support adaptation of coastal ecosystems and marine life

Networks of MPAs and marine reserves are important for their ability to protect and preserve habitats and depleted, threatened, rare and endangered species and populations and to maintain connectivity. Research suggests that the benefits of extending MPAs (including spillover benefits) exceed costs in many locations, including the opportunity costs of limiting fishing in the areas.[2]

The creation of an MPA network also means the creation of jobs. A global MPA network that meets the World Parks Congress goal of conserving 20–30 percent of the world's seas could cost between $5 billion and $19 billion per year. It is estimated that such a network would create about 1 million jobs (Balmford et al. 2004).

In the Seychelles, the costs of coral bleaching events were calculated and compared with the costs and benefits of adaptation strategies. For adaptation measures (and associated costs), an investment package of more than $9 million and annual recurrent costs of more than $5 million are foreseen. The net present value of adaptation in terms of benefits to tourism is estimated at $209 million, giving a benefit-cost ratio of 1.9 (Cesar et al. 2004).

The Nature Conservancy's Atlas of Ocean Wealth, and the accompanying interactive mapping tool, serves as a valuable resource for managers and decision-makers to determine not just the location of coral reefs and other important natural assets but also their value in terms of fish production, carbon storage and coastal protection. By revealing the location and magnitude of benefits, the Atlas of Ocean Wealth maps and tools can help destinations fully understand and investment in protecting the natural systems that underpin their tourism sector.

Box 17 examines the efforts under way to improve the resilience of marine tourism in the Great Barrier Reef, Australia, through investment in active coral reef restoration and coral saving technologies.

Box 17. Improving the Resilience of Great Barrier Reef Tourism, Australia

As a long-haul international destination, the impacts of the COVID-19 pandemic on marine tourism in the Great Barrier Reef (GBR), Australia, have been acute. Concurrently, this industry sector has been facing an existential threat brought on by climate change, as illustrated by four mass coral bleaching events from 2016 to 2022. Among industry and government responses to the climate threat, there has been a paradigm shift in coral reef management and stewardship. Passive protection of the reef, aimed at preventing and minimising user impacts, is transitioning to active restoration and resilience building through research and development and on-ground practice change. Reef tourism operators are playing a key role in site restoration at local scales and are being supported by adaptive government policy, with the dual aim of sustaining reef tourism through the pandemic and advancing reef restoration.[a]

Substantial government investment to research and development of coral-saving technologies (e.g. the Reef Restoration and Adaptation Program) and efforts to the improve water quality from catchment runoff, reflects the GBR's iconic status among Australians and its high social, cultural and economic values. In 2017, the total economic value of the GBR was estimated at AU$56 billion, with reef tourism contributing $5.7 billion annually to the Australian economy and providing 58,000 jobs (full-time equivalent).[b]

Presently, recovery of GBR tourism from the COVID-19 pandemic is not yet apparent, and it may be several years before pre-COVID visitation levels are again seen. Research to identify opportunities for improving industry resilience to future extreme events is ongoing, and it is possible that significant structural change will be apparent in the sector in coming years. Such change will be driven by supportive and adaptive government policies,[c] the evolution and scaling up of coral reef restoration and innovation and entrepreneurship within the industry.[d]

Sources: a. GBRMPA n.d.b; b. Deloitte Access Economics 2017; c. see GBRMPA 2021; d. Cumming et al., forthcoming.

4.3.3 Diversify tourist markets

Tourism destinations must improve their resilience to future shocks and crises by diversifying their tourism markets. For many countries, this will mean marketing and developing products for domestic (Box 18) or regional tourism. It also means that investments in tourism infrastructure—including mobile tented camps and resorts, hotels and conference centres—should be designed to be multipurpose and adaptable to changing requirements.

Tourism revenues are seasonal and volatile. Visitors are affected by extreme events (which will increase with climate change) as well as by global events, such as the COVID-19 pandemic. Alternative sources of income for those who serve tourists are therefore essential.

A study on beach tourism diversification in Bangladesh indicates that diversification offers multiple activities and experiences to tourists, leading to a better destination image. It also helps to extend the tourism season, reduce seasonal risks, increase productivity, reduce overall costs and increase profits. In addition, diversification through the presentation of new alternative products to the traditional mass tourism products and services on beaches can provide more customised products to tourists, leading to greater strategic flexibility to meet varied tastes and demand. Alternative tourism products around beaches, such as fishing, bird watching, hiking and photography, have less negative social and environmental impacts. They can also ensure better utilisation of marine and coastal assets along with increased stakeholder attention towards better management of the maritime environment.

In the Solomon Islands, the Ministry of Culture and Tourism has encouraged domestic tourism during the pandemic by adjusting civil servants' leave entitlements to encourage workers to take a paid holiday in local hotels. Such moves can generate consistent local demand and build a robust domestic tourism base in the region, providing an opportunity for development partners to support the Solomon Islands Tourism Sector Recovery Plan in creating a more circular and resilient tourism base (ADB 2021).

4.3.4 Build resilience through crisis recovery

Coastal and marine tourism and the communities that live along the coast will experience future crises and environmental threats and even disasters. Although these might not be preventable, a pathway for recovery through community-led tourism is possible. Box 19 explores the experience of Japan in rebuilding and strengthening its resilience in the aftermath of disaster.

Box 18. Repositioning Domestic Tourism Market by Engaging Expats, Thailand

In Thailand, domestic tourists outnumber international ones, with 166 million domestic trips in 2019 compared to 40 million international trips.[a] However, domestic travellers stay, on average, 2.5 days, whereas international tourists stay about 9.5 days. The spending per day for domestic travellers (US$71) was less than half of that for international travellers ($159) in 2018, which has meant a traditional focus on international arrivals. During the global pandemic and in response to travel restrictions, Thailand repositioned its strategy to invigorate its domestic tourism market.

A key aspect of this was recognising that the expatriate population—specifically Chinese, European and Japanese—had been largely overlooked in traditional marketing strategies. As such, it developed targeted incentives to encourage these groups to travel and share their domestic tourism experiences with friends, family and colleagues at home and abroad. Thailand also targeted solo travellers with a special 'Single Travel Route' campaign. Other government campaigns, such as 'We Travel Together' and 'Encouragement' (Kum Lung Jai) helped boost the domestic market.

Source: a. ADB 2021.

Box 19. Post-disaster Tourism for Community Recovery and Resilience, Japan

In the early phases of disaster recovery, community-based tourism can be part of psychological, emotional and economic recovery for disaster-affected communities. Activities such as storytelling tours do not have to rely on new investment or rebuilding of infrastructure; thus, they can be part of early recovery through volunteer efforts. In later stages, as a more formal activity, tourism can be a way of communicating vital information to visitors through educational, experiential or nature-based activities sometimes incorporated in school programmes. Disaster-related stories that include historic evidence become part of traditional local knowledge that forms a critical foundation of living with the environment. Tourism as a form of visitor-host interaction can carry memories and lessons and be part of resilience building. Sensitivity and ethical considerations are mandatory, as extensively discussed in dark tourism literature.[a]

Locally initiated post-disaster tourism was seen in the early recovery phase of the Great East Japan Earthquake and Tsunami on March 11, 2011. The magnitude-9 wave devastated over 500 kilometres of the Tohoku region's coastline and hinterland and claimed nearly 20,000 lives, with some 2,500 still missing.[b] The region covers nearly 20 percent of the nation's land, 68 percent of which is forested. At the time of the disaster, the region's population was approximately 10 percent of the entire nation, and Tohoku's primary output of agriculture and fisheries products was important on the national scale.[c] Fisheries were the most affected by the disaster, with 319 fishing ports damaged and 19,000 vessels damaged or lost. In the areas affected by the now-defunct Fukushima Daiichi Nuclear Power Plant, recovery of the fishery is estimated as 18 percent of the pre-disaster level.[d]

Tanohata (population 3,244), located on the northern Sanriku Coast in Iwate prefecture, is one of the areas where post-disaster tourism started early. The coast became part of the Sanriku Fukko (Reconstruction) National Park, which was established in 2013 to promote the area's geographical and natural features while commemorating the disaster and lessons learned. Part of the area was also designated as the Sanriku Geopark in the same year, including the legacy of the earthquake and tsunami that carry important information, history and memories of the community.

The early tourism activity started within four months after the disaster and included a *zappa* boat adventure cruise. Six 'boat captains' were taking visitors in the traditional fishing boat (*zappa*) to areas inaccessible from land, telling stories about the day and explaining the geographical features of the place, their fishing experiences, local legends and folktales. The cruise not only helped fishers to stay active and connected with their place and, importantly, with their boats, but it also allowed them to utilise their skills and knowledge in a form of economic activities. Their stories included references to 'tsunami stones', the large stones brought ashore by the tsunami and used as a warning for future construction beyond the marked point. One stone in Tanohata, at 25 metres (m) above sea level and 360 m from the shore, was believed to have been brought up in the 1896 Meiji-Sanriku Tsunami. In 2011 the water stopped just below the stone, and most of the houses below were destroyed.

In the Sanriku Fukko National Park, three of the tsunami stones were included alongside the 29 disaster-related sites—such as a pine tree that survived out of 7,000 trees and a memorial park which was overwhelmed by the 15 m high tsunami and where an entrance gate and part of the camping facility was preserved—and a 13 m high observatory was built with materials from destroyed structures so that visitors can understand the scale of the tsunami that reached the region. The park was based on the Green Reconstruction Vision, including the development of a 700-kilometre coastal trail, the Michinoku Shiokaze Trail.[e]

With COVID-19, the popularity of walking trips has been increasing. The Tohoku Ohenro Pilgrimage, connecting disaster-affected sites along the coast, was initiated by two women in September 2011 as a way of maintaining the connection among the disaster sites, keeping the memories of the disaster alive and inviting tourists back to the area.. The pilgrimage now connects 91 sites, including not only temples and shrines but also places that tell important disaster stories, such as 'the 130 steps where 88 children ran up', 'a shrine gate reconstructed by volunteers' and 'a tree where people fled to and were saved'. Tourism can provide a way forward for disaster-affected communities, carrying memories and stories that are vital not only to themselves but to visitors. It is a form of resilience building and is regenerative in nature for the local community and cultural heritage.

Notes: An existing national park, prefectural park and two other protected areas were restructured into the Sanriku Fukko National Park, and another park was included in March 2015; there are 34 national parks in Japan. As of 2022, the Japan Geopark Network includes 46 locations, 9 of which are also listed in the Global Network of National Geoparks; geoparks feature locally distinct culture and industry associated with the geophysical characteristics of the area and grassroots initiatives such as local guides with storytelling and interpretative skills. The Sanriku Fukko National Park pine was named the 'Miraculous Pine Tree'; however, it deteriorated significantly and was cut down and replaced with a concrete replica in 2013.

Sources: a. see Sharpley and Stone 2009; Sharpley and Kato 2021; b. Reconstruction Agency 2022; c. MLIT 2011; d. Reconstruction Agency 2022; e. Ministry of the Environment of Japan n.d.; see JNTO 2022.

5. Financing

Shifting from the pre-pandemic tourism model to one that is more sustainable, regenerative and resilient will require aligning economic and social incentives with conservative objectives. This section considers the main financial mechanisms currently available to support destinations to shift to more sustainable practices.

Historically, market-based incentive structures have been misaligned with conservation objectives, supporting the argument that government intervention will be required to support a successful shift that maximises socio-economic benefits. Tourism can play an important role in this respect, recognising that the health of these ecosystems is more closely tied to revenue streams than in any other ocean-based industry (Box 20).

It is critical to acknowledge the current funding gap that exists with respect to financing a sustainable ocean-based economy. The pandemic-related drop in tourism revenue exacerbated this gap, and in many resource-dependent coastal locations, it is compounded by burdensome external debt, high energy costs, limited access to credit, brain drain and the impacts of natural disasters (Schuhmann 2020).

In many cases, governments use revenue from marine tourism to fund marine research and conservation efforts (Wilson and Tisdell 2003) and undertake monitoring and protection activities in MPAs. For example, in the Tubbataha Reefs Natural Park in the Philippines, tourism revenues make up over half of the conservation budget needed to protect areas from illegal fisheries (UNESCO 2020). With the decline in tourism revenues during the COVID-19 pandemic, some sites have turned to crowdfunding, online donations and government grants (where available) to meet the funding gaps. Private foundations have also stepped in to compensate for reduced revenue from tourism and endowments. However, these funding sources are unlikely to be sustained.

In this section, six types of finance mechanisms are considered to support governments and the tourism industry in addressing the current financing gap and shifting their practices to a more sustainable, regenerative and resilient model:

1. Tourist taxes and fees
    i. User fees and entry fees
    ii. General tourist conservation fees
2. Concession fees
3. Privately established and managed MPAs
4. Environmental taxes
5. Environmental 'blue' bonds
6. Conservation trust funds

Box 20. Who Should Pay for the Protection of Natural Resources That Support Coastal and Marine Tourism?

Conservation of the environmental assets that support coastal and marine tourism is essential to sustaining economic and social returns from tourism. Because market forces cannot be relied upon to provide the efficient amount of conservation, the expenditures required to finance market interventions should be viewed as investments that promote the public good and improve overall market efficiency. These investments can be financed in a variety of ways, each with different implications in terms of equity, efficiency and practicality.[a] General theories for financing the costs of conservation include the 'beneficiary pays principle' (BPP) and the 'polluter pays principle' (PPP).[b]

Consistent with neoclassical economic theory, the BPP suggests that costs should be borne in proportion to the benefits received.[c] Under the BPP, those that derive value from natural resources (directly or indirectly) should pay for the associated benefits.

The PPP is based on the idea that the price of goods and services should reflect the true costs of their provision, including costs associated with environmental damage or degradation.[d] The PPP therefore suggests that individuals or groups should be held financially responsible for costs imposed on others. Both the BPP and PPP can be expected to improve market efficiency by internalising extra-market benefits or costs, thereby providing accurate and appropriate pricing signals and incentives to market actors.[e]

Specific means of revenue generation that are consistent with the BPP and apply to tourism include user fees and entry fees, concession fees and accommodation taxes. Avenues that are consistent with the PPP include taxes on environmentally damaging activities and, because visitors may also detract from the flow of benefits available to others through crowding and damage to natural assets, some user fees and entry fees.

Sources: a. Atkinson et al. 2000; b. Schuhmann, P.W., et al. 2019; c. Balmford and Whitten 2003; d. Parker et al. 2012; e. Schuhmann, P.W., et al. 2019.

5.1 Tourist Taxes and Fees

A large body of literature spanning several decades points to an inescapable conclusion: tourists the world over are willing to pay for access and improvements to high-quality coastal and marine resources. Non-market valuation studies have shown that tourists are willing to pay for clean, wide beaches (Beharry-Borg and Scarpa 2010; Loomis and Santiago 2013; Schuhmann et al. 2016; Brouwer et al. 2017; Lopez-Sanchez and Pulido-Fernández 2017; Tyllianakis and Ferrini 2021); coral reef quality (Parsons and Thur 2008; Beharry-Borg and Scarpa 2010; Casey et al. 2010; Schuhmann et al. 2013); clean (pathogen-free), clear seawater (Hess and Beharry-Borg 2012; Farr et al. 2016; Schuhmann, P., et al. 2019); and encounters with charismatic species (Davis and Tisdell 1999; Cazabon-Mannette et al. 2017; Murphy et al. 2018). Visitors have also been shown to be willing to pay for sustainability at tourist destinations through higher taxes, hotel prices and special conservation fees (e.g. Palmer and Riera 2003; Svensson et al. 2008; Casey and Schuhmann 2019; Jurado-Rivas and Sanchez-Rivero 2019; Schuhmann, P.W., et al. 2019; Durán-Román et al. 2021; Nelson et al. 2021).

Although it may seem obvious that tourists are willing to pay for quality environmental experiences, this literature suggests something more: tourists are willing to pay much more than they are currently paying. This underutilisation of tourist fees relative to their capacity suggests that a vast source of revenue for conservation initiatives and a potentially important tool for resource management is largely untapped.

5.1.1 User fees and entry fees

Pricing mechanisms for entry to spatially bound protected areas can raise revenues for resource protection and, by limiting entry, can reduce on-site crowding and damage to natural resources (Schuhmann, P., et al. 2019). The collection of fees at points of entry to protected areas also provides an opportunity to educate visitors and monitor demand and visitor satisfaction. The absence of entry fees or other forms of visitation management often results in inadequate protection of natural assets and resource degradation, which can limit the natural beauty and attractiveness of the coastal and marine environment (Palmer and Riera 2003; Font et al. 2004) thereby threatening both the economic and ecological sustainability of the destination.

For example, in the Mediterranean it is estimated that 89 percent of MPAs have historically relied on funding from two sources: governments and donors. With the former providing most funds, only 12 percent of management needs are covered by these sources, leading to inefficient and ineffective management (BlueSeeds 2020). One of the key findings for sustainable finance for U.S. MPAs provided by the Marine Protected Areas Federal Advisory Committee (2017) is that appropriated funds from agencies establishing MPAs are rarely sufficient for protected areas to achieve their missions.

The underutilisation of tourist fees as a source of financing for MPAs stands in stark contrast to evidence on visitors' willingness to pay. For more than twenty years, studies have shown that user fees for access to MPAS could be significantly higher. For example, Depondt and Green (2006) found that user fees for MPA access were largely lacking in Francophone countries of the Indian and Pacific Oceans and were significantly lower than divers' willingness to pay in Southeast Asia. Terk and Knowlton (2008) found that diving fees were levied in only 16 of 38 countries in the Caribbean and in only 34 of the 194 identified MPAs, even though 82 percent of the MPAs in the region protect coral reefs. Peters and Hawkins (2009) use evidence from 18 willingness-to-pay studies conducted at MPAs that support diving and snorkelling throughout the world, also finding that when MPA fees are charged, they are significantly lower than users' willingness to pay. Other examples illustrating the untapped potential of user fees in MPAs include Arin and Kramer (2002) in the Philippines; Togridou et al. (2006) in Greece; Ahmad and Hanley (2009) in Malaysia; Gelcich et al. (2013) in Chile; Rogers (2013) in Australia; Batel et al. (2014) in Croatia; Daly et al. (2015) in Mozambique; Piriyapada and Wang (2015) in Thailand; Kirkbride-Smith et al. (2016) in Barbados; Trujillo et al. (2016) in Colombia; Getzner et al. (2017) in Croatia; and Yu et al. (2018) in China.

Government reluctance to implement user fee systems due to public opposition is understandable. Fees may reduce access to nature for some groups and might be interpreted as commodifying nature for profit. Further, entry fees may crowd out spending in other economic sectors. Although these concerns should not be ignored, evidence suggests that their impacts can be mitigated (Schuhmann, P., et al. 2019). For example, differential or tiered pricing systems can be developed that discount or waive entry fees for socially meritorious groups such as locals and children (Depondt and Green 2006). Such price discrimination—charging different entry fees to different groups of users—is practised in several countries, including Costa Rica. Since May 2002, Costa Rica's park agency has set national park entrance fees at $7 per foreign visitor and approximately $2 per domestic visitor. In Mexico, price discrimination for locals and foreigners has been evaluated and found to generate significantly higher revenues than current prices (Rivera-Planter and Muñoz-Piña 2005).

Education and information regarding the purpose and use of fees can also mitigate public opposition. Because visitors are more willing to pay fees that are used to improve environmental quality or pay management costs (Font et al. 2004; Rivera-Planter and Muñoz-Piña 2005; van Beukering et al. 2006; Edwards 2009), it is essential that policies are in place to direct funds from fees towards management and conservation efforts (Parker et al. 2012) and that the benefits of fee-based conservation funding are clearly communicated to visitors (Box 21). It seems logical that fees should be sufficient not only to provide for facility maintenance, but also to protect against future damage.

Box 21. Sustainable Marine Protected Area Financing, Bonaire

Located in the southern Caribbean Sea, 80.5 kilometres north of Venezuela, Bonaire is one of the Dutch 'ABC islands' (Aruba, Bonaire, Curaçao). Bonaire is a small, biologically diverse and fragile desert island, surrounded by vulnerable coral reefs. In the early 1990s, dive tourism was increasing by 9–10 percent per year. An estimated 17,000 scuba divers visited Bonaire in 1991, and roughly 70 percent of all visitors to the island were divers.[a] Bonaire recognised that to continue to attract high-spending dive tourists, the island needed to develop sustainably and maintain a healthy environment.

By the 1970s, coral reefs were being damaged by both divers and boats, and the government decided to take action. In 1979, the Bonaire National Marine Park (BNMP) was established but at the time lacked a long-term source of financial support. A 1981 proposal for fees on air tank fills to support management of the BNMP was opposed by the dive industry and leading dive magazines and did not find government support. By the end of 1984, the initial grant monies had been exhausted. With no funding for staff or maintenance, the BNMP became a 'paper park', with management and control of access left to the dive operators.[b] Heavily used sites soon began to show signs of degradation, and the threat of losing dive tourists to other countries put Bonaire's livelihood at risk.[c]

Early in 1990, concerns about the impact of divers, and the lack of formal management of the BNMP, led the Island Government to commission a study to evaluate options, which recommended introduction of a visitor fee system and the creation of a new institutional structure for BNMP, with representation from the tourism industry.[d] In January 1992, an annual admission fee of US$10 for scuba divers was introduced, with all fees going directly to the park. By the end of 1992, the fees had raised over $170,000, enough to cover salaries, operating costs and capital depreciation.[e]

The BNMP is one of the few Caribbean marine protected areas (MPAs) that is almost entirely financed by user fees. Economic valuations (specifically non-market valuation studies) played an important role in establishing appropriate user fees which lead to self-financing of the BNMP. The first valuation study in 1991[f] provided estimates of the contribution of the park to the local economy, the costs of operating the park, divers' willingness to pay entrance fees and estimates of the level of dive intensity, beyond which damage to reefs would likely result. The study found the willingness to pay for entrance into the park averaged $27.40 per visitor per year, and 92 percent of visitors agreed that a proposed $10 user fee was reasonable. The $10 user fee was established in 1992 and, by law, can only be used to support marine park operations.

Over time, inflation diminishes the purchasing power of this revenue, and the BNMP's management needs became more apparent. Based on subsequent valuation studies, the price of a dive tag was increased to $25 per diver per year in 2005, and an annual $10 nature fee was established for other water users (snorkellers, windsurfers, kayakers, etc.).[g] These fees have had no discernable impact on visitation rates and have generated sufficient revenue

Box 21. Sustainable Marine Protected Area Financing, Bonaire (Cont.)

to finance fieldwork, maintenance, patrolling, monitoring, education, communication, outreach and law enforcement work for the BNMP. As of 2022, the admission fee for scuba divers increased to $45 per year, and all other users purchase a $25 nature fee tag. The fee is paid when visitors check in at their dive resort. Since the introduction of an online payment system in 2019, dive tags, which are compulsory, have become a popular souvenir from a trip to Bonaire. The BNMP survived the COVID-19 pandemic through a mix of financial reserves managed by Stichting Nationale Parken Bonaire and leveraging national government funding support for salaries—covering roughly 60 percent of salaries.[h]

Most MPAs are not sustainably financed, even those collecting user fees, if the revenue stream is inadequate or if revenues do not flow directly to the protected area. The latter is a broader problem. For terrestrial parks, in a study covering 51 countries and 556 parks worldwide, Balmford et al.[i] found that on average, only 2 percent of tourism income went back to park management and maintenance.

Economic valuation can inform the benefits of investment in an MPA and guide the setting of user fees. But, even when valuation results point to positive net benefits of user fees and investment in the MPA, this is not always sufficient to prompt action, especially if there is a lack of political will, corruption or poor communication of the valuation results.[j] In Bonaire, the enabling conditions which supported the uptake of valuation results and the setting of user fees included the following:

- **High reliance on a healthy marine environment.** Diving and snorkelling on coral reefs are mainstays of Bonaire's economy. More than half of the country's gross domestic product comes from tourism. Dive tourism relies on a small number of visitors with high disposable income.[k]
- **Threats to resource and economic health.** Before the BNMP was revitalised with staff and resources to support effective enforcement of regulations, reefs were degrading due to overuse and lack of management. The threat of losing dive tourists to other countries contributed to the willingness to establish park entry fees to pay for marine conservation efforts.[l]
- **Good governance and transparency in the setting of user fees.** Efficiency and transparency in the management of entry fee revenue has helped the fee system sustain broad support from both tourists and dive operators. Revenue has supported regular park patrols, educational materials and more than 100 well-maintained moorings. Dive operators and watersports operators collect fees and remit them to the park on a weekly basis, eliminating administrative costs and increasing accountability for the funds.[m]
- **Stakeholder engagement.** Engagement of the tourism sector (including hotels and dive shops), non-governmental organisations and the government allowed for the exchange of views, concerns and collaborative development of solutions.

The application of economic valuation in Bonaire is a widely documented and shared case study on sustainable financing of an MPA. This approach has been replicated in Fiji, Indonesia, Hawaii and Honduras by the Coral Reef Alliance as well as in Belize.[n]

Sources: a–c. Dixon et al. 1993a; d. van't Hof 1990; e, f. Dixon et al. 1993b; g. Thur 2010; h. Pers. Comm. de Meyer 2022; i. Balmford et al. 2015; j. Kushner et al. 2012; k. Waite et al. 2014; l. Dixon et al. 1993a; m, n. Kushner et al. 2012.

5.1.2 General Tourist Conservation Fees

In addition to a willingness to pay for access to natural sites such as parks and protected areas, a great deal of evidence suggests that tourists are willing to pay for conservation initiatives at destinations through general tourist fees and donations to conservation trusts. For example, Casey et al. (2010) found that tourists were willing to pay an additional fee to visit Mexico if they were assured that the revenue generated would go directly to coral reef protection. Visitors were found to be willing to pay between $20 and $80. With some 5 million visitors passing through Cancun International Airport each year, this suggests that it would be possible to raise between $100 and $400 million annually for coral reef management programmes. Conservatively, a $20 fee paid by only 50 percent of tourists would provide $50 million a year for reef protection. Schuhmann, P.W., et al. (2019) found that visitors were willing to pay an average of approximately $36–$52 per trip to Barbados for

coastal and marine conservation, and that the implementation of nominal conservation fees would have minimal impact on visitors' willingness to return to the destination. The authors note that a fee of $10 per trip for non-Caribbean visitors to Barbados would generate over $5 million annually for coastal and marine conservation. Edwards (2009) examined tourists' willingness to pay a general tourism tax and an environmental tax in Jamaica. Finding significantly stronger support for the latter, this study suggests that a $2 environmental tax could generate roughly $3.4 million, a sum sufficient to 'completely finance' coastal zone management activities, with negligible impacts on visitation.

General tourist fees for coastal and marine conservation are appropriate for destinations where most tourist interactions with natural resources are not spatially limited by the boundaries of protected areas or when physical exclusion of non-paying visitors is impractical (Schuhmann et al. 2019). This is likely the case in many 'sun, sea and sand' tourist destinations, where opportunities for interactions with coastal and marine ecosystems span entire coastlines. As with all fees, opposition to tourist fees can be mitigated by clearly communicating their purpose and by providing evidence of positive environmental outcomes associated with the fee revenues.

5.2 Concession Fees

In addition to entry fees levied on visitors and users of parks and protected areas, fees can be charged to private sector businesses and service providers ('concessionaires') who profit from operating within or near those areas. Concessionaires can include suppliers of lodging, souvenirs, food and beverages, guide services, equipment rentals and recreation opportunities (UNEP 2001). Concession fees are appropriate when there is a clear demand for particular goods and services within or near the natural area, but natural resource or park managers do not have the capital or capacity to provide them in-house (MPA FAC 2017). As with visitor fees, concessionaire fees can be structured in different ways, including license fees that grant legal rights to a limited term of operation (e.g. annual, monthly) for a fixed fee; per-consumer fees that are proportional to demand for the provider's goods and services; or based on a percentage of earnings (UNEP 2001; MPA FAC 2017). Contracts for concession fees should include requirements for sustainable resources use and require that concessionaires either acquire sustainable tourism certification or adhere to a set of best practices (MPA FAC 2017).

Concession agreements may also be granted to private operators with mandates for sustainable management of protected areas. The concessionaire would then set entry or user fees to recover maintenance and concession costs. These types of arrangements are used in Brazil (Estima et al. 2014) and Ecuador (Thompson et al. 2014). Such management concessions may be appropriate for particular zones of existing MPAs where government or local community participation in local marine resource management is limited. In their place, concessionaires can provide infrastructure and management structures to establish and maintain marine conservation goals, including the ability to protect discrete areas for threatened marine life, build local capacity for MPA management, act as a test case for traditional protected area management techniques, build awareness of marine protection and, importantly, build core or no-take areas for larger, slower developing (state-led) MPAs more effectively. As is the case with concessionaire agreements for the provision of goods and services, concessions for protected area management require monitoring to ensure resource protection and adherence to sustainable practices (NOAA 2018).

Such concessions may be an option for particular zones of existing MPAs, where government or local community participation in local marine resource management is limited. In their place, concessionaires offer existing infrastructure and management structures to more quickly establish marine conservation, including the ability to protect discrete areas for threatened marine life, build local capacity for MPA management, act as a test case for traditional protected area management techniques, build awareness of marine protection and, importantly, build core or no-take areas for larger, slower developing (state-led) MPAs.

Preferential access to certified tour operators (especially in MPAs) is another alternative. For example, according to the Global Sustainable Tourism Council (GSTC), whenever possible, Royal Caribbean Cruises gives preferential purchase treatment to shore excursion operators that are certified by a GSTC-accredited certification body. MSC

Cruises has a similar approach, and other travel suppliers give preferential purchasing treatment to suppliers that are certified as sustainable.

5.3 Privately Established and Managed MPAs

In some cases, committed marine conservationists among tourism operators have taken proactive steps to directly invest into the establishment and management of new protected areas. Dive operators, in particular, have a vested interest in marine ecosystem and coral reef protection. Since the 1990s, there have been discussions about the potential for new forms of MPA governance, including 'entrepreneurial MPAs' (Colwell 1997), 'marine conservation agreements' (Udelhoven et al. 2010), dive tourism–led conservation areas (de Groot and Bush 2010) and 'hotel managed marine reserves' (Torres and Hanley 2016). IUCN defines additional categories of governance, such as community-led (by indigenous peoples and local communities), private governance (by private sector entities) and shared governance (through a combination of the above or transboundary; Dudley 2008; Jones et al. 2018).

Today, some of the cases featured in the above literature would be described as 'other effective area-based conservation measures' (OECMs), a new category introduced by the Convention on Biological Diversity and IUCN to reflect wider conservation efforts under a range of governance typologies. OECMs are defined as 'a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in-situ conservation of biodiversity with associated ecosystem functions and services and where applicable, cultural, spiritual, socio–economic and other locally relevant values' (CBD 2018).

There is also a growing number of marine privately protected areas (M-PPAs) initiated by tourism investors that have become formally recognised protected areas. IUCN defines a privately protected area (PPA) as a protected area under private governance 'by individuals and groups of individuals; non-governmental organisations; corporations, including commercial companies and small companies established to manage groups of PPAs; for-profit owners such as ecotourism companies; research entities such as universities and field stations; or religious entities' (Mitchell et al. 2018).

Two of the most well-known examples of successful M-PPAs are Chumbe Island in Zanzibar, Tanzania (Box 22), and Misool Marine Reserve in Indonesia (Box 23). Both of these M-PPAs are formally recognised protected areas, and both are led by ecotourism businesses.

Box 22. The Chumbe Island Coral Park M-PPA, Tanzania

Located in Zanzibar, Tanzania, the uninhabited Chumbe Island was identified as a marine biodiversity hot spot in 1991, and a private company (Chumbe Island Coral Park, or CHICOP) was established to lobby for the island's protection. Through CHICOP's efforts, the Chumbe Island marine privately protected area (M-PPA) was legally designated in 1994, including a no-take coral reef sanctuary and fully protected forest reserve on land.

Management agreements were signed between CHICOP and the Zanzibar government for CHICOP to fully finance and manage the site, making it the world's first M-PPA. A small area of the island was leased to CHICOP to establish an ecolodge to fully fund operations as a not-for-profit entity, with all revenue generated from visitors to the island funding conservation management and an extensive education programme for Tanzanian schools, communities and wider stakeholders. This also made Chumbe the world's first financially self-sustaining marine protected area.

The visitors' center and ecolodge were developed with state-of-the-art eco-architecture and technology to ensure zero impact on the environment, all energy is solar, water is generated by rainwater catchment and sewage is totally avoided by composting toilets and vegetative grey water filtration systems. Outreach and employment opportunities were targeted to proximal communities from the outset, with job creation extending to support wider enterprise development locally.

Since becoming an M-PPA, peer-reviewed studies have shown that fish biomass in the no-take reef sanctuary has increased by 750 percent, with the spillover effect supporting sustainable fisheries and food security many kilometres from Chumbe's borders, with live hard coral cover reaching 80 percent coverage in the protected area. To date, the project has also provided education services to more than 13,000 schoolchildren and community members and continues to run a range of community support and enterprise-development initiatives locally.

Box 23. The Misool Marine Reserve M-PPA, Indonesia

Located in Raja Ampat (Papua, Indonesia), the private company Misool Eco Resort (MER) began operations in 2005 when it entered into a lease agreement with local traditional owners to build an ecolodge and establish a no-take marine reserve in the area to protect the region's marine biodiversity. Concurrently, Indonesia's government was in the process of establishing a marine protected area (MPA) at the site; thus, the MER no-take reserve became embedded into the legally designated MPA as one of the MPA's no-take zones (NTZs).

To manage the area, MER established the Misool Foundation as a separate conservation management entity, and over time the areas leased for conservation management expanded to cover a total of 1,220 square kilometres, including two large NTZs bridged by a restricted gear corridor. The foundation employs, trains and supports local community members to manage the area through regular patrols and a range of conservation research and policy initiatives.

The lease arrangement with these communities includes a financial payment (fixed term, renewable) and the provision of a range of support services. This includes a community education programme (providing support for local school operations and scholarships for advanced education) and a community recycling service. MER and the foundation also provide essential employment and training opportunities to these remote communities.

Since becoming a marine privately protected area, peer-reviewed studies have shown that fish biomass in the NTZ areas has increased by 250 percent, and there are approximately 25 times more sharks within the reserve than directly outside of the protected areas. Oceanic manta sightings also increased 25-fold between 2010 and 2016.

In both of these cases, the drive to protect and sustainably manage the marine ecosystem and engage and support local communities was at the core of their business models. They showcase replicable innovation in sustainable ocean conservation and management and have been a catalyst for the growing recognition that M-PPAs can provide a credible alternative governance approach to conservation area management.

Unlike under-resourced state-managed MPAs, M-PPAs can generate the means to finance and manage the site independently, be appropriately staffed with a strong on-ground presence, create job opportunities, support local livelihoods and build partnerships with local resource users. They also have a vested business interest in the long-term health of the marine environment upon which their operations depend.

However, replicating and scaling this approach requires important conditions to be in place; and the international conservation community has an important role to play in promoting these conditions to incentivise a shift to sustainable coastal and marine management through wider private sector engagement.

Important conditions for success include government willingness to engage in public-private partnerships, security of tenure with long-term tenurial arrangements, investment incentives for triple-bottom-line commitments to invest in outreach and awareness-raising programmes, tax incentives or operational incentives that help ameliorate non-commercial costs linked to key management achievements. In turn, private sector actors need to clearly demonstrate their business plans and mechanisms to deliver effective M-PPA management and engagement of local communities through proactive job creation, livelihood support, education programmes and involvement of local leaders as advisers to the project. Ultimately, an M-PPA needs to be able to deliver on its biodiversity conservation commitments.

M-PPAs offer the cost-effectiveness of private sector management following business principles, financing that is inherently more sustainable than project-cycle donor funds, and potential public-private partnerships that can ensure cost efficacy and financial sustainability for protected areas. The crucial role of the private sector in biodiversity conservation is increasingly being recognised globally. In 2016 the IUCN World Conservation Congress passed Resolution 36 calling on member states to promote PPAs to support ecosystem integrity

(IUCN 2016), and in 2018 it produced the Best Practice Protected Area Guidelines (Mitchell et al. 2018). To date, however, very few marine PPAs exist, and the potential of this approach for both promoting effective conservation area management and securing livelihoods of local people remains largely untapped.

5.4 Environmental Taxes

Environmental taxes are compulsory payments to government where the tax base is a physical unit (or proxy) that has a known negative impact on the environment (Spratt 2013). Such taxes are direct applications of the 'polluter pays principle' and can be expected to improve overall market efficiency by 'pricing-in' external costs created by market activity. Environmental taxes can be an important instrument to mitigate climate change, and through their impacts on efficiency, innovation, human health and productivity, they can play a critical role in accelerating the transition to renewable energy and a green growth model (Coste et al. 2018). Because market actors have flexibility in how to respond to environmental taxes, desired environmental outcomes (e.g. lower pollution) can be achieved at a lower total cost than through mandated restrictions on inputs or output (Schuhmann 2018).

Environmental taxes are often touted as creating a 'double dividend'—both generating revenues and incentivising sustainable behaviours. In practice, however, the ability of taxes to achieve both results may be limited in the long term. When taxes are applied to polluting goods with relatively inelastic demand, such as fossil fuels used for energy and transport, the revenue-earning potential of environmental taxes is higher, but the environmental gains may be limited by relatively modest changes in consumer behaviour. Conversely, taxes applied to goods with relatively elastic demand will create larger changes in behaviour, thus limiting the revenue-earning potential of the tax.

Examples of environmental taxes include taxes on the sale or use of fossil fuels (i.e. carbon taxes), pesticides, fertilisers, motor vehicles and plastic bags. Taxes on resource extraction or harvest (e.g. timber, minerals, game, fish) and on imports of bulky or hazardous goods are also common, as these can help to defray the future costs of disposal and management of refuse (Eurostat 2013). In Belize, revenue-targeting environmental taxes have been included in national legislation since 2001 and include environmental taxes of 1 percent paid on the arrival of vehicles and other imports (Attzs et al. 2014). Tax proceeds are earmarked for a special fund used to finance environmental goals such as solid waste management, building institutional capacity in the Department of the Environment, environmental clean-up initiatives and measures to preserve and enhance the environment.

As with all fees and charges, environmental taxes are likely to be met with public opposition. To mitigate pushback, the design and purpose of environmental taxes should be clearly communicated to the public, providing transparency in terms of what is being taxed, the magnitude and incidence of the tax burden and the environmental and social goals of the tax (e.g. behavioural change, revenues for specific initiatives; OECD 2011; Attzs et al. 2014). To motivate behavioural change away from environmentally harmful goods and services and to cleaner alternatives, governments must illustrate long-term, predictable commitments to the environmental tax (OECD 2011). For example, if consumers think that an environmental tax on gasoline may soon be repealed, they will have less incentive to adopt cleaner transport options. Such a commitment requires high-level political support (Spratt 2013).

A common concern with environmental taxes is their regressive burden if households on the lower end of the income distribution spend proportionately more on items such as energy and fuel. Yet both empirical and theoretical evidence suggest that fuel taxes are only mildly regressive and may in fact be progressive in lower- and middle-income nations (Spratt 2013). To preserve the incentive effect of environmental taxes, they should be implemented as broadly as possible, with distributional impacts addressed via ex post policies outside of the tax programme, such as lower income taxes or rebates for certain income classes (OECD 2011).

To mitigate adverse impacts on especially vulnerable economic sectors (e.g. energy-dependent manufacturing that is highly exposed to trade), governments can offer protection through tax rebates or subsidies for the adoption of cleaner technologies and production practices (Coste et al. 2018). Concerns about environmental taxes reducing competitiveness relative to other locations may be unfounded. In their recent review of the effects of

environmental taxes, Coste et al. (2018) find that environmental taxes have not had significant adverse effects on trade, output or employment, and the limited impacts tend to be short-term ones that are concentrated in a few emissions-intensive, trade-exposed industries. The Coste et al. (2018) review also suggests that environmental taxes lead to significant reductions in GHG emissions and that using environmental tax revenues to lower other taxes on households and firms (i.e. revenue-neutral taxation) can increase GDP.

5.5 Environmental 'Blue' Bonds

Many coastal and marine tourist destinations have a paradoxical combination: rich in natural resources assets but burdened by external debt. The past decade has revealed the problems of inadequate investment in coastal and marine management, and the pandemic has highlighted the vulnerabilities of insufficient economic diversification.

Innovative financing mechanisms such as bonds can assist governments in transitioning to more sustainable futures by protecting economically valuable natural resources while also providing financial support for projects or initiatives that are not funded by tax revenues (MPA FAC 2017). Environmental bonds (including 'blue', 'green' and 'climate' bonds) were adapted from the idea of municipal bonds whereby governments issue debt securities (loans) with predetermined fixed rates of return to fund capital improvement projects that serve the public good. Investors (bond buyers) are paid back a steady stream of 'fixed income', providing a low-risk alternative to investments with variable rates of return (Schuhmann 2018). In the case of revenue bonds (also known as 'use-of-proceeds' bonds), investors are paid back from earnings or cost savings from a capital improvement project. Revenue bonds might be issued to finance the construction or improvement of public utilities (e.g. fee-based wastewater treatment services provided to households and businesses) or to provide the capital needed to improve operational efficiency and lower costs in the public sector (e.g. retrofitting government buildings or transportation to be more energy efficient). With general obligation bonds—commonly used for funding parks and schools—investors are paid back from revenues associated with higher taxes. General obligation bonds typically involve a referendum vote from taxpayers regarding the creation of new taxes to fund specific initiatives (MPA FAC 2017).

Blue bonds are emerging as an innovative way to fund ocean- and water-related solutions, create sustainable business opportunities and signal responsible ocean stewardship to the market, but they may be relatively unfamiliar to the broader investment community (Box 24). To ensure the credibility and transparency needed to attract institutional investors, blue bonds should conform to existing global standards such as those prescribed by the International Capital Markets Association (Mathew and Robertson 2021).

Box 24. Blue Bonds, Seychelles and Belize

In 2008 the Republic of Seychelles defaulted on its national debt. Since then, the country has sought ways to preserve its natural environment without endangering financial stability. In 2016 The Nature Conservancy (TNC) and its impact investing unit, NatureVest, brokered a deal to restructure a portion of the country's debt with a debt-for-nature swap. TNC bought some of the debt from lenders at deeply discounted rates. The Seychelles government agreed to pay TNC back over time and to funnel the savings from its lower-interest rates into ocean protection. The deal allows the government to restructure its debt with a mix of investments and grants, in exchange for designating 30 percent of its exclusive economic zone (EEZ) as a marine protected area (MPA; up from less than 1 percent). The agreement frees capital streams and directs debt service payments to fund climate change adaptation and marine conservation activities that will improve the management of the country's coastlines, coral reefs, mangroves and fisheries. Traditionally used for conservation of tropical forests, this is the first time this financing technique has been used for the marine environment.[a]

In 2018, the Seychelles government complemented its debt-for-nature swap by establishing the world's first sovereign blue bond valued at US$15 million over 10 years (with backing from the World Bank and the Global Environment Facility) to support the necessary shift to sustainable management and governance of fisheries. Proceeds from the blue bond are disbursed on a competitive basis as grants or loans through the Seychelles Conservation and Climate Adaptation Trust and have been used for fisheries management planning activities and to encourage investment in sustainable fishing. As fisheries recover over time, these investments will generate increased revenue for the government and the fisheries sector. The combination of the debt-for-nature swap and blue bond has helped the Seychelles expand marine protected areas (MPAs) and improve management. In March 2020, the Seychelles achieved designation of 30 percent of the EEZs in MPAs, supporting nature, fisheries, tourism and the blue economy.[b]

In November 2021, TNC and the Belize government announced the world's largest debt restructuring for marine conservation to date—an innovative $364 million financial transaction which will enable the country to reduce its debt burden and generate an estimated $180 million for marine conservation. This translates into approximately $4 million per year, plus it capitalises on an endowment fund in support of marine protection, tripling Belize's budget for ocean conservation programmes over the next two decades. As part of the deal, Belize commits to protect 30 percent of its marine area by 2026 (roughly doubling the area under protection), strengthen governance frameworks for fisheries, establish a regulatory framework for blue carbon projects and develop a marine spatial plan (MSP) to guide sustainable management of marine and coastal areas, including sustainable tourism and fisheries.

The MSP is an important tool informing the expansion of existing MPAs and establishment of new ones. Stakeholders engaged in the MSP planning process will include members of local communities, fishing associations, the tourism sector and government officials. Local engagement is critical to ensure that the plan sustainably supports the local economy while protecting ecosystems. Proceeds from the blue bond will be disbursed on a competitive basis through a newly established independent conservation fund for Belize. The tourism sector is represented on the board of the fund by the Belize Tourism Industry Association.

Important enabling conditions for the success of this approach are political will, strong partnerships and an economic situation which lends itself to selling or restructuring the national debt. The Inter-American Development Bank (IDB) is also using blue bonds as a means of promoting marine conservation and building back better post-COVID through its IDB Invest programme covering the Caribbean and Latin America.

Sources: a. Thande 2018; b. TNC 2021.

5.6 Conservation Trust Funds

Conservation trust funds (CTFs) are legally independent grant-making institutions that provide financing for conservation and sustainable development activities (Bath et al. 2020). CTFs are not direct sources of conservation finance. Rather, their main purpose is to act as an intermediary, collecting revenues from different sources and investing and/or distributing funds to local organisations such as non-governmental organisations (NGOs), community organisations or government agencies to implement targeted conservation or development programmes (Briand and Carret 2012; TNC 2012; Bladon et al. 2014).

Key benefits of CTFs include the provision of a sustainable source of revenues for conservation programmes, allowing for improved planning and more efficient use of resources, the capacity to mobilise large amounts of funding, the ability to strengthen stakeholder participation and capacity and the ability to improve coordination between donor programmes and activities and national or regional conservation strategies (TNC 2012). By leveraging their local presence and network of stakeholders, CTFs can also serve as a low-cost entry point to attract and mobilise other sources of funding (CFA 2014).

CTFs first emerged in the late 1980s and 1990s in response to the Convention on Biological Diversity and to channel funds from debt-for-nature swap arrangements to local conservation initiatives (Bayon et al. 1999; Bath et al. 2020). CTF funding sources have since expanded to include grants, donations, revenues from tourist fees and levies, environmental taxes, payments for environmental services schemes, natural resources leases and court settlements (Schuhmann 2018). Key sources of initial endowment capital to establish CTFs include local governments; donor agencies such as the World Bank, the United Nations Development Programme, the Global Environment Facility and the U.S. Agency for International Development; private foundations; and international NGOs (Bayon et al. 1999; Bath et al. 2020).

Although most CTFs are established to fill funding gaps at specific protected areas or networks, the scope of CTFs is often much broader (Bath et al. 2020). Bath et al. (2020) report that more than 100 CTFs are currently operational around the world, with more than 40 established since 2010. Of these, 45 percent attract and invest funds for conservation in marine and coastal systems, 66 percent invest in economic livelihood diversification programmes and nearly half make investments in climate change mitigation. As of early 2020, these CTFs have collectively managed assets worth more than $2 billion (Bath et al. 2020).

The main components of a CTF are its institutional structure, revenue generating mechanisms, accounts and fund distribution mechanisms (Parker et al. 2012; Bladon et al. 2014). Institutional structure commonly includes of a board of directors, technical or scientific advisory committees, investment committees and project selection committees. The board and CTF committees typically comprise representatives from various stakeholder groups and are responsible for establishing policies and criteria for funding and the allocation of funds for grants and investment purposes.

CTF financial accounts are intended to cover programming needs, provide long-term financial stability and diversify risk. These accounts can take a variety of forms, including endowment accounts, sinking funds, revolving funds, emergency funds or a combination of these (Oleas and Barragán 2003; Bath et al. 2020). Endowment funds are permanent investment funds that provide returns through interest earnings. Generally, the principal amount of the endowment is held in reserve and only interest earnings are drawn to fund projects or activities, providing the CTF with long-term financial stability and operational resilience (Bath et al. 2020). Sinking funds disburse capital over a fixed time period and are appropriate for one-time projects. This type of funding arrangement can be attractive to donors who wish to see the results of their contributions (Blandon et al. 2014). Revolving funds receive periodic infusions of new capital from recurring revenue streams, such as user fees or entry fees, environmental taxes or loan repayments (Oleas and Barragán 2003). Emergency endowment funds may also be established by setting aside a portion of revenues for emergency needs, such as disaster recovery or to fund protected areas when other sources of funding are scarce (Bladon et al. 2014). The importance of emergency conservation funding became apparent during the pandemic as the rapid decline in tourism resulted in budget shortfalls for protected area

management (Bath et al. 2020). Strategies for investments are often determined by an investment committee within the CTF, and they tend to follow a conservative approach, targeting modest capital growth and minimal risk (Bladon et al. 2014). Investment vehicles can range from the utilisation of local financial institutions to purchase of fixed-income government bonds, stocks or mutual funds (Schuhmann 2018).

The distribution of CTF funds often follows a competitive grant-awarding process whereby proposals for projects or activities that serve the public good are solicited on a cyclical basis and selected for funding based on specified criteria (Spergel and Mikitin 2013; Schuhmann 2018). Proposals may be solicited for targeted projects or may be directed to broad conservation goals. After suitable proposals are identified, a contract between the CTF and grantee is created specifying obligations and expectations for each party.

In addition to channelling funds to conservation programmes, CTFs can also participate in the development of national conservation strategies and policy, support corporate social responsibility in the private sector and provide technical expertise to build long-term, in-country capacity in public and private sector organisations (Spergel and Mikitin 2013; Bath et al. 2020). CTFs also engage with private sector investors to help transform production practices and develop and scale new business models in industries such as tourism, fisheries and agriculture, thereby supporting the transition to green and blue growth models of economic development (Bath et al. 2020).

To appeal to donors and other sources of finance, CTFs must illustrate continuity and stability and are therefore most often organised outside of government control (TNC 2012), though it is common for governments to be represented in CTF governance arrangements, such as having a seat on a CTF's board of directors (Spergel and Mikitin 2013; Bath et al. 2020). It is also important that CTFs adhere to accepted standards of operations and performance, such as the Standards for Conservation Trust Funds, established by the Conservation Finance Alliance (CFA).[3]

Examples of successful CTFs include the Protected Areas Conservation Trust (PACT), which provides a sustainable means of financing the protection, conservation and

enhancement of the natural and cultural resources of Belize. PACT revenues are derived from a conservation fee of $3.75 paid by overnight visitors, a 15 percent commission from a cruise ship passenger head tax, and interest earned on its deposits. Funds are distributed through a grant-funding mechanism for projects that support conservation across the 103 protected areas that form the national protected areas system. The Seychelles Conservation and Climate Adaptation Trust (SeyCCAT) was established in 2015 to manage the capital proceeds from a debt-for-nature swap brokered by NatureVest (The Nature Conservancy), involving the conversion of $21.6 million of sovereign debt in exchange for a commitment by the Seychelles government to improve policies and investment around marine conservation and climate adaptation. SeyCCAT's financial structure includes a revolving fund (Blue Grants Fund) to finance conservation projects through a competitive grants process as well as an endowment fund (Blue Endowment Fund).

A variety of resources are available for additional information on best practices for CTFs, including the Voluntary Practice Standards for Conservation Trust Funds (Spergel and Mikitin 2013), which provides a comprehensive set of standards and best practices for all aspects of design, management, monitoring and evaluation of CTFs. The CFA provides a tool kit for environmental funds that includes legal documents, manuals, plans and communications materials to help guide the creation of new funds, promote best practices and increase the efficiency and effectiveness of funding biodiversity conservation.

6. Measuring and Tracking Progress

You can't manage what you don't measure." Attributable to management consultant Peter Drucker, the point of this phrase is that improvements in many aspects of life and business are enhanced by the definition of measurable goals and tracking progress toward those goals. This section looks at the role of establishing a baseline level of sustainability using an updated and more comprehensive set of indicators to support a shift towards a regenerative and resilient model of coastal and marine tourism.

Establishing a baseline level of sustainability and measuring changes relative to that baseline is an essential step for destinations or industry actors aiming to improve the sustainability of their tourism product. However, because sustainability is a multifaceted and multisectoral concept, as indicated in Section 5, this can appear to be a complex task.

There are numerous internationally established standards and criteria frameworks for sustainable tourism that apply to coastal and marine tourism. This section looks at leading criteria and certification programmes and proposes an expanded set of indicators that encompasses an increased focus on regeneration and resilience.

6.1 Criteria and Certification

The internationally approved minimum criteria for sustainable tourism practices maintained by the GSTC are recognised as one of the primary sets of criteria for both industry and destinations and form the basis for many certification programmes. The GSTC criteria include four pillars: sustainable management, socio-economic impacts, cultural impacts and environmental impacts (including consumption of resources, reducing pollution and conserving biodiversity and landscapes). Built on years of prior work globally and considering the standards for sustainable tourism in every continent, the adaptable GSTC criteria sets targets for businesses, governments and destinations to achieve and surpass. Two sets of criteria are available: Industry Criteria and Destination Criteria. Industry Criteria aim to sustainably manage the private sector travel industry, focusing on hotels and tour operators; and Destination Criteria focus on tourism destinations.

There are many GSTC-recognised standards for hotels, tour operators and destinations globally. These are sustainable tourism standards that comply with and have GSTC criteria included as part of the standards owned by a certification body or a local, national, or specialised tourism organisation, including EarthCheck, Green Globe, Preferred by Nature and Green Destinations.

A review of certification systems in Poland revealed that the measures implemented to achieve certification not only reduced CO_2 emissions but also reduced hotel maintenance costs in certain areas. Research suggests that meeting the standards of certification systems can lower water and energy consumption costs by about 20 percent and waste disposal costs by 80 percent (Dziuba 2016) and can lead to increased motivation among employees (Duglio et al. 2017). Certification costs can vary widely; evidence suggests that the EU Ecolabel scheme costs hotels up to €4,000, though some reports suggest costs as low as €2,000.[4]

6.2 Measuring Sustainable Tourism Outcomes

In advance of the 2017 Year of Sustainable Tourism, the UN Statistical Division partnered with UNWTO to address the complexity of measuring progress towards sustainable tourism by establishing a statistical framework for the measurement of sustainable tourism (UNWTO 2016b). The overarching goal of the Measuring Sustainable Tourism (MST) initiative is to develop a set of national-level indicators relevant for monitoring and analysis of sustainable tourism outcomes, utilising a standardised framework that is compatible with other economic, social and environmental information collected by national statistics offices. The MST initiative rests on developing a set of indicators that are connected to and compatible with the UN System of National Accounts (SNA), which is the internationally accepted framework for national income accounting (the comprehensive tracking of national output and income), and the more recently developed System of Environmental Economic Accounting (SEEA) framework and Tourism Satellite Accounts (TSAs; UNWTO 2019a). SEEA is a framework designed to extend the SNA to account for environmental assets with ties to economic activity (UN n.d.), and TSAs are frameworks for measuring the direct contribution of tourism consumption to national economies (Frechtling 2010).

By leveraging existing data collection and reporting frameworks related to national accounts, tourism statistics and environmental indicators, the MST framework allows destinations to measure the impacts and contributions of tourism on the economy, society and environment in a common and consistent manner. The MST framework uses baseline indicators to establish levels of sustainability, identify trends and areas for improvement, compare sustainability performance relative to similar destinations and track progress over time. Recognised by the UN Statistical Commission as

'the main tool to monitor the contribution of tourism to the Sustainable Development Goals', as of 2020 the MST has been piloted by 11 countries: Austria, Canada, Fiji, Germany, Italy, Mexico, Netherlands, the Philippines, Saudi Arabia, Sweden and Thailand (UNWTO 2020a).

Comparison of economic, environmental and social indicators between the tourism industry and national economies allows for insights regarding the costs and benefits of activities related to tourism and sets the stage for data-driven policy actions, such as spatial planning, implementing compulsory standards for emissions and creating economic incentives to shift behaviour to sustainable outcomes. Multiple sets of potential baseline indicators already exist, such as the initial set of indicators proposed in 2005 by the UNEP and UNWTO and, more recently, the European Indicator Framework.

Table 1 outlines a comprehensive set of indicators tailored to the sustainability of coastal and marine tourism destinations and bringing in the concepts of regeneration and resilience outlined in this report, which do not exist in earlier indicator frameworks. Thirty-two core indicators (in bold) cover the fundamental aspects of sustainability monitoring and provide the basis for effective destination management. They also allow for comparison over time and for benchmarking between destinations. Additional indicators are proposed to expand the understanding and impact of tourism on the destination and allow for benchmarking against particular priorities for the destination (e.g. restoration of ecosystems or cultural heritage; Box 25).

Table 1. Indicators of Sustainable Coastal and Marine Tourism

PILLAR	BASELINE ISSUE	INDICATOR
Environmental	Sustainable tourism public policy	▪ Percentage of tourism enterprises or establishments in the destination using a voluntary certification or labelling for environmental quality and sustainability and/or corporate social responsibility
	Diversity of coastal and marine ecosystems and pollution/water quality	▪ Flora and fauna; number and population volume of species ▪ Level of pollution in seawater (e.g. turbidity; chlorophyll; concentration of nitrogen, phosphorous other pollution index) ▪ Harmful algae blooms (i.e. number of events, intensity or concentration, duration) ▪ Number of days per year the beach/shore is closed due to contamination ▪ Percentage of beaches awarded the Blue Flag[a]
	Reducing impact of travel to/from	▪ Average travel (kilometres) by tourists and same-day visitors from home to the destination
	Energy management	▪ **Per capita energy consumption of energy from all sources (total, tourist-related sectors, per person day)** ▪ **Percentage of businesses participating in energy conservation programmes or applying energy-saving policy and techniques** ▪ **Percentage of energy consumption from renewable sources (total, tourist-related sectors)** ▪ **Greenhouse gas emissions (total, by sector)** ▪ Percentage of tourism enterprises involved in climate change mitigation schemes, such as carbon dioxide (CO_2) offset, low energy systems, etc. ▪ Percentage of annual amount of energy consumed from renewable sources (megawatt-hours) compared to overall energy consumption at destination level per year ▪ Availability of renewable energy sources ▪ **CO_2 equivalent sequestered at the destination through regenerative coastal management, blue carbon projects and living shorelines or green infrastructure adaptations**
	Water availability and consumption	▪ **Water use (total volume, per capita, per tourist, per day)** ▪ **Water saving (percentage reduced, recaptured or recycled)**

Table 1. Indicators of Sustainable Coastal and Marine Tourism (Cont.)

PILLAR	BASELINE ISSUE	INDICATOR
Environmental (Cont.)	Drinking water quality	▪ **Percentage of tourism establishments with water treated to international standards** ▪ **Reported cases of waterborne diseases per week/month (total, tourists)**
	Development control	▪ **Use of a land-use or development planning process, including tourism** ▪ **Percentage of area subject to control by type (e.g. density, design)**
	Sewage avoidance or treatment	▪ **Percentage of sewage from tourism-related businesses avoided, reduced or treated (primary, secondary, tertiary)** ▪ **Availability of treatment systems** ▪ **Percentage of tourism establishments with treatment systems**
	Solid waste management	▪ **Waste volume produced total, tourism sector (e.g. tonnes per month)** ▪ **Volume and percentage of waste recycled by waste type** ▪ **Volume of litter in public areas (total, tourism sites)** ▪ Availability of waste management facilities ▪ **Volume of organic waste composted** ▪ Percentage of tourism enterprises separating different types of waste ▪ Percentage of total waste recycled per tourist compared to total waste recycled per resident per year
	Conservation and restoration	▪ Area and volume of sand nourishment ▪ Percentage of natural/cultural heritage places restored through tourism certification ▪ Percentage of visitors actively contributing back to conservation (e.g. tourist volunteer hours) ▪ Percentage of natural/cultural heritage places restored ▪ Percentage of ecosystems restored through tourism ▪ Area of restored ecosystems by ecosystem type ▪ Status or population density of economically important species of touristic importance (e.g. sea turtles, sharks, whales, etc.) ▪ Coral reef density or similar health indicator
Economic	Sustaining tourist satisfaction	▪ **Level of satisfaction by visitors**[b] ▪ **Perception of value for money**[b] ▪ **Percentage of return visitors** ▪ Percentage of visitors having exceptional experiences ▪ Number of incidents of visitor safety
	Tourism seasonality	▪ **Visitor arrivals by month/quarter** ▪ **Accommodation occupancy rates by month/quarter** ▪ **Percentage of year-round versus seasonal businesses** ▪ **Number and percentage of permanent, seasonal and temporary tourism jobs**
	Economic benefits of tourism	▪ **Tourism employment (domestic: foreign, gender ratios and wage differentials)** ▪ **GDP/revenue generated by tourism as percentage of total revenues** ▪ Businesses offering training ▪ Business networks ▪ Visitor expenditure ▪ Innovation index ▪ Number of local people employed in tourism (also ratio of tourism employment to total employment) ▪ Tourism revenue staying with the destination (or country) ▪ Percentage of product sourced locally
	Diversification of tourist market	▪ Ratio of international versus domestic visitor ▪ **Types of tourism segment in self-identified visitor surveys**

Table 1. Indicators of Sustainable Coastal and Marine Tourism (Cont.)

PILLAR	BASELINE ISSUE	INDICATOR
Socio-cultural	Local satisfaction with tourism	▪ **Local satisfaction level with tourism**[b] ▪ Percentage who believe that tourism has helped bring new services or infrastructure[b]
	Effects of tourism on communities	▪ **Ratio of tourists to locals (average and peak period/days)** ▪ Number of incoming and outgoing passengers per port per month ▪ Number of berths and moorings for recreational boating ▪ **Percentage who believe that tourism has helped bring beneficial services or infrastructure**[b] ▪ **Social services available to the community (number and capacity attributable to tourism)** ▪ Total kilometres of open-access beaches relative to total kilometres of beaches ▪ Percentage of beaches accessible to all
	Gender equality	▪ Percentage of tourism enterprises where management positions are held by a woman ▪ Ratio of local employment (men:women)
	Indigenous representation	▪ Percentage of tourism enterprises where management positions are held by an indigenous person ▪ Ratio of local employment
	Inclusion and accessibility	▪ Percentage of rooms in commercial accommodation establishments accessible for people with disabilities ▪ Percentage of tourist attractions that are accessible to people with disabilities and/or participating in recognised accessibility information schemes
	Health and wellbeing of local community	▪ Satisfaction index amongst local tourism workforce[b]
	Cultural heritage	▪ Percentage of visitors who seek to experience culture and/or heritage[b] ▪ Amount of visitor expenditures reinvested into culture and/or heritage ▪ Percentage of natural/cultural heritage places restored through tourism certification ▪ Number of initiatives supporting indigenous/traditional owners ▪ Percentage of indigenous/traditional-owned/operated businesses ▪ Percentage of bilingual signs and interpretation ▪ Number of tourism businesses contributing to community ▪ Percentage of the destination's events that focus on traditional/local culture and heritage ▪ Number of households speaking ancestral languages ▪ Number of students graduating from educational programmes that emphasise ancestral knowledge and cultural heritage

Notes: GDP = gross domestic product. Core indicators are listed in bold. a. See Box 6; b. Indicator data can be collected using tourist surveys/questionnaires.

Source: Authors, adapted from Becken and Kaur (2021, Table 3) and drawing from UNEP and UNWTO (2005) and the European Indicator Framework (European Commission 2016a).

Box 25. National Indicators for Sustainable Tourism, Indonesia, Japan and Portugal

Indonesia

In February 2022, Indonesia established the Indonesia Marine Policy Action Plan 2021–2025.[a] This action plan emphasises the strategic value of marine tourism in national marine economy and welfare. The economic contribution and benefits of marine tourism are particularly highlighted, focusing on sustainable added value improvement. These guidelines have been aligned with the UN World Tourism Organization (UNWTO) indicators and officially recognised by the Global Sustainable Tourism Council (GSTC).[b]

The sustainability pursuit has been incorporated within the Decree of the Minister of Tourism 14/2016 on Guidelines for Sustainable Tourism Destination.[c] This aims to establish and provide guidance to the government and stakeholders on the sustainable tourism destinations in Indonesia, including coastal and marine tourism. The regulation scope includes four aspects: the management of a sustainable tourism destination, the economic benefits to local communities, the cultural preservation for the community and visitors and environmental conservation.

From these four aspects there are 41 criteria (and 104 corresponding indicators) upon which the sustainability of the tourism destinations are assessed. Some of the criteria and indicators from the regulation can be highlighted as follows:

- *Local career opportunities*: Policy and legislation that require companies at tourist destinations to provide employment opportunities, training opportunities, work safety and fair remuneration for all, including women, youth, the disabled, minority groups, etc.
- *Access for all*: Policy to support access for all to sites and facilities, including those of natural and cultural importance, including persons with disabilities and others who have specific access requirements.
- *Support local entrepreneurs and fair trade*: Programme and system that support micro, small and medium enterprises (*usaha mikro, kecil dan menengah*) in the tourism value chain to develop and promote sustainable local products through fair trade principles. The local products include foods, beverages, handicrafts, performance art and agriculture.
- *Cultural heritage protection*: Established laws or regulations to protect historical and archaeological artefacts; programmes to protect and celebrate intangible cultural heritage (e.g. music and drama)
- *Greenhouse gas (GHG) emissions:* A system to encourage and assist tourism enterprises in measuring, monitoring, reporting and mitigating GHG emissions. This includes a set of regulations on controlling GHG emissions and involvement from community and local government in monitoring efforts to control GHG emissions.

The sustainable tourism implementation is also supported by a monitoring system called Sustainable Tourism Observatories[d]—as part of the UNWTO International Network of Sustainable Tourism Observatories.[e] The observatories are utilised as the centres for monitoring and support for sustainable tourism within the corresponding tourism destinations. There are currently five existing observatories in Indonesia, managed in collaboration with local universities.[f]

Japan

The Japan Tourism Agency (JTA), part of the Ministry of Land, Infrastructure, Transport and Tourism, was established in 2008. With intense promotion since early 2000, especially on inbound tourism, international arrivals reached 10 million in 2015 and 30 million in 2019. Sustainability became a clear focus in 2018 with the establishment of the Sustainable Tourism Promotion Office within JTA, partially to counterbalance the negative impacts in some of the major destinations. Following the publication of a study report in 2019, a national standard, the Japan Sustainable Tourism Guideline for Destinations (JSTS-D), was launched in June 2020. The JSTS-D is a GSTC-recognised standard and consists of 47 criteria in four sections: sustainable management, socio-economic sustainability, cultural sustainability and environmental sustainability.[g] Implementation of the JSTS-D has been encouraged nationally with funding directed towards capacity building and policy implementation at 5 destinations selected in 2020 and another 15 in 2021, with further significant qualitative and quantitative expansion in 2022. Sustainable destinations and products are promoted in the Japan National Tourism Organization's brochure *Explore Deeper—Sustainable Tourism Experiences in Japan*.[h]

Box 25. National Indicators for Sustainable Tourism, Indonesia, Japan and Portugal (Cont.)

Portugal

Portugal launched 'Tourism Strategy 2027' to drive economic, social and environmental development while promoting the country as 'one of the world's most competitive and sustainable tourism destinations'. The plan includes five pillars of strategies: valuing resources both historical and cultural; boosting the economy, promoting innovation to attract foreign investment; promoting knowledge in the tourism sector; generating connectivity for air travel and stakeholders; and promoting the country as an attractive destination.[i]

Several major programmes have been in place to achieve the above strategies. The €90 million Valorizar programme aims to expand tourism demand geographically and seasonally, focusing on improving Wi-Fi in historic locations, increasing accessibility for tourism, improving inland destinations, encouraging sustainable tourism and municipal wildfire recovery. Tourism 4.0 and the NEST Tourism Innovation Center promote the digitisation of the tourism sector and foster entrepreneurship and innovation and the Revive Programme for attracting investment to revitalise high-value heritage for tourism.

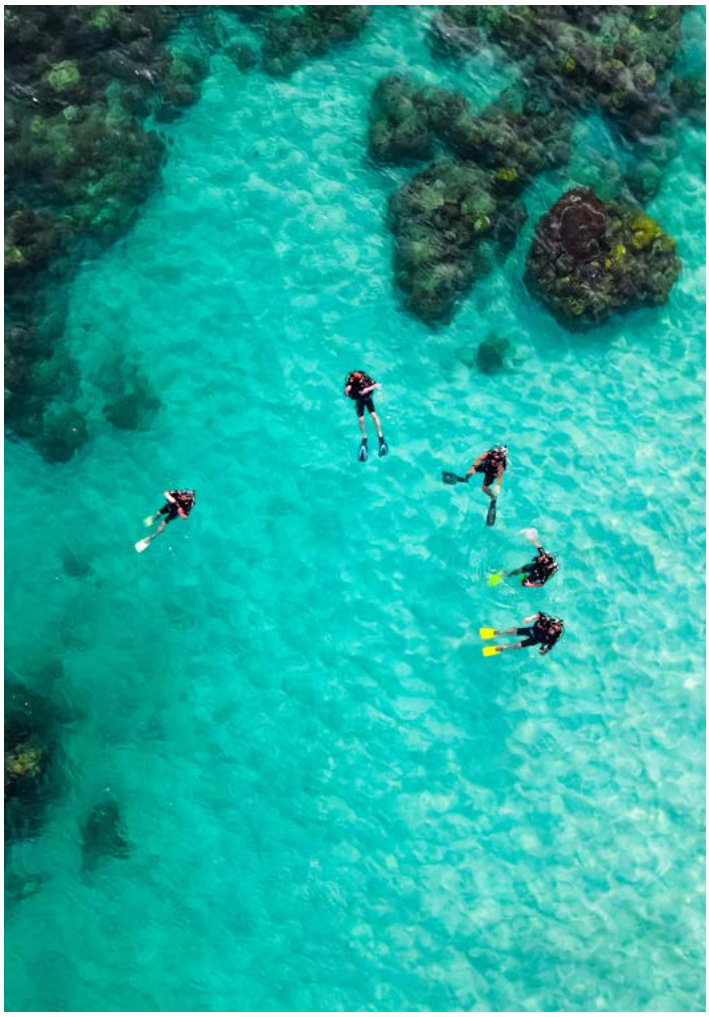
Portugal used the European Indicator Framework as the basis for these strategies and a monitoring framework to track progress against the baseline in 2017.[j]

Sources: a. Presiden Republik Indonesia 2022; b, c. Yahya 2016; d. OECD 2021b; e. UNWTO 2016a; f. Putri 2019; g. JTA 2020; h. JNTO 2022; i. OECD 2022; j. European Commission 2016b.

7. Collaboration and Co-operation

Given the increasing competition between destinations and the growing complexity of tourism destination management, developing co-operative and collaborative relationships between stakeholders is a prerequisite for success and sustainability.

This section explores examples of collaborative and co-operative approaches at three scales: community level, destination level and regional level.



Co-operation can assist destinations in environmental planning, protecting shared natural assets, dealing with environmental crises and developing new projects and initiatives (Erkuş-Öztürk and Eraydin 2010). Co-operation across and within tourist destinations can also reduce costs associated with long-term conflict resolution and enhance innovation through the sharing of ideas and perspectives (Erkuş-Öztürk and Eraydin 2010).

7.1 Collaborative Community-Led Initiatives

Fostering the development of community-led initiatives that understand and value local heritage and history contribute to the long-term economic prosperity of a destination. Co-management or collaborative partnership models can be highly effective in ensuring local communities are directly engaged in tourism while also providing for the expertise of the private sector or foreign entities. See Box 26 and 27 for case studies in Indonesia and Mozambique.

7.2 Destination Stewardship

Given the complex and multistakeholder nature of most tourism destinations, the creation of a central destination management organisation can be effective in co-ordinating goals, marketing and ensuring open and inclusive participation of all stakeholders for a particular destination. In recent years there has been a growing interest in the concept of destination 'steward-

Box 26. Collaborative Management of Bunaken National Park, Indonesia

The management of Bunaken National Park in North Sulawesi has been supported by a collaborative system between two key stakeholders: the Bunaken Local Community Forum (Forum Masyarakat Peduli Taman Nasional Bunaken; FMPTNB) and the North Sulawesi Watersports Association (NSWA).

Representing nearly 30,000 local villagers, the FMPTNB advocates for community aspirations, such as benefit sharing and environmental awareness; it helped design participatory area zonation involving local government, dive operators and villagers. The NSWA group represents the marine tourism industry stakeholders in Bunaken.

The FMPTNB has worked closely with the NSWA to ensure the growing marine tourism in Bunaken also supports community welfare. The NSWA commits to employ locals for various positions, such as dive guides, lodging staff and boat captains. As of 2012, more than 1,000 local people were employed by the local marine tourism industry.

Source: UNDP 2012.

Box 27. Community-Led Joint Venture Tourism, Mozambique

Anvil Bay is a nine-chalet (18-bed) lodge situated in the Maputo Special Reserve in Mozambique. The lodge offers guests game drives, walks in the dune forest and on the beach, beach bikes, watersports, snorkelling, fishing and turtle nesting walks.[a]

Mozambique's government awarded a 50-year concession to the Ahi Zamene Chemucane (AZC) community association, which in turn has a 25-year agreement with the Chemucane Tourism Company (CTC), a joint venture company, to develop and operate the lodge. The CTC is 40 percent owned by AZC, which was financed by a US$500,000 grant from the World Bank's Community Enterprise Fund and by a $500,000 loan from the Ford Foundation, administered by the African Safari Foundation (ASF). The other 60 percent equity is owned by the Bell Foundation, a non-governmental organisation, which invested $2 million.[b]

The AZC represents about 1,000 residents in three affected communities: Mabuluko, Muvukuza and Tsolombane.[c] During the construction phase there were 25 staff members, and 19 of them were from the communities that are part owners of the lodge. Another 7 employees were from Inhambane; they helped to train local people in carpentry and other construction skills.[d]

Locally sourced construction materials were used where possible, including reeds for the chalet roofs. This had the unintended benefit of local people realising that grass had a value, and it reduced incidents of burning.[e] During construction, monthly trips were also organised for around 25 people from the three communities to visit the lodge construction site. The visitors rotated each month so that all would have an opportunity to visit the site. Training was provided for 13 local community members in hospitality at the South Africa College of Tourism.[f]

Now operational, the lodge has 29 employees: 28 are Mozambican, and of these, 22 (76 percent) are from the three local communities. Local procurement is relatively limited due to the remote location, but Anvil Bay is able to purchase seafood and small quantities of thatch for maintenance as well as pay for transport and local storage fees.[g] Staff members were trained in how to construct and maintain furniture and fittings, using sustainably resourced natural materials for furniture where possible.

One of the key successes to the development of Anvil Bay was the long-term technical support provided by three non-governmental organisations: the ASF, Technoserve and the Peace Parks Foundation. For example, the ASF helped to facilitate the partnership between the community and the private sector, provided technical advice to the AZC and also facilitated funding for the community's 40 percent shareholding.[h] A joint management committee was established and included representatives from the Ministry of Tourism, the Matituine District government, the AZC and the community.[i]

Development of joint ventures between community members and the private sector, and preferentially employing local people, is an important way to build local capacity and reduce poverty in remote and marginalised areas. However, it has high associated transaction costs, particularly where community members have a limited understanding of tourism and hospitality and lack basic education. Yet this case demonstrates that building and operating a luxury lodge is feasible with the effort and energy from enlightened operators with adequate technical support and finance. Such initiatives are replicable in cases where substantial grant support can be identified to purchase community equity in lodge-owning companies and to provide funding for preparatory and ongoing technical expertise.

Sources: a. Snyman and Spenceley 2019; b. Collins 2012, 2014; c. Collins 2012; d–f. Spenceley 2014; g. Pers. Comm. Collins 2017; h. Collins 2014; i. Collins 2012.

ship', driven by an increase in sustainability awareness, smarter tourism development and management for both tourists and residents, a rising call for social inclusion, new technologies, a growing need for resilience and increasing governmental interest in destination governance (Imbsen et al. 2021). A focus on destination stewardship has been accelerated by the COVID crisis (Imbsen et al. 2021).

Destination stewardship is defined by the GSTC as 'a process by which local communities, governmental agencies, NGOs, and the tourism industry take a multi-stakeholder approach to maintaining the cultural, environmental, economic, and aesthetic integrity of their country, region, or town' (Bray 2021).

A destination stewardship approach can help tourism stakeholders, including community members, create their shared future in a collaborative and mutually beneficial way. Translating the concept of destination stewardship to action requires a structure that supports bringing all of the stakeholders around the table. It also requires giving them a real voice in tourism planning, policy and management. A number of locations have

Box 28. Destination Stewardship, Bahamas

The Ministry of Tourism, Investments and Aviation recently launched the Bahamas Destination Stewardship Council initiative to promote sustainable lifestyles, environmental protections and stewardship in the Bahamas.[a] The council aims to promote more inclusive tourism development at the community level. The initiative, which follows GSTC criteria, serves to educate and unite the communities through a collaborative effort of the key stakeholders of the tourism industry—members of the local communities, government agencies and business operators—to holistically maintain the integral aspects of the destination, be it aesthetic, economic, environmental or cultural.

The council was formed to ensure that community stakeholders are involved in the management of destinations and local businesses remain viable and can achieve long-term success. Early progress has focused on collaborative approaches for waste management, recycling and installation of solar lights to increase sustainability on two islands. Additionally, the councils plan to educate visitors and residents about various landmarks on the islands.

Source: a. Tourism Today 2022.

Box 29. Destination Stewardship, Iceland

Iceland's Snæfellsnes Peninsula extends 90 kilometres west between Reykjavík and Vestfirðir. Known for its stunning landscapes, nature, culture and history, as well as its convenience from Reykjavík, tourists flock there to witness glaciers, active volcanoes and the northern lights. Having reached mass tourism in the last decade, amounting to 2 million visitors in 2019 before the pandemic (seven times the number of locals), overtourism could create irreversible environmental damage. Icelanders in Snæfellsnes designed sustainable development for tourism, including establishing the Snæfellsnes Regional Park in 2014 through a multistakeholder approach. In 2008 Snæfellsnes earned an EarthCheck destination certification, a Global Sustainable Tourism Council–Recognized Standard, recognising its efforts in improving environmental, social and economic sustainability. The local communities have tracked 12 key sustainability measures. In the 10 years since certification, landfill waste in Snæfellsnes has been halved, carbon emissions and energy performance have been rated 'excellent' and a number of new environmental and social programmes have been established.[b] Coupled with the certification, these initiatives provide Snæfellsnes with numerous opportunities for marketing and branding itself as a responsible destination.

Iceland is aware of the impacts of mass tourism and has been encouraging visitors to explore beyond the popular attractions, travel slowly, extend their stays and go into the country. Snæfellsnes adopts a collaborative governance approach and formed an informal network of organisations—including the destination stewardship council involving the mayors, a research centre, the park, marketing organisations, tourism unions and businesses—to work on the common goal of sustainable development. The regional park is now working toward becoming a UN Educational, Scientific and Cultural Organization biosphere destination.[c]

Sources: a. Randle 2016; b. EarthCheck 2015; c. GSTC 2022.

formed destination stewardship councils as a governance structure to achieve sustainability goals (see Boxes 28 and 29 for two examples).

The WTTC has a Destination Stewardship Governance Diagnostic Framework to assess different aspects of destination governance and identify priority areas for improvement (WTTC 2021c).

7.3 Regional Co-operation

Enhanced regional co-operative and collaborative efforts can promote shared values and understanding across diverse tourism actors and unite economic and social interests by creating new relationships of trust and interdependence. Co-operation can also be an effective tool to avoid competition between locations, which could lead to a 'race to the bottom' in terms of sustainability when locations are competing over low-cost travel or package deals. Businesses and governments may not wish to be first movers for higher environmental and socio-cultural standards and policies if it leads to a loss of visitors to other (cheaper) destinations. This may be most apparent in regions where destinations compete against each other for tourists.

In general, the formation of regional 'clubs' organised around a set of common principles could be effective in stimulating broad and coordinated adoption of sustainability initiatives and mitigating domestic opposition. Coordination of environmental policies between countries (e.g. standards for cruise ships, tourist fees earmarked for conservation, environmental tax rates) can address the concerns of domestic industries that may be vulnerable to international competition (Coste et al. 2018). These clubs could operate at a country level or across hotels or comparable tourist operators. Such clubs could offer the opportunity for valuable peer exchange and technical support. Locations and countries that have adopted higher standards across the industry (such as Costa Rica) have fared well.

Regional coordination can also help strengthen resiliency to economic or environmental shocks through capacity building, improved access to resources and efficiency gains from economies of scale.

There are several co-operative initiatives worth highlighting. In Malaysia, tourism policies in the context of regional co-operation have been offering interesting prospects for inter-regional tourism, multidestination visitation and cross-cultural exchanges. These policies

cover not only cruise tourism but also transborder national parks, educational tourism and themed heritage trails (Hamzah 2004).

In the Black Sea region, a project called the 'Creation of a Black Sea Network for Sustainable Tourism Development in Bulgaria, Romania, Ukraine, Moldova and Georgia' launched the Black Sea Sustainable Tourism Network. The network contributes to joint tourism initiatives and activities through knowledge sharing and communication between tourism information providers and the tourism industry, and it increases public understanding and environmental and socio-economic awareness about tourism activities, among other measures (Golumbeanu et al. 2014).

There are multiple initiatives and projects implementing transboundary approaches for the protection of marine biodiversity, including the efforts made by the Healthy Reefs Initiative and the Mesoamerican Reef Fund to protect the Mesoamerican Barrier Reef System across the four countries that compose it and the broad efforts of the Ocean Foundation (see Boxes 30 and 31). The Caribbean, Mediterranean and Red Seas also have transboundary efforts and plans to control marine pollution, such as the Building Resilience in the Eastern Caribbean through Reduction in Marine Litter project, the Prevention of Marine Litter in the Caribbean Sea project, the Mediterranean Action Plan, the MedProgramme (2020–24) to reduce the major transboundary environmental stresses affecting the Mediterranean, and the Gulf of Aqaba Environmental Action Plan. Efforts to restore marine habitats include the Regional Strategy and Action Plan for the Valuation, Protection and/or Restoration of Key Marine Habitats in the Wider Caribbean 2021–2030.

Box 30. Regional Sustainable Tourism Policy and Development Framework, Caribbean

The 2020 Caribbean Sustainable Tourism Policy and Development Framework (CSTPDF) of the Caribbean Tourism Organization (CTO) is an output of its Supporting a Climate Smart and Sustainable Caribbean Tourism Industry (CSSCTI) project. The CSSCTI project is funded by the Caribbean Development Bank through resources allocated under the African Caribbean Pacific–European Union Natural Disaster Risk Management in the CARIFORUM Programme. The 2020 framework (an update to CTO's 2008 CSTPDF) serves as a tool for member countries, private sector and regional partners and CTO for supporting sustainable development of tourism and cultivating the competitiveness of its regional tourism sector. The national tourism organisations in CTO's member countries are encouraged to utilise the CSTPDF to develop, adapt or update national tourism policies and strategies according to their national priorities. For the Caribbean Hotel and Tourism Association and other private sector partners, the CSTPDF provides support for broader advocacy issues in tourism development and business operations. It also provides a platform for CTO and development partners to plan, implement and monitor tourism issues of regional significance.

The framework serves to enable the tourism sector to effectively contribute to not only the national development of member countries but also to the region's adoption of the global 2030 Agenda for Sustainable Development and particularly to the attainment of the UN Sustainable Development Goals.

The CSTPDF 2020 comprises an agreed vision, 12 value propositions and guiding principles and 7 integrated policies or thematic areas that incorporate regional priority areas for sustainable tourism development. The value propositions and guiding principles for sustainable tourism also support the UN World Tourism Organization's Global Code of Ethics for Tourism (Annex 3). The framework identifies development goals to be addressed by the policy, and areas for policy action by member countries and provides strategic interventions and best-practice guidelines. Case studies, regional and international best practices and benchmarks are used to highlight applications of the practices and interventions recommended under each policy and development framework area.

Box 31. Regional Water Quality Monitoring, Mesoamerican Reef

Given estimates of over 21,000 metric tons of nitrogen from wastewater discharge entering coastal waters along the Mesoamerican Reef (MAR), many communities and tourist destinations need improved wastewater treatment.[a]

The need for better data on the levels and sources of nutrient pollution in the critically endangered MAR ecosystem was clear before the onset of the global pandemic, and the resulting travel reductions provided a 'natural experiment' to better understand nutrient pollution from tourism. Coral Reef Alliance and the Healthy Reefs Initiative developed a joint initiative with multiple local partners to gather high spatial- and temporal-resolution data at sites where tourism-related sewage is expected to be a dominant pollution source as well as in low-tourism (control) locations. The collaboration has sampled 90 sites in Belize, Honduras and Mexico (30 per country) over a six-month period. As countries open their economies, analysing the relationship between changes in tourism levels and water quality parametres associated with sewage will enable a better understanding of the impacts of tourism on water quality and possible effects on reef health. These data will support growing efforts to implement targeted solutions to improve regional water quality. For water quality data to be effectively used to inform investment and management, governments need to become more willing to allow data to be publicly available.

Source: a. Berger et al. 2022.

8. Opportunities for Action

This report has emerged out of a demand for a fundamental reset of coastal and marine tourism following the unprecedented opportunity for reflection offered by the global pandemic. Given the highly localised nature of tourism, a single set of recommendations will not apply to all destinations or industry actors. Equally, the emphasis placed on aspects of sustainability, regeneration and resilience should be determined based on local priorities. For some, this will require a focus on restoration and recovery of local ecosystems to offer new opportunities for ecotourism and coastal resilience. For others, it may require a renewed approach to revitalising local traditional knowledge and culture through new offerings for tourism and partnerships with local communities and indigenous populations.

8.1 Five foundational priorities

Despite the lack of a 'one-size-fits-all' set of recommendations, based on the examples and case studies analysed, it is possible to identify five foundational priorities that will help initiate destination-wide systemic change in coastal and marine tourism as part of recovery efforts:

- Focus tourism policies, plans, product development and marketing on attracting visitors, both domestic and international, who wish to engage genuinely with the communities and destinations they visit and support in the regeneration of the local environment, economy and community.
- Develop strategies to increase sustainable and resilient financing for conservation and restoration activities, including MPA management and enforcement, leveraging user fees and environmental taxes and also building long-term solvency through the establishment and endowment of conservation trust funds to ensure conservation funding is resilient to downturns in visitation.
- Collect, integrate and maintain data on sustainability indicators, including through national ocean and tourism accounts, to inform local authorities on how to manage operational externalities, target appropriate investment for sustainability requirements and move beyond an over-reliance on GDP.
- Undertake value chain analysis to align strategies and interventions to eliminate leakage and boost local economic prosperity, including through upskilling local communities across the tourism value chain.
- Utilise collaborative management arrangements and co-operative partnerships to promote engagement of all stakeholders in decision-making and share expertise and resources for sustainability.

This report also identifies a suite of destination-wide and industry-specific opportunities for action, aligned with each pillar of action, to support more sustainable, regenerative and resilient coastal and marine tourism by 2030.

These opportunities are not exhaustive but aim to identify major shifts and key interventions. Sustainable tourism will require intervention and action from all tourism stakeholders, including the visitor, industry, community and government, as well as collaboration across the public and private sectors, development partners, communities and destinations.

8.2 Destination-Wide Actions

8.2.1 Reduce the negative impacts of tourism on the local environment, economy and community

- Create destination management authorities which measure the operational externalities caused by tourism; develop destination management priorities together with local stakeholders; and establish long-term goals, budgets and on-going monitoring and finance systems for sustainability at the destination level.
- Develop sectoral decarbonisation policies and plans, including incentives to encourage the adoption of low-emission technologies and establishment of industry targets and use of carbon accounting at the destination level.
- Support low-carbon industry practices by rewarding low-carbon behaviour and designing minimum regulatory requirements to limit high-polluting activities.
- Include tourism, aviation and transport targets in national climate plans and strategies to account for and manage the carbon footprint of travel to a country.
- Invest in improving the sustainability of destination infrastructure, including renewable energy, rainwater capture and reuse, solid waste, wastewater and sewerage management and sustainable financing for such infrastructure.
- Create extension programmes through universities or destination management authorities to help establish recycling industries for all parts of the tourism economy, in particular, small and medium enterprises.
- Minimise the impact of high-intensity tourist zones and conflicts with other coastal and marine users through land-use planning, zoning and integrated coastal zone planning.
- Adapt pre-existing or develop local and/or national mechanisms for rating tourism sustainability (economic, environmental, social) across tourism sites based on monitoring and evaluation.
- Undertake quantitative visitor impact assessments of destinations and identify 'limits of acceptable change' through community engagement and environmental, cultural and social impact assessment, utilising best-practice frameworks such as the Visitor Use Impact Framework.
- Adopt mandatory requirements for businesses to assess and disclose impact and dependencies on nature and incentivise businesses to avoid and reduce negative impacts throughout their value chains to align all activities with a nature-positive economy.
- Raise awareness and educate tourists and host markets through visitor pledges and eco and carbon labels and reporting mechanisms and by utilising technological advances.
- Encourage economic activities for the local market that support giving back, engaging local stakeholders and localising supply chains to reduce economic leakage.
- Educate tourists on local culture, history and natural resources utilising local languages and local people as guides and tourist operators.
- Development and/or implement best-practice standards for how the tourism industry uses and interacts with culture and local heritage, particularly for marketing and product development.

8.2.2 Reinvest in and regenerate ecosystems, local markets and communities

- Take stock of site-specific natural capital and the related ecosystem services, measuring baseline levels of ecosystem condition and extent and identifying principal drivers of change.
- Foster ecological conservation and restoration by encouraging industry and visitors to contribute financially or through hands-on participation. Consider willingness to pay, utilising user fees and visitor payments at a local level and the development of a fund to reduce future risk.
- Integrate and incentivise sustainability, conservation and restoration activities in sectoral policies, laws and regulations, including taxation, tourism licences and concessions.
- Reform harmful subsidies, including indirect and direct incentives, by redirecting, repurposing or eliminating them to support investments into restoration of ecosystems, generating local markets and communities.
- Provide new economic opportunities and upskill local communities across the tourism value chain, including through training to local businesses to upskill and diversify product and service offerings.
- Reduce barriers to entry for local small and medium enterprises through legislative review and reform where appropriate.
- Create linkages between tourism industry products and key destination assets to local community supply chains, provide micro loans and financing for small and medium enterprises to fund innovation and new business opportunities, using inclusive economic development principles.
- Ensure inclusive planning and collaborative management with all stakeholders, such as deliberative citizen panels.
- Leverage ocean accounts as a tool/framework to measure the impact of tourism to coastal/marine ecosystem changes and to define the mitigating/regenerating measures with the relevant granularity.

8.2.3 Build resilience to threats and future shocks and crises

- Legislate coastal setbacks in new developments to allow natural flooding of coastal environments with sea level rise (including the removal of buildings and infrastructure that may be exacerbating coastal change), such as the protection and restoration of dunes.
- Build capacity in disaster risk management and adaptation, including training and education for the tourism industry and the development of early warning systems and effective communication systems.
- Leverage uniqueness of place through appropriate design of infrastructure and experiences and by developing place-sensitive destination management strategies.
- Develop protected area strategies which provide community-based tourism opportunities.
- Promote transboundary planning and international co-operation, including regional 'clubs' in key subsectors to promote collaboration on key sustainability measures.
- Develop basin-scale or regional strategies to ensure tailor-made indicators of sustainability and to foster co-operation between countries on key initiatives.
- Develop a database of information and marketing for coastal and marine tourism products as part of tourism market diversification.

8.3 Industry-Specific Actions

8.3.1 Reduce the negative impacts of tourism on the local environment, economy and community

- Establish science-based targets for GHG emissions reduction from operations (e.g. Glasgow Declaration for Climate Action in Tourism), and monitor and transparently communicate progress to destination management authorities or other relevant agencies.
- Develop management plans for the use of energy, water and food in hotels and resorts.
- Provide on-site recycling and composting facilities.

- Obtain and maintain certification according to internationally approved criteria for sustainable tourism practices for industry (e.g. GSTC Industry Criteria, EarthCheck, WTTC's Hotel Sustainability Basics, Blue Flag or Global Ecosphere Retreat certification).
- Set internal quotas for local hires within key levels of an organisation or business.

8.3.2 Reinvest in and regenerate ecosystems, local markets and communities

- Offer apprenticeships and vocational training opportunities for local community members and establish privately funded education programmes for the local community.
- Source goods and services locally to enhance economic benefits to communities.
- Explore opportunities to channel market-based revenues into the regeneration of coastal and marine ecosystems, including the use of entry fees, concessionaire fees and the establishment of M-PPAs.

8.3.3 Build resilience to threats and future shocks and crises

- Utilise 'blue infrastructure' to improve resilience of coastal assets and infrastructure while reinvesting in natural assets (i.e. nature-based solutions or living shorelines).
- Provide training for the local community to upskill and diversify the workforce.
- Cultivate wider skill sets for employees within the industry by providing training in soft skills and transferrable skills.

The research undertaken for this report, particularly the SLR to identify economic analysis for sustainable coastal and marine tourism, has highlighted a significant gap in research estimating benefit-cost ratios for measures or actions aimed at the economic and social and cultural pillars of sustainability. New analysis in these areas—particularly the assessment of direct and indirect employment opportunities associated with transitioning to a sustainable model of coastal and marine tourism—is encouraged to inform decisions that relate to the sector's contribution to socio-economic development.

9. Conclusion

This report provides a comprehensive view of place-based coastal and marine tourism, highlighting inherent inefficiencies and providing a catalog of evidence-based interventions that focus on resilience and regeneration. The findings and opportunities for action identified in this report will be of great value to governments, policy makers and industry leaders seeking to chart a new course for coastal and marine tourism that is economically, environmentally and socially sustainable.

The global pandemic has provided a timely period of reflection for the tourism industry to be honest and transparent about the real economic, social and environmental costs of coastal and marine tourism. Unless the full costs of tourism are considered, the future of the industry will remain inherently unsustainable, uncertain and at risk.

The so-called 'traditional' model of tourism is, and always has been, beset with high levels of economic leakage and varying levels of seasonality, with too many places over-reliant on it and therefore reinforcing models of mass tourism for perceived economic gain. Tourism as an industry and driver for change needs to be viewed and managed in a more holistic and transparent manner with the need to manage its impacts, improve its ability to be regenerative in nature, improve its adaptive capacity and manage risks and vulnerabilities. This shift necessitates a strategic and sustained collaboration among industry, government and all destination stakeholders, including resident communities (see Nelson et al. 2007; van der Leeuw 2008; Alvarez et al. 2022).

Although the resilience of the industry remains to be seen, tourists themselves have proved to be highly resilient. The future will thus be about managing tourism demand in a manner that will help achieve a more sustainable, resilient form of tourism while also achieving as many SDGs as possible. As highlighted in this report, there are many inspiring forms of sustainable and regenerative coastal and marine tourism from which to draw. The challenge that faces the sector is to 'scale up' such examples to the mass market (where demand will continue to grow) and to ensure sustainability is mainstreamed throughout the entire tourism value chain. This will require systemic policy change, including implementing incentive-based mechanisms to change the behaviour of people and businesses so that the true value of natural resources is measured, built into market prices and tracked in national income accounts. Governments and peak bodies must lead this change. National governments need to establish destination management authorities that measure, monitor and develop action plans to lower tourism impacts via a range of actions, including improvement of local infrastructure, creation of enforceable land-use plans and zoning to regulate tourism growth and protect fragile coastal regions,

develop GHG emissions targets in concert with national goals in co-operation with industry and create an enabling environment for tourism industries that focuses on quality rather than quantity and allows for genuine partnerships and collaboration with host communities.

Tourism destinations must also improve their resilience to future shocks and crises by diversifying their tourism markets. For many countries, this will mean marketing and developing products for domestic tourism. Insurance and social safety nets will also play an important role in mitigating the risks of tourism products, operators and destinations as a whole. It also means that investments in tourism infrastructure, such as hotels and conference centres, should be designed to be multipurpose and adaptable to changing requirements.

To finance a positive transformation of tourism, new revenue sources will be needed. Many destinations or tourism economies will also require innovative financial mechanisms that balance the high short-term costs of transformation with benefits that may not be realised for decades. Given the impact that the pandemic has had on the economies of many tourism-dependent island and coastal destinations, national funding packages or traditional financial lending arrangements will be required to ensure these economies have the opportunity for change.

Small-scale and localised examples of good practices can lead the way and pilot new ideas and innovation, coupled with co-operation within regions and industry sectors to ensure first movers are not penalised. Destination management requires the ability to set goals and provide leadership on meeting goals for improved environmental and socio-cultural outcomes together with industry.

Ultimately, however, the shift will require a major pivot by the entire industry—a pivot made even harder by the projected significant increase in global population over the next three decades, with much of the growth evident in coastal and island developing countries. The current and future challenges for the industry are real, and they are becoming more pressing. However, transformation requires us to face the causes of our current problems and find new approaches that better fit the future. The global pandemic has offered us this unique and timely opportunity. This will require bold policy action and leadership from governments.

Abbreviations

ASF	African Safari Foundation
AZC	Ahi Zamene Chemucane
BNMP	Bonaire National Marine Park
BPP	beneficiary pays principle
CFA	Conservation Finance Alliance
CHICOP	Chumbe Island Coral Park
CIP	Coastal Infrastructure Programme
CLIA	Cruise Lines Industry Association
COP26	United Nations Climate Change Conference
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CSSCTI	Supporting a Climate Smart and Sustainable Caribbean Tourism Industry
CSTPDF	Caribbean Sustainable Tourism Policy and Development Framework
CTC	Chemucane Tourism Company
CTF	conservation trust fund
CTO	Caribbean Tourism Organization
EEZ	exclusive economic zone
EPA	Environmental Protection Agency
FMPTNB	Forum Masyarakat Peduli Taman Nasional Bunaken (Bunaken Local Community Forum)
GBR	Great Barrier Reef
GHG	greenhouse gas
GIS	Global Information System
GSTC	Global Sustainable Tourism Council
Gt	gigaton
ICT	information and communi cation technology
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
JSTS-D	Japan Sustainable Tourism Guideline for Destinations
JTA	Japan Tourism Agency
KBA	Key Biodiversity Area
MAR	Mesoamerican Reef
MER	Misool Eco Resort
MPA	marine protected area
M-PPA	marine privately protected area
MSP	marine spatial plan
MST	Measuring Sustainable Tourism
NGO	non-governmental organisation
NSWA	North Sulawesi Water sports Association
NTZ	no-take zone
OECD	Organisation for Economic Co-operation and Development
OECM	other effective area-based conservation measure
PACT	Protected Areas Conservation Trust
PPA	privately protected area
PPP	polluter pays principle
PUD	photo-user day
SAMPA	South Ari Marine Protected Area
SCTLD	stony coral tissue loss disease

SDG	Sustainable Development Goal
SEEA	System of Environmental Economic Accounting
SeyCCAT	Seychelles Conservation and Climate Adaptation Trust
SIDS	small island developing states
SLR	systematic literature review
SNA	System of National Accounts
TBOP	Tourism Bay of Plenty
TNC	The Nature Conservancy
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNWTO	UN World Tourism Organization
VCA	value chain analysis
WQ	water quality
WTTC	World Travel and Tourism Council
WWTP	wastewater treatment plant

Endnotes

1. Benefits include welfare issues, non-use and aesthetic values and health impacts, among others.

2. Other studies on MPA projects report benefits in excess of costs, but the role of tourism in the benefits is not indicated. This is the case for evaluations conducted in Scotland (Hussain et al. 2010) and in the United Kingdom as a whole (McVittie and Moran 2010).

3. To learn more, see the CFA, https://www.conservationfinancealliance.org.

4. The EU Ecolabel is a voluntary ecolabel scheme established in 1992 that currently covers more than 83,000 products in 24 categories. It is awarded to products and services meeting high environmental standards throughout their life cycle. Tourist accommodation services are included in the catalogue. Hotels and camping venues wishing to be certified must meet 21 mandatory criteria and receive at least 20 points in optional criteria. The criteria focus on environmental hot spots such as excessive water and energy consumption, waste management and the use of toxic substances.

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