

Destinations at Risk:

THE INVISIBLE BURDEN of tourism



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FOR THOSE YET TO COME

Destinations at Risk: The Invisible Burden of Tourism

By Megan Epler Wood, Mark Milstein, and Kathleen Ahamed-Broadhurst

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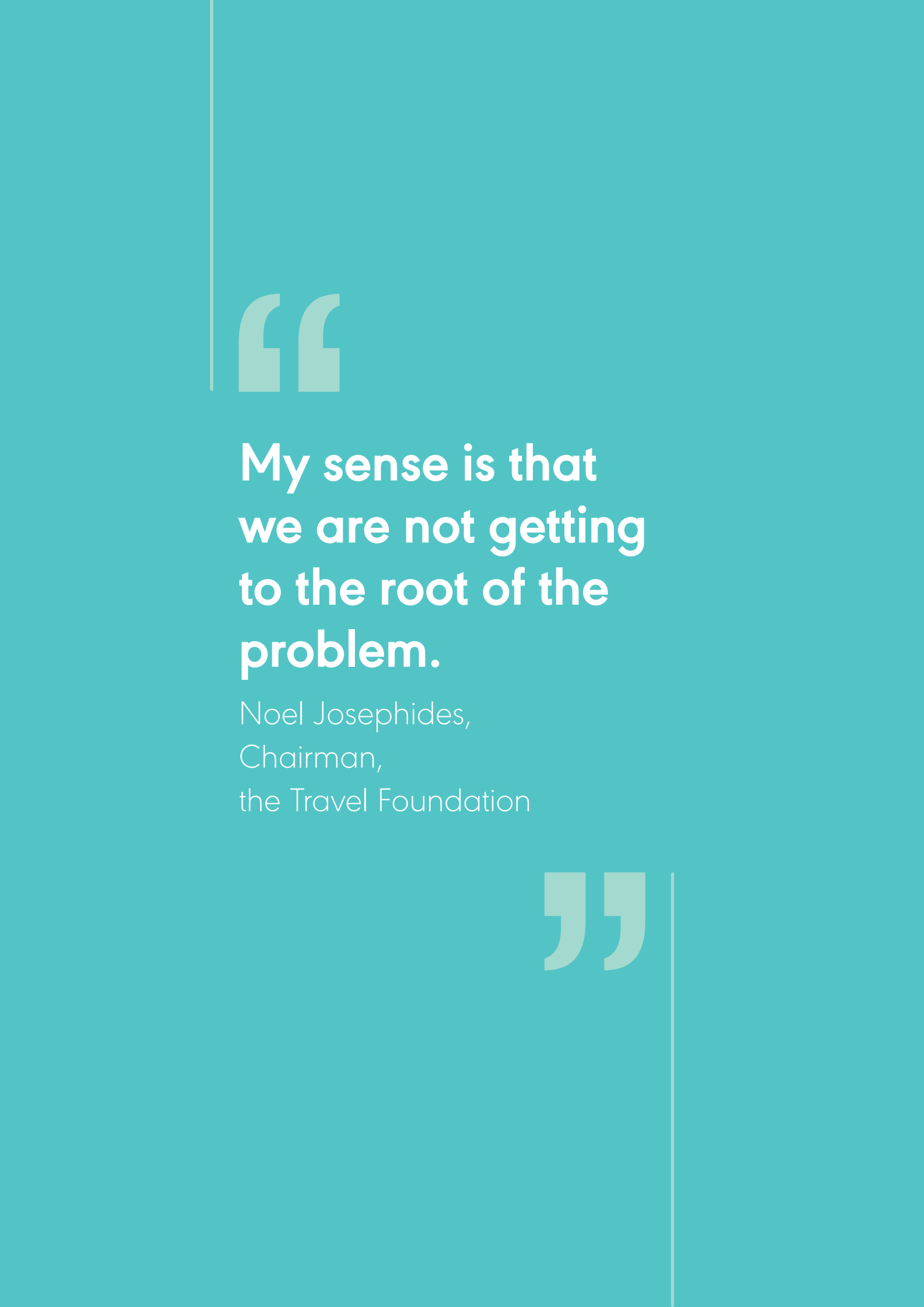
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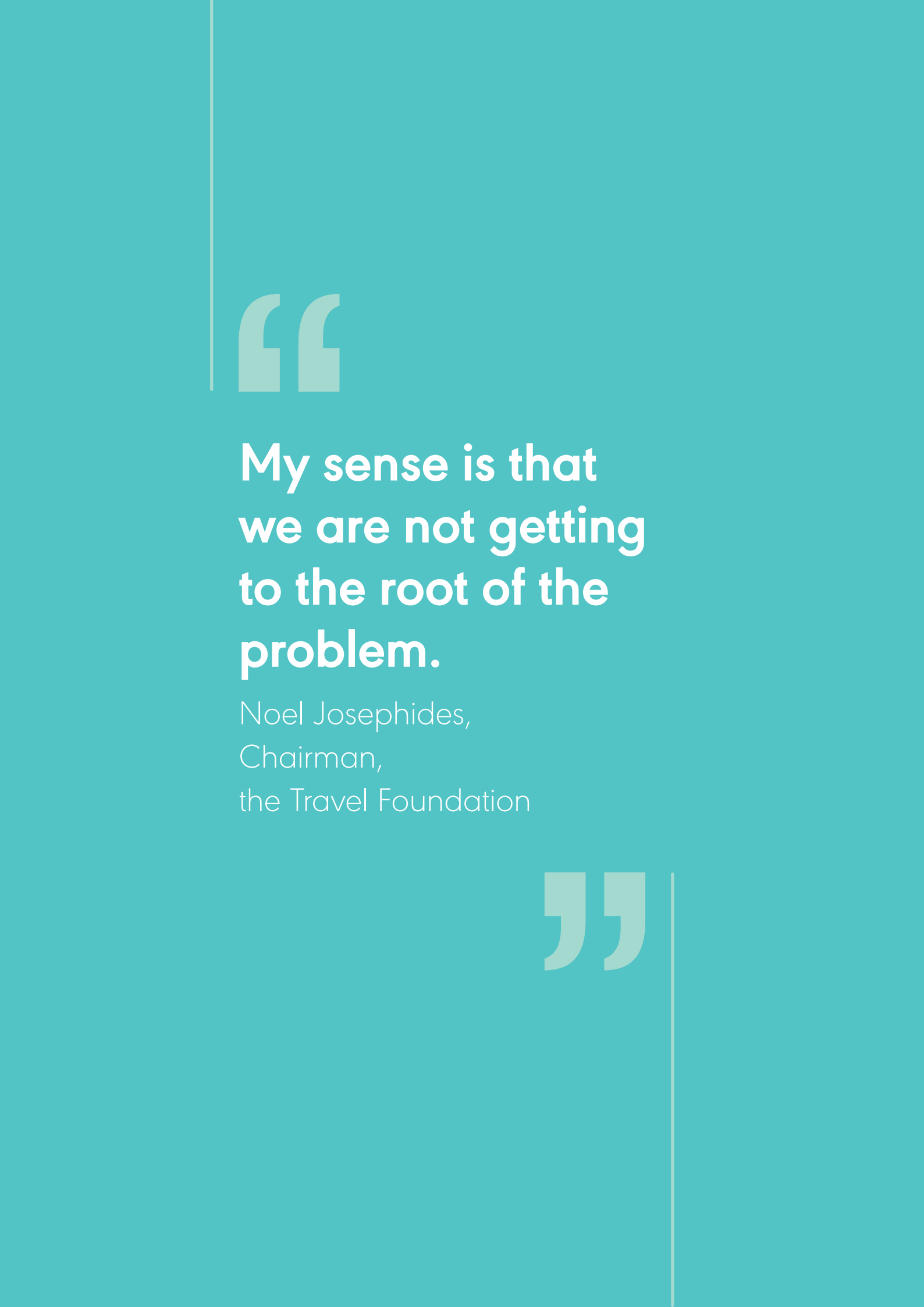


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**My sense is that
we are not getting
to the root of the
problem.**

Noel Josephides,
Chairman,
the Travel Foundation

”



Foreword

Noel Josephides, Chairman, the Travel Foundation

Thanks mainly to the phenomenon known as overtourism, the future of our industry has become a regular topic for trade conferences and the trade and consumer travel media. So much so, that “overtourism” became one of Oxford Dictionary’s “Words of the Year” in 2018. This discourse follows a familiar pattern, raising examples of destinations struggling to cope, and pointing to various factors that may be aggravating the problem. The natural conclusion is invariably that we need “better destination management”.

However, these overtourism-inspired debates have not particularly helped our understanding of what “better destination management” is, why it hasn’t happened already, and what needs to change to make it happen, in a global context.

A few destinations are, commendably, seeking to take a different approach. Some are introducing tourism taxes, some are placing restrictions on certain types of tourism (such as Airbnb and cruise), some are adapting their marketing strategies and are becoming more concerned about residents’ views. But these responses are generally reacting to a specific issue that has reached a flash point and can no longer be ignored. What other issues may be simmering under the surface waiting to appear in years to come? My sense is that we are not getting to the root of the problem. And that not much, and not enough, is changing in the way we manage tourism.

Our objective for this report, coming together with EplerWood International and Cornell University, was therefore to better understand, and explain, the situation in which many destinations now find themselves. They are ill-prepared for coping with tourism growth. It is vital that the renewed calls for better destination management do not amount to businesses abdicating their responsibilities by placing them squarely on the shoulders of national and municipal tourism administrations.

It’s time for us to look at a bigger picture and find ways to collaborate so that destinations in urgent need of resources, skills and leadership can access these. By addressing its invisible burden, tourism can truly become the global force for good we all want it to be, for the benefit of visitors and residents alike.



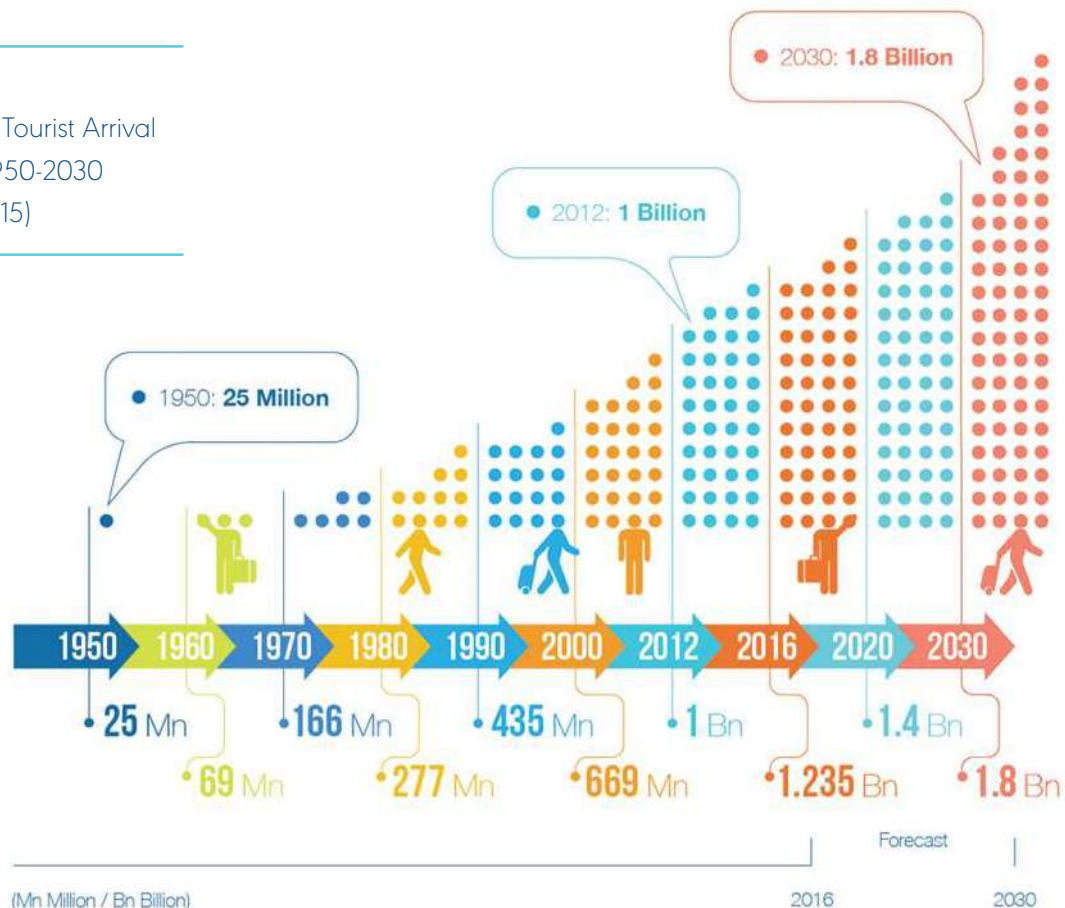
The rapid growth of tourism in the 21st century is leading to damage in destinations across the world that is largely unreported and frequently not perceived by tourists, putting destinations at risk without effective response.

Local capacity to manage the ballooning costs of tourists is hindered by a lack of quality analysis that accounts for the cost of managing each tourist on local municipal ledgers. This invisible set of local budgetary obligations is placing destinations in a position of financing additional required infrastructure for energy, waste, waste water and the protection of natural and cultural resources, without recompense from the tourism economy. These costs lower the economic benefits of tourism and are not recognized in international and local economic impact analyses. A new net economic benefit basis for destination tourism accounting is required in order to capture this invisible burden, together with a bold plan for preserving tourism's valuable assets. A wide range of new talent will be required to safeguard invaluable global heritage, life-giving natural capital, and essential social and community resources.

Tourism accounted for 10% of the global economy in 2016 and is projected to continue by nearly 4% annually until 2030. (UNWTO, 2018)

Figure 1:

International Tourist Arrival Projections 1950-2030
(UNWTO, 2015)





A coherent and consistent policy framework is needed to... assess the impact of sustainability factors on financial stability and long-term investment.

OECD (2018)



Although the growth of the industry has been steady for decades, policies for addressing its significant economic, social and environmental impacts continue to lag. While the influx of tourism dollars has a positive economic impact, the invisible burden of tourism on local economies appears to be steadily weakening underdeveloped infrastructure. As the industry grows, the cost of managing and developing sustainable infrastructure will weigh heavily on destinations, as will the disappearance of vital non-renewable resources, ecosystem degradation and escalating greenhouse gas (GhG) emissions. This puts tourism on a shaky foundation that could crack under its own weight. To date, the majority of dialog on these issues fails to adequately address the root causes or account for the key policy and governance reforms necessary to address the implications of unfettered growth. (OECD, 2018).

The degradation of these assets is a concern for businesses, which depend on the protection of global tourism assets frequently not under their control. In Europe, the number one international tourism destination in the world, there are alarming reports of overcrowding at major tourist destinations. Beloved historical cities are being throttled by congestion, local residents are posting anti-tourism signs, and visits to popular monuments far exceed capacity. At present, businesses are rarely in the position to manage the falling value of mainstream destinations that become overcrowded or degraded. But the risk of bottom-line impact is high, and the growing global protests related to “overtourism” are already impacting the global reputation of the tourism industry. If companies fail to invest in critical, value-generating core assets, they are likely to see per tourist revenue fall even as tourism numbers increase.

Countries around the world have yet to fully confront the hidden costs of tourism in their local economies. In the worst cases, there is increasing academic evidence that some of the world’s top destinations have growing debt per tourist even as their tourism economies soar. The effort to create sustainable tourism that genuinely delivers on the promise of protecting assets for future generations has been weak. While governments have long discussed sustainable tourism as an important part of their National Tourism Administrations’ (NTAs) objectives, only 11% of NTAs are implementing national policies related to environmental sustainability. (UNWTO and UN Environment 2018) Devaluation of value per tourist requires thoughtful, deliberate, coordinated collective action between the private sector and government to create joint platforms of investment in value-added tourism development. This will not only involve new, more creative products, it will involve a transition to more well-managed destination management systems.





We need to work together to support and develop infrastructure to handle the increase in travelers worldwide, particularly in destinations that are more ecologically and culturally sensitive.¹

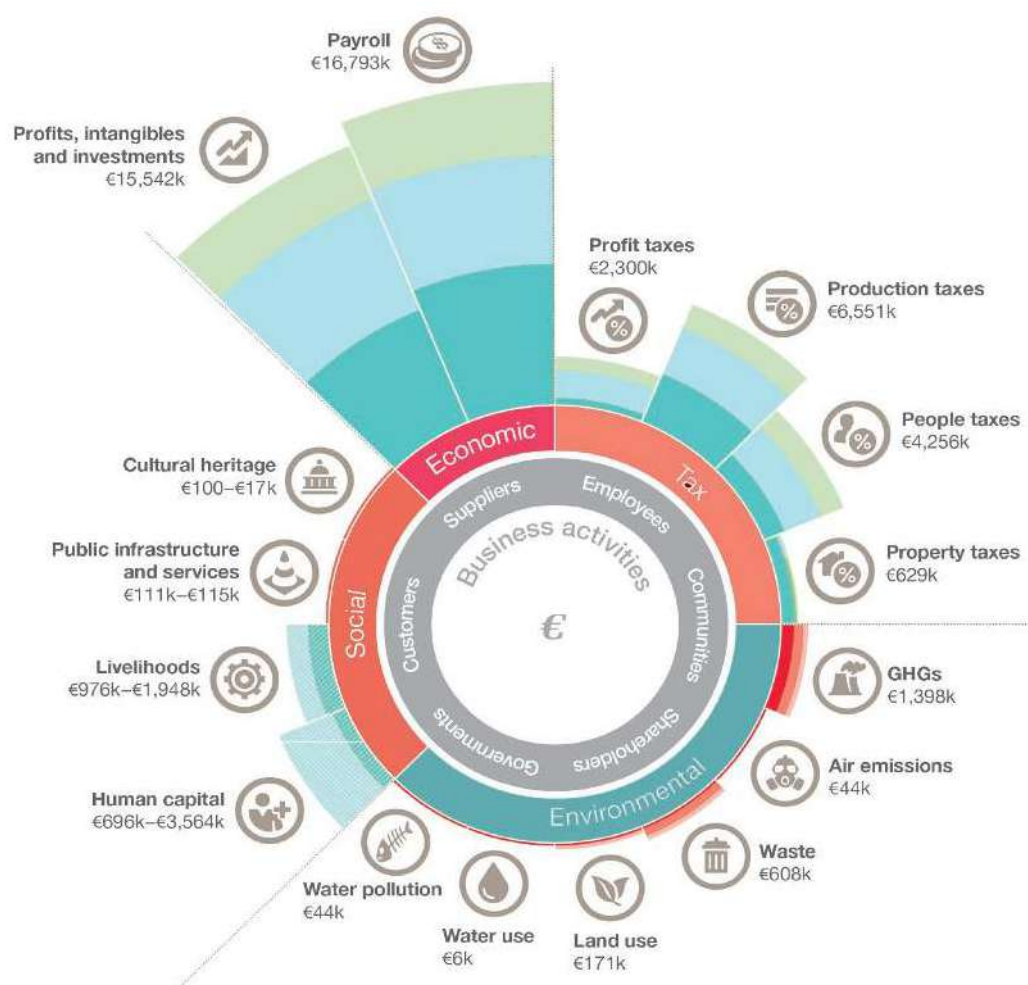
Denise Naguib, VP of Sustainability & Supplier Diversity, Marriott International

Figure 2:

Summary of Total Impact of TUI Group's activities in Cyprus 2013
(Travel Foundation, 2016)

Key:

■ Negative impact direct
■ Negative impact indirect
■ Negative impact induced
■ Positive impact direct
■ Positive impact indirect
■ Positive impact induced
■ Negative impact minimum
■ Negative impact maximum
■ Positive impact minimum
■ Positive impact maximum



The construction of viable investment and management platforms to secure tourism destinations should not be postponed. It will require knowledge of the costs to manage tourism assets, as well as what it costs to manage each tourist. While such accounting is only just emerging, it is important that steps are taken to establish baselines now, which can be refined over time. At present, OECD (2018) recommends improving data analysis to accurately integrate environmental and sustainability criteria and risk factors into tourism financing and investment decisions. Such decision-making tools are essential for governments and businesses to develop better policy and make more effective and efficient investment decisions.

Simply put, we have failed to properly account for the full risks and costs of tourism growth. No one arm or representative of the travel and tourism industry or government is presently in charge of protecting destinations. While a reallocation of resources will be required to alleviate the lack of resources at the local level, few researchers have reviewed the question of tax benefits from tourism and their allocation. The Travel Foundation's collaboration with PwC to use their Total Impact Measurement and Management (TIMM) methodology, was an early attempt at deploying holistic methods of impact measurement to quantify the economic, tax, environmental and social impacts of tourism activities.

¹ Quotations in this document are taken from online interviews in preparation for the Sustainable Tourism Entrepreneurship and Destination Asset Management Roundtable, May 3, 2018, Cornell University. Full citation in Literature Cited

High positive impacts were found in human capital, livelihoods, profits, payroll and taxes. The highest negative impacts were environmental impacts: water pollution, water use, land use, waste, air emissions and GhG emissions; and social impacts: public infrastructure and services and cultural heritage. (See Figure 2) (The Travel Foundation, 2016)

Leaders in the global tourism business world will need to recognize the financial and reputational risk of ignoring the shared value that tourism destinations provide and the municipal costs incurred for local services. Without more holistic accounting recognized by governments and businesses, the value of beloved tourism assets worldwide will decline and become a growing concern for national economies and businesses globally.

As tourism continues to grow around the world, the problems associated with overtourism will become increasingly difficult to manage unless there are targeted interventions that focus on root causes. The extremely rapid growth of tourism in the Southeast Asian region is driving unsustainable growth, which is making regular news, for instance with island closures in Thailand and the Philippines.²

Figure 3:

At present Southeast Asia is at the epicenter of this phenomenon with 2016 growth rates that would challenge any leadership team (UNWTO, 2018):



² A sample set of news reports on the Thailand island closings in 2018 are found in Literature Cited

While governments are quickly posting notices of resolved problems, let there be little doubt, there are heavy impacts when destinations expand at lightening-speed. Such impacts cannot be erased.

While many of Europe's capitals are already producing new plans to protect their historic city centers, the large majority of destinations around the world are not prepared. Precious assets are at risk on a global basis and valuable World Heritage monuments are under stress, without adequate resources or expertise to respond. (Intercultural Center, 2018)

Thailand's Inherent Conflict

“The amount of garbage and waste water floating on these islands is so big it will become unbearable in future”.

Jutaporn Buruphat, Chief
of the Thailand Marine and
Coastal Resources
(Wilson, R, 2018)

Thailand is the largest tourism economy in Southeast Asia and the fastest growing tourism destination in the world, with visitor numbers doubling, from 15 to 35 million, between 2010 and 2017. (UNWTO, 2018) The newly appointed Minister of Tourism, Weerasak Kowsurat, has noted the shifting challenges he faces in a role he held a decade earlier. Over that period, while inter-Asian tourism has driven Thailand's incoming visitor numbers to double, Thailand has seen no major infrastructure overhauls. Kowsurat notes the inherent conflict entrenched in conventional approaches to tourism management: The Tourism Authority of Thailand campaigns for overseas visitors, while the Ministry of Tourism seeks to manage them. The result: the Ministry is overwhelmed by growth that is being promoted by its own government. With just 130 staff in Bangkok, Kowsurat's office lacks the professional training in tourism for the next 20-30 years of growth. He suggests that the problem of managing tourist attractions in Thailand is so severe they need a crowdsourced effort to raise funds for overburdened destinations. (Charuvastra, 2018)



Photo by Humphrey Muleba

Part One

THE INVISIBLE BURDEN



Accounting for the Invisible Burden

The invisible burden is defined in this report as the unaccounted for destination costs to provide local infrastructure and the protection of eco and socio-cultural systems for tourists and local people.

Tourism is, without a doubt, an effective tool for economic development, generating over 10.4% (\$8.2 trillion USD) in direct contribution to global GDP in 2017. (WTTC 2018) It attracts investment in infrastructure such as airports, hotels and local transportation. Though less well understood, tourism also contributes to both national and local treasuries through a variety of taxes (both direct, such as taxes on aviation and accommodation, and indirect, such as VAT on sales), revenue to businesses, as well as paying to use local amenities and infrastructure (for example, public transport). (WTTC, 2018) But the allocation of such taxes is barely researched, and the policy implications of tourism tax allocation are vast. There is an inherent danger in underrepresenting or not representing the costs of tourism growth at the destination level to ensure they correspond with revenues from tax. It is therefore vital to understand the costs and benefits per tourist and the marginal cost as visitor numbers grow.

The future of tourism will depend on the industry and government's ability to efficiently and effectively measure and manage the full cost of each tourist. This will require systems that calculate the costs of tourism development on local economies. Those costs include the infrastructure required to transport, feed

and house, provide energy and water, and manage waste and waste water for the growing numbers of visitors and tourism workers in each destination. These local economic burdens are too often invisible (i.e., overlooked, misunderstood, or ignored) to national decision makers who focus on promoting tourism growth, but are very real for local municipalities, which are seeing budgets that exceed local uses by multiples of 8-10 times higher than local consumption without the utility metering to properly assess these costs. (Gossling & Peeters, 2015)

Today's tourism managers focus on an incomplete set of economic measures to assess the health of the tourism destination – total number of visitors, as well as direct and indirect economic impacts. Those figures provide a one-sided view of tourism's contributions to local economies and fail to account for management costs at the local level. While the private sector utilizes sophisticated managerial accounting systems to understand and assign costs to specific activities at the destination level, these are not used to determine cumulative impacts in each region where tourism is developed. As a result, the tourism industry has not looked extensively at measuring and predicting the long-term deterioration of vital assets at the destination level.³ (Epler Wood, 2017) Nor has it sought to monetize the growing financial burdens or create systems that



Tourism management seems to be entirely focused on promoting business. It is so tied to commercial and tax interest that the focus is less on how to manage the destination and more on how to develop destinations for commercial interests. Government ministries lack the full set of professional tools they need to make use of measures that can equalize the playing field and protect vital resources and human health and well-being.

Dr. Jack Spengler, Yakira Yamaguchi
Professor of Environmental Health and
Human Habitation, Harvard T.H. Chan
School of Public Health

rely on the participation of international business. (WTTC, 2018) To date, there are no measures that consistently account for the cost of managing tourism at the local level.

In short, a new set of consistent annual accounts is needed that can offer a keen, accurate understanding of where the costs per tourist lie and who bears them. Acknowledging and measuring this invisible burden can enable decision makers to determine how such costs can be paid for in order to ensure that local ecosystems and socio-cultural values are not degraded beyond the point of no return for local people and the tourism industry. Scholars have already linked ecosystem degradation with declining profits and visitor satisfaction, noting that the relationship between tourists and local natural and social assets is especially crucial for countries where tourism is a significant mechanism for GDP growth. (Dvarkis, 2017)

Without a consistent system to manage the invisible burden on local economies, tourism growth will continue to degrade more destinations in ways that increase frustration and produce more protests, as local citizens see their most beloved historical centers, monuments, and vital resources degrading without adequate explanation or informed action.



³ Systems such as the Global Reporting Initiative (GRI) and the Carbon Disclosure Project (CDP) only assess compliance to specific environmental standards that companies choose to measure. Such measurements do not provide insights into the problem of destination degradation

Operational externalities are defined in this report as the excess costs generated by the invisible burden, which require holistic accounting by local authorities in order to avoid deficits from tourism development.



The invisible burden results in operational externalities for local governments, which can impact local municipal budgets. However, traditional economic impact research hides these externalities and few studies have looked at the holistic costs for tourism destinations.

The goal of pinpointing the operational externalities precisely for accounting reasons is to clearly identify the cost of managing invisible tourism burdens for municipal leaders. One holistic accounting approach taken to date is to design national statistics that place value on natural and social capital (UNWTO, 2016), but this methodology does not serve the urgent needs of municipalities worldwide to account for the costs of managing tourists in a way that will keep tourism from silently draining limited, local budgets.

Cancun provides a case in point. The famous beach development offered substantial economic gain after an initial investment. But this gain was followed by rapidly increasing deficits as social and infrastructure service costs rose over time. (Ambrosie, 2012) One of the primary costs that is overlooked in more than one large-scale tourism destination is the cost to service the workforce, who mostly immigrate to the area to work and live in slums near resort communities. (Murray, 2007) As tourism grew in Cancun, so did all aspects of infrastructure costs, without recompense from the tourism economy. Mexican researchers documented

that only 30% of the waste water (aka sewage) in the Cancun region generated by tourists and locals was treated. Hundreds of thousands of tons of solid waste were transported annually to illegal garbage dumps through the 1990s and 2000s, leaving contaminated water to flow directly into the ground water, cenotes and sea. (Martinez, Vargas, Nechar, Gonzalez, 2013) In addition, coastal erosion from overbuilding hotels on fragile coastlines led to the increasing disappearance of Cancun's famous beaches.

Cancun's taxation system has traditionally placed 80% of tourist revenues into the budgets of the national tourism authority and not local municipal accounts. This has forced local government to depend on national transfusions of funds to manage local costs for health, well-being and environmental protection, which was left largely unattended at the municipal level. While the national government continues to promote Cancun, local government has misdirected what funds it does have, and failed to protect the destination from the impacts of growth." (Ambrosie, 2012)

To avoid this problem, destinations should account for real operational costs (i.e. operational externalities – the costs per tourist), which as yet are not included in municipal or national budgets (see Table 1, page 10).⁴

⁴ The operational externalities that contribute to the invisible burden are what UNEP has referred to as the Green Economy. (UNEP & UNWTO, 2011)



Photo by Ricardo Esquivel

Table 1:

Operational externalities –
the costs per tourist

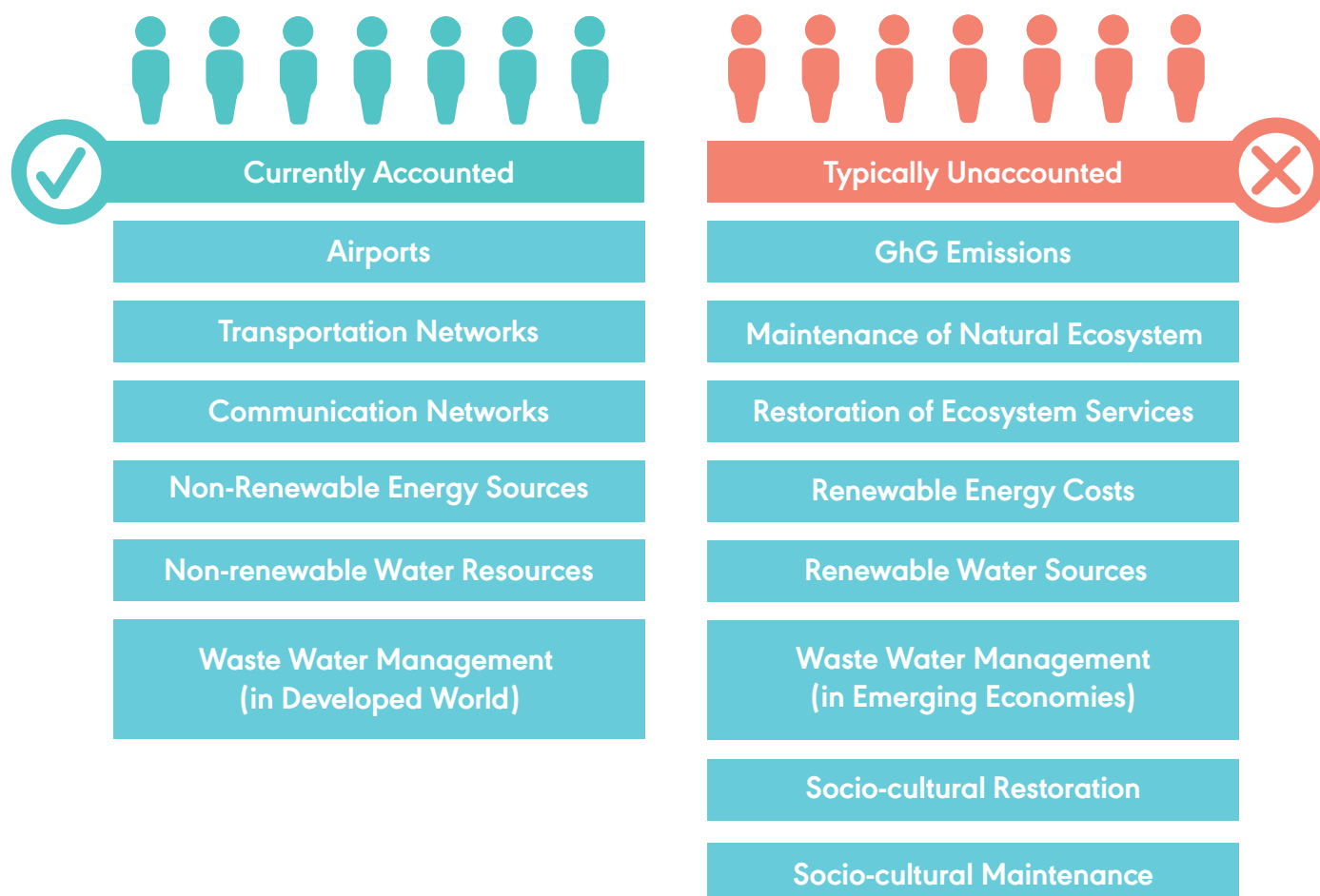
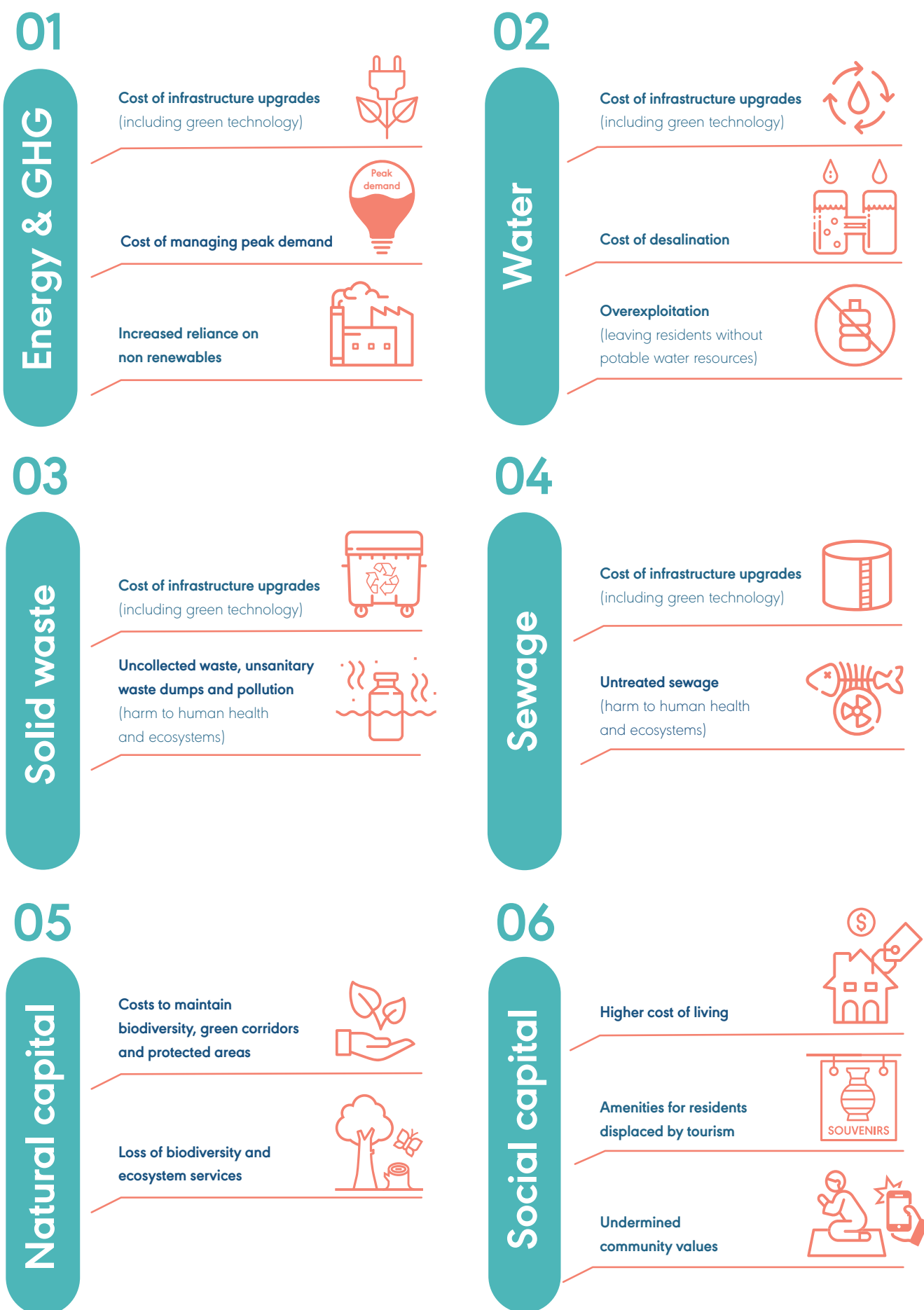


Figure 4:
Examples of the Invisible Burden



The challenge for the tourism sector is determining how best to account for the operational externalities caused by the invisible burden in order to support destinations from further erosion of cultural and environmental value and operational losses. In short, we need to develop approaches that enable localities to measure and manage the true costs of operations at the destination level.

Tourism businesses may ostensibly pay for municipal services such as water and energy, and the use or maintenance of public assets such as beaches and monuments, but additional costs associated with tourism are often passed on, partially or fully, to residents.

Here are the most common reasons for the invisible burden on destination residents and environments:

1

Costs associated with expanding and upgrading infrastructure to manage tourism growth based on demand forecasts

2

Costs for transition to greener, more efficient local infrastructure

3

High allocation of taxes to support visitor growth targets based on accounting that is not holistic

4

Tax incentives to encourage tourism growth and growth targets based on flawed analyses of per tourist revenues

5

Costs to maintain and create systems for the management of destination assets (such as beaches, public spaces, monuments etc), not estimated or included in tourism planning budgets

Energy & GhG

Most governments worldwide do not know the extent to which tourism is driving up energy costs at the destination level.

Nor do they know to what extent peak energy demand for tourism in high seasons is driving requirements for more power generation, which can require costly additional energy infrastructure, and which may not be compatible with meeting climate goals. In the case of Rhodes, Greece, tourism doubles the population of the island in peak season, which roughly doubles energy demand. Because peak demand during the hot Greek island summers drives energy plants past their supply limit, Greece gave the green light to finance a new diesel-fired power plant in Rhodes to stem the energy deficits and supply growing tourism demand.



\$1.35 per tourist night

Each tourist night is costing Greek citizens \$1.35 or a total of \$23 million in 2013 to subsidize the expensive oil-dependent power generation system of Rhodes. In addition, the new oil-fired power plant has now locked-in the island to another 20 years of fossil-fuelled power generation. (Fotiadou, 2013)

Tourism and Global GhGs



Between 2009 and 2013, tourism's global carbon footprint (including direct and indirect energy needs) accounted for 8% of global greenhouse gas emissions with a 95% level of confidence. Global demand for tourism is outstripping the decarbonization of tourism operations and accelerating global carbon emissions. Neither responsible travel behavior nor technological improvements have been able to offset the increase of tourism's carbon footprint. (Lenzen et al, 2018). The global issue of managing the GhG gas emissions from air travel (which represents 12% of tourism's total emissions when including food and shopping and upstream supply chains (Ibid)) will continue to be managed at the international level for the time being, via an agreement called CORSIA (Carbon Offsetting and Reduction Scheme for International Aviation), which offers a template for action with substantial room for improvement, and is endorsed by the European Union.

Photo by Chris Willan

Research on tourism demand for energy at the destination level, and its percentage of responsibility for national GhG emissions, would seem an obvious way to uncover the invisible energy burden. But this concept is still very new in the tourism world. For example, hotels in the Dominican Republic contribute nearly 50% of GhG emissions among commercial buildings. The conversion to renewable energy at the grid level will require financing and the bundling of energy needs to create scale. Hotels in the Dominican Republic could greatly benefit from this process, but researchers found few informed responses from the hotel community on joining the effort to attract capital and financing to create a lower carbon economy. (Ochs et al, 2015)

Accounting for the costs of managing energy for tourism at specific destinations, including the costs of shifting to alternative energy, will allow governments to understand their investment needs effectively and with precision. The process of managing costs for energy, and accounting for those costs per tourist, will allow decision makers to judge what steps are required in order to cover costs while transitioning to a greener economy, as part of their commitment to the Paris Agreement and the Sustainable Development Goals (SDGs).

Water

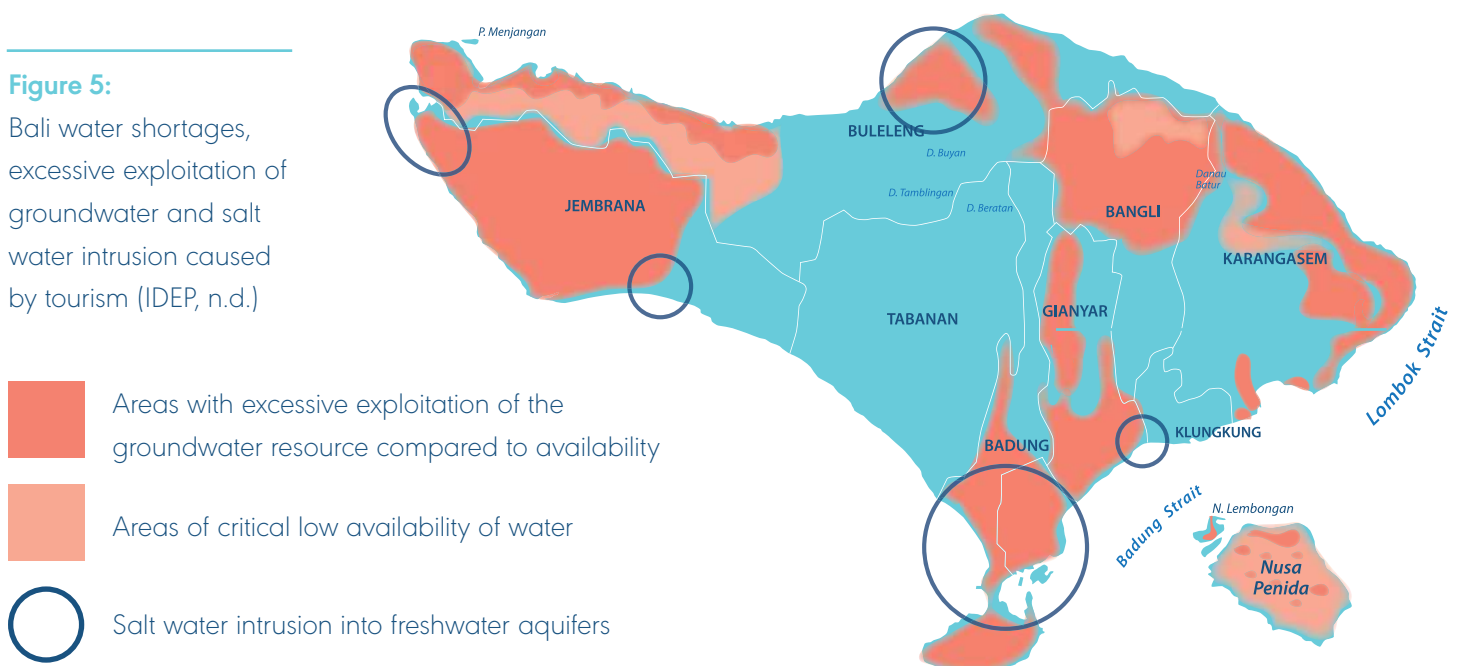
Visitors use water liberally during their travels. They take showers more often, use pools, and frequent beautiful gardens, which are irrigated to retain a perfect image for the guest. All of this results in using much more water than local people, especially in arid countries. The countries of Bahrain, Barbados, Israel, Malta, Saudi Arabia and the United Arab Emirates have clocked visitor water consumption that exceeds the availability of renewable water resources by a factor of 15. (Gossling et al, 2011)

With so many countries now struggling to meet the freshwater demands of their citizens – even before the more acute effects of climate change are forecast to exacerbate the problem – the travel and tourism industry will need to consider how to pay for the extra burden placed on destinations in areas that are becoming increasingly arid with growing water scarcity. A growing number of cases is emerging worldwide where water consumption from tourism is undermining local capacity to access fresh, uncontaminated water. One such case is Bali, where over-extraction has led to saltwater intrusion so that the groundwater is not fit for human consumption in popular resort areas, and competition between tourism uses and agriculture have been well documented. (Cole, 2012) See Figure 5.



Figure 5:

Bali water shortages, excessive exploitation of groundwater and salt water intrusion caused by tourism (IDEP, n.d.)



Demands on Water Resources in Tourism



Figure 6:

12 locations across 6 countries were given at least a “high” overall water risk score (International Tourism Partnership, 2018)

Heavy demands on local water resources during the driest seasons of the year force countries to allow water use when water scarcity is of grave concern for local residents. Hotels located in destinations around the world have increasing water risk factors, in part due to water scarcity and in part due to high consumption of water per tourist. Indonesia, India, Thailand, China, the United Arab Emirates and the Philippines have the highest risk of water shortages due to tourism development. Seven destinations are at the highest risk of running out of water in the driest seasons within these countries: Bali, Jakarta, Mumbai, Dubai, Istanbul, Zhengzhou and Abu Dhabi. (International Tourism Partnership, 2018)





Photo by Chris Willan

Destinations are likely to face increasing challenges with water shortages around the world. Biophysical studies of water tables are required to baseline and track pending saltwater intrusions that damage local water resources such as those that have already transpired in Bali. While the hotel community can assist by monitoring its own water consumption and implementing efficiency measures, the tourism community at large cannot stand apart from the larger water needs of local populations. The case of Bali and other water-stressed destinations demonstrate that destination-level planning is required to ensure that local needs are met.

Effective and efficient freshwater use requires clarity on the marginal costs associated with the oversight and measurement of water resource uses via utility records. The tendency to use fossil fuels to desalinate seawater requires energy, and that increases energy costs per

tourist by 20%, according to research on the island of Djerba, Tunisia. (Epler Wood, Fotiadou, Jarrar & Daouda, 2019)

Many arid countries are essentially manufacturing water for tourists, using desalinization processes. This practice can feasibly be offset by the use of renewable energy, as long as this is budgeted for as part of the cost of transitioning the tourism economy to renewable energy. The United Arab Emirates (UAE) long ago set a standard for excessive use of water when it began to host tourists in the 1970s in Dubai, and the UAE remains one of the highest users of water per person in the world, even though it lacks the energy required in the long term to support Dubai's growing consumption of energy and water. (International Tourism Partnership, 2013)

Solid Waste



The invisible burden of solid waste management will accelerate in the next decade, driven by tourism demand.

Photo by David Rengel

The level of additional solid waste produced by tourism is frequently not factored into the operational costs for local municipalities. Although one hundred percent collection and treatment of solid waste has been a public health goal since the mid-19th century, it has yet to be achieved. According to UN documentation, only 36% of low-income countries have collection. Africa and Asia have lower percentage collection figures than Latin America, the Caribbean, Europe and North America and rural areas have lower rates of collection than urban areas. Between 30-60% of all solid waste is collected in low-income cities, while documentation on rural areas is difficult to obtain. Overall, approximately 2 billion people worldwide, or 28% of the global population, lacked access to solid waste collection in 2015. (UNEP, 2015) It is therefore not at all surprising that cities in emerging economies and island resorts in rural areas around the world have an uncomfortable challenge ahead to find suitable landfill sites. As a result, untreated solid waste accumulates and is ultimately disposed of in areas tourists cannot observe.

In Haiti, for example, the government intends to double hotel room numbers by 2030, but there is no published government plan to expand solid waste management systems consistent with such tourism growth. (Brunet, 2015) In the Maldives, it has been estimated that the tourism industry generated 155,000 metric tons of solid waste in 2015 alone, 95% of which

was caused by resorts. Waste management practices consisted of dumping organic waste into the ocean and transporting and incinerating the rest at the overfilled and underdeveloped landfill on Thilafushi Island. Scientific studies detected detrimental impacts on air and soil quality as well as on coral reefs and the local food chain. Waste washed ashore on tourist islands hurt the Maldivian brand image of a pristine paradise. (Zeitlberger, 2016)

The invisible burden of solid waste management will accelerate in the next decade, driven by tourism demand. Only advance planning to cover solid waste management costs at the destination level can address this problem. Untreated waste is an acknowledged public health challenge with direct impact on residents, especially children. Uncontrolled dumpsites often leach hazardous waste, which can pollute both surface and groundwater. When unmanaged dumpsites are close to coastal environments they cause decreases in tourism due to polluted beaches and contaminated watersheds. (Wilson, 2015) In most cases untreated waste is not measured, making the scale of the problem difficult to assess, but the implementation of solid waste management offers considerable savings to countries who act. The UN estimates the cost to society of untreated waste is 5-10 times the cost of a solid waste management program per capita. (Ibid) Such problems are washing up on the shores of tourism resorts, which would benefit greatly by working on the best financial investment solutions as the tourism economy grows.

Waste Water / Sewage



Only 8%
of populations in
low-income economies
have waste water service.

(UN Water, 2017)

The management of black water, or sewage, is presumed to be part of the overall cost of managing tourism, but there is substantial evidence that it is commonly not factored in by the sector as a cost of doing business in most emerging economies. Across the globe, wastewater treatment infrastructure is underdeveloped or entirely lacking, with only 5% of waste water treated worldwide. Just 8% of populations in low income economies have waste water service. In lower middle-income societies, 28% of the population has service. In upper middle-income countries, 38% of the population have access. The only region of the world with widespread waste water treatment services for their populations, above 70%, are developed world economies. (UN Water, 2017) Resort communities around the world are growing at rapid rates and as a result, sanitary emergencies are reaching the news with increasing frequency due to a lack of waste water treatment facilities in emerging economy destinations worldwide.⁵

Waste water accounting for tourism facilities has a long way to go. There is little progress in this arena for most of the industry, and few governments have the resources, or prioritize the waste water infrastructure gap. Despite the harm sewage causes to both human health and ecosystems, the additional cost of treating sewage cannot simply be shifted to local governments, either practically or ethically. While alternative systems for waste water management, such as ecological

sanitation via constructed wetlands, are promising and could be part of a solution, they are not frequently used, despite their advantages and appropriateness for resort communities.

Taking the next steps to address the waste water burden of tourism resorts may not be as daunting as it sounds. In one Mexican reef resort with 350 rooms and full amenities, which produced 200 gallons of waste water per day, it took a mere 2 years to break even after implementing innovative technology for treating waste water via constructed wetlands. Such a project was projected to save the resort over \$800K per year. (Jackson, 2015) With tourism continuing to increase in emerging economies around the world, governments and businesses would benefit from investing in these and other innovative technologies for managing waste water.

⁵ A sample set of news stories on poor sewage and solid waste infrastructure are provided as examples in Literature Cited

Natural and Social Capital

Social capital includes historical, cultural, and community capital that provides a long-term connection to place. Natural capital is the source of ecosystem services.

Social and natural capital are fundamental to the health of a destination and its residents. They are as crucial as keeping track of built capital (for example, a hotel) and human capital (for example, staff trained in first aid or wildlife identification). Social capital includes historical, cultural, and community capital that provides a long-term connection to place. Natural capital is the source of ecosystem services. Destinations need an operational approach to managing all capital accounts, which would allow decision makers to target specific Key Performance Indicators and prevent natural and social capital from decaying to the point that vital ecosystem or socio-cultural services are threatened. Although more research is needed, especially on how to account for social capital, there is little doubt that the loss of these important assets is being perceived by tourists and residents alike, raising concerns that, in time, destinations will no longer hold the same value for locals or visitors.

Economists have found that the natural capital found in protected areas generates roughly \$600 billion in direct tourism revenue from approximately 8 billion visits annually. (Balmford et al, 2015) Protected areas have hundreds of millions of dollars in deficits worldwide with a chronic lack of investment and growing threats from fossil fuel exploration, logging and mining, and

illegal exploitation. (Kirby et al, 2015) In short, the lack of investment in vital heritage or environmental assets is fully understood to be undermining the market value of these non-commercial assets. But only \$10 billion is spent to maintain parks and protected areas around the world according to the best estimates to date. (Balmford et al, 2015) Preserving biodiversity to meet UN targets will cost \$76 billion annually – a goal that far exceeds tourism needs. (McCarthy et al, 2012) While the total value of biodiversity to humanity is an essential reference point, deriving the value of tourism in protected areas is a practical and essential way to determine the cost of maintaining protected areas for national and regional economies. But this must be based on both the value of protected areas to tourists and the cost to manage their visits by local authorities and protected area agencies. If management costs are left out, tourism grows without proper oversight, leading to damage. To avoid this entirely, in future NTAs could monitor the growing value of protected areas to tourists and seek to determine what financing is required to ensure protected area agencies can properly manage tourism and secure vital national assets, creating a positive income-generating environment that allows both tourism and natural resources to prosper.



Similar calculations for social capital could transpire, but to date they are seldom calculated as part of market value. This is leading to the undervaluation of socio-cultural benefits from tourism and has resulted in inadequate resources to maintain social capital in tourism destinations. Surprisingly, businesses are the first to consider social capital to protect the value of the socio-cultural assets they require as part of a corporate valuation process. (Accounting for Sustainability, 2015) To date, social capital is measured by Chief Financial Officers in terms of the health and well-being of communities, job creation and local working conditions. Such measures can be improved upon for tourism destinations because tourism companies and government have much to gain if they maximize community benefits and avoid severe, long-term, irreversible societal impacts. (Ibid)

Photo by Chris Willan



Photo by Chris Willan

Managing Debt Caused by the Invisible Burden

In developing countries where a growing percentage of economies now depend on tourism, and where there are few resources to spare, the invisible burdens of tourism present costs that frequently outpace revenue growth from tourism year on year. Consider the Maldives, where public debt has accumulated even as the tourism economy has soared. The economy has grown to be nearly 80% reliant on the tourism service economy, yet the country's current account balances have plummeted just as its service economy has become dominant. (See Figures 7 and 8).

The problems in the Maldives mirror the issues of growing debt documented in Cancun, Mexico, where revenues from tourism were misallocated and not adequately accrued to local accounts, causing growing local account deficits. (Ambrosie, 2012) The plummeting

of local accounts devalues currency and lowers a country's ability to raise finance, forcing the country to take on more debt.

Accounting and finance instruments can help the Maldives and other emerging economies take advantage of the growth of the tourism economy while not ignoring the inherent costs. If the full costs per tourist are covered, this will lower impacts and accelerate the potential to use revenues from tourism to transition to a greener, more climate-resilient economy, without having to depend on debt financing.

Figure 7:

Maldives 2014 GDP breakdown

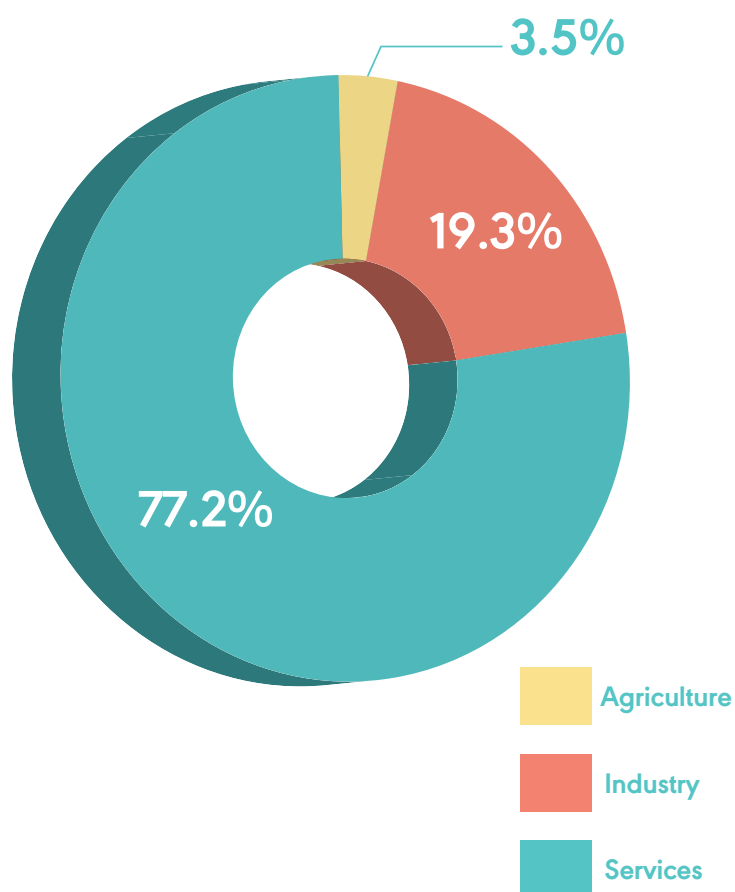
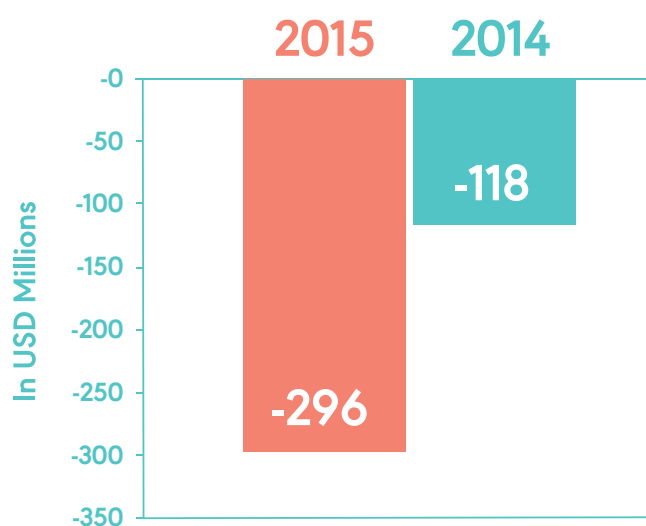


Figure 8:

Maldives national account balances in 2014 and 2015



Source CIA (2016); recreated by the author (Zeitlberger, 2016)

Part Two

MANAGING THE INVISIBLE BURDEN

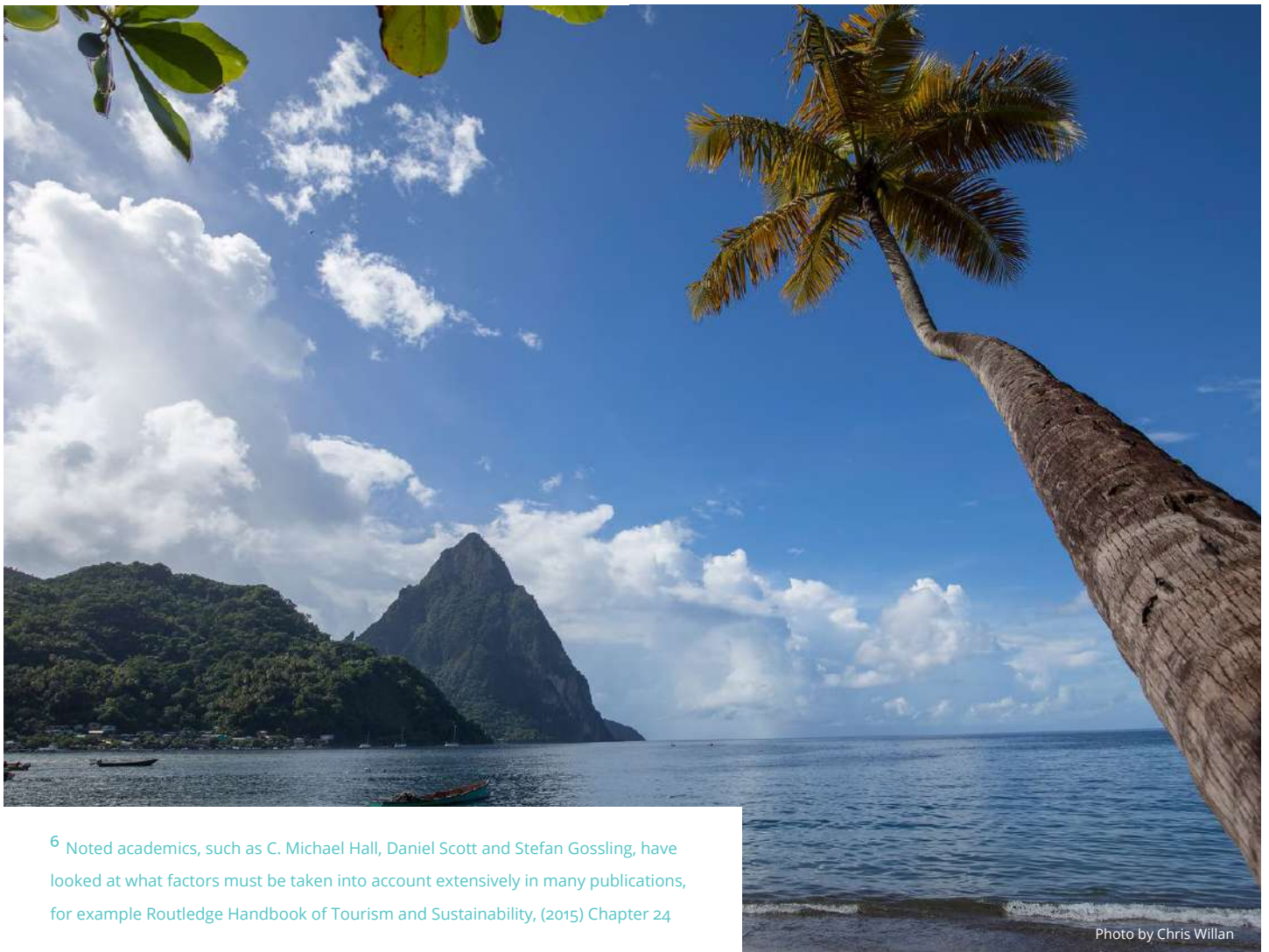


Managing Risk

An irreversible set of market trends is placing unprecedented demands on global destinations. The risks of destroying the product are not small. While the industry and government jointly celebrate annual growth, there is little consistent review of specific risk factors that will cause potential destination decline. The development of risk analysis methods that can translate into tourism policy is in its infancy.⁶ Forecasting and scenario analysis are essential tools for estimating risk and making policies that will protect vulnerable destinations. Such projections into the future allow for proper reflection on a variety of methods to manage tourism growth, without making a commitment until a variety of options have been considered. In addition to forecasting risk factors, Smart destination management and master planning are useful tools for managing tourism's invisible burden.

The most vulnerable destinations in the world are therefore where:

- 1 Climate change impacts are likely to devastate tourism-dependent economies.
- 2 The growth of the global middle class is driving growth at unsustainable levels.
- 3 The percentage of economic dependence on tourism is highest
- 4 The ability of local government to manage growth in terms of budgets or human capital is low.



⁶ Noted academics, such as C. Michael Hall, Daniel Scott and Stefan Gossling, have looked at what factors must be taken into account extensively in many publications, for example Routledge Handbook of Tourism and Sustainability, (2015) Chapter 24

While much of the overtourism literature to date seeks to address overcrowding in urban areas (WTTC, 2017), in fact, urban areas have more resources to address the problem, which lowers their risk compared to underfunded rural regions and island states, a point of particular importance for global donors seeking to help finance tourism-dependent states' transition to a greener economy.

The invisible burdens of tourism extend beyond concerns about density and present a series of complex risks that need to be managed in a deliberate way. Unless risks related to invisible burdens are made explicit, regions will be unable to invest in responses to protect the assets that are vital for tourism. All national and regional planning authorities can assess where tourism development will have the lowest risk and create incentives for greater return on investment for businesses and governments that have jointly resolved to avoid risk and better manage longer-term prospects for tourism development. Today's policy makers seem to put basic 5 to 10-year projections on the back burner in order to avoid reputational risk. But it is essential that risks are evaluated in the immediate to near future.

Such risks include:

- 1 Climate change risks (sea level rise, high intensity storms, flooding, fires, desertification)
- 2 Level of depletion of natural and socio-cultural capital required for local well-being caused by tourism
- 3 Level of depletion of local ownership of land and ability to manage land resources through governmental oversight
- 4 Availability of human capital and monitoring systems in place to manage tourism growth risks.
- 5 Availability of financial capital and investment systems in place to manage tourism growth risks.

Educated risk analysis will be the determinant of how destinations in the future attract capital and investment.



Photo by Chris Willan

While governments continue to focus on good press and avoid any mention of risks, educated risk analysis will be the determinant of how destinations attract capital and investment. Institutional investors will increasingly take the issue of overcrowding and the destruction of valuable assets into account using Environmental, Social and Governance (ESG) Reporting, which screens social and environmental management risk categories for institutional investors. ESG Reporting has been statistically proven at Harvard Business School to improve corporate competitiveness. (Serafeim, 2014) Tourism must be analyzed according to risk categories specific to its own industry, as other industries have already achieved. (Ibid) ESG analysis could save the tourism industry and NTAs from substantial losses and disruptions in operations and guide the improvements and maintenance of necessary assets using discounted capital now in order to invest in value-added tourism in the future.

Goals for the strategic analysis of risk are important in order to set out the appropriate, measured analysis required. More in-depth approaches require a review of the risk categories. (See Appendix A)

Overall, the goals should fall into the following categories:

- 1 Economic goals for risk management at the destination level should include a balanced set of objectives to establish and maintain prosperity across different levels of society.
- 2 Environmental goals for destinations require mechanisms to conserve and manage resources, especially those that are not renewable or are precious in terms of life support.
- 3 Socio-cultural goals for destinations include the preservation of local human rights and opportunity for all in society to share in tourism's benefits, alleviate poverty, and maintain life support systems, across different cultural contexts. (Hall, 2011)



Photo by Chris Willan

Managing Tourism's Biggest Risk: Climate Change

Coastal hotel developers face increasing climate risk, which will have catastrophic impacts on tourism's facilities as super storms and sea level rise become the new normal. Yet this is one of the more woeful areas of inaction in the tourism sector. With tourism set to increase by over 200% in the next 20 years, together with a 289% increase in land-use. (see Figure 9)

At a time when both institutional investors and civil society are raising serious questions about capital outlays in the face of climate change, the failure to account for climate-related risk leaves many hoteliers around the world vulnerable, and their workers even more so.

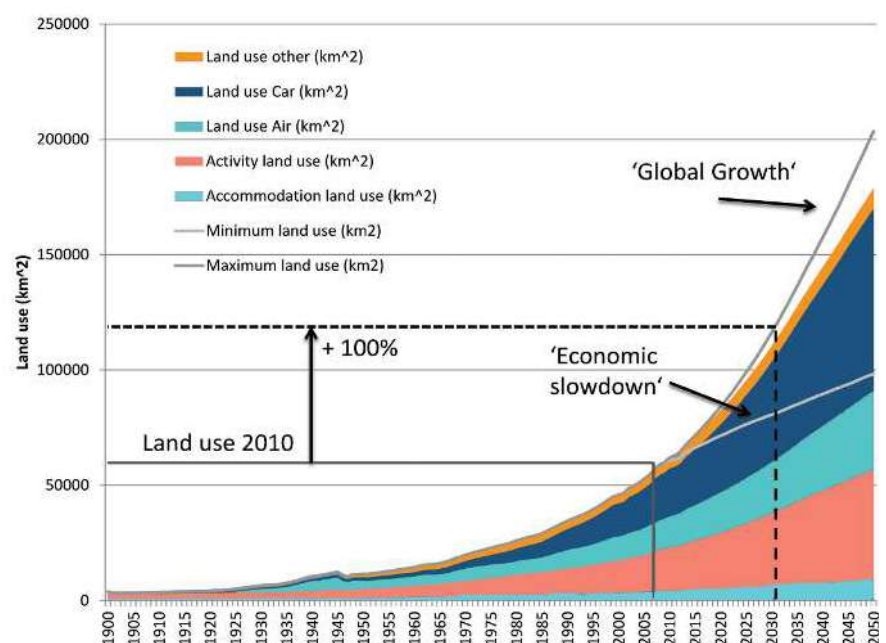
Puerto Rico exemplifies the reasons why climate change risk management is necessary for hotels and their employees. Hurricane Maria, which hit Puerto Rico in 2017, is an example of a rain-laden super storm which left the island's energy grid inoperable and devastated its drinking water infrastructure. Businesses failed or cut back operations and tens of thousands of people lost jobs, with accommodation bookings down 55.4% from the previous year and the employment rate in tourism plummeting 12.6% within 4 months after the hurricane. In total, half a million people (14% of the total population) relocated to the U.S. mainland. (Rand Corporation, 2018)

In the Caribbean, 29% of the facilities are at risk of inundation with 1 meter of sea level rise. (Scott and Shin, 2012)⁷ Estimates do not seem to exist on the total global, or even regional, values of tourism resort infrastructure at risk due to climate change – crucial missing figures. It is evident, however, despite this lack of strategic information, that the potential impacts of sea level rise, high intensity storms, and coastal erosion on hotel and transportation infrastructure are vast and should be considered as part of development strategies in the future.

Puerto Rico suffered consequences of devastating proportions that experts have suggested could be a reality for other islands and coastal areas. Its reconstruction plan of \$139 billion was submitted to the U.S. Congress in August 2018. (Reuters, August 2018) To avoid such excess costs, the risks of climate change-related invisible burdens can be reduced by managing coastal infrastructure with an eye to protecting both citizens and the industry over the long term. This requires preparation and planning. Time is of the essence.

Figure 9:

Land use growth from global tourism
(Gossling and Peeters, 2015)



⁷ The same report finds 49% of resorts are at risk of landslides caused by heavy rains, when located 50 meters above the sea, and 60% of resorts are at risk when found at 100 meters above the sea. (Scott, Daniel, Murray Charles Simpson and Ryan Shin, July 2012)

Smart Management of Destination Data

Smart Destination Management, an approach that utilizes innovation and big data to manage destinations, has become a motivating topic for tourism managers and governments around the world. The use of data trends, mapping, and measurements of resource consumption can create an equitable and balanced use of local resources.

Smart Destination Management was born from the idea of Smart cities. Smart cities (a European idea that tasked local authorities to use big data to manage the needs of their citizens) are designed to create “good solutions for society in general,” (Gabriel, 2018). The Smart Cities concept requires local governments to foster technical systems to ensure social innovation, efficient energy systems, management of the environment, infrastructure and housing, and transport. The slow adoption of big data by the public sector has increased pressure for municipalities to innovate quickly using systemic approaches, partnerships with the research community, and the development of local innovation hubs. (Ibid).⁸

Smart Destination goals are still evolving and will require careful evaluation by policy makers in order to ensure there is a balanced set of goals for both monitoring resources and managing market demand. The excitement around the use of big data in the tourism field has largely been driven by the question of managing visitor data and to “unlock the potential of data in today’s tourism marketplace to uncover the preferences of a new generation of travelers.” (Amadeus, 2018) While this orientation is valuable and fits with the traditional needs of NTAs, it lacks a balanced approach that provides information on both supply and demand. (see Figure 10, page 28)

Programs of the future will need to 1) monitor market trends and manage demand and 2) monitor the use of local utility services and impacts on natural and social capital via science-based metrics. Linking questions of tourism demand and destination resource availability will be essential to destinations worldwide. Yet at present, there is no common language evolving between urban planners and tourism planners to create such a balanced portfolio of data management, even in advanced European cities.⁹

In the future, well-trained intelligence units will benefit from receiving data that can link public and private needs. (Markkula, 2018) Tourism is inextricably linked to natural resources and their protection is a strong value proposition for many tourism corporations. Their viability as businesses will be enhanced by science-based analysis with unbiased information on the status of vital resources such as clean water, coral reef ecosystem health, and ecosystem services such as vital watersheds and the protection of biodiversity – all required for healthy human life.

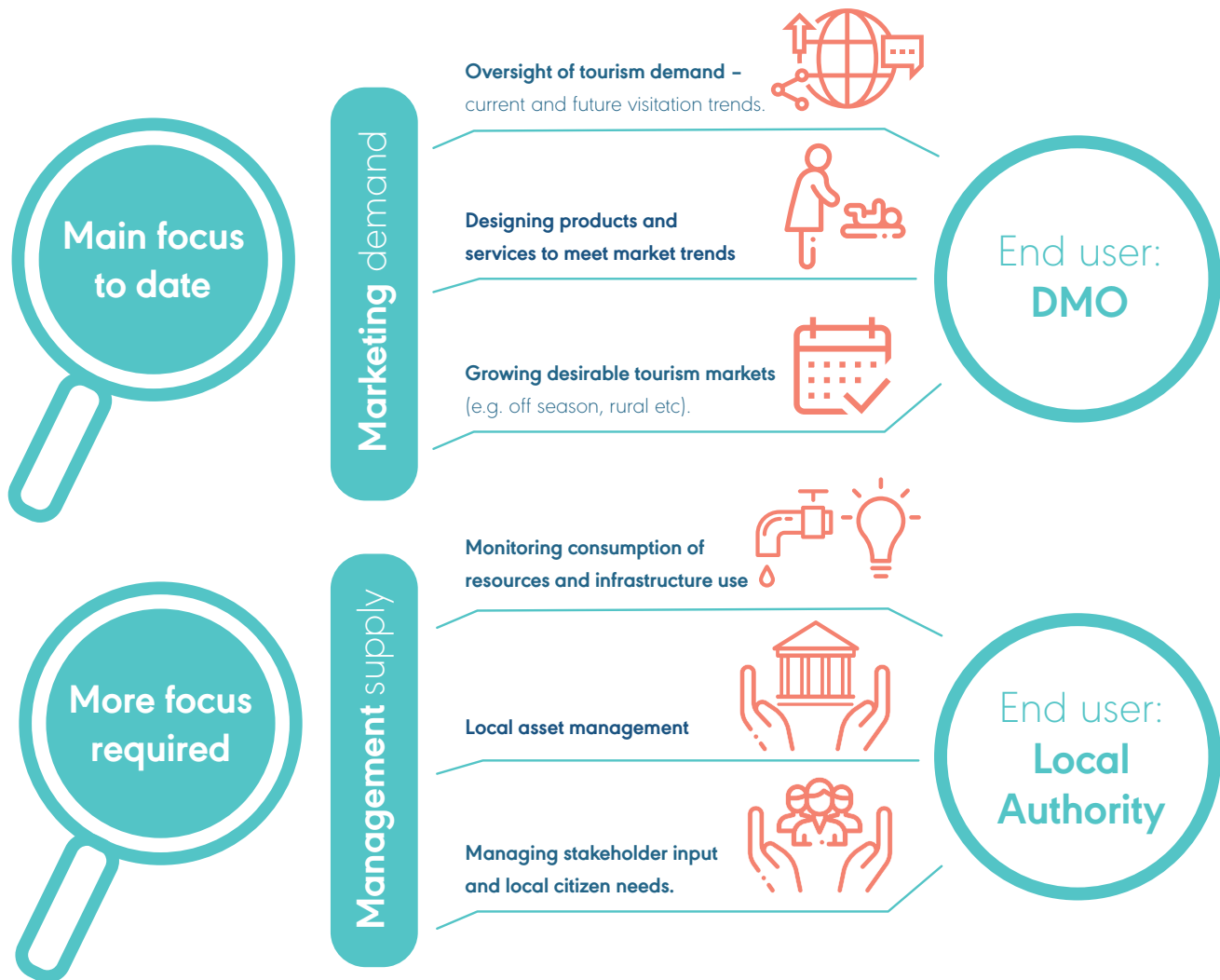
Destination managers will need to sit at the new nexus between data on tourism demand and the supply of resources to support the tourism economy. (Monzon, 2015) Balancing the demand-supply equation, in terms of budget allocations, will be key to guiding the management of tourism assets and the greening of the tourism economy of destinations in the future. However, as more and more destination managers turn to data for planning purposes, data privacy will increasingly become a concern. Governments that outsource all data analysis may be opening doors to multiple uses of the same data, unless terms are carefully dictated. To protect vital destination data, the NTAs of the future will have to secure data that is related to both tourism demand and the management of vital resources for tourism.

⁸ The European Commissioner for the Digital Economy and Society opened the conference with a call for full collaboration to deliver civic engagement and management options will enable efficient, operative connections to stakeholders and monitoring public use of local resources (Gabriel, 2018)

⁹ According to Fin Mortenson (personal communication), State of Green, Copenhagen <https://stateofgreen.com/en/>

Figure 10.

Two Models for Smart Destination Management



If NTAs of the future are to remain relevant, they will require the capacity to work fluidly with data from agencies managing critical resources on behalf of the nation or region. NTAs may specialize in managing tourism demand, but they will require the help of urban planners, science-based agencies (for example, Ministries of Environment and Natural Resources) and universities to manage their supply of natural and social capital. The more cooperation there is between NTAs and institutions that use mapping and data the better. While NTAs have long managed their agendas based on market and visitor research, a new era of collaboration with other agencies will be required to achieve sustainable growth.

Governments can establish units to manage tourism intelligently in the future and coordinate on the management of visitor demand with institutions that can gauge the capacity to absorb the growing volume. This will require greater investment in the use of higher-end digital tools to benchmark Key Performance Indicators, which are regularly monitored via statistically valid surveys and sub-metered utility accounts. As NTAs advance with the help of data-oriented units and institutions, they will be able to design increasingly sophisticated systems that map and benchmark the strategic goals of their cities and regions. Such systems of interactive planning can best be set up via master plans driven by Geographical Information Systems (GIS).

Master Planning

Master planning, the tool used worldwide to prepare regions for development and growth, guides government policy on the management of tourism and is an essential tool for government to lay out their vision and strategic plan for the future of tourism in their regions. Master planning has long guided the allocation of city and rural resources for development, but only recently has it become more fully interactive with rapidly changing tourism demands on local resources. Traditionally, tourism master plans use economic and tourism visitation data to generate a vision that allows for tourism growth in an orderly manner. Planning procedures are guided by principles

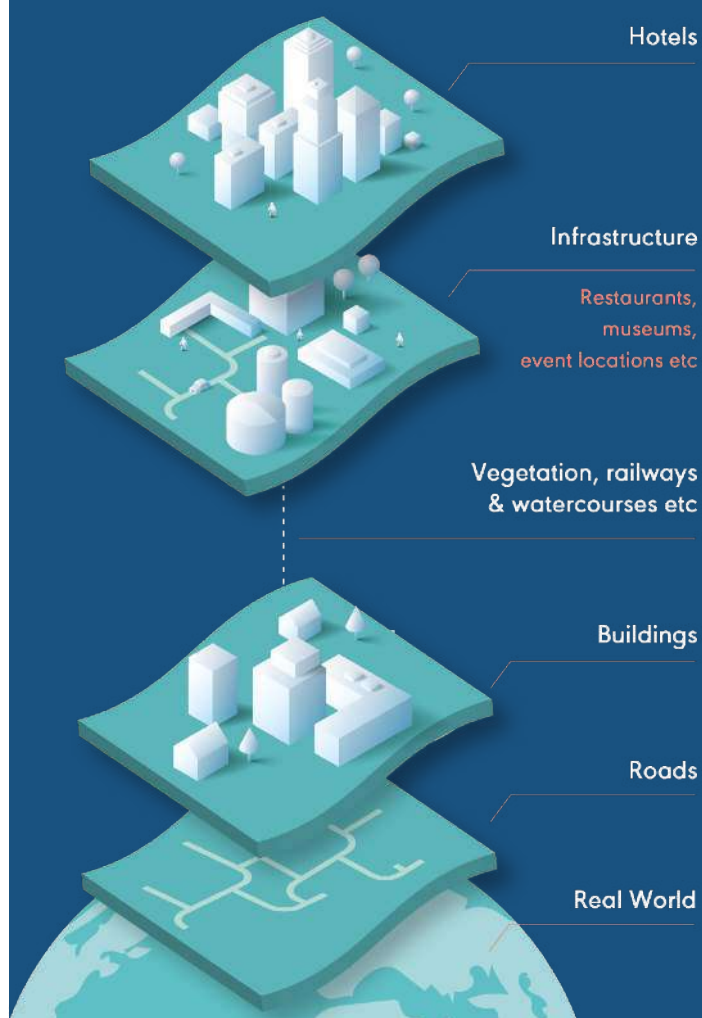
of managing density in dedicated zones using territorial land-use planning systems that use GIS. However, scholars have noted that tourism managers do not use GIS technology sufficiently, and that there are few academic studies on the management of tourism using GIS. (Cvetkovic and Javanovic, 2016)

As tourism continues to grow at rates well above many other global industrial sectors worldwide, GIS-driven master plans that track the social, environmental and economic impacts of tourism will be increasingly essential to cities and regions experiencing rapidly growing tourism demands on local resources.

GIS Basics and Potential for Tourism Planning

Figure 11:

Simple GIS Framework for
Tourism Planning



GIS uses geographical data as well as data sets to visualize, analyze, and assess multilayers of information in a synthesized model of the real world. GIS maps allow researchers, academics and officials to identify and monitor key areas. The objective of geographic analysis is to transform data into useful information to satisfy the requirements of decision makers at all levels. GIS mapping and analysis can be used to enrich data-driven studies as well as qualitative studies and fosters more interdisciplinary explanations of statistical analysis and scientific assessment. An important use of GIS analysis is the predictive capacity of the technology, which can project the impacts of future events. (Javanovic and Njegus 2008) GIS technology offers a quick and efficient approach to responding to the requirements of different users (for example, stakeholders) via the presentation of results in cartographic, statistical and tabular form – enabling dynamic troubleshooting via a comparison of a wide variety of databases. Uses of GIS can be particularly important to manage visitor flows and allow educated responses to a wide variety of changing factors, such as climate change, and GIS allows decision makers to allocate zones for land-use planning, which can incorporate dynamic indicators for benchmarking and monitoring the protection of both socio-cultural and natural capital. (Cvetkovic and Jovanovic, 2016)

There are few, if any, master plans at present that establish baseline tracking systems for managing tourism growth that combine data and location to yield insights at the street level on a continuous basis using measurable benchmarks.¹⁰ In the future, such master planning methods will be necessary.

Governments around the world sign off on master plans without being deeply involved in the research and without adequate review of the enormous documents normally delivered.¹¹ The best architectural schools in the world, such as Harvard, have long had concerns about the lack of flexibility of master plans to handle constantly changing variables, using tables and charts that quickly become outdated.¹² As a result, they have innovated more user-friendly forms of GIS to bring the benefits of GIS planning to broader populations of users. The creation of open source GIS, called Geodesign, at Harvard now allows for genuine stakeholder exchange via mapping systems – an innovation that led the International Sustainable Tourism Initiative (ISTI) at Harvard to begin coursework and research on the use of Geodesign for tourism planning.¹³

Local authorities need more useful master planning systems that produce visualized benchmarks from the data on indicators set not only for economic indicators but also environmental and social sustainability. Master plans should have local residents at the heart of the process in order to ensure that information on key resources that are vital to local residents are adequately tracked on a regular basis to reflect local needs. Environmental goals for destinations require mechanisms to conserve and manage resources, especially those that are not renewable or are precious in terms of life support. Socio-cultural goals for

destinations must move towards sharing tourism's benefits in concrete ways that can be measured to alleviate poverty and maintain equitable outcomes in land distribution and access to highly valued socio-cultural resources for locals and tourists alike. GIS-powered master planning provides a cost-effective means for managing natural and socio-cultural resources even in developing countries with low budgets. (Chaplin and Brabyn 2013) GIS systems are equally useful in developed economies to fully monitor land use, control the spread of tourism facilities along overburdened coastlines and distribute tourism use in more concentrated areas in order to prevent sprawl. (Boavida-Portugal, Rocha, & Ferreira, 2016)

Master planners can delineate where growth will harm vital protective ecosystems (e.g., wetlands). Such efforts are routinely undertaken in the conservation and sustainable development world, but not often in consultation with NTAs. For example, there are no known studies with GIS mapping of tourism industry vulnerability to climate change. Yet, GIS is extremely well-suited to tracking invisible burden-related risks such as climate, water scarcity, and waste. For example, by clearly mapping vulnerable coastal regions, tourism decision makers can zone areas that are less vulnerable to impacts driven by climate change and provide incentives for moving tourism infrastructure, particularly hotels, to areas safer from threatening storms and surges.

¹⁰ Work at the Harvard International Sustainable Tourism Initiative to launch the course, Sustainable Tourism, Regional Planning, and Geodesign has yet to uncover master plans which measure key resource consumption issues or socio-cultural indicators as part of tourism development plans

¹¹ According to V. Moles (personal communication), Advisor, International Sustainable Tourism Initiative, Harvard T.H. Chan School of Public Health

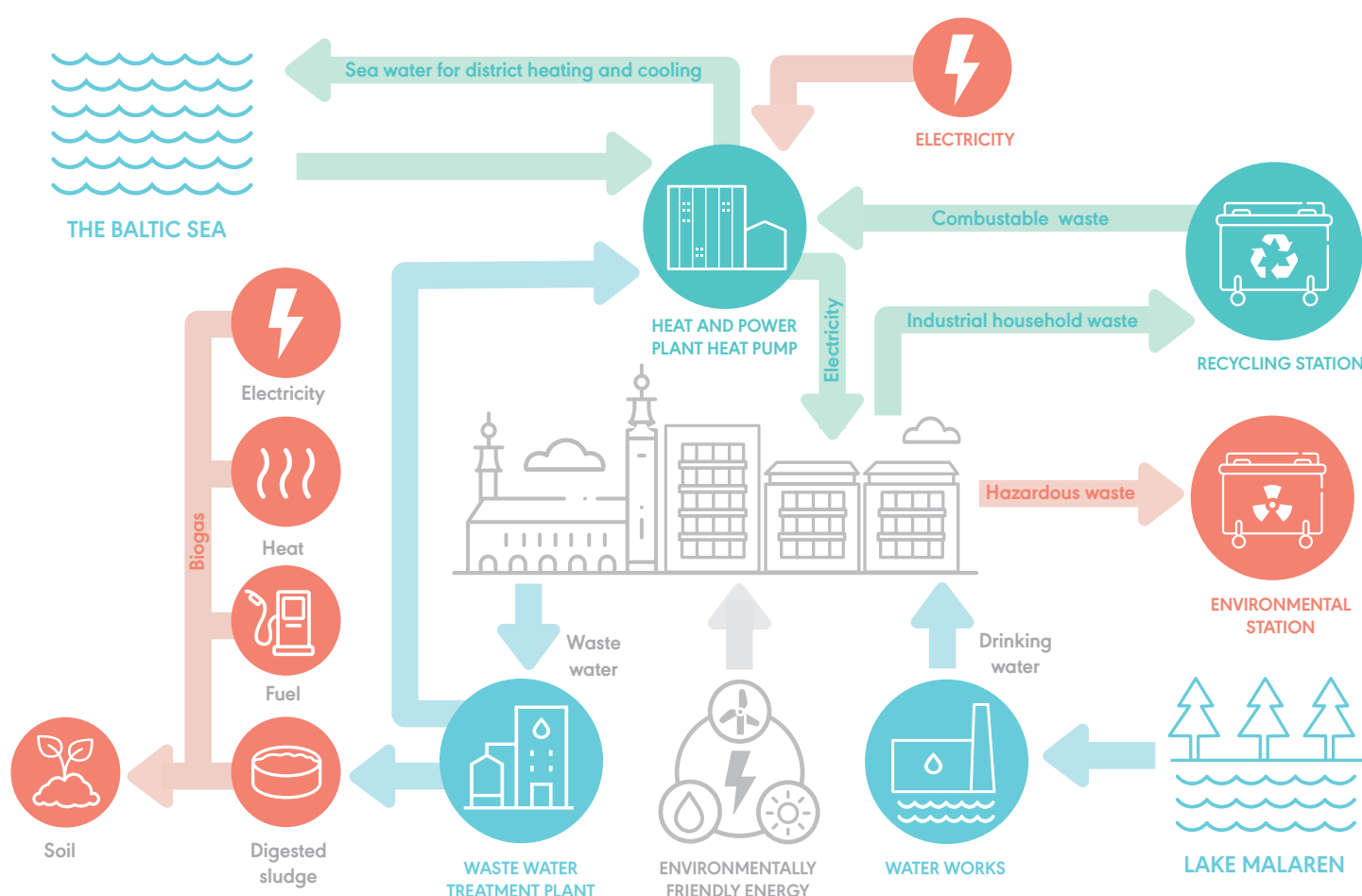
¹² According to S. Ervin (personal communication), Harvard Graduate School of Design

¹³ Geodesign allows local people to identify where compromised systems lie and where investments in alternative energy, clean development infrastructure, and the protection of green spaces can be made to better manage the future of destinations
<https://scholar.harvard.edu/sustainabletourism/smart-destinations>

Master plans generated with GIS can also track measurements of tourism impacts on social and built capital, including heritage, culture, historical centers, and ports. Multi-criteria group evaluation techniques allow residents to identify the limits to their acceptance of change in their home cities and towns in terms of crowding, interference with their daily lives, management of cultural centers, and ability to access their own gathering places.¹⁴ GIS allows such data to be placed into maps that managers can use to reduce local conflict and growing dissatisfaction with tourism. Mapping everything from environmental impacts to local residents' concerns could allow city and town managers to determine how to best prioritize and

preserve vital living and historical, social and cultural capital in destinations as part of living master plan systems. (Girard, 2013)

Hammarby Sjostad, Sweden is an excellent example of a master plan used for the holistic management of an urban space to create a green district. From its infancy, the Ecodistrict of Hammarby Sjostad in Stockholm, Sweden used sustainable infrastructure to produce a green economy that offers an affordable and pleasing aesthetic outcome for citizens. Such a model is not at all out of reach for destinations of the future, which could create an ecosystem of energy management with very low waste and a highly efficient use of resources.



¹⁴ Limits of Acceptable Change (LAC) was designed to address the failures of carrying capacity after years of work seeking to apply this concept in the protected area community. "Carrying capacity associated with tourism development on public lands is uniformly a failure. Not only have intrinsic numerical carrying capacities failed to be identified, policies limiting use have often been unsuccessful." (McCool, 2013)

Figure 12:
Integrated
development strategy
for Hammarby Sjostad

Real time data on resident and commercial uses of all utility systems via intelligent grids can be tapped by tourism planners to automate the process of monitoring hotels' energy use, waste, or waste water in order to create the Hammarbys of the future. This will help to ensure that the costs of managing tourism are not paid by local residents. Such intelligent utility systems are already the dream of leaders in the European Union and are on the verge of being implemented by leading European cities. (Gabriel, 2018)

Data management and mapping will also be critical to help municipalities around the world respond to the skyrocketing of shared accommodation. Apartment and house sharing, known as the Airbnb model, have become a global phenomenon generating billions of dollars-worth of revenue via short term rentals managed within the digital economy. On a vast scale,

the wholesaling and retailing of vacant commercial and residential properties is becoming big business worldwide. The growth of the digital property marketplace has disrupted city centers in already booming destinations, such as Amsterdam, Barcelona, San Francisco, and New York, among many others, outstripping most efforts to regulate impacts. This will not abate soon, as many new booking platforms are accelerating at warp speed on an international scale by obtaining inventories of commercial listings for resale. (Schaal, 2018) This has little to do with the sharing economy, and more to do with the monetization of unused commercial and residential space. With the number of residences and commercial spaces that are becoming available via online management platforms as of 2019, cities will have to create digital systems to track and manage the impacts. This can be done via mapping different users using GIS, as was done in Athens. (See Figure 13)

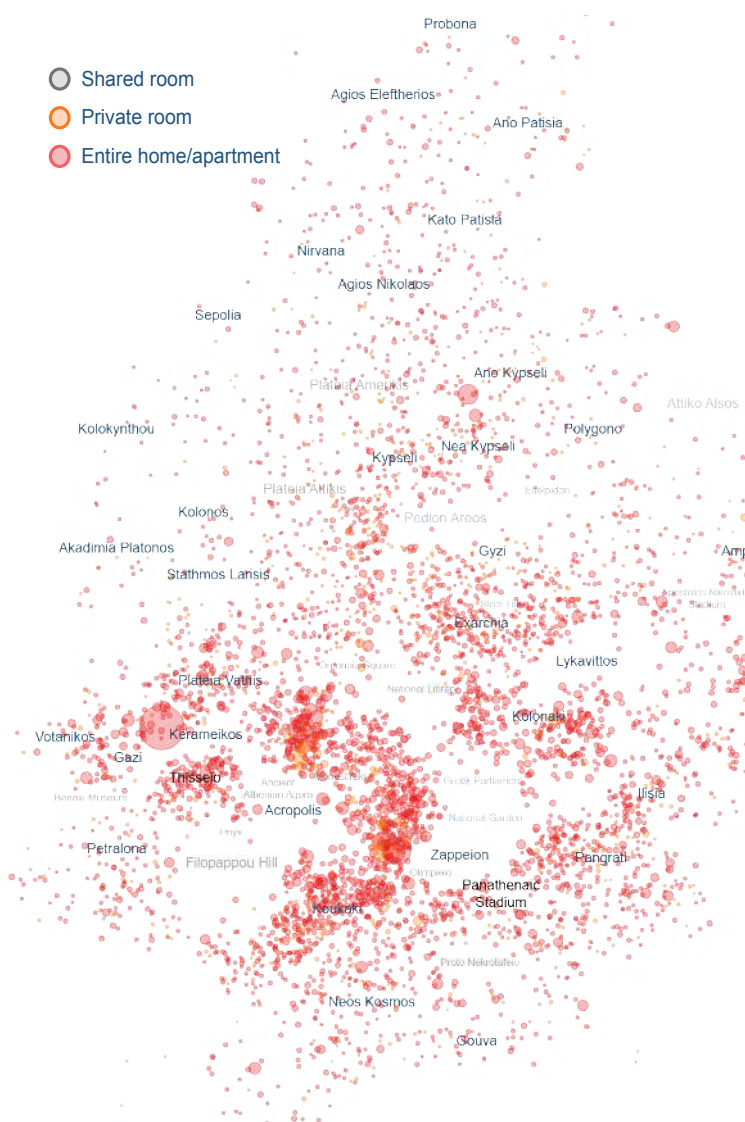


Figure 13:
Athens Airbnb listings 2017
(Sideras, 2018)

€9/night €5,000/night

In Athens, 56.2% of listings are single listings per host, but 43.8% are multi-listings, indicating that commercial operators were operating 11,705 properties in 2017. (Sideras, 2018) In Barcelona, authorities are aware of the need to regulate all the various forms of new accommodation. Growth, types of accommodation, distribution, and permitting are at the heart of their concerns. (Goodwin, 2018) GIS mapping of home and apartment shares can distinguish local property owners from large-scale commercial property managers. This allows municipal leaders to review new regulations that distinguish larger businesses from small-scale home owners.

Part Three

ENABLING CHANGE



Dedicated Destination Management Capacity

In order for governments to do their job, they will need holistic accounting measures, a better system for managing demand, a different tax allocation plan, public-private partnerships, and a new method of valuation of operational requirements to preserve tourism assets. This will require new teams to manage an intelligent, data-driven tourism economy, which cannot be achieved without a full re-evaluation of the skills required. Having specialized in marketing for over 50 years, NTA personnel lack the knowledge, training, and experience to manage the invisible burden on tourism destinations and cannot simply convert their personnel to new roles. While training can assist, destinations should seek support from university systems and other data management institutions to make an effective transition.

The “to-do” list for municipalities and city managers includes the creation of a staffed data unit to measure the cost for delivering essential services to the tourist, for example, water, waste water treatment, and solid waste management. In addition, the maintenance of natural and social capital assets must be built into data management systems to ensure proper evaluation of total tourism costs to society at large.

Once the projected costs for managing tourism at the destination level are clear, action can be taken. Without budgetary planning for the preservation of key destination assets, there is little chance of dynamic solutions. And without such budgetary projections and forethought, destinations will continue to rely on last-minute solutions on an emergency basis, frequently resulting in dirtier, less efficient tourism economies – such as what transpired in Rhodes, Greece. (Fotiadou, 2013) Governments require a balanced set of accounts that can view the cost per tourist within their city accounts in addition to a set of ongoing statistics on the future cost of services for sustainable tourism growth. Such accounts will manage the costs of both planning and implementing green infrastructure systems that serve both hosts and guests.

The decision to reinvent tourism management is an economic, social and environmental imperative, and it is therefore urgent to establish new protocols for training destination managers. Destinations that lack the human resources to manage assets of national importance to the economy will experience growing economic risk over time. Professionals able to measure and analyze invisible burden-related data will be valuable to national economies and should be trained. Another useful approach will be to create agreements with university programs as part of the larger role universities can play in local society. Science-based statistics on key resources including energy, water, waste water management, and biodiversity are essential to governments in order to be certain that tourism can be sustained, in light of the growing risks of climate change, poor infrastructure, declining renewable resources, and overtourism.

With the support of universities, urban planning experts, and science-based agencies, governments can establish units to manage tourism intelligently in the future. But they should not seek to work alone. Instead they can take advantage of the capacity of the private sector to invest and help manage the external costs of tourism. The role of government in this increasingly digitized environment is to foster the right Smart platforms for economic growth. Though nascent, basic principles of public-private mechanisms and instruments for governments to achieve this are presented in Appendix B.

Holistic Accounting

One of the primary challenges for tourism decision makers is the inaccurate and misleading nature of the data they use to project and discuss success. Economic impact analysis does not account for the costs associated with the invisible burden. Tourism decision makers at the international and national levels frequently make important decisions based only on international arrival figures, which excludes vital information on the growth of domestic tourism, and the economic value of each tourist.

UNWTO International visitation figures are generally the basis for policies set at the national level by NTAs. This approach has long been known to be superficial and without proper statistical analysis of the economic impacts per tourist. This is technically alleviated via the use of Tourism Satellite Accounting (TSA) accounting, which extends the information to direct and indirect impacts of specific tourism supply chains. But this does not include local operational costs – the invisible burden.

There is another accounting area that needs urgent correction. Domestic tourists represent roughly 4 times the number of international tourists (Gossling & Peeters, 2015), but they are not accounted for in most

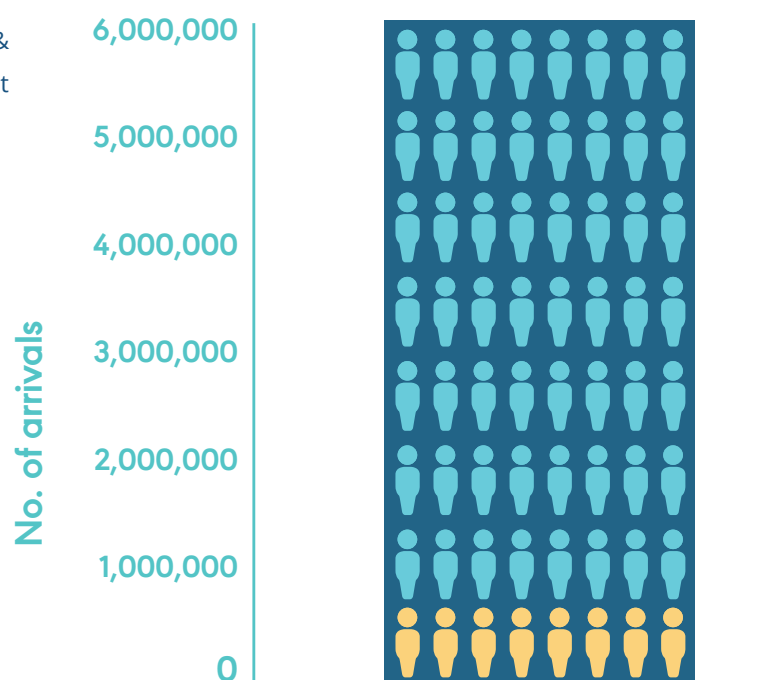
analyses of tourism numbers, unless such numbers come from the local sites, which are organized to report their numbers digitally. This could be a fix, anywhere in the world – especially in countries that have the IT talent to coordinate domestic and international visitation numbers to manage key assets.

At present, local municipalities and NTAs often do not coordinate on these statistics, and there is frequently a lack of solid information on total visitor counts at key monuments, even vital world heritage monuments such as the Taj Mahal. (See Figure 14)

To effectively manage tourism at the site or destination level, policy makers need to share records with local governments and jointly review annual domestic and international visitation numbers in order to manage tourism and prevent negative impacts. There is also the need to project future visitation in order to prepare for accelerating crowd numbers at monuments, and other problems associated with overtourism.

Figure 14:

Domestic and International Arrivals at the Taj Mahal, India 2014¹⁵



¹⁵ No reliable statistics on the visitor numbers for the Taj Mahal were published which distinguish between national and international numbers for the years 2015-2018; (January 2019) Review by EplerWood International

In India, the data on travel impacts from the domestic growth of tourism is awakening policy makers to considering alternative approaches to managing tourism.¹⁶ Domestic figures show:



12.4%

Annual growth
2014-2016

1.6 billion

Domestic travelers
2015/2016

While the pressures from domestic tourism are only beginning to set off alarm bells in the halls of the Ministry of Tourism of India, policies are largely formulated based only on international inbound traveler figures. (Outlook India, Responsible Tourism 2018)

Accurate accounting of total visitor numbers will help local decision makers to project costs for managing local infrastructure needs per tourist. The Harvard T.H. Chan School of Public Health tested its International Sustainable Tourism Initiative (ISTI) Framework on

Djerba Island in Tunisia in order to help this post-revolutionary country understand the GhG emissions per tourist and the cost of infrastructure to maintain tourists on the island. Results were gathered directly from the utilities, and findings came as a wakeup call to decision makers, who assumed tourism consumption was not driving total utility costs for the island. On the contrary, electricity demand was 56.5% of total demand in peak months on Djerba Island in 2016 (33% of the total demand for the island), water demand was found to be 8-10 times higher than it was for local users and municipal solid waste per tourist was responsible for 25% of the waste generation on the island. (Epler Wood, Fotiadou, Jarrar & Daouda, 2019)

The Harvard ISTI Framework Research in Tunisia demonstrated that:

- 1** Without further monitoring at the destination level, tourism will play an increasingly energy- and resource-intensive role that will not be accounted for in national planning and will leave local authorities without the resources to manage growth.
- 2** Municipal leaders require data on the many unmonitored and unaccounted for impacts on local destinations to guide the development of more sustainable, efficient economies, in order to meet the Sustainable Development (SDG) Goals and lower GhG emissions in accord with the Paris Agreement.

The study concluded that any society that seeks to generate a more efficient, low-carbon tourism industry, as Tunisia does, must resolve to standardize data collection on tourism impacts and create an investment plan in updated infrastructure to absorb peak demand impacts and manage total visitor demand. (ibid)

¹⁶ According to M. Sharma (personal communication), Additional Director General, Ministry of Tourism

Demand Management in the Public Domain

Another outstanding issue is the management of monuments as tourism numbers escalate. Demand management is the art and science of dynamically managing demand to optimize the distribution of customers. (Anderson & Carrol, 2007) While originally designed to price airplane seats to maximize returns for the airlines, it could be a surprisingly effective tool to manage visitor demand and flows in destinations. Establishing demand management systems now for coordinating visitation to the world's most sought-after global monuments, parks, and iconic destinations could be an essential tool to manage tourism growth.¹⁷ For example, a government can decide to give a third-party business a concession to manage inventory for key monuments that are becoming overcrowded. The government and monument's managers can work together to set conditions according to their requirements, with the goal of smoothing demand curves and raising funds for management, without the need to privatize public assets. In fact, the government can manage the system and require a percentage from the vendor while establishing clear conditions to maintain key national assets for the public good.

Conditions can be carefully designed to reflect the need to protect valuable assets. Achieving the highest revenues per tourist, as is done by the airlines, need not be the condition for access to world heritage

A demand management system could prioritize a wide range of options, with some examples here:



Purchasing early



Purchasing in small groups



Purchasing with a donation to the conservation of the site



Purchasing with a commitment to stay in hotels with verified systems for sustainability



Purchasing to visit during non-peak hours



Visiting with a licensed, experienced guide who is certified by the site. (Anderson, 2018)

This simple innovation could make monuments more pleasant and consumer-friendly, while at the same time create a steady pipeline of resources for site conservation and maintenance, responsible accommodation, and the use of well-trained guides.

¹⁷ Demand management calls for commercial or non-commercial manager of sales to: 1) control inventory and the reservation process; 2) segment consumers according to their requirements and behaviors; and 3) influence purchasing behaviors using incentives. See Anderson & Carroll (2007).

Tax Allocation

The existing approach of industry and government has not proven to be adequate for addressing the challenges of tourism's growing invisible burdens, requiring a re-evaluation of how taxes are being allocated. While destination facilities are crumbling under the weight of overtourism, marketing continues apace using substantial tax dollars generated by each tourism visit. The allocation of tourism tax is generally evaluated according to the number of responses generated to the many ads generated by destinations worldwide. Much of this work is outsourced to private agencies dedicated to driving greater demand to the destination at considerable expense. Such methods are due for a robust strategic re-evaluation.

While NTAs (and the Destination Marketing Organizations and the private marketing firms they help finance) expend public funds on marketing their destinations, they are faced with heavy competition from the travel, transportation and hospitality industry, which spends eye-popping sums on marketing online. For example, Priceline Group (recently renamed Booking Holdings), which owns Booking.com, Priceline, Kayak and Opentable, spent \$3.5 billion on marketing in 2016, with Google as the primary recipient. (Phocuswire, 2017) NTAs will be less and less able to compete with Online Travel Agencies (OTAs) in the metadata and search world in the era of overtourism, opening up the option of allocating more of existing visitor taxes to the management of vital tourism assets.

For many tourism businesses in emerging economies, lowering tax allocation to government marketing programs may seem risky as they may believe that such marketing investments are their lifeline to remaining competitive and ensuring steady demand. But the trade-offs are significant. Unless emerging economy countries, particularly small island states, protect the assets on which they depend (such as clean water, coral reefs, beaches, and well-protected wildlife), they are endangering the future of tourism and lowering the value per tourist. It takes time to realize the benefits of pivoting away from allowing unrestricted commercial uses of public assets. But there is little doubt that a value-driven set of investments in securing the beauty and sanctity of destinations, while managing the underlying costs, will have good returns. Attending to the invisible burdens sooner rather than later will allow even the poorest destinations to achieve lower municipal debt, greater local well-being, and give them a chance to make a transition to a greener economy – all of which will foster higher visitor satisfaction and a lower cost per arrival.



Photo by Chris Willan

Financing of Destination Management

The tourism sector's focus on destination marketing is driven by the belief that this is the best way to realize economic goals. But, the failure to adequately account for and manage tourism's invisible burdens means that the long-term social, environmental, and economic health of those destinations is in peril. Deliberate, rigorous destination management will require investments in people, places, and processes.

In most countries, the majority of funding for tourism comes from central government budgets. (OECD, 2018) Other sources include taxes and charges on accommodation stays, air travel, arrival and departures,

and the use of certain resources. However, conserving unique natural, social and cultural assets will require investments that are neither part of most country plans nor likely to be, as government budgets tighten. (OECD, 2018) Public sector intervention is needed in order to generate low-carbon, clean outcomes, but the budgets are just not there. Due to government austerity measures, there was a sustained decrease in OECD member budgets for managing tourism between 2015-2017. (OECD, 2018) This placed extra stress on efforts to generate a break-even set of scenarios from tourism, because of the invisible burden contributing to aging infrastructure.



Iceland can thank the tourists for rebooting the economy and there are plans for investment in the national infrastructure, but this can be difficult when only 350,000 people live there to raise taxes from.

Partington, R. (June 2018)
The Guardian

Tourism has ideal circumstances to finance sustainable growth

The tourism economy has numerous advantages for attracting investment to solve destination-related problems, including: 1) sustained growth; 2) motivated public and private actors who seek to solve destination management issues; and 3) substantial tax revenues that could be reallocated in order to improve destinations and thereby improve global and local business services and the well-being of local people simultaneously. Investing in value-added tourism is worthwhile because tourists have indicated a willingness to pay more for well-preserved assets and are likely to stay longer in regions that have carefully protected natural and social assets.



From a tour operator's perspective, support of local infrastructure should be part of the cost of doing business.

Stephen D'Alfonso, Group Director of Public Affairs and Sustainability, Thomas Cook Executives



Some countries, such as Iceland and New Zealand, have already acted to cover the infrastructure gap by charging an infrastructure tax. Iceland's government approved tax reforms to pay for their infrastructure via a new National Infrastructure Plan for the Protection of Nature and Sites of Cultural and Historical Value. (OECD, 2018) New Zealand has added an additional tax on visitors called an eco-tax. The Ministry of Tourism will collect a visitor payment of \$25 USD (\$35 NZD) beginning in 2019 to cover the cost of infrastructure and for the cost of protecting natural areas. This was triggered by the dramatic increase in New Zealand's tourism arrivals, which left their systems strained and once un-touched wildlands increasingly despoiled. (Eturbo News, June 2016) The Balearic Islands have similarly implemented a tourism tax to help protect the islands, which raised €100 million in 2016 and 2017. (Travel Daily Media, 2018) Funds have been used for conserving the islands' natural and cultural heritage. Despite warnings that the tax would slow tourism, tourism to Balearics increased by 6.6% in 2017. (Majorca Daily, November 2017)

However, it is understood that many governments are averse to new taxes and must seek out other solutions. Fortunately, there is a revolution occurring

today in the world of finance that offers new tools and techniques meant to incentivize the types of complex investments necessary to support the amelioration and long-standing well-being of destinations over time. These include conservation finance, impact investment, and green and social bonds, all of which may all be applicable in the future to destination finance as they mature in the marketplace.

Secure trust funds, social bonds, or revolving fund accounts developed to manage business investment in destinations could facilitate investment in the cost of managing tourism at the local level. WTTC (2018) discusses matching grants to municipal governments from national funds, crowd funding, and tourism business improvement districts, or capital recycling, which frees up funds by putting leases on public assets. An innovative new solution being pioneered by researchers for this report is a small transaction fee placed on the global digital travel supply chains. Such funds could be placed into trust for reinvestment in local destinations, providing a revolutionary means of generating capital for managing the invisible burden of tourism and investment in transitioning tourism economies to sustainable destinations.

Intelligent Green Investments in Tourism Assets

Intelligent, green investments would ensure that:

1

Tourism operates as a long-term economic development tool that benefits local citizens.

2

Tourism creates healthy green infrastructure that benefits local citizens and visitors.

3

Tourism supports local economies and prevents the syndrome of increasing debt seen in country after country, especially once they become more and more dependent on tourism.

4

Tourism lowers dependence on foreign exchange by developing a healthy local economy which is managed for local well-being and efficient use of local resources.

5

Tourism captures the value of the growth of the tourism economy and distributes it equitably, based on solid investment platforms that are not politically-driven.



Financial tools to both lower the total cost of investment and raise the potential of improving the efficiency of infrastructure systems are promising. Green bonds, municipal bonds, and Smart City bonds may also be useful financial tools for improving investment in tourism destinations. For example, new types of public private financing systems for Smart cities has brought large-scale tech companies to the table, such as Cisco, which has established an

Infrastructure Financing Acceleration Program for lagging U.S. cities. The types of financing include: 1) concession financing, where the city gains the benefits of the new infrastructure while getting incremental revenue from the private sector vendor; or 2) revenue/cost sharing, which can help tie the cost of financing to desired public private outcomes and allow city and private investors to share in revenue streams or cost savings. (Wharton University, February 2018)

The efficacy of current allocations of tourism taxes must undergo a full policy review before adding new fees, such as eco-taxes.

Governmental oversight of new taxes and the use of tourism fees and taxes must be insulated from the political winds.

Tax allocation must be based on holistic accounting of operational externalities as tourism grows.

Green Climate Financing (for example, Conservation Financing) for destinations that prioritize the tourism sector is another promising financial tool to allow countries to meet Nationally Determined Contributions plans associated with the Paris Agreement to lower global GhG emissions at the national level. This could allow for tourism growth while funding climate change mitigation and adaptation measures in the future. (10 YFP Sustainable Tourism Programme, 2016) While only \$3.5 billion had been committed to the Green Climate Fund out of \$10.3 billion as of September 2018, countries including Norway, Germany and Japan announced significant new investments at COP 24 in Katowice, Poland in December 2018. (Green Climate Fund, December 2018)

The emerging investment climate for new infrastructure systems could be used to finance new solid waste, waste water, and renewable energy systems. Innovative financing approaches could include:

- 1 Allocation of a portion of tourism tax dollars to infrastructure (vs. tourism marketing).
- 2 Allocation of a portion of digital commerce transactions towards destination trust funds.
- 3 Creation of a global trust or revolving fund account to finance the preservation of destination assets.
- 4 Creation of a system of regional or national financing units which can manage trust or revolving funds independently of government and work with the development of scalable solutions for financing green infrastructure.

All revenue collection systems will have more strategic effect if they are independent, with secure and transparent systems for managing the tax. Goals can be developed based on a strategic analysis of the economic, environmental and socio-cultural sustainability of destinations at the operational level with the following terms:

- 1 The allocation of tourism taxes undergoes a full policy review before adding new fees, such as eco-taxes.
- 2 Governmental oversight and the use of fees and taxes are isolated from the political winds.
- 3 The level of allocation of tax is based on operational costs as tourism grows. Trust funds could offer an effective mechanism for managing investment from business to protect global assets managed independently from government with boards that represent local communities.

Valuation

If you put the Taj Mahal on the market, that would give you an incomplete picture of its value. Its intangible value is hard to quantify. While no valuation system will ever be perfect, almost any valuation system is going to be better than no valuation at all.

John Tobin-de la Puente, Professor of Practice of Corporate Sustainability, and Founding Co-Director, Initiative on Responsible Finance, SC Johnson College of Business, Cornell University



To effectively finance tourism assets that are the foundation of tourism economies, it is critical to know what the value of those assets are. Yet, many governments at the national, regional, and local levels have only a cursory understanding of what that value is of their most iconic attractions – all of which are part of a “bucket list”¹⁸ system that drives tourism to their countries. Bucket lists often drive tourists to the same sites, suggesting a need for valuation studies of the top “bucket list” sites.

Tourism in the 21st century requires placing a value on the most strategic tourism assets in the economy and protecting them from speculators and others who seek to shave dollars from an under-valued system. The nations that ensure their most valuable monuments and hotspots are protected will come out winners. For example, Australia has assessed the value of the Sydney Opera House (SOH) by making residents of New South Wales (NSW), and Australians in general, aware of the current budget to maintain the SOH and asking

them what they believe they could pay per person to cover additional uncovered costs. They found that residents of NSW and citizens of Australia were willing to pay over \$6.00 AUD each annually for a total of \$568 million USD in tax to maintain the monument, giving SOH an asset value of \$2.1 billion USD for Australia’s economy (with a 40-year net present value rate discounted at 7% per year). (Deloitte, 2013)

Australia may be the first advanced economy to ask these questions of their citizens, but they are likely pointing the way to a whole new view of the value of tourism for local economies and the need to protect iconic assets from overly assertive governmental budget cuts. More impoverished nations, which have long lacked adequate government budgets, are already working to protect vital natural resources to secure their futures. This is the case in Rwanda, a poor country with a tragic history, which has set out strategic goals to protect mountain gorillas and other important natural assets by raising access fees and seeking a high yield per tourist. Some of the top safari companies (for example, Wilderness Safaris) are working directly with Rwanda to formulate this strategy. (Austin, Epler Wood, & Leonard, 2018)

¹⁸ A bucket list is roughly defined as the number of experiences or achievements that a person hopes to have or accomplish during their lifetime. There are many travel books and guides written to encourage folks to create a “bucket list” of their top tourism destinations.

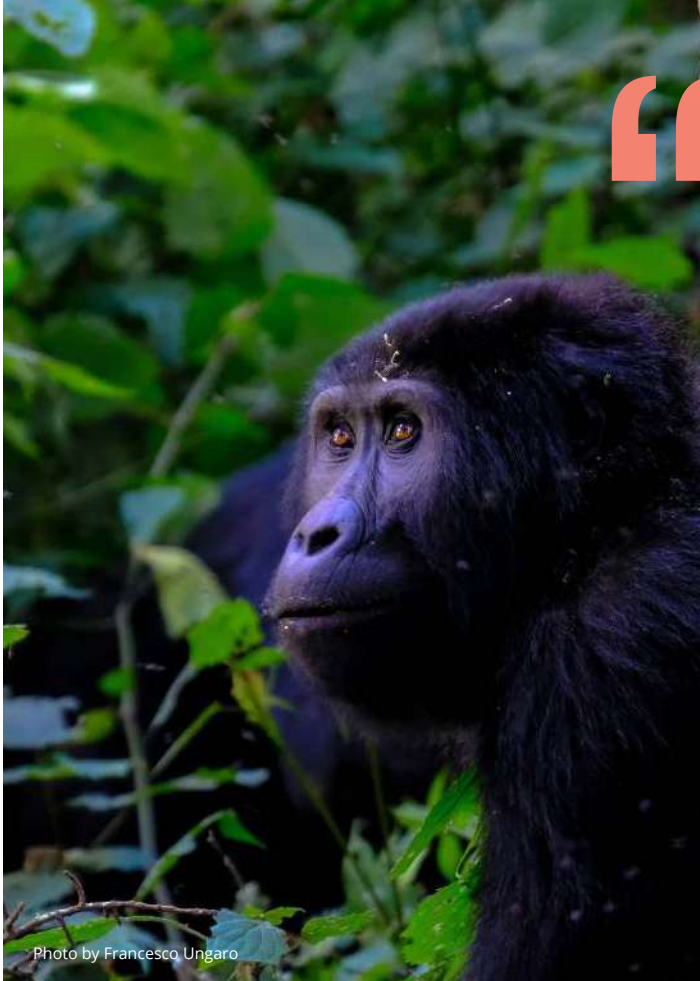


Photo by Francesco Ungaro

The mountain gorillas living in the Virunga Mountains of Rwanda have seen populations grow from 480 to 604 in 2016. That's all good news for Rwanda's tourism industry, which is taking a low-volume, high yield approach focusing on attracting high-end visitors and environmentally responsible tour operators. The country's strategy is to double tourism revenues by 2024 to \$800 million. Permits to see gorillas have increased from \$750 to \$1500. Local communities receive 10%.

Powell, L. (June 2018, Skift)

Such investment in strategic wildlife equity in Africa has long been known to increase revenues for private companies and to spread greater benefits to local people around major parks and conservation areas worldwide. (Buckley, 2010) Conservation tourism or ecotourism has long considered the value of wildlife and habitats as part of the core value of the tourism product. Such metrics have pointed the way to using tourism as a means of managing natural capital. For this reason, ecotourism and conservation tourism provide excellent examples of how public private investment in natural capital can have substantial benefits for both local government and businesses. If governments establish effective valuation and investment platforms, there is more likelihood of attracting private sector cooperation in order to stabilize destinations and create more robust tourism sectors. Such platforms need to consider the value of natural and cultural assets and be certain that the economic valuations of their current value are accounted and paid for.



Photo by Chris Willan

Conclusion

This report has concluded that the cost of managing tourism's vital assets worldwide are not being accounted for at the international or destination level. An invisible burden is undermining the success of the tourism economy, which is causing frequent disturbances both in Europe and around the world in the form of local protests, islands closing, and failing infrastructure.

European cities such as Barcelona and the countries of Iceland and New Zealand have set out new planning systems to finance infrastructure and protect historical assets and local well-being. But the large majority of destinations are unprepared and lack the budget and expertise to both manage escalating demand and oversee a proper evaluation of tourism's impacts on their local infrastructure and resources.

The invisible burden is threatening global cultural and environmental assets of enormous renown and value. The degradation of world class parks, historic city centers and world heritage monuments has vast economic implications for countries seeking to maximize the economic benefits of tourism. A keen and accurate understanding of the costs at the destination level is needed in order to ensure that vital resources and tourism assets are not degraded beyond the point of no return for local people and the tourism industry in the future.

The invisible burden results in operational externalities for local governments that have a direct impact on local municipal budgets – impacts that are not explicit in traditional economic impact research. While theoretical approaches have addressed this question, there has yet to be a system designed for destination managers to account for costs that are silently draining limited local budgets. The management of energy, water, solid waste, waste water/ sewage and natural and social capital per tourist has proven to be the primary operational externality that requires attention. Unless these costs are factored into the cost of tourism growth, an increasing number of tourism destinations will be driven to crisis management without a proper road map.

Risks for tourism economies are also escalating due to rapid land development in coastal areas. The global coastal build-up of hotels is placing a growing number of countries at economic risk due to sea level rise and the intense storms caused by climate change. Inadequate public data exists on this issue, but it is known that for the Caribbean region, 29% of facilities are at risk of inundation with 1 meter of sea level rise, in one of the few studies outlining the critical nature of this challenge for tourism development worldwide.

Developing countries are the most in peril of losing the economic benefits of tourism because their infrastructure is frequently poor, according to all UN documentation, and the demands and costs for servicing each tourist is high compared to the costs of serving locals.



The most vulnerable destinations in the world are therefore where:

- 1 Climate change impacts are likely to devastate tourism-dependent economies.
- 2 The growth of the global middle class is driving growth at unsustainable levels.
- 3 The percentage of economic dependence on tourism is highest.
- 4 The ability of local government to manage growth in terms of budgets or human capital is low.

This report is a call for more advanced systems to manage our growing and prosperous tourism economy. Financing tools will be required to launch a new generation of tourism development that captures an appropriate percentage of global revenue to invest in well-managed destinations worldwide.

In most countries, the majority of funding comes from central government budgets. However, leading research institutions, such as the OECD, agree that conserving unique natural, social and cultural assets will require investments that are not in local budgets, as government budgets tighten. Despite this challenge, the tourism economy has many advantages for attracting financing that were explored in this report. Given that tourism is projected to drive sustained economic growth until 2030 and beyond, 2020 is an excellent year to conceive of an investment platform that can drive 10-20 years of revenue to cover destination costs, improve the well-being of local people, and provide protection for vital natural and cultural assets.

Only if it is understood that historical, socio-cultural and environmental assets are the foundation of tourism economies, can such investments in the proper management of future assets be deployed. Fostering emerging talent found in universities, government and industry can help build the foundations for the public private platforms required to channel substantial investment in greener, more efficient destinations of the future. Global data pioneers, finance professionals, green economy engineers, protected area experts, social enterprise specialists, and lovers of the earth's greatest treasures are needed in order to help the sector seize leadership and galvanize the total economic value of tourism for good. With the leadership, finance, and analysts in place, a whole new generation of balanced, economically beneficial development can move forward and erase the invisible burden while benefitting millions around the globe.



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Goals for analysis of strategic risks

Economic Risks

1. The interruption of tourism visitation from hurricanes, terrorism, government changes such as social unrest and uprisings, and pandemics.
2. The transformation of the tourism marketplace and the growing dominance of digital marketing firms that powerfully control consumer choice without regard for local destinations or their requirements.
3. Increasingly low airfares to the hottest destinations, and escalating costs for regions not in high demand, based on airline demand management and the growth of low-cost airlines.

Environmental Risks

1. Rising costs of energy and dependence on fossil fuels for hotels.
2. Water scarcity and competition with local people for fresh water resources.
3. Sea level rise, storm surges and threats caused by climate change.
4. Lack of infrastructure for solid waste management and waste water management.
5. Lack of land-use planning to secure important land resources for local people.
6. Lack of protection of non-renewable natural resources required for local life support.
7. Lack of management of species vital to ecosystem functions that support the tourism economy, such as beaches and coral reefs.
8. Lack of financing to manage protected areas used for tourism.
9. Lack of human capacity to measure and manage environmental risks based on data.

Socio-cultural Risks¹⁹

1. Loss of control over the growth of tourism in local contexts central to the socio-cultural life of local people.
2. Lack of opportunity to influence the direction of government policy on tourism
3. Loss of reasonable access to public assets that are part of local natural and cultural legacies, e.g. beaches and monuments.
4. Overpricing of property due to lack of regulatory control on tourism properties and accommodations.
5. Loss of opportunity to be gainfully employed by the tourism economy, due to low-level wage systems.
6. Loss of opportunity to start businesses related to the tourism economy, due to inadequate support for capitalization of micro-small and medium enterprises.

Derived from
(Hall, 2011)

¹⁹ The process of identifying the precise definitions of each sustainability goal should be in the hands of the participants in the process. Rather than putting a large number of potential risk indicators, the goal is to create tactical decision for policy reasons, guided by an open source process.

Mechanisms for governments to achieve public private cooperation

Governments will require an accounting of the Invisible Burden of tourism and measure this against standard economic impact analysis. With this information they can:

1. Establish a holistic cost accounting system that provides annual reports to citizens on both the revenue and relevant operational costs of ensuring that tourism is economically, socially and environmentally beneficial from a quantitative perspective.
2. Project future costs and amortize them over a 10-20 year period to pay for green infrastructure as tourism grows.
3. Determine how and if tourism taxes can cover the required local infrastructure that can lead to a green local economy, and if so, determine the specific strategic goals for any new tax.
4. Deliver clear, transparent results, annually to all citizens on the outcomes of holistic accounting system to ensure there are benchmarks that can be audited by an outside party trained in the system.

Governments will need to review their current tourism tax structure and deliberate on its efficacy and determine if taxes might be allocated in ways that protect local citizens from deteriorating assets and growing debt from costs not projected when tourism began to grow in the area.

1. Facilitate private sector investment in key platforms for managing tourism locally.
2. Create a foundation for managing the public private platform that is fully open to outside review and is available for large and small investments into the system.
3. Consider returns on investment in destinations, which can provide both citizens and business with a reason to consider participation, with regular annual reports to guide discussion of investments.
4. Consider structuring board slots which are not political in nature, but rather representative of the tourism stakeholder community.

Governments can offer more organized procedures, such as demand management systems for global wholesalers, which generate revenue for the destination to manage the most important tourism assets in each destination. With the revenue and data this would generate, governments would be free to foster:

1. A renaissance of Smart destination tools that both target appropriate demand and power the protection and management of destinations.
2. More Smart City data, which provides a proper evaluative platform for managing green growth and attracting investment in green infrastructure, and the maintenance of natural and social capital.

Governments can establish goals to develop new talent and capacity to manage tourism via new organizational units that can manage vital data on tourism assets. This will help develop:

1. The human capital required to manage tourism assets.
2. Build university programs that can support the change of focus and help destinations to manage with intelligent systems for managing assets, via public private collaboration.

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