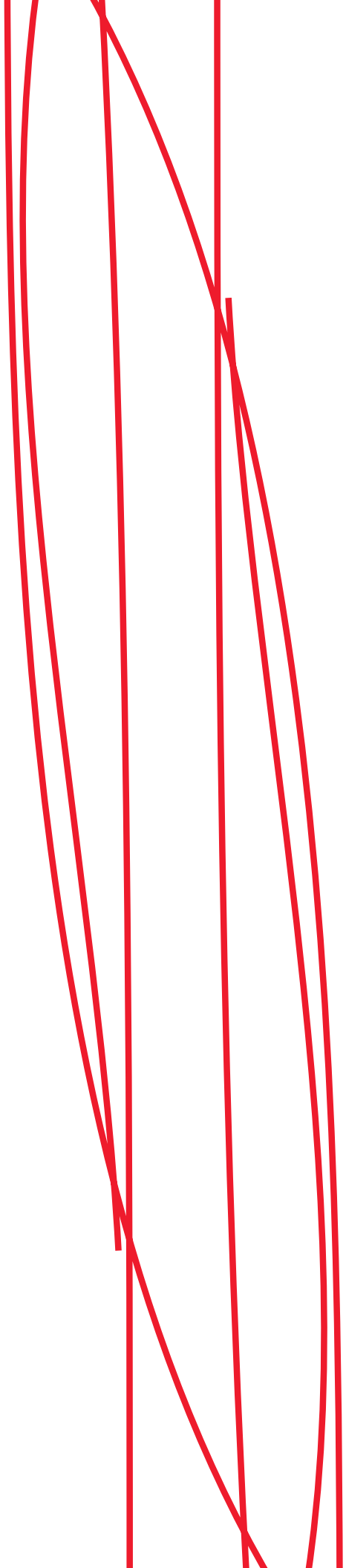

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Environmental Sustainability as a Driver for Competitiveness

Environmental Sustainability as a Driver for Competitiveness

As concerns mount about rising kerosene prices for airlines, growing carbon emissions from aviation, and the impact of tourism on the natural environment, travel and tourism (T&T) companies are finally paying attention to environmental sustainability. But what exactly is environmental sustainability? How does it drive competitiveness in the public and private sectors? And can it be leveraged to create a win-win solution for T&T operators, investors, national economies, local populations, and travel consumers? We will explore these questions in detail and highlight some of the key success factors to consider in leveraging environmental sustainability to further drive competitiveness in the T&T industry.

Dimensions and Impact of Environmental Sustainability

In the context of this article, we define *environmental sustainability* as development of the T&T sector in a way that meets the current needs of the industry at the destination, without compromising the needs of future generations in regard to all human ecological support systems—such as clean air, unpolluted water, and uncontaminated food. The different areas of environmental impact of the T&T industry can be described and structured within four basic categories: emissions, resources, waste, and noise (see Exhibit 1).

These four categories vary in their impact and importance, depending on where violations or improvements occur along the industry value chain—whether in distribution (e.g., tour operators and travel agencies), transportation (e.g., air, rail, and road), or accommodations (e.g., hotels and resorts). And for each player, every dimension of environmental sustainability can be addressed to different degrees on local, regional, or even global levels. The importance of each category also varies by geography, because regional stakeholders put different emphases on environmental impact quality control. For example, whereas noise was the number one issue for many U.S. and European airports for a long time, carbon

Exhibit 1
Environmental Impact Categories of the T&T Sector

Emissions	Resources
▪ Carbon dioxide ▪ Methane ▪ Nitrous oxide ▪ Hydrofluorocarbons ▪ Perfluorocarbons ▪ Sulfur hexafluoride	▪ Fuel, oil, fossils ▪ Wood ▪ Fresh water/drinking water ▪ Renewable energy sources ▪ Land space ▪ Other natural assets
Waste	**Noise**
▪ Reusable ▪ Biodegradable ▪ Recyclable ▪ Hazardous ▪ Inflammable	▪ Decibels ▪ Frequencies ▪ Time (night/day) ▪ Noise footprint

Source: Booz Allen Hamilton

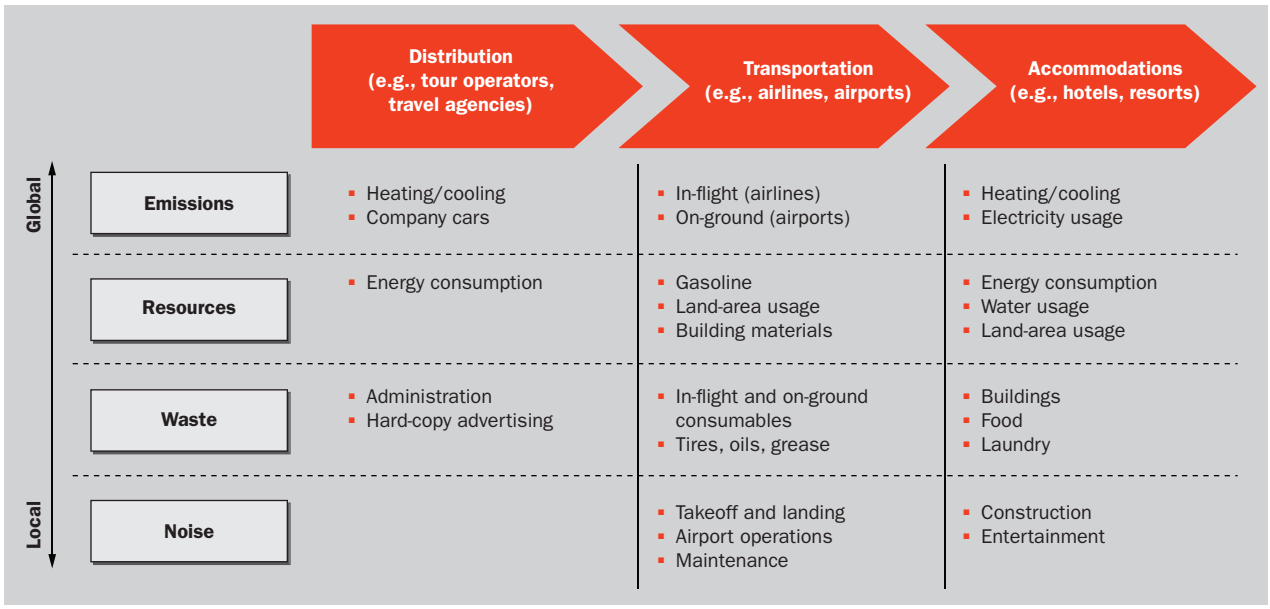
dioxide (CO_2) emissions are currently the main focus for the European air travel industry. But each player has the capacity to address every dimension to some degree (see Exhibit 2).

As a result of global warming, the issue of **emissions** has recently been the most widely discussed and recognized environmental problem. Because the effects of greenhouse gases on climate, and thus tourism, are indisputable, both the public and regulatory bodies have evinced an interest in "greener" travel, which focuses on the reduction of CO_2 emissions. A number of international and some global initiatives have already been implemented in different countries and regions to deal with these issues. With its strong growth to date and its potential to continue that growth, the T&T sector already attracts much attention from environmental groups and public regulators. The next stakeholders who request that the sector cut down on its carbon footprint and ask for cleaner ways to travel may be private investors and consumers. Discussions about global warming and the impact of the T&T industry in this area have just started—and are not expected to cease in the years to come.

The efficient use of **natural resources** also has some relevance at the global level—for instance, in considering the decreasing availability of fossil fuels and the rising demand for oil and kerosene in transportation. However, its impact is clearest at the local level (e.g., when expanding infrastructure) and the regional level, such as when clean water is scarce and usage needs to be split between the needs of the domestic population and those of incoming tourists. Looking at islands, for example, where natural resources are mostly composed of coral reefs, nearby tourism resorts often maintain their septic tanks poorly, which leads to sewage pollution of the drinking water as well as to a deterioration of nearshore water quality—damaging and even destroying their major tourism attractions. Considering that an average hotel room in selected island resorts creates as much as 30 kilograms (about 66 pounds) of waste and uses up to 700 liters (185 gallons) of water each day, the impact on natural resources can be tremendous if not managed sustainably.

Waste management is also relevant on a regional level. This especially holds true for destinations with

Exhibit 2
Examples of Environmental Impacts of Different Players along the T&T Value Chain



Source: Booz Allen Hamilton

restricted land areas, such as islands, where imported tourism consumables quickly turn into rubbish that is dumped in ever-growing landfills. Unsustainable, short-term solutions to waste management not only endanger these fragile ecosystems; they also put tourism at risk in the long run.

Finally, at a local level, **noise** pollution remains a key environmental issue for the air travel industry, despite the fact that modern aircraft are considerably quieter than their predecessors. The increasing volume of traffic has outweighed this improvement in most of the world's major hubs and imposes a major hurdle that needs to be overcome when expanding ground infrastructure and increasing aircraft movements at airports with communities nearby.

Thanks to increasing public awareness, all players in the T&T industry need to start thinking about environmental sustainability holistically when developing their strategy. As the demand for green travel continues to grow, both governments and industry operators will be forced to look at all dimensions of environmental sustainability and consider the impact of regulation and corporate conduct on both natural and cultural assets. Only the countries that manage to create a win-win solution by balancing the requirements of the tourism industry with the preservation of these assets will be successful in the long run and gain a competitive advantage over other destinations. Public authorities as well as private operators that see environmental sustainability as an opportunity to gain competitive advantage, rather than as a threat, may be able to create a new selling proposition and thereby attract new customers. But how? By looking at the results of the World Economic Forum's Travel & Tourism Competitiveness Index (TTCI) and taking some country and industry examples as case studies, we can shed some light on this question.

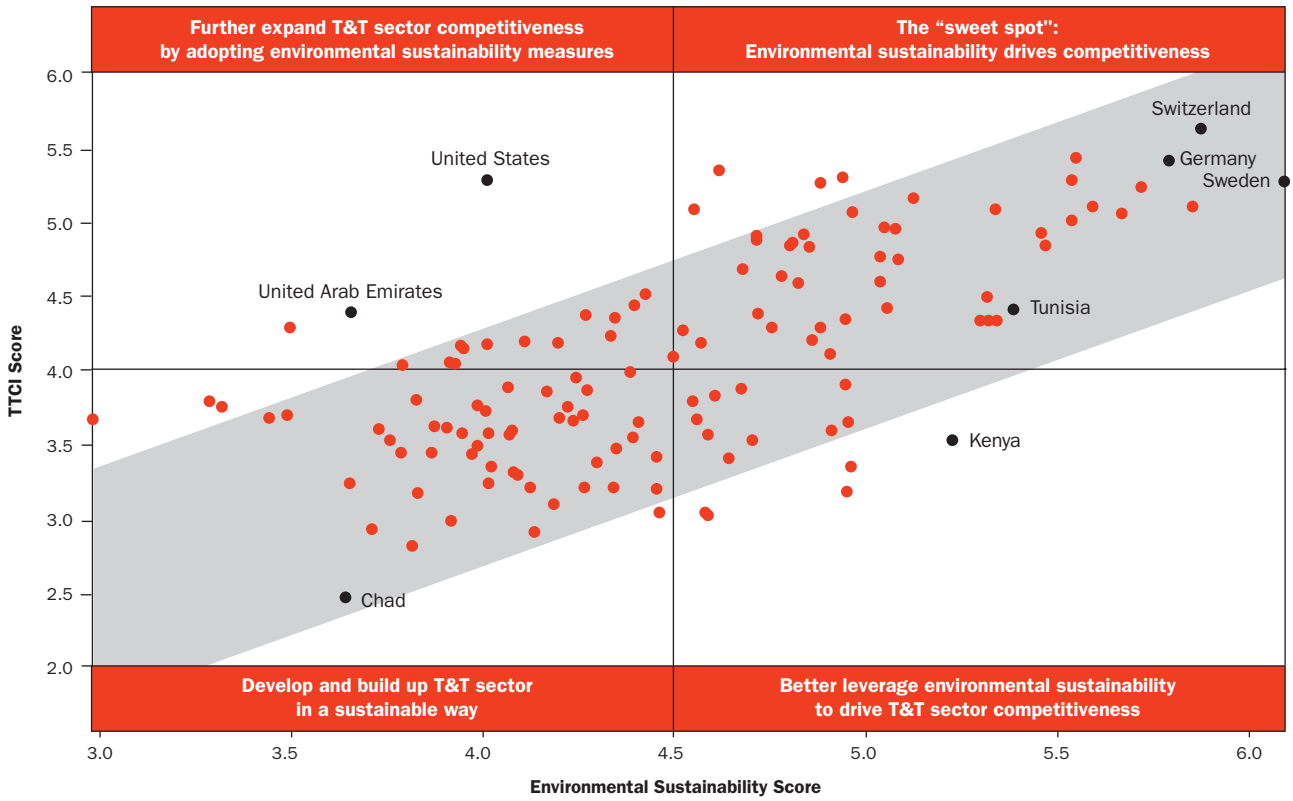
Environmental Sustainability: A Driver of a Country's Sector Competitiveness?

A country's level of environmental sustainability can be determined by its input measures, such as regulatory policies, and output measures, such as the eco-footprint of its tourism sector on a macro level and the behavior of private operators in the industry on a micro level. To evaluate the impact of these environmental sustainability measures on the sector's competitiveness, this year the TTCI included, for the first time, an additional pillar on environmental sustainability. This pillar evaluates the stringency of environmental regulation, enforcement of environmental regulation, ratified environmental treaties, and the sustainability of the T&T industry's development as input measures. As output measures, CO_2 emissions, particulate matter concentration per GDP, and threatened species give some indication of an economy's impact on its environment. Of course, these outputs are driven not solely by travel and tourism, but by economic activity as a whole. However, in light of scarce statistics regarding industry-specific environmental measures, these variables seem to be the best available proxy of ecological behavior and its influence on the T&T sector's competitiveness.

Looking at the overall scores of the TTCI on one side and the scores for environmental sustainability on the other shows a positive correlation, which underscores the fact that T&T industry competitiveness can be the result of long-term, sustainable regulatory policies that aim to preserve natural and cultural assets. Countries that score well in the sustainability category also show a high competitiveness ranking overall (see Exhibit 3, page 4). The leading economies in the environmental sustainability pillar have very stringent environmental policies—related not only to the tourism industry but to other sectors overall. In Germany, for example, renewable energy production is subsidized heavily by the state; the building of infrastructure and the control of particulate measures in inner cities are also tightly controlled by the state to prevent environmental and health damage for tourists as well as the domestic population. This is one of many reasons that Germany ranks not only among the top countries in the environmental sustainability pillar, but also among the top three in the overall TTCI.

The top right quadrant of Exhibit 3 highlights the "sweet spot," in which countries have established a

Exhibit 3
Travel and Tourism Competitiveness Index Score versus Environmental Sustainability Pillar Results



Sources: TTC; Booz Allen Hamilton

sustainable regulatory framework, assigning value to the protection of the country's natural assets as a means of driving the T&T sector's competitiveness. Switzerland, Germany, Sweden, and the majority of the other European countries also emerge in this quadrant, mainly because of the strict environmental regulations in the European Union (E.U.). The Nordic countries rank exceptionally high on the environmental sustainability pillar: Sweden leads the way, closely followed by Denmark (ranking third), Norway (sixth), and Finland (seventh).

Finland offers many good examples of how to protect the natural environment. Wide-ranging and detailed environmental data and high levels of technological skill form the basis of Finland's effective environmental protection policies. Enhancing efficiency in the use of materials is one of the main goals of the country's environmental policies: The concept of eco-efficiency is used to promote ecological improvements, with the idea being to produce more commodities and well-being using the same amount of resources. Initiatives designed to increase eco-efficiency include a far-reaching national program to promote sustainable consumption and production; it includes more than 70 measures designed to save energy and preserve natural resources. The low population density and comparatively unspoiled natural environment in the Scandinavian countries also facilitate nature conservation. Most Nordic countries have built up an extensive network of protected areas to safeguard biodiversity, which is one of the reasons why these nations show up in top rankings in the environmental sustainability pillar.

But less-developed areas, such as Tunisia (ranked

13th) and Puerto Rico (14th), are also relatively competitive in terms of environmental regulations. Tunisia, for example, is one of the few developing countries that place a high priority on the state of the environment and land development. Clear-sighted policies and a vigorous application of regulations have resulted in Tunisia's enjoying the status of being one of the cleanest countries in the southern Mediterranean. In addition to the positive impact this has on health and tourism, it could become a crucial competitive element when international environmental regulations begin to emerge in the near future.

Apart from these best-practice examples of countries where environmental sustainability goes hand in hand with travel and tourism, there are also countries that score quite well in the overall TTCI but perform relatively weakly in terms of environmental sustainability measures (visible in the top left quadrant of Exhibit 3). For example, despite the fact that the United Arab Emirates has started to invest in green buildings and cities that, in order to reduce waste, use only recyclable and renewable resources, many infrastructure projects are driven by economic instead of ecological goals. The building of the artificial islands at the Dubai coast, for instance, might have a negative impact on marine life; also, the country still does not regard solar energy as an alternative to cheap local fossil fuels for energy production.

The U.S. is one of the major domestic and inbound tourism destinations in the world; it also scores well in the overall TTCI (ranking seventh), but looking at the environmental sustainability pillar, the country falls back to 100th place. The low score on this pillar is not only a result of relatively weak regulatory measures to combat global warming, but also driven by inefficient energy consumption and the relatively high levels of air pollution in major cities as a result of limited public transportation and the high fuel burn rate of private cars. In general, countries within this top left quadrant already score high in overall competitiveness but might consider further improving the T&T sector's competitiveness by adopting, implementing, and controlling environmental policies—whether monetary incentives or regulatory measures—that not only preserve natural assets within the country but also contribute to its global brand awareness, which will attract more tourists in the long term.

Countries listed within the lower right quadrant of Exhibit 3 have already adopted a competitive, environmentally friendly regulatory framework but do not yet score high in the overall TTCI. Kenya, for example, is ranked 19th on the environmental sustainability pillar but only 101st in the overall index. Since Kenya is well aware of its natural assets (ranked 24th), it has established a multitude of national parks to preserve its wilderness attractions. However, the country is lacking in other metrics of the TTCI, such as safety and security (ranked 120th), health and hygiene (118th), and ground transportation infrastructure (107th). A lot of countries that depend on their natural resources find themselves in the same dilemma: Natural and cultural assets are not sufficient for them to be competitive; the basic elements for tourism also need to be developed in a sustainable way, such as providing access by road, rail, or air network links and ensuring the safety and health of incoming visitors. With increasing green tourism trends, these countries have a solid opportunity if they leverage their natural and cultural assets in an environmentally friendly way—thus attracting a newly emerging tourism segment in the years to come.

Countries that show both relatively low overall TTCI scores and low rankings within the environmental sustainability pillar, such as Chad, need to build up the basic elements of the sector (its regulatory framework, infrastructure, distribution channels, and so on). While they look to improve their competitiveness in the global T&T sector, they also need to make sure that they develop a strategic plan that takes into account not only short-term tourism receipts but also the impact of that tourism on the domestic population and the financial viability of potential public or private investments. Regardless of a country's stage of development, such a sustainable tourism strategy can drive competitiveness—for the public sector, with its goal of increasing inbound T&T receipts, and also for

the private sector to grow profitably into new markets. By looking not only at best practices but also at bad examples of other countries, these economies can build up their T&T sectors effectively in a relatively short time.

The Public Sector: Safeguarding Environmental Sustainability

Since the private sector always needs to strive for profitable growth, environmental sustainability will be embedded in the product portfolio and corporate conduct of the industry only if it pays off economically. Thus, one of the key challenges for public authorities will be to balance the trade-offs between the economic goals of private investors and operators and the long-term environmental requirements of current and future tourists and the local population. But what if an environmentally viable model is not supported by a positive business case? Alternatively, what if certain measures yield positive monetary results at the expense of the environment?

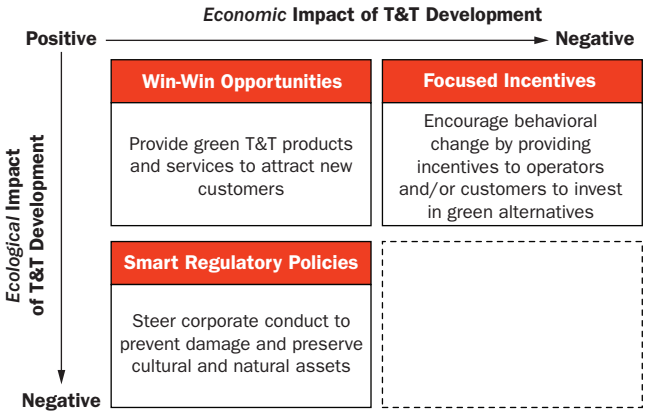
Because of this potential conflict, the public sector needs to step in to safeguard environmentally sustainable development of the T&T sector. Public authorities need to evaluate environmental impacts and define and implement the most effective measures to steer both corporate and end-consumer behavior, striking a balance between the costs incurred by private operators and the costs that occur as a result of the usage, or even the damage, of natural and cultural resources. This can be regulated either by allocating incentives or by adopting public standards, measures, and policies. But since any regulation that is put in place will come at a cost—to the state, the industry, or the end-consumer—the public sector also needs to consider the impacts of its regulatory framework, not only on the environment but also on overall tourism demand and the sector's competitiveness. Depending on the price sensitivity of visitors and the competitive level of a country's T&T industry, additional costs that are imposed on the sector might drive tourists out of the country—with results that are the opposite of any regulation's original intent. Hence, the public sector needs to define a regulatory framework that considers all implied costs to establish a balance that effectively develops the sector in a sustainable way, by:

- Supporting operators that invest in green tourism products and/or services
- Preserving cultural and natural assets
- Maintaining a constant, and potentially even growing, tourism stream.

Events that will have an irreversible or cost-intensive impact on the environment, such as the destruction of natural or cultural assets, especially need to be addressed by government policy and regulation. But reversible impacts (which can be ameliorated over time, once there is a viable business case) also need to be considered; the actual costs incurred need to be taken into account, which is possible only if natural and cultural assets are priced correctly. As a result, short-term profits might become losses if tourism attractions are destroyed in the long term. On the other hand, innovative renewable energy production technologies might suddenly pay off, if the environmental damage of traditional technologies is also considered. Apart from cost, the value added—both for incoming tourists and for the domestic population—should be part of the equation.

In terms of the economic and ecological impacts of development activities in the T&T sectors, there are basically three types of initiatives in which the public sector can steer the industry (see Exhibit 4). First, governments need to identify and promote potential win-win opportunities that not only provide a viable business case for private investors and operators but also have a positive impact on cultural and/or natural assets and the local population. One example of such a win-win opportunity is the T&T strategy of the Tuscany region in northern Italy, which implemented policies for tourism infrastructure such as accommodation and hotels (the so-called agricultural tourism strategy). To keep the cultural heritage and the natural landscape, the region prevents the buildup of large tourism resorts but provides incentives for the restoration and transformation of old farmhouses into little lodges.

Exhibit 4
Examples of Public-Sector Initiatives to Manage the Balance of Economic and Ecological T&T Development



Source: Booz Allen Hamilton

Second, in cases in which the return on investment is positive for the private sector but the environmental impact on nature and society is negative, the public sector needs to step in to prevent long-term damage to its assets and the destination's reputation. By adopting a smart regulatory policy with respect to sustainable tourism, a country can make sure that economic, mostly short-term goals from the private sector are balanced against the ecological, long-term goals of the domestic society, the natural environment, and incoming tourism needs and expectations. Therefore this regulatory framework needs to consider all aspects of environmental impacts from emissions, resources, waste, and noise. This framework can be driven by regulatory penalties and legislation that sets standards and targets—for example, for carbon emissions, recycling, and utility usage. In addition to defining environmental regulation, governments need to ensure that policies are actually implemented and that they drive corporate as well as private behavior toward sustainability.

For example, Montenegro, as one of the youngest nations on the planet and one of the fastest-growing tourist destinations, has declared itself an "ecological state," having institutionalized ecological principles in its constitution. In order to avoid the problems caused by mass tourism in other, more established Mediterranean destinations, Montenegro has set up an agenda for tourism development that has sustainability, nature protection, and ecotourism at its core. Because attracting foreign investment has been an important aspect of the country's agenda for tourism development, policymakers have ensured sustainable infrastructure construction by implementing sustainability principles with which all investments must comply. Among these principles are:

- Introducing transparent emissions-taxation schemes (e.g., mandatory for cars entering the country, voluntary carbon emissions fee for hotel guests)
- Implementing and enforcing specific land use requirements to enable sustainable growth of tourism without jeopardizing natural beauty
- Creating a high-quality tourism product portfolio through investments in human capital and through recruitment support and training
- Establishing specific programmatic and administrative policies to attract investors with long-term perspectives, operating expertise, and a sensitivity and commitment to the impact of national tourism development
- Incorporating environmental education into the mission of the government and the tourism ministry in particular
- Following a broad tourism portfolio approach to balance the needs of visitors and spread the risks of environmental impacts
- Creating a rigorous and consistent tender process for privatization of assets and greenfield investments that focuses on the quality of the investor, the operator, and the proposed project.

The third type of initiative in which the public sector can steer the industry involves alternative solutions (e.g., for transportation, energy production, and consumption of consumables) that have a positive ecological impact but currently have a poor return on investment—especially compared with other, cheaper solutions. In the areas of waste management or alternative power resources, for instance, the private sector will often fail to use recyclable materials or

solar energy if no additional incentives are provided by the government. Many cases have shown that without the support of the public sector, behavioral change might not take place. But if public policy provides incentives to invest in hybrid cars or solar energy, then operators as well as the end-consumer will shift toward environmentally friendly alternatives.

California, for example, enacted global-warming legislation to force the state's largest industrial polluters to reduce their greenhouse gas emissions 25 percent by 2020. This law led to the creation of a carbon market, allowing clean-energy producers in the world's sixth-largest economy to sell carbon credits to polluters who cannot or will not reduce their emissions. In addition, California also committed $3.2 billion to fund a drive to install solar panels on a million rooftops by 2018. Now California's largest corporate solar-power installation is in operation at Oakland International Airport, which fuels 80 percent of the hub facility's energy needs, substituting the sun for fossil fuel and other sources of electricity.

Any strategic plan for travel and tourism needs to address all these types of initiatives to define an effective regulatory framework, one that balances monetary and ecological impacts of planned investments and their implied costs—taking into account the needs of investors, operators, incoming and domestic tourists, the country's inhabitants, and the preservation of natural and cultural assets. An effective mix of industry policies, standards, and incentives will drive economically and ecologically viable infrastructure investments. Only the combination of a clear and well-thought-out strategy with excellent execution will achieve the desired results and economic benefit for a country to further develop the T&T sector in a environmentally sustainable way.

Pushing for Environmental Sustainability: The Case of CO_2 Emissions Control

Noise, waste, and resources are mostly dealt with at local or regional levels; emissions is the only one of the four dimensions of environmental sustainability that is currently discussed in the global community. Especially now, when governments around the globe are in intense discussions to develop a regulatory framework that will follow the Kyoto Protocol, the T&T industry has come under intense scrutiny and received calls to regulate the carbon emissions of air transportation.

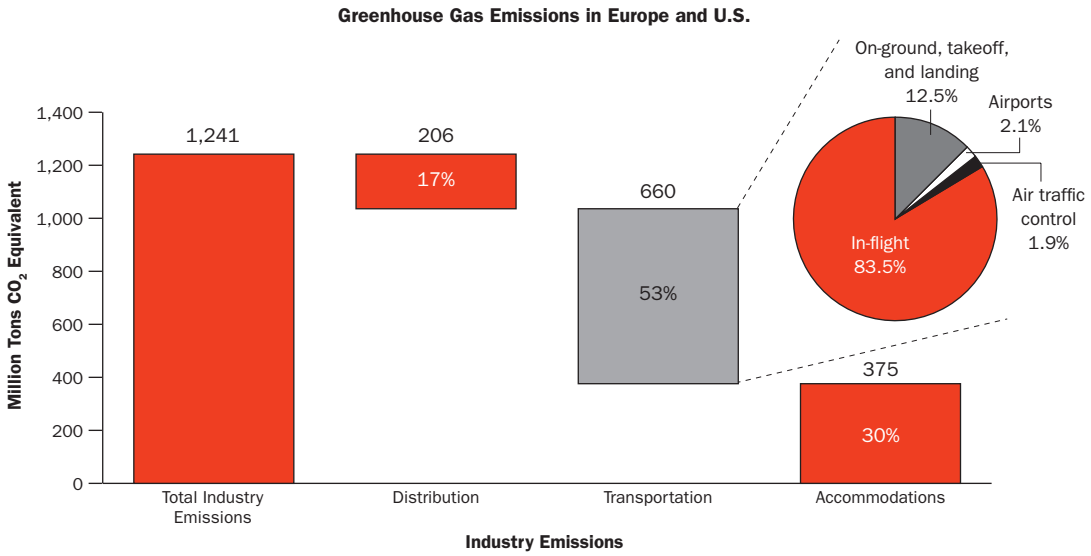
Although the industry's contribution to global warming is relatively low—about 5 percent—compared with other sectors such as energy, which represents about 38 percent, the rise in international tourism and the increasing number of air passengers have brought the sector to the attention of policymakers and environmental stakeholders. According to the United Nations World Tourism Organization (UNWTO), the 4 percent annual growth in international tourism will drive CO_2 emissions up 152 percent by 2035.

Consider the total greenhouse gas emissions across the major segments of the T&T value chain: The sector emits about 1.2 billion tons of CO_2 and other greenhouse gases that are converted into CO_2 equivalents, such as nitrogen oxides (NOx), per year (see Exhibit 5). Consider the different parts of the value chain; air transport accounts for more than half of the overall industry's emissions, which are mostly driven by emissions during the flight itself—making the airline industry the focal point of public discussions and politicians in their search for potential sources of emissions reduction.

Because of the global nature of the aviation sector, it is difficult to develop fair and effective policy measures to impose incentives on the industry players for the reduction or limitation of greenhouse gas emissions. Currently, different regulatory instruments to set such incentives are being discussed. However, any environmental regulation needs to recognize that there is presently no alternative to long-distance air transportation, and adopted policies shouldn't result in a drastic reduction of demand, which would have negative effects on the global economy. Although the necessity of reducing carbon emissions is indisputable among global institutions, there are different approaches to meeting that goal.

The United States favors better air traffic management and technological innovation as the most feasible

Exhibit 5
Greenhouse Gas Emissions across the Travel and Tourism Value Chain



Sources: Boston Analytics; Booz Allen Hamilton

ways to cut emissions: The view of the U.S. Federal Aviation Administration is that investments in modernizing air traffic management and creating new aircraft technologies will yield an immediate reduction in emissions without the need to put a price tag on those emissions. In the long term, changing the nature of fuel—either by using synthetic kerosene or by developing alternative fuels—is viewed as having the greatest potential effect on emissions reduction.

Apart from the fact that next-generation air traffic management systems and ongoing research into cleaner engines and fuel might help reduce emissions, the European Union's environmental ministers have agreed upon a future directive to incorporate the aviation sector into the existing emissions trading scheme (ETS) system. The directive is supposed to cover all CO_2 emissions from domestic flights starting in 2011 and international flights to and from E.U. airports starting in 2012, and it will apply to both E.U. and non-E.U. operators. Most leading aviation organizations believe that a fair and effective ETS needs to be a worldwide agreement with the participation of large global economies—for example, the United States, China, and India—instead of a regional system limited to Europe. This conflict is currently up for debate, and some legal challenges must be overcome before any regulation can finally be put in place.

Currently, airlines are the focal point in climate change regulations, but they depend heavily on other industry players to reduce fuel burn and carbon emissions: Aircraft manufacturers, airports, and air traffic management all need to be considered when thinking about industry emissions reduction levers.

Airlines: Because of rising kerosene prices, airlines have an intrinsic interest in reducing fuel burn per passenger kilometer—driving them to optimize utilization per flight. Additionally, air carriers can invest in modern aircraft or operate with larger planes that are more fuel-efficient per passenger kilometer flown. Finally, air carriers can give their pilots incentives to fly economically to reduce fuel burn and emissions.

Aircraft manufacturers: Reducing CO_2 emissions from aircraft is a challenging target because emissions from current kerosene-fueled aircraft are related directly to

fuel burn. In 2002, the Advisory Council for Aeronautics Research in Europe (ACARE) set environmental objectives for new aircraft fuel efficiency per seat kilometer relative to a baseline in 2000—with the objective of reducing CO_2 emissions by 50 percent and NOx emissions by 80 percent by 2020. In the U.S., the National Aeronautics and Space Administration (NASA) set similar objectives. Technological improvements driven by manufacturers also include the development of more fuel-efficient engines and cleaner/alternative fuels, and changes in aircraft structure and design (e.g., by fitting winglets to reduce drag).

Air traffic management: The regulation and management of air space present opportunities to reduce fuel burn significantly. Due to national airspace limitations, airlines sometimes fly longer distances than needed, burning unnecessary fuel. Opening up national airspace can result in more direct air routes, which will heavily reduce greenhouse gas emissions. Optimizing air traffic control services can also improve air routes. In Europe, for example, airlines are faced with 34 local air traffic control providers, which makes it difficult to fly the most direct path between two airports. Compared with the system in the United States (which has only one agency), this leads to inefficiencies, delays, and too much time in the air. Thus, the adoption of a "single European sky," managed by a solitary air traffic control authority, would reduce fuel consumption by an estimated 12 percent per seat kilometer flown.

Airports: In light of the strong growth in passenger and cargo air transportation, capacity bottlenecks occur not only in the sky but also on the ground—increasing the amount of time aircraft spend in holding patterns. Improving airport operations and adding capacity in runways, aprons, gates, and terminal space—especially at already-congested international hub airports—can reduce fuel burn and, hence, greenhouse gas emissions.

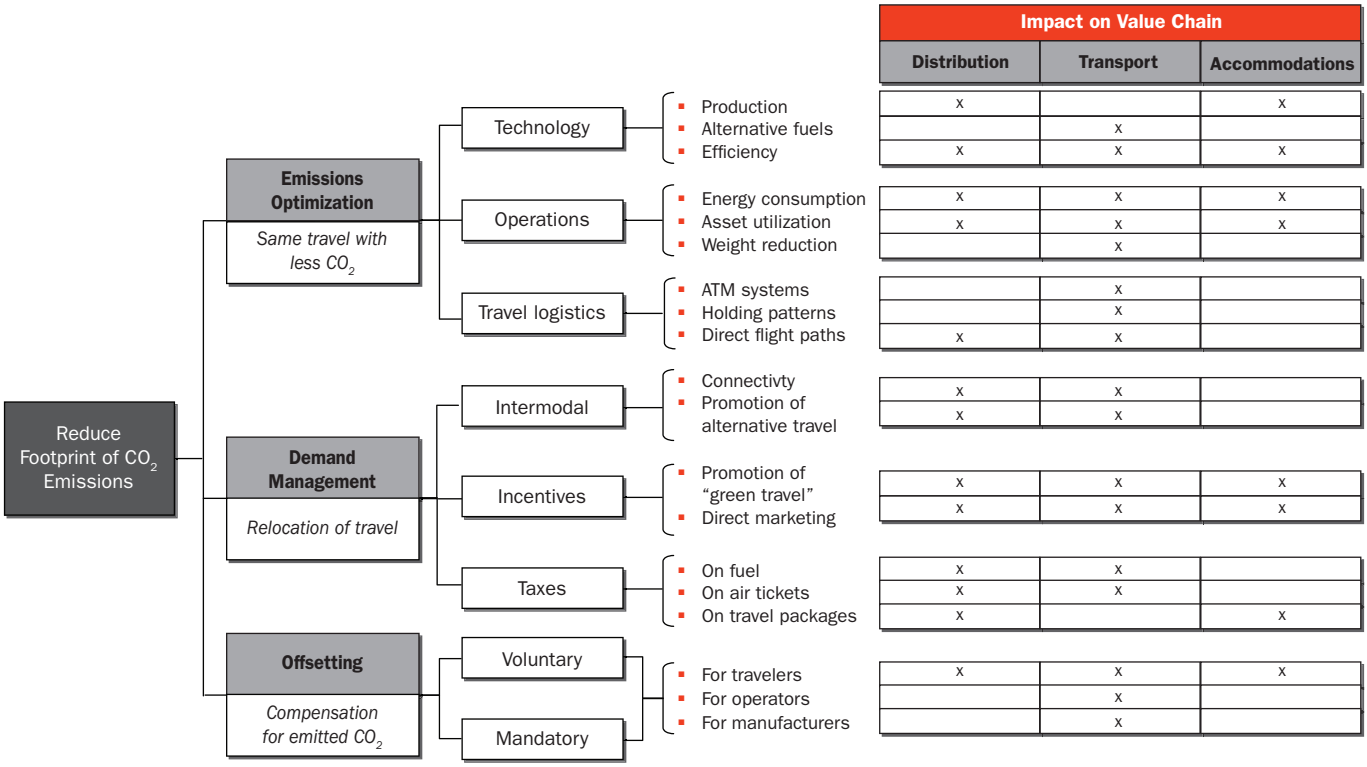
In conjunction with the reduction of bottlenecks in airspace and ground capacities, the optimization of air traffic management, the development of new engine technology, and the use of new fuel sources, emissions trading might be a viable economic option to motivate and speed up the application of emissions reduction levers by air carriers. For airlines, this could be a workable solution that avoids the imposition of environmental taxes, if it is applied globally and effectively by all industry players in the aviation value chain (see examples of emissions reduction initiatives in Exhibit 6).

As regulators face greater pressure from action groups to decide on emissions targets, the industry needs to ask itself what its role should be in controlling its environmental impact. All players in the industry should start to consider new ways to engage in environmental management. Their aim should be to influence both the public and policymakers, encouraging them to adopt measures that enable the market to respond to growing air travel demand but that ensure it is done in a sustainable way—while keeping an eye on the industry's cost and revenue position.

A sizable amount of the sector's CO_2 emissions (about 30 percent) is attributable to accommodations. This industry also needs to develop adequate measures to reduce its contribution to global warming. The hotel sector response to the increasing need for environmental consciousness has been to establish systems and procedures at the core of the decision-making process and to bring sustainable tourism to hotels through environmental initiatives, such as environmental management systems and eco-labeling schemes. The largest emissions reduction levers are more efficient insulation of buildings and the replacement of conventional heating or cooling systems with alternative solar or thermal energy sources. Beyond energy conservation, hotels and resorts have a multitude of other levers that drive environmental sustainability, such as effective waste and recycling management, reduced water usage, and the promotion of local conservation projects.

Public awareness of the need for environmentally friendly behavior will continue to grow, becoming a major factor in consumer decisions. The demand for green tourism products will rise further, making environmentally friendly packages the preferred solution. But what can the players in the tourism

Exhibit 6
Examples of Emissions Reduction Levers



	Impact on Value Chain		
	Distribution	Transport	Accommodations
Production	x		x
Alternative fuels		x	
Efficiency	x	x	x
Energy consumption	x	x	x
Asset utilization	x	x	x
Weight reduction		x	
ATM systems		x	
Holding patterns		x	
Direct flight paths	x	x	
Connectivty	x	x	
Promotion of alternative travel	x	x	
Promotion of "green travel"	x	x	x
Direct marketing	x	x	x
On fuel	x	x	
On air tickets	x	x	
On travel packages	x		x
For travelers	x	x	x
For operators		x	
For manufacturers		x	

Source: Booz Allen Hamilton

value chain do to develop a competitive advantage through environmental initiatives and at the same time not jeopardize their current cost structure? And are customers willing to pay a premium for greener products and services?

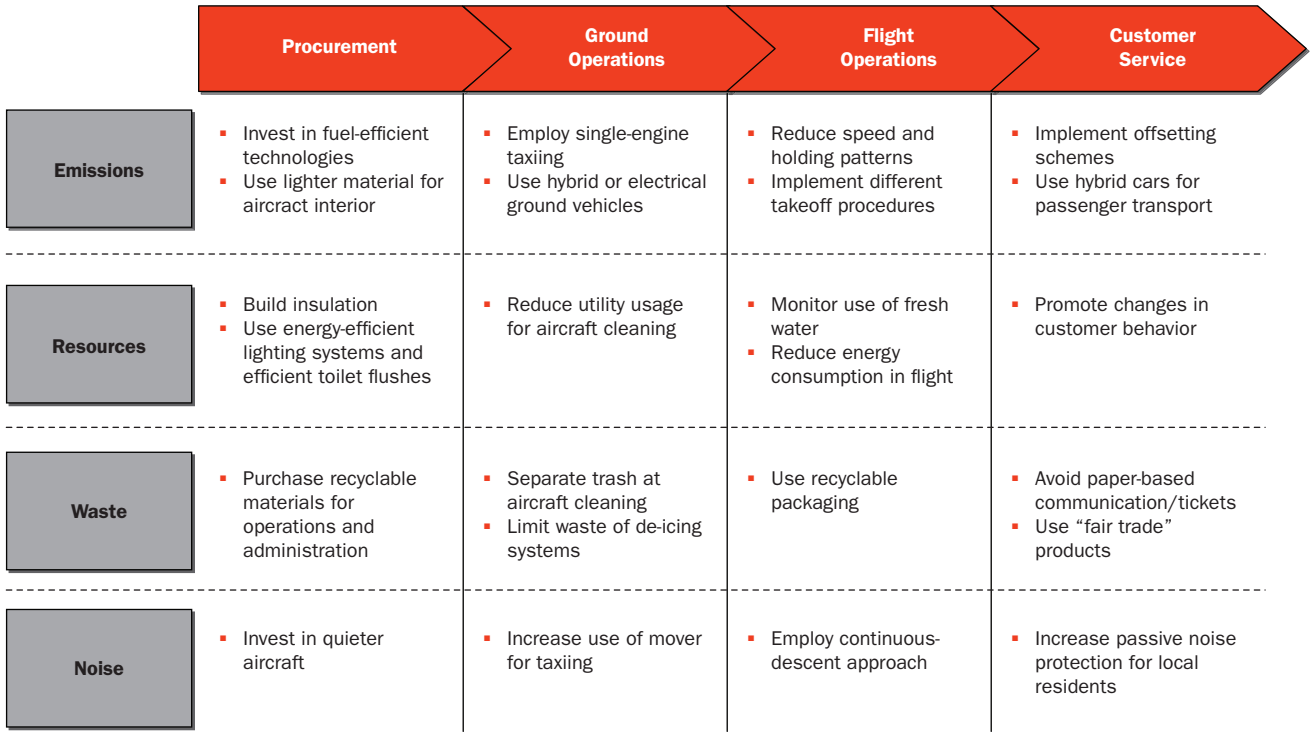
Managing the Trade-Off between Economic and Environmental Objectives

Taking airlines as an example for private operators, adopting a green strategy is nothing new in the industry, but it is mostly driven by opportunistic factors. A lot of big network airlines and even low-cost carriers practice and communicate green initiatives that span all four dimensions of environmental sustainability along their major value chain components in procurement, ground, and flight operations, as well as customer service.

Many of these green initiatives (as shown in Exhibit 7, page 12) are driven not solely by environmental sustainability but rather by cost-cutting opportunities—such as reducing fuel burn or increasing aircraft utilization. For example, investments in new aircraft do have the beneficial side effect of reducing noise pollution and cutting down on emissions per passenger kilometer, but the investments are inspired mostly by the better economics of new planes. However, this does not diminish the fact that everywhere along the value chain, airlines are already pursuing many of initiatives that support environmental sustainability, such as the procurement of lighter materials for aircraft interiors, single-engine taxiing on the ground, the continuous-descent approach in the air, or the offering of offsetting schemes to their customers.

Currently, most airlines offer these offsetting schemes via external organizations that allow customers to fly CO_2-neutral by paying extra money toward measures that counteract the effects of global warming, such as reforestation and investments in alternative energy

Exhibit 7
Examples of Airline Mitigation Options along the Four Sustainability Dimensions



Source: Booz Allen Hamilton

sources. However, offsetting does not reduce any CO_2 emissions from the travel industry, nor is the impact measurable along a proven methodology, because of the lack of generally accepted certificates. Offsetting also presents another major problem: The customer does not see any tangible effects as a result of an offset flight. Furthermore, the program does not even rely on the emitting airline but on another organization that has undertaken environmental projects that the customer cannot directly experience in any way. Thus, it is not surprising that offsetting has not taken off as a viable and sustainable solution for the industry. So far, most carriers have experienced only very low customer response rates on their offsetting schemes.

Since such initiatives can be regarded as only a first step in a long-term sustainable business strategy, airlines—as well as all other T&T companies—need to focus on the development of a holistic environmental strategy that will have a measurable impact on the environment and that adds a recognizable value for the customer, while keeping a positive business case in the selected initiatives.

The starting point for a sustainable corporate strategy is to identify potential initiatives that have a measurable, positive impact on the environment. Only those initiatives that can be measured can be controlled over time and can have the results publicized. Identifying measurable initiatives is extremely important, since it allows the company not only to communicate and market the potential effects, but also to show improvements and ensure traceability and credibility across all stakeholders. Additionally, all initiatives need to be technologically, legally, and politically feasible and should be realizable within the near term.

But every environmental initiative will come at a cost, and without a convincing business case, there will be no chance for a long-term environmental initiative in a competitive corporate environment. Therefore, all initiatives have to be evaluated for their market impact,

brand awareness, and unique selling proposition, on one hand, but also, on the other hand, for their implied costs. For example, being recognized as the first green airline in the market might allow a carrier to tap into new revenue streams of an as-yet undiscovered and underestimated market.

Driven by competitive and regulatory pressures, most large air carriers around the globe will sooner or later need to invest in new technologies and aircraft—further diminishing their ability to differentiate themselves. Adopting an environmental strategy and creating value for the customer at the same time might be a feasible way for an airline to distinguish itself from other carriers and thus create a competitive advantage, which might lead to attracting new customer segments.

Some ideas for environmental value-adds for customers could lie in the integration of offsetting schemes into an airline's existing frequent-flyer miles program. This would not only increase transparency to the traveler but also reduce transaction cost and time, since any flight could be offset directly by using customers' bonus points or earned miles. In addition, instead of recognizing frequent travelers, an airline could reward carbon-neutral travelers who offset their flights. Apart from the positive environmental effects, the customer could get public recognition, for example, via a green baggage tag or the possibility of preferred boarding. Going even further, a new line of products could be offered as a unique selling proposition—something like a "Green Pass" that allows customers to check in at green counters, collect and spend green points with a "Green Frequent Flyer Program," or even use a "Green Credit Card" to pay for a carbon-neutral flight and other environmentally friendly products and services, such as ecotours. Price differentiation between the regular and the "Green Booking Class" could be realized, and new sales channels could even be opened with customer groups that usually would turn away from air travel because of its negative environmental reputation.

But green does not stop in the air. It should be taken below the clouds. Organic food, ecological interior materials, and attractive and more environmentally friendly designs of lounges and check-in areas can also make a real difference in the customer's perception, which is one of the main keys to success in thinking about a sustainable and competitive strategy. All initiatives need to provide the customer with a unique and special feeling and therefore add value to the airline's product and service offerings. One who feels good, does good; and only if a customer sees and feels the results of his or her actions will he or she feel enough passion to pay a price premium for green products and services. Therefore, offsetting schemes are not necessarily inefficient tools, but they must provide an instant experience so that the customer can feel the difference he or she is making. Just like a company, the customer needs to see some sort of return for green behavior, or it will not be sustainable.

In addition to these selected examples from the aviation industry, numerous levers can be applied across the entire T&T value chain to achieve environmental sustainability. For example, the hotel industry has also started to adopt ecologically friendly practices to limit its impact on the environment. These include using green cleaning products; offering organic food, beverages, and flowers; recycling coat hangers; eliminating Styrofoam cups; and offering paperless check-in and check-out (e.g., as practiced by Kimpton EarthCare). Although there are levers that can be applied by single players in the value chain, there are also a multitude of initiatives that cut across the industry—either by directly optimizing emissions, by effectively managing demand, or by adopting offsetting schemes. Initiatives that support the combined actions of all players in the T&T value chain as well as a company's individual introduction of innovative technologies and the employment of low-carbon technologies not only can lead to a positive environmental impact but also might yield a positive business case.

To successfully embed a green strategy, the selected environmental initiatives need to be aligned with the overall corporate strategy, the company's business objectives, and its culture. If initiatives do not support the big picture of the T&T operator, the staff and management will never truly offer their support, and

the new green opportunity will be lost and might even damage the company's reputation. Hence, the new green strategy needs to be part of the top goals of the organization and has to build on existing strategic initiatives. Crucial success factors are, therefore, top management support; proactive communication about the strategic definition process in the entire organization; involvement of all levels of the organization; and, finally, external benchmarks to set realistic targets.

Defining a Sustainable Environmental Strategy

A comprehensive sustainability approach needs to be driven by a top-down strategy and supported by a capable platform. We see five major steps for the development of a sustainable corporate strategy, as illustrated in Exhibit 8.

Step 1: Baseline—determining the eco-footprint. First, a company needs to understand the full scope of the pollution it is responsible for—in all four impact categories: emissions, resources, waste, and noise. Both direct and indirect environmental impacts need to be evaluated and measured. Direct impacts result from the organization's business activities (e.g., transportation or accommodations), while indirect impacts are driven by suppliers' activities (e.g., producing building materials for infrastructure and planes, or producing electricity). Once the eco-footprint of a company has been determined, the major improvement areas can be identified and prioritized.

Step 2: Risk and opportunity analysis. Second, a company needs to be aware of its potential risks, either from changed regulations, customer behavior, environmental groups, or potential investors. In

Exhibit 8
Process Steps for the Definition of a Sustainable Corporate Strategy

Work Steps	Baseline: Determining the Eco-Footprint	Risk and Opportunity Analysis	Evaluation of Strategic Options	Strategy Formulation and Target Setting	Implementation Planning and Execution
Activities	▪ Identify areas of pollution along – Emissions – Resources – Waste – Noise ▪ Measure the degree of pollution – Direct – Indirect ▪ Identify main drivers ▪ Estimate future developments	▪ Identify risks – Regulation and legislation – Investors' needs – Changing customer behavior – Environmental groups ▪ Identify opportunities – New customer demand – Competitor and supplier strategies – Government subsidies and grants	▪ Match long list of initiatives against targets – Corporate culture – Realistic initiatives – Overall business strategy ▪ Evaluate initiatives along assessment criteria (cost, impact, awareness, benefit) ▪ Develop business case ▪ Evaluate and prioritize options	▪ Define corporate targets – Qualitative – Quantitative ▪ Formulate corporate environmental strategy – Strategical goals – Communication plan – Control mechanism ▪ Ensure alignment with overall corporate strategy ▪ Set up measurement and control process	▪ Allocate roles and responsibilities ▪ Define milestones of initiatives ▪ Set specific output of initiatives ▪ Report progress and results ▪ Evaluate organizational implications ▪ Start communication – Internal – External
Output	▪ Direct and indirect corporate eco-footprint	▪ Prioritization of environmental initiatives (long list)	▪ Short list of strategic options ▪ Business case (ROI)	▪ Sustainable environmental strategy	▪ Implementation plan ▪ Communication plan ▪ Performance control process

Source: Booz Allen Hamilton

the airline industry, for example, the problem of aviation's contribution to greenhouse gas emissions has been underestimated for a long time, and the risk of regulatory intervention continues to grow as a result. On the other hand, green initiatives also offer potential opportunities, if they are implemented and communicated effectively—for example, by creating a unique selling proposition that provides a competitive advantage in the global struggle to entice travelers. Identifying and evaluating implied risks and opportunities creates a basis for prioritization of strategic environmental initiatives that serves as a long list for further evaluation.

Step 3: Evaluation of strategic options. The defined high-level long list of potential environmental initiatives needs to be evaluated in more detail to ensure a strategic fit with the company's culture and overall business strategy. Those initiatives that would be feasible need to be analyzed in terms of realization costs and their impact on the market (in terms of awareness, reputation, and potential revenues). Initiatives with a positive business case should be prioritized into a short list that will be considered in the corporate strategy. Identifying measurable initiatives with high impact that allow a positive business case will be the key for success. It allows a company to control potential effects, show improvements, and ensure traceability and credibility. In the end, all strategic options have to be filtered through a profitability evaluation scheme, which is based on efficiency, implied costs, and impact on public perception.

Step 4: Strategy formulation and target setting. Strategic goals need to be defined around a set of qualitative and quantitative environmental performance targets. For example, quantitative targets could be fuel burn per passenger kilometer flown, investment costs for each initiative, the scope of value-added services for carbon-neutral customers, or acquisition targets for new customers. The targets and the timing of initiatives need to be in line with the overall corporate strategy and need to be embedded with existing performance management processes. The environmental measurement and control system needs to be transparent and traceable—not only for the company itself but also for outside stakeholders. For effective performance control, an organizational entity needs to be responsible for data collection, target setting, performance management, and communication of results to the public.

Step 5: Implementation planning and execution. The implementation of environmental activities needs to focus on "quick wins" first, with companies making sure that a unique selling proposition is generated early in the process (and, thus, keeping a positive return on investment, which might change if competitors take up similar activities). To realize these initiatives effectively, milestones need to be set and clear responsibilities need to be allocated—ideally to the newly established environmental team within the organization. This environmental team needs to be embedded into the organizational design and culture of the firm, making sure that it oversees the eco-footprint of the company and can constantly adjust the strategy if processes or market demand and regulation changes. Only what gets communicated will have an impact in the market, so every environmental initiative should reach direct customers as well as other stakeholders, such as policymakers, environmental activist groups, and potential investors. Thus, the value of a sustainable environmental strategy will be reflected in the overall public awareness and reputation of the company.

Companies can transform environmental initiatives from cost drivers to profitable success stories by developing a comprehensive, understandable, and well-planned sustainable corporate strategy. Tapping into new potential revenue streams and cutting costs through environmental initiatives might allow a company to become a first mover in the industry. Examples from other sectors—such as Toyota's showing positive results from its hybrid-powered Prius—show that this is actually achievable. Although the Prius accounts for less than 5 percent of Toyota's U.S. sales, the company created a strong selling proposition as a result of the positive publicity and increased sustainable brand awareness. Some players in the T&T industry are now leading the way, either by

investing in greener technologies or by developing new service offerings that are focused on nature-based ecotourism. With growing market pressure to conduct business in a more sustainable way, the private sector needs to move from an opportunistic approach to adopting long-term strategies that live up to the challenges ahead.

Conclusion

With growing public concerns about environmental sustainability, the T&T sector needs to rise to the challenge of effectively managing the trade-offs between the economic and ecological requirements of operators, investors, travelers, and the local population of tourism destinations. Since the private sector is bound by market forces to invest only in economically viable projects, public authorities need to create a balance that ensures sustainable T&T industry development, either by imposing rules and regulations or by allocating incentives that drive operators and consumers toward environmentally friendly, sustainable behavior. In this article, we have highlighted some examples of environmental impacts and potential initiatives that can be applied by different players on the T&T industry value chain to reduce their negative eco-footprint—in either voluntary or mandatory fashion.

Independent of applied regulatory mechanisms, the public's consciousness of environmentally friendly behavior will continue to rise in the years to come and will become a major factor in future customer decisions. Starting with the distribution and sales of T&T packages, the customer will have a chance to decide not only on the preferred destination but also on the mode of transport and the hotel. With increasing awareness, the demand for green tourism products will grow further in the years to come. If private operators realize this opportunity and effectively leverage this trend, they might be able to gain a competitive advantage and attract new customer segments at the same time.

Although the private sector is aware of these green trends in the market, only a minority of the industry players have yet developed a holistic, environment-oriented strategy. This behavior is driven by the fact that environmental initiatives are not yet seen as an investment that pays off in monetary terms. But customers will not be the only ones to ask for green alternatives; the financial community will also start measuring companies and their leaders by their ecological behavior along with their economic behavior. To be successful in the long term, it will not be enough to opportunistically engage in green branding campaigns. Companies will have to establish initiatives that have a measurable positive and long-lasting impact on the environment—creating a value-add for the tourist, for the industry, and for the destination society as a whole.

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03/08 PRINTED IN USA