

Environmental Sustainability as a Driver for Competitiveness

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As concerns mount about rising kerosene prices for airlines, growing carbon emissions from aviation, the impact of tourism on the natural environment, and the increasing pressure from regulators, investors, and end consumers for green behavior, Travel & Tourism (T&T) companies are finally paying attention to their ecological conduct and 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.

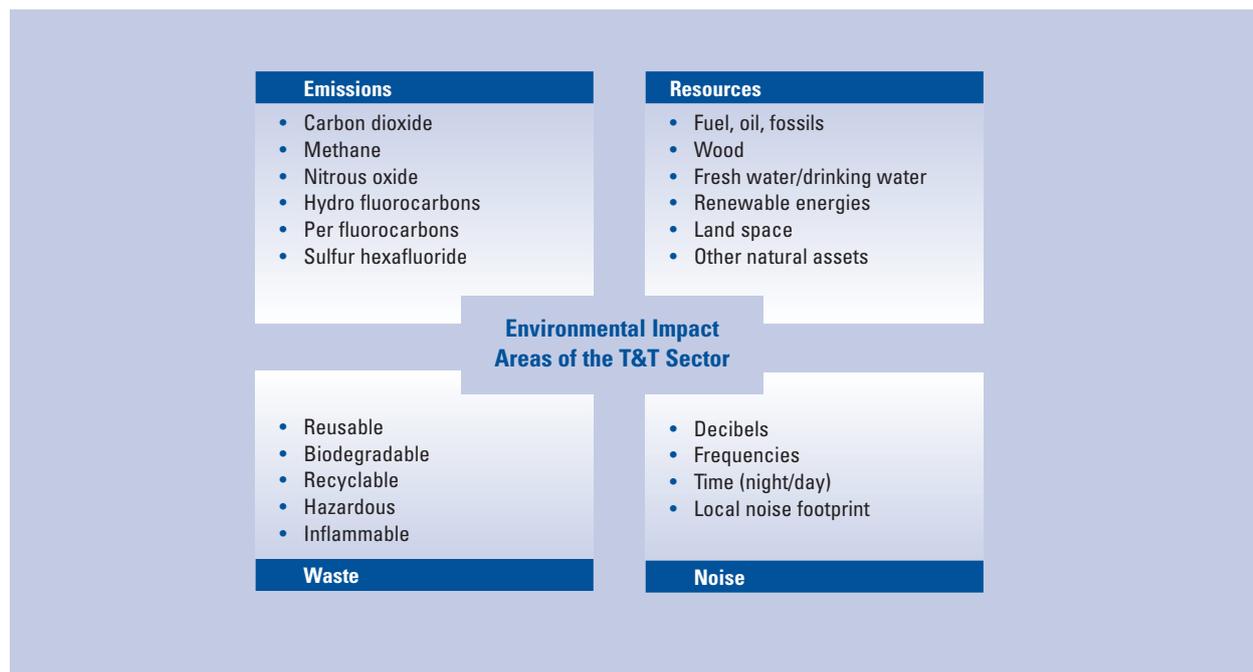
Dimensions and impact of environmental sustainability

In the context of this chapter, we define *environmental sustainability* as the 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, or 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 (Figure 1).

These four categories vary in their impact and importance, depending on where along the industry value chain violations or improvements occur—whether in distribution (e.g., tour operators and travel agencies), transportation (e.g., air, rail, and road) or accommodation (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 had been the number one issue for many airports for a long time, CO₂ emissions are currently the main focus for the air travel industry. But each player has the capacity to address every dimension of environmental sustainability to some degree, on a local, regional, or worldwide level (see Figure 2).

As a result of global warming, the issue of **emissions** has recently been the most widely discussed and recognized environmental problem. Since the effects of greenhouse gases on climate, and thus tourism, are indisputable, both public awareness and regulatory bodies have evinced an interest in “greener” travel, which focuses on the reduction of CO₂ emissions. A number of international and even global initiatives have already

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Figure 1: Categories of environmental impact of the T&T sector

Source: Booz Allen Hamilton.

been implemented across 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 a lot of attention from environmental groups and public regulators. The next stakeholders who request the sector to 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 incoming tourists. Looking at islands, for example, where natural resources are mostly composed of coral reefs, nearby tourism resorts often poorly maintain their septic tanks, which leads to sewage pollution of the drinking water as well as to a deterioration of near-shore water quality—damaging and even destroying their major tourism attractions. Considering that an average hotel room in island resorts can create as much as 20 to 30 kilograms of waste and uses up to 700 liters 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 restricted land areas, such as islands, where imported tourism consumables quickly turn into rubbish that is dumped in ever-growing landfills. If not handled in a sustainable way, short-term solutions 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 T&T sector and the air travel industry in particular, 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.

Due 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 are 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

Figure 2: Examples of environmental impacts of different players along the T&T value chain

| | | Distribution (e.g., tour operators, travel agencies) | Transportation (e.g., airlines, airports) | Accommodation (e.g., hotels, resorts) |
|----------------------|-----------|--|---|--|
| Global ↑ Local | Emissions | <ul style="list-style-type: none"> • Heating/cooling • Company cars | <ul style="list-style-type: none"> • In-flight (airlines) • On-ground (airports, roads) | <ul style="list-style-type: none"> • Heating/cooling • Electricity usage |
| | Resources | <ul style="list-style-type: none"> • Energy consumption • Administration | <ul style="list-style-type: none"> • Gasoline/kerosene • Land-area usage • Building materials | <ul style="list-style-type: none"> • Energy consumption • Water usage • Land-area usage |
| | Waste | <ul style="list-style-type: none"> • Hard-copy advertising | <ul style="list-style-type: none"> • In-flight and on-ground consumables • Tires, oils, grease | <ul style="list-style-type: none"> • Buildings • Food • Laundry |
| | Noise | <ul style="list-style-type: none"> • n/a | <ul style="list-style-type: none"> • Take-off & landing • Airport operations • Maintenance | <ul style="list-style-type: none"> • Construction • Entertainment |

Source: Booz Allen Hamilton.

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 Travel & Tourism Competitiveness Index (TTCI) results and taking some country and industry examples as case studies, we can shed some light on this question.

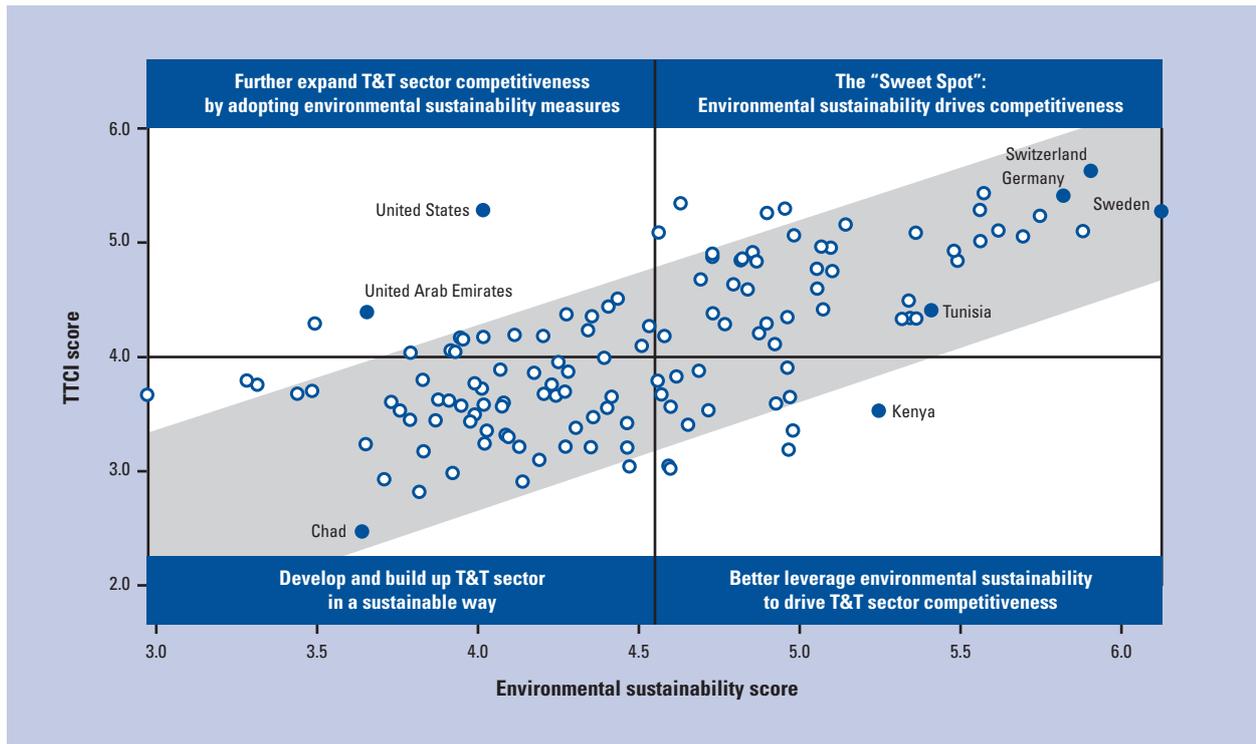
Environmental sustainability: A driver of a country's sector competitiveness

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 a country's 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 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 and enforcement of environmental regulation, ratified environmental treaties, and the sustainability of the T&T industry's development, as input measures. As output measures, carbon dioxide emissions, particulate matter concentration and the percentage of threatened species give some indication of an economy's impact on its environment. Of course, these outputs are not solely driven by Travel & 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 of the environmental sustainability pillar 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 (Figure 3). The leading economies in the environmental sustainability pillar have very strict and 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 government 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 corner of Figure 3 highlights the “sweet spot” in which countries have established a sustainable regulatory framework, assigning value to the protection of its natural assets as a means to drive the T&T sector's competitiveness. In addition to Switzerland, Germany, and Sweden, the majority of the other European countries also emerge in this quadrant, mainly

Figure 3: Travel & Tourism Competitiveness Index score vs. environmental sustainability pillar results

Source: World Economic Forum, TTCI 2008; Booz Allen Hamilton analysis.

because of the strict environmental regulations in the European Union (EU). The Nordic countries especially rank exceptionally high on the environmental sustainability pillar: Sweden leads the way, closely followed by Denmark (ranking 3rd), Norway (6th), and Finland (7th).

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 amounts of resources. Initiatives designed to increase eco-efficiency include a far-reaching national program to promote sustainable consumption and production, which includes more than 70 measures designed to save energy and 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 they show up at the top of the environmental sustainability pillar ranking.

But less-developed countries such as Tunisia (ranked 13th) and Puerto Rico (at 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 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 & 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 corner of Figure 3). For example, despite the fact that the United Arab Emirates has started to invest in green buildings and cities that only use recyclable and renewable resources to reduce waste, a lot of 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 maritime life; also, the country still does not regard solar energy as an alternative to cheap local fossil fuels for energy production.

Being one of the major domestic and inbound tourism destinations in the world, the United States also scores well in the overall TTCI (ranking 7th), 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 its relatively weak regulatory measures to combat global warming, but is 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 relatively high fuel burn of private cars. In general, countries within this top-left quadrant already score high in overall competitiveness but might consider further improvement of the T&T sector by adopting, implementing, and controlling environmental policies—whether monetary incentives or regulatory measures—that preserve not only natural assets within the country but also contribute to its global brand awareness, which might attract more tourists in the long term.

Countries that find themselves within the lower right corner of Figure 3 have already adopted a competitive, environmentally friendly regulatory framework, but do not yet score high in the overall T&T. 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. On the other hand, however, the country is lacking in other metrics of the T&T, 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 alone are not sufficient 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 Index scores and low rankings within the environmental sustainability pillar, such as Chad, need to build up the basic elements of the sector (e.g., its regulatory framework, infrastructure, distribution channels, and so on). While they look to improve their competitiveness in the overall T&T sector, they need to make sure that they develop a strategic plan, which takes not only short-term tourism receipts into account, 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 development stage, such a sustainable tourism strategy can drive competitiveness—not only for the public sector, with its goal of increasing inbound T&T receipts, but also for the private sector to grow profitably into new markets. By not only looking at best practice but also learning from bad examples of other countries, these economies can build up their T&T sector effectively in a relatively short time.

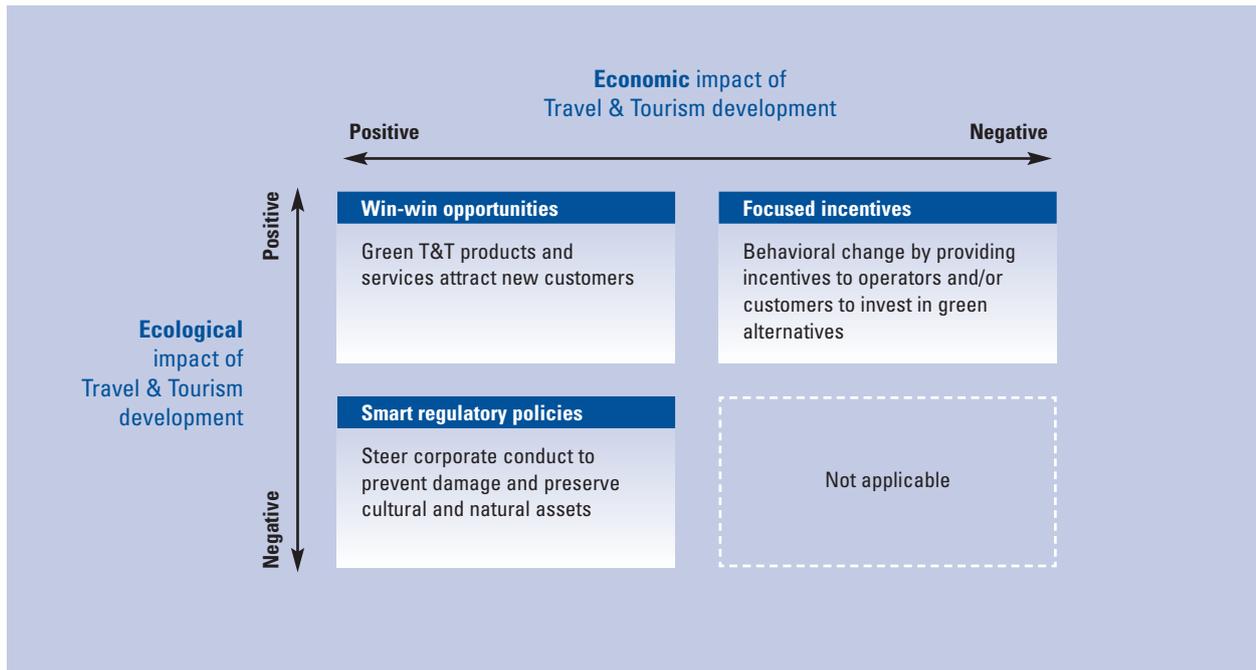
The public sector: Safeguarding environmental sustainability

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 tradeoffs 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? Alternately, 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—either 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—and result in the opposite effects of any regulation's original intent. Hence, the public sector needs to define a regulatory framework that considers all costs implied 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; and
- maintaining a constant, and potentially even growing, tourism stream.

Events that will have irreversible or cost-intensive impacts 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 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

Figure 4: Examples of public-sector initiatives to manage the balance of economic and ecological T&T development

Source: Booz Allen Hamilton.

hand, innovative ways of using renewable energy production technologies might suddenly pay off, if the environmental damage of traditional technologies is considered. Apart from cost, the value added—both for incoming tourists and also 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 sector, there are basically three types of initiatives in which the public sector can steer the industry (see Figure 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 that 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 build-up of large tourism resorts but provides incentives for the restoration and transformation of old farmhouses into little lodges.

Second, in cases where 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 in regard 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, laws, and legislation that set 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 both corporate as well as private sustainable behavior.

For example, Montenegro, as one of youngest nations on the planet as well as one of the fastest-growing of all tourist destinations, has declared itself an “ecological state.” 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 (Box 1). Because attracting foreign investment continues to be an important aspect of the country's tourism-development agenda, policymakers have ensured sustainable infrastructure construction by implementing sustainability principles with

which all investments must comply. These principles are being realized through:

- the introduction of transparent emission-taxation schemes (e.g., a mandatory fee for cars entering the country);
- implementation of location-specific land use requirements to enable sustainable growth of tourism without jeopardizing natural beauty;
- creation of a high-quality tourism product portfolio through investments in human capital and through recruitment support and training to complement and support “hardware” investment;
- introduction of specific programs and policies to attract those investors with a long-term perspective, with operating expertise, and with a sensitivity and commitment to the impact of national tourism development;
- a commitment to environmental education as part of the mission of the government generally and the tourism Ministry in particular;
- a “Middle Path” approach, balancing the need for growth with the need for truly sustainable development; and
- creation of a rigorous and consistent tender process for privatization of tourism-related assets that focuses on the quality of the investor, of the operator, and of the proposed project.

Third, there are alternative solutions (e.g., for transportation, energy production, and consumption or consumables) that have a positive ecological impact but currently have a negative return on investment—especially compared with other, cheaper solutions and technologies. 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 new energy sources, 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

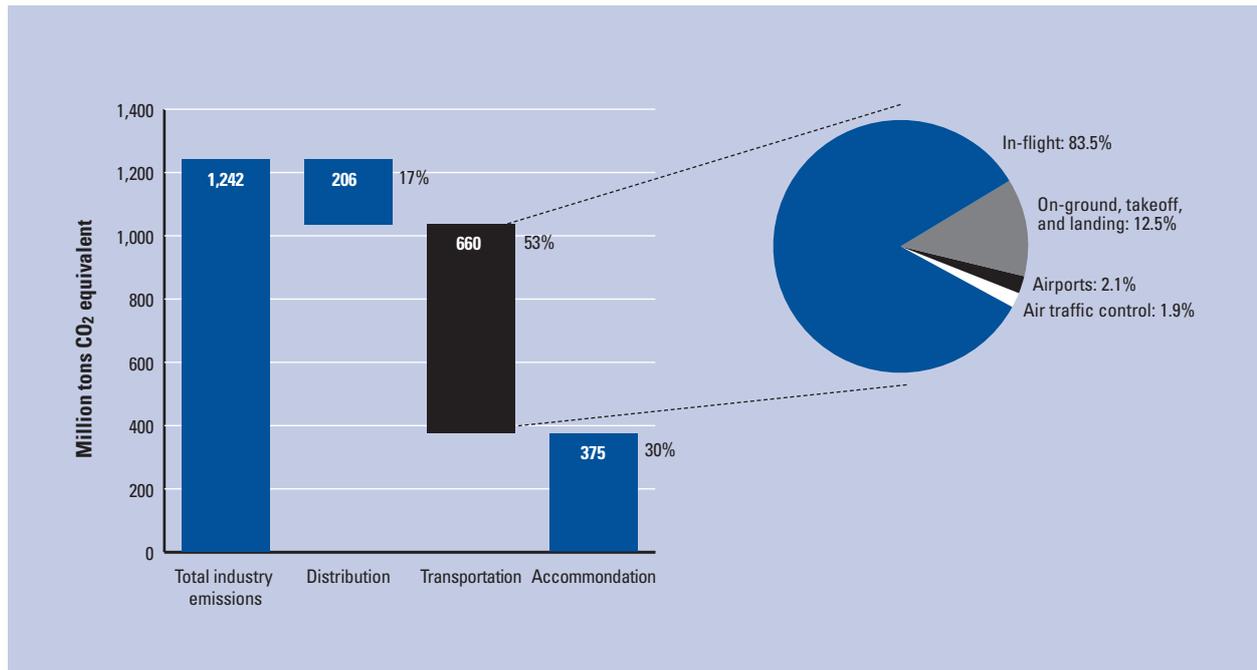
Box 1: The Case of Montenegro: Steps toward environmentally sustainable tourism development

In ensuring that the development of tourism supports and sustains the environment, the government of Montenegro believes it must accomplish four key goals—goals it has put at the core of its tourism strategy:

- 1. Planning: Articulation and implementation of a clear, long-term strategic plan** specifically addressing issues of tourism and environment. This must involve all stakeholders in the process, including the national government, municipalities, the private sector, NGOs, and so on. This master plan needs to provide the foundation for any specific planning and regulatory regime, and serve as a framework for specific spatial and land-use planning for each local development project. The result is a national Sustainable Development Strategy that complements the country’s National Tourism Strategy.
- 2. Stimulation of appropriate investment, including foreign investment, in the right kinds of projects**, by clearly communicating to the investment community that the country is supportive of investors that are themselves committed to a product that is sustainable, environmentally positive, and appropriate to the physical and cultural setting—for example, by including appropriately stringent environmental criteria in all public tenders, such as density and aesthetic criteria, and environmentally sensitive operational criteria.
- 3. Mitigation of environmental impact** by moving toward carbon neutrality and decreased emission through incentives, appropriate regulation, enforcement, offsets, and partnership with the private tourism sector. As an example Montenegro has implemented a carbon tax on vehicles in order to lower emissions and fund environmental projects. Programs like this are designed to both lower emissions and create a more attractive environment.
- 4. Appropriate regulation and enforcement**, by establishing a comprehensive enforcement regime, designed to both signal strong commitment to environmental issues and ensure that this commitment is shared and realized.

These four “policy pillars” are the foundation for an active and creative approach to planning, public communication, and implementation of new programs. They are critical to a long-term and broadly sustainable approach to tourism. Tourism issues must always be considered in the context of their environmental implications. And of course, to achieve these goals, government must be organized and structured appropriately. In Montenegro, this commitment to an integrated and truly environmentally sensitive approach is both facilitated by, and reflected in, Montenegro’s decision to create a single, integrated Ministry of Tourism and Environment Protection, ensuring that structure matches mission.

Source: Ministry of Tourism and Environment Protection of Montenegro.

Figure 5: Greenhouse gas emissions across the Travel & Tourism value chain (in million tons CO₂ equivalent)

Source: Booz Allen Hamilton and Boston Analytics.

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 & Tourism needs to address all of these types of initiatives to define an effective regulatory framework, one that balances monetary as well as 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 an environmentally sustainable way.

Driving for environmental sustainability: The case of CO₂ emission control

Although noise, waste, and resources are mostly dealt with at local and/or regional levels, emissions is the only one of the four dimensions of environmental sustainability that is currently most 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 gotten calls to regulate its carbon emissions of air transportation.

Although the T&T 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 has brought the sector to the attention of policymakers and environmental stakeholders. According to the UNWTO, the 4 percent annual growth in international tourism arrivals will drive up CO₂ emissions by 152 percent by the year 2035.¹

Looking at the total greenhouse gas emissions across the major segments of the T&T value chain, the sector emits about 1.2 billion tons of CO₂-equivalent greenhouse gases per year (see Figure 5). Looking at 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 for the reduction and/or limitation of greenhouse gas emissions on the industry players. Currently, different regulatory instruments are being discussed to set effective incentives to reduce greenhouse gas emissions. 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 ways to cut emissions: the view of the US 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 developing alternative fuels—is viewed as having the greatest 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 EU'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 CO₂ emissions from domestic flights starting in 2011 and international flights to and from EU airports starting in 2012—applying to both EU and non-EU operators. Most leading aviation organizations believe that a fair and effective ETS needs to be a worldwide scheme with the participation of large global economies—for example, the United States, China, and India—instead of a regional system limited to Europe only. This conflict is currently up for debate and there will be some legal challenges to be overcome before any regulation will be finally 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 emission 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 CO₂ 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 CO₂ emissions by 50 percent and NO_x emissions by 80 percent by 2020. In the United States, 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

Both the regulation and management of air space present opportunities to reduce fuel burn significantly. Due to national air-space limitations, airlines sometimes need to fly longer distances and burn unnecessary fuel. Opening up national air space 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 United States (with 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.

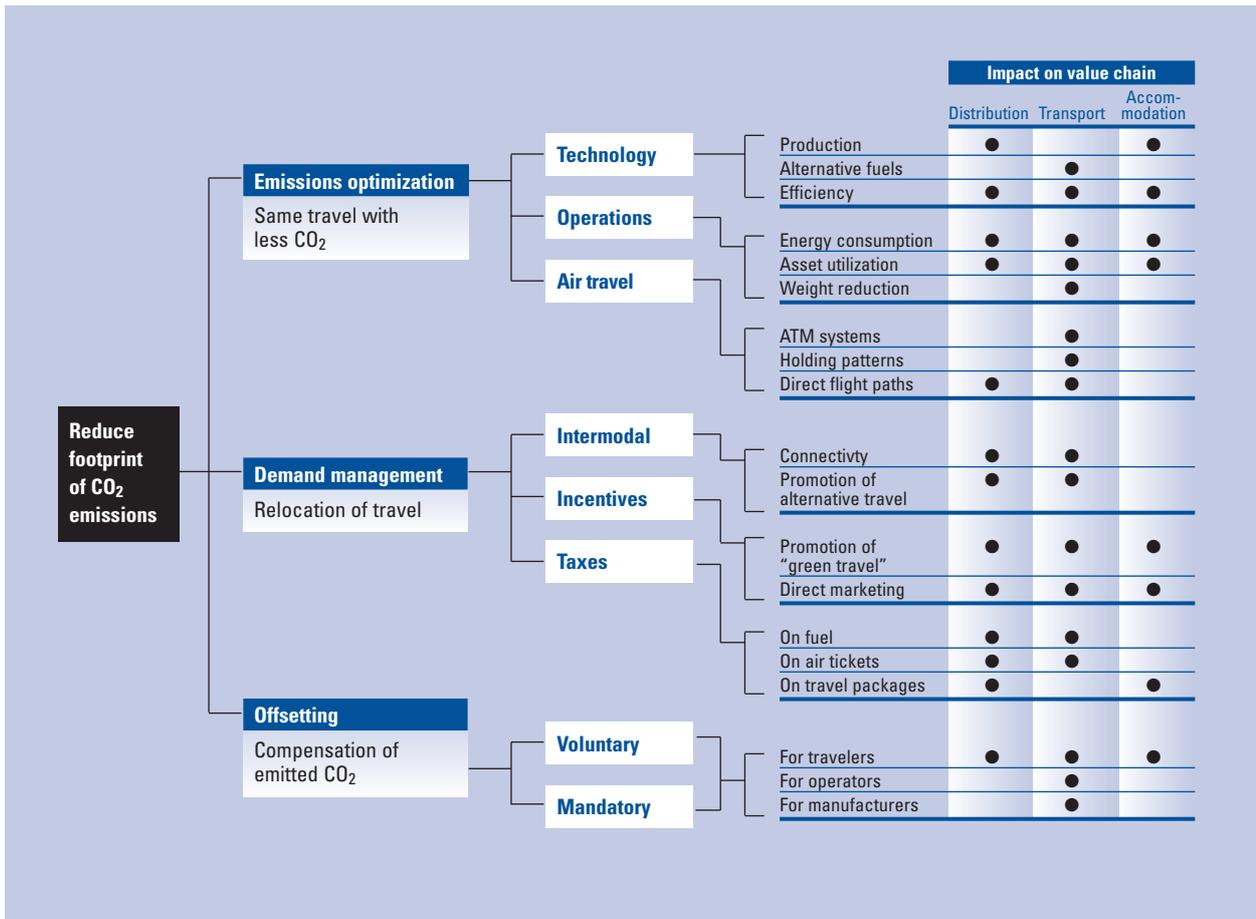
Airports

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 additional 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 air-space 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 emission-reduction levers by air carriers. For airlines, this could be a workable solution that avoids the imposition of environmental taxes, if emission reduction levels are applied globally and effectively by all industry players of the T&T value chain (see examples of potential emission reduction initiatives in Figure 6).

As regulators are facing greater pressure from action groups to decide on air emission 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

Figure 6: Examples of different environmental initiatives to cut greenhouse gases



Source: Booz Allen Hamilton.

both public opinion and policymakers to adopt measures that enable the market to respond to growing air travel demand, but ensure that it is done in a sustainable way —while keeping an eye on the industry’s cost and revenue position.

Aside from emissions from air transport, accommodation also accounts for a sizable amount of the sector’s CO₂ emissions (about 30 percent) and needs to develop adequate measures to reduce its contribution in order to reduce global warming. The hotel sector’s 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 emission-reduction levers are more efficient insulation of buildings as well as the substitution of conventional heating or cooling systems—shifting toward alternative solar or thermal energy sources. Aside from energy conservation, hotels and resorts also have a multitude of other levers that drive environmental sus-

tainability, 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, and ensuring that the demand for green tourism products will rise further —making environmentally friendly packages the preferred solution. But what can the players in the tourism 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 tradeoff between economic and environmental objectives

Taking airlines as an example for private T&T 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

Figure 7: Examples of airline mitigation options along the four sustainability dimensions

| | Procurement | Ground operations | Flight operations | Customer service |
|-----------|--|---|---|--|
| Emissions | <ul style="list-style-type: none"> Invest in fuel-efficient technologies Lighter material for A/C interior | <ul style="list-style-type: none"> Single-engine taxiing Hybrid or electrical ground vehicles | <ul style="list-style-type: none"> Reducing speed and holding patterns Different takeoff procedures | <ul style="list-style-type: none"> Offsetting schemes Use hybrid cars for passenger transport |
| Resources | <ul style="list-style-type: none"> Build insulation Energy-efficient lighting systems and efficient toilet flushes | <ul style="list-style-type: none"> Reduced utility usage for aircraft cleaning | <ul style="list-style-type: none"> Monitor use of fresh water Reduce energy consumption in flight | <ul style="list-style-type: none"> Promote and incentivize changed customer behavior |
| Waste | <ul style="list-style-type: none"> Purchase recyclable materials for operations and administration | <ul style="list-style-type: none"> Trash separation at aircraft cleaning Limit waste of deicing systems | <ul style="list-style-type: none"> Use of recyclable packaging | <ul style="list-style-type: none"> Avoid paper-based communication/tickets Use “fair trade” products |
| Noise | <ul style="list-style-type: none"> Invest in quieter aircrafts | <ul style="list-style-type: none"> Increase use of mover for taxiing | <ul style="list-style-type: none"> Continuous-descent approach | <ul style="list-style-type: none"> Passive noise protection for local residents |

Source: Booz Allen Hamilton.

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.

A lot of these green initiatives (as shown in Figure 7) 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 aircrafts do have the beneficial side effect of reducing noise pollution and cutting down on emissions per passenger kilometer, but the investments are mostly driven by the better economics of new planes. However, this does not diminish the fact that everywhere along the value chain, airlines are already undergoing a multitude 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 CO₂-neutral by paying extra money toward measures that counteract the effects of global warming, such as reforestation and investments in alternative energy sources. However, offsetting does not reduce any CO₂ 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, which 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 only as 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 on 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 get measured can be controlled over time, and 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 along their market impact, brand awareness, and potential unique selling proposition on one hand, but also, on the other hand, the costs implied need to be considered as well.

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—diminishing the ability to differentiate themselves even more. 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 around 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 can be offset directly by using customers' bonus points or earned miles. In addition, instead of recognizing frequent travelers, an airline could also award carbon-neutral travelers that offset their flights. Apart from the positive environmental effects, the customer can get recognized publicly, for example, by 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—such as 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. 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 when thinking about a sustainable competitive strategy. All green initiatives need to provide the customer with a unique and special feeling and therefore add value to the airline's product and service offering. One who feels good, does good; and only if a customer sees and feels the results of his or her actions will there be 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 makes. Just like a company, the customer needs to see

some sort of payback for green behavior, or it will not be sustainable.

Aside from these selected examples from the aviation industry, there are a multitude of levers that can be applied across the entire T&T value chain to achieve environmental sustainability. For example, the hotel industry has also started to actively adopt ecologically friendly practices to limit its impact on the environment. These range from 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). While 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. 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 can not only 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, 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 into existing strategic initiatives. Crucial success factors are therefore top management support; proactive communication about the strategic definition process; involvement of all levels of the organization; and, finally, external benchmarks to set realistic targets.

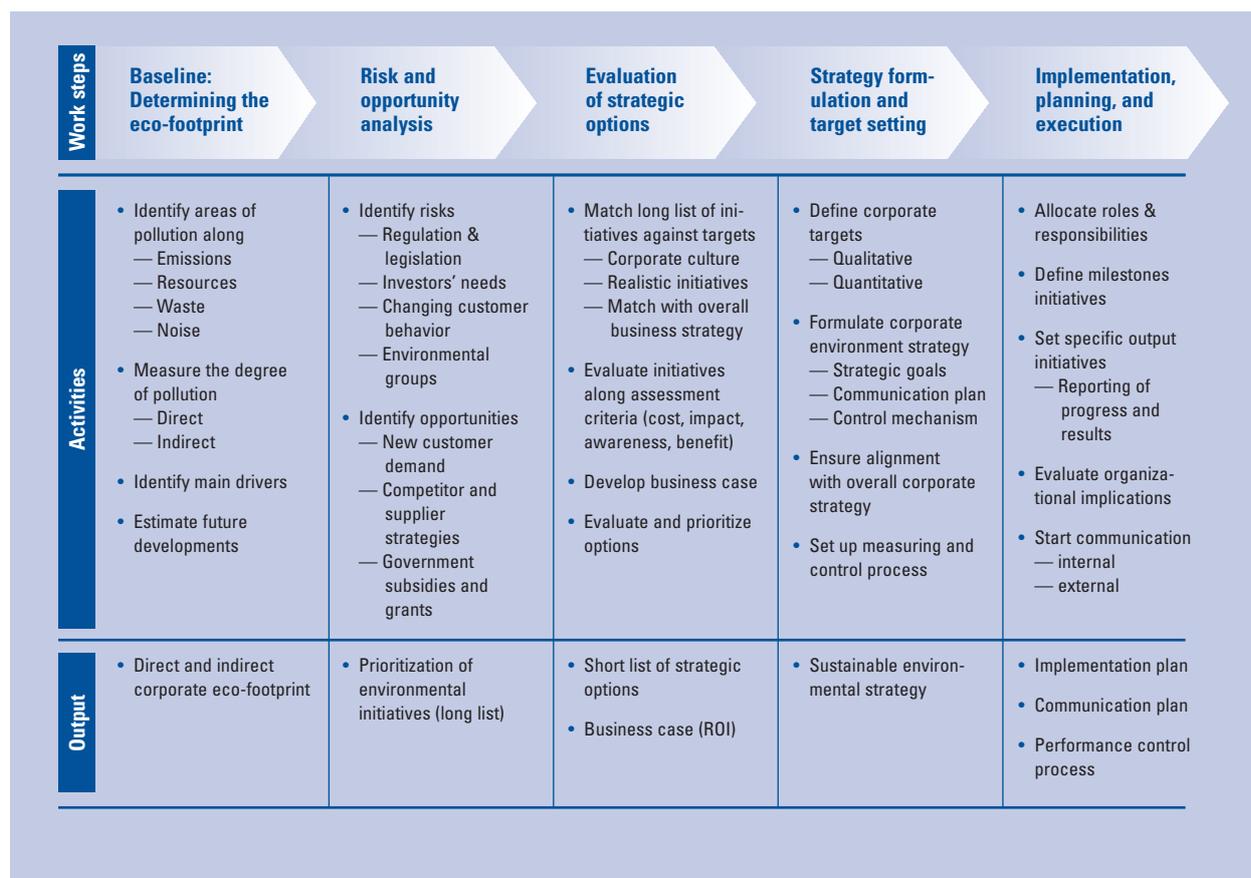
Defining a sustainable environmental strategy

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 Figure 8.

Step 1: Baseline: Determine the eco-footprint

First, a company needs to understand the full scope of the pollution it is responsible for—along all four dimensions of emissions, resources, waste, and noise. Both direct as well as indirect environmental impacts need to be evaluated and measured. Direct impacts result from the organization's business activities (e.g., transportation or accommodation), while indirect impacts are driven by suppliers' activities (e.g., building materials for infrastructure and planes, or electricity production). Based on the eco-footprint of a company, the major improvement areas can be identified and prioritized going forward.

Figure 8: Process steps for the definition of a sustainable corporate strategy



Source: Booz Allen Hamilton.

Step 2: Risk and opportunity analysis

Second, a company needs to be aware of its potential risks, whether from changed regulation, customer behavior, environmental groups, or potential investors. In the airline industry, for example, the problem of aviation's growing 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 implemented and communicated effectively—for example, by creating a unique selling proposition that provides a competitive advantage in the global struggle for enticing 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 (both in terms of aware-

ness, 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. At 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, 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 start taking 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 and/or market demand and regulation changes. Only what gets communicated will have an impact in the market, so every environmental initiative should reach not only direct customers, but also 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.

Transforming environmental initiatives from cost drivers to profitable success stories can be achieved 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 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 US 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 have also started to lead the way, either by investing in greener technologies or by developing new service offerings that are focused on nature-based eco-tourism. With growing market pressure to conduct business in a more sustainable way, the private sector needs to move from an opportunistic approach and adopt long-term strategies that live up to the challenges ahead.

Conclusion

With the growing public concerns about environmental sustainability, the T&T sector needs to rise to the challenge of effectively managing the tradeoffs 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 chapter, we have highlighted some examples of environmental impacts and potential initiatives that can be applied by different players of 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 steadily in the years to come and will become a major factor for future customer decisions. Starting with the distribution and sales of T&T packages, the end customer will have a chance to decide not only on the preferred destination, but also on the mode of transport and the hotel. With the 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 not only to gain a competitive advantage, but also to attract new customer segments.

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 not only by their economic but also by their ecological 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 not only for the tourist but also for the industry and the society at the destination as a whole.

Note

- 1 UNWTO 2007, p. 17.

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