Data-Driven Sustainable Strategies: The DMO Handbook

DATA APPEAL

ALMAWAVE GROUP

Navigating sustainable travel: Harnessing data and analytics for a greener, better world

In our ever-evolving world, the travel and tourism industry is facing a growing need to address pressing environmental and social challenges. Travellers today, especially the younger generation, are more conscious than ever of their impact on the planet and are actively seeking destinations that make sustainability a priority.

In response, Destination Management Organisations (DMOs) are embracing the power of data and analytics to navigate their sustainability efforts.

The Data Appeal Company stands firmly committed to this mission. Our dedication to making the world a more sustainable place is reflected in one of our proprietary indexes, the Destination Sustainability Index. This index empowers destinations to measure, compare, and improve their sustainability initiatives, promoting a culture of continuous growth and excellence.

But our commitment goes further. We actively engage with destinations through talks, events, and resources, providing invaluable support to empower them on their path toward sustainability.

One of these resources is this comprehensive guide designed to enhance sustainability and cater to the changing preferences of environmentally-conscious travellers. The chapters included in this resource offer an exclusive preview of a larger project on the same topic, with more information about the project to be announced in the near future.

Although every effort matters, it's essential to remember that sustainability is not merely a buzzword; it's a path that we must collectively embrace. Together, we can work towards a world where sustainability is not just a choice but a way of life.

Sincerely,

Mirko Lalli
Founding CEO
The Data Appeal Company

What is sustainable tourism?

Sustainable tourism is a holistic approach to tourism that aims to minimise negative environmental, social, and economic impacts while maximising positive ones, considering tourism's environmental, social, and economic effects on a destination.

Sustainable tourism is based on the principles of equity, conservation of natural and cultural heritage, and respect for local communities, and aims to strike a delicate balance between the impacts of tourism, **benefiting both the "temporary residents" (the tourists) and its permanent residents.**

At its core, sustainable tourism focuses on fostering an equilibrium between economic development, social well-being, and environmental protection while ensuring that the tourism industry is resilient and adaptive to change.

Types of sustainable tourism

Sustainable tourism encompasses various forms, including:

- **Ecotourism**
  focuses on preserving the natural environment and promoting conservation efforts while providing visitors a unique and educational experience.

- **Community-based tourism**
  looks at the involvement of local communities in tourism development and decision-making and benefits the local economy.

- **Regenerative tourism**
  aims to repair and restore the natural environment, communities, and cultural heritage and create a net positive impact on the destination.

These types of sustainable tourism can overlap and are not mutually exclusive, and the precise approach can vary depending on the destination and the goals of its stakeholders.

Measuring sustainable tourism: Frameworks and certifications

There are several frameworks and certifications that destinations can use to assess their sustainability performance, and to comprehensively evaluate a destination's sustainability performance, covering various aspects such as environmental protection, social responsibility, and economic development.

The most well-known and widely used frameworks include the **European Tourism Indicator System (ETIS), the Global Sustainable Tourism Council (GSTC) Criteria, the United Nations' Sustainable Development Goals (SDGs)**, and ISO 14001 These frameworks provide a set of indicators and standards that destinations can use to assess their performance in various areas of sustainable tourism, such as economic viability, social responsibility, and environmental protection.

European Tourism Indicator System (ETIS)
This system provides a framework for destinations to measure and monitor their sustainability performance in economic, social, and environmental areas. The framework also includes indicators for accessibility, cultural heritage, and natural heritage.
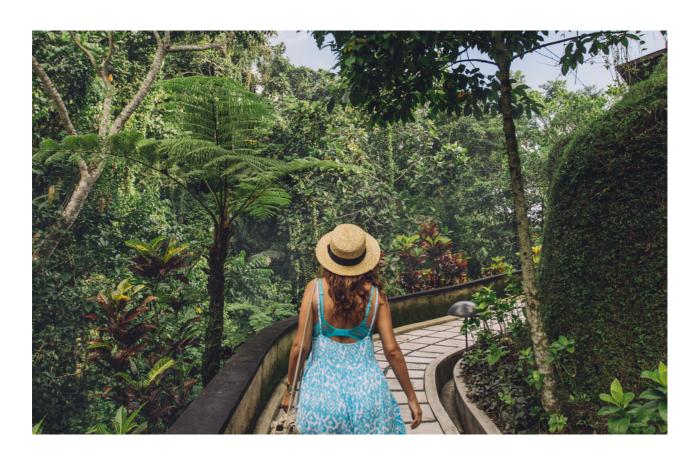
Global Sustainable Tourism Criteria (GSTC)

This set of global sustainable tourism criteria provides a framework for destinations and businesses to evaluate their sustainability performance in social and cultural sensitivity, environmental management, and economic responsibility.

UN Sustainable Development Goals (SDGs)

These 17 global goals established by the United Nations provide a framework for destinations and businesses to improve their sustainability performance in economic growth, social inclusion, and environmental protection.

ISO 14001

This international standard provides a framework for destinations and businesses to manage their environmental performance and minimise environmental impact. The standard incorporates energy and water conservation, waste management, and environmental impact assessment.

Additionally, destinations can obtain certifications demonstrating their commitment to sustainable tourism. Some of the most recognised certifications include **Travelife**, **Green Key**, and **EarthCheck**. These certifications are awarded to destinations that meet specific criteria and standards in sustainable tourism practices:

Travelife
This certification program is designed for tour operators, hotels, and accommodations to improve sustainability practices and minimise environmental impact. The program covers energy and water conservation, waste management, and social and economic responsibility.

EarthCheck
This certification program provides a framework for destinations and businesses to measure, monitor and manage their environmental and sustainability performance. This program is used by hotels, tour operators, and destinations to benchmark their performance against industry standards and improve their sustainability practices.

Green Key

This certification recognises and rewards environmentally responsible hospitality establishments, promoting sustainable practices and eco-friendly initiatives in the industry.

Green Globe

This certification program is focused on sustainable tourism and provides a framework for hotels, tour operators, and destinations to improve their environmental and social performance. It encompasses energy and water conservation, waste management, and cultural heritage conservation.

Biosphere

This certification program is focused on sustainable tourism development and provides a framework for destinations and businesses to improve their environmental and social performance. It includes biodiversity conservation, community development, and cultural heritage preservation.

Rainforest Alliance
This certification program is focused on sustainable tourism development and provides a framework for destinations and businesses to improve their environmental and social performance. The program covers biodiversity conservation, community development, and cultural heritage preservation.

The increasing demand for sustainable tourism is driving the evolution of these certifications, with new initiatives being developed to reflect the changing needs and expectations of tourists, destinations, and local communities. This highlights the importance of staying informed about the latest developments in the field and continuously working to improve the sustainability of a destination.

Data-driven approaches to mitigate the adverse effects of overtourism

Destinations aiming for sustainable tourism must understand how tourism impacts them. To achieve sustainable tourism, it is essential to have a clear understanding of the impact of tourism on a destination.

Data is the most reliable and efficient tool destinations can use to identify areas of concern and opportunities for improvement, particularly to a pertinent issue within the realm of sustainable travel — overtourism.

This data-driven approach enables informed decisions about future sustainability initiatives and complements the use of various frameworks and certifications.

What is overtourism?

As the world returns to normalcy after the COVID-19 pandemic, many destinations have already experienced a surge in "revenge travel", as people seek to make up for lost time and experiences.
And **while this benefits local economies and businesses, this rebound in tourism activity could be a double-edged sword, with the threat of overtourism on the other side.**

This is particularly true in destinations already struggling with overcrowding and overtaxed infrastructure, resulting in growing impatience among local citizens who are feeling the strain of tourism's negative effects, such as **congestion, environmental degradation, and loss of cultural heritage.**

As such, it will be necessary, now more than ever, for destinations to manage this rising influx of tourists, striving to find the right balance that meets the requirements of both visitors and local communities.

How can destinations use data to embrace sustainable tourism?

Data-driven approaches support destinations to prioritise the quality of life of their residents and minimise the adverse effects of overtourism, ultimately creating truly sustainable destinations.

Measuring and monitoring the sustainability performance of a destination using data analytics is a crucial aspect of ensuring long-term health and success. This is because data analytics allows DMOs to identify patterns and trends in their sustainability performance. This can inform decision-making and guide the development of new solutions to improve sustainability.

One of the critical techniques that DMOs can use to measure and monitor the sustainability performance of their destination is **sustainability metrics**.

These quantitative indicators measure a destination's environmental, social, and economic performance. These metrics include carbon emissions, energy consumption, water usage, and waste production. By tracking these metrics over time, DMOs can identify trends in their sustainability performance and areas that need improvement.

DMOs can also employ data analytics tools. These tools can include software such as **geographic information systems (GIS), business intelligence (BI) platforms, and data visualisation tools**. These tools can help DMOs analyse large amounts of data, identify patterns and trends, and create visualisations that can be used to communicate the destination's sustainability performance to stakeholders.

Impactful sustainability efforts can draw from a wide array of data, with the most common use cases to support your goals being:

1 **Visitor forecasting models**

One fundamental data-driven approach to managing overtourism is visitor forecasting models. These models use visitor data to predict peak tourism times and popular attractions, allowing destinations to develop targeted strategies to manage and distribute tourists more evenly throughout the destination.

For example, in **Amsterdam**, the city implemented a visitor forecasting model, which helped them predict peak tourism times and redirect tourists to less crowded areas, reducing pressure on popular attractions such as the Rijksmuseum and Van Gogh Museum.

2 **Customer feedback data**

Another practical approach is using customer feedback data to identify areas of concern for residents and implementing targeted marketing campaigns to promote off-peak seasons and lesser-known attractions. This helps redistribute tourism and eases pressure on popular areas.

In **Barcelona**, the city used customer feedback data to earmark areas where residents were particularly impacted by overtourism, such as the Gothic Quarter. The city then implemented targeted marketing campaigns to promote lesser-known areas of the city, resulting in a more evenly distributed tourism flow.

3 Resident engagement

Involving residents in the planning and decision-making process related to tourism development is also crucial. This can be achieved through stakeholder engagement surveys and community consultation sessions, which provide valuable insights into the perspectives and priorities of residents.

The **Hawaii** State Department of Land and Natural Resources conducts regular community meetings to gather input from residents on tourism development plans and management strategies.

4 Monitor tourism impact on residents

Destinations can use data and analytics to monitor tourism's economic and social impacts on residents and implement strategies to mitigate any adverse effects. For example, destinations can use data on housing prices and rental rates to identify areas where residents may struggle to afford housing due to increased tourism demand.

In **Venice**, Italy, the city has implemented a system to track the number of tourists in different areas using sensors and cameras. This data is used to earmark areas where the number of tourists is reaching unsustainable levels, allowing the city to implement measures to manage the flow of visitors and protect the quality of life for residents.

Achieving a balance between tourism and local community development by leveraging data insights

Tourism is essential to the global economy, generating income and employment opportunities for local communities. However, the benefits of tourism are not always evenly distributed, and in some cases, tourism growth can negatively impact local communities. To achieve a balance between tourism and local community development, it is essential to **leverage data insights to inform decision-making** and guide the implementation of sustainable tourism strategies.

One key strategy for balancing tourism and local community development is to use data to understand the patterns and trends of tourism in a particular destination. By analysing data from various sources, including government statistics, tourism boards, and social media, it is possible to understand the flow of tourists, the types of activities they engage in, and their impact on the local community. This information can be used to identify areas where tourism has a negative impact and develop targeted interventions to mitigate these effects.

As already mentioned in the previous chapter, another critical strategy for balancing tourism and local community development is to involve local communities in the planning and management of tourism. By working closely with residents, tourism stakeholders can gain a deeper understanding of the needs and priorities of the community. This can be used to develop more inclusive and sustainable tourism strategies considering residents' perspectives. Additionally, involving local communities in the planning and management of tourism can increase their sense of ownership and engagement in the tourism industry, leading to more significant social and economic benefits for the community.

A third strategy for balancing tourism and local community development is to use data to track and monitor the performance of sustainable tourism initiatives. By using data analytics to measure the effectiveness of sustainable tourism programs, stakeholders can identify areas where further improvements are needed and adjust their strategies as needed. Additionally, data can be used to communicate the benefits of sustainable tourism to policymakers and other stakeholders, building support for the continued implementation of sustainable tourism strategies.

Examples of real world data-driven projects

By analysing large amounts of data, it is possible to identify patterns and trends that can inform decision-making and guide the development of new solutions. Several organisations have already adopted this approach, and it has proven effective in promoting sustainable tourism.

One example of a data-driven project in sustainable tourism is the **EU DigiTOUR project**. The project received funding from the EU and aimed to support the digital transition of the tourism sector. The goal was to help small and medium-sized enterprises (SMEs) lead the tourism recovery through innovative and technological solutions. In total, nearly €9 million was made available for nine projects, all of which focused on using data to improve the sustainability of the tourism industry.

Another example is the **South West United Kingdom's sustainable tourism plan**. The plan includes marketing and training assistance for businesses, visitor education programs about their impacts and ways to make more sustainable choices, and a green tourism toolkit (Destinations). This plan is comprehensive and award-winning; it considers data to support sustainable tourism development in the region.

In addition, the **European Capital of Smart Tourism competition** has a report, Leading Examples of Smart Tourism Practices in Europe showcasing the most innovative projects in smart tourism in Europe. This report is a guide to smart tourism in the EU, and the collection of best practices has been derived from the applications the cities submitted to the competition. Other innovative projects in sustainable tourism include the **Eastern Sierra Sustainable Recreation Partnership**, a unique public-public partnership between local and federal government agencies, and HSBC's ESG-concerned green finance.

The **United Nations World Tourism Organisation (UNWTO)** offers a Tourism Statistics Database, that contains valuable data related to sustainable development goals, COVID-19 impact on tourism, and various resources like a tourism data dashboard and language services.

These projects demonstrate the potential of data-driven solutions in supporting the transition to sustainable tourism and provide valuable insights for organisations looking to develop similar solutions.

Amsterdam's journey towards sustainability: A detailed analysis of data-driven initiatives

Amsterdam has faced severe challenges related to overtourism, which has led to overcrowding, congestion, and negative impacts on the quality of life for residents.

To address these challenges, Amsterdam has implemented several strategies that leverage data insights to balance tourism and local community development. One approach is to **use data analytics to better understand tourists' patterns and behaviours and to use this information to develop targeted interventions that can help reduce tourism's negative impacts.**

For example, **the city has used data from GPS devices and social media** to identify the busiest tourist areas and has implemented measures such as crowd control and traffic management to help alleviate the pressure on these areas.

Another strategy that Amsterdam has used is to use data insights to develop more sustainable tourism offerings that better align with tourists' and residents' needs and interests. This can include **using data from review sites and social media to earmark popular tourist activities and working with local businesses and organisations** to develop new and innovative ways to offer these more sustainable activities that better support the local community.

Finally, Amsterdam has also used data insights to help build stronger relationships between tourists and residents and to create more opportunities for residents to benefit from tourism. For example, the city has used data from social media and review sites to **identify areas where tourists are looking for more authentic and immersive experiences** and has then worked with residents to develop new and innovative ways to sustainably offer these experiences, benefiting both tourists and residents.

These strategies demonstrate how data insights can balance tourism and local community development and create more sustainable and equitable outcomes for all stakeholders.

Amsterdam's model: Replicable best practices for sustainable tourism

Community-based tourism

Community-based tourism (CBT) is a form of tourism developed, managed, and owned by local communities. In many rural areas, tourism is often seen to create economic opportunities and improve residents' livelihoods. However, this can be difficult to achieve without a proper understanding of the needs and desires of the local community.

Following Amsterdam's model, many rural communities have begun to use data insights to inform the development of CBT initiatives. For example, a neighbourhood in a rural area may use data from social media, review sites, and government data to identify the types of tourism activities that are most popular among visitors. This information can then be used to develop CBT initiatives that align with tourists' and residents' interests and preferences.

Another example is using satellite imagery data to earmark natural beauty areas popular among tourists. The community can then use this information to develop sustainable tourism activities, such as hiking trails, bird-watching tours, and ecotourism programs based on the area's unique characteristics. This helps ensure that tourism activities are sustainable and provide economic benefits for the local community.

Additionally, the community can use data from surveys and focus groups to better understand the needs and desires of residents. This information can then be used to develop tourism activities and infrastructure that align with the community's needs, such as building community centres, developing local transportation networks, and investing in education and training programs for residents.

Identify and target specific tourism market segments

Another strategy for balancing tourism and local community development by leveraging data insights is using data analytics to identify and target specific tourism market segments. For example, **a destination may use data analytics to prove that a significant portion of its visitors is interested in outdoor activities and conservation.** The destination can then use this data to develop and promote sustainable tourism activities, such as hiking and wildlife watching, that align with these visitors' interests while also supporting local conservation efforts. Additionally, the destination can use data insights to identify and target sustainable accommodation options and local businesses that align with the interests of these visitors, thus supporting the local community.

Monitor and manage tourism flows

Data insights can help destinations monitor and manage tourist flows. For example, a destination may use data analytics to identify areas experiencing high tourism-related congestion or overcrowding. The destination can then use this data to implement measures such as timed entry systems or visitor quotas in these areas to reduce the negative impacts of overtourism on the local community and environment. Additionally, the destination can use data insights to develop and promote alternative, less-crowded areas or activities for visitors, thus supporting the local community.

Track and measure the economic impact of tourism

A destination may use data analytics to track the number of jobs created or sustained by the tourism industry and the distribution of tourism-related revenues among local businesses and communities. This data can then be used to develop and implement policies and initiatives that support the equitable distribution of the benefits of tourism among the local community, such as training and capacity-building programs or targeted investments in infrastructure.

Oaxaca's data-backed cultural identity preservation

In Oaxaca, Mexico, the provincial government recognised the importance of preserving their unique cultural heritage as a major tourist draw. Using data from visitor surveys, social media analytics, and other sources, **they identified a trend of an increasing number of tourists expressing interest in experiencing authentic Oaxacan culture.**

To address this, the city government developed a cultural tourism plan that included **the creation of a cultural centre to showcase the history and customs of the Zapotec and Mixtec peoples, as well as the restoration of traditional buildings** and the promotion of local artisans and their crafts. They also implemented a training initiative for tour guides to ensure they could accurately and respectfully share the region's cultural heritage with visitors.

Additionally, the local government worked with community leaders and organisations to **involve the local population in developing and managing the cultural tourism plan**. This ensured that the plan aligned with the community's values and goals and provided economic opportunities for the local population by promoting local businesses and creating jobs in the tourism industry.

Using data insights and a focus on cultural tourism and preserving cultural identity, the city of Oaxaca successfully balanced the needs of both tourists and the local community. This not only helped attract more visitors to the region but also helped promote sustainable development and preserve the area's unique cultural heritage.

Best practices for sustainable and data-driven destination management

1 **Advanced data analysis and monitoring**: Employ cutting-edge technology to monitor and analyse tourism trends and patterns. Utilise satellite data, social media, and review sites to collect information on visitor numbers, demographics, and tourism's impact on local communities. Employ this data for targeted, data-driven marketing campaigns aimed at attracting the right visitors and minimising negative impacts.

2 **Data-driven marketing campaigns**: Utilise data insights to create targeted marketing campaigns that not only attract the desired visitors but also work to mitigate the adverse effects of tourism on the environment and local communities.

3 **Community empowerment through training**: Implement innovative training and education programs to empower local communities and businesses to actively manage tourism. Offer training initiatives that educate residents and business owners about the latest tourism trends, best practices, and provide them with the tools and technologies needed to effectively manage their tourism-related activities.

4 **Sustainable tourism education**: Emphasise education and awareness as a best practice. Promote sustainable tourism practices among tourists, local communities, and businesses to create a shared responsibility for sustainability.

5 **Community involvement and stakeholder collaboration**: Encourage active participation of local communities and stakeholders in destination management. Foster collaboration and engagement between various parties to ensure a holistic and well-rounded approach to sustainable and data-driven destination management.

Destination Sustainability Index: A Data Appeal solution for measuring destination sustainability

Destination Sustainability Index (DSI) is a set of KPIs developed by The Data Appeal Company.

The DSI is an automatic tool that uses a combination of data sources, including social media, review sites, government data, and satellite data, to calculate key performance indicators (KPI) to measure a destination's sustainability. It allows destination management organisations (DMOs) to have a clear overview of the sustainability performance of their destination without the need for inputting any data from the destination itself. The DSI is globally available and uses artificial intelligence (AI) to calculate the KPI.

One of the main features of the DSI is the inclusion of an over-tourism sub-indicator. Over-tourism is a growing concern in many destinations worldwide, as it can lead to environmental degradation, strain on local resources, and negative impacts on the local community. The DSI's over-tourism sub-indicator allows DMOs to monitor the level of over-tourism in their destination and take necessary actions to address it.

The DSI offers a comprehensive and data-driven approach to measuring and monitoring the sustainability performance of a destination. Using data from various sources provides a more accurate and complete view of a destination's sustainability performance. DMOs can use the DSI to identify areas for improvement and take necessary actions to promote a more sustainable future for their destination. Additionally, by providing transparency and access to data on a destination's sustainability performance, the DSI can also help attract environmentally and socially conscious travellers.

Data analytics and tools such as the Destination Sustainability Index (DSI) developed by Data Appeal are becoming increasingly important in the travel and tourism industry. By providing a data-driven approach to measuring and monitoring the sustainability performance of a destination, DMOs can create a more sustainable future for their destination while meeting the needs of travellers looking for sustainable travel options.

Discover more

The Data Appeal Company

The Data Appeal Company is an AI-based solution provider which enables the actionability of data from a broad range of sources, providing the most powerful combination of Location Sentiment and Market Intelligence datasets for any Point of Interest, brand or territory worldwide.

Data Appeal supports destinations, tourism boards and ministries around the world, aiding them to enhance the visitor experience, strategise efficiently, create more targeted campaigns and better understand their territory, visitors and competitors with a data-driven approach.

We evaluate points of interest across all sectors for accurate, up-to-date insights on visitor preferences and behaviours and enrich it with external factors — such as the impact of events, flight and hotel searches and bookings and more to strategise demand-based pricing, investments and forecasting.

Visit our website

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