

GOOD PRACTICE STORY

Title: Walking in Harmony: How Nature was Reclaimed with the Restoration of Meia Praia's Dune Cordon

Destination, Country: Lagos, Portugal

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In the category: Nature & Scenery

The Story in a picture:

This picture is an aerial view of Meia Praia, the place where this Good Practice Story took place.



Summary:

In the captivating story of the rehabilitation and restoration of the dune cordon of Meia Praia in Lagos, Portugal, a remarkable transformation unfolds. Faced with challenges such as damage caused by unregulated human activity, the negative impacts of climate change, ecosystem degradation, and the presence of invasive species, the municipality embarked on a comprehensive requalification project. Through meticulous planning, sustainable design, and the involvement of experts, the project successfully navigated the hurdles. Invasive species were removed, walkways were erected, and palisades were implemented to protect the dunes. Environmental education and mobility initiatives were launched, promoting responsible behavior and ensuring accessibility for all visitors. Monitoring studies provided valuable insights, and resting stations, bars and restaurants enhanced the visitor experience. The direct results were a healthier lifestyle for visitors, active contribution to dune conservation, and visible growth in the dune size. Indirectly, the project stimulated the local economy, fostered a deeper connection between people and nature and aims to inspire other destinations.

This story serves as a shining example of how a holistic and sustainable approach can rejuvenate a natural landscape, ensuring its preservation for future generations.

Good Practice Story:

Destination description

Brief background of the destination.

Integrated in the pre-history of the Algarve's southwestern tip, the Lagos municipality area has been inhabited since ancient times, as demonstrated by several archaeological sites. The city's original name - Lacobriga - points to a Celtic origin, around 2000 years BC, being, for a long period, a port frequented by Phoenicians, Greeks and Carthaginians.

During Roman rule, the town prospered and grew, making it necessary to build a dam to supply water and a bridge over the Ribeira de Bensafrim. In the 10th century, the Arabs erected a walled enclosure, which did not prevent Christian domination from 1249.

The 15th century is Lagos' golden century. For about forty years, due to its location facing Africa, the city became a port of departure and arrival of the ships that, year after year, were discovering the coast of that continent. A centre for the trade of exotic products, of ivory, gold and silver from Africa, Lagos sees new churches being built, the number of houses increasing, and the number of merchants and bankers, both national and foreign, growing.

New walls, built in the 16th century, accompanied the urban expansion of the city, which since 1573 was the bishopric's seat and residence of the Algarve governors. These defenses were reinforced in the 17th century with the construction of forts at strategic points.

The earthquake of 1755 and the subsequent tsunami destroyed a large part of the city. Only from the middle of the 19th century, with the fish canning industry and commerce, did it begin to recover its prosperity. The Lagos of today is a dynamic and active city, proud of its past.

The giant sculptures made by the waves and the crystalline sea. The iridescent caves. The many beaches nestled in ochre cliffs or stretching out into a soft sandy beach. The houses sprinkle in the soft green of the landscape.

Discover one of the most attractive corners of the Algarve!

Issues faced

Problems/issues solved with the Good Practice Story.

Before undergoing requalification, the dune area of Meia Praia grappled with a host of pressing issues that threatened its ecological balance and overall health. One prominent concern was the unregulated human activity that had taken a toll on the dune ecosystem. People commonly used the dunes as a shortcut to reach the beach, trampling over the delicate vegetation and destabilizing the sand structure in the process. This relentless foot traffic caused significant damage to the dune system, compromising its ability to act as a natural barrier against coastal erosion.

In addition to the human-induced pressures, a study revealed that climate change was exacerbating the challenges faced by the dune area. Rising sea levels, increased storm intensity, and altered weather patterns were all contributing to the erosion and degradation of the dune system. This necessitated urgent action to mitigate the negative impacts of climate change and protect the dunes from further damage.

The compromised state of the dune area had far-reaching consequences for the surrounding ecosystems. Habitats crucial to the survival of numerous plant and animal species were being harmed, resulting in a loss of biodiversity. Invasive species had also made their way into the dune ecosystem, outcompeting native plants and disrupting the delicate ecological balance. Efficient removal of these invasive species became imperative to restore the dunes' ecological integrity and allow indigenous flora and fauna to thrive.

In summary, the dune area of Meia Praia faced a range of interconnected challenges before requalification. The damaging effects of unregulated human activity, the detrimental impacts of climate change, the harm inflicted on ecosystems, and the presence of invasive species necessitated a comprehensive and urgent approach to rehabilitate and restore the dune area, preserving its environmental significance for future generations.

Methods, steps, and tools applied

Solutions implemented to address the sustainability problems or issues.

During the requalification process of the dune area in Meia Praia, several crucial methods and steps were undertaken to restore and enhance its ecological balance and visitor experience.

Firstly, a comprehensive removal and cleaning program targeted invasive species that had encroached upon the dune ecosystem. By efficiently removing these non-native plants, the project aimed to restore the natural vegetation and allow indigenous species to flourish. In this case, the invasive species in question is *Carpobrotus edulis*, which is already invading around 27.000 square metres, from a total of 590.000 square meters of the intervention area.

To ensure sustainable access and minimize further damage to the dunes, a network of walkways was erected and installed throughout the area. These walkways provided designated paths for visitors, diverting foot traffic away from sensitive dune areas. Additionally, palisades were strategically implemented within the dunes to act as barriers and to promote the dune's growth, protecting vulnerable sections and encouraging visitors to stay within the designated walkways. They have an extension of 2.5 km, were installed in parallel with the primary dune, and led to the creation of:

- 16 perpendicular lines of access to the car parks, beach car parks, beach facilities and the beach;
- Resting and observation areas.

Another utilized method was the erection of palisades in the sands and affected areas, covered with the excavation sand itself. They are around 1.2m high.

Recognizing the importance of environmental education and promoting sustainable mobility, a comprehensive plan was implemented. This included a communication plan to raise awareness among visitors about the ecological significance of the dune area and the importance of responsible behavior. Environmental education initiatives were integrated to educate visitors about the fragile nature of the ecosystem and the need for its protection. This included:

- Placing fixed supports in the break areas and along the intervention area; → Creation of a mobile app;
- Creation of information boards;
- Graphic execution of the image;
- Production of graphic material;
- Production of dissemination and distribution supports.

Furthermore, mobility education was prioritized to improve accessibility for individuals with reduced mobility, ensuring that the dune area could be enjoyed by a wider range of visitors. This involved providing infrastructure and facilities that catered to the needs of people with disabilities, such as accessible walkways through ramps and resting areas, allowing them to navigate and experience the dune system comfortably.

To enhance visitor comfort and provide pleasant resting areas, several resting stations with shade were installed along the walkways. These stations offered respite from the sun, allowing visitors to rest, appreciate the surroundings, and connect with nature. Additionally, the installation of eight bars and restaurants along the walkways provided convenience and amenities for visitors, further enhancing their overall experience.

Lastly, to monitor and assess the impact of visitor activities, a thorough study will be conducted on the behavior and patterns of visitors within the Meia Praia dune system. This monitoring study will provide valuable insights to guide future management strategies and ensure that visitor activities

remain within sustainable limits. This study aims to:

- Define zones and counting vectors;
- Know the quantities and qualities of users and visitors;
- Know the zones of entry and exit of people;
- Know the displacement zones and the respective directions;
- Enhance the efficiency and effectiveness of future interventions in the dunes.

Key success factors

Critical elements that led to successfully solving the issues.

The successful rehabilitation and restoration of the dune cordon of Meia Praia can be attributed to several key factors that have contributed to its remarkable achievements.

First and foremost, meticulous planning and research-based decision-making played a crucial role in guiding the project towards success. From the initial stages, a comprehensive understanding of the dune ecosystem and its vulnerabilities was established through thorough research and the involvement of environmental experts. This knowledge formed the basis for developing effective strategies and techniques that minimize disruption and damage during the rehabilitation process.

Another essential factor was the commitment to sustainable design principles and practices. By prioritizing environmentally friendly materials and low-impact construction methods, the project team ensured a harmonious integration of infrastructure within the natural landscape. Careful consideration was given to preserving the visual aesthetics and ecological integrity of the dune cordon, resulting in a walkway that not only provided accessibility but also blended seamlessly with its surroundings.

The implementation of monitoring and maintenance programs is instrumental in preserving the restored dune ecosystem. Regular assessments and inspections are conducted to identify any signs of degradation or potential risks, allowing for timely interventions and necessary remediation measures. This proactive approach ensures the ongoing health and resilience of the dune cordon, safeguarding it for future generations to enjoy.

Moreover, community engagement and education initiatives will play a pivotal role in the project's success. Through awareness campaigns, workshops, and educational programs, both visitors and local residents will be empowered with knowledge about the importance of preserving the dune ecosystem. This heightened awareness will lead to a shift in behavior, promoting responsible tourism practices and fostering a sense of collective responsibility for the environment.

Lessons learned

Challenges faced while implementing the Good Practice and their solutions.

In the journey of rehabilitating and restoring the precious dune cordon of Meia Praia, the dedicated team faced some challenges that tested their resilience and determination.

One of the foremost obstacles was the delicate task of treading the fine line between progress and preservation, ensuring that the dune remained unharmed throughout the rehabilitation process. This called for meticulous planning and innovative techniques, such as employing lightweight machinery and environmentally friendly materials to minimize the impact.

Another critical challenge lay in choosing the optimal path for the walkway, as it needed to strike a harmonious balance between accessibility and dune conservation. Countless hours were spent analyzing the dune's natural contours and consulting with environmental experts, resulting in a thoughtfully designed pathway that seamlessly blended into the landscape.

However, the journey towards sustainable tourism doesn't end here. Present and future challenges lie in maintaining the walkway's pristine condition and combating the increased influx of visitors, particularly during the bustling summer months. The municipality's team anticipates their ongoing commitment to regular maintenance, diligently addressing repairs and ensuring the walkway's longevity.

Additionally, they recognize the importance of upholding cleanliness and waste management, placing particular emphasis on the timely emptying of trash containers. With an unwavering spirit and a steadfast commitment to sustainability, they stride forward, ready to overcome these challenges and pave the way for a brighter, greener future for Meia Praia and its vibrant ecosystem.

Achievements and Results

Direct and indirect results of the Good Practice.

The implementation of sustainable practices in the rehabilitation and restoration of the dune cordon of Meia Praia has yielded a multitude of direct and indirect results that have positively transformed the area.

One of the most visible and tangible outcomes is the increased usage of the rehabilitated area for walking and recreational activities. As the walkway provides a safe and accessible route, people have embraced the opportunity to immerse themselves in the natural beauty of the dunes, promoting a healthier and more active lifestyle. This newfound connection between visitors and the dune ecosystem has fostered a sense of appreciation and stewardship, as individuals actively contribute to its conservation by respecting designated pathways and adhering to responsible behavior guidelines.

Moreover, the implementation of sustainable practices has had a profound impact on the dune ecosystem itself. With the careful design and construction of the walkways, there has been a visible growth in the size of the dunes beneath them. The natural processes of sand accumulation and wind patterns have been allowed to continue undisturbed, leading to the gradual expansion of the dune system. This growth not only enhances the visual appeal of the area but also contributes to the overall ecological health and resilience of the dune ecosystem.

Beyond these direct outcomes, the Meia Praia project has triggered a range of indirect results that have positively influenced the surrounding community and local economy. The enhanced natural beauty and preservation of the dune cordon have significantly boosted the area's appeal not only as a tourist destination, but also as a spot where locals spend their time. This, in turn, has attracted more visitors, stimulating local businesses and creating new economic opportunities. The increased influx of tourists and locals has also provided a platform for environmental education and awareness, as visitors learn about the significance of dune conservation, the importance of responsible tourism practices as well as about local culture and the traditional gear of fishing arts.

Furthermore, this project aims to serve as an inspiration and benchmark for other destinations facing similar challenges. The Meia Praia case study is a shining example of how sustainable practices can be integrated into tourism development, highlighting the positive outcomes that can be achieved through a holistic and environmentally conscious approach. The project's achievements may spark interest and replicate efforts in other areas, contributing to a broader movement towards sustainable tourism and ecosystem preservation.

Tips for other destinations

Your suggestions or recommendations for other destinations facing the same issues or implementing similar solutions

For other destinations facing similar challenges in rehabilitating and preserving their natural landscapes, here are some valuable tips to consider:

- Embrace a holistic approach: Adopt a comprehensive and integrated approach that takes into account both environmental and socio-economic factors. Balancing the preservation of natural resources with the needs of local communities and visitors is crucial for sustainable tourism development.
- Engage stakeholders and the community: Involve local stakeholders, including residents, businesses, environmental organizations, and tourism operators, from the early stages of planning. Encourage their active participation and seek their input to ensure a sense of ownership and shared responsibility for the project's success.
- Prioritize research and expertise: Invest in thorough research and seek guidance from environmental experts, ecologists, and sustainable tourism professionals. Their knowledge and expertise will help identify the most effective strategies, techniques, and materials to

protect and restore delicate ecosystems.

- Design with nature in mind: Utilize environmentally friendly design principles that respect the natural landscape. Prioritize low-impact construction techniques and materials that minimize disruption to the environment while ensuring visitor safety and accessibility.
- Implement sustainable infrastructure: Integrate sustainable infrastructure solutions such as eco-friendly walkways, viewing platforms, and signage. Use materials that blend harmoniously with the surroundings, consider renewable energy sources for lighting and facilities, and employ efficient waste management systems.
- Educate and raise awareness: Develop educational programs and awareness campaigns to inform both visitors and locals about the importance of preserving and respecting the natural environment. Promote responsible tourism practices, such as proper waste disposal, reducing carbon footprint, and respecting wildlife and vegetation.
- Establish monitoring and maintenance programs: Regularly monitor the condition of the rehabilitated areas and implement maintenance programs to address any issues promptly. This includes monitoring the walkways, cleaning and emptying trash containers regularly, and repairing any damage caused by natural forces or human activities.
- Collaborate with neighboring destinations: Foster collaboration and knowledge-sharing with neighboring destinations facing similar challenges. Learn from their experiences, exchange best practices, and work together to address common issues, such as waste management, visitor management, and sustainable tourism initiatives.
 - Continuously adapt and improve: Sustainable tourism is an ongoing process that requires continuous adaptation and improvement. Regularly evaluate the effectiveness of implemented strategies and adjust accordingly. Embrace innovation and stay up-to-date with emerging technologies and practices that can enhance sustainability efforts.

By following these tips, destinations can overcome challenges, strike a balance between tourism development and environmental preservation, and create a sustainable future for their natural landscapes and communities.

Recognitions and Additional references

Recognitions and awards the Good Practice received and supporting evidence. This beautiful transformation is better experienced through photos. In the following link, it is possible to see the evolution of this project:

- <https://1drv.ms/f/s!AkbYogacPRQNje9PfglEdsw3YVm9bQ?e=P6P8kB>