

PLASTIC USE SUSTAINABLE CHANGE IN PORTUGAL: AN ANALYSIS ON TOURISM STAKEHOLDERS' ACTIONS AND PROGRAMMES

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ABSTRACT

Studies indicate that 80 % of all Tourism in Europe is held in coastal areas. In Portugal the number grows to 90 %, a fact that raises two distinct but equally relevant types of concerns: on one side the pressure for maintaining the shorelines and beaches clean and aesthetically appraisable for visitors, and on the other side, the potential massification of tourism that stands on the opposite end towards preserving the environment of tourism locations. This study focuses on the relevance of the oceans' preservation for the tourism sector in Portugal, specifically in the Algarve, and on how sustainability is being addressed regarding plastic use and its negative outcome, particularly marine litter and the damages it inflicts on coastal areas. The methodology adopted was literature review and case studies analysis of a set of governmental, non-governmental and private tourism sector stakeholder's actions and programmes. Findings suggest that the promotion of circular economy is a path several organizations are already undertaking in order to address plastic use towards a more sustainable planet and Tourism development. Results also indicate that Design is an important facilitator for the change of the tourism sector towards this new circular economy model.

Keywords: Coastal Tourism, Design and Circular Economy, Portugal, Sustainability, Marine Litter, Oceans' Preservation.

JEL Classification: Z3, Z32, Q01, Q5

1. INTRODUCTION

Tourism is defined by the United Nations World Tourism Organisation (UNWTO) “as a social, cultural and economic phenomenon, which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes. These people are called visitors (tourists or excursionists; residents or non-residents) and tourism has to do with their activities, some of which involve tourism expenditure” (UNWTO, n.d.-b).

According to the UNWTO, which oversees short-term tourism trends regularly to provide global tourism stakeholders with an up-to-date international tourism analysis, 2019 was another year of strong growth, although slower when compared to the exceptional rates of 2017 (+6 %) and 2018 (+6 %) (UNWTO, n.d.-a). This was mainly identified in advanced economies, particularly in Europe, to which contributed the Brexit process, geopolitical and trade tensions, and the global economic slowdown. 2019 was also the year of major shifts

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for the tourism sector, with the collapse of Thomas Cook and several low-cost airlines in Europe. Nevertheless, based on trends, economic prospects and the UNWTO Confidence Index (UNWTO, 2020a), a growth of 3 to 4% in international tourist arrivals worldwide in 2020 was forecasted.

However, the current Covid-19 pandemic dramatically changed these projections, as Tourism has been one of the most affected economic sectors worldwide, with 60 to 80% possible falls in international tourist numbers, according to the most recent UNWTO report (UNWTO, 2020b).

The number of tourists travelling across borders was expected to reach 1.8 billion a year by 2030 (UNWTO, 2020a), alongside a further 15.6 billion domestic tourist arrivals. Such growth would bring many opportunities, including socio-economic development and job creation. However, at the same time, the impacts of tourism-related transport were continuously rising, challenging the sector's ambition to meet the targets of the Paris Agreement (UNWTO, n.d.-a).

The Covid-19 pandemic will certainly bring new developments to the relationship between tourism and the environment, as governments and international agencies such as UNWTO appeal to the responsible regeneration of the sector. In recent declarations, UNWTO Secretary-General Zurab Pololikashvili stated that Tourism must “continue to promote innovation and sustainability. These must no longer be small parts of our sector, but instead must be at the heart of everything we do. This way, as we restart tourism, we can build a sector that works for people and planet” (UNWTO, 2020c).

António Guterres, the secretary-general of the United Nations (UN), recently stated that although tourism is among those sectors being affected most severely by the Covid-19 pandemic, it is an essential pillar of the 2030 Agenda for Sustainable Development and can be a platform for overcoming the pandemic crisis. He encourages “all those involved in the tourism sector to explore how we can recover better, including through climate action and other steps that advance sustainability and build resilience” (UNWTO, 2020d).

Therefore, present circumstances, although challenging, may be ideal for creating and implementing new Design-based strategies for the tourism sector, in order to make a shift towards a more sustainable and healthier planet. This work intends to study the relevance of the oceans for the tourism sector by analysing two aspects: the importance of oceans' preservation for coastal tourism; and how sustainability is being addressed by coastal tourism companies and government agencies operating in Portugal, when it comes to plastic use, specifically in the region of the Algarve.

2. LITERATURE REVIEW

2.1 Coastal Tourism

Coastal areas are some of the most productive and biologically diverse on the planet. According to the UN (UNEP, n.d.-c), 37 per cent of the world's population lives within 100 km of the coast, a fact that makes them densely populated and heavily pressured areas. On top of this, 80% of all tourism takes place in coastal areas, with beaches and coral reefs amongst the most popular destinations (WWF, n.d.).

Coastal tourism refers to land-based tourism activities such as swimming, surfing, sunbathing and other coastal leisure, recreation and sports activities, which take place on the shore of a sea, lake, or river. Hence, proximity to the coast is a necessary condition for services and facilities to support coastal tourism (UNWTO, 2019). Recognized as one of the most important economic activities of coastal areas worldwide, tourism has a positive impact on social and economic indicators such as employment and revenue generation.

However, seasonal and spatial tourist's concentration has serious implications on resource management and environment protection, because development purposes and increased tourism in coastal areas, impact the physical environment and biodiversity, increases rates of erosion, damages coral reefs, and destroys mangroves, among other concerns (Blue Flag, 2006).

These concerns were evidenced in a study conducted in 2016, where Danish coastal areas (protected from tourism development and construction for over 80 years), were relieved of these restrictions by the government and tourism-related projects were invited to be made within these areas. The study concluded that overall proposals had an emphasis on economic growth, with no long-term perspectives and scarcely knowledge or reference to sustainability as a holistic concept (Andersen et al., 2016).

Tourism is both highly vulnerable to climate change and a massive contributor to it. On one side, threats for the sector are diverse, with direct and indirect impacts such as more extreme weather events, water shortages, safety concerns and increased insurance costs, biodiversity loss, damage to assets and attractions at destinations, among others (UNWTO, n.d.-a). On the other, when "much of the plastic used in tourism is made to be thrown away and often can't be recycled" (One Planet Network, n.d.), and around 80% of all tourism taking place in coastal areas, the sector is greatly responsible for the pollution and damages its activities cause to coastal areas among other natural habitats.

It is, therefore, vital to protect the marine environment while fostering coastal tourism. And to accomplish this goal, it is imperative that all stakeholders take responsibility and actively cooperate. Whether this is achieved through the establishment of laws, imposed by governments and public organizations, or, through a mix of public and private tourism decision-makers rules, directives or good practice guidelines, the purpose remains unaltered.

In Portugal, concerning the year 2018, statistics show that the number of non-resident tourists arriving reached 22.8 million (INE, 2019), and that coastal areas concentrated 84.8% of total overnight stays in the country. The region of the Algarve (south of Portugal) had 35,3% of the market share, which makes it the region with the highest number of tourists for coastal tourism (INE, 2019).

2.2 Climate Change

The First World Climate Conference held in Geneva in 1979 with the participation of scientists from 50 nations worldwide, stated that it was urgent to act upon the way society and governance were evolving, because the predictions of climate change were already alarming, at the time. The Rio Summit in 1992, the Kyoto Protocol in 1997, and more recently, the Paris Agreement in 2015, all continued to reinforce scientists' warnings on the emergency for immediate action to mitigate climate change.

A worldwide coalition of over 11,000 scientist signatories, led by William Ripple and Christopher Wolf, renewed the message in their article "World Scientists' Warning of a Climate Emergency". They reinforced that the climate crisis is closely linked to excessive consumption of the wealthy lifestyle and that the most prosperous countries are mainly responsible for the historical Green House Gas emissions and generally have the greatest per capita emissions. It is their understanding that policymakers and the public, need urgent access to a set of indicators that convey the effects of human activities on Green House Gas emissions and the consequent impacts on climate, nature and society. They concluded that these key indicators were Energy, Short-lived Pollutants, Nature, Food, Economy, and Population (Bioscience, 2020).

This work focuses on the Nature key indicator, where scientists believe that the protection and restoration of Earth's ecosystems can reduce up to a third of the carbon emissions needed by 2030, according to the Paris agreement.

The 2030 Agenda for Sustainable Development and its' 17 Sustainable Development Goals (SDGs), also consider an utmost priority the promotion of actions and measures that combat climate change and preserve our oceans and forests (UN, 2019).

In line with these views are the latest reports of the Intergovernmental Panel on Climate Change (IPCC), that predicted climate change to greatly affect marine, freshwater, and terrestrial life, from plankton and corals to fishes and forests (IPCC, 2018). As this study emphasizes coastal areas, the preservation and protection of the marine ecosystems is of greatest importance, and mitigating climate change while honouring the diversity of humans, entails major transformations in the ways our global society functions and interacts with natural ecosystems (Scientists Warning, 2020).

Climate change impacts ecosystems and their goods and services, threatens key cultural dimensions of lives and livelihoods. The ocean is the home of the largest continuous ecosystem, provides habitats for rich marine biodiversity, and is an essential source of food. It also supports other services to humans such as Tourism, where the aesthetic appeal of the ecosystem is a key element. Governance of the ocean has a unique set of challenges and opportunities and requires different treatment under a changing climate (IPCC, 2014).

2.3 Marine Litter

UNEP defines marine litter as “any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment. Marine litter consists of items that have been made or used by people and deliberately discarded into the sea or rivers or on beaches; brought indirectly to the sea with rivers, sewage, storm water or winds; accidentally lost, including material lost at sea in bad weather (fishing gear, cargo); or deliberately left by people on beaches and shores” (UNEP, 2005: 3).

A study that analyses marine anthropogenic litter in Portugal, conducted over a two-year period (2011–2013) in eleven beaches along the Portuguese coast, concluded that of all collected litter items, 99% were plastic and 68% were microplastics. In this study, marine anthropogenic litter items were found in all surveyed beaches. Results suggested that microplastics have predominantly a land-based origin and that they were deliberately discarded or accidentally lost in watercourses and/or coastal areas (Antunes et al., 2018).

Another study regarding the type of marine litter found in submarine canyons off the west coast of Portugal, evidences that 86% of all marine litter found in three of these canyons was plastic sourced. Findings also suggested that the majority of the plastic litter was land-based, as it was most abundant at sites closest to the coastline and population centers (Mordecai et al., 2011).

This data coincides with the findings of Schmidt et al, which points that plastic pollution of freshwater systems, particularly rivers, and of the marine environment are linked because rivers ultimately discharge into the marine environment. Since land-based sources are considered to be a major contributor to marine plastic debris, and rivers connect most of the global land surface to the marine environment, scientists considered rivers to be a major pathway for plastic transport into the seas. It is also their understanding that the study's 10 top-ranked rivers transport between 88 and 94% of the total land-based plastic that ends in the sea (Schmidt et al., 2017).

This information is essential in order to establish best practice procedures, create processes and make laws that can help mitigate river and marine litter issues. Scientists believe that

awareness outreach and co-responsibility actions are needed to change behaviours in civil society (Antunes et al., 2018).

A study conducted in 2009, already reinforced these scientists' theories, and what common sense tells us: litter is primarily the result of individual behaviours. This study indicated that about 85% of littering in the USA was the result of individual practices/habits and that changing individual behaviour was the key to preventing litter (KAB, 2009).

The European Directive for plastic bags 2015/704 (Eur-lex, 2015) and the European Directive for Single-Use Plastics (SUP) 2019/904 (Eur-lex, 2019), reiterate all the above-mentioned studies and their scientists' concerns for the emergent need to address the plastic problem, that has no ocean boundaries and spares no coastal areas.

These facts also suggest that marine litter is part of a larger problem of waste management, where consumers' awareness and behaviour bring to a greater extent, the task to manage the environmental sustainability problem that concerns populations and governments around the world.

2.4 Sustainability

Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development does imply limits - not absolute limits but limitations imposed by the present state of technology and social organisation on environmental resources and by the ability of the biosphere to absorb the effects of human activities. (UN, 1987: 15)

Already in 1987, the World Commission on Environment and Development (WCED) report (see above citation), entitled "Our common future" (commonly known as the Brundtland Report), established guiding principles for sustainable development. It states that critical global environmental problems are primarily the result of the unbalanced way of life between the poverty of the South Nations and the non-sustainable wealthy patterns of consumption and production of the North Nations. The asymmetries were made clear and equity of living standards was a need made evident (op. cit.).

The Brundtland Report called for a new strategy for sustainability and identified sustainable development as [the development] "that meets the needs of the present without compromising the ability of future generations to meet their own needs" (op. cit.). Then and now, sustainable development is a precious concept that needs to be applied in all human activity sectors.

Sustainable tourism development guidelines and management practices are applicable to all forms of tourism in all types of destinations, including mass tourism and the various niche tourism segments. The principles for this way of working in the tourism sector are based on the environmental, economic and socio-cultural dimensions which need to be balanced so that we can guarantee a long-term sustainable tourism industry (UNWTO, n.d.-c).

Oceans and seas cover more than 70% of the Earth's surface and they are greatly responsible for the food we eat, climate regulation, and oxygen production. Their importance is also perceived in worldwide economy, supporting fisheries, international shipping, and the tourism industry. However, due to human activity these vital ecosystems are threatened and face unprecedented changes and massive destruction (UNEP, n.d.-a). It is a fact that we live without the oceans, however, we have increased the use of its natural resources with little concern for its sustainability.

Tourism and its' industry are one of the main threats to the health and preservation of the oceans, with recreational activities, construction development, and pollution aggravation in

coastal areas that damage habitats and reduce the biodiversity of these marine environments. The United Nations Environment Programme (UNEP), claims that we have already lost half of the world's coral reefs, and in 2016 alone we witnessed the death of a 400-mile stretch of the Great Barrier Reef (UNEP, n.d.-b). Programmes like UNEP are addressing these challenges by working with governments, businesses, universities, and civil society groups around the world, promoting the protection and sustainable management of the marine and coastal environments. Science has proven beyond doubt that we are using resources faster than they can naturally recover.

So, to achieve a sustainable future, there is a need to develop new attitudes and change the way we live permanently, which also concerns tourism-related practices.

2.5 Circular Economy

The Circular Economy (CE) definition can be arguably discussed, however according to a study conducted by Kirchherr et al. (2017), not a single study until now has comprehensively and systematically investigated CE definitions. Therefore, for the purpose of this study, the definition of Circular Economy by the Ellen MacArthur Foundation (EMF) was adopted. Since its creation, the Foundation has pioneered the transition of the linear economy development model and its negative impacts on the Planets' ecosystems, into sustainable circular economy principles that respect and protect natural resources.

EMF defines circular economy as “one that is restorative and regenerative by design and aims to keep products, components, and materials at their highest utility and value at all times, distinguishing between technical and biological cycles” (EMF, 2015). This concept seeks to rebuild capital, whether it is financial, manufactured, human, social, or natural; and it looks beyond the current linear industrial model where we take the resources, use them to make products, and discard them after use without truly grasping its life end cycle. It is based on three principles: Design out waste and pollution, keep products and materials in use, and regenerate natural systems (EMF, n.d.) (see Figure 1).

Waste and pollution are seen as a problem, when in fact they are the consequence of bad design decisions. This first principle believes that it is necessary to change mindsets and design products considering their complete life cycle so that waste is not produced in the first place.

The second principle focuses on the reutilisation of materials. Products should be designed to last a long life, however, and even more importantly, we need to be able to keep these materials within the economy, so after their usage they should come back to the productive cycle to be transformed and reused, thus reducing the need for new materials to be extracted from the environment.

To regenerate natural systems is a very important part of CE because it refers directly to environmental improvement. It aims to give back to soils their nutrients and other ecosystems their resources, so that our natural resources can increase instead of reducing.

If products or services are holistically designed, their life cycle will be fully grasped and no pollution or unnecessary use of raw materials will ensue, therefore, for the purpose of this paper, the focus stands on the first principle for CE according to the EMF: “Design out waste and pollution”.

Figure 1. Circular Economy Principles



Source: Ellen MacArthur Foundation

2.6 Design and Circular Economy

The Montreal Design Declaration defines design as “the application of intent: the process through which we create the material, spatial, visual and experiential environments in a world made ever more malleable by advances in technology and materials, and increasingly vulnerable to the effects of unleashed global development” (WDS, 2017). This declaration recognizes that we can address pressing global challenges and potentially improve global economic, social, cultural, and environmental goals through design.

We are surrounded by design on a daily basis. Everything we dress, use or construct has been designed to serve a purpose. And purpose is a good thing when products and services are conceived taking into account all their life cycle. However, we are still driven to think the design process in the linear model way, and the consequences and impacts the products or services have on the environment are often not taken into consideration. This is where Design can be the facilitator towards the change to a CE model.

“Designers are professionals, who, by education, outlook and experience, are capable of developing new, interdisciplinary solutions to improve quality of life” (WDS, 2017). Therefore, designers can help stakeholders to look beyond their linear model needs, and consider all the aspects of their services or products in a broader way, where negative impacts are identified before design decisions are made and, ultimately, end-users are even more satisfied. The CE process needs to re-design economic development and transform it into a restorative economy, where people and the environment are equally important. Designers need to be creative and develop new and positive design thinking systems so this can become a reality.

A designer’s work can be applied to all types of industries using CE principles, and the tourism industry has a special interest in this approach because the environment is a key element for its success and development. Dynamics like the “New Plastic Economy Global Commitment” (NPEGC, n.d.), are valued especially to the coastal tourism areas, where plastic waste and marine litter are a challenging problem. The NPEGC is an organization lead by EFM that seeks to unite businesses, governments, NGOs, and other organisations behind a universal vision and specific goals to address plastic waste and pollution at its source. The NPEGC envisions a CE for plastic in which it never becomes waste. In the NPEGC three actions are expected to be taken by all signatories (NPEGC, n.d.): i) “Eliminate all problematic and unnecessary plastic items”; ii) *Innovate to ensure that the plastics we do need are reusable, recyclable, or compostable*; and iii) “Circulate all the plastic items we use to keep them in

the economy and out of the environment”. Designers are needed to rethink plastics for the above three actions, as well as to think and create new solutions for the plastics that have already been produced without CE concerns, and that end their life cycle polluting the oceans and seas worldwide.

Another good example of CE applied to tourism is the One Planet Network, an organization lead by UNWTO that aims to guide the tourism sector in the direction of a more sustainable path. One of the network’s programmes is *The Global Tourism Plastics Initiative*, which aims “to stop plastic ending up as pollution while also reducing the amount of new plastic that needs to be produced.” When much of the plastic used in tourism is made to be disposable and often cannot be recycled, they encourage tourism companies and destinations to get involved and “commit to eliminate the plastic items they don’t need; innovate so all plastics they do need are designed to be safely reused, recycled, or composted; and circulate everything they use to keep it in the economy and out of the environment” (One Planet Network, n.d.).

Regarding private tourism-related businesses, the need to become more sustainable whilst maintaining high standard services is starting to be demanded by customers worldwide. The Iberostar Hospitality Group, with more than 110 units around the world, is committed to shift towards a Circular Economy in all of its operations. With hotels spread in 35 countries around the world, the hospitality group employs more than 32,000 tourism professionals and welcomes around 8 million guests each year (Iberostar, n.d.). More than 80% of the Group’s hotels are located on seafront sites, thus the group created the *Wave of Change* Programme, which focuses on three main areas: the reduction of plastic pollution; the promotion of sustainable fishing; and the conservation of coral reefs and protection of the Mediterranean Sea. Regarding plastics, the chain started by casting out single-use plastics from their hotel rooms in Spain in 2018, with an expected plastic consumption reduction of more than 175 tons per year only in this country. This measure was implemented in all their hotels worldwide, in 2019. By the end of 2020, the aim is to extend this course of action in all operational areas (within legal restrictions), taking significant steps towards a circular economy in plastics. By doing so, Iberostar intends to prove that luxury, quality, and sustainability can successfully coexist (Wave of Change, n.d.). Through their actions, the company aims to raise awareness on both employees and guests, to the importance of individual actions towards safer and healthier oceans, that ultimately help to tackle climate change.

Figure 2. Wave of Change Programme: Reduction of Plastics through different Design Strategies



Source: Wave of Change 2019 Summary

The examples above, suggest that non-governmental organizations, governments, and tourism companies are truly committed to change the course of their negative environmental

impacts and to shift towards a CE business model, where Design is fundamental in order to provide solutions that respect, protect and raise awareness regarding the natural environment.

3. METHODOLOGY

The methodology chosen for this exploratory study is literature review and case studies analysis (commonly used in social sciences). The analysis was divided in three different steps: description and objectives; stakeholders involved; and key findings. The description and objectives step will comprehend an introduction of the programme or initiative, its main guidelines, objectives, and timeline. The following steps inform the stakeholders involved in the programme or initiative. The key findings consider the adoption of strategies for rethinking, reusing, reducing, recycling and upcycling plastics.

Six case studies were selected using three main criteria: scope diversity; range of action, and maturity level. Regarding “scope diversity”, it comprises programmes or initiatives from governmental, non-governmental, and private sector organisations. The “range of action” was defined by the implementation’s area of the programmes or initiatives: local, national, and international levels.

As for “maturity levels”, the “Portfolio Maturity Model” created by Acuity PPM (Acuity PPM, 2020) was adapted for this study. The maturity levels have 5 different stages (op. cit): initiation, developing, defined, managed, and optimized. Table 1 (see below) summarizes the case studies and criteria adopted for the analysis conducted in the study.

Table 1. Case Studies Framework

Adopted Criteria	Scope Diversity	Range of Action	Maturity Level
Programmes or Initiatives			
CAPonLITTER	Governmental	National and International	Developing
Observatory for Sustainable Tourism of Algarve	Governmental	Local	Managed
FEE: Foundation for the Environment Education	Worldwide Non-Governmental Organisation	International	Optimized
Associação Portuguesa de Lixo Marinho - APLM	Portuguese Non-Governmental Organisation	National	Managed
Discovery Hotel Management	Private Sector Hotels	National and Local	Initiation
Booking.com	Private Sector Online	International	Optimized

Source: Own Elaboration

3.1 Case Studies

3.1.1 CAPonLITTER

Description and objectives

CAPonLITTER is an initiative that aims to improve policies and practices that can help in preventing marine litter that results from coastal tourism and recreational activities.

More specifically, the project will focus on key fractions of waste, such as plastic food and drink containers originating from beach facilities and recreational events, due to improper behaviour of consumers but also to lack of incentives and structures for prevention, collection, and recycling of waste (CAPonLITTER, n.d.). Its main goal is to develop good coastal practices and improve policies to prevent marine litter. CAPonLITTER involves authorities and organisations from seven European countries in which coastal tourism is a key economic activity highly impacted by marine litter. Portugal is the lead partner and will be exchanging experiences and mutual learning with partners from Spain, Croatia, France, Germany, Greece and Bulgaria. The project will be developed by Nova University of Lisbon with the participation of the Portuguese Government through the Portuguese Environment Agency – *Agência Portuguesa do Ambiente* (APA). It aims to exchange experiences and mutual learning with the support of key stakeholders so that it can explore ways to improve regional policies and the implementation of best practices. Zero Waste Management, marine litter prevention, collection and recycle are also main goals to be achieved. An action plan named “Green Book” will be produced at the end of the initiative and will include recommendations to prevent marine waste resulting from tourism and recreational activities in the coastal zone, compiling the best practices learned by the researchers (APA, n.d.).

Stakeholders

The initiative stakeholders are Governmental Agencies and Public Universities, described as follows:

- Nova University of Lisbon and *Agência Portuguesa do Ambiente* (Portugal)
- German Federal Environment Agency (Germany)
- Region of Crete (Greece)
- IRENA - Istrian Regional Energy Agency Ltd (Croatia)
- Union of Bulgarian Black Sea Local Authorities (Bulgaria)
- MerTerre (France)
- ECOAQUA University Institute - University of Las Palmas de Gran Canaria (Spain)

Key Findings

- The CAPon LITTER initiative will create a Zero Waste Management programme to prevent Marine Litter.
- More sustainable and conscious tourism practices can be implemented when exchanging information with other partners.
- Coastal and Marine Environment can be improved if new and effective policies are created.
- Collection and recycling of Marine Litter at coastal sites will help and preserve the ecosystems.
- UN Sustainable Development Goals to be achieved with the project:
 - 13 – Climate Action
 - 14 – Life Below Water
 - 17 – Partnerships for the Goals.

3.1.2 Observatory for Sustainable Tourism of Algarve

Description and Objectives

The Observatory of Sustainability of the Algarve Region for Tourism (OSART) was launched in March 2019 by the *Região de Turismo do Algarve* (RTA), with the purpose of studying, analysing and monitoring the touristic performance of the region in terms of economic, social and environmental sustainability. The project aims to provide key indicators for tourism stakeholders and policymakers so that a sustainable development can be attained by the Algarve, the main coastal tourism region in the country.

This important assessment tool was developed in close collaboration with the *Instituto Superior de Engenharia* (ISE) of the University of Algarve, and other national and local institutional partners. Over a two-year period (2017-2019) the project was developed and the “Observe” platform (see Figure 2) has been online for almost a year and available for the general public. “Observe” collects, organizes, systematizes and disseminates information on various thematic areas, present in the pillars: Environment, Sociocultural, Economic and Institutional. It does not produce information and its main source of information is taken from its own application (API) and INE. The platform is dynamic and counts with around 77 indicators that can be easily managed, improved, changed, and expanded. It has a participation tab where the general public can make questions, add suggestions, and request new indicators (which the administrators will provide if relevance is considered and data can be obtained).

The OSART has recently integrated the prestigious World Tourism Organisation International Network of Sustainable Tourism Observatories, making Portugal the country with more tourism observatories recognized by the international community in Europe (INSTO, n.d.).

Figure 3. Landing page of “Observe Platform” - Observatory of Sustainability of the Algarve Region for Tourism



Source: OBSERVE, n.d.

Stakeholders

The initiative stakeholders are Local and National Governmental Agencies and a Public University, described as follows:

- University of Algarve – *Instituto Superior de Engenharia*
- RTA - *Região de Turismo do Algarve*
- CCDR – *Comissão de Coordenação e Desenvolvimento da Região do Algarve*
- *Turismo de Portugal*

Key Findings

- The observatory for sustainable tourism of Algarve has a free online platform with key indicators for the development of sustainable initiatives and programmes (“Observe”).
- The Observe Platform can be updated according to public and private stakeholders’ needs.
- The Algarve tourism region achieved worldwide recognition for environmentally responsive tourism region through INSTO.
- UN Sustainable Development Goals that are/can be achieved with this programme:
 - 11 – Sustainable Cities and Communities
 - 12 – Responsible Consumption and Production
 - 13 – Climate Action
 - 14 – Life Below Water
 - 17 – Partnerships for the Goals.

3.1.3 FEE: Foundation for the Environment Education

Description and Objectives

The Foundation for Environmental Education (FEE) is the world’s largest environmental education organisation with members in 77 countries worldwide. Through their five innovative programmes, they aim to empower people to take meaningful and purposeful actions so that they can help create a more sustainable world. Over the past four decades, they strived to make a difference every day by following their eight environmental education principles working towards excellence in Environmental Education and Education for Sustainable Development. For the purpose of this study, we will focus on two of these programmes, The “Blue Flag” and the “Green Key”, because they are specifically centred on the tourism sector.

The “Blue Flag” programme was launched in France in 1987 and at the time the FEE was partnered with the European Union. Eleven years after, in 1998, the European Union withdraw their participation and to keep the programme alive, the FEE International Coordinator created a levy that every country had to pay for every site awarded with the blue flag (FEE, 2016). Their mission aims to “promote and participate in environmental education programmes for the users of beaches, marinas and boating operators; implement sound safety and environmental management systems; monitor environmental conditions to reduce the impact of human activity at the beaches, marinas and boating operators; and commit to partnerships and collaborative action to promote the sustainable development of tourism” (Blue Flag, n.d.). For this purpose, they created a world-renowned eco-label that is recognised and trusted by tourists and international governmental agencies like UNEP. This eco-label is yearly awarded to beaches and marinas worldwide, if and when they met the rigorous standards and criteria that the Blue Flag programme supports. Portugal has 378 awarded sites, being that the Algarve region holds 92 of these awarded sites (Bandeira Azul, 2019).

The “Green Key” programme was created by the Danish Outdoor Council originally as an eco-label for hotels and hostels. Inspired by the “Blue Flag” Programme it was brought to the FEE General Assembly in 1998 and rejected at the time. It was only in 2003 that the programme was officially included as a FEE programme (FEE, 2016). It follows the same procedures as the “Blue Flag” programme but is focused on the tourism industry establishments. “Green Key” programme aims to “increase the use of environmentally friendly and sustainable methods of operation and technology in the establishments and

thereby reduce the overall use of resources; raise awareness and create behavioural changes in guests, staff, and suppliers of individual tourism establishments; and increase the use of environmentally friendly and sustainable methods and raise awareness to create behavioural changes in the hospitality and tourism industry overall” (Green Key, n.d.). It is currently present in 66 countries and with 3100 awarded establishments. The “Green Key” label is also yearly awarded and follows rigorous standards and criteria of the “Blue Flag” programme, obviously adapted to the tourism establishments’ reality. Portugal has a total of 182 awarded establishments from which 31 are located in the Algarve.

Stakeholders

The initiative stakeholder is the Foundation for Environmental Education.

Key Findings

- FEE is a solid international foundation that has 5 major programmes in which two are focused on what can be done in the present and the other three are seeding the grounds for an aware and environmentally engaged new generation of consumers.
- The “Blue Flag” programme helps to keep coastal areas clean and protected.
- The “Green Key” programme raises awareness on the tourism sector and helps the establishments to change towards a more environmentally and economically sustainable way of working.
- Both “Blue Flag” and “Green Key” programmes achieve the 17 UN Sustainable Development Goals in different countries and in the most diverse contexts.
- Both programmes are also known to the general public, which helps tourists to make better travelling decisions.

3.1.4 Associação Portuguesa de Lixo Marinho – APLM

Description and Objectives

The *Associação Portuguesa de Lixo Marinho* (APLM) first steps go back to 2008 when researchers from “Mare” – Marine and Environmental Sciences Centre conducted studies regarding marine litter. Two projects were created subsequently, “Poizon” (2010-2014) and “Marlisco” (2012-2015). Both projects continued the studies on marine litter, plastics, and microplastics in the marine environment and specifically in the Portuguese coastal area. The interest of creating this association started later through contacts with entities and individuals that shared mutual interests and information. In 2013 the initiative was launched in a meeting that took place in APA’s facilities, who had always expressed their willingness to collaborate with the APLM. The association’s mission is “to protect the environment against the impacts of litter, especially plastic, in marine and ocean ecosystems and in estuaries waterways and their margins; to raise awareness and promote co-responsibility towards sustainable consumption values, citizenship, solidarity and environmental protection” (APLM, n.d.). Presently the association works with national and international partners, in a total of 22 NGOs and 17 national and international institutional and governmental agencies. APLM has ten projects that have been studied and implemented, all relate to coastal areas and their preservation. The association also engages in educational activities for schools or other organized groups. It has been invited to participate in several conferences and talks where it has the possibility of disseminating information. APLM also has training and capability building activities that can be carried out on a various range of sites, from

teachers at schools to municipalities and private sector businesses. Every single person can get involved by being a volunteer, or an associate, through donation, by participating in the projects, organising a beach clean-up activity, being a partner, or simply by making a suggestion or signing the engagement letter that states the principles of eradication of marine litter on which we all should live by.

Stakeholders

The initiative stakeholder is APLM, although the association develops partnerships with other NGOs and Governmental Agencies both nationally and internationally.

Key Findings

- APLM is a Portuguese association committed with studying, teaching, and acting upon the problem of plastics and marine litter, particularly in coastal areas.
- They created a comprehensive network of NGO's a governmental agency that can help to make a difference towards the preservation and awareness of plastics and marine litter.
- Common citizens are welcome to join the association and participate in many different ways and make the change in their consumer behaviour.
- UN Sustainable Development Goals that can be achieved with the project:
 - 12 – Responsible Consumption and Production
 - 13 – Climate Action
 - 14 – Life Below Water
 - 17 – Partnerships for the Goals.

3.1.5 Discovery Hotel Management

Description and Objectives

Discovery Portugal Real Estate Fund is a tourism property asset management fund from Portugal that launched its own hotel management brand called Discovery Hotel Management (DHM) in 2015. In an article published that year, the fund management explained that their goal was to maintain the units' authenticity and identity, respecting their roots by integrating traditions with innovation and design. Adding value to the assets would be done through renewing them with an innovative design while working closely with local partners would create differentiating experiences for each hotel and a new approach to hospitality (Discovery Portugal Real Estate Fund, 2015). Since then, DHM has been continuously growing and presently has 17 assets that go from traditional hotels and resorts to design collection hotels, villas and touristic apartments. Currently, more than half of the assets are located in the Algarve, thus our choice of this hotel management brand as our private sector case study.

Concerned about protecting the environment and its natural resources, DHM has recently launched a new initiative called DHM Green. This initiative aims to create an ecological awareness as well as a set of sustainable procedures to be implemented at an internal level. A list of actions is provided, and each hotel is compelled to execute them in order to achieve a total of five levels of internal certification (Root, Trunk, Branch, Leaves, and Fruits). Each hotel nominates its' Green Keeper who is held responsible for the implementation of the actions and is also the person that collects new sustainable ideas or initiatives. The programme is still in an initial phase and adjustments may be made, however, the concept

is engrained and the method of approach may lead towards a greater consciousness towards sustainable tourism.

Stakeholders

The stakeholder of this programme is DHM and its' employees.

Key Findings

- DHM is a hotel management brand that wants to make things differently.
- The DHM Green initiative is an internal sustainability certification programme that raises awareness on all the employees and may act as a catalyst towards creating a more sustainable tourism industry.
- Employees are empowered to make a difference and encouraged to change negative environmental behaviours.
- UN Sustainable Development Goals that can be achieved with the project:
 - 11 – Sustainable Cities and Communities
 - 12 – Responsible Consumption and Production
 - 13 – Climate Action.

3.1.6 Booking.com

Description and Objectives

“Booking.com” is one of the world’s leading digital travel companies. Founded in 1996 in Amsterdam by a small Dutch start-up, the business grew exponentially over the past two decades and has presently 198 offices spread through 70 countries worldwide. Its’ mission is to “make it easier for everyone to experience the world” (Booking.com, n.d.).

The platform is available in 43 languages and offers more than 28 million accommodation options with competitive prices and worldwide locations. They believe that investing in technology helps potential tourists and businesses or entrepreneurs to seamlessly connect with each other. By doing so, they believe to help tourists achieve the best memorable experiences and businesses or entrepreneurs of all sizes with wide-reaching visibility and potential growth.

The company also has concerns regarding sustainability, as it is aware that tourism is an industry that negatively contributes to climate change. Thus, they created an online sustainability programme called “Booking Cares.com”, launched in 2014. This programme focuses on leading tourism and particularly the travel industry into a more sustainable future. It is their belief that everyone benefits from this change, the planet, the tourists, the business partners, the industry itself, and the employees that get to contribute to it (Booking Cares, n.d.). “Booking Cares” defines Sustainable Tourism as being comprised of four main pillars: tourism dispersal; environmental conservation and protection; inclusive travel; and cultural preservation and promotion. It supports two main initiatives, “Booking Volunteers” and “Booking Booster”. At “Booking Volunteers”, employees are encouraged to volunteer their time and their expertise and partner with local communities and organisations on projects that can help to improve their destinations. “Booking Booster” is an accelerator programme that supports sustainable travel startups by coaching, mentoring, and financing projects that have sustainable concerns.

In 2019 they also co-launched “Travalyst”, together with other major online travel companies and the Duke of Sussex. This platform aspires to be a catalyst for good, where

travelling is not only sustainable but also helps and protects both people and places securing a positive future for generations to come (Travalyst, n.d.). “Booking.com” also issues an annual “Travel Sustainability Report” where it shares its findings regarding sustainability for the last four years. Their latest report revealed very interesting data, such as the fact that 72% of travellers believe that people need to act now and make sustainable travel choices to save the planet for future generations (Booking.com, 2019).

Stakeholders

The initiative stakeholders are international online travel companies and an English Monarchy Member, described as follows:

- Booking.com
- Travalyst: HRH the Duke of Sussex, “Booking.com”, “Skyscanner”, “Tryp.com”, “TripAdvisor” and “Visa”

Key Findings

- “*Booking Volunteers*” programme creates awareness and involves the employees with the local community’s needs, which may promote more sustainable practices.
- “*Booking Booster*” accelerator programme fosters new ideas that help tourism companies to solve important problems like plastic waste and marine litter.
- “*Booking Sustainability Travel Report*” is a tool that provides data that can be used by the tourism industry as an indicator for developing sustainable activities.
- “*Travalyst*” – A new online platform that aims to use travel as a catalyst for sustainability.
- UN Sustainable Development Goals that can be achieved by “Booking.com” and its partners:
 - 8 – Decent Work and Economic Growth
 - 10 – Reduce Inequalities
 - 11 – Sustainable Cities and Communities
 - 12 – Responsible Consumption and Production
 - 13 – Climate Action
 - 14 – Life Below Water
 - 17 – Partnerships for the Goals.

4. RESULTS

Climate change is a problem that needs to be addressed worldwide by all of us. The tourism industry has an important role to play in this context, as it is greatly responsible for the problem.

This study focuses on plastic pollution, especially marine litter, and the damages it inflicts on coastal areas, as well as on the actions that are being taken in order to make a positive change towards a more sustainable tourism development.

The first case study, “CAPonLITTER” shows that Portugal is committed to make this change happen and it already started to address the marine litter problem at a governmental level associated to researchers’ expertise. According to APA, the programme will study furthermore the negative impacts of plastics in the marine environment, as it is known that they make up to about 90% of all marine litter found in the Portuguese coastal regions. New strategies and policies to tackle marine litter are expected to arise from the information and knowledge that this programme is supposed to collect (APA, n.d.).

The second case study, the OSART, suggests that the main coastal tourism region of the country is also concerned about climate change and has undertaken actions that measure the problem resulting in indicators that may help tourism stakeholders find innovative ways to help mitigation of climate change impacts on its coastal tourism areas. Furthermore, the OSART is now part of a universal sustainability criteria network, the ISTNO, which not only recognises the initiative as valid but also allows comparison of collected data with other worldwide sites.

The FEE, the third case study is the most worldwide recognized programme of all the undertaken case studies. The foundation was created over 40 years ago and its “Blue Flag” eco-certification is known for its high safety standards and continuous work to protect local coastal areas and their ecosystems. The “Green Key eco-label, one of the newer programmes of the foundation also aims to drive the tourism industry into a more sustainable developed sector. Its eco-label is growing year by year and is raising awareness and recognition amongst the tourism stakeholders, both establishments and tourists. Portugal has been closely working with FEE and is one of the countries that presently hold the most “Blue Flag” and “Green Key” awards. This suggests that the government, local authorities, and private sector tourism companies, all made an investment to maintain and improve the conditions of our touristic areas, especially those located near the coast.

The fourth case study, APLM is an association that was born through the Portuguese scientific community. This particular case study shows that academics, government agencies, and regular citizens can all come together in a combined effort to clean our beaches and raise consciousness amongst the Portuguese population to the marine litter growing problem. The association also gathers information and data from its national and international NGO partners, which is essential to make the necessary consumer behaviour changes.

Discovery Hotel Management, the fifth case study, demonstrates the Portuguese tourism private sector engagement towards a more sustainable developed tourism industry, where real and effective actions are beginning to take place. Their innovative design approach to hospitality seeks to maintain the roots and authenticity of the local assets and communities, whilst fostering sustainable and conscious practices. The recently launched DHM Green programme, aims to improve their relationship with the environment and measures to be undertaken include reduction of plastic waste and ending of single-use plastics, amongst other actions that will greatly improve environmental footprint.

The last case study, “Booking.com”, represents the travel industry worldwide. As one of the major players when it comes to online travelling companies, “Booking.com” has embodied earth’s sustainability needs as a high priority. Climate changes endanger tourism activities all around the globe however tourism is one of the larger contributors to these changes. “Booking.com” created “Bookingcares.com” to act upon the tourism negative impacts on the environment, launching programmes and initiatives that can promote a change, like “Booking Volunteers” and “Booking Booster” startups accelerator. They also study tourists’ behaviour and needs, thus contributing to understanding what companies and other tourism facilitators can improve or offer to their guests.

Overall, the case studies analysed have a strong commitment towards the sustainability of the Planet. Whether local or global, all cases show awareness and determination to make the changes that need to be made. Some cases are still in their early stages while others are firmly established, which shows that the problem is not recent, but the emergency is growing fast and expressions like “climate change”, “marine litter” or “sustainable tourism” are present in all stakeholders’ daily actions. Most of the studied cases already use circular economy principles in their work and when compared to previously referred stakeholders’ initiatives like the *New Plastic Economy Global Commitment*, the *Global Tourism Plastics Initiative*

or the *Wave of Change programme*, a continuous growth in the reinforcement of sustainability principles is expectable in order to reach CE's full potential benefits.

In all the analysed cases, Design seems to be a major catalyst for CE, being the first of its' guiding principles, thus it is also expected that stakeholders consider maintaining the development of pioneering projects and processes through this practice.

5. CONCLUSION

As part of the main region of tourist destinations worldwide (the Mediterranean Europe), Portugal is a country where the tourism industry thrives. Year after year, tourism-related indicators are surpassed. The Algarve region is the main receiver of coastal tourism visitors in the country (INE, 2019). But the growth of the tourism sector in both size and importance poses as a dilemma because it brings good economic effects but negative environmental impacts. Thus, the present study aimed to understand how the region is addressing the changes that the sector, as a whole, needs to establish with emphasis on the problem of plastics and marine litter, and if they fit into a framework of measures being implemented by international entities or companies.

Six case studies were chosen, and the majority has a strong presence in the Tourism sector of the Algarve. Findings suggest that the region is aware of the consequences of climate change regarding tourism in coastal areas, its main economic activity, and is therefore acting towards its mitigation. Evidence also shows that the approaches are being directed at the source of the problem, meaning that all stakeholders are preventing plastics and marine litter growth by making circular economy choices. The results also suggest that people are the catalyst element for behaviour change, whether they are represented by governmental agencies, NGO's, tourism private sector companies, or individually, as citizens or tourists.

The current Covid-19 pandemic has changed the tourism sector's forecasted growth pattern without previous warning, and the negative results of it are yet to be determined, however, this event also showed that with less human activity (which naturally is not this study's goal or suggestion) pollution might be at least partially reverted. This may provide a relevant indication for the need to implement new and more sustainable tourism-related behaviours using Circular Economy developments.

Further research needs to be made in order to confirm or review this study's assumptions; however, evidence shows that there is room to develop different and innovative projects, where Design as a circular economy facilitator, can be of major contribution to the Tourism industry, specifically regarding coastal tourism areas.

REFERENCES

- Acuity PPM (2020, September 11). *Assess Portfolio Maturity Model*. Retrieved from <https://acuityppm.com/ppm-101-assess-portfolio-maturity-in-order-to-get-there/>
- Andersen, I., Blichfeldt, B., & Liburd, J. (2018). Sustainability in coastal tourism development: an example from Denmark. *Current Issues in Tourism*, 21(12), 1329-1336.
- Antunes, J., Frias, J., & Sobral, P. (2018). Microplastics on the Portuguese Coast. *Marine Pollution Bulletin*, 131, Part A, 294-302.
- APLM – Associação Portuguesa Lixo Marinho (n.d.). Retrieved from <https://en.aplixomarinho.org/>

- APA – Associação Portuguesa do Ambiente (n.d.). *O Projeto CAPonLITTER- Capitalizar boas práticas de gestão costeira e melhorar políticas para prevenir o lixo marinho*. Retrieved from <https://apambiente.pt/index.php?ref=17&subref=1249&sub2ref=1622>
- Bandeira Azul (2019). *Locais Galardoados 2019*. Retrieved from <https://bandeiraazul.abae.pt/galardoados/galardoados-2019/>
- Booking.com (n.d.). *About Booking.com™*. Retrieved from <https://www.booking.com/content/about.en-gb.html>
- Booking.com (2019, April 17). *Booking.com Reveals Key Findings from its 2019 Sustainable Travel Report*. Retrieved from <https://globalnews.booking.com/bookingcom-reveals-key-findings-from-its-2019-sustainable-travel-report/>
- Booking Cares (n.d.). *About Sustainability at Booking.com*. Retrieved from <https://bookingcares.com>
- Blue Flag (2006). *Awards for Improving the Coastal Environment: The Example of the Blue Flag*. Retrieved from <https://www.blueflag.global/publications>
- Blue Flag (n.d.). *Mission and History*. Retrieved from <https://www.blueflag.global/mission-and-history>
- Caponlitter (n.d.). *Capitalising Good Coastal Practices and Improving Policies to Prevent Marine Litter*. Retrieved from <https://www.interregeurope.eu/caponlitter/>
- Discovery Portugal Real Estate Fund lança marca hoteleira DHM (2015, February 11). *Diário de Notícias*. Retrieved from <https://turismo.dnoticias.pt/artigo/6629-discovery-portugal-real-estate-fund-lanca-marca-hoteleira-dhm>
- EMF – Ellen MacArthur Foundation (2015, December 9). *Towards a Circular Economy: Business Rationale for an Accelerated Transition*. Retrieved from https://www.ellenmacarthurfoundation.org/assets/downloads/TCE_Ellen-MacArthur-Foundation_9-Dec-2015.pdf
- EMF – Ellen MacArthur Foundation (n.d.). *Global Commitment. A Circular Economy for Plastic in which it never becomes Waste*. Retrieved from <https://www.newplasticseconomy.org/projects/global-commitment>
- Eur-Lex (2019, June 5). *Directive (EU) 2019/904 of the European Parliament and of the Council*. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0904&from=EN>
- Eur-Lex (2015, April 29). *Directive (EU) 2015/720 of the European Parliament and of the Council*. Retrieved from <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L0720&rid=1>
- FEE – Foundation for Environmental Education (2016). *Foundation for Environmental Education – a story*. Retrieved from <https://www.fee.global/our-history>
- Green Key (n.d.). *Our Programme*. Retrieved from <https://www.greenkey.global/our-programme>
- Iberostar (n.d.). *Iberostar is removing all single use plastics from all of its hotel rooms*. Retrieved from https://www.iberostar.com/en/press_room/news/iberostar-is-removing-all-single-use-plastics-from-all-of-its-hotel-rooms/
- INE – Instituto Nacional de Estatística (2019). *Estatísticas do Turismo 2018*. Retrieved from <https://www.ine.pt/xurl/pub/358629548>
- INSTO – International Network of Sustainable Tourism Observatories. (n.d.). *Observatories*. Retrieved from <http://insto.unwto.org/observatories/>

- IPCC (2014). *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, R. K. Pachauri and L. A. Meyer (Eds.)]. IPCC, Geneva, Switzerland.
- IPCC (2018). Summary for Policymakers. In *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P. R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (Eds.)]. World Meteorological Organisation, Geneva, Switzerland.
- Keep America Beautiful. (2009). *Littering Behavior in America – Results of a National Study*. Retrieved from https://kab.org/wp-content/uploads/2019/10/NewsInfo_Research_LitteringBehaviorinAmerica_2009Report_Final.pdf
- Kirchherr, J., Reike, D., & Hekkert, M. (2017). Conceptualizing the Circular Economy: An Analysis of 114 Definitions. *Resour. Conserv. Recycl.*, 127, 221-232.
- Mordecai, G., Tyler, P., Masson, D., & Huvenne, V. (2011). Litter in Submarine Canyons off the West Coast of Portugal, Deep-Sea Research Part II-Topical. *Studies in Oceanography*, 58(23-24), 2489-2496.
- NPEGC - New Plastics Economy Global Commitment (n.d.). *Global Commitment. A Circular Economy for Plastics in which it Never Becomes Waste*. Retrieved from <https://www.newplasticseconomy.org/projects/global-commitment#overview>
- OBSERVE (n.d.). *Observatory of Sustainability of the Algarve Region for Tourism*. Retrieved from <https://observe.ualg.pt/>
- One Planet Network (n.d.). *Global Tourism Plastics Initiative*. Retrieved from <https://www.oneplanetnetwork.org/sustainable-tourism/tourisms-plastic-pollution-problem>
- Ripple, W., Wolf, C., Newsome, T., Barnard, P., & Moomaw, W. (2020). World Scientists' Warning of a Climate Emergency. *BioScience*, 70(1), 8-12.
- Schmidt, C., Krauth, T., & Wagner, S. (2017). Export of Plastic Debris by Rivers into the Sea. *Environmental Science & Technology*, 51(21), 12246-12253.
- Travalyst (n.d.). *Travel as a Catalyst for Good*. Retrieved from <https://travalyst.org/>
- UNWTO – United Nations World Tourism Organisation (n.d.-a). *Climate Change*. Retrieved from <https://www.unwto.org/sustainable-development/climate-change>
- UNWTO – United Nations World Tourism Organisation. (n.d.-b). *Glossary of Tourism Terms*. Retrieved from <https://www.unwto.org/glossary-tourism-terms>
- UNWTO – United Nations World Tourism Organisation (2020a, January). Growth in international Tourist Arrivals Continues to Outpace the Economy. *World Tourism Barometer*, 18(1). Retrieved from https://webunwto.s3.eu-west-1.amazonaws.com/s3fs-public/2020-01/UNWTO_Barom20_01_January_excerpt_0.pdf.
- UNWTO – United Nations World Tourism Organisation (2020b, May 7). *International tourist numbers could fall 60-80% in 2020, UNWTO reports*. Retrieved from <https://www.unwto.org/news/covid-19-international-tourist-numbers-could-fall-60-80-in-2020>
- UNWTO – United Nations World Tourism Organisation (2020c, June 4). *Restarting Tourism*. Retrieved from <https://www.unwto.org/news/restarting-tourism>
- UNWTO – United Nations World Tourism Organisation (n.d.-c). *Sustainable Tourism*. Retrieved from <https://www.unwto.org/sustainable-development>

- UNWTO – United Nations World Tourism Organisation (2020d, June 9). *Tourism can be a platform for overcoming the pandemic*. Retrieved from <https://youtu.be/hrVcOLirxUU>
- UNWTO–United Nations World Tourism Organisation (2019). UNWTO Tourism Definitions. UNWTO Madrid. doi: <https://www.e-unwto.org/doi/pdf/10.18111/9789284420858>
- UN – United Nations (1987). *Report of the World Commission on Environment and Development: Our Common Future*. Retrieved from https://www.are.admin.ch/are/en/home/sustainable-development/international-cooperation/2030agenda/un-_-milestones-in-sustainable-development/1987--brundtland-report.html
- UNEP – United Nations Environment Programme (2005). *Marine Litter, an analytical overview*. Retrieved from <https://wedocs.unep.org/handle/20.500.11822/8348>
- UNEP – United Nations Environment Programme (n.d.-a). *Why do Oceans and Seas matter?* Retrieved from <https://www.unenvironment.org/explore-topics/oceans-seas/why-do-oceans-and-seas-matter>
- UNEP – United Nations Environment Programme (n.d.-b). *Promoting Effective Marine Protected Areas*. Retrieved from <https://www.unenvironment.org/explore-topics/oceans-seas/what-we-do/promoting-effective-marine-protected-areas>
- UNEP – United Nations Environment Programme (n.d.-c). *Coastal Zone Management*. Retrieved from <https://www.unenvironment.org/explore-topics/oceans-seas/what-we-do/working-regional-seas/coastal-zone-management>
- Wave of Change (n.d.). *Moving Beyond Plastics*. Retrieved from <https://waveofchange.com/>
- WDS – World Design Summit (2017, October 24). *Montréal Design Declaration*. Retrieved from http://www.designdeclaration.org/wp-content/uploads/2019/01/Montreal_Design_Declaration_2017_WEB.pdf
- WWF (n.d.). *Tourism and Coastal Development - Beautiful Coastlines Disappearing Under Concrete*. Retrieved from https://wwf.panda.org/our_work/oceans/problems/tourism/