



Sustainable Development and Tourism: the Case of Lanzarote Island in the Light of the 2030 Agenda

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ABSTRACT

Sustainability is an issue whose importance has steadily increased in the last decades, becoming more and more a priority than just a set of good practices. This is proved by the charts and treaties ratified since the end of the 80s, starting with the UN's Brundtland Report and its first definition of sustainable development with the 2030 Agenda for sustainable development issued in 2015. A set of 17 goals that all adhering countries should pursue to assure a sustainable future for future generations. In the meanwhile, in 1995, the "Charter for sustainable tourism" was published in Lanzarote, one of the eight Canary Islands, declaring that tourism undoubtedly plays a crucial role in contributing to sustainability since it can promote destinations and offer services that pay attention to the local environment, economy, culture and society, in other words, to "heritage". It did not happen by chance that Lanzarote was chosen as the cradle of sustainable tourism: although its fame spread much later than other archipelago islands, its development was carefully planned, carried out and managed to prevent any damage to local culture and landscape. In this paper, we explore the case study of Lanzarote, to explain in details the threats that this destination managed to face (e.g. overtourism, environmental and cultural loss), along with those factors that have been crucial for the island's sustainable development: a wide range of natural and cultural features (warm climate, sea, volcanic landscape, vernacular architecture, agriculture, gastronomy and history), the involvement of local society in tourism activities, the adoption of legislative measures for the protection of natural and cultural heritage, the improvement of infrastructures and technology and the collaboration between public and private stakeholder. However, thanks to the prominent figure of the local artist César Manrique, all those factors were strategically linked, conceiving the idea of a network of tourist sites: the Centers of Art, Culture and Tourism (also known as CACT). This network contributed to the creation of a well-known brand whose strategy is to offer a set of "alternative tourist products", in addition to the classical model of sun, sea, sand, that is sustainable for both the environment and the local society and does not exclude existing traditional activities like farming, fishing and crafts. We compare all the characteristics introduced in this paper with the 12 sustainable tourism aims established by the World Tourism Organization and the 17 goals of the 2030 Agenda for Sustainable Development to check Lanzarote's sustainability degree objectively.

KEYWORDS

sustainability;
tourism;
agenda2030



Sustainable development and tourism: the case of Lanzarote Island²

1. Introduction

Lanzarote is currently a popular European tourist destination thanks to its unique landscape, peculiar environment and cultural identity. These features frequently attract tourists to small island destinations, the difference is that these sites usually end up being overwhelmed by tourists, leading to negative impacts on the environment and sociocultural characteristics. What distinguishes Lanzarote is its standing as a sustainable tourist destination, having combined sustainable development with tourism. The number of incoming tourists proves its success: in 2019, more than 3 million visited the island (Centro de datos, Cabildo de Lanzarote, 2020a), most of them (2.7 million) being foreign tourists. In the same year, the main tourist attraction and the symbol of the island's sustainable development, the Centres of Art, Culture and Tourism (CACT), received 2.9 million guests (Centro de datos, Cabildo de Lanzarote, 2020b).

In this paper³, we start with an overview of sustainable development and tourism concepts, analysing official documents issued by international institutions like the United Nations and the World Tourism Organisation; we also focus on academic investigation concerning the definitions of sustainability and circular economy. After a brief description of the main natural and cultural characteristics of Lanzarote, we show how it managed tourists to prevent the risk of overtourism, also referring to case studies of similar small island destinations and their tourism development. We then introduce the charismatic figure of César Manrique, the local artist considered the initiator of the sustainable tourism development of the island thanks to his activism for the safeguard of the environment, local society and culture, explaining why education plays a key role in his goal. Manrique's commitment resulted in the creation of the Centres of Art, Culture and Tourism (CACT), that we present as an example of sustainable development strategy, based on some key aspects that have been decisive in the success of Lanzarote as a sustainable destination such as: the protection of its natural and cultural heritage, the inclusion and active participation of local people in tourism development, the improvement of infrastructures and the use of Information and Communication Technology (ICT) for a better tourist experience. The most important sources of information for this section are the CACT's institutional documents (e.g. Charter, strategic plans etc.), data provided by the local government (Cabildo de Lanzarote), statistical institutes and public stakeholders, the reports issued by consulting companies (ENV, Deloitte Consulting) and the information gained during the interview with the Marketing Manager of the company, Carmen Teresa Cabrera Gonzales. We will finally give an insight to future perspectives looking at Lanzarote's tourism strategy with the 2030 Agenda for Sustainable Development and the 12 goals for sustainable tourism to show that Lanzarote complies with most of them.

2. Sustainable development and sustainable tourism: an overview

To understand why Lanzarote is an example of sustainable development and, more precisely, a sustainable tourism destination, we have to summarise the definitions given to these concepts over the years.

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The current definition of sustainable development was issued in 1987 in the United Nations' Report of World Commission on Environment and Development, titled *Our Common Future*, also known as the Brundtland Report. It was defined as «the development that meets the present needs without compromising the ability of future generations to meet their own needs» (United Nations, 1987, p. 37). This implies a relationship among the economic, social and environmental fields. Development cannot occur in a deteriorated environment that lacks the resources indispensable for production, but at the same time, the environment can't be protected if development doesn't pay attention to its impacts on its surroundings.

In 1995, the issue of sustainability was officially also debated concerning the tourism industry; in that year, organisations like the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Tourism Organization (UNWTO), along with all adhering states, gathered in Lanzarote for the first World Conference on Sustainable Tourism (Holden, 1995).

The Charter for Sustainable Tourism defined tourism «as a powerful instrument of development» that «can and should participate actively in the sustainable development strategy» (UNWTO, 1995, p. 4) and established the principles on which sustainable tourism should be based. The capacity to satisfy tourists remains the core objective of all tourist activities, yet it is not the only objective. Tourism businesses must also pay attention to local communities, their cultural heritage and traditions and the preservation of the destination.

Considering that tourist satisfaction depends on the quality of the destination, including protected areas and heritage sites, and visitors inevitably affect this, tourist activities should support conservation to safeguard against degradation (Croes, 2018; Alfaro Navarro *et al.*, 2020; Bandoi *et al.*, 2020).

When talking about heritage, we do not exclusively mean tangible heritage; it includes a set of intangible features that constitute local culture. The importance of intangible heritage was only recently recognised: in 2003, its formal recognition was ensured internationally by a UNESCO treaty, the Convention for the Safeguarding of the Intangible Cultural Heritage. This includes all «practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated in addition to that – that communities, groups and, in some cases, individuals recognise as part of their cultural heritage» (UNESCO, 2003, p. 2). The relevance of intangible heritage and the consequent necessity to protect it lies in the fact that each of the above-mentioned examples makes people feel part of a well-defined social group that shares values and beliefs, satisfying their need to belong and, most of all, assert their identity. This same identity becomes part of the “tourist product” that a given sustainable destination wants its guests to know.

Considering this premise, sustainable tourism is «tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities [...] Sustainable tourism should: make optimal use of environmental resources [...] helping to conserve natural resources and biodiversity [...] [It should] respect the socio-cultural authenticity of host communities [...] providing socio-economic benefits to all stakeholders that are fairly distributed» (UNWTO, 2005, p. 11-12).

Given all these definitions, a new approach by the economic system is needed, one that focuses not only on production but also on the conservation of and equitable access to natural resources, ensuring everybody an adequate livelihood base (Amerta *et al.* 2018; Higgins Desbiolees, 2018; Sharpley, 2020).

From an economic point of view, profitability remains the main purpose of any business; however, value is added by the attention that must be paid to social needs, equity and environmental impact. Social needs and aspirations are crucial because they determine consumption patterns, which are different for each culture. These can only be sustainable if their long-term impact on the environment and the quality of life of the coming generations are considered.

Given this interrelationship, to exert a profound and beneficial impact on society and the Earth, a change in the economic field is required, one that moves from the traditional “linear economy” towards a “circular economy” (Pearce, Turner, 1989).

The circular economy was first defined by Turner and Pierce (*Ibidem*). It was further investigated by Braungart *et al.* (2006). They introduced the “cradle-to-cradle approach” and the concept of “eco-effectiveness”, in which the manufacturing process is a closed-loop system where resources are repeatedly reintroduced into the flow, maintaining or even upgrading their quality. Eco-effectiveness allows the use of products with short life cycles as long as all their materials maintain their status as productive resources and, consequently, they persist in the closed-loop system of the circular economy. Waste reduction, therefore, is not the main goal. It is a side effect resulting from keeping materials within the flow and endlessly reusing them as resources. Sandoval *et al.* (2017), who shared many aspects of the cradle-to-cradle approach, summarised the circular economy in five steps: extraction, transformation, supply, use and recovery. In defining the implementation of this approach, some authors have stressed the importance of reducing the consumption of raw materials by practices such as recycling and reusing and delaying a product’s end of life as far as possible. Companies dealing with such a model imply a change in production and distribution patterns (Ghisellini *et al.*, 2015; Mitchell, 2015; Rizos *et al.*, 2017; Geissdoerfer *et al.* 2017).

As a result, the linear economy is inadequate for the goals proposed by sustainable development. The paradigm of the linear economy often referred to as «make, use, dispose» (Mitchell, 2015, p. 5, *op. cit.*), «take, make and dispose» (Ghisellini *et al.*, 2015, p. 1, *op. cit.*) and «extract, produce, consume and trash» (Sauve *et al.*, 2016, p. 6), uses natural resources as if they were infinite and produces huge amounts of waste that needs to be disposed of in the environment, which has limited carrying capacity. Sauve *et al.* (2016, *op. cit.*) were quite sceptical about the possibility of continued growth without reducing or removing environmental impacts; our development could have already gone beyond the carrying capacity of the Earth. Therefore, they doubt there can be any further growth that is also sustainable: «the only sustainable development that is possible is when the carrying capacity of an environment is at equilibrium or steady-state, i.e., either no growth or only the growth that is the result of improvements in the planet’s carrying capacity or in technological progress» (2016, p. 5, *op. cit.*).

Other researchers, reviewing the concept of sustainable development, have defined it as a concentric system in which the economic, social and environmental dimensions, influence one another (Sandoval *et al.*, 2017, *op. cit.*; Petti *et al.* 2020).

Sustainable development implies a close link between society and the economy, and basic needs are crucial for improving these fields. For example, investing in education and health enhances human well-being and productivity, which results in economic development. This, in turn, allows improvements in society by providing opportunities and investments in education and health for underprivileged and vulnerable groups (United Nations, 1987, *op. cit.*).

In particular, education plays a key role not only in personal development but also in collective development. It contributes to changing attitudes towards the environment (i.e. consumption patterns), it helps close the gap between unequal social groups (e.g. women and men), it increases awareness of how natural resources should be used to reduce the deterioration of our ecosystem and it ensures future generations the same rights and chances to meet their needs and aspirations. Lack of education can be a severe obstacle for people looking for new livelihoods (Burbano, Meredith, 2020b). With no skills or know-how, it’s also impossible to diversify local economies, which risks relying only on a single sector (Lasso, Dahles, 2018). Tourism activity can be a means of diversification, provided it is carefully planned and the industry promotes educational opportunities for all society.

Tourism is undoubtedly an efficient tool for enhancing local economies in the short term, especially for small islands, yet its potential threats are many and must be carefully considered during the planning phase. For example, if this is a top-down process that does not involve the local society, this could negatively affect tourism and lead to local conflicts (Kinseng *et al.*, 2018). If tourism becomes the only source of livelihood rather than being a strategic tool for diversification, the local economy can become «extremely vulnerable to visitor volatility» (Lasso, Dahles, 2018, p. 475, *op. cit.*). Moreover, to attract as many tourists as possible, a given destination can easily reach the stage of overtourism (Briguglio, Avellino, 2019; 2021), resulting in damage to its environment and culture. A

possible solution would be carrying out conservation strategies, but if too extreme, these could make local people resistant to tourism (Burbano, Meredith, 2020a).

Given that environmental stress and uneven development can cause social tensions, economic policies must involve local communities, which implies their active participation in the co-designing of sustainable tourism, which can be defined as “the process of actively engaging and enabling distinct world views, values, culture and knowing of those involved in sustainable development processes to identify and leverage latent opportunities” (Liburd *et al.*, 2020, p. 7).

This is crucial for avoiding conflicts between residents and the tourism industry, especially if it is mostly in the hands of foreign businesses (Kinseng *et al.*, 2018, *op. cit.*; Robinson *et al.*, 2019; Burbano, Meredith, 2020a, *op. cit.*).

We are now going to discover how Lanzarote faced these challenges and became a sustainable tourist destination, including the use of the CACT network, by pointing out the key factors that contributed to its success and the spread of its destination brand abroad.

3. Lanzarote as a sustainable tourist destination: main features

Lanzarote, one of the seven Canary Islands, is also known as the “island of volcanoes”. It consists of mostly desert and rocky surfaces shaped by the eruptions of two volcanoes: Timanfaya, or Montaña de Fuego, and La Corona. Due to these eruptions and the resulting landscape, the living conditions on the island have always been difficult, and many people have moved to other islands or countries. Those who decided to stay have had to live by adapting and finding new ways to make the most of the harsh environment.

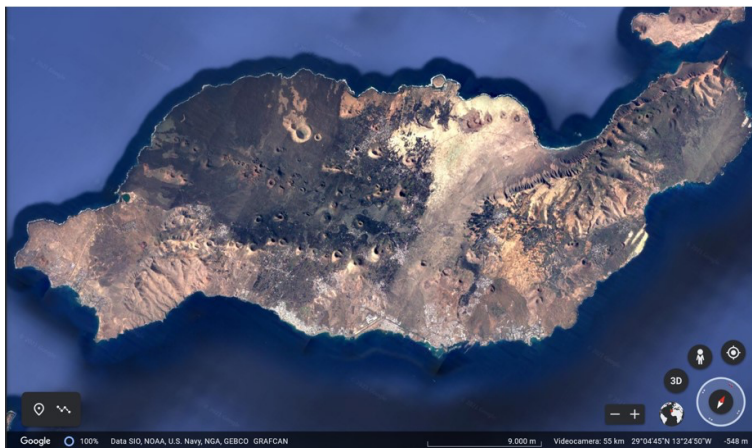


Figure 1: satellite image of Lanzarote; the island is characterized by a mostly rocky and volcanic surface.
(Source: Google Earth)

The goal of any tourist destination is to provide tourists with an unforgettable experience aimed at satisfying their physical and/or psychological needs for leisure, adventure, entertainment, education, health, etc. To do so, destinations develop specific offers according to their strengths and qualities for their chosen market segment. In the case of Lanzarote, the tourism sector plan wasn't driven by the need for visitors; it was mainly driven by the inhabitants' need to find a new source of income for their precarious economy, taking advantage of that same environment that made life on the island so hard (Sabaté *et al.* 2015; Zamora Cabrera, 2018). However, the lack of resources and infrastructure made living conditions difficult, and a lack of qualified architects on the island made it difficult to respond to the demand for modern and appropriate infrastructure (Zamora Cabrera, 2014; Scarpa, 2019).

3.1. Natural and cultural resources as an opportunity to develop sustainable tourism

When the design of a development plan was first hinted at, the island's economy was based on agriculture and fishing, and although the soil seemed infertile, farmers managed to get the most out of it. Among the most interesting outcomes of the inhabitants' ingenuity is the farming technique called *arenado* and the vernacular architecture. The area of La Geria is a fascinating example of this technique. It is well known for its vine plantations and *bodegas*, or wine cellars and shops.

Just as geology obliged adopting a particular farming technique, so too has the climate influenced housing design. The farmhouses are generally all white and cube-shaped, with smooth surfaces. Because the farmers needed to collect rainwater for household use, the walls and roof surface needed to be as sterile as possible. For this reason, the houses are completely covered in lime and do not have roof tiles, so the unpolluted rainwater can easily flow into storage tanks. The lime also reflects the light, «preventing the sun's infrared rays from penetrating the farmhouse. And this, in a hot country, is fundamental» (Manrique, Higuera, 1974).

The local government enacted laws to establish precise aesthetic construction features, ensuring the vernacular architecture survived and guaranteed consistent urban development. Buildings of any kind must be white, while doors and windows can be green or blue depending on the location (e.g. blue for houses on the coast) (Gobierno de Canarias, 1991).

People in Lanzarote have managed to adapt to the island's harsh environment by creating or finding ways to turn the problematic features, the seemingly arid soil and climate, into resources. Farming and fishing allowed them to survive, although they depended heavily on supplies from nearby islands or other countries (Sabaté *et al.* 2015, *op. cit.*). The island needed to change its economy to become more self-reliant and relieve poverty; tourism definitely played a key role, considering that the number of inhabitants living below the poverty line decreased by 55% between 1995 and 2001 (Lemes, 2005).

3.2. “Alternative tourism products”: a strategy for tourist flow distribution and the protection of local community life

Managing dynamic growth is a huge and critical challenge for sustainable tourism: tourism is a constantly growing sector. The increasing number of tourists arriving at a destination exercises pressure on the environment. The tourist flow in Lanzarote grew steadily over the last decade, going from nearly 2 million visitors in 2010 to more than 3 million in 2019 (Centro de Datos, Cabildo de Lanzarote, n.d.).

To avoid this pressure, the growth was well managed and paid particular attention to the most vulnerable sites: marine and coastal locations, historic towns and cultural heritage sites and fragile natural environments.

Although tourism can bring about rapid economic growth, if it's not well managed, it can also cause overtourism, overcrowding, pollution, noise, difficulty moving around the destination (Szromek *et al.*, 2020) and the uncontrolled construction of hotels. This has happened in similar destinations, such as Malta, where local people wish there were fewer tourists and better-quality tourism (Briguglio, Avellino, 2019; 2021, *op. cit.*), and Santorini, where the development of «non-institutionalised forms of tourism accommodation» intensified by overtourism has had severe consequences on the use and management of land, spaces and landscapes (Sarantakou, Terkenli, 2019).

The local Lanzarote council adopted several measures to control, regulate and limit massive construction for tourist purposes: they limited the number of hotel beds, fixed the percentage of the surface that could be occupied by tourist residences and set the pace of the tourist construction industry (Carballo *et al.*, 2019).

Apart from legislative measures, other planning strategies can be applied to avoid consequent threats. Eckert and Pechlaner (2019) proposed a possible solution to manage mass tourism, particularly for the most vulnerable destinations, such as small islands. Called “alternative product development”, it consisted of using the core values and features of a destination to create new products to attract tourists and redistribute them away from the conventional tourism model of sun, sea and sand, where

the economic benefits are mostly shared among big resorts and hotels, leaving aside host communities.

Using Lanzarote as a good example, they illustrated how stakeholders were able to develop a sustainable tourism strategy by taking advantage of the island's specific characteristics, themes and values: its distinctive natural landscapes, geological features, biodiversity, gastronomy, culture and sport and the figure of César Manrique.



Figure 2: El Golfo and its black sand beach. (Source: Authors)

Dóniz-Páez (2014) analysed the importance of geotourism and volcanic tourism in the Canary Islands, highlighting how they represent an additional alternative offer in tourism industry in the whole archipelago. In the case of Lanzarote, the island has been declared part of a UNESCO geopark⁴, that includes not only volcanos (Timanfaya, La Corona etc.) but also attractive landscapes like El Golfo and its black sand beach, or Los Hervideros, a part of coastline made of solidified magma. Considering that Canary Islands are becoming a mature destination, enhancing volcanic tourism is not just an alternative, but rather a necessity (Dóniz-Páez *et al.*, 2010; Dóniz-Páez, 2014, *op. cit.*).

4. Caesar Manrique: the artist who started the sustainable turn in Lanzarote

The development of successful tourism on Lanzarote was mainly due to the local artist César Manrique, who remains a key figure in promoting the Lanzarote brand abroad (Carrasco, 2016; Díaz Hernandez *et al.*, 2016). Manrique linked his great passion for art with his homeland, aiming to boost the local economy and provide additional income in addition to that derived from the primary sector while protecting the island's cultural and environmental uniqueness. Manrique's recovery strategy didn't merely focus on the "sun, sea and sand" model (the 3S model); it also focused on some of the island's peculiar places, with the final goal of creating a unique tourist destination.

A unique and fragile destination like Lanzarote needed and deserved rules to protect its environment. Yet, when establishing these measures, it's crucial to involve the local community and find a balance between conservation and social needs (i.e. allowing local people to carry on their resource-based livelihood activities). Too strict regulations, particularly those that prohibit activities, such as farming or fishing, while protecting areas for tourist purposes can generate negative perceptions of the tourism industry in residents, giving rise to social conflicts, as happened in the Galapagos Islands (Burbano, Meredith, 2020a, *op. cit.*).

⁴ Lanzarote and Chinijo Islands UNESCO Global Geopark.

The local government of Lanzarote found many ways to protect the environment, also thanks to Manrique and the initiatives he promoted. First, in 1974, it established the protected area of the Timanfaya National Park, and many other protected spaces have been added over the years, including Malpaís de La Corona and El Golfo⁵. Furthermore, it issued an Island Plan of Territorial Organization, also known as the Plan Insular de Ordenación del Territorio, that set several laws for both the built and natural environments, regulating which activities are allowed in protected areas. Agriculture is recognised as contributing to the formation of the peculiar landscape and an activity that helps prevent overdependence on tourism, which could be strategic in a recession in this sector⁶. Commitment to the protection of the local ecosystem was recognised in 1993 by UNESCO when the whole island of Lanzarote was declared a Biosphere Reserve (Carballo *et al.*, 2019, *op. cit.*).

Along with government initiatives, César Manrique contributed to safeguarding the island's landscapes through a network of cultural and natural sites, the Centres of Art, Culture and Tourism (CACT): the Cueva de los Verdes (opened in 1963), the Jameos del agua (opened in 1966), the Casa-Museo del Campesino (opened in 1968), the Montaña de Fuego (opened in 1970) within the Timanfaya National Park and the Jardín de Cactus (opened in 1990). These deteriorated areas were restored by Manrique, while Mirador del Río (opened in 1973) was entirely conceived and designed by the artist.

Today, this network is managed by a local public company, Entidad Pública Empresarial Local (EPEL) CACT, which, apart from taking care of each site, is involved with and boosts many other projects dealing with innovation, sustainability and promotion.

4.1. Education and life-long learning as tools for cultural change

César Manrique was deeply committed to the pedagogic activity, both at the beginning of and after the economic transformation of the island: «For him, a nation without neither culture nor tradition was destined to disappear. Education [...] should foster the knowledge of heritage as a mean to inculcate respect for the environment through aesthetic sensibility» (Jiménez, 2012, p. 159). Tourism development can coexist with environmental and cultural safeguards, but it requires a change in the mind-set of the population that is accustomed to living off agriculture and fishing, isolated from the rest of the world: «The didactic activity that he (Manrique) developed throughout the years has been almost as important as his artworks, explaining and convincing a population who culturally and spiritually used to live trapped by ignorance in a closed and obsolete system» (Hormiga *et al.*, 1995, p. 49, *op. cit.*).

In addition to promoting his project among the inhabitants, Manrique began launching educational initiatives, such as cultural hubs and museums. The first to be opened was the Casa-Museo del Campesino in 1968 and was followed by El Almacén in 1974, «a place whose aim was to become a cutting-edge artistic and cultural hub»⁷, which offers a cinema, an art gallery, an assembly hall, a restaurant and bar where citizens can meet and discuss cultural and artistic topics while eating traditional dishes and drinking local wines.

Further examples are the Museum of Contemporary Art, opened in the Castle of San José, or César Manrique's house in Tahiche, which was converted into the foundation that carries his name.

Education continues to be a key element for EPEL CACT by training future professionals who will bring their ideas and contribute to local development in innovation and sustainability. EPEL CACT pursues this aim through many activities, including school visits and cultural events hosted in many centres, including Jameos del Agua, Cueva de los Verdes and the International Museum of Contemporary Art.

⁵ turismolanzarote.com/en/discover-lanzarote/sustainability/protected-spaces/

⁶ Art. 4.2.2.4., A.1.

⁷ www.cactlanzarote.com/en/bar-el-almacen-lanzarote/

Boosting education can have a positive effect by increasing employment and promoting opportunities for local people. In this regard, EPEL CACT helps the local society by providing internships for students at the centres (Deloitte Consulting, 2018). It also offers courses to increase people's professional skills, such as the 2017 Customer Experience Management; of the 40 course participants, four were hired by the tourist network. Overall, more than 7,403 people have been employed as a direct or indirect consequence of EPEL CACT's activity and paid taxes to the local administration. These funds have been employed or reinvested for the social and economic development of Lanzarote.

5. The Lanzarote Centres of Art, Culture and Tourism (CACT): a brand strategy for sustainable tourism

From Manrique's idea of a network of tourist sites emerged the consequent creation of a strong brand and a strategy focusing on product diversification, in which culture is both a tourist attraction and an element of community integration. The Centres of Art, Culture and Tourism (CACT) have been the starting point for creating the Lanzarote brand, which has since attracted tourists to the island. The brand needed to convey both geographic and anthropologic components: climate, sea, volcanic landscape, vernacular architecture, agriculture, and history.

The CACT, being a network of sites located throughout the island, respond perfectly to the challenge of managing dynamic growth by preventing tourists from gathering exclusively on the coast. Each centre carries a particular meaning from a cultural or environmental viewpoint.

The current management company, the EPEL CACT, continues to pursue the goal of managing the increasing number of tourists with new initiatives. In its latest strategic plan, it proposed the opening of new centres: the Castillo de las Coloradas in Playa Blanca, also known as Castillo del Águila, and the Islote de la Fermina in the capital city of Arrecife. Furthermore, the company plans to restore the Famara salt pond, or Salinas del Río, the oldest in the archipelago (EPEL-CACT, 2019). These new centres aim to increase the profitability of the whole network, improve tourist offering with new products (could you provide an example?), and better manage and distribute tourists. This will prevent crowding during visiting hours and, as a result, improve the tourist experience.

These centres play a key role in preventing cultural loss, a potential threat to any tourist destination. Indeed, loss of cultural traits is a loss from anthropological and social viewpoints, as this would be a step towards a kind of "world homogenisation" and a loss from an economic perspective. The tourist product would be seriously affected because culture conveys the uniqueness of each destination, and if it disappears, the number of tourists and income will decrease.

Cultural loss also occurs when social relationships and traditional customs crumble and materialism and competition among inhabitants prevail over mutual help and sociability, as perceived by the people living on the small island of Pari, Indonesia, despite the benefits they gained in terms of income and better services (Kinseng *et al.*, 2018, *op. cit.*).

Among all the CACT, the Casa-Museo del Campesino centre, maybe more than the others, bears witness to the island's cultural identity. César Manrique conceived this site to pass on old craft, vernacular architecture, and agricultural traditions. Within the *vivienda*, designed according to aesthetic rules prescribed by local laws and climatic conditions, tourists can visit workshops dealing with gastronomy, pottery, cochineal dyeing, etc., and the centre hosts a local sustainable market, where local farmers sell their products. Moreover, traditional farming techniques are demonstrated through tools, camel and donkey saddles, vine plantations and *socos*, a wine press and a *tahona*⁸ used to produce flour and *gofio*⁹.

⁸ An old mill that was powered by donkeys, horses and camels.

⁹ A sort of flour made in the Canary Islands from roasted grains.



Figure 3: a flour mill (tahona) in the Casa Museo del Campesino. (Source: Authors)

Figure 4 here



Figure 4: an example of “socos”, a typical farming technique in Lanzarote. (Source: Authors)

The Castle of San José (opened in 1976) is another symbol of the historic architecture of Lanzarote. Built between 1776 and 1779, it had no defensive purpose other than being used as a depository despite its form. When César Manrique was developing his project, the castle had been abandoned for over a century. He wanted to restore and give it new functions, and it was finally converted into the current International Museum of Contemporary Art.

5.1. Including local people in the tourism activities: an example of successful governances

The tourism industry is undeniably an efficient means for rapidly increasing the GDP of a country and local people’s incomes, particularly for small island destinations (Kinseng, 2018, *op. cit.*), but it can also represent an essential asset if it supports and boosts existing (traditional) activities, such as farming, fishing and crafts, and includes them in its value chain.

In doing so, local economies can follow a diversification strategy that allows residents not exclusively to rely on one sector (i.e. avoiding specialisation). Furthermore, if farmers, fishers and craftsmen supply local tourism businesses with their products, the profitability of those sectors will increase, preventing them from abandoning these activities because of «changes in viability» (Burbano,

Meredith, 2020b, *op. cit.*). A governance approach has made it possible to involve communities and maintain a good balance between tourism and non-tourism economies.

However, many case studies of small island destinations have shown how the tourist industry has replaced and deleted other types of businesses, whether by wrong local government strategies (Burbano, Meredith, 2020a, *op. cit.*) or residents choosing to abandon their usual activities, attracted by the prospect of short-term greater profits generated by tourism (Lasso, Dahles, 2018, *op. cit.*) without considering the risks derived from seasonality and tourist volatility.

In the specific case of Lanzarote, diversification seems to have been a successful strategy; although an overdependence on tourism is undeniable, its contribution to local agriculture and other traditional activities has been ascertained. In this case, the choice of a governance approach made it possible to involve communities and maintain a good balance between tourism and non-tourism economies.

Safeguarding the island's ecosystem also implies the protection of endangered species. The EPEL CACT takes care of them within its centres, as in the case of the *cangrejo ciego* or blind crab that lives in the Jameos del agua and considered by scientists to be a unique species, and by supporting projects such as the one concerning *Cymodocea nodosa*, a marine plant. This project aims to restore a vulnerable ecosystem by transplanting samples to the submarine Atlantic Museum in the south of Lanzarote to compensate for the impacts caused by harbour enlargement works in Playa Blanca. This intervention is designed to prevent the degradation of the marine ecosystem and the extinction of this species and to enhance diving in this area.

Paying attention to a site also means taking care of the society that lives therein, particularly the poorest part. Tourist activities can provide additional business opportunities and sources of income, particularly in rural areas and employment.

From the very beginning, César Manrique wanted his fellow citizens to be beneficiaries and active participants in the development plan. The current management company adopts the same ideology and, through several projects, continues to attract people's contributions to the sustainable development and promotion of the island abroad.

Sustainable tourism requires the equitable distribution of the benefits of tourism, for example, by investing directly or indirectly in its well-being. When local people run tourism businesses or satellite activities, all the money spent by tourists increases their family income (Kinseng *et al.*, 2018, *op. cit.*).

The Marketing Manager of the EPEL CACT, Carmen Teresa Cabrera Gonzales, explained during the interview that the company's contribution consists of, first, paying an annual lease to the Cabildo of Lanzarote, who reinvest it in the island's socio-economic development. Second, it takes part in local projects with companies that aim to boost sustainable tourism growth to improve Lanzarote's brand abroad and make the island an example of innovation worldwide.

An interesting example of this is the Society for the Foreign Promotion of Lanzarote, the Sociedad de Promoción Exterior de Lanzarote (SPEL). This company includes private and public stakeholders who work and jointly decide on common strategies to ensure Lanzarote keeps growing as a sustainable destination. According to the Marketing Manager, this collaboration between public and private tourism companies has two positive consequences for the destination. On the one hand, working together implies adopting commonly shared policies and conveying a consistent and cohesive image of Lanzarote abroad. On the other hand, it prevents political bodies from making decisions concerning many partners operating in the tourism industry. EPEL CACT is one of these and therefore contributes to making Lanzarote a distinguished tourist product by addressing specific and interested market segments, such as tourists travelling for sports events, gastronomy, exhibition and conferences

Almost all the CACT, except Cueva de los Verdes, have a restaurant and souvenir shop that sell local products made by Lanzarote farmers and craftsmen. Selling local products is a possible solution for fostering sustainable consumption and production behaviours that boost local agriculture, reducing CO₂ emissions derived from importing foreign products and ensuring the survival of cultural traditions.

A recent audit report by ENV¹⁰ that analysed the efficiency and climate impacts of the CACT network¹¹ praised the Casa-Museo del Campesino for its local market. The company observed its activity and appreciated an increase in the number of inhabitants buying local products to support local farmers, for the high quality of the products and to reduce their carbon footprint.

The same report suggested that the centres could make further improvements to be even more sustainable, particularly by enhancing the local economy and agriculture. For example, they could add “Zero Kilometre” labels to all food products and dishes made in Lanzarote or the other islands of the archipelago and considering that many souvenirs sold in the centres were not produced on the island, they should be replaced by locally manufactured items.

The local economy, especially agriculture, is also favoured by Saborea Lanzarote, an annual international gastronomic event held in Teguise, usually in November, where people can visit many stands, each dealing with a different area: seafood, wine, Spanish cuisine, local products, gastronomic competitions, etc. This is an extraordinary showcase for local and sustainable agriculture and the Lanzarote brand as a whole, and the EPEL CACT supports its organisation.

5.2. Improving infrastructures and the use of Information and Communication Technology (ICT) for tourism

The development of the tourism industry in a new destination brings many advantages, such as stimulating economic growth and providing public services (Kinseng, 2018, *op. cit.*) that were probably inefficient. When the Lanzarote development plan was taking shape, the island lacked the basic infrastructure to connect it with other countries and even places within the island. The local government went on to play a fundamental role in providing the territory with efficient infrastructures, first an airport and then a road network that strategically linked towns and the CACT (EPEL-CACT, 2019, *op. cit.*).

A recent infrastructure improvement is represented by significant advances towards sustainable mobility made by the EPEL CACT: 12% of its vehicles are electric, hybrid or fuelled by natural gas. An exciting project in which the company and particularly the Montaña de Fuego centre are involved in is Cities Timanfaya, which aims to replace the diesel buses that drive tourists along the Ruta de los Volcanos with electric and self-driving buses (Spanish Road Association, 2019; Lanzarote Technology and Tourism Innovation Centre, 2019). The realisation of this project would mean not only reducing CO₂ emissions but also further safeguarding the protected area of the Timanfaya National Park. Indeed, the adoption of electric vehicles in the tourism sector has been undertaken and studied by many destinations (Kaiying *et al.*, 2019) as a mean to reduce pollution derived from carbon emissions and, consequently, combat climate change.

Innovation can also occur when tourism takes advantage of technology and contributes to the digital transformation of the industry to improve tourists’ experiences and the quality of tourism services. Furthermore, the role of Information and Communication Technology (ICT) is crucial even before the arrival of tourists. People can find out about new destinations, look for information about them, book services (i.e. transport, accommodation, tours, etc.) (Ercole, 2019) and share their opinions and evaluations of a place and their experiences. Tourism businesses can promote their activities, rapidly reach a wider public, and enhance their reputation thanks to tourist reviews, electronic word-of-mouth, or eWOM (Corradi, 2019).

Digital transformation is constantly increasing, and several places, including small islands, have turned into good models of smart tourism destinations. They have created apps and platforms to gather big data about tourists’ preferences and provide tourists with useful information about places of interest, events, weather, etc. (Roopchund, 2020). However, smart tourism destinations are not

¹⁰ An environmental consulting company.

¹¹ ENV, 2019.

only those that simply exploit data and use ICT to solve problems; being a smart destination also has to do with the above-mentioned issues of participation and governance, which, as Ercole (2019, *op. cit.*) highlighted in his research, is in terms of involvement with people and the innovation and transformation processes of cities thanks to their creativity.

EPEL CACT is following this same path. It has invested strongly in digital innovation and contributed to the Lanzarote Smart Island project launch. It pursues three main objectives: increasing the sustainability of the island's tourism sector, boosting its innovation and digital transformation and involving local people and businesses in this process.

This transformation is supported by Lanzarote's Technology and Tourism Innovation Centre (CITTLAN), the Technological and Tourism Innovation Centre, which fosters open innovation initiatives aimed at improving tourists' experiences on the island. This innovation hub works as a meeting point for citizens, companies and start-ups and offers them educational¹² workshops and networking opportunities. It also mounts challenges to find new solutions or create new ideas to modernise the tourism industry and increase its sustainability. Some successful CITTLAN and Lanzarote Smart Island initiatives are the CACT Lanzarote app, which guides visitors through each centre and collects their opinions and interests, and Taro, a conversational chatbot assistant, helps tourists before, during and after their stay on the island.

6. Lanzarote's experience and sustainability goals

To check Lanzarote's sustainability improvement and commitment, we compare the characteristics of Lanzarote and the CACT introduced so far with two different United Nations' sources: the "12 Aims for Sustainable Tourism" and the "2030 Agenda for Sustainable Development". The first source refers specifically to sustainability of the tourism industry and businesses, while the second one establishes the 17 goals that must be met to pursue sustainable development in wider terms.

As each source was issued by different bodies and with different objectives, we are going to introduce them separately.

6.1. Lanzarote and its compliance with the World Tourism Organization's (UNWTO) Aims for Sustainable Tourism.

In 2005, the United Nations Environment Programme (UNEP) and the World Tourism Organization (UNWTO) highlighted the main challenges to the sustainable tourism industry: managing dynamic growth, contributing to the conservation of the destination and paying attention to local society.

Therefore, they issued a list of tasks concerning sustainable tourism, identifying 12 aims for evaluating the sustainability of a tourist destination or business (UNWTO, 2013; UNESCO, 2015; Rasoolimanesh *et al.*, 2020).

The first refers to economic viability. Considering the success of Lanzarote as a sustainable tourist destination, we can claim that this goal has been met: the island looks for high-quality tourism and those market segments that are concerned with sustainability issues and are particularly careful towards local communities. Economic viability requires the destination to be preserved, as far as its image and environmental qualities are concerned. Considering EPEL CACT's mission to offer a network of tourist sites and protect them from degradation and other negative impacts, together with the several projects designed to keep intact the natural and built environment of Lanzarote (e.g. the restoration of Salinas del Río and the opening of new centres), this first goal is undoubtedly satisfied, and Lanzarote's image and brand are promoted abroad thanks to the SPEL company.

¹² Courses about sustainability, tourism, etc.

Many goals refer to local communities, the protection of cultural identities and the socio-economic impacts of tourism. For example, local prosperity (the 2nd goal), has been partly met. EPEL CACT contributes to this aim by paying taxes and fees to local government, hiring and training local employees and involving local businesses in its network (e.g. local farmers). However, there is an overdependence on tourism, confirmed by the Covid-19 pandemic: the tourist sector and its satellite activities have been heavily damaged and the economy of almost the whole island has been paralysed. According to the data published by the employment observatory of the Canary Islands (OBECAN), the number of inhabitants in Lanzarote being on unemployment benefit increased by 55% between May, 2019 and May, 2020 (OBECAN, Gobierno de Canarias, 2020); during the same period, unemployed people in the hospitality sector went from 3.116 to 5.210. This rate continued to grow, reaching the peak of 6.262 in February, 2021 and 5.979 in May, 2021 (Centro de Datos, Cabildo de Lanzarote, 2019, 2020, 2021).

Employment quality (3rd goal), social equity (4th goal), visitor fulfilment (5th goal) and community well-being (7th goal) are also significant. If a company can assure permanent jobs, career opportunities for everyone and a safe workplace, there is a good chance that its employees will be motivated and carry out their jobs more efficiently, thereby offering better services. As a result, tourist satisfaction and loyalty will increase, and tourists will probably leave positive reviews to boost and promote the brand for free.

Contributing to social equity can also have positive effects since every measure adopted for this goal can prevent residents' negative opinions of or behaviours towards tourists; a welcoming society is important for a positive tourist experience in any destination. As far as education is concerned, it plays a fundamental role in both personal and collective development. For the former, all kinds of educational opportunities help fulfil people's needs and aspirations and raise awareness of environmental and climate problems. For the latter, educated and trained people become future professionals who help solve local problems and actively participate in the sustainable development of their homelands.

New initiatives, such as the CACT app and the Taro chatbot, have been designed to increase visitor fulfilment. They aim to provide tourists with all the information they need to enjoy their vacation, dive into local culture and discover new customs, gastronomies and curiosities. EPEL CACT fosters employment, education and lifelong learning through several initiatives, such as apprenticeships, training courses, cultural events and school visits. Residents' well-being has certainly been improved by the rise of the CACT network by driving major infrastructure developments.

The 8th and 9th goals of cultural richness and physical integrity are closely related to preserving local traditions and identity. Again, we can confirm that cultural richness and, therefore the conservation of historical and cultural heritage are the bedrocks on which the whole network of centres has been built and continues to grow. Each of them symbolises one or more cultural features (e.g. traditional architecture, agriculture and crafts) and contributes to their safeguarding and conservation by involving local people in the realisation of connected activities; for example, farmers who sell their products in the local market of the Casa-Museo del Campesino and craftsmen in their workshops. The current management company is actively working to enlarge the existing network by adding new centres and protecting historic sites, such as Salinas del Río.

Physical integrity was always Manrique's main objective when conceiving the CACT; they aim to avoid visual impacts on and the degradation of the surrounding environment by adapting rather than changing. Physical integrity has also been made possible by legislative means: the law regulating the aesthetic features and requirements for new buildings is intended to safeguard Lanzarote's built landscape and its aesthetic qualities. If new types of houses and characteristics were allowed, they would destroy the island's uniqueness, making it like many other destinations and therefore losing its appeal. Finally, a national park and other protected areas are a reliable means for safeguarding the environment by assuring its integrity.

EPEL CACT fosters the involvement of the local community in the decision-making and innovation processes through Lanzarote Smart Island, its open innovation hub (i.e. CITTLAN) and the SPEL company. As a consequence, the 6th goal of local control has been reached.

For the last three goals of biological diversity, resource efficiency and environmental purity, EPEL CACT continues to work hard to achieve them fully. The first is probably the most developed since the centres have been designed and built to protect both the landscape and the environment and endangered species, such as *cangrejo ciego* (the blind crab) in the Jameos del Agua and the marine *Cymodocea nodosa* (Dracaena consultoria ambiental *et al.*, 2019). For the other two goals, the company is implementing important measures to reduce the use of raw materials and the volume of waste and emissions, including the replacement of old lights with energy-saving LED bulbs, the installation of polyvinyl butyral glass for windows and doors for insulation and better management of organic and non-organic wastes (ENV, 2019). However, the most meaningful example is the Cities Timanfaya project, which aims to introduce electric and autonomous buses to the Montaña de Fuego centre (Spanish Road Association, 2019, *op. cit.*; Lanzarote Technology and Tourism Innovation Centre, 2019, *op. cit.*).

6.2. Lanzarote and its compliance with the Sustainable Development Goals of the 2030 Agenda

In 2015, the General Assembly of the United Nations approved a list of 17 goals that every country should pursue when aiming for sustainable growth; this list constitutes “The 2030 Agenda for Sustainable Development”.

We can summarise this ~~investigation~~ paper by retracing the main stages of Lanzarote’s tourist development regarding the goals of this Agenda. ~~for Sustainable Development goals.~~

The tourism industry was introduced to Lanzarote as an alternative source of livelihood to relieve the poverty of locals, who relied on agriculture and fishing (1st goal: End poverty in all its forms everywhere).

César Manrique, who triggered the shift towards tourism, designed a development plan in the 1950s that consisted of a network of tourist sites: the CACT. To carry out this project, the island needed infrastructure. The local government solved this problem and realised an airport and a road network (9th goal: Build resilient infrastructure, promote sustainable industrialisation and foster innovation). Currently, this innovation process continues thanks to EPEL CACT, which manages the centres and contributes to further infrastructure improvement (e.g. using sustainable mobility and supporting projects like Cities Timanfaya) and boosts digital transformation (e.g. Lanzarote Smart Island and CITTLAN).

For the development plan to be successful, local people had to be educated to facilitate the cultural change required. Manrique started his pedagogic commitment by promoting his plan and opening cultural hubs, museums, etc. The EPEL CACT continues to enhance educational and life-long learning through initiatives intended to increase people’s awareness of the importance of their environmental and cultural heritage and organising and hosting school visits and cultural events within the centres (4th goal: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all).

The involvement of the local community has been essential for the success of the development of tourism in Lanzarote. Including local farmers, fishers and craftsmen in the value chain has endorsed not only sustainable agriculture (2nd goal: Zero hunger) but also responsible production and consumption (12th goal: Ensure sustainable consumption and production patterns), with local suppliers selling products with reduced or zero environmental impact and residents and tourists buying those products in sustainable local markets (e.g. Casa-Museo del Campesino).

The creation of the CACT network has increased the number of local employees who work directly for the centres or satellite activities (8th goal: Promote inclusive and sustainable economic growth, employment and decent work for all).

Along with economic profit and social well-being, environmental protection was among the main objectives of the sustainable development plan conceived by Manrique. Thanks to the several protected areas and the related limitation of human activities, many terrestrial ecosystems have been restored and safeguarded, avoiding biodiversity loss (15th goal: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss). It follows that all species

living within these ecosystems, especially endangered species, are protected against degradation or extinction. EPEL CACT takes care of terrestrial and marine ecosystems by contributing to the restoration of the threatened sea plant *Cymodocea nodosa* (14th goal: Conserve and sustainably use the oceans, seas and marine resources).

Clean and renewable energy, a measure against climate change, is used by some of the centres. The Montaña del Fuego restaurant has a natural oven powered by the volcano's heat. In contrast, the air-conditioning system in the Castle of San José restaurant is powered by the cool temperature of seawater (7th goal: Ensure access to affordable, reliable, sustainable and modern energy). Additionally, the ENV audit report listed many other measures, including using energy-saving LED lighting and replacing old electrical appliances with new and more efficient ones (13th goal: Take urgent action to combat climate change and its impacts).

Let's consider that César Manrique began his engagement with the development of Lanzarote tourism in the mid-fifties and his ideas about the preservation of the environment and cultural identity. We can claim that he was a pioneer of sustainability and sustainable tourism.

Many improvements are still required and explained in the ENV audit report. It suggested the installation of new air-conditioning systems and of PolyVinylButyral (PVB) glasses on windows and doors, which are recommended for some of their properties like safety and thermal insulation; besides, all centers hosting evening events should install lighting with motion sensors in areas like guests' toilettes, staff's changing rooms and toilettes; restaurants and cafés within the centres should add the "zero kilometre" label on all food products made in Lanzarote; moreover, considering that many souvenirs sold in the Centers are not made in the island, they should be replaced with local manufactured items, so that to promote craftsmen's job, preserve cultural traditions of Lanzarote and reducing carbon footprint deriving from the delivery of foreign souvenirs (ENV, 2019, *op. cit.*). We've seen that Lanzarote and its CACT network comply with many goals of the 2030 Agenda for Sustainable Development. This shows that the tourism industry and all its stakeholders have chosen a long-sighted plan that, apart from economic profit, includes environmental protection and social well-being as its core values, which have made the Lanzarote brand a well-known sustainable tourist destination.

7. Conclusion

In this paper, we described the key aspects that have been decisive for the successful development of Lanzarote as a sustainable destination: the ability to manage tourist flow, the protection of its natural and cultural heritage through legislative measures and the creation of the CACT network, the inclusion and active participation of local people in the development of tourism, the offer of educational and life-long learning opportunities and innovation enhancement.

We also introduced César Manrique, the charismatic figure who was able to link all those aspects to finally conceive the idea of the CACT and lead Lanzarote toward sustainable tourism development, yet without leaving aside existing traditional activities (farming, fishing and crafts).

The current management company, EPEL CACT, has been proven to be following Manrique's ideas and principles, even though they have had to be adapted to different and more challenging circumstances, like new technologies, climate change and its consequences, and mass tourism and its potential impacts on the destination. The crisis triggered by the Covid-19 pandemic undoubtedly requires unprecedented measures to be overcome: ensuring visitors a safe and healthy destination will be fundamental for tourism industry to recover; at the same time, reducing the overdependence on tourism could avoid or lessen drastic drops in employment rates in this sector (Centro de Datos, Cabildo de Lanzarote, 2019, 2020, 2021, *op. cit.*).

In conclusion, we have also tried to check if EPEL CACT can be linked to all 12 sustainable tourism goals established by the World Tourism Organization and many of the 17 goals of the 2030 Agenda for Sustainable Development.

This investigation represents a frame of reference for destinations that, like Lanzarote, want to introduce the tourism industry as an alternative source of income, raise their awareness of potential

threats and provide them with strategic advice to seize all the opportunities that this sector offers to carry out long-term and sustainable tourism development that protects and promote the natural, social and cultural features of the destination.

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