INTRODUCTION

WHAT'S A GEOPARK?

A UNESCO global geopark, is an area with an internationally relevant geological heritage used for its own development. That area must be clearly defined and they must have the necessary population to generate their very own socio-economic development. It's not a legal protection figure, and it doesn't pretend to be. However, geoparks encourage the protection of geological heritage, whether that is outside or within the protected areas.

The landscapes and geological formations are witnesses of the evolution of our planet, and they determine our future sustainable development. A geopark is based on its geological peculiarities, but also on the relationship between the geological heritage and the natural, cultural, historical, archeological and ethnological values of the land.

The European Geoparks Network (EGN) was created in 2000, starting up with four European areas: Haute Provenza (France), Maestrazgo (Spain), Lesvos (Greece) and Vulkaneifel (Germany). Some of the objectives of the Network was to protect geo-diversity, promote the geological heritage for the general public and maintain a sustainable development in those areas, mainly through geo-tourism. Although geology is always key when it comes to promoting the Geoparks, the members of the Network take on a full-on approach to promote the natural and cultural heritage, with the essential participation of the local community.

On 17th November 2015, the UNESCO General Assembly passed the International Geo-science and Geopark programme. Within this programme, geoparks are recognised as UNESCO Global Geoparks. The European Geopark Network is a regional network of the Global Geoparks (GGN) like the Asia Pacific, Latin America and Caribbean Networks.

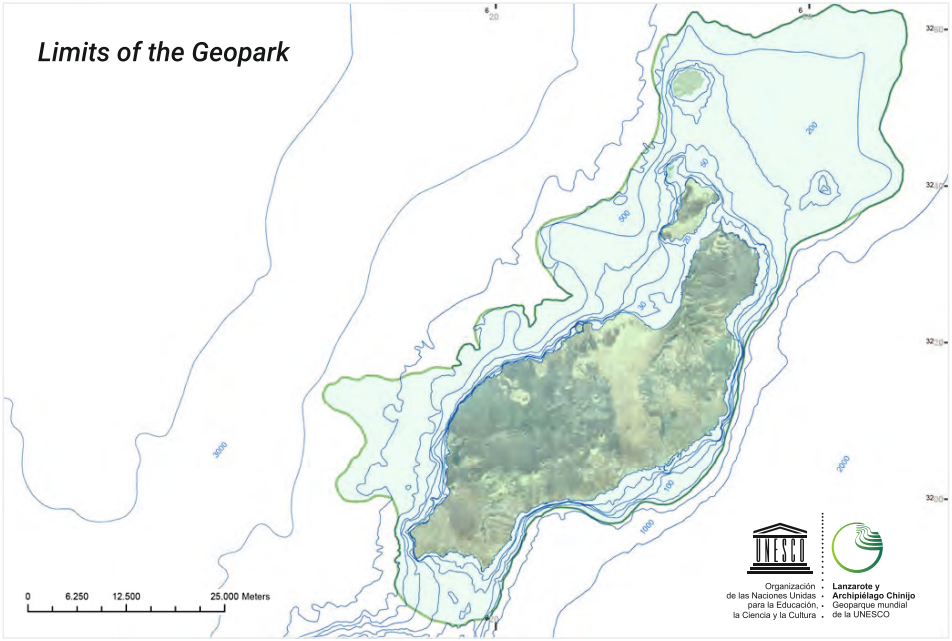
As we have already mentioned, a UNESCO Global Geopark must have international geological relevance and in order to do so, it must be assessed. UNESCO Global Geoparks are living and active landscapes where science and the local communities act in a mutually beneficial way. UNESCO Global Geoparks contribute to the promotion of geology and science at large, going further than the actions included in UNESCO, covering education, culture and communication.

UNESCO Global Geoparks tell the story of 4,600 million years on planet Earth, and the ecological events that led to it, as well as the evolution of humanity itself. They don't only show evidence of climate change in the past, but also inform the local communities of current challenges, helping people to prepare for risks such as earthquakes, tsunamis and volcanic eruptions. The UNESCO Global Geopark Programme, aims to raise awareness in relation to geo-diversity and encourage protection, education and tourism. Alongside Global Heritage Sites and Reserves of the Biosphere, the UNESCO Global Geoparks, have a full range of sustainable development tools and contribute to reaching the 2030

Sustainable Development Objectives by combining global and local perspectives.

Lanzarote and Chinijo Islands became part of the European Geopark Network in April 2015, and on 19th September that same year, they became a Global Geopark; later, on 17th November 2015, next to the rest of geoparks, they became UNESCO Global Geoparks.

Lanzarote and the Chinijo Islands are volcanic islands indeed, but they are also much more than that. They tell the story of the people who inhabit them, inspiring their lifestyle, cultural heritage and their activities, including their economy. We could say that even their points of view. The sustainable interaction between men and land is palpable in Lanzarote and Chinijo Islands, the tourist centres are geo-tourism points of reference, the geo-tourism activities allow people to have high-quality experiences on land and sea. All of it has helped them become a Global Geopark.



The Geopark area formed by Lanzarote and Chinijo Islands make up more than 2,500 km2 including not only dry land, but also a considerable amount of underwater areas, therefore contributing to the geodiversity of the Geopark, as an essential requirement. This extension of shapes, processes and materials that comprise the islands below sea level, is plain to see in complex volcanic formations like the formation of the islands, whose base is part of the bottom of the ocean.

The logo used to represent the Lanzarote and Chinijo Islands Geopark comes from the slogan "sand, sea, fire and life", inspired by the engraving Hartung did in 1857, in which he drew La Graciosa (located on the left), separated from Famara by the Río stretch of sea and over Famara, Volcán de la Corona.

Details of the geological outline of the northern tip of Lanzarote, 19th Century. Hartung (1857): Die geologischen Verhältnisse der Inseln Lanzarote und Fuerteventura

GEOLOGICAL HERITAGE

FORMATION OF THE ISLAND AND THE CHINIJO ISLANDS

In front of us we have an open-air museum; A beautiful open-air museum and visiting it becomes a wonderful journey through planet earth. To begin this journey we must understand how it was constructed.

The Canarian Archipelago is located in the Atlantic Ocean, northwest of Africa, between latitudes 27º 37 'and 29º 25' North and longitudes 13º 20 'and 18º 10' West of Greenwich; at a distance of about 100 km off the coasts of Morocco.

The first volcanic material that rose above the sea to give rise to Lanzarote appeared about 15 M years ago; and its main feature is the emission of large quantities of basaltic materials forming large volcanic structures in the south and north that are Ajaches and Famara, respectively.

Later, about 2 million years ago, very extensive lava fields were created and would cover part of the previous material.

But nevertheless, one of the jewels of our Geopark that makes it stand out among volcanic territories are the historical eruptions and in particular the one that took place between 1730 and 1736, due to its duration and extension. Finally the last eruption on the island occurred in 1824 which created three new cones, Tao, Nuevo del Fuego and Tinguatón that expelled few materials.

As for the islets of the Chinijo Islands, they were formed from hydromagmatic type eruptions, about 2.5M or 2M years ago.

In short, Lanzarote is one of the oldest islands in the Canary Archipelago, but curiously it should be added that it is also the one that has had the most historical volcanic activity.

WHAT'S A GEOSITE?

A Geosite is a “place or area where there is one or more geo-diversity features, well defined geographically and that has significant value from a scientific, educational, tourist, or other, point of view" (Brilha, 2005).

In order to preserve these highly valuable geological sites, an inventory must be conducted, and to do so, different factors must be taken into account. Those factors can be included in the following fields:

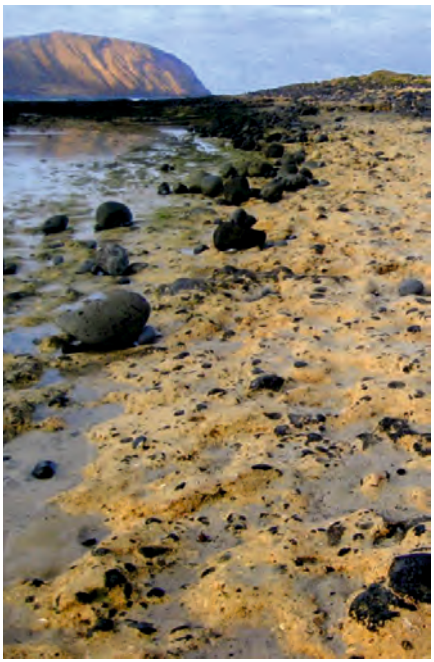
- Stratigraphical
- Morphological
- Petrological
- Tectonic
- Geomorphological
- Paleontological
- Sedimentological
- Volcanic

Therefore, the inventory must show the most geologically representative places in Lanzarote and the Chinijo Islands, in turn representing their geodiversity. There are 49 land SGIs and 19 underwater geosites included in the Geopark.

Once those sites have been selected, descriptive files are filled out gathering not only the geological features, but also their place in the urban planning of the municipality, the land ownership system, the demographic system and logistic infrastructure of the environment, as well as other elements of interest whether they are natural or related to the historic-cultural heritage and ethnological or traditional.

Once selected, their value is analysed, and the extent to which their protection is a priority, and even the likelihood of deterioration is researched.

LAND GEOSITES

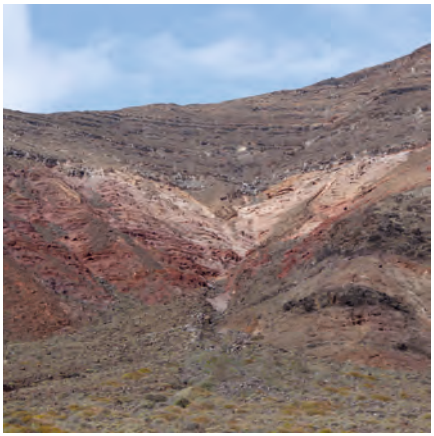


Costa de Los Resbalajes (La Graciosa)

In barely just 2 km of coast, we can see three outstanding sectors; in the first stretch, old lifted beaches with the whole range of typical shapes caused by sea erosion on fossil sandstones. On the second stretch, there are outcrops of rocky materials carved on basalt lava flows. In the last stretch, the beach is formed by organogen sand deposits. This beach is called Las Conchas.

Barranco de los Conejos (La Graciosa)

A barely developed ravine longwise, well set. This is an example of the volcanic construction and destruction, torrential and wind related. This is a spectacularly beautiful and very active place from a geo-dynamic perspective.



Cono enterrado de Órzola (Lanzarote)

This is one of the oldest hydromagmatic cones on the island. It's located under dark subsequent basalts with ochre shades on this buried cone that make it stand out more. At the bottom of the cliff, there is a platform of sediments and ancient lava.

Salinas del Río (Lanzarote)

The oldest salinas in the Canary Islands, located on a flat coastal surface of the coastal line of the bottom of the Famara cliff. There is a lake on the inside, whose bottom is below sea level, allowing for natural water into the cave when the weather is rough. The plain is formed by materials from the erosion of the cliff. This is an area of natural salinas that were later adapted in order to be exploited.

Valles colgados de Famara (Lanzarote)

Example of the interference between volcanic and erosive processes. These valleys have no head due to the gliding of Famara and in their middle stretches they are closed because of lava flows of recent eruptions that led to the loss of its mouths. They then became enclosed vegas. Therefore, once the rainfall comes in, it has no way out toward the sea.

Valle de Temisa (Lanzarote)

"U"-shaped valley, caused by the combination of humid and semi-arid periods that favour the settling of the bottom of the ravine and the setback of the hillsides, respectively. This geosite represents U-shaped valleys of the eastern islands of the Canarian Archipelago.

El Cuchillo - Mosta - Montaña Cavera (Lanzarote)

The three volcanic constructions are aligned according to a NE-SW direction crack, and they make up the area with the largest number of hydromagmatic cones in the Canary Islands. The full transition can be seen in them, from the initial formation stages of a hydromagmatic construction, to the last ones that are purely magmatic since the water has disappeared from the system.

Las Laderas (Lanzarote)
Old cliff that nowadays isn't in contact with the sea and that corresponds to the topographic completion of Risco de Famara. At the base there are two generations of sediment fans that evolve until they get to the wind sand of the *Jable*. The oldest ones have a surface with caliche.

Barranco de Tenegüime (Lanzarote)
A "V"-shaped valley, with a rectilinear outline where the erosion of water has excavated all the materials part of the Famara massif. It allows us to differentiate different stages of the insertion of pyroclasts, lavas with column structures, openings and sedimentary fans.

Jable del Medio (Lanzarote)
Located northwest of Lanzarote, near Mala, it consists of organogen wind fine sand deposits that can be more than 22 metres thick. The sand is slightly cemented by carbonates and have interesting stratification structures.

Cantera de Tinamala (Lanzarote)
A quarry excavated in a cone formed by pyroclastic deposits that are partially welded, and are bright red. The pyroclasts are mainly lapilli-size, but there are other sizes too; as it is a settled tuff this allowed the extraction of blocks. The extraction of blocks has led to a unique and beautiful stepped cut.

Montaña de Tinache (Lanzarote)
During the construction of this volcanic building there was a rotation of hydromagmatic and strombolian episodes. On its flanks we can observe a high degree of caliche on the surface, which has ended up in the protection of the hillsides of the building acting as shield.

La Caldereta (Lanzarote)
Ancient cone that posed an obstacle for the lava flow during the eruptions between 1730 and 1736, surrounded by lava flows forming what is known as "islote" or "kipukas" in Anglo-Saxon terminology. The bottom of the crater of La Caldereta is located around 50 m under the base of the exterior flanks. Ochre shades stand out over the black sea of lava in Timanfaya.

Lomos de San Andrés y Camacho (Lanzarote)

This geosite corresponds to the interference of wind sand that form dunes and the deposits of a later nearby recent eruption. This is the only known example of this type of convergence in the Canary Islands.

Monumento al Campesino (Lanzarote)

In this tourist centre of the Cabildo Insular of Lanzarote, we can appreciate old floors, that are the materials prior to the eruption of Timanfaya (1730-1736) and the first pyroclasts of this eruption, and over them, the lava flow caused by the last stage of the eruption that reached Puerto de Arrecife.

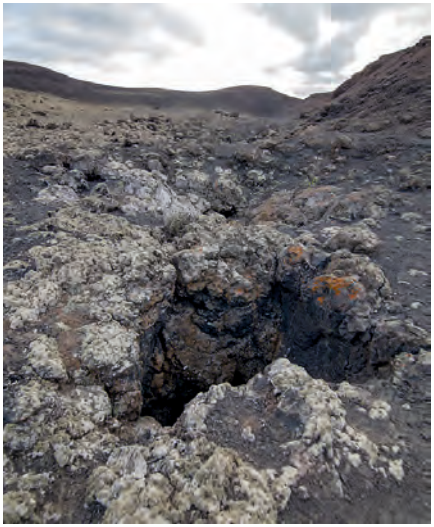
Los Ancones (Lanzarote)

Originating from Volcán de Montaña Corona, these powerful lava flows poured down until they reached the sea, which led to explosive processes due to the contact of lava and water and the formation of spectacular pseudo-craters on its surface. They are called pseudo-craters as they are not filled by a dyke, but by a current of lava.

Canal de lava del Chinero (Lanzarote)

Volcán Nuevo del Fuego, is the second episode of the triple eruption taken place in 1824. The lava channel formed in the main flow, is an exceptional spot to watch superficial pahoehoe lava morphologies from and their transition to aa lava flows. We can also see overflowing structures in the lava channel caused by rough changes in emission during the eruption. The name of Volcán Chinero comes from the extraction of "chinas" on its hillsides to build the road of Ruta de los Volcanes.

It's within the Timanfaya National Park and the authorisation of the National Park is therefore required.

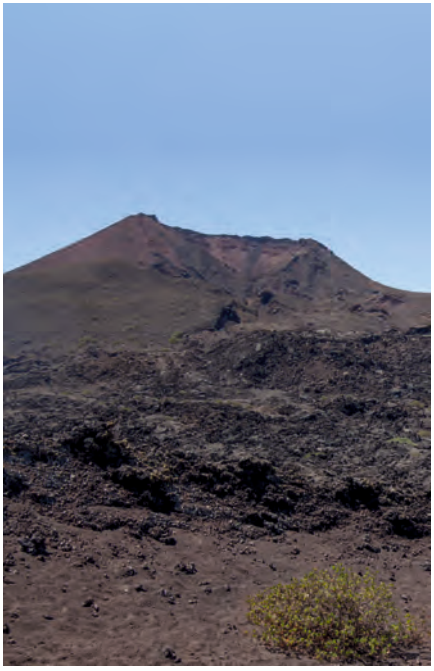


Volcán de Tinguatón (Lanzarote)

Located on the same fracture of eruptions in 1824, this volcano corresponds to the third and last episode of those eruptions. The most significant feature of this eruption was the emission of salt water coming out of strong hot water streams in the final stages of the eruption. The water emission left 6 to 95 m deep volcanic chimneys in its crater totally clean.

Islote de Hilario (Lanzarote)

This islote or kipuka, is surrounded by the lava flows of the Timanfaya eruption, and it is also covered by its pyroclasts. But its main feature is the presence of thermal anomalies, that reach up to 250º C on the surface and more than 600º C at 13 m deep. Currently it is used for tourism-related purposes, including different activities like for instance the creation of artificial *geisers* by introducing cold water through the metallic tubes. That heat is then also used to cook at El Diablo Restaurant.



Pico Partido - Montaña del Señalo (Lanzarote)

An eruption set formed by an overlapping and combination of cones and craters formed at different stages, not always linked to fractures in the same direction. That is what makes it an extremely diverse site when it comes to morphologies. A lava channel connected to the drainage of a lava lake stands out.

It's within a protected area and the authorisation of Cabildo de Lanzarote is therefore required.

Conos de Timanfaya (Lanzarote)

This geosite includes the cones of the initial and final stages of the eruption of Timanfaya. La Caldera de los Cuervos formed at the beginning of the eruption, on 1st September 1730; is a pyroclast cone and on the inside of its crater there is a pool of lava that empties out suddenly resulting in the formation of an erratic block at around 200 metres from the opening of the emission centre.

Caldera Colorada is the last construction of this eruption, surrounded by numerous large volcanic pumps.

Fundación César Manrique (Lanzarote)

The ground floor of this Museum-Home, was built on pahoehoe lava flows from the Timanfaya eruption. César Manrique used five bubbles that were under the surface of the lava flow to make different rooms. Those bubbles probably formed by explosive processes produced by a rough stream of steam; the origin of this steam may have been the sudden evaporation of water from cisterns covered by lava. The ceiling on some of the bubbles has collapsed resulting in the formation of the *jameos*. There's significant contrast between the black shades of basalt and the pristine white colour of the house.

Montaña Rajada (Lanzarote)
Formed during the Timanfaya eruption, this is one of the largest isolated volcanic buildings. This building was formed during the only volcanic episode with variations on eruptive dynamics, with a highly varied morphology: accretion balls, inlaying crater, *hornitos*, lava channel-tube, etc.) It's within the Timanfaya National Park and the authorisation of the National Park is therefore required.

Hornitos del Echadero de los Camellos (Lanzarote)
Separate from the centre of the Timanfaya eruption, these *hornitos* are linked to the emission of low viscosity magmas and gas content and high temperatures, with very active lava streams marking the degassing points of secondary effusive fissures. It's within the Timanfaya National Park and the authorisation of the National Park is therefore required but you can see from Echadero de los Camellos parking.

Corazoncillo (Lanzarote)
The crater of this annular volcano is located 100 m below the external base level of the building. It is an explosive funnel in the largest strombolian building of the Timanfaya historical eruption. The yellowish shades of the materials that form the cone, make it stand out over the black landscape that surrounds it. It's within the Timanfaya National Park and the authorisation of the National Park is therefore required.

La Geria (Lanzarote)

Pyroclasts field from the Timanfaya eruption, the largest in the Canary Islands based on surface and thickness. The *rofe* or *picón* (volcanic rock), as these pyroclasts are known in Lanzarote, covered fields of crops and villages. But what started up as an unprecedented cataclysm on the island, turned into a farming revolution, and it is precisely the properties of this material what makes this possible. The surface/volume rate is high, the little heat capacity and conductivity and great emissivity. At night, the free surface quickly cools down which favours condensation. This condensed water is kept in the pores and gets immediately filtered. During the day, only the free surface is subject to evaporation as the thermal wave barely penetrates the floor.

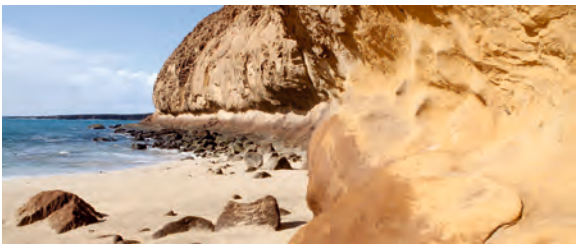
All of the above results in the possibility to grow vines and fruit trees in holes made in lapilli.

Laguna de Janubio (Lanzarote)

A coastal lagoon closed off by a boulder cord that originated due to the coastal drift of products from the dismantling of lava flows from the Timanfaya eruption. It's connected to the Salinas de Janubio, which became one of the most significant ones on the archipelago due to the need to find salt for fishing and the salt industry for canneries.

Valle de Femés (Lanzarote)
A valley excavated in ancient Ajaches deposits, closed off by recent and silting volcanic deposits, making a closed off or endorheic valley.

Barranco de las Pilas (Lanzarote)
A sea flat area with a significant warm coast, with a regressive deposit on top with the highest wind dune in the Canary Islands (160 metres). It is called Barranco de Las Pilas because small grit is used as a water filter.



MONTAÑA AMARILLA (La Graciosa)

This impressive yellow volcano located in the south of La Graciosa, is a hydromagmatic building with a strombolian eruptive phase. There is a fossil beach level between them, the dismantling of the hydromagmatic building and the explosion of a magmatic feeding system where the lava flows directly lean, showing that both stages were separated by a period of calm. There are also some honeycomb structures known as *tafoni*. There are also large accretionary lapilli and the feeding path of the strombolian eruption. Through Cocina beach, located on the inside, we can enter two stunning worlds, the sea and volcanic world.

PAPAGAYO (Lanzarote)

Located in the south of Lanzarote and at the base of Ajaches, there is a wide sea abrasion platform where a dendritic fluvial network has settled. The average height of this flat area above sea level is around 40 m. In its mouth there are organogen sand beaches and climbing dunes. The cliffs have rocks that belong to the Ajaches massif, where there are plenty of lava flow piled up separated by red ochre and significant differences. These deposits are crossed over by numerous dykes and faults. This is a valuable landscape due to its contrasts, among other features, as also the sea has turquoise and blue shades that truly stand out.

RISCOS DE FAMARA (Lanzarote)

The 25-km long Famara cliff, between 400 and 600 m tall, is associated with a mega-gliding episode. Its formation has three constructive stages:

- *Inferior:* The base of the Famara massif is between 10.2 and 8.3 Ma. Formed mainly by volcanic materials with abundant pyroclast cones. These deposits are crossed by dykes.

- *Medium:* Between 7.2 and 5.3 Ma, a tabular structure, and fewer pyroclasts and intrusive dykes.

- *Superior:* Crowning the highest relieves in Famara, around 3.9 Ma. Its powerful basalt lava flows stand out, with alternate cinder cones. Few dykes.

Over the scarp we can see different generations of combined debris alluvial fans, wind organogen sand deposits attached to the base of the massif and lava deltas. Due to the mega-gliding, it is possible to see part of the internal structure of the massif. We must also add the rich colours of the massif, the impressive location over the sea and its stunning beauty.

VEGA DE SAN JOSÉ (Lanzarote)

Valley of fluvial origin transformed into an endorheic basin due to the eruption of the Guanapay volcano. There are signs of ancient floors on the inside of the valley. Those deposits can be used as farmland. The summit of the volcano was used to build Castillo de Santa Bárbara, which became an excellent watch point for the centre of the island. To build it, they used lava and pyroclasts of the volcano, which maintains its morphology and is crowned by basalt lava flows. The hillsides of the cone are full of caliche with highly developed gullies.

EL JABLE (Lanzarote)

A corridor of active organic wind sand that crosses the island from north to south, from Caleta de Famara to Playa Honda - Arrecife. The sedimentary sequence of the *Jable* shows alternating arid and humid weather. This is a significant site of interest for paleoclimate research, as on some outcrops we can see several wind episodes that show signs of arid weather, as well as humid weather signs. It continues to be an active system with sporadic storms that have historically even buried full villages. The dynamic of the sand has been anthropically conditioned due to deforestation, building and transport infrastructures.

EL GOLFO (Lanzarote)

A stunning hydromagmatic building where we can see numerous pyroclastic structures and coastal erosive processes. The eruption started with humid emissions of basal pyroclast that evolved at the end of the eruption in drier terms. In the deposits there are elements that are typical of hydromagmatic eruptions such as accretional lapilli, crossed stratifications, channels, load deformation structures, etc.

Subsequently, there was a dismantling of almost half the building due to erosion followed by an strombolian eruption whose pyroclasts and lava flows cover part of the hydromagmatic building.

On the inside, they add beauty to the volcanic set with an internal lagoon separated by a rock barrier. The green shade is caused by the algae. It is called Laguna de los Clicos or Charco Verde.

VOLCANIC TUBE OF LA CORONA - ATLÁNTIDA (Lanzarote)

Formed during the eruption of Volcán de la Corona around 20,000 years ago. This tube is more than 7.6 km long. A complex design of corridors and superimposed galleries with vaults that are up to 20 x 20 metres tall and some small internal lagoons.

On the surface the tube can be identified by a series of *jameos* (a collapse of the roof of the volcanic tube that facilitates natural access).

There are three geological elements of the tube worth mentioning:

- Cueva de los Verdes, with outstanding morphological structures and mineralisations.
- Jameos del Agua, where the geological museum "Casa de los Volcanes" is located, as well as space designed for leisure and for people to visit as it has turned into a peaceful shelter.
- Tubo de la Atlántida, part that corresponds to the stretch that is located under the sea, evidence of the global change of the level of the sea after the latest glaciation.

The biodiversity added by tiny invertebrates, unique in the world, adds to the peculiar aspects of this place.

CALDERAS QUEMADAS, MAR DE LAVAS DE TIMANFAYA (Lanzarote)

We have joined together two geosites at this point because they are both part of the historic Timanfaya eruption that took place from 1730 to 1736.

This eruption resulted in one of the largest historical lava fields in the world. The lava flows covered around 176 km2 and formed lava piles that in some areas are up to 100 metres thick. Some of those lava flows reached the sea, in turn increasing the size of the island.

There's all kinds of superficial morphologies typical of pahoehoe lava types (such as the *losas, cordadas, abombadas, en tripas, digitadas*) and also aa type lavas (typical, with chaotic, almost abstract, landscapes). In this sea of lava, there are also lava channel type structures, tubes and micro tubes, bridge, *hornitos*, *jameos*, etc. This sea of lava covered vast harvest areas, but in exchange offered a floor formation and vegetable and animal colonisation laboratory.

But the eruption didn't just leave seas of lava behind, it also designed new volcanic buildings such as the Calderas Quemadas. If we take a look at this set of volcanoes, we can perfectly appreciate the lineation that defines the direction of the eruptive fissure that led to the Timanfaya eruption. These four annular volcanic buildings set up the most compact lineation in the Timanfaya area. Each of them is designed from one or several main craters with a funnel shape, and several effusive fissures located at the base where abundant pahoehoe lava flow starts from. In this area, significant geo-thermal anomalies have been recorded.

LOS HERVIDEROS (Lanzarote)

A cliff in the west of the island resulting from the eruptions of the 18th Century, formed by significantly thick lava flows. This basalt has a high number of olivine; on the surface they have an aa type morphology but accretion balls can be seen on the surface. On the cliff there are columnar disjunction prisms formed during the cooling process of the lava flow. The erosion caused by the sea buffeting makes the most of the fractures and the columnar structure of the lava flow to form windows, arches, corridors, etc. On days of strong waves, the sea water forcefully enters the pulverised sea water spray streams called *bufaderos*, a show on the cliff.

PEÑAS DE TAO (Lanzarote)

The best example on the island to help understand what erratic blocks are, large rock fragments transported by the lava. Those large blocks, some of them are more than 30 metres tall, come from the partial deconstruction of one of the sides of the volcanic building of La Corona; they moved up to more than 5 km from the centre. The basalt lava flow, has pahoehoe morphology and an aa type evolution.

These erratic blocks make the landscape seem strange as they're not abundant.

SEA GEOSITES

The Geopark doesn't only consist of areas on the surface on the island of Lanzarote and Chinijo Islands. As we have previously mentioned in the introduction, it includes underwater areas, and 19 of them are geosites.

Arrecife
A low-altitude coastal area located on fossil beaches around 5 to 10 metres above sea level. Significantly large slit and sand terracing and areas with different-size rocks as well as conglomerate and basalt outcrops.

Baja de los Cochinos
Basalt intertidal platform, with large pools interconnected at different levels: a supra-littoral zone with pebbles and a black sand lifted beach. A defined sub-tidal ledge approximately 12 metres deep.

Caletón Blanco - Órzola

Basalt rock conglomerate embedded into a fine sand and slit substratum. A broad intertidal zone where rocky and sandy areas are exposed when the tide is low. The sub-tidal area is formed by rocky outcrops surrounded by sand. In this area there is a vast marsh. The coastal lagoons and the colour contrast make this landscape unique in the world.

Los Placeres

A stripe of the coastal reef made out of basalt marked by a ledge with a broad platform with different size and depth pools. The coastal area has a very regular morphology with small coves, some more defined than others. The sub-tidal ledge is quite defined and vertical, between 7 and 21 metres high, depending on the area. Diverse rocky bottom with highly eroded crags.

Montaña Bermeja - Laja del Sol

A coastal reef consisting of a low coast with a platform at the bottom of Montaña Bermeja volcano, and another cliff line and platform with broad and shallow pools. Fissured outcrops, cracked underwater rocks and slabs adjacent to the lower intertidal stripe, underwater rock blocks and disperse pinnacles.

Roque del Este tunnel
An underwater tunnel, approximately 85 metres long, with a 5 to 10-m diameter deep into the hydromagmatic rock north to south, with a large dome in the centre. Its floor is covered by large blocks and basalt rocks.

Punta Mujeres
Sandbank covered by sea water at around 15-20 metres deep, with a soft relief and small hollows, 20-30 cm shelves caused by erosion and rocky outcrops. The light-coloured sand is organogen.

Playa de los Pocillos - Puerto del Carmen
Sandbank covered by sea water between 5 and 17 metres deep. An average slope and soft relief with small cavities in the sand and some 40-cm shelves caused by erosion.

Guasimeta
An underwater sandbank, around 5 to 20 metres deep, with an average slope. There are rocky outcrops in the area that is slightly covered by sea water, but as it goes deeper, it turns into a light grey sandbank.

Playa Quemada
A sandbank of around 8 to 13 metres deep, with an average slope and a slightly uneven relief, with no overhangs or cavities, it's protected from the currents of the sea.

Atlántida volcanic tube
Large lava tube, more than 1.6 km under water, formed after the eruption of Volcán de la Corona. It consists of a complex network of tunnels and superposed galleries with domed ceilings.

Papagayo
A sandbank covered by sea water at around 8 to 12 metres deep. A soft relief, with small cavities in the sand and some 30-cm shelves caused by erosion. This area is protected from predominant currents. The lithic sites make the sand look greyish.

La Catedral
Spacious open cave with a sand floor, more than 10 m tall and 20 m wide. This is one of the many 23 to 45 m deep caves that can be seen in this coastal platform.

Abrasion platform on the North of Lanzarote and the Chinijo Islands

Sea abrasion platform located between the north of Lanzarote and the Chinijo Islands. This is a unique structure with two mountainous reliefs that comprise this group of islands.

Famara gliding

Mass movement of the materials that formed the structure of the old Famara Massif and that has led to a strong drop of the coastal line. The material settled on the abrasion platform, moving more than 20 km away from the current coastal line.

Yaiza underwater volcanic field

Volcanic alienation with several long volcanic constructions that show weak lines that facilitate the increase of magma and the construction of complex and polygenic structures that set up the islands. This volcanic activity, related to structural axes, also includes areas under the Atlantic Ocean leading to underwater volcanic fields that act as an extension of the main volcanic chains on the surface.

Bocaina abrasion platform

Segment of the sea abrasion platform that separates the islands of Lanzarote and Fuerteventura.

Bajo Risco Negro - Playa de la Madera

A reef with basalt lava flows and two different areas: a platform with intertidal puddle zones, at the bottom of a low cliff and a coastal cliff. The sub-tidal zone is varied, with alternate sand and rocky areas, up to the base of the ledge.

Arrieta

An organogenic sandbank with a soft relief covered by sea water around 10 to 20 metres deep, with small 20-30 cm shelves caused by erosion and small cavities. It is located in an area of intense sea dynamics.

CULTURAL HERITAGE

CULTURAL HERITAGE

The cultural heritage of the island is like its landscape, diverse and impressive; as if it were trying to imitate the beauty of the natural heritage as a whole, it adds elements that are like branches of a family tree, always growing, always changing, adapting to avoid becoming extinct.

In order to understand it, we must observe nature, she is the one who creates many of the traditions and uses that inhabitants make of an area, and Lanzarote is no different.

ARCHITECTURE

> *"Your simple architecture turns its back on the burden of the hasty breeze, hiding its face away, to open its eyes to the slow heat of the souk"*
>
> *César Manrique*

These words of artist from Lanzarote, César Manrique, show the significance of how elements of nature determine human action, such is the case of architecture. To understand this, it is necessary to know the characteristics of the climate, the geology, topography and biology.

Already the constructions of the first inhabitants of Lanzarote showed how they protected themselves from the wind, finding shelter on the land away from the low temperatures at night and the fresh air when avoiding the high temperatures during the day, especially in the summer. That was how the *casa honda* style house architecture took off. In order to build them, ancient inhabitants lowered the natural ground or used already existing underground caves. Those houses didn't stick out much, as the aim was to find shelter. They used intertwined open rings using ricks, generally with a way in and another way out. In order to facilitate access to the house, they built a stone ladder up to the previously dug floor. The roofs were generally domed and they used trunks, branches and large slabs to make them with; they covered them with rubble and soil mixed with straw. The soil used to cover the houses with the "tegue", was a fine soil that turns hard after it's mixed with water and has waterproof properties.

It was from the conquest of the island in 1402, when everything started to change. The arrival of people from Castilla, Andalucia, Extremadura, Galicia, the Basque Country, France, Portugal, Belgium and Geneva, has its influence on the new architectural style on the island and it brings it closer to the places where those new inhabitants come from. Subsequently, the architecture has multiple styles and influences, although it is true that always adapted to the weather conditions on the island. We must also take into account socio-economic elements. There were lordly homes, located in the main urban areas, and rural homes scattered around the island, surrounded by farming fields.

The houses were L, U or O-shaped, and one of their sides was left open leeward, toward the south, to protect them from the wind. Therefore, on the side facing leeward, there were small windows for air and light. Houses were laid out around a patio, used to access the rest of rooms. The patio was where the cistern tank was, which was an essential part of the homes of Lanzarote used to gather water; it was so important that even the patio had a small slope connected to the cistern tank pipe. The simple-line homes are detached, although sometimes they may have a second floor; the colour obtained when using lime over the mud and “picón" stood out. The lime resulted in earthly colours, even pastel colours on houses. The corners of houses were also painted, but using only blue, green or brown. From the 1960's, the main colour used is white, giving an even look to the whole island.

Many of the house ceilings were flat in order to increase the surface to collect rainfall, although sometimes there were pitched roofs; and they used to be topped by the fireplace, oven or kitchen pointing to the blue sky, using a range of shapes, from simple lines like frames made with wooden strips or filled or also other bulbous domes.



The walls were thick and made with rough stones and pebble stones. The former consisted of stones that hadn't been cut, and the latter were blocks worked at the quarry, which meant that they were excessively dear as they had to be subsequently cut. For this reason, they weren't placed everywhere around the house. We must also take into account that having them depended on whether the house owners could afford it or not.

MATERIALS

The materials used for construction, were the materials available at the time, like volcanic rock, *jable* deposits, lime, clay and even wood, although the latter was mainly brought from other islands, given the lack of wooded areas on the island.

It must be noted that volcanic rock has several degrees of density, porosity and harshness, depending on the amount of dissolved gas in the lava it comes from. The nature of the rock itself, favours its cut and shape, and therefore, it determines how it can be used in construction. Rocks from lavas aa were frequently used uncut, but the ones used on corners were cut on the outside.

Some *jable* deposits, generally sand formed by mollusc biological remains, and they therefore have a high content of calcium carbonate, they have a tendency to become cemented and hardened. The chiselling of this natural mix, doesn't need too many tools or effort, so it was sometimes also used when building houses close to the coast.

The lime, one of the first building materials used by men, was also obtained on the island but it became a trading good with other islands. The first step to get it consisted of extracting lime rocks or caliche from the quarries and with great effort, fragmenting it into small pieces to be subsequently taken to the lime ovens or limekiln.

The process to put the limekiln together, placing the lime rocks to be burnt, was tough, as layers of caliche had to be placed with firewood or coal that fell over the grill placed on the upper part of the oven.

Four or six days after non-stop burning the caliche with fire, the smoke came out white; that meant that the lime was ready. It was then removed from the grill and it put out with water, that's why limekilns are always in places with access to water.

The limekilns have a conic or trunk-conic shape, they're made out of rock and mud. On the lower part, there is an entry access to the iron grating which is where the layers of lime rock and firewood are placed. They were placed through an opening at the top that could be accessed via a ramp.

On the island, there are also clay and mud deposits used to make mortar or lining, the latter is called *tegue*.

The mud and lime were used to cover the houses; the most modest ones were made with mud or straw, whereas the wealthier family homes had several layers combined with different dosages of mud and lime for a better final result and overall protection.

The last element to mention, out of the ones used in the architecture of the island, is wood; the lack of trees on the island meant that trees had to be imported from other islands such as Tenerife and La Palma. Out of the different types of wood, the most highly regarded was the Canarian pine, also known as tea, as well as *acebiño*, *acebuche*, *barbusano*, *mocán*, *til* and *viñátigo*, all of them hard and resistant. The most humble solution was to make the most of the different bushes that grew on the island. For instance, the *leñero* or *bobo*, as it is flexible and good when placing beams on forged areas. In addition, and for the same reason, the central nerves of the leaves of the Canarian palm tree.

The people from the island get the materials they need to build their homes from the quarries; at one point there were fifty-two, although not all of them were exploited for architectural reasons. In Guatiza and Tinajo there were some important ones for the extraction of stones used in construction.

Others were used to supply the volcanic soil to create new *enarenados*, basically new crop fields, because that land and its hygroscopic qualities favours the retention of dampness on the land, benefiting agriculture.

Currently, there are only some active ones; in some occasions, those quarries have been adapted to bring back a more natural look; others like Nazaret, have used this chance to create a beautiful leisure space, like the LagOmar museum.

Nowadays, the volcanic land is also used as base to make building blocks.

However, the materials haven't just been used for humans to build a place to shelter, a container to use to cook or eat, a working tool; they were also used to express magical and earthly elements, dreams and concerns, fears and desires... the artistic side of human beings. The *mahos* used clay to make the small figures that were found on a site on the island, of a highlighted sexual nature indicating that they worshipped fertility. There was a tradition that consisted of a sort of commitment couples made by giving each other gifts to seal their relationship ensuring they would get married in future. The groom gave the bride a male figure; and if she accepted it, she would give him a female figure in return. These clay figures are known as "Novios del Mojón".

An important part of the architecture on the island are the churches. Every town has at least one. They're generally small and have only one nave, they seem submerged in the white of the houses that surround them. They are simple, we could even say they are timid, as they don't stand above much, facing leeward to avoid the wind from coming in and break the silence that lives there.

They all tell their own story, from pirate attacks to fires, abandonment and even having suffered the buffeting of the eruption of the 18th Century (destroying the three chapels in the affected area). All of them are interesting, but we would like to highlight the story of the four that still stand, alongside a brief description of each of them.

Iglesia de San Marcial del Rubicón

The first European settlement on the islands was established in 1402 in the south of Lanzarote, San Marcial del Rubicón, and the Ajaches massif as a witness. Rubicón is the area that goes from the south coast of Lanzarote to the highest peak of Femés.

The conquerors chose this area as there they could shelter from the wind as the surrounding height can be fortified, allowing the French-Norman vessels to anchor. There were wells in the area.

Two years later, in 1404, the Obispado Rubicense was built, and already back then there was a population centre, houses, several wells, a tower, a graveyard and the church-cathedral. It's the first bishopric in the Canary Islands, but in 1485 it moved to the island of Gran Canaria due to the constant pirate attacks suffered and also due to poverty.

However, it is true that the first building was located in Playa del Rubicón, but we are aware of the fact that its location changed different times, and it was eventually established in Femés. The current one was likely built in the 1630's.

The current San Marcial church in Femés is the result of constant interventions throughout the years. It had one only nave, although at two different heights. The church has two fronts with rounded arches cut with red limestone in one of the facades and another one on the side walls. The bell gable placed between both accesses has two openings and underneath a sign informing of the visit of bishop Dávila y Cárdenas in 1733.

The image of San Marcial carved in 1734, is placed in a central alcove. Sailing votive offerings decorate the side walls.

The festivity of San Marcial is held on 7th July. He is the patron saint of the island of Lanzarote.

Ermita de San Rafael

This small chapel is located a short bit away from the centre of Villa de Teguise, on the hill of San Rafael, and it's one of the first examples of religious architecture in Lanzarote.

It has one single nave that can be accessed through the only front it has with a round arch. Over the vertical side of the arch, the facade has a small oculus. The facade has also an L-shaped barbican to protect it from the wind, as much as possible.

The pitched roof is lined with tiles. The bell gable has one single area as it is not placed on the facade but at the back of the nave. This is probably due to the fact that having done so meant that it faces the inhabitants which allows for them to hear it better.

Its festivity is held on 24th October.

The chapel is connected to the volcanic events that took place in 1824, as it was assigned as observatory to follow up on the volcanic activity during the first eruptive episode. In turn, it became the first geological observatory in the Canary Islands.

"On the 31st, at seven in the morning, a sudden whirlwind was seen a league away to the west of this capital Town,... bringing the earth to a halt, shaped like a water pump... and right next to it, fire began to come out, and lava started to pour out... The Mayor retired to this Town, after having checked out Tiagua and Tao, and arrived at night, and asked for eight men to go to the chapel of San Rafael, with a neighbour at the lead, making sure to watch in case the volcano erupted again...however, the Mayor kept his eye on such terrible sight; in fact, he couldn't go to bed and didn't get any sleep that night, and just kept staring at the volcano" [sic]

News about the volcano that erupted in Lanzarote. Year 1824.

National Historical Archive. Suppressed Council Section, Printing and Aggregates sub-section, leg.11.299.Exp.

Ermita de Nuestra Señora de la Caridad

Right in the heart of La Geria, there is a small chapel built in the first half of the 17th Century, having survived the eruptions of 1730 and 1736. Although it underwent some damage, as it is explained in a text written by bishop Dávila y Cárdenas: *"... the (chapel) Ermita de la Caridad, in las Gerias (is) covered by sand..."*; that is why we currently see that it's almost hidden in the land, sheltered from northern winds. Its festivity is held on 15th August.

It has a single nave with a chapel-sacristy attached to it. It can be accessed by a rounded arch front with an overlapping small, one area, central bell gable. It has a barbican consisting of two walls with a private space between them where one can feel peaceful. There is a canvas portraying Virgen de la Caridad del Cobre, which is all there is at the top, as there is no altarpiece.

Ermita y Santuario de Nuestra Señora de los Dolores

If Ermita de la Caridad is a chapel marked by the eruptions of the 18th Century, and was almost wiped out by them, Nuestra Señora de los Dolores on the other hand, is a chapel that was built thanks to this volcanic cataclysm.

At a time when lava poured out of the volcanoes over a place next to Tinajo, a missionary encouraged the faithful to go out to a procession carrying a picture of Virgen de los Dolores from the church of San Roque to mountain Guiguán. That was when they made a promise to build a chapel in her honour if she would take the threat away from Tinajo. It looks like one of the believers carried a cross and he took it to the rim of a river of lava and stuck it in it. The lava changed paths and saved Tinajo from it. The cross is still there, next to the chapel built in 1781, as promised to the Virgen de los Dolores, also known as Virgen de los Volcanes. Her festivity is held on 15th September.

It has a single nave that can be accessed by only one rounded arch front. Over it, there is an oculus. Right on the facade, there is a central bell gable with a double space. There is also a dome over the main altar and on the outside a buttress made out of basalt that stands out against the white walls.

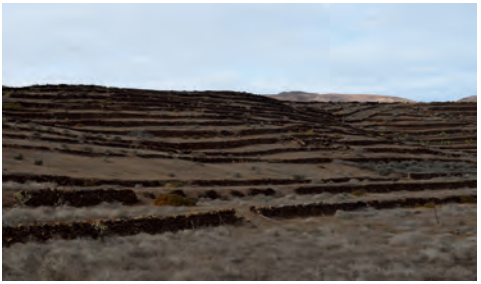
CROPS

The history of agriculture is the history of mankind...

Cultivating in Lanzarote is a challenge due to the lack of water, the winds and the elements; farmers, men and women from Lanzarote faced that challenge patiently and wit. Crops are impressive on this island, not only because their mere existence reminds us of the determination people who work the land have, but also because the landscape itself is stunningly moving and stunning. In a world where productivity is a priority, where plastic seems to come before beautiful crop fields, farmers from Lanzarote have kept alive a respectful way to farm, aware of the fact that the care given to the land will work as the best possible fertiliser.

There are different types of actions to make the most of the land and the conditions available, the most significant ones on the island have been the following:

Bebederos* or *Gavias



Places where rainfall is gathered naturally. These places are therefore ideal to cultivate. Also, places adapted by farmers aiming to reproduce those conditions, and in order to do so, they levelled the ground, added "testes" and stone walls to collect water; they included elements that helped bring in overflow towards the *gavias*. There were even systems to empty out excess water. All of it was done to make the most of the water during times of rain and to be able to use the water to cultivate.

Gavias were used to grow corn, chickpeas and broad beans, and sometimes wheat, barley and lentils.

These structures are scattered all over the island, in places where there are valleys or backwater to such extent that the hills were left stepped due to the number of terraces.

Nateros or *traveseros*

In this case, farmers used to build stone walls through the bed of ravines, perpendicularly drawn in the direction of the water, helping to retain the materials dragged by the overflow. A new row of rocks was added when the built-up debris reached the top height of the wall, to raise the height of the stone wall in order to continue to retain the soil in the ravine.

The ground was ideal to cultivate fruit trees, especially fig trees, although it was also used to plant tomatoes, potatoes, pumpkins, watermelons and melons.

Those formations still remain, especially in all the ravines in the north of the island as part of the landscape, and although they are no longer being used, they continue to have an important role to avoid the loss of fertile grounds.

El Jable

The word *jable* comes from "sable" in French and it means sand. These fine golden sand comes from seashell lime marine remains, shells and algae; the wind spreads it resulting in this landscape that locals use to grow sweet potatoes, wheat, rye, pumpkins, watermelons and tomatoes. Historically, the barilla used to also be grown in the jable and it was used to make soap with.

Bards or vegetable barriers are placed to stop the sand, and even some rye stubble was left on the ground after reaping and also sweet potato shrubs. Another method to stop *jable* from moving forward is to plow the land for sowing with broad and wide apart furrows, perpendicularly drawn in the direction of the wind.

The *jable* takes up the whole area that goes from Famara, on the west coast of Lanzarote, to Playa Honda, on the east coast; the distance between both is how far the organogenic sands are moved by the wind. That area is known as "corredor del jable" (jable corridor).

La Geria and the *enarenados*

The most significant historic event that has taken place in Lanzarote is related to a geological process: volcanism; a process with two instantaneous opposing and indivisible stages, destruction and creation.

The eruption that started on 1 September 1730 and finished on 16 April 1736, didn't only change the morphology of Lanzarote, and affected a fourth of the island; it also transformed men and women and how they connected with their land.

The lavas and ash discharged by he eruptions, covered many of the cultivation fields, covering the landscape with a black layer of volcanic sand or lapilli where before you could see at different times of the year, green shades of cereal and pulses. The valley where La Geria is, used to be considered one of the richest in Lanzarote and is located between Chupaderos and Diama Mountains on the north, and Tinasoria, Guardilama and Caldera Gaida on the south; it starts a couple of kilometres northeast of Uga, and it goes as far as 3 km in that same direction all the way to Montaña de Peña Palomas.

Its name comes from a small village in the valley fully covered by ash during the eruption.

The distressing landscape the inhabitants of Lanzarote had to face after the eruptions is hard to fathom, as well as the work done by farmers afterwards. Making a huge effort, farmers dug holes, in search of their precious fertile land. That is how this type of cultivation got started, turning into a paradigm of sustainable and respectable interactions with the environment.

The holes dug by hand, reached the vegetable land where it was possible to grow fruit trees as well as vineyards. The depth dug made by farmers, sometimes reach three metres high, depending on the layer of volcanic sand, working as protection against the wind which is extremely important for the vineyard.

Slowly but surely, the landscape started to change and farmers realised that the layer of volcanic sand prevented dampness on the ground, and that the sand itself acted as a fertiliser, which favoured the maintenance of cultivation.

Farmers do everything related to vineyards manually; pruning, cleaning the leaves, the grape harvest; as true sculptors of an extreme and strange garden.

Among the many varieties of grape from Lanzarote, the Volcánica Malvasía grape particularly stands out (or Malvasía from Lanzarote). It is known as a type of grape typically from the island; other important grapes are white Listán, Diego, Moscatel from Alejandría and black Listán. In addition, there are also others such as Burra-blanca, Breval, Tinta Conejera and other foreign ones.

This new type of cultivation developed due to the volcanic events that took place which motivated farmers to reproduce those rich fields protected by *rofe* or *picón* (names used in Lanzarote to refer to volcanic sand) in many areas of the island. Therefore, farmers create *arenados* or *enarenados*, that are plots with cultivation ground covered by a layer of that sand, artificially reproducing something designed by nature.

Farmers knew how to even make the most of the sides of the lava fields and the collapses and cracks left behind, to use the fertile ground. As a result, we can enjoy fig trees and vineyards barely showing themselves in fields of karst land, where the definition of this sea of lava in itself seems to be an obstacle for life.

SALINAS

> *"For Hercules sake, a civilised life cannot be conceived without salt"*
>
> *Plinio El Viejo*

Salt has been an essential element in the history of mankind, and it has especially stood out on the islands. In some areas, such as islands, the weather conditions used to cause food to perish quickly. Therefore, salting food was a way to preserve it and guarantee being able to feed the population.

In Lanzarote, salting pork was essential, but especially fish, which was done by piling up layers of fish and salt. A few days later, the fish released water which helped the salt dissolved better, making it easier for it to penetrate the tissue; the fish had to be eaten within six months.

We also know that ancient settlers already used it. They extracted it directly from coastal pools. This is a tradition that still remains in some coastal areas in the west of Lanzarote. Those pools fill during high tides, followed by isolated periods which allow for the water to evaporate and the salt can then be recollected; white and fine salt.

The first salinas in the Canary Islands were located in Lanzarote, more specifically under Risco de Famara, called Gusa salinas or Río salinas.

The place where they are gets flooded regularly, and its features are ideal for salt to form naturally; this place was believed to have been used by Romans for the same purposes, but there is no evidence that confirms this. What there is indeed evidence of, is that towards the end of the 15th Century, there was adaptation work done to it.

Towards the end of the 19th Century and beginning of the 20th Century it was when the salinas on the island truly started to flourish. Adapted to the canning industry and fish salting, so much so that at a particular point in time, there were twenty-seven of them on the island. The salinas were geometrically beautiful, and they took up a large part of the coast of Lanzarote, with plots that draw a significant man-made landscape; the wind mills helped carry the sea water to the salt plots, joining forces with the winds; the old mud bottom salinas were replaced by stone bottom salinas, yet again, a display of local wit. Later, the industrial cooling and the canning company crisis, led to the deterioration and neglect of the salt industry.

Nowadays, only two of those salinas are still active. One of them is Agujeros, on the coast of Guatiza, and the other one in Janubio on the south of the island. Janubio used to be a port that mainly commercialised limestone, but the Timanfaya eruptions (1730-1736) gave the coast a new profile as the lava flow closed off the gulf and made the creation of a lagoon possible, where the salinas where later built.

However, let's not forget that from the point of view of nature, the salinas are unique habitats, man-made work that resulted in a way to favour the

environment and is ideal for certain bird species and plants used to hyper-saline environments, and microorganisms used to extreme conditions where the salinity varies significantly as well as the temperatures and even the concentration of oxygen.

Janubio is one of the best enclaves to observe birds, as it holds the most significant nesting on the island, as well as being important for migratory birds which find a place to rest and feed here.

A significant number of birds can be seen here: the black-legged Kentish plover, the ruddy turnstone (Arenaria interpres), sandpipers, the black-winged stilt (Himantopus himantopus), the Eurasian oystercatcher, common redshank, calidris, Berthelot's pipit, the trumpeter finch and common ringed plover, among many others.

FOLKLORE

The Royal Spanish Academy (RAE), describes the word folklore as a set of customs, beliefs, craftwork, songs and other traditional and popular concepts. However, this definition lacks an essential element, as it forgets to mention that it also means time, interactions among people, the expression of creativity, sensitivity; basically, human richness.

We wanted to highlight three significant factors that make the folklore from Lanzarote stand out, although there are many other examples.

Diabletes from Teguise

The origin of this tradition possibly goes back to competitive dances, rituals and festivities of ancient inhabitants of Lanzarote, although they most certainly got different contributions from conquerors and slaves during the 15th, 16th and 17th Centuries.

At the rituals, the male goat was a symbol of manhood and the clothing worn was associated with this animal. A male goat's mask was worn and skin hardened in sea water covered their heads and from their backs down to their feet.

It's the Franciscans that arrived with the conquerors who managed to include these dancers into the Corpus festivities, as it represented the struggle between good and evil; so, their own god represented good and those who danced wearing goat's skin represented evil. From then on, they started to be called *Diablos* or *Diabletes*.

Subsequently, in the 16th Century, the combination of the dancers and black and Moorish slaves brought by lords from Lanzarote and Fuerteventura, enriched the cultural content of the Danza de los Diablos. Next to the dancers, there is a black slave playing a drum, the *tamborilero*. In fact, kids from Teguise shouted at the *diabletes*, "gelégua" or "eleguá", which is Eleguá, one of the most ancient African gods, not only brought to Lanzarote by black slaves, they also took it to Cuba and other parts of America. In addition, at the Museo Africano in Arrieta, there were some Berber dolls whose clothing reminds us of what the *Diabletes* wear. Their shirts and trousers decorated with red and black dots and their face painted red, black and white.

In the 17th Century, the Cabildo General, with headquarters in Teguise, paid those who danced and played the drum.

In 1777, by means of a royal order, there was an attempt to put an end to that tradition, but it wasn't until 15 years later that bishop Tavira managed to abolish the *Diabletes* from the Corpus festivities.

Despite this, the *Diabletes* didn't disappear, it was the emigrants who returned from American countries that encouraged the people from Teguise to go out during the carnival period. It was at that time, when there was a change made to the mask. It went from being a male goat's mask to a bull's mask.

The masks were made with pieces of paper stuck together with flour and water on a mud mould. The clothing consisted of a shirt and trousers painted with stripes and black and red dots, shaped like diamonds; two crossed straps over the shoulders with handbells hanging to make the sound of the *Diabletes* as they raced around the streets of Teguise. Their attire included the *garabato*, a short stick hanging of a leather pouch filled with rags, paper and some soil used to hit anyone who crossed their way.

This is one of the oldest traditions in the Canary Islands, we wish the *Diabletes* were still running the streets of Teguise, carried by the wind and the magic they bring along.

Ranchos de Pascua

In 1417, the Orden of San Francisco established an oratorio in Famara, and it was the Franciscans who brought their customs and festivities influenced by the rituals and traditions of the *mahos*, as well as traditions later brought from Castilla, the Portuguese and the Moors.

The origin can be found in the ancient Ranchos de Ánimas who begged for the poor who had passed away, born in the bosom of the "Cofradías de las Ánimas". They set off in November and went on until the 2nd of February (Candelaria's Day), but it was from 13th November when they sang to Christmas. Another one of the popular manifestations during the Christmas period was the *misas de luz* (Candlemas), in which the Rancho of Teguise also took part. It took place nine days prior to Christmas.

The singing was monotonous and sad, although they turned jollier at Christmas time, along with the slow and rhythmic metallic sound of the triangles, swords and tambourines; also, castanets, jingles, *requintos*, *timples* and guitars.

These instruments were intended to be banned at church in several occasions; but Teguise refused to lose its tradition, and the rancho went on especially at Christmas; the Ranchos de Ánimas ended up being called Ranchos de Pascuas or Christmas Ranchos. The ranchos were present in many towns, but Teguise had the most ancient one and Lanzarote has a 20-people rancho; four of them are part of the dance, in charge of performing the "Salto", a farmers dance with only background music. This is an intertwined dance, with advances, setbacks, skips and reverences; it is peculiar to see that the dancers never turn their backs to the image of Jesus, not even on their way out.

Teguise has a "Rancho Grande" formed by adults and a "Rancho Chico" where kids perform, making sure to pass on this beautiful representation of popular culture.

Out of the many verses the ranchos include, we have chosen the following ones. They show how the volcanic events marked the lives of the people from Lanzarote.

It's the purgatory
A great sea of lava
The souls are like rafts
That swim on the inside

Los Buches

The colourful carnival of Arrecife fills up with music, laughter and joy with this music band.

Some historians place the tradition of hitting *buches* back to the Roman festivities of *lupercales*, when *luperci* men walked the streets naked, carrying a strip of male goat's skin, hitting women in order to motivate fertility.

Toward the beginning of the 15th Century, the first colonisers arrived bringing the first musical instruments; wind, string and membrane instruments. But the roots of the musical heritage of the island are based on other dances from Lanzarote, like the so-called shepherd's dance, sailors dance, farmers dance and dances related to religious festivities. Nonetheless, it is true that there is a significant number of influences that enrich our cultural heritage.

However, the *buches* are especially connected to the capital of the island, and they bear witness to the bond the men and women from Lanzarote have with the sea.

The part-taking of sailors at the festivities of Arrecife, is, among other reasons, due to the creation of the Cofradía del Mar in 1630 (a sailors brotherhood); there are records stating that already back in 1711, the members of this brotherhood danced wearing fish bladders as part of the San Ginés celebrations ritual.

Subsequently, they started to blend in with the carnival. In fact, in 1880, René Vernau described the liveliness on the streets where men and women were dressed up as farmers. Some of them playing the guitar and singing, and others singing and hitting everyone that crossed their path with huge fish bladders.

The aim of the Parranda las Buches (band), is to keep this musical sailing tradition alive, and that is the reason why we can come across them during the Carnival, dressed up with the traditional clothing that farmers from Lanzarote used to wear; with colour strips down their shoulders, and a cloth cap whose peak is decorated with sequins and garments. Their face is hidden behind an opaque metallic fabric mask in which eyebrows, nose, mouth and a long moustache are drawn.

Virgen de los Volcanes Festivity

Lanzarote is dry and harsh, but its people, on the contrary, are not like its landscape. Every town, big or small, celebrates different festivities, mainly once a year, although some towns have several different ones. Among them all, the festivity of the Virgen de los Dolores or Volcanes, held on 15th September, stands out. The *romerías* that pay tribute to the Virgin have been popular ever since the beginning of the 20th Century. Back then, camels, horses and donkeys were part of the festivity. Those who could afford it, dolled up their animals, and they all enjoyed the festivity held for the Virgin they considered had saved Tinajo from the eruptions that took place from 1730 to 1736.

Currently, the *romería* is still celebrated and although some people drive, many others walk the different paths, lanes and roads, wearing traditional costumes. They walk and share stories of the past. They are accompanied by music, with *timples*, guitars, lutes, etc., singing lyrics that talk about times gone by.

This festivity gathers not only most people from Lanzarote, but also traditional music bands from all over the Canary Islands during the Encuentro Folclórico Nanino Díaz Cutillas (folk music festival).

Another significant event during this festivity is the Feria Insular de Artesanía de Mancha Blanca (crafts fair), bringing together artisans from all over the islands. This is a great place to promote traditional products and others inspired by them, showing how the imagination of craftsmen develops just like nature does. An unstoppable creative process.

Gofio

Golden like the grains of *jable*, the aroma of childhood and milk, memories of a *parranda* (Canarian party) and *zurrón* (typical leather purse), this is one of the emblematic foods of Canarian cuisine and has been with the islanders for centuries. Gofio is a flour of roasted ground cereals, its consumption dates back to the aborigines of the islands, who made it mainly out of barley and wheat, although the use of beans and chickpeas was also common. After the arrival of Europeans to the American continent in 1492, "millo" (corn) arrived in the Canary Islands and began to be part of the Canarian diet, Gofio was even made with it. In times of famine in Lanzarote, cosco seeds *(Mesembryanthemum nodiflorum)* were used to make it too.

The aborigines used clay pots for roasting, mixing the grain with *jable* in order to gain uniform heat and avoid burning during toasting, and so by do it gradually and homogeneously. Later, it was ground in manual mills, there were several types, but perhaps the best known is the one made up of two circular stones that fit together, one of them placed horizontally which fits the second piece, which fits perfectly and is rotated with the help of a handle. The mills have also undergone an evolution, from the use of blood mills (moved by animal traction) through to windmills and finally engine mills.

We would like to share with you a snack for those with a sweet tooth, and in order to taste this recipe you will need:

"Plátanos con Gofio" (Banana with Gofio)

Ingredients:

2 bananas
Orange juice
Honey
Gofio

Preparation:

Grind the bananas which should be well ripe, then add orange juice and a drop of honey for taste; mix well. Finally we add the Gofio stirring well until we get the consistency we want.

ART, CULTURE AND TOURISM CENTRES

This tourism centres network part of the Cabildo of Lanzarote, started to take shape in the 1960s; César Manrique and Jesús Soto created art in natural spaces for the emerging number of tourists to enjoy. Their work was ahead of their time, symbols of the balance between art, nature and tourism.

CUEVA DE LOS VERDES

Part of the eruptive process of Volcán de la Corona is one of the most impressive geological elements in Lanzarote, a volcanic tube that in the 1960's Jesús Soto turned into a visit, not only through the geology of the island, but also its history. The cave was used as hiding place by locals in the 16th and 17th Centuries looking for protection from pirate attacks.

The shapes of the tube and the atmosphere created by lighting make visitors feel they are on a Jules Verne adventure.

JAMEOS DEL AGUA

A jameo is a hole caused as a consequence of the collapse of the ceiling of a volcanic tube. The tube it belongs to dates back to the eruption of Volcán de la Corona, approximately 25,000 years ago. This is the first Art, Culture and Tourism Centre created by César Manrique.

Jameos del Agua is a unique place in the world, not only because it belongs to one of the longest volcanic tubes in the planet, but also because of its magical connection with the ocean and the unique and exclusive fauna that inhabits it; Jameos is pure evidence of respectful human interaction with a natural environment.

JARDÍN DE CACTUS

This wind mill has witnessed the transformation of this ancient *rofera*, and has seen it turn into a garden which holds 450 different species of cactaceae plants from the five continents. Contrasts between dark volcanic shades, the blue sky and green cacti, turn it into a place to relax and stay away from it all. The garden is surrounded by prickly pear plants. The history of Lanzarote that refuses to be abandoned and forgotten.

LA CASA AMARILLA

Located in León y Castillo street, used to be the old headquarters of the Cabildo of Lanzarote. The 2-storey building is an example of eclectic architecture, with a green and ochre glazed ceramic facade, hence its name. The lower floor holds temporary exhibitions focused on spreading knowledge about Lanzarote, and on the top floor there are institutional offices. The CACT (Art, Culture and Tourism Centres) use Casa Amarilla as tourist information point and tickets sales office.

INTERNATIONAL CONTEMPORARY ART MUSEUM (MIAC)

An ancient fortress built between 1776 and 1779 under Charles III's mandate to defend Arrecife and its port. The fortress was abandoned for almost a century and was later turned into an art gallery thanks to the vision of local artist César Manrique. The International Contemporary Art Museum opened in 1976, and it displays the work of Tàpies, Miró, Mompó, Millares, Óscar Millares and Pancho Lasso, among others.

There is a restaurant on the ground floor of the fortress with an exceptional view to the sea, where visitors can enjoy avant-garde cuisine.

MIRADOR DEL RÍO

From mirador del Río, visitors can enjoy a stunning view of La Graciosa, the islets the Chinijo Islands are named after, as well as Salinas de Guza, the oldest in the Canaries at the foot of Risco de Famara.

Included in the sites of geological interest catalogue of the Lanzarote and Chinijo Islands Geopark.

Perfectly merged with the rocks, Manrique's architectural creation in collaboration with Jesús Soto and architect Eduardo Cáceres, shows the necessary harmony between nature and humans.

MONUMENTO AL CAMPESINO

Created by César Manrique, Monumento a la Fecundidad, made with old ship water tanks and iron objects, the monument pays tribute to the work and effort of men and women in the fields of Lanzarote; people who saw opportunities on this land, despite the hostile conditions at the time, and that were able to bring it to life, managing to even make food products stand out, some of them like the local wines are internationally known.

The buildings combine architectural elements from Lanzarote with other more modern and avant-garde ones; in addition, the restaurant and its traditional cuisine, bring the flavours of Lanzarote closer to us, white and green, representing our towns.

The geology of the place makes it worthy of being a Site of Geological Interest in the inventory of the Lanzarote and Chinijo Islands Geopark.

MUSEO ATLÁNTICO

Created by artist Jason deCaires Taylor, the museum was conceived as a true artificial reef that aims to appeal to the defence of the oceans and create a visual dialogue between art and nature. The museum was set up in Bahía de Las Coloradas, 2,500 m^2, and around 12 metres deep, this underwater museum contributes to an increase in diversity levels and biomass, and at the same time, it makes us think about our own societies that sometimes seem to forget about our planet.

MONTAÑAS DEL FUEGO - TIMANFAYA

This impressive place was created by the volcanic processes that hit the south of Lanzarote from 1730 to 1736, and 1824. The volcanic cataclysm designed a new landscape that also stuns visitors; colours, textures and never-ending shapes that move everyone with their harmony and immensity.

In Islote de Hilario, César Manrique set up a restaurant that used the natural heat of the earth. He called it Diablo (Devil), aware of the hell people of Lanzarote went through during the periods of long eruptions. Visitors can also do the Ruta de los Volcanes by bus, and enjoy the beautiful moon-like landscape.

A significant part of our geological heritage, included in the SGIs list (Site of Geological Interest).

WATER CULTURE

"You used left over water from
a sancocho to wash yourself with,
your lips turned to sponge cake"

This verse was written by D. Juan Brito, as part of the popular music of Lanzarote, showing us the issues with water scarcity that people from Lanzarote had to face in the past, mainly due to the weather conditions and the lack of rainfall. The average annual rainfall on the island of Lanzarote is around 142.6 mm (Sáinz-Pardo, 2004).

Water, and its essential role on life, became a subject matter for locals on the island. Plenty of devices were created to make the most of the scarce rainfall, as there were hardly any springs and wells.

Underwater deposits, known as *aljibes* (reservoirs), were built in order to make the most of the overflow. In those deposits, the water was collected to such extent that they became a significant element in the architecture of the island and they were placed next to houses or house patios.

The walls of the reservoirs were originally built with stone and soil mixed with a combination of water and limescale, and floor that was waterproofed with a lime mortar; covered or not.

Roofs of reservoirs were generally domed and made with stone cutting (basalt), they were normally finished off with a parapet which is the hole used to extract the water from, and a draining board to catch the water that falls on the top. The reservoirs also had an exit point, the overflow channel or overflow where the water came out of when it filled up.

In order to increase the amount of water collected in the reservoirs, overflow caudal deviation systems were arranged on paths or ravines, or lime constructions, called *alcogidas* or *acogidas*, and they were placed against hills on mountains.

Other elements connected to the use of water are the *maretas*, already used by the *majos*, ancient settlers from Lanzarote. Those *maretas* were nothing but water reservoirs adapted on hollows or the bed of a ravine. One of the most important ones on the island is the Gran Mareta de Teguise that collected overflow water from the Guanapay Mountain and adjacent meadows, those structures even had soil dragged by the rain, and its use was regulated. The price of water was set depending on the rainfall and neighbours shared cleaning tasks.

The water of some *maretas* was used to be consumed by people and also by animals. Other significant *maretas* are the State ones carried out in Arrecife to ease the serious water supplies issues at the beginning of the 20th Century.

But the culture water on the island is not only about having the necessary wit to collect and store water, but also for cleaning purposes developing different methods:

- Throwing handfuls of lime in the water to disinfect it.
- The presence of a *saltón*, mosquito larva *(Culiseta longiaerolata)*, that works as a good biological water purifier.
- Use of sea eels *(Anguila anguila)* that prayed on living beings that nested in reservoirs and boettger's wall gecko and lizards around the reservoirs, to avoid having insects.

These clever techniques didn't only consist of collecting water, filtering and purifying it before consuming it; this device consists of a stone carved on sandstone or limestone used as a filter; and a clay container called a *bernegal* used to collect water once it was filtered to keep it fresh to be consumed. The filter was very frequently used in homes on the island, stored in a fresh place over a wooden piece of furniture. It was commong to see stone cutting by adiantum amplums that grew thanks to the dampness. Currently, there are still many houses that continue to use this clever invention that came from necessity.

In the 20th Century, issues with the lack of water and the high number of people on the island became a public catastrophe, and the precious liquid had to be brought in Army tankers, as well as on private company boats.

In 1964, the first desalination plant was installed in Arrecife, which turned into an authentic revolution promoting tourism. Despite the advantages of obtaining water from setting up a desalination plant. Locals continued to make good use of it, an attitude that perhaps originated from ancient people from Lanzarote who made the most of every single drop of water.

BIODIVERSITY

BIODIVERSITY

Lanzarote has a landscape with difficult conditions, a desert climate due to the scarce rainfall softened by the ocean, and trade winds. Harsh and arid looking, the island surprises us when it comes to bearing life, we only need to know where to look. In that learning process, we must enjoy how wonderful it is to share the land with other living beings interacting in a similar way to us.

FLORA

The Lanzarote plant catalogue includes around 700 species and more than twenty of them are endemic to the island, which means that 3% of that flora is unique in the world. The low altitude of the island, means that the climate is even in all different areas; but the geological age, type of rocks they grow on, and the degree of isolation, are factors that have allowed those unique species to evolve; hence it being understanding that Famara, one of the most ancient places in Lanzarote, is the place where we can see almost all those endemic species.

The ability to adapt is key to survive, and there are several strategies to make this possible:

- Having an extensive root system to collect the highest volume of rainfall.
- Having small white hairs that help reflect the sun rays avoiding sunburn and dehydration.
- The transformation of leaves into thorns to reduce evaporation, and at the same time protect from the attack of herbivores.
- The build-up of water on their stems in order to access it during drier periods.

Not all vegetables that grow on the island are the so-called superior plants, those that have roots, stems, leaves, flowers and fruit; it is amazing to find out about the existence of fern and moss, frequently hidden in a world of cracks and cavities alongside a dampness that makes them witness changes on the island. Among the 15 ferns on the island, the most common ones are: culantrillo, culantrillo negro de monte, doradilla velluda, hierba candil and batatilla.

In order to get a better idea about the flora on the island, we need to look further, towards the ocean. Our geopark extends to the water that surrounds us and we therefore must pay attention to the algae that provide colour to the seabed: green, red, brown and even pink shades. On the coast of Lanzarote and the Chinijo Islands, there is more than 300 different algae. When there is a low tide, we invite visitors to observe our underwater world.

It is not possible to include a full list of all the existing plants on this guide, but this selection includes true jewels of botanics on the island.

TAJASNOYO
(Ferula lancerottensis)
A herbaceous plant that reaches a metre tall. Its leaves are divided into fine and fleshy segments. The inflorescence is like a yellow bouquet.

YELLOW *YESQUERA*
(Helichrysum gossypinum)
Branched out bush at the base, with thick leaves covered by fine hair. The flowers are yellow.

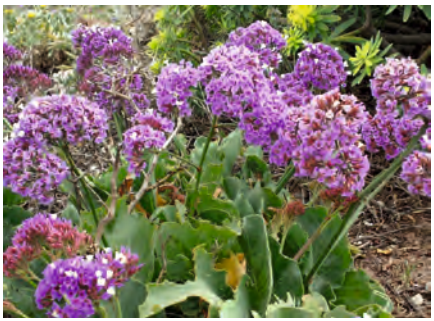
RED *YESQUERA*
(Helichrysum monogynum)
Small branched out bush, with grey-green leaves, covered by a dense fine fuzz. Red flowers, as the transformed leaves that cover the flower are red.

BEJEQUE* FROM LANZAROTE, VERODE *(Aeonium lancerottense)
A branched out bush whose branches are a silver grey. The leaves are fleshy with reddish edges arranged as roses. Its flowers are pink.

BEJEQUE FARROBO
(Aeonium balsamiferum)
A bush with branched stems, leaves arranged as roses that give out a strong scent. Yellow flowers arranged as small inflorescences.

TOJIO
(Asteriscus intermedius)
A bush with silver stems, and grey-green leaves, covered by a dense fuzz. Its flowers are bright yellow.

MARGARITA DE FAMARA
(Argyranthemum maderense)
A bust that can be up to 70 centimetres tall. Its flowers are totally yellow, including the adapted external flowers.



SIEMPREVIVA
(Limonium bourgeaui)
A branched out plant with rigid white fuzz at the base. Its leaves are broad and they have inflorescences with blue-purple flowers and a white corolla.

LENGUA DE VACA
(Echium lancerottense)
A herbaceous plant with downy leaves and blue-purple flowers.

CUERNÚA
(Caralluma burchardii)
A small square-shaped plant with succulent stems and no leaves. It has bulges on the edges. Small flowers with brown on the outside and yellow in the middle. Its most outstanding feature is its fruit with a long-horn shape.

FAUNA

Like other oceanic islands, Lanzarote doesn't have large vertebrates. However, birds take a leading role as there are many of them, up to 30 different species nesting on the island. When the wind stops, their sounds are heard, as long as we're listening. Steppe birds that blend in with the ochre shades of some areas of the island, sea birds, coastal birds and wetland birds that require saltpetre, as well as ebony black crows, trumpeter finches with bright peaks, and eurasian hoopoes that come to a halt and expand their flashy crest. We must also add migrant birds that choose the island as stop-off point. They add up to 150 different species, among them Eleonor's falcon stands out.

Lanzarote has ornithological wealth that has adapted to the climate conditions and to the landscape of the island (to its geography), there are perfectly camouflaged nests on the ground, the colour of the eggs and all of it to ensure the existence of a new generation.

When it comes to reptiles, there are three species that live on the island. Two of them are endemic to the islands of Lanzarote, the Chinijo Islands and Fuerteventura; on the one hand, the Haría lizard, with daytime habits, and on the other hand, the tarentola from Fuerteventura with preferably nighttime routines. The third reptile that is endemic to the island of Lanzarote and Fuerteventura is known as chalcides simonyi *(lisneja)*. Watching it in nature is not easy, mainly because its fragmented settlements and loss of habitat.

The largest number of land animals consists of invertebrates, and within that group, insects stand out. These animals provide significant benefits to the ecosystems that are often responsible for the reproductive biology of plants, whose pollinating role is familiar to us. Some of them have even been an essential part in the economy of the island, such is the case of the cochineal, a small insect that lives on prickly pear trees. Its dye was very significant in Lanzarote from 1835 until the 1980's.

Let's not forget the waters that surround Lanzarote and the Chinijo Islands, their temperature and proximity to the African continent make these waters very productive, which is why there live 259 fish species, such as the grouper, red porgy, *sama*, *cabrilla*, *vieja*, moray eels, conger and abad, among others.

The number of marine invertebrates is significant, a very heterogenous and diverse group, spread out from the intertidal zone, to its greatest depths. Corals, sea anemone, echinoderm (sea urchin), molluscs (limpets, *burgados*...), crustaceans (white crab, lobster) all of them are part of a vast underwater universe adding value to everything we've just mentioned.

There are two other very differentiated groups that join this universe, and that provide great wealth to the underwater world: the cetaceans and the turtles. The Canary Islands, and thereby Lanzarote, is a place of special interest when it comes to the diversity of cetaceans in its waters. The geographic location of the islands, and the fact that it's an oceanic archipelago, allows for the presence of species of cetaceans in semi-warm environments, as well as others that come from colder areas and that make it to the islands carried by the Cold Currents of the Canary Islands. There are even tropical species.

Out of the fifty-six species of cetaceans in the Atlantic Ocean, thirty of them can be seen in the waters of the Canary Islands. Many of them are in the Canary Islands due to the degree of mobility of many sea mammal species, with no permanent place to live. For instance, the common bottlenose dolphin, the Atlantic spotted dolphin, the common dolphin, as well as the tropical rorqual, common rorqual, the sperm whale and several species of beaked whales.

The other group worth mentioning, the sea turtles, five out of the seven in the world visit the Canary Islands and it actually might even be six. The most common ones of them in our waters are the common turtle or *boba* and the green turtle. There's also the leatherback sea turtle with an outstanding pattern and the hawksbill sea turtle which there's very few of.

10 JEWELS OF FAUNA ON THE ISLAND

CANARIAN SHREW
(Crocidura canariensis)
A mammal endemic to Lanzarote, Fuerteventura, Lobos and Montaña Clara, sized between 6 and 7.5 cm. With a brown-grey coat, slightly darker on its back. Its ears, legs and tail are lighter and covered by whitish fine hair. It has a sharp and long snout and large round ears and it feeds on insects, reptiles and even carrion.

TRUMPETER FINCH
(Bucanetes githagineus)
A 12-centimetre long bird. Males have a red-orange peak with reddish feathers that stand out even more during the breeding season. Females have yellowish peaks and browner feathers. Both their heads are grey and their nasal sounds are similar to an ear trumpet.

ATLANTIC LIZARD
(Gallotia atlantica)
A small dark lizard, changing shades depending on the time of the year, the area and age too. Males have a row of blue or turquoise eyespots on each side; females too, but smaller.

TARENTOLA
(Tarentola angustimentalis)
A reptile with nighttime habits that feeds on arthropod, with a flattened but strong body, and they can reach up to 15 centimetres. Their colouring depends on their age and region, that is why there are dark ones and others that are brown or grey. Their eyes are almost golden.

BLIND ALBINO CAVE CRAB
(Munidopsis polymorpha)
A small crab whose colouring goes from white to orange. Due to its capacity to adapt to caves, adult ones have no eyes. During the day it hides between cracks and stones, but during the night they show up to feed on diatom, detritus and even dying and dead animals.

HOUBARA BUSTARD
(Chlamydotis undulata)
A large bird (between 55 and 65 cm) that lives on rocky plains, and has a long stripe of black feathers on both sides of its long neck. Its upper body has sandy shades with a blackish vermiform pattern. Females are smaller, with less prominent stripes on their neck.

KENTISH PLOVER
(Charadrius alexandrinus)
A bird between 15-17 cm long with blackish peak and legs. Males have black spots on their head and chest, whereas females are brownish. The colour of their coat is more intense in the summer than in the winter.

CORY'S SHEARWATER
(Calonectris diomedea borealis)
A sea bird that feeds on fish, cephalopods and crustaceans, and reaches up to 45-65 cm. Its upper part is brownish, a mottled grey brown shade, and the base of its tail is lighter. Its lower part is lighter, white, with dark-edged wings. Its peak is yellow and robust, with a dark tip. This bird makes a very peculiar sound: "guaña guaña".

OSPREY
(Pandion haliaetus)
A 53-66 cm bird of prey connected to the sea and which feeds on fish. This bird is white on its lower part, changeable dots on its chest and a brown-black mask that covers part of its neck and goes as far as its upper part, which is quite dark; a white pileus.

EGYPTIAN VULTURE
(Neophron percnopterus)
Between 55 and 65 cm, this bird of pray has a yellow face with no feathers. The feathers on its head look like a lion's mane. When it flies, its wedged tail and black primary and secondary wings stand out. It's an endangered species.

LICHENS

Let's not forget, in this section dedicated to biodiversity, an essential group for ecosystems, lichens. Lichens are complex organisms formed by the symbiosis between a fungus and an algae, and sometimes yeast. They are quite resilient to adverse environmental conditions and it is precisely that "team work" which allows for that resilience. As the algae is able to conduct a photosynthesis, it provides the nutrients that are necessary to live; whereas the fungus protects the algae from desiccation and it allows it to colonise ecosystems which it would not be able to colonise otherwise.

This group of organisms manages to adapt to extreme conditions, and they're able to put up with periods of desiccation and dampness without suffering damage to their structure. They're pioneers in many ecosystems, like for instance in volcanic areas after eruptions, and they share the colonising role with insects. Furthermore, they play an essential part in the formation of the ground, favouring the evolution and settling of fungus and plants, and therefore contributing to the biological wealth. They are also used as indicators of air pollution, as they're quite demanding when it comes to pure air.

There are green, grey, ochre, red and brown lichens, covering rocks with a wide range of shades. Sometimes they're very small and we need to watch them up close for us to become aware of their great morphological diversity and lifestyles, small details that enrich the natural spaces not only when it comes to the landscape but also from a biological perspective.

The number of species of lichens on the island is high. One of the lichens has made a significant mark in the history of the island, the orchila. It grows in coastal areas facing the winds, although it's also possible to see it in other areas; this lichen was used to make purple dye. The orchila trade was important in Lanzarote from the 14th Century to the 19th, but the appearance of the cochineal and artificial dye made it lose its popularity.

PROTECTED NATURAL AREAS

PROTECTED NATURAL AREAS

Lanzarote enjoys a great variety of ecosystems which are very well preserved and have numerous protected natural areas, some of which have been declared as the Canary Islands Network of Protected Natural Areas (RCENP), a regional protection system known as Red Natura 2000 (RN2000), European ecological network of biodiversity conservation areas consisting of Special Areas of Conservation (ZEC) and Special Protection Areas for Birds (ZEPA). The aim of RN2000 is to ensure the long-term survival of species and types of habitat in Europe, helping to halt the loss of biodiversity. It is the main instrument for the conservation of nature in the European Union.

Below, there is a list with the different spaces and their membership to each one of the networks or in some cases both, where applicable.

▶ Los Jameos Scientific Site of Interest (RCENP / RN2000)

This section of the volcanic tube de la Corona has interior lakes, which makes it a unique geomorphologic formation besides being the longest submerged lava tube in the world. The presence of more than a dozen species of great scientific value makes Los Jameos a unique place.

▶ Janubio Scientific Site of Interest (RCENP / RN2000)

These salinas are a valuable cultural element and are also the ideal habitat for the refuge, nesting and breeding of migratory water birds that further enrich this space.

▶ Protected Landscape of Tenegüime (RCENP)

The Tenegüime ravine is representative of the geology of the island and has relevant landscape values. Endemic species such as the *tojia* and the presence of birds like *guirres*, *pardelas* and kestrels should be highlighted.

▶ Protected Landscape of La Geria (RCENP / RN2000)

This large area of vineyards and orchards constitutes a special landscape which is a mixture of nature and human action in which the harmonious coexistence of both is demonstrated. Ornithological richness stands out in this unique environment in the world.

▶ La Corona Natural Monument (RCENP / RN2000)

Volcán de la Corona and the pahoehoe lavas formation which emerged from its eruption form a geomorphologic structure of great beauty and interest, as well as two natural habitats which converge in the area, the underground and the *tabaibal ralo.*

▶ Los Ajaches Natural Monument (RCENP / RN2000)

Old volcanic massif formed and modelled in different weather conditions into the existing ones today. Los Ajaches also has paleontological sites of great scientific interest and protects an important avifauna.

▶ Cueva de los Naturalistas Natural Monument (RCENP / RN2000)

Volcanic tube with galleries and spaces of great appeal and scientific interest.

▶ Islote de Halcones Natural Monument (RCENP / RN2000)

Remains of a volcanic structure that is surrounded by the lavas of the 1730-1736 eruptions due to its height. Interesting from a scientific and landscape point of view.

▶ Montañas del Fuego Natural Monument (RCENP / RN2000)

From high landscape, this set of cones belongs to the eruptions of the 18th Century, it shows a high degree of conservation and is a reference point in the Timanfaya area.

▶ Los Islotes Integral Natural Reserve (RCENP / RN2000)

From a geomorphologic and scenic point of view the Islets to the north of Lanzarote are very significant. In addition, this is due to the number of birds they shelter, with a large number of species, among which we can find, seabirds, raptors, steppe birds and migrants. Another added value of the islets is the existence of paleontological deposits.

Timanfaya National Park (RCENP / RN2000)

Volcanic habitat sparsely colonised, which makes it a real laboratory of colonisation processes because most of the territory was created by the eruptions that took place between 1730-1736 and 1824. Geological and geomorphologic elements are plentiful, such as caves, *hornitos*, balls of accretion, pahoehoe lavas formations, etc. The entire area of Timanfaya is an area of special protection for birds; in addition it must be taken into account that the Islet of Falcons and the Massif of Timanfaya are included in this space.

The Chinijo Archipelago Natural Park (RCENP / RN2000)

The Famara massif, the Jable plains and the northern Islets of Lanzarote are geomorphologic elements of great beauty, to which we must add its biological importance because of the exclusive species in this area. Prehistoric sites of extinct bird eggs add scientific value.

Los Volcanes Natural Park (RCENP / RN2000)

This is mostly made up of recent lavas from historical flow, lapilli fields, cones and craters that are preserved in the same way as the moment they formed, adding a greater geomorphologic and landscape interest to the area.

Malpais del Cuchillo Special Conservation Area (RN2000)

This area enjoys the presence of the plant called *"Caralluma burchardii"* commonly known as *"cuernúa"*, a species that is currently endangered and included in the Canarian catalogue of protected species.

Los Risquetes Special Conservation Area (RN2000)

A small area with the presence of community habitats of interest such as vegetable groups that develop in saline environments.

Llanos de la Mareta and Cantil del Rubicón Special Protection Area for Birds (RN2000)

This stony area in the south of the island of Lanzarote is home to important birdlife, notably steppe birds and sea bird colonies.

▶ Llanos de la Corona and Tegala Grande Special Protection Area for Birds (RN2000)

Areas of great importance from an ornithological point of view, especially due to the presence of steppe and marine birds.

▶ Sebadales de la Graciosa Special Conservation Area (RN2000)

Located in the northeast of the island of Lanzarote, along the coast of the municipality of Haría and the tiny island of Graciosa. An important meadow of sea grass is located here which provides an environment which is both, beneficial for fish and it encourages rich fauna.

▶ Sebadales de Guasimeta Special Conservation Area (RN2000)

The existence of a shallow and sandy coastal shelf, allows for the presence of phanerogams and with this it favours the existence of invertebrates and marine vertebrates.

▶ Marine Reserve of La Graciosa and the Islets of the North of Lanzarote (MAPAMA)

A marine reserve is a specific measure that contributes to achieving a sustained exploitation of fishing interest resources, establishing specific protection measures in delimited areas of traditional fishing grounds. These areas must meet certain characteristics that allow for the improvement of the reproduction conditions of certain species from the point of view of fishing and the survival of their young.

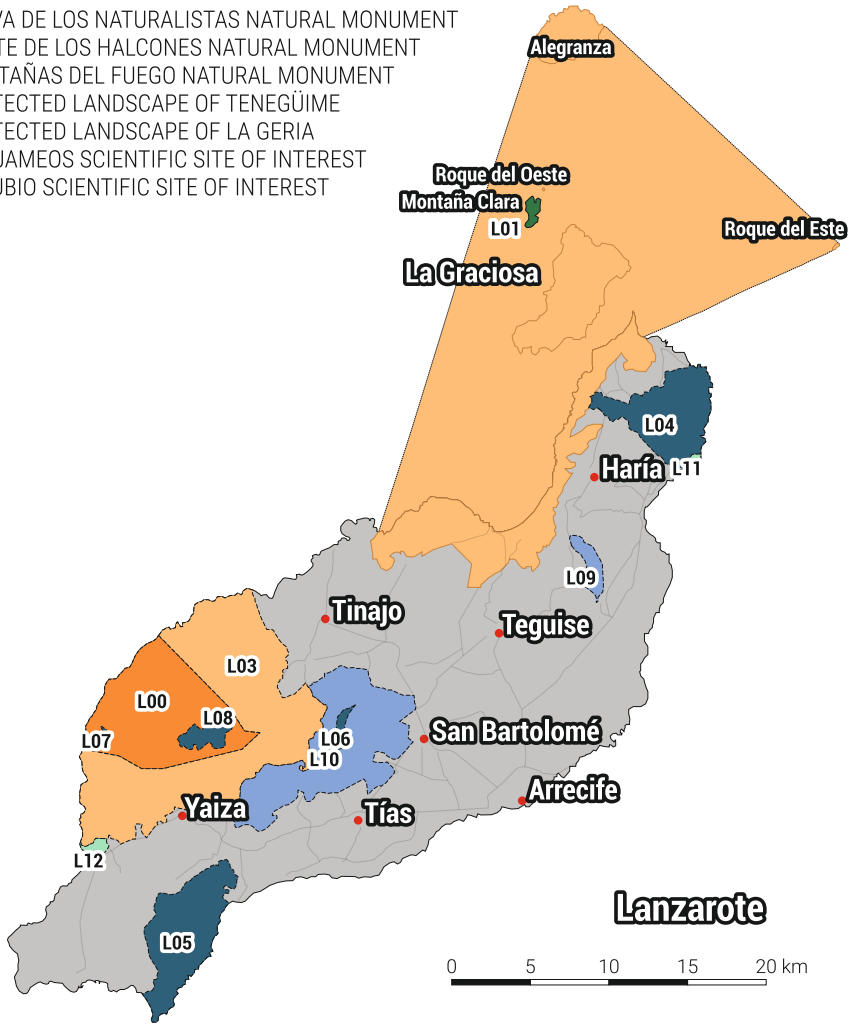
Due to the shallow and therefore well illuminated depths, influenced by cold waters which are rich in nutrients produced in the nearby African coast, this area in the north of Lanzarote became very important from a fishing point of view. With an area of 70,439 hectares, this reserve aims to regenerate the target resources of traditional fishing activities.

▶ Lanzarote Biosphere Reserve (UNESCO)

The International Council of the UNESCO MaB Program which was agreed on 7th of October 1993 to declare the island of Lanzarote a Biosphere Reserve. Among the many reasons for this declaration, it is important to highlight the network of natural spaces, the high environmental cultural level, the wide catalogue of individual works adapted to the environment and the conservation of territorial involvement that represents a beautiful and singular heritage.

PROTECTED NATURAL AREAS

- L00 - TIMANFAYA NATIONAL PARK
- L01 - LOS ISLOTES INTEGRAL NATURAL RESERVE
- L02 - THE CHINIJO ARCHIPIELAGO NATURAL PARK
- L03 - LOS VOLCANES NATURAL PARK
- L04 - LA CORONA NATURAL MONUMENT
- L05 - LOS AJACHES NATURAL MONUMENT
- L06 - CUEVA DE LOS NATURALISTAS NATURAL MONUMENT
- L07 - ISLOTE DE LOS HALCONES NATURAL MONUMENT
- L08 - MONTAÑAS DEL FUEGO NATURAL MONUMENT
- L09 - PROTECTED LANDSCAPE OF TENEGÜIME
- L10 - PROTECTED LANDSCAPE OF LA GERIA
- L11 - LOS JAMEOS SCIENTIFIC SITE OF INTEREST
- L12 - JANUBIO SCIENTIFIC SITE OF INTEREST



PRACTICAL GUIDE

MUSEUMS AND INFORMATION POINTS

CASA DE LOS VOLCANES

A vulcanology centre of great scientific, cultural, educational and tourist interest whose main objective is to spread culture and education as well as promote science in the field of vulcanology.

Jameos del Agua
(+34) 928 810 100
geoparque@cabildodelanzarote.com

MANCHA BLANCA VISITORS AND INTERPRETATION CENTRE

Next to the Timanfaya National Park, in the midst of the lava flows of the 1730-1736 eruptions. The aim of this centre is to inform and develop interpretation activities for all visitors to the Park. There are exhibition rooms, a simulation room and a sensorial experience room, as well as 2 viewpoints.

Carretera Tinajo - Yaiza (LZ-67) km 9,6
(+34) 928 118 042
manchablanca.cmayot@gobiernodecanarias.org

ECHADERO DE CAMELLOS MUSEUM

A small museum dedicated to dromedaries and their connection to Lanzarote. There are adaptations of farming tools that locals used with these unique animals.

Carretera Tinajo - Yaiza (LZ- 67) km 16

MUSEO DE LA PIRATERÍA

Located in Castillo de Santa Bárbara, a fortress whose own history is linked to pirate attacks, not only showing the history of piracy in the Canary Islands, but also the history of Teguise.

Castillo de Santa Bárbara. Montaña de Guanapay. Teguise.
(+34) 928 845 001
informacion.cultura@teguise.es
www.museodelapirateria.com

EL PATIO FARM MUSEUM

Located in an old 1845 country house, displaying a Lanzarote agricultural holding. The exhibition shows how the volcanic land was used for cultivation. It includes pottery, and roses, among others. There is also a cellar, a mill and a chapel.

C/ Echeyde, 18. Tiagua.
(+34)928 529 134
info@museoelpatio.com

CASA-MUSEO DEL TIMPLE

As well as a *timple* museum including other small guitars from different cultures all over the world, it is also a research centre and cultural space. The museum aims to spread, preserve and study Canarian traditional culture.

Plaza de la Constitución. Teguise.
(+34) 928 845 181
www.casadeltimple.org

TANIT ETHNOGRAPHIC MUSEUM

Located in an ancient 18th Century house, it helps us get to know the history of the island, the different uses, traditions, symbols, tools and clothing, as well as everything related to the people of Lanzarote.

C/ Constitución, 1. San Bartolomé.
(+34) 928 802 549
lanzarote@museotanit.com
www.museotanit.com

CÉSAR MANRIQUE FOUNDATION

The house of the local artist was built in the middle of a lava flow part of the 1730-1736 eruptions. This house was inspired by traditional architecture, and it shows how the work of humans and nature can connect. It currently holds an art museum.

Taro de Tahíche. C/Jorge Luis Borges, 16. Tahíche.
(+34) 928 843 138
fcm@fcmanrique.org
www.fcmanrique.org

A CASA

This museum house used to be home to writer José Saramago, awarded the Nobel Prize of Literature in 1998. Saramago used to say that the house was made of books. Among other interesting things, there is an olive tree that was adapted to the volcanic land it's planted on.

C/ Los Topes, 2. Tías.
(+34) 928 833 053
acasajosesaramago@gmail.com
www.acasajosesaramago.com

TOURIST OFFICES

Arrecife Tourist Office - Kiosco de la Música

Parque José Ramírez Cerdá, s/n. Arrecife.
(+34) 620 264 703
Monday to Friday 9:30 -17:00 h. / Saturdays 10:00 -13:00 h.
info@turismolanzarote.com
www.turismolanzarote.com

Costa Teguise Tourist Office

Avenida Islas Canarias, s/n (next to Pueblo Marinero). Costa Teguise.
(+34) 928 592 542
costateguise@turismoteguise.com
www.turismoteguise.com

Teguise Tourist Office

Plaza de la Constitución, s/n (next to Palacio Spínola). Teguise.
(+34) 928 845 398
villateguise@turismoteguise.com
www.turismoteguise.com

Airport Tourist Office

Arrivals T1. Lanzarote Airport.
(+34) 928 820 704
aeropuerto@turismolanzarote.com
www.turismolanzarote.com

Muelle de los Mármoles Tourist Office

Muelle de los Mármoles, s/n. Arrecife.
(+34) 928 844 690
puerto@turismolanzarote.com
www.turismolanzarote.com

Puerto del Carmen Tourist Office

Avenida de las Playas, s/n. Puerto del Carmen.
(+34) 928 510 542
turismo@ayuntamientodetias.es
www.puertodelcarmen.com

Puerto del Carmen II Tourist Office

Centro Cívico el Fondeadero. C/ Lanzarote, 1- Local 9. Puerto del Carmen.
(+34) 928 513 351
turismo@ayuntamientodetias.es
www.puertodelcarmen.com

San Bartolomé Tourist Office

Casa Cerdeña. C/ Dr. Cerdeña Bethencourt,17. San Bartolomé.
(+34) 928 522 351 / 928 522 593
turismo@sanbartolome.org
www.sanbartolome.es

Playa Blanca Tourist Office

C/ Varadero, 3. Playa Blanca.
(+34)928 518 150
oficinaturismo@yaiza.org
www.yaiza.org

Turismo Lanzarote

C/ Triana, 38. Arrecife.
(+34) 928 811 762
info@turismolanzarote.com
www.turismolanzarote.com

OUTDOOR MARKETS

ARRECIFE STREET MARKET

San Ginés square and the adjacent streets in the centre of Arrecife, turn into a local and traditional food product market.

Saturdays 9:00-14:00 h.

TEGUISE STREET MARKET

La Villa de Teguise has a market on its main historical streets and squares. There are traditional and contemporary crafts, farm produce, cheeses, wines... and many other local and international products.

Sundays 9:00-14:00 h.

HARÍA STREET MARKET

In Haría's Plaza de la Constitución, the market has handcrafted products exclusively. A varied and charming market, including traditional and trendy crafts, as well as pastries and local farm produce.

Saturdays 10:00 -14:00 h.

MANCHA BLANCA FARM AND CRAFTS MARKET

Located next to Iglesia de los Dolores in Mancha Blanca, this market brings you the chance to discover products from all different sectors: fish, cattle and farm produce as well as handcrafts and pastries. The last Sunday of the month, they show local traditions and customs.

Sundays 9:00 -14:00 h.

UGA MUNICIPAL MARKET

In the village of Uga, next to the church, on an old traditionally farming house, there is a small market that promotes agriculture and farming in the area.

Saturdays and Sundays 9:30-13:30 h.

LA GRACIOSA DAILY MARKET

On the streets near Puerto de Caleta del Sebo, there are craft stalls where you can purchase souvenirs from this 8th island, overlooking the impressive Risco de Famara and the boats that are calmly resting on the dock.

Everyday 10:00 - 18:00 h.

SAN BARTOLOMÉ FARM AND CRAFTS MARKET

In this market, located in Plaza León y Castillo, you may find local crafts, food and farming products.

First sunday of the month 9:00-14:00 h.

MARINA RUBICÓN STREET MARKET

Rubicón's Marina, in Playa Blanca, offers a range of local products from Lanzarote.

Wednesdays and Saturdays 9:00 - 14:00 h.

PUERTO DEL CARMEN STREET MARKET

In this market located in Varadero, in a seafaring atmosphere, there are traditional handcrafted products, custom jewellery and other local products.

Fridays 10:00-14:00 h.

COSTA TEGUISE MARKET

In Plaza del Pueblo Marinero, there is a market located in a pleasant atmosphere surrounded by nearby restaurants and bars.

Fridays 17:00 - 22:00 h.

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