

## Ecotourism Guide



## Waterways and Stories in Sitia Geopark



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Global Geopark

**Project “Waterways and Stories in E4 and the Geoparks of the Eastern Mediterranean, with the Acronym «Waterways»”**

**Co-funded by the European Union (ERDF) and national resources of Greece and Cyprus**

The main objective of the project is to improve the attractiveness and increase the traffic on the intervention areas of Crete and Cyprus on the E4 - European Long Distance Trail, mainly mountainous areas that are at a disadvantage in terms of economic development and which are the most susceptible to climate change.

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**«Waterways»**

**Waterways and Stories in E4  
and the Geoparks of the Eastern Mediterranean**



**SITIA 2022**

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## INTRODUCTION

In addition to being a vital element of nature and of the preservation of species, water was also the basic founding material of many cultures, especially in the Mediterranean. Water is a necessary condition for life on our planet, a source of health, well-being, euphoria, strength and inspiration. It is no coincidence that great ancient civilizations developed in areas around water. Its existence served as the basic criterion for the settlement of people and the creation of organized societies and settlements.

From his first steps on earth, man found that water is an integral element of life and treated it with respect and gratitude, related it closely with his metaphysical concerns and included it in his daily life. Springs, rivers, oceans and rain took on the faces of gods or demigods. From the water man learned to write fairy tales and songs, to seek for fairies and elves in springs and lakes, he learned to move machines, to improve the yields of his crops, to live with it by building bridges, water mills, fountains and to enjoy each of its drop, thanking it for the life it gives him.

Nowadays, the terms and criteria of our behavior towards this good have changed. Management, exploitation, cost, yield, profit are all that matter. But rapid climate change is creating huge problems in many areas of our planet, with the world's weakest and poorest experiencing them to a greater extent. The 21st century, apart from being the century of technology, will certainly be the century of water. And, if in the coming years developments in social media and internet technology will determine the shape of "the world of tomorrow", the sufficiency of drinking water will decide the fate of man on earth.

The problem of water shortage and especially the lack of clean drinking water afflicts about 50% of the planet. Water is a good that belongs to everyone. Access to this essential element for life is now part of fundamental human rights and no one should privatize and sell water as yet another commercial product.

The ecotourism guide is addressed to the walker, the naturalist, to those for whom walking is not another sporting activity, but an opportunity to get to know the natural landscape, the people, the geology, the flora and fauna of the area, the history and culture. To learn about man and his struggle to take root in this place, while respecting the landscape and the goods that nature gave him. Only if you get to know, if you walk, if you taste and learn the history of the place where you live or visit, only then can you appreciate and protect the place that hosts you.



## "Waterways and Stories in E4 and the Geoparks of the Eastern Mediterranean" - WATERWAYS

The Mediterranean University, the Technology and Research Foundation (ITE), the Ephorate of Antiquities of Lasithi, the Municipality of Siteia and the Geopark of Sitia, the Troodos Development Company (ANET) and the Troodos Geopark, as well as the FRENTERIK Research Center collaborated for the WATERWAYS project.

The Geoparks of Sitia and Troodos in Cyprus are monuments of geological heritage included in the Network of European and Global Geoparks, while they have been recognized as UNESCO World Geoparks since November 2015.

Apart from the added value it gives them, this recognition demonstrates the richness of the geological and cultural heritage they possess and the special importance that this heritage has in terms of scientific and educational value, quality and rarity, in European and global scale. At the same time, it is a comparative advantage that highlights the unique development opportunities and possibilities through the protection, promotion and exploitation of this rare heritage and identity that will contribute to the sustainable development of local communities and their emergence as geo-tourism destinations of excellence. The main objective of the project is to improve the attractiveness and increase the traffic on the intervention areas of Crete and Cyprus on the E4 - European Long Distance Trail. These - mainly mountainous - areas are at a disadvantage in terms of economic development and are the most susceptible to climate change. The increase of their traffic will be achieved through the upgrading of the tourist product with the introduction of the water element as an important shaping factor, both of the natural landscape and of culture in these areas.



## E4

E4 is an international trail under the supervision of the European Mountain Walking Association (E.W.V.) and has been designed and marked by the Hellenic Mountaineering-Climbing Federation. It starts from the south of Spain and the Pyrenees, continues through France, Switzerland, Germany, Austria, Hungary, Romania, Bulgaria, Greece, which it crosses from north to south, from Promaxonas to Gytheio and then continues to Crete (Kastelli Kissamos), which it crosses from west to east, ending up in Kato Zakros to continue its "journey" to Cyprus from there. The total length of the E4 is over 10,000 km, giving the hiker or climber the opportunity to experience all the variety of the landscape, but also the richness of Greek and Cypriot nature.

The European Trails constitute a network of long-distance trails that cross Europe. Passing through many different European countries they pass through diverse ecosystems and areas of particular cultural interest. In general, the routes make use of existing national and local trails. In the 1980s, an effort began so that two of the European long-distance trails would also pass through Greece. These are E4 and E6, which cross the country from north to south and from west to east.





## E4 in the Geopark of Sitia Brief description

Chrysopigi - Dafni - Vori - Chandras - Ziros - Skalia - Zakros - Kato Zakros

Starting from Chrysopigi (Roukaka), we follow a relatively easy section of the E4 trail of Crete that passes, for the most part, through paths, dirt roads and asphalt. Arriving in Dafni, at 600 meters above the sea level, we proceed to the east and through dirt roads and paths we reach the village of Vori. Then, we proceed to the village of Papagiannades, at 450 meters above the sea level, we climb up through the village, we cross the wind farm of Handras and reach the village of the same name. Via a paved road we reach Ziros at 590 meters above the sea level. From the north-eastern side of the village we follow the old path, which leads us to the area of Zakanthos.

We continue our course to the small abandoned settlement of Skalia at 650 meters above the sea level. At the foot of the rock, opposite the historic church of the village, there is a spring with drinking water. In Skalia, north of the church, the trail leads us to the area of Mavros Kampos which is crossed by a dirt road. At the eastern end of the plateau we abandon the dirt road and turn left on the trail to the old upper neighborhood of Zakros called "Mesa Mylos" and located at 250 meters above the sea level.

Following the E4 signs, we reach the central square and take the narrow concrete road, which descends through a sparsely built area. We continue on a dirt road, until we finally reach the entrance of the Zakros canyon, also known as the "Canyon of the Dead". Then, we follow the direction of the concrete conduit that crosses the canyon and through a path in the bed of the canyon overgrown with oleanders and plane trees, we reach the area with the cave

walls, which served as cemeteries during the Minoan period. After a few minutes we are at the exit of the canyon, from where we follow the dirt road to the left and, after passing south of the Minoan palace, we end up in the modern small coastal settlement of Kato Zakros.

The Geopark of Sitia is located in the eastern part of Crete. It includes the wider area of Sitia, as well as all the coastal areas from North to South. It is basically a mountainous area, with the mountains of Zakros dominating the landscape and the ragged coastlines characterizing the entire coastal zone. The boundaries of the Geopark have been clearly defined and cover a large extent with a total area of 517 km<sup>2</sup>. The Park is characterized by a wide variety of elements of the abiotic and biotic environment and is a unique geotourism destination. Since 2015, the Geopark of Sitia is officially recognized as a UNESCO World Geopark.



## UNESCO World Geopark of Sitia

The Geopark of Sitia is characterized by a very rich geoheritage, which includes impressive rocks, special formations and geoforms, characteristic tectonic and microtectonic structures, as well as a wealth of fossils. Geosites of global importance, such as the marine terraces observed on the shores of the eastern and south-eastern coastal parts of the Geopark bear witness to the geological changes and orogeny of the area. Large and small canyons, created by the combined action of tectonic uplift and erosion, spread throughout the Geopark of Sitia and host rare endemic species of flora and fauna. The geology of the area of Sitia may not be as complex as that of other areas of Crete, but it has peculiarities that make it unique. The rocks that dominate the Geopark area are mainly of alpine age, limestones, marbles and slates. Among the most characteristic and impressive rocks of the Geopark are the reddish to crimson (purple) clay slates and the phyllites with little or no metamorphism.

Karst geoforms develop in the limestone rocks of the Geopark, which were created - almost exclusively - by the karst erosive processes, with little to no influence of tectonic forces. These geoforms include karst cavities of all dimensions (plateaus, polgas, dolines, holes), as well as the surface glyphs. Underground karst geoforms include caves and karst shafts, as well as sinkholes. Hundreds of caves attract the interest of the global scientific community and international speleological teams map and evaluate these unique and rare ecosystems that the Geopark of Sitia has by the hundreds.

The special feature of the caves in the area is that they present a small surface opening and have very steep slopes and, in many cases, a very long length that goes deep into the bowels of the Earth. The cave of Pano Peristeras is typical, where the mapping (which is still ongoing) by the French speleologist Jean Luc Carron, of the French speleological group L.U.C. (Lille Universitaire Club) has exceeded 9,000 meters of underground river; it is one of the largest underground rivers in Greece. Another example is the cave of Pelekitos, which, in addition to its great aesthetic value, the rich decoration that covers almost all the halls and the largest hall that exists in a cave in Crete, is one of the most important archaeological caves in the area, as traces of habitation from the Neolithic era were found in it.

The oldest fossils have been found in the area of Palaikastro and consist of plant remains from the Carboniferous period (~300 million years). The Miocene era in the Geopark area is represented by one of the most impressive and important fossils, the deinotherium (*Deinotherium Proavum*), a species related to the elephant. Skeletal fragments of the deinotherium were found in three locations within the Geopark boundaries. In addition to the deinotherium, an ancestor of pigs and a mastodon also lived in the area at the same time, according to two finds of fossilized teeth found in the area. Regarding the marine fossils of the era, fossilized shells and fragments of marine organisms have been identified in many places within Miocene rocks, such as: corals with characteristic appearances within reefal limestones, sea urchins (*Clypeaster*) and bivalves (*Chlamys*), within marls and marly limestones, as well as various foraminifera.





The Pleistocene era is represented in the Park area by very important fossilized mammals that once lived there and today are found in many, mainly coastal, locations: deer (*Candiacervus cretensis*), hippopotamus (*Hippopotamus creutzburgi*), elephants (*Elephas antiquus*).

Eastern Crete, and especially the region of Sitia, is one of the most important and special regions of Crete, from an environmental point of view. Its geographical position at the eastern end of the island, which allowed the exchange of species with Asia Minor, combined with the strongly dry-thermal climate that prevails in the area, created a mosaic of habitats and ecosystems. Some of them, for example the Vai Palm Forest, dominated by the *Phoenix Theophrasti*, are unique in the Mediterranean region.

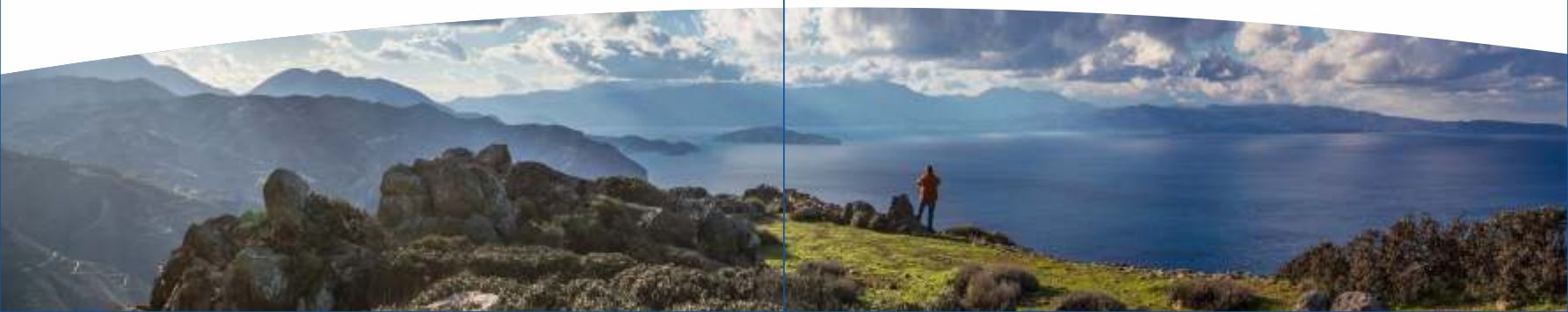
Due to its rare biodiversity, a large part of the Geopark is included in the network of NATURA 2000 areas. Visitors will come across rare species of flora and fauna, unique in Crete, Greece and Europe throughout the Geopark. Specifically, in the area one can observe over 60 endemic species, many of which are under protection status, with several of them included in the "Red Data Book of Rare and Endangered Plants of Greece" (*Phoenix Theophrasti*, *Bellevia sitiaca*, *Silene holzmanii*, *Orchis sitiaca*, *Asperula crassula*, stenoendemic species of extremely high importance, *Carlina sitiensis* and *Limonium sitiicum* also stenoendemic species, *Viola scorpiuroides*, African species extremely important for Europe etc.). The wider area also presents a large number of avifauna, which includes over 200 species of which 4 are classified as globally threatened, while 14 species of mammals (3 of which are cetaceans), 8 species of reptiles and 2 species of amphibians have been recorded.

The Geopark of Sitia is full of archaeological sites, places of memory and history. The Neolithic presence is confirmed by various finds, utensils and tools, such as those of the important Neolithic house in Magassa and caves, such as Pelekita.

During the Bronze Age, Sitia was the gateway of Crete to the ports of the eastern Mediterranean. The organization of trade, transactions and the concentration of goods led to the creation of large urban centers, such as Palekastro. Furthermore, Petras and Kato Zakros, the fourth largest palace in Crete, were port cities on the model of the rest of the Minoan "palaces".

Great cities were Itanos an important port and transit trade station between the East and Crete, Praios which is considered the center of the Eteocretans, that is, the old inhabitants of the island who retired here after the invasion of the Dorians, preserving the "Minoan" character of their language, religion and worship.

At the beginning of the 17th century, the leading work of Cretan literature, "Erotokritos", a metric love poem by Vicenzos Kornaros from Setia was created here. Today we also find brilliant examples of that era, such as the historic Stauropegian Monastery of Panagia Akrotiriani or Toplou, a 15th century building, but also the villages of Etia and Voila, where important Venetian buildings (towers, temples, houses) are preserved.



The local quality products are promoted through the Local Quality Agreement of the Geopark, with the olive oil of Sitia - one of the best olive oils in the world - but also the excellent wines standing out.

The Geopark of Sitia is suitable for numerous activities covering a wide range of preferences: from visitors who simply wish to rest in a traditional and unique part of Crete to the most demanding adventure seekers.

In the area there are world famous locations for windsurfing, such as Kouremenos beach which is one of the most popular beaches in the world for this sport.

There are also rock climbing areas mapped, while countless caves and canyons offer thrills for the more daring and trained.

The hiking trails play a leading role in the Park, as they offer the visitor the opportunity to get to know its beauty and its numerous attractions up close, such as, of course, the geosites, cultural monuments, beaches, etc. The routes are all marked on a map, while most of the trails are adequately marked. Apart from the purely hiking georoutes, routes which can be done either by car or by bicycle have also been designed.

Canyoning (crossing canyons) in the canyons of the Geopark with a smooth riverbed that do not require special expertise and equipment, but also canyoning in canyons with waterfalls and vertical rocks.

Also, there is the possibility for birdwatching, mountain biking and other similar activities.

Throughout the Geopark there is a well-organized network of information signs that, in combination with the website, the detailed map and the Geotourist guide available at the Geopark, inform the visitor. A Museum of Natural History in the local community of Zakros operates inside the Geopark. The Museum is dedicated to the features of the Park's Natural Environment with a purely educational and informative character. Through small representations of habitats (dioramas), showcases, stuffed animals, rocks, fossils and posters, the special elements of the flora, fauna and geology of the area are presented. The Natural History Museum of Crete has designed three educational Museum Kits for the Geopark of Sitia, which include complete educational programs addressed to students in the last grades of elementary school and the first grades of high school.

The settlement of Karydi hosts the Information Center which is dedicated to speleological research. The center, in addition to information about the Natural Park, the adjacent georoutes and the activities that are addressed to the visitor, also offers hosting infrastructure for special groups and researchers. The center offers the necessary overnight and accommodation equipment for groups of speleologists, biologists, schools, etc. who are interested in studying and observing the environment, the caves and the features of the mountain zone. It also has safety and orientation equipment for touring the wider area, the caves and canyons of the Geopark.



## A few words about the geology of the route

### 1. General geology of the area

The geological bedrock of the area consists of:

1. Unit of Tabular Limestones: limestone rocks that were deposited in a neritic to pelagic environment and form the basis of all units of Crete (about 175 to 37 million years)

2. Phyllite – Quartzite unit: metamorphosed rocks consisting mainly of phyllites, quartzites and schists, with characteristic occurrences of marbles and gypsum (about 265 to 236 million years)

3. Unit of Tripoli: fossiliferous limestone rocks that have been deposited in a neritic environment, the most characteristic fossils being the Rudists (about 208 to 65 million years)

4. Flysch of the Tripoli unit: alternations of sandstones, clays and conglomerates, metamorphosed, occurring in places

5. Magassa unit (Pindos): limestone rocks that have been deposited in a pelagic environment, with the main occurrences near the village of Magassa and in the wider area of the Ziros plateau (about 162 to 43 million years)

6. Post-alpine rocks: sedimentary rocks, with terrestrial, marine and lake origin and abundance of fossils (about 12 to 0,01 million years)

### 2. Limestones

Limestones are the dominant rock of the area and their main component is calcium carbonate. The solubility of calcium carbonate, and thus their deposition on the ocean bed, is dominated by the percentage of carbon dioxide, pressure, temperature and salinity of the water. They are deposited in shallow sea and continental shelf and more rarely deep sea environments. As the burial depth of carbonate sediments increases, so does their degree of cohesiveness and cementation, resulting in their gradual transformation into low-porosity rocks.

When limestones are excavated and come into contact with acidic rainwater, the calcium carbonate dissolves, causing pre-existing cracks to open further, creating extensive underground flow networks. Due to the high penetration of water, the limestones can be likened to sponges and this is one of the main reasons why surface water flows are not observed in the area. Landscapes created in this way are called karst. Some of the most characteristic karst formations are caves, dolines and polgas, sinkholes, canyons and lapiés.





### 3. Canyons

Canyons are an indication of a change in ground level (sea level) due to rapid uplift of an area due to tectonic movements or a decrease in sea level due to the last ice age. They can also be created by the collapse of a cave, but also along faults, which are zones of high erodibility.

### 4. Springs

Springs are points where underground water spurts to the surface and the way they are created is determined by the geology of the area. In their simplest form, springs are formed where water permeable rocks (limestone) overlie impermeable ones (schist, phyllite), creating a barrier that forces water to spurt instead of further infiltrate (contact springs). Often the contact of water permeable and impermeable rocks is due to the action of faults (fault springs). In other cases springs are created when the groundwater level in a large aquifer reaches the ground surface, usually consisting of impermeable sediments in the center of a basin (overflow springs).

### 5. Karst geofoms

Caves belong to the underground karst formations. They are created by the gradual underground erosion of the limestone rocks, resulting in the creation of chambers. The water, which is saturated with calcium carbonate, deposits it on the walls of the cavities, creating the decoration of the caves (stalactites, stalagmites, etc.)

Glyphs are the most common surface forms of karstification. They are formed when water flows over limestone, creating shallow grooves that look like either finger marks on plasticine or wheel marks on mud.

Dolines are formed by the gradual surface erosion or collapse of limestone, eventually revealing an underground chamber.



## The caves

Before we walk and meet the water on the path, let's mentally transport ourselves to the underground water paths, the chasms and the hundreds of caves that are located in the area of the Geopark of Siteia and give us the precious water.

Limestone, one of the rocks that erode easily and acts like a sponge, absorbs water through its cracks, which are on the surface of the soil. This water is collected in underground cisterns and flows in underground rivers, which can be many kilometers long. These underground waters, as soon as they find soft rock, will break it open and thus find a way out. They may reappear from large inlets and form large surface rivers, which will follow a seaward course, or they may appear as small or large springs. The cave of Peristera near the village of Karydi is one of the largest underground rivers in Greece with more than 8,500 meters explored and mapped to date.

But let's look at this process from the beginning:

As rainwater ( $H_2O$ ) falls to the ground, it combines with carbon dioxide ( $CO_2$ ) found in large quantities in the atmosphere or with that which is concentrated in fallen leaves on the ground, which are in the stage of decomposition. A new chemical compound is created by combining water with carbon dioxide, called carbonic acid ( $H_2CO_3$ ). This acid is found in the water, which is gathered in small cracks on the ground.

Over the years, the water dissolves the limestone and these cracks gradually get bigger and bigger, until finally a wide vertical



passage, a chasm, is formed. This process continues downwards and thus widens the cave, until it meets other rocks that do not allow it to pass through them. Then the water will start to move horizontally and thus form the large horizontal halla, while the cave will continue to grow, until the water finds a way out and reappears on the surface of the ground in the form of springs, lakes or rivers.

For our region, these mountains and caves are a source of life and their protection is non-negotiable.



**"The Route of Water"**



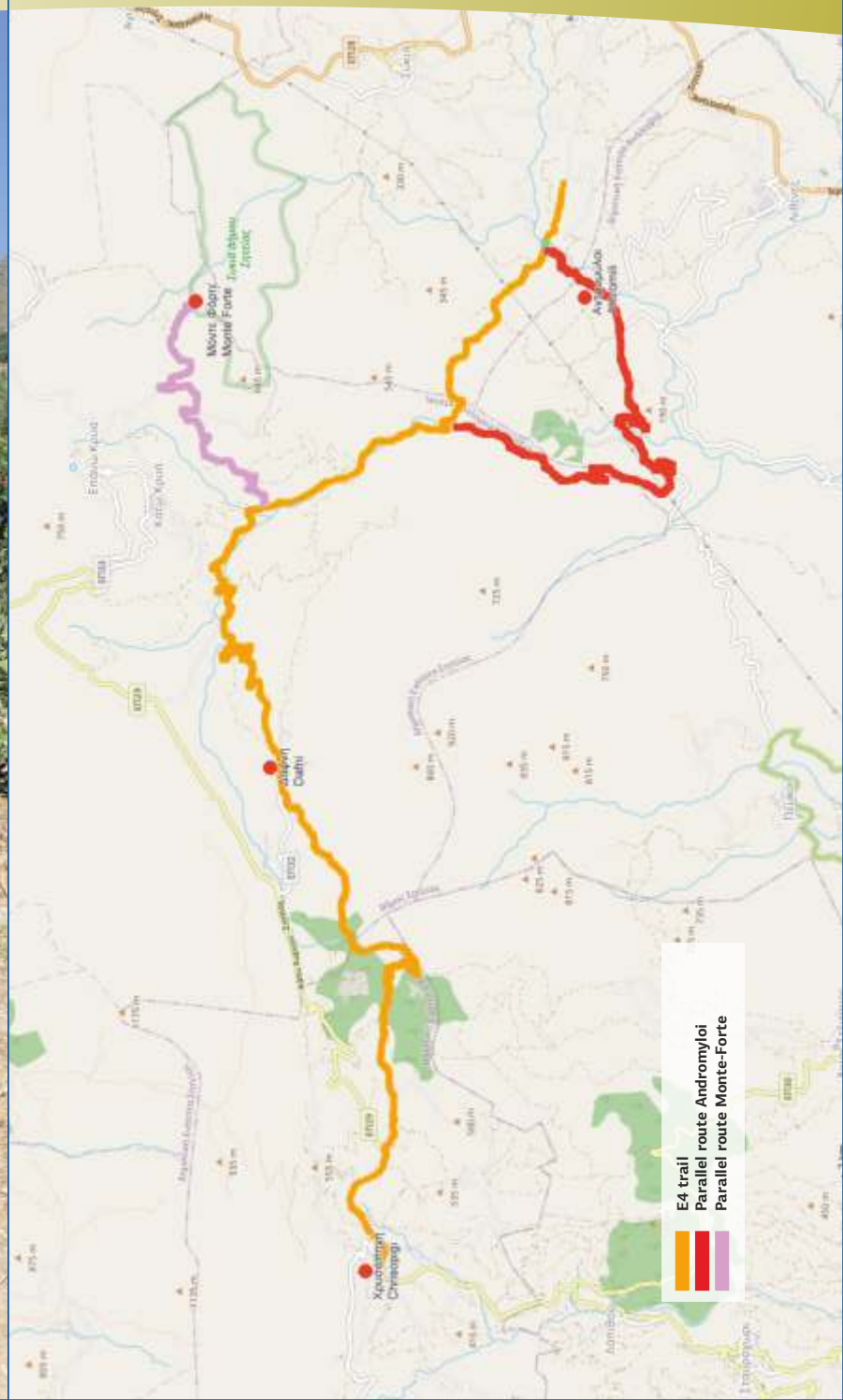
## Let's walk ... !

In order for the walker who is on the section of the E4 trail on the borders of the Geopark of Sitia to have the possibility to plan his visits to it, the route has been divided into 6 individual sections and each of them has its own story to "tell" about the water, the people, the culture, the landscape, the nature.





**1. Chrysopigi - Dafni -  
Monte-Forte - Adromyloi**





## CHRYSOPIGI

The European trail E4 in the Geopark of Sitia starts from Chrysopigi, a village located at the junction of two small valleys, in a strategic position, on a pass that joins the western with the eastern side of the mountainous massif of the province of Sitia. Until 1955, the village was called Roukaka, a name with unknown etymology, possibly of Arabic origin, while it then took its name from the temple of Zoodochos Pigi located in the square.

Its oldest mention is in a document of 1390, as a fiefdom of Fragoulos Moundazios. In the Venetian census of 1583 it is mentioned by the Castlekeeper as Rucaca, with 262 inhabitants. Its fertile area was inhabited both during the Venetian and Ottoman periods, when it was one of the largest Muslim villages in the region and became a center of revolutionary operations.

Inside the village are the picturesque church of John the Theologian and the church of the Presentation of the Virgin Mary. There were two fountains, according to the testimonies of the inhabitants, of which only one is preserved, which has suffered much wear, since the drum of the arch has been removed, and the interior of the hall-cistern is visible.

At a short distance there was the old settlement, of which only the temple of the Transfiguration is preserved near the gigantic plane trees and the spring that once watered the village. To the northwest is the church of Virgin Mary at Dichala and a little further the deserted settlement of Bebbona.



Spring of Chrysopigi



Square of Chrysopigi



Church of John the Theologian



Church of Virgin Mary at Dichala

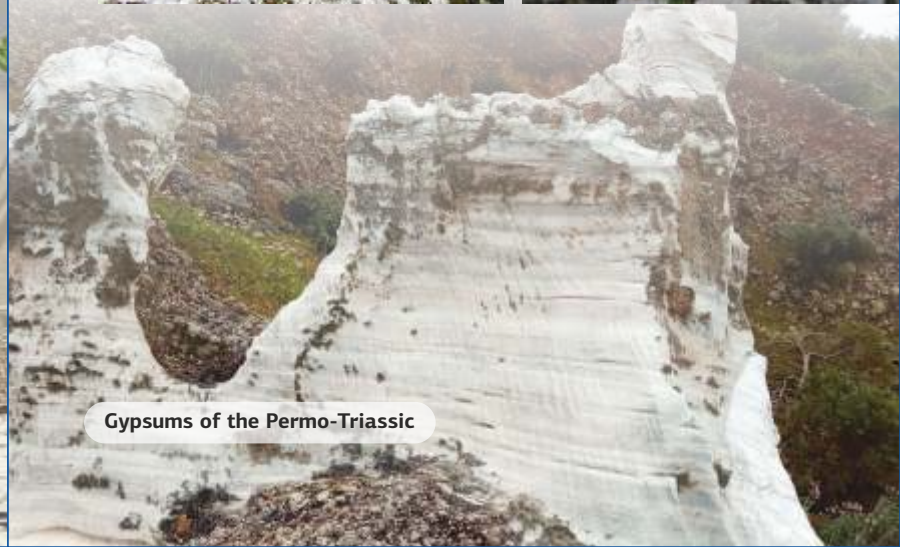


Our route starts from the eastern exit of the village following the paved road to Sitia and after 1.2 km we continue to the left on a dirt road that will lead us to the village of Dafni. As we continue our course on the slope of the hill, we have the asphalted road low to the left and to the north the mountainous massif of Ornos and its highest peak, Megali Mouri, until we reach the village of Dafni at 600 meters above the sea level, having covered the first 5,65 kilometers. The gypsums found in the area south of the mountainous massif of Sitia, in the wider area of Chrysopigi and on the E4 trail, belong to the lower part of the Phyllite-Quartzite Unit that was formed around the Permo-Triassic era (about 265 to 236 million years). They belong to a class of minerals called evaporites, due to their deposition due to evaporation of the liquid in which they are dissolved. Other minerals belonging to the category of evaporites are anhydrite and halite, i.e. salt.

Gypsums deposited in the Permo-Triassic period belong to 35% of the global evaporite deposits, and this is because they are associated with the closing of the hyper-continent, Pangea, and the creation of lagoons. Due to the gradual cut-off of the lagoons from the rest of the sea, as well as the dry climate that prevailed during the Permian, the conditions for their evaporation and deposition were favorable. The observation of the Ornos fault is also excellent, a fault that brings the Flattened Limestones (Plattenkalk) into contact with the Phyllites-Quartzites. According to recent studies, the fault is considered active, with a dynamic of Ms 6.5, with a 50% chance of reactivation in the next 650 years.



Church of Zoodochos Pigi



Gypsums of the Permo-Triassic



## DAFNI

Dafni is a small mountain village with many waters, a beautiful square with an impressive gigantic plane tree and the 17th century church of the Virgin Mary nearby. It is mentioned for the first time in F. Barozzi's census as Dhafni in 1577, while the Castlekeeper in 1583 mentions it as Dafni, with 187 inhabitants.

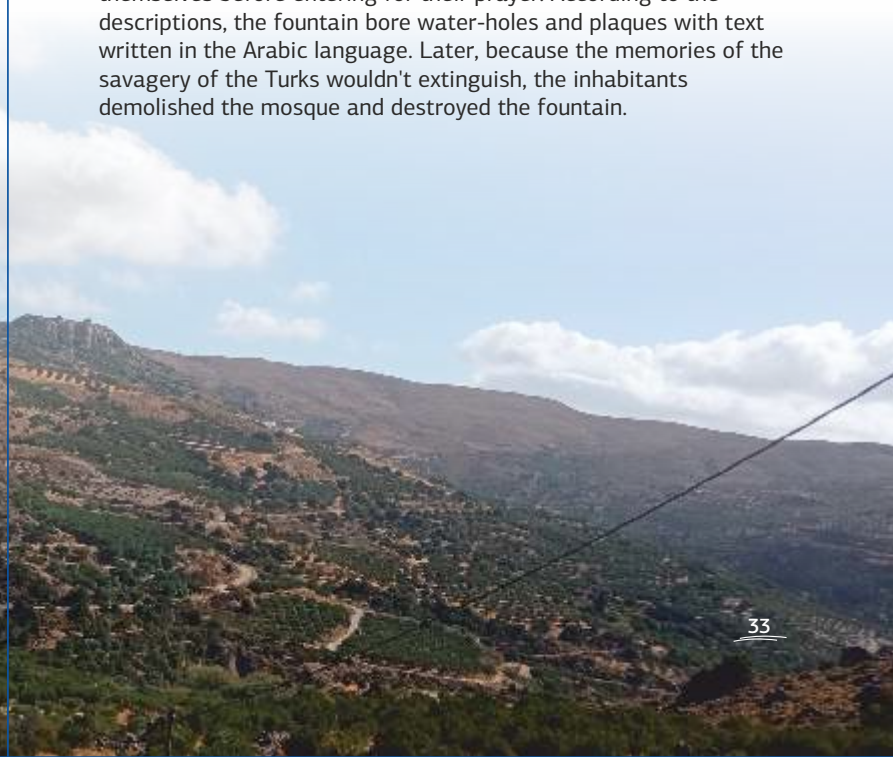
During the Turkish rule, Dafni became a center of Muslim fanatics and, as seen in the 1881 census, most of its inhabitants were Ottomans. In the revolution of 1897 the Christians besieged the Turks in the village Mosque, managed to kill many of them and later captured all 30 fugitives who had hidden in a cave near the village.

At that time, there was a mosque in the square of the village and directly opposite a wonderful Ottoman fountain that is no longer preserved, but in 1986 the Cultural Association of the village ensured that the one we see today was built in its place.



### **The fountain in the square:**

The wonderful fountain in the village square during the Turkish rule, apart from its functional role, also had a religious character. According to the Koran, the believers had to wash to purify themselves before entering for their prayer. According to the descriptions, the fountain bore water-holes and plaques with text written in the Arabic language. Later, because the memories of the savagery of the Turks wouldn't extinguish, the inhabitants demolished the mosque and destroyed the fountain.





### **The fountain in the area of Katostrati:**

At the time of the Turkish rule, fountains were often built in areas outside the settlement, in passages to quench the thirst of passers-by and to bless the one who built them, so that his sins were saved. Such a small, modest fountain is still preserved today outside the village, to the NE, 20 m from the provincial road in the area of "Katostrati". It consists of a hall - cistern with a facade built with tuffs. According to information from the inhabitants, perhaps its founder was the Turkish owner of the area.

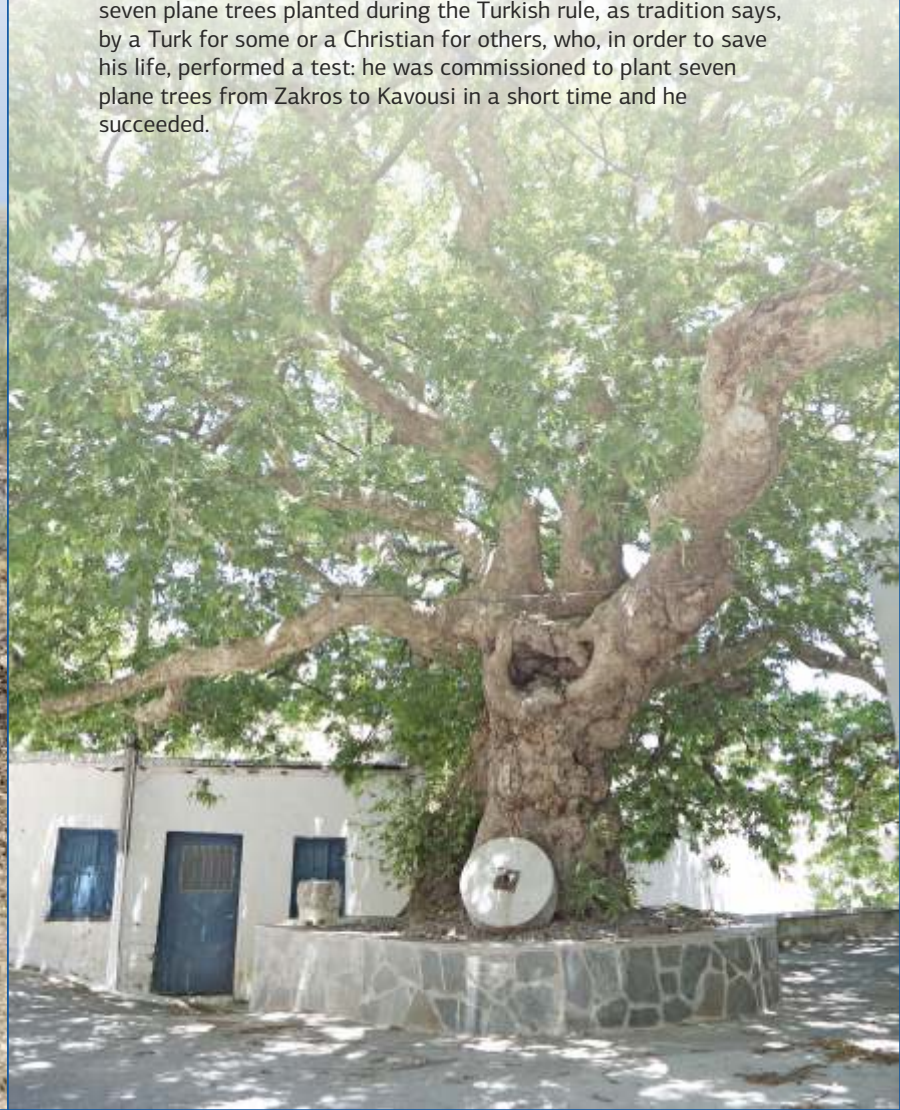


### **The fountain in the area of Tzigounia:**

Just before we enter the village, to the east, in the area of "Tzigounia", there was the kimeraki, as they still call the Ottoman fountain from the Turkish word "kemer", i.e. arch, because of the characteristic arch with the drum on its facade. It is said that the Christian inhabitants of Dafni who lived in the nearby small settlement during the Turkish rule used to get water from there. The fountain today is destroyed.

### **The plane tree in the square:**

The presence of the gigantic plane tree in the village square testifies to the abundance of water in the area. It is one of the seven plane trees planted during the Turkish rule, as tradition says, by a Turk for some or a Christian for others, who, in order to save his life, performed a test: he was commissioned to plant seven plane trees from Zakros to Kavousi in a short time and he succeeded.





From Dafni we start descending to the eastern exit and follow the downhill dirt road that crosses the slope to the gully overgrown with plane trees. After having traveled 3.6 kilometers from the village of Dafni, we follow the parallel path to the E4 trail, on a dirt road, with the villages of Epano (Up) and Kato (Down) Krya on our left, heading to Monte Forte fortress. This parallel route is 3.1 kilometers long.

## MONTE FORTE

North-east of the settlements of Epano (Up) and Kato (Down) Krya, on the steep hill with the high and steep rocks in a strategic position that visually controls the entire area, is Monte Forte or Apano (Upper) Kastelli. It is a fortress from the Middle Byzantine period (10th – 13th century AD) that belongs to the network of inland fortresses. It was used by the Venetians from the beginning of the 13th century in order to ensure their sovereignty over the local population, while, during the revolutions, it was often occupied by the rebels. In 1303 the great earthquake of Crete destroyed the fortress which was repaired, but it began to become more and more deserted and, probably, in the great earthquake of 1490 or 1508 it was almost destroyed.

The fortress was inaccessible from all its sides except one, which was originally walled, as evidenced by remains of rampart walls. A cobbled path leads to the fort gate, which must have been the main entrance to the fortified enclosure protected by a square tower with two compartments. In the center of the fortress, the church of Agios Georgios is preserved, while to the east is a vaulted two-aisled cistern that was used to collect rainwater.

To return to the E4 trail again, we follow the dirt road continuing parallel to the gully, until we meet the path at 1.8 km, just before the entrance to the canyon of Anevryta.



Interior of vaulted cistern



## CANYON OF ANEVRYTA

The small Canyon of Anevryta is formed within the limestone rocks, southeast of the village of Dafni and can only be crossed with special equipment. The water from the small and large springs that exist in the area forms a stream that flows through it in the winter and in its course forms about 12 waterfalls, with the largest being about 20m high.

Following an uphill path to the east, with the sound of the water from the waterfalls, the passer-by arrives at the picturesque church of Agios Antonios, located directly under a rock roof. Built on the natural cavity of the rock with stones in the colors of the rocks of the area, it blends harmoniously with the environment. From the small courtyard of the church there is a unique view towards the valley of Lithines.

We climb the small rocky col in front of us. After crossing the small col we descend to a bushy smooth slope, which we cross with a clear easterly course, and then we are on a rocky - flat surface with many marine fossils, to finally find ourselves in the settlement of Adromyloi.

Alternatively, if we have chosen to travel with a vehicle, we continue, without crossing the path, the downhill dirt road above the canyon of Anevryta, having the small church of Agios Antonios with its impressive rock roof on our left. We cross the Bridge of Peteinos and continue on the dirt road, to find ourselves in the settlement of Andromyloi.

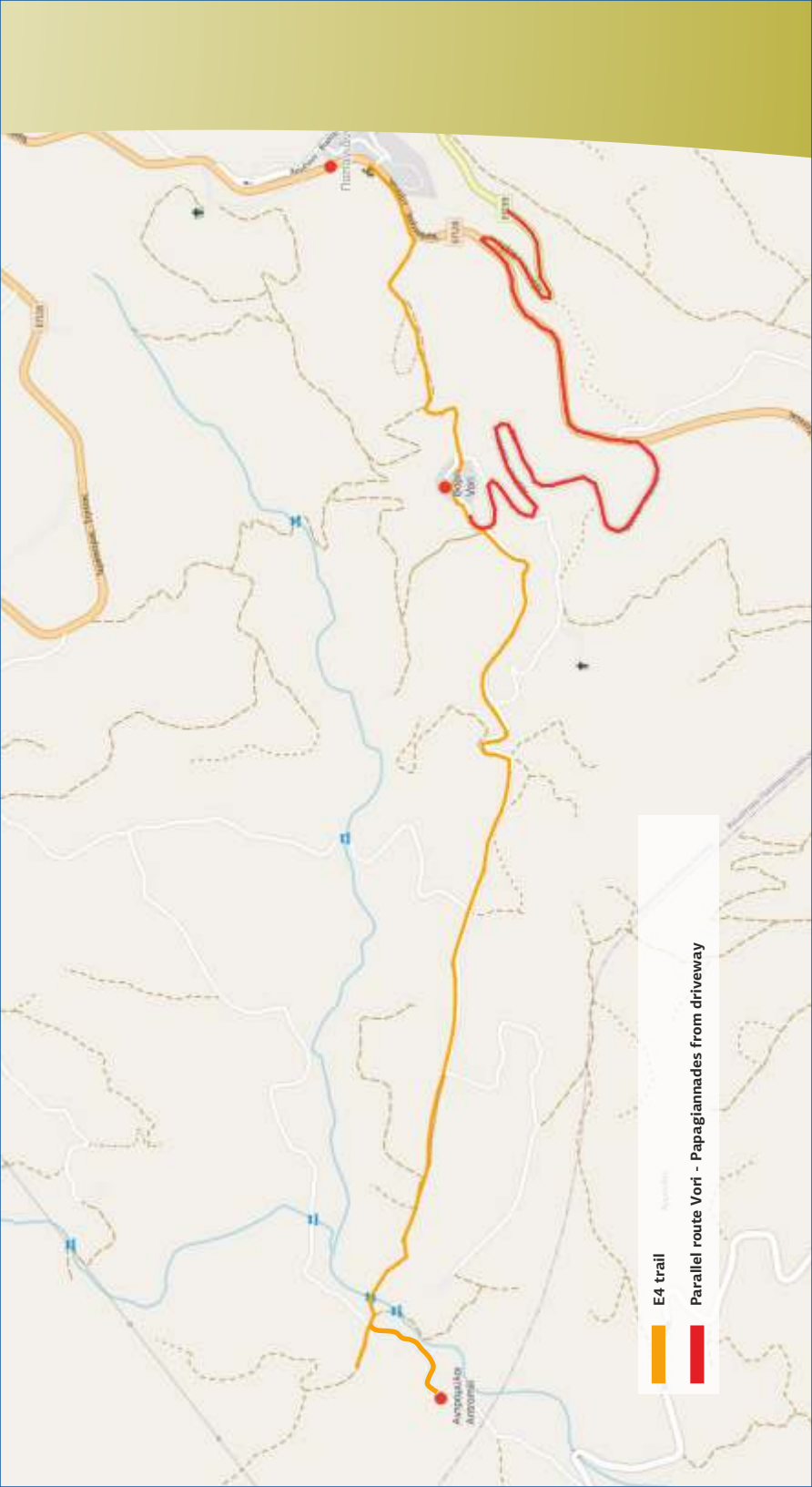


**Canyoning**



**Church of Agios Antonios**





## 2. Adromyloi - Vori - Papagiannades



## ADROMYLOI

At the lowest point of the valley of Lithines lies the abandoned settlement of Adromyloi amidst towering plane trees with plenty of water from the springs that exist in the area and the river that crosses the valley. It is mentioned for the first time in the 1881 census, with 62 Christian inhabitants.

The settlement is said to have taken its name from "Hydromylos" from the water mills that existed. The inhabitants of Lithines, who still have their gardens there today, remember going to grind their grains up to the 70s at the "Mill of Sgourakis" and the "Mill of Tsagaris". A little below the settlement there is a spring, as well as the frescoed church of the Holy Apostles.

### The church of the Holy Apostles

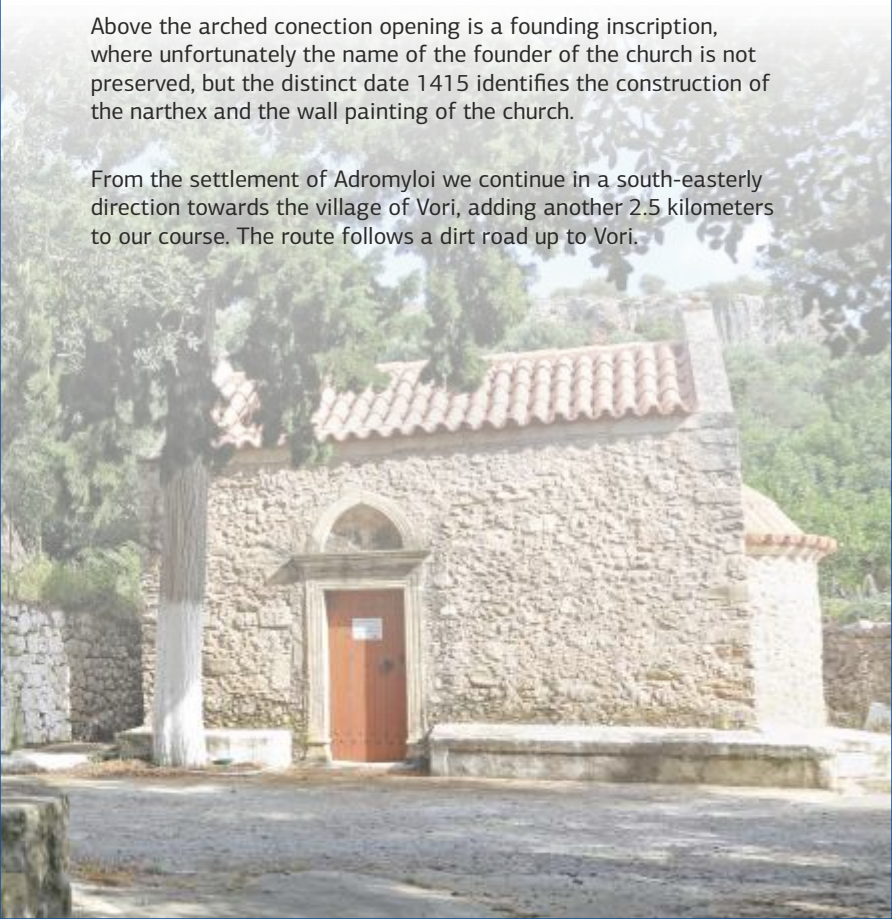
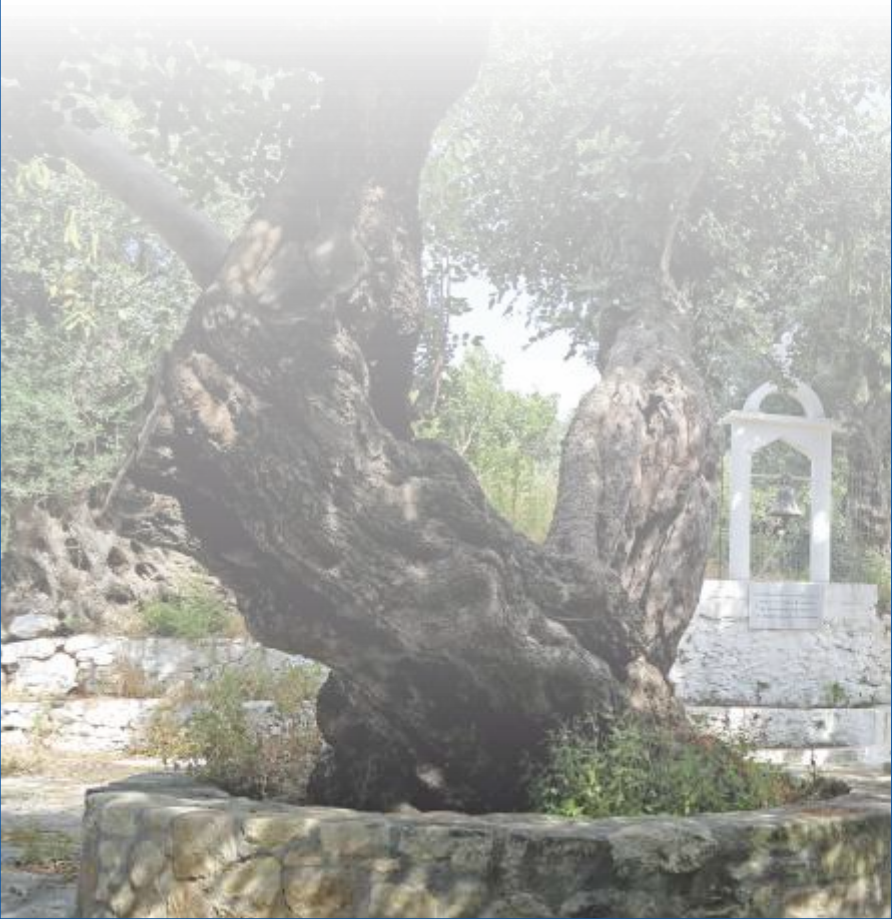
It is a single-chambered temple with a vaulted roof, with a sharp-crested arch reinforced with a sling. On its northern axis and perpendicular to it, an almost square narthex of a lower height, also with a vaulted roof, was later built. The main entrance to the temple is on its south wall, while on the east and high up on the north wall of the narthex there is another low entrance. The two spaces communicate with a low arched opening in the northern wall of the temple.



The wonderful fresco decoration which appears to have been done in a phase slightly later than its original construction and at the same time as the addition of the narthex, derives its themes from the Gospel, Christological and Hagiological cycle.

Above the arched connection opening is a founding inscription, where unfortunately the name of the founder of the church is not preserved, but the distinct date 1415 identifies the construction of the narthex and the wall painting of the church.

From the settlement of Adromyloi we continue in a south-easterly direction towards the village of Vori, adding another 2.5 kilometers to our course. The route follows a dirt road up to Vori.



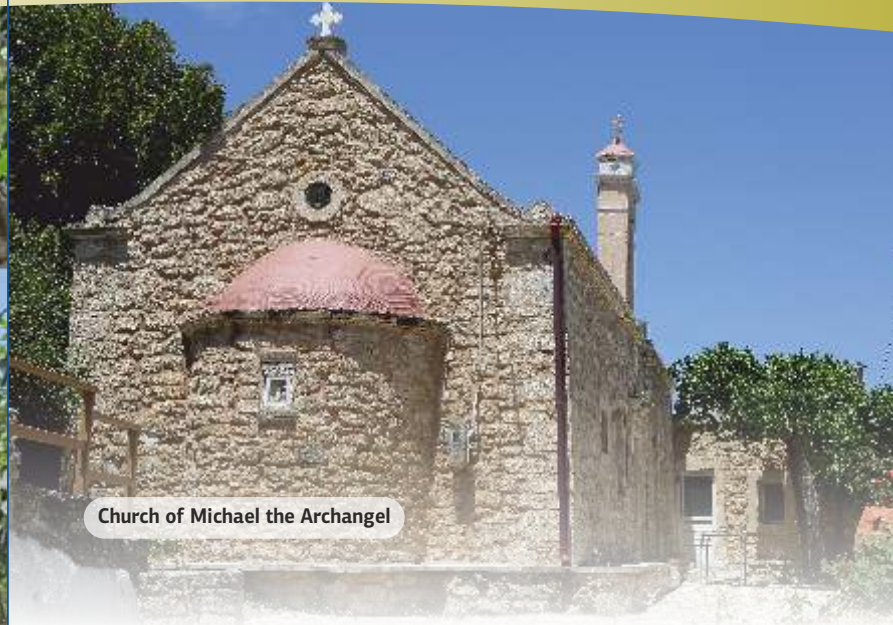




## VORI

Vori (or Vorri), a small settlement, is mentioned for the first time in the Egyptian census in 1834 as Vuria, with 5 Christian and 3 Turkish families, while in 1881 it is mentioned as Vori in the Municipality of Chandras.

Today it is a small, almost abandoned village, where very few people, mostly old, still live in its picturesque stone-built houses. To the northeast of the small settlement is the very picturesque church of Michael the Archangel, while a little outside and south of the village we find the cemetery church of Agia Paraskevi. The village is surrounded by fertile land and water sources that give life to the settlement.



Church of Michael the Archangel

Continuing the route on foot, we follow the path below the church of Michael the Archangel, climb the steep dirt road up to the country road, which we follow to the left and after a few meters we are in the village of Papagiannades, at 450 m. above the sea level, 1,000 m from Vori.

If we choose to use a vehicle, from the village of Vori we follow the paved road, in the direction of the village of Papagiannades.

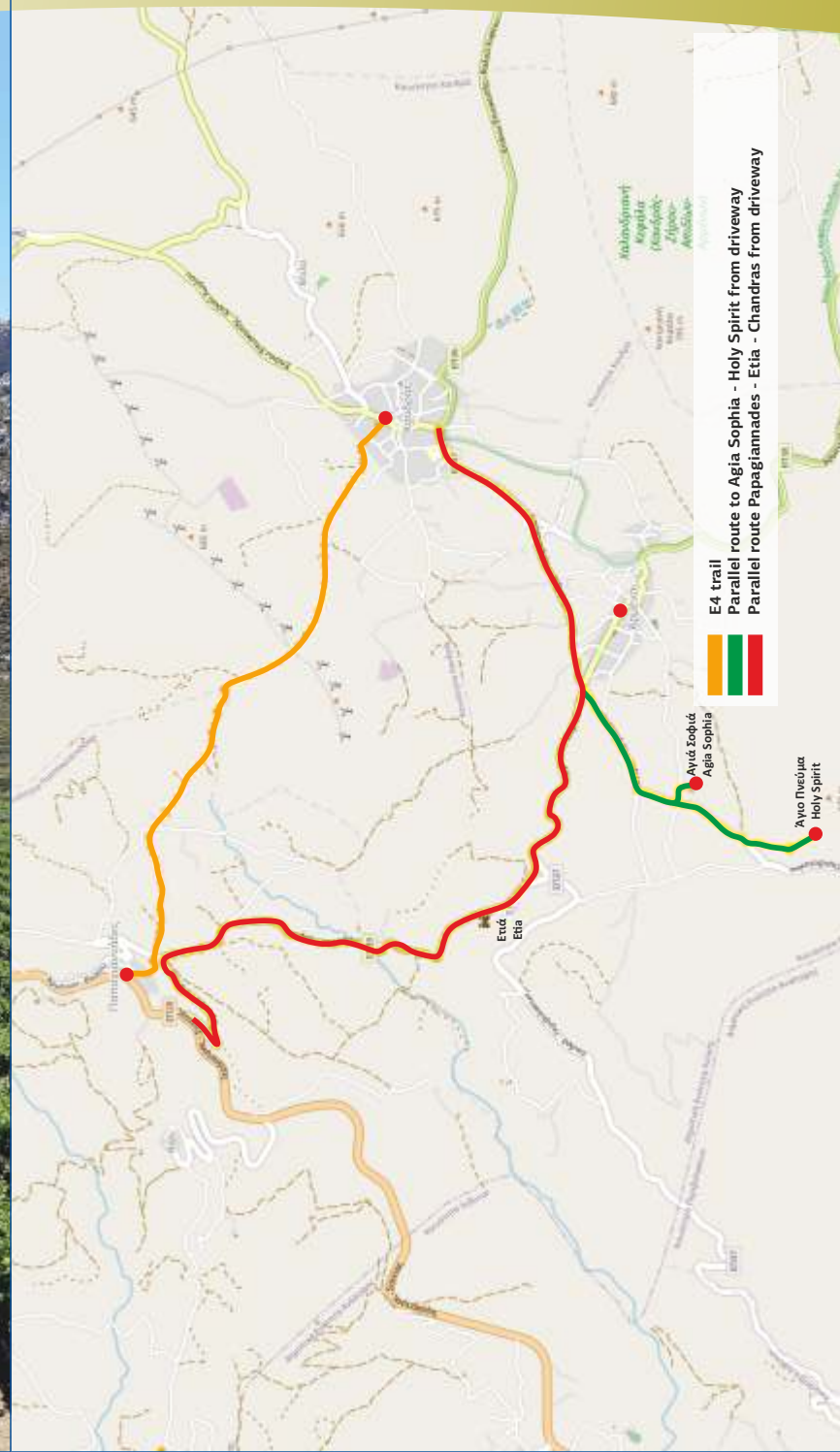
Throughout the route, going uphill from the position of Andromyloi up to Papagiannades, but also in other positions of the route E4, we encounter sedimentary rocks. The sediments found in the area of the trail come from marine, lake or terrestrial sedimentation. A generalization is that reddish sediments come from terrestrial sedimentation, while lighter-white ones come from marine or lake sedimentation. Another way to identify the depositional environment is fossils.



Church of Agia Paraskevi



### 3. Papagiannades - Etia - Agia Sophia - Chandras





## PAPAGIANNADES

The semi-mountainous village of Papagiannades is mentioned for the first time in the Egyptian census of 1834 as Papa-Jannadho, with 8 Christian families, while in the 1881 census as Papagiannados, in the Municipality of Chandras, with 77 Christians and 4 Turks. The place name comes from the surname of its inhabitants.

An elegant fountain decorates the small square of the village, while a little further down the old well with the manual pump is still preserved. Within the settlement is the stone-built old olive oil-press ("factory") along with its equipment and just outside the village is the frescoed church of Panagia Eleousa (Agia Zoni).

Place names in the area such as "the nun's fountain" near the temple of Panagia Eleousa, where there was a well and "Brahmi's source", a place where they washed patanias (bedclothes) taking advantage of the flow of water that facilitated the removal of waste water, testify the presence and exploitation of water resources for the daily needs of the inhabitants.

### The fountain

The beautiful stone-built fountain consists of a hall-cistern with two facades built with tuffs with functional and decorative elements. The front side, with pilasters and pediment, is decorated with a special niche with a cross carved inside it. Above the niche there are six-leaved rosettes in a circle, two to the right and left, ancient symbols for the removal of evil, so that the water is not polluted. At the bottom is the faucet and below that is the trough. On the right side facade there is also a faucet and troughs below, while in the back it ends in a small vaulted canopy with troughs.



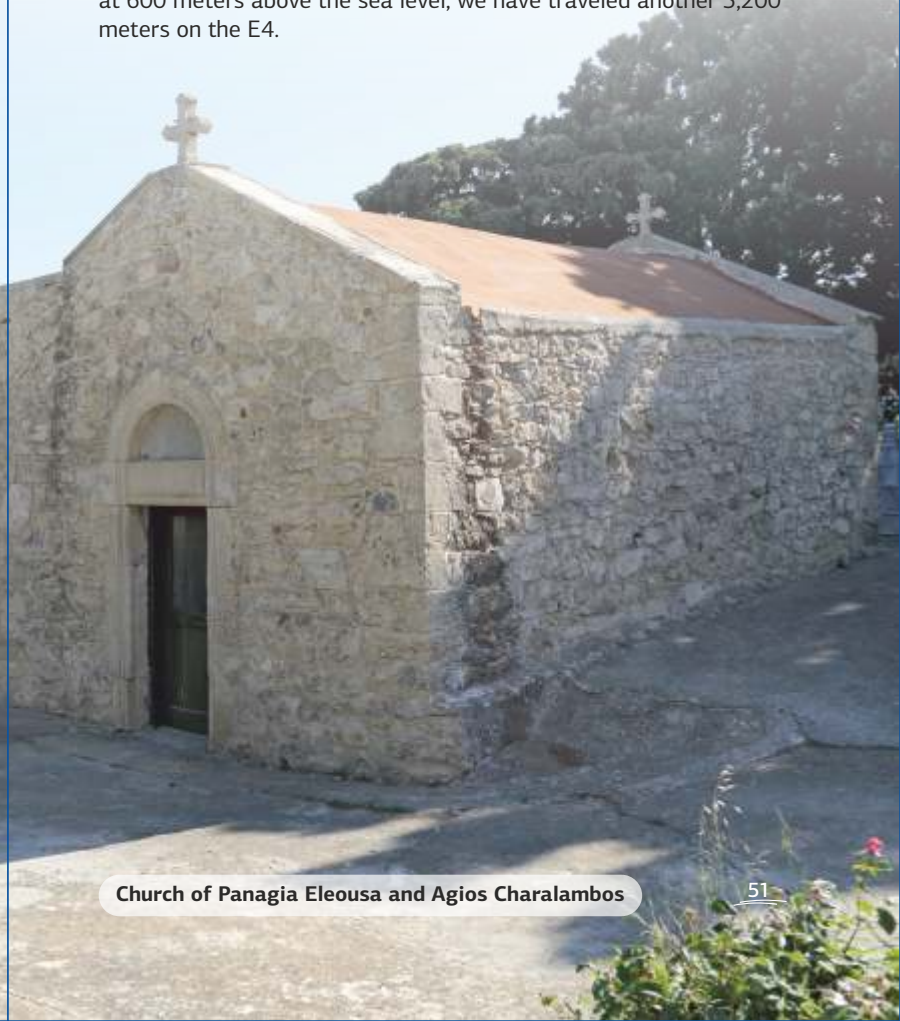
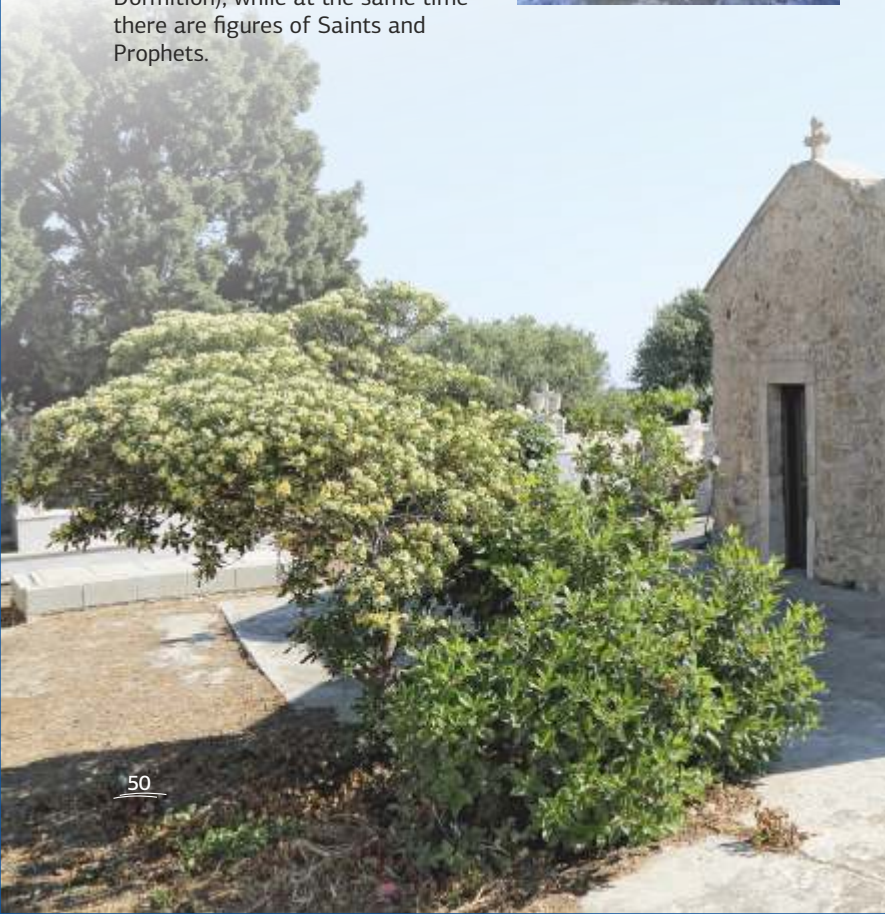


### **The Church of Panagia Eleousa and Agios Charalambos**

It is a two-aisled domed temple that was built in two phases. Initially, the church of Virgin Mary (Panagia) was built under the name "Eleousa" and in a second phase the church of Agios Charalambos was added to its north. In the church of Virgin Mary (Panagia), remarkable frescoes are preserved that date back to 1364 based on a written inscription. The wall paintings derive their themes from the Christological cycle, the cycle of the Virgin Mary (Birth, Entrance, Dormition), while at the same time there are figures of Saints and Prophets.



The course of the E4 continues through the alleys of Papagiannades, climbing the ridge to the east, until we reach the paved road. There we follow the dirt road that will lead us southeast. We meet two water cisterns and follow the left uphill direction, always on a dirt road, continuing southeast. The landscape is characterized by bushy and phryganic vegetation and sporadically few horticultural and olive crops. At the end of the uphill road, the view towards the plateau of Chandras and Armenoi spreads out in front of us as we start to descend slightly, passing the wind turbines of the area and the abandoned settlement with the church of Agios Panteleimon. We continue having on the right and in front of us the plateau of "Armenochandrades", as the area has come to be referred to by the locals, with the windmills and the horticultural and grape crops. Arriving at the village of Chandras, at 600 meters above the sea level, we have traveled another 3,200 meters on the E4.





## ETIA

Etia is an abandoned medieval settlement near Armenoi. In the past it has been referred to by various names. From Francesco Barozzi in 1577 as Etea, in the Venetian census of 1583 by the Castlekeeper as Ettea with 564 inhabitants, Basilicata mentions it in 1630 as Ethea while in the Turkish census of 1671 it is mentioned as Nitte, with 62 polls. The settlement is dominated by the three-storey Venetian Mansion De Mezzo or Seraglio and the fountain of Bishop Meletios Trivizas (1701) in the outer enclosure. The Byzantine churches of Agia Ekaterina and Agios Ioannis are also preserved, while the - ruined today - church of the Virgin Mary (Panagia), the church of Agios Konstantinos, and the church of Agios Athanasios, behind the Mansion, still functioned in the area.

## The De Mezzo Mansion or Seraglio

The De Mezzo Mansion or Seraglio is one of the most representative examples of Venetian architecture in Crete. Its first construction phase was placed at the end of the 15th century, while its current form with the Renaissance elements dates back to the beginning of the 17th century. It was the residence of the noble Venetians De Mezzo, feudal lords of the area, as can be seen from the coats of arms on the facade. The building has a fortress character from the outside, and is surrounded by two enclosures. It was originally three stories high, with an imposing main entrance on the south side, but, after successive destructions, today only the ground floor is preserved.

During the Turkish rule, the mansion was used as a residence for Turkish officials, the last one being Memetaka, the so-called Seragiano who was known for his atrocities. Even today the mansion is known as Seraglio. In 1959, it was declared a historic monument by the Archaeological Service, therefore important works have been carried out to fix, restore and highlight the complex.







### **Fountain**

At the entrance of the De Mezzo mansion is the fountain, the water of which was poured into troughs, both on the outer side of the street, to quench the thirst of passers-by, and on the inner side towards the courtyard for the use of the residents of the Mansion. On its facade facing the street, there is a built-in stone slab with a star-shaped decoration and an inscription which mentions the date of its construction (1701), as well as the name of Bishop Meletios Trivizas, who possibly built it for charitable purposes. The fountain was damaged and was restored in 2008 by the Ministry of Culture.



### **The Church of Agia Aikaterini**

The two-aisled church of Agia Ekaterini and Nativity of the Virgin Mary (Panagia) is located at the end of the settlement. Today the phase of the late Venetian rule (beginning of the 17th century AD) is preserved. There are traces of an earlier building phase and fragments of frescoes in the south aisle. The church has a renaissance morphology and an imposing bell tower with stone relief decoration. On the western side of the temple remains of ramparts from earlier periods are preserved.

We always continue on the road to Chandras - Ziros and, just before entering the village of Armenoi, we follow a dirt road in a southwest direction. Through vineyards, we arrive at Agia Sophia.





## ARMENOI

### The Convent of Agia Sophia

On the plateau of Armenoi with the old windmills, which is overgrown with vineyards, is the convent of Agia Sophia, which was built around the original church in 1634, according to an inscription found on the ruined frame. The convent had a fortification character and, based on an old photograph of the damaged frame, it seems that the door bore a strong resemblance to the entrance to the Toplou Monastery. In the center of the precincts is the church of Agia Sophia while around the perimeter are the wings of the cells with most of the buildings in ruins. The church is a single-aisle basilica without a narthex and seems to have been built in two different periods of time. The decorative stone carvings in the temple and the elaborate paving of the courtyard show special care during the construction.



### The temple of the Holy Spirit

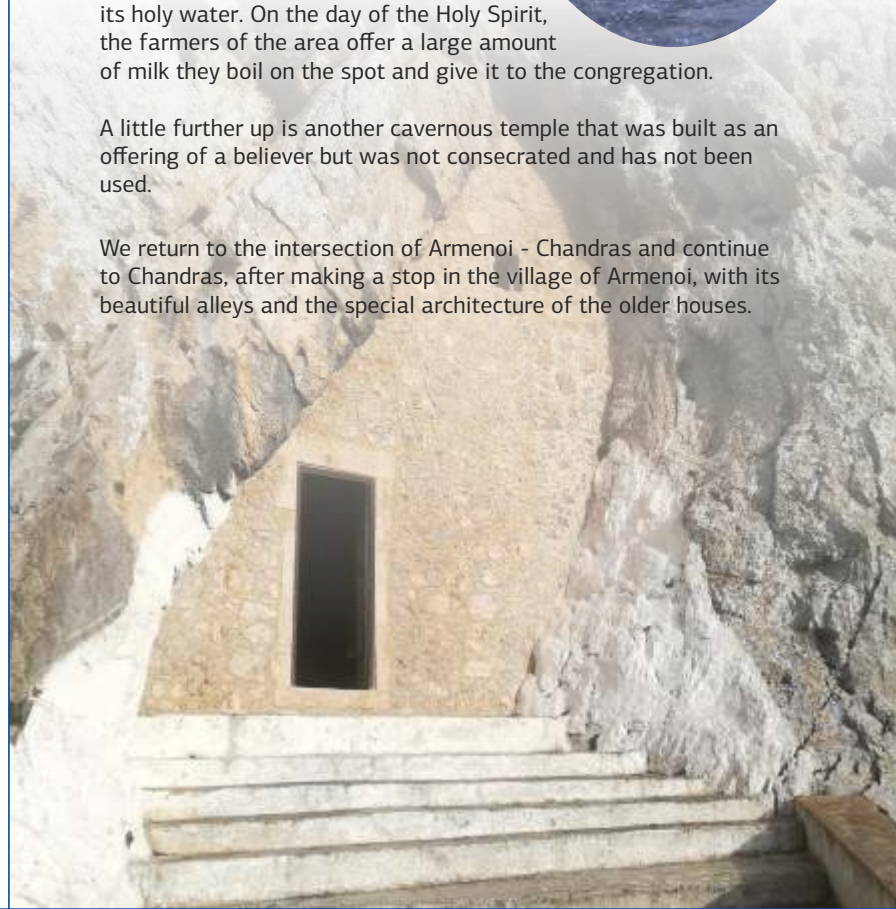
On the plateau of Armenoi east of the Monastery of Agia Sophia, among the steep rocks, a stone wall of the cavernous temple of the Holy Spirit can be seen. In the depth of the cave the Sanctuary is formed and at the same height as the end of the iconostasis a jug is placed for the holy water to drip into from the only point in the cave where we have dripping at a specific moment on the day when the Mass takes place.



The inhabitants of Armenoi, but also of the neighboring villages, especially honor the chapel and tell many stories about the miracles that took place with its holy water. On the day of the Holy Spirit, the farmers of the area offer a large amount of milk they boil on the spot and give it to the congregation.

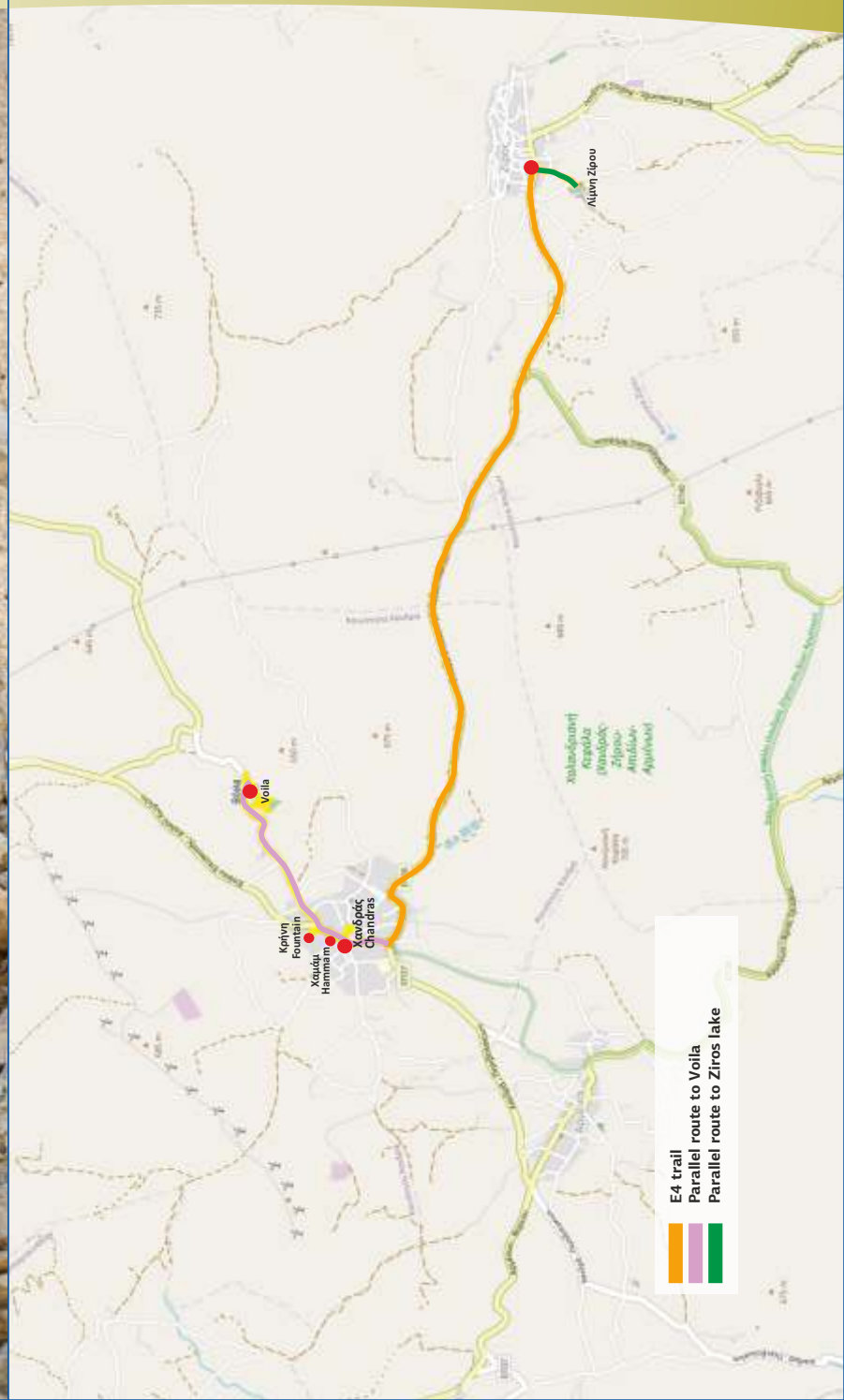
A little further up is another cavernous temple that was built as an offering of a believer but was not consecrated and has not been used.

We return to the intersection of Armenoi - Chandras and continue to Chandras, after making a stop in the village of Armenoi, with its beautiful alleys and the special architecture of the older houses.





#### 4. Chandras - Voila - Ziros

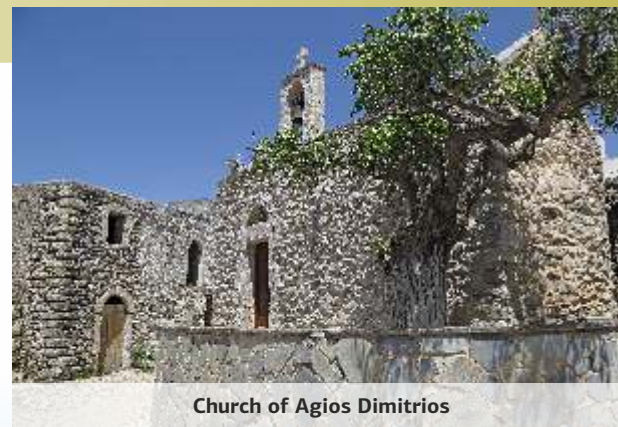




## CHANDRAS

Chandras or Chadras is a large village on the Plateau of Armenochandrades. It is said that the Arab Saracens, its first settlers, named it so from the Arabic word Hándra that means green, or the word hender-er, that means capital, because of its population. In the Venetian census of 1583 it is mentioned by the Castlekeeper as Candra and Chandra, with 403 inhabitants.

In the oldest part of the settlement there is the two-aisled church of the Assumption of the Virgin Mary and the Annunciation, the church of Agios Dimitrios, the small Ottoman Turkish bath (hammam), buildings with Venetian influences and an excellent fountain, while in the newer part there is the two-aisled church of Agios Charalambos with the imposing bell tower of the 19th century.



Church of Agios Dimitrios

In the area of Chandras, near a spring, there is the frescoed temple of the Transfiguration in Pano Panteli from 1486 as well as the cavernous chapel of Zoodochos Pigi in Goundas which has a spring inside. Around the village old windmills that were used to pump water from the wells are preserved.







### The fountain

The fountain is a unique monument, with many Venetian elements. It consists of a hall - cistern, on the face of which there is a series of five fountains, with corresponding troughs, inside five arches that go into pilasters. On the drums of the arches are nailed iron wedges with round heads which were used to tie the animals. In front of the fountains is an open arcade, the facade of which consists of two finely carved semicircular arches resting on three pilasters. On the roof of the entire structure, a floor was added in 1947 to house the Community store, resulting in its great distortion.



## CHANDRAS

### The small Ottoman Turkish bath (hammam)

In the center of the settlement are the ruins of the small Ottoman Turkish bath (hammam). The Turkish bath (hammam) was a place of meeting, rest and physical purification for the Ottomans who lived in the area. The most common simple structure featured a domed hall and a hall that served as a dressing room at the time. As can be seen from its surviving remains, the site had at its entrance a vaulted structure with holes and a cremation area - a cauldron - while there is also a built-in water cistern inside the central hall.



Combustion area



Dome with skylights



## VOILA

The settlement of Voila is located near Chandras on a steep slope which constitutes a natural fortification from the south-east, while a low wall, partially preserved, fortifies the rest of the perimeter towards the valley. The place name comes from the founder of the settlement, either from Voilas or Volias, the name of a Byzantine official in the area, or from the word voilas or volias as the Byzantines called the renowned warrior.

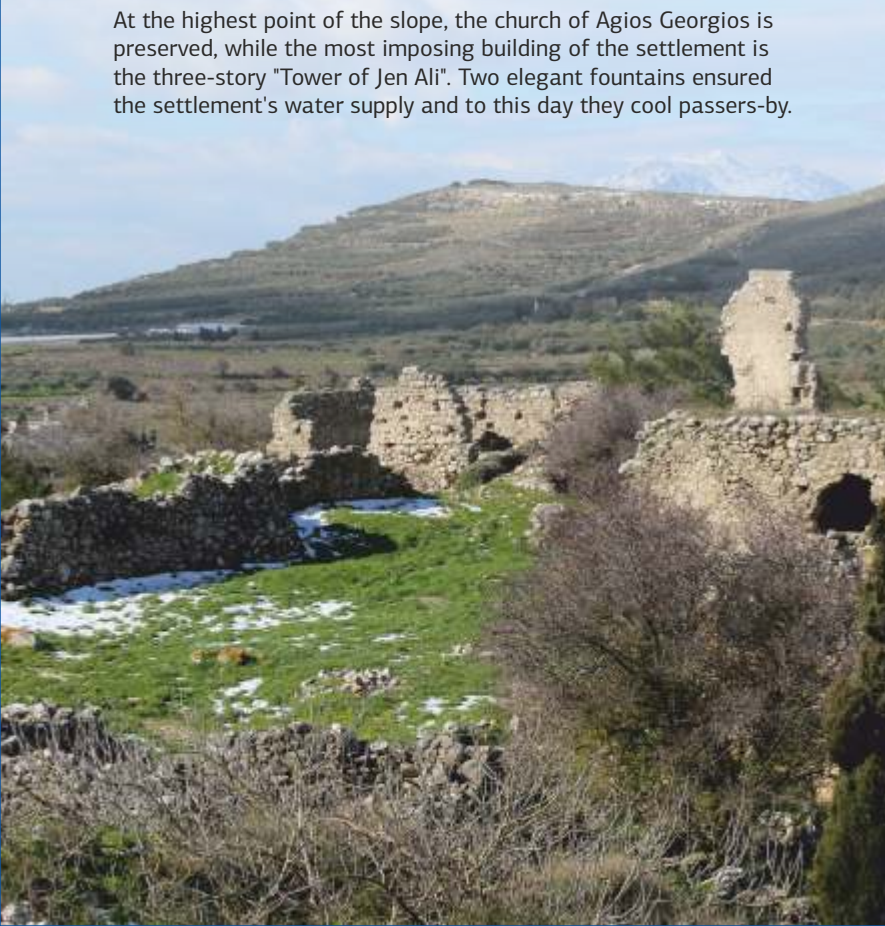
The existence of the settlement goes back to the middle Byzantine period, according to the sources, but it experienced great prosperity during the Venetian rule, as can be seen from the Venetian census of the Castlekeeper in 1583 in which it is mentioned as Voila, with 299 inhabitants. From the end of the 19th century it gradually declined and was abandoned.

At the highest point of the slope, the church of Agios Georgios is preserved, while the most imposing building of the settlement is the three-story "Tower of Jen Ali". Two elegant fountains ensured the settlement's water supply and to this day they cool passers-by.

## The Tower of Voila or Tower of Jen Ali

The elaborate three-story structure with its buttressed foundation and elaborate exterior and interior openings follows 16th- and 17th-century Venetian standards. It consists of two vaulted spaces that communicate with each other on the ground floor, with an interior stone staircase leading to the upper floor, which respectively consists of two spaces.

During the Turkish rule, it was used as the seat and residence of the commander of the janissary order, the well-known Jen Ali. On the entrance door there is a rich decoration with the characteristic Turkish symbols such as rossetes, cleavers, cypress trees while in the center there is a Turkish epigram with the date 1153 of the Hijri calendar which is equivalent to the year 1742 of the Christian calendar. It seems to have been built during the Venetian rule and repaired during the Turkish rule.







Arcosolium, frescoed inscription on the south wall

## VOILA

### The Church of Agios Georgios

The church is preserved at the highest point of the slope and is two-aisled, with two phases of construction. The first phase includes the church of Agios Georgios in the southeast, while later the second aisle, dedicated to Agios Ioannis the Theologist, was added to the north. The two single-chambered dome-roofed temples communicate with large arched openings. The frame is of Venetian style, with coats of arms, probably of the Salomons, that is, the nobles whose feud it was.

The church was remodeled in order to accommodate the family tomb of the Salamis, as shown by the inscriptions. In the southwest corner there is an arcossolium with a frescoed drum depicting the Virgin Mary enthroned with the Infant. To the right and left of her are depicted the founders of the church and below the representation there is a gravestone metrical inscription.

To the left of the Virgin Mary there is an inscription with the name of the founder "Georgios Salamos" and the date 1518, while on the western wall, above the tomb, there is a small fresco with a scene of funerary lament and an inscription with the date 1560.



### Large fountain

In the "Kryo Nero (Cold water)" location, there is the large Ottoman fountain of the settlement, which consists of a hall - cistern, on the facade of which there is an arch that culminates in a key - crest and goes to narrow pilasters with impostos. In the middle of the drum of the arch are two niches and above them a decoration with twenty-leaved rosettes in relief and between them a jewel - frame with small rosettes and rhombuses at its four ends which seems to have been scratched. Usually at this spot there were inscriptions stating the donor, the time of construction, the name of the fountain and, in some cases, verses from the Koran.





## VOILA

### Small fountain

To the west of the settlement is the small Ottoman fountain with a nice decoration and an inscription on its facade. It consists of a hall - cistern, with a facade built with rectangular tuffs that is crowned by a frame, while on the right side wall there is the overflow. The facade arch is pilastered, as wide as the rest of the facade, and above it are two relief jewels with an Ottoman inscription between them, scratched with a sharp tool. On the drum of the arch, above the bronze faucet, there are circular jewels and between them a niche that has not been deepened.



*Cyclamen creticum*



*Arum creticum*

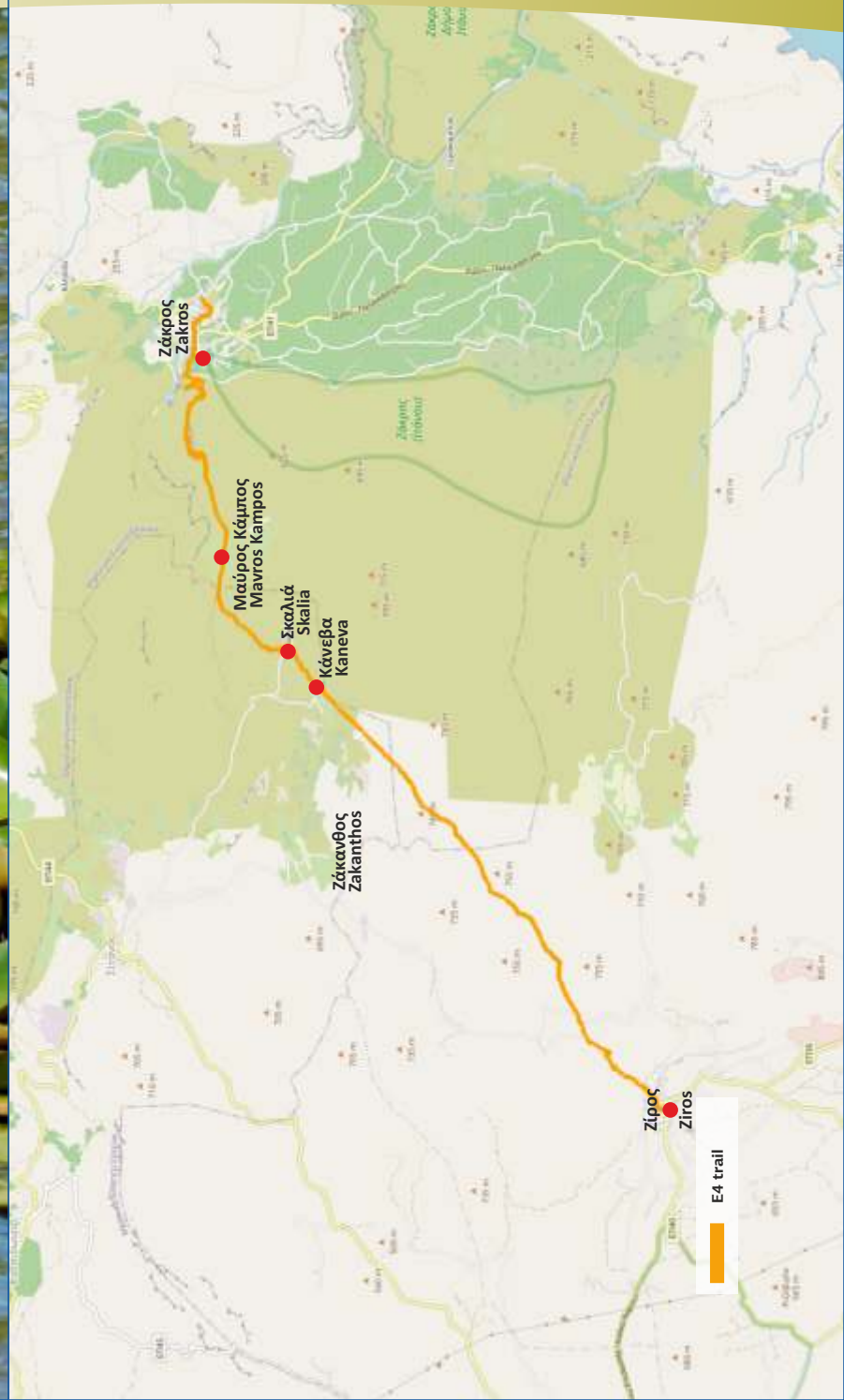
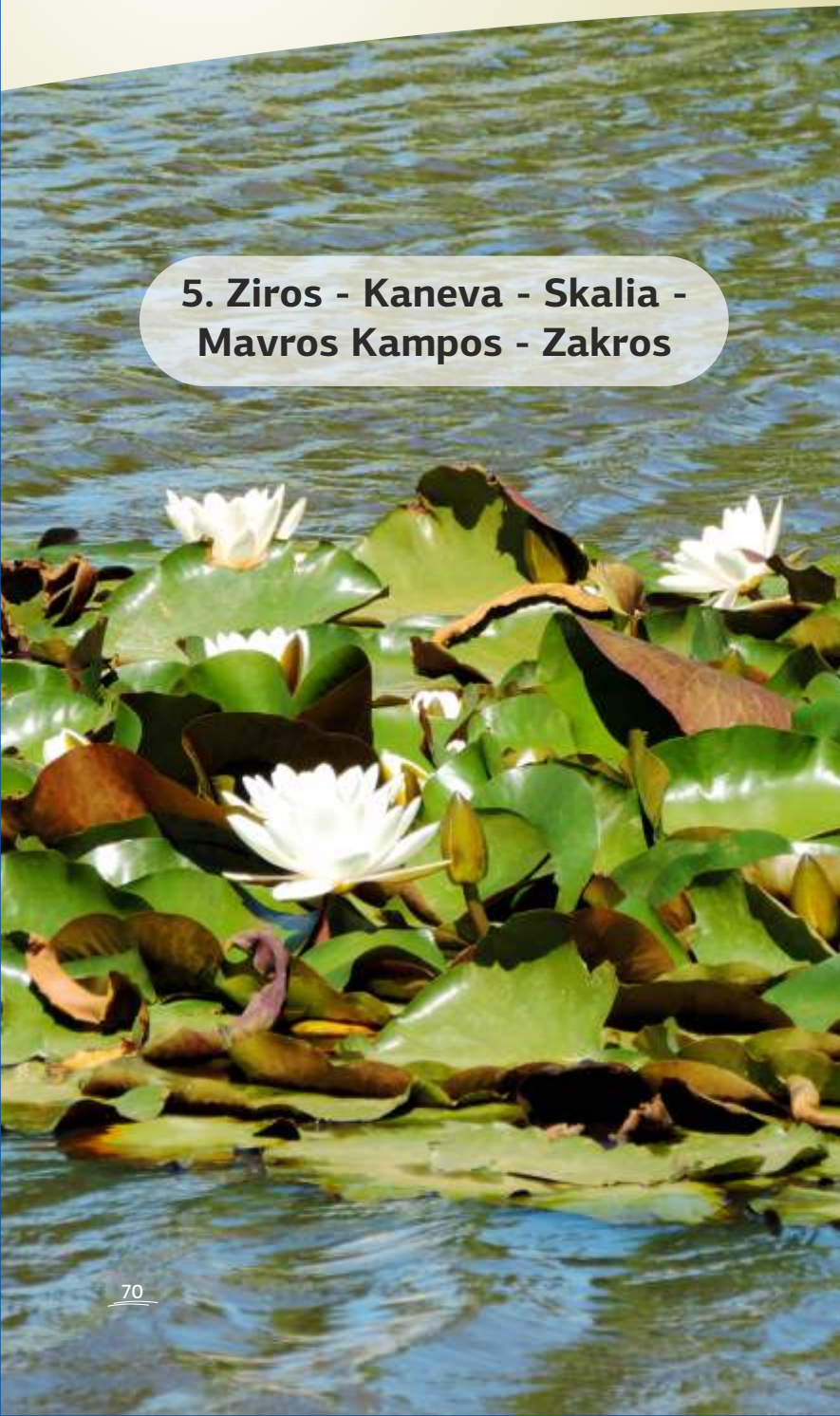
At the southern exit of Chandras, we continue on the paved road that leads us after 4 km to Ziros, at 590 meters above the sea level, crossing the narrow valley that connects the two plateaus through vineyards. Ziros is built on the southern foothills of the "Egremnos" hill (785 m.), at the northwestern end of the plateau of Ziros. On the fertile plateau, vines and a few vegetables are grown. In the area around the village, you can see limestone rocks with karst geoforms, such as cave chasms and sinkholes (funnel). Karst erosion is evident on the plateau of Ziros, which is a polga (Fitrolakis, 1975). Its bottom consists of Neogene sediments and flysch and its edges of carbonate rocks.

Polgas are flat geoforms of large area, surrounded by limestone rocks. They are fertile fields usually with significant agricultural exploitation. The water that runs through them is usually lost through openings (sinkholes) that lead to underground flow.





**5. Ziros - Kaneva - Skalia -  
Mavros Campos - Zakros**





## ZIROS

### The settlement

Ziros or Ziros is built on the southern foothills of the "Egremnos" hill, on the homonymous plateau with the characteristic windmills. There are many versions for the origin of the place name but none of them is confirmed.

The area has been inhabited since antiquity, as evidenced by the rich archaeological reserve from the Minoan, Protogeometric and Archaic eras. The oldest mention of the settlement is made by Francesco Barozzi in 1577 as Siro, while in 1581 it is mentioned in a contract that it was the mother feud of Andreas Kornaros. In the censuses during the Turkish rule it appears that it was inhabited by Christians and Muslims.

Near the central square is a modernized windmill that until recently supplied the village cistern with water from the well. In the past, a small lake was in the place of today's central square, while today we find an artificial pond, an important wetland of the area, next to the settlement.

The artificial lake at the site of Pyrgioliki Ziros is an internal wetland, a permanent freshwater swamp, with an area of 3 acres. The wetland is home to the Cretan Frog (*Pelophylax cretensis*) and during the migration period the visitor can observe many species of avifauna, such as Clossy Ibis (*Plegadis falcinellus*), Little Egret (*Egretta garzetta*), Grey Heron (*Ardea cinerea*), Black-crowned Night Heron (*Nycticorax nycticorax*), Squacco Heron (*Ardeola ralloides*), Bittern (*Botaurus stellaris*), Stork (*Ciconia ciconia*), Purple egret (*Ardea purpurea*), etc. The wetland is included in the list of small island wetlands and is protected by legislation, in accordance with the Law on the Conservation of Biodiversity and other provisions (N. 3937/2011), since it is an important feeding and resting point for migratory birds, as well as of the reptile fauna it hosts.

Nearby is Limnio Ziros, also an important natural wetland that is probably the last part of the old lake that existed on the plateau of Ziros.





## ZIROS

### Agia Paraskevi

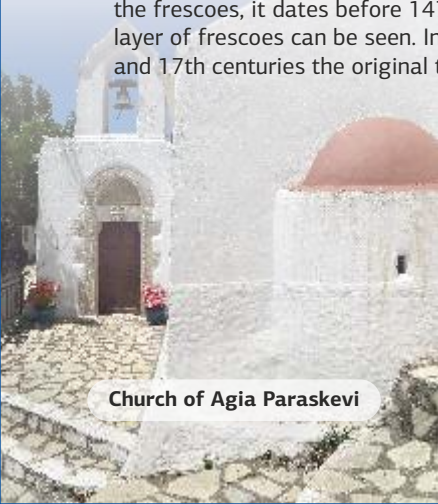
The church of Agia Paraskevi is connected to the tragic historical event of the Scaliores Sacrifice. Therefore, inside it is an ossuary with their bones. It is a tripartite temple, with a longer central aisle that communicates with the other two with low arches resting on massive pillars. It was built in different periods and in the south aisle the fresco of Agia Paraskevi above the lintel of the entrance is preserved dated 1523. The main entrance to the east and a second one to the south have a beautiful relief pointed frame of Venetian style.



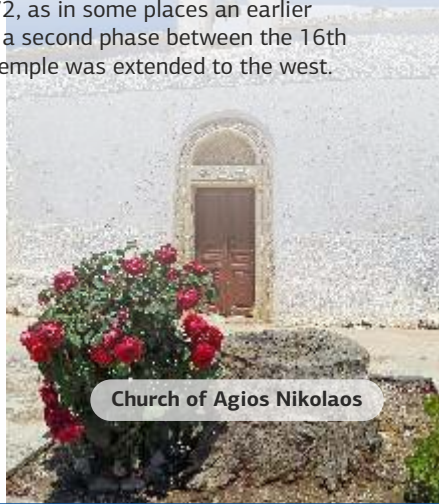
Church of Agios Nikolaos, sanctuary

### Agios Nikolaos

The frescoed church of Agios Nikolaos in the northeast of the settlement, is single-spaced, stone-built, vaulted with a beautiful, relief, semi-circular frame. It was built in two phases. Its original eastern part has an excellent fresco decoration with scenes from the life of Agios Nikolaos, as well as representations of other saints. According to engravings made by visitors on the mortar of the frescoes, it dates before 1472, as in some places an earlier layer of frescoes can be seen. In a second phase between the 16th and 17th centuries the original temple was extended to the west.

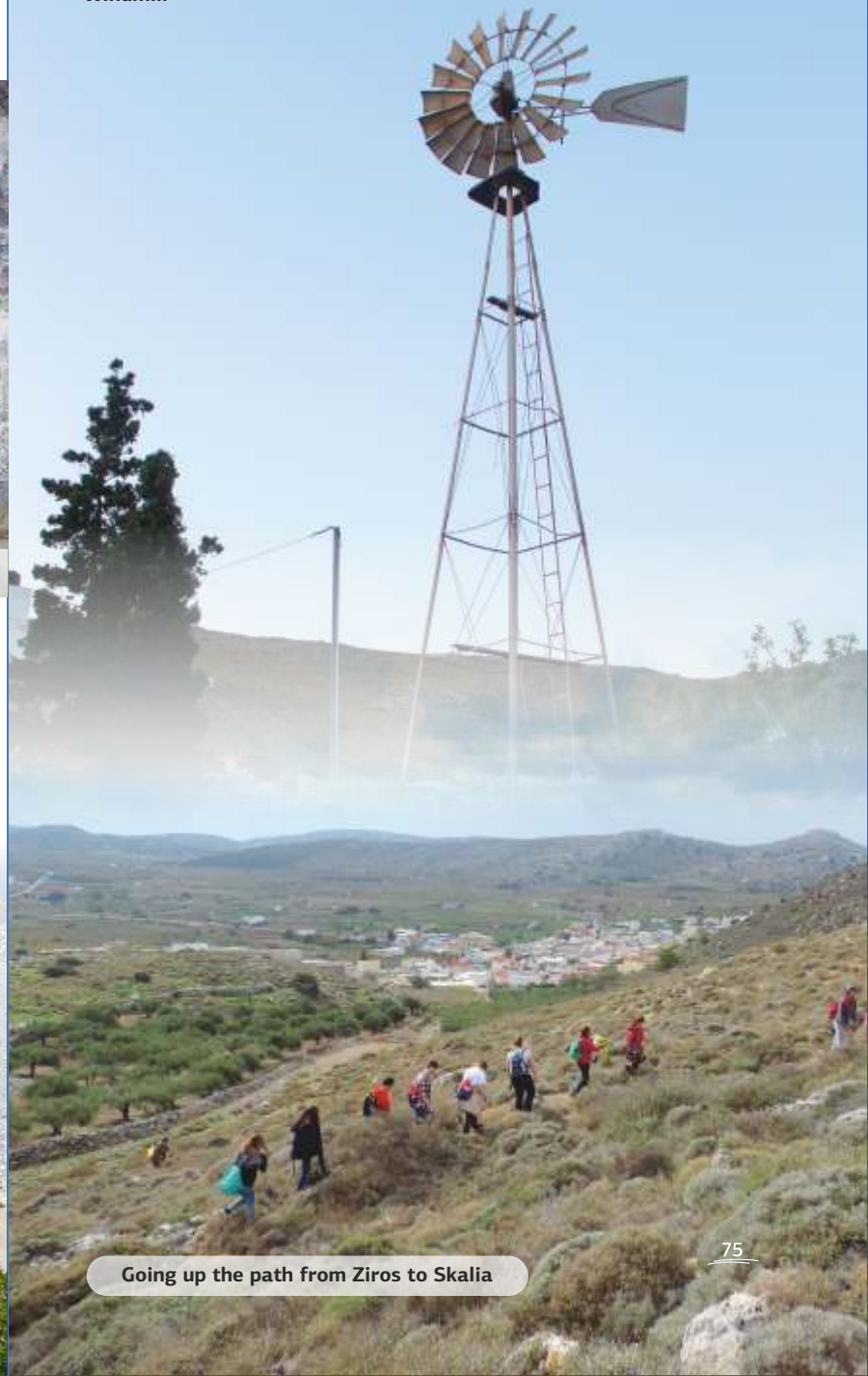


Church of Agia Paraskevi



Church of Agios Nikolaos

### Windmill



Going up the path from Ziros to Skalia



## ZIROS

Starting from the square of Ziros, we follow the E4 trail to Zakros. Passing by the north-eastern side of the village, we take the old, in many places stone-paved, path uphill with a view of the plateau of Ziros behind us, until we reach a small flat spot. We always continue on the path northeast and pass south over a low rocky elevation. We are in a strongly karstified area, while to the north we have a view towards the area of Zakanthos.

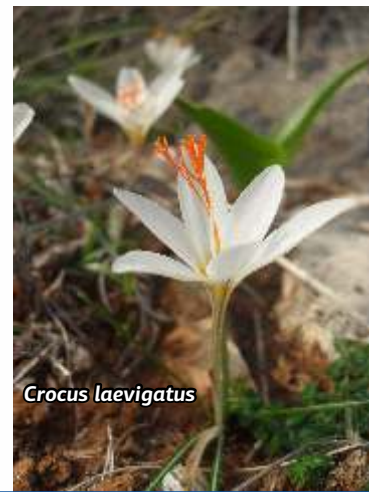
Along the entire route, we find garrigue with sea urchin (*Genista acanthoclada*) and heather (*Erica manipuliflora*), *Sarcopoterium spinosum*, *Coridothymus capitatus*, labdanum (*Cistus creticus*, *Cistus salviifolius*), savory (*Satureja thymbra*), *Euphorbia acanthothamnus*, lamprey (*Ballota acetabulosa*), *Phlomis fruticosa*, *Ononis spinosa*, *Ranunculus creticus*, *Sedum creticum*, *Tulipa cretica*, many species of orchid (*Ophrys cretica*, *Ophrys mammosa*, *Ophrys phryganae*, *Orchis anatolica*, *Orchis lactea*), etc. with small clumps of holly (*Quercus coccifera*) and lentisk (*Pistacia lentiscus*).



*Orchis sitiaca*



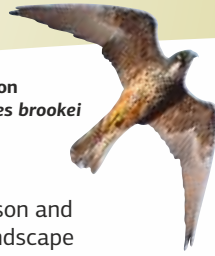
*Onosma graecum*



*Crocus laevigatus*



Peregrine falcon  
*Falco peregrines brookei*



## ZIROS

Buzzard *Buteo buteo*

But, depending on the season and especially in spring, the landscape changes from a multitude of annual plants that add their own colorful touch and give the walker the opportunity to observe and photograph many rare species, both flora and avifauna, especially predators. Many of them nest in the steep rocks of the wider area. The most important birds that have been recorded and can be observed are: The Golden Eagle (*Aquila chrysaetos*), is the strongest predator in Greece, with a wingspan of 185-220cm and a body length of 75-90cm. The Peregrine falcon (*Falco peregrines brookei*) is one of the fastest bird species in the world and the most powerful falcon species in Greece, with a wingspan of 90-115cm and a body length of 35-50cm. The area of Zakros is one of the most important habitats for this species. The Buzzard (*Buteo buteo*) is a fairly large predator, with a body length of 50-55cm and a wingspan of 118-140cm.



Golden Eagle *Aquila chrysaetos*



Red-backed shrike *Lanius collurio*



Eu. Stonechat *Saxicola rubicola*



Vulture *Gyps fulvus*



The Vulture (*Gyps fulvus*) is a large and heavy predator, with a wingspan of 260cm and a body length of 97-104cm. It will often be seen flying over the mountains in search of food. The Booted Eagle (*Hieraaetus pennatus*) is a passerby during migration, mainly in October and early spring (February and March). The Bearded Vulture (*Gypaetus barbatus*) is the rarest vulture in Greece, with a wingspan of up to 2.80 meters. *Emberiza caesia*, *Oenanthe hispanica*, Island partridge or *Alectoris chukar* and many migratory birds.

Bearded Vulture  
*Gypaetus barbatus*





## KANEVA

We continue our course between the rocks and garrigue and then we reach a small plateau with vines in the area of Kaneva. The cultivation of the vine for the production of wine has old roots in the area, since the inhabitants, of Zakros for example, using the path, climbed up to cultivate their vines in a difficult environment, knowing however that the wine from this area, as well as from nearby Zakanthos, is excellent. This is of course due to the special soil and climate conditions that prevail in these places and favor the production of unique wine from local varieties such as Liatiko.

After 10 minutes of walking, and after we have passed the old settlement, we are in the small, historical settlement of Skalia, at 650 meters above the sea level.



*Orchis laxiflora*



*Quercus coccifera*

Ruined settlement Skalia

## SKALIA

Skalia is an abandoned settlement located approximately in the middle of the beautiful hiking route of the European trail E4 between the picturesque villages of Ziros and Zakros. It is mentioned in the Venetian census of 1583 by the Castlekeeper as Scaglia, with 162 inhabitants, while in the Turkish census of 1881 it is no longer mentioned. It seems that the village was abandoned after the massacre of its inhabitants (Skaliotes) as the oral tradition tells us.



*Daphne sericea*



*Narcissus tazetta*



## SKALIA

The inhabitants of Skalia (Skaliotes), known for their resistance action against the Turks, provoked their anger when they managed to annihilate an expeditionary force of 200 men that had moved against them. Tradition says that the Christian guide they used to lead them to Skalia circled the mountains in order to delay them and force them to stop to sleep in the position "Mavros Kambos (Black Field)". Then he took the opportunity to alert the inhabitants of Skalia (Skaliotes), as a result of which they managed to kill the Turks.

Wanting to get revenge, the Turks approached Pope Drakos or Fragias from Ziros and promised him a reward to betray them. He invited the inhabitants of Skalia (Skaliotes) to give them Holy Communion in the church of Agia Paraskevi, so that their sin of slaughtering so many people would be forgiven and, after urging them to leave their weapons outside the church, the Turks took the opportunity to rush in and slaughter them all, except for one who managed to escape. The Turks then called the pope for his payment, but burned him alive because, since he had betrayed his countrymen, he would be capable of doing worse to them.



## SKALIA

Nowadays, only the church of Agios Georgios is preserved and the village wall can be seen, while the visitor can still quench his thirst with the water that gushes through the rocks of the spring, from where the village was supplied with water.



Spring at Skalia



Church of Agios Georgios



## SKALIA

The spring at Skalia is created at the contact between the permeable limestones of Magassa, which are thrust against the impermeable flysch of the Tripoli unit. The spring maintains a small seasonal swamp, which is vital for many organisms in the area.

On the trail we can easily distinguish the overthrust of the tectonic cover of Magassa on the cover of Tripoli. With tectonic contact (overthrust), the limestones of Magassa can be seen on the flysch of Tripoli. We will encounter many geoforms and karst glyphs along the E4 route. It includes natural sculptures sculpted by the agents of weathering and erosion in the limestone rocks of the Tripoli section. These processes create strange rock formations that look like statues and with a little imagination one can make out familiar figures from the animal kingdom!



## MAVROS KAMPOS

From Skalia, north of the church of Agios Georgios, the trail leads us to the small, but very beautiful, plateau of Mavros Kampos, which is crossed by a dirt road. In the past, vines were grown there, but now it is used only for growing cereals, while it hosts numerous small wetlands, small seasonal swamps, very important for the avifauna. At the eastern edge of the plateau we leave the dirt road and turn left onto the path, which crosses a small col and begins to descend on the northern slope of a small peak.



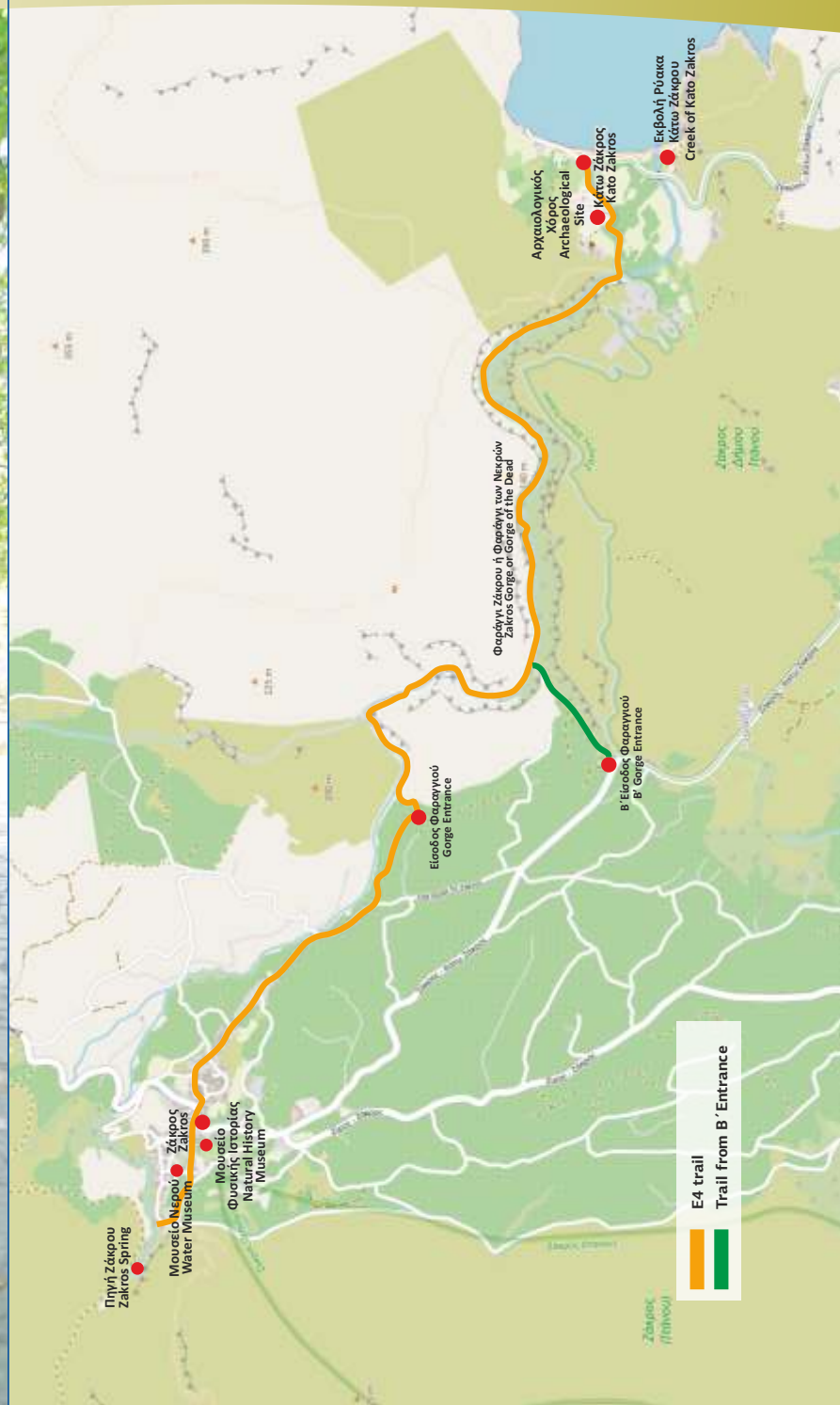
Along the route we also come across the - now abandoned - lime kilns, which "burned" until a few decades ago, providing the lime that served as a basic structural raw material, but also for many other uses, such as the whitewashing of houses and roads. The choice of the place where the lime kiln will be set up was not just random. It had to have suitable limestone stones close at hand, but also plenty of bushes for burning the kiln.

As we descend towards Zakros, on our left there is a small canyon and a torrent which, a little further down, develops into a verdant gully. The view upon reaching Zakros is excellent, as we have in front of us the whole settlement which is developing, mainly, along the gully and the hills covered with olive trees. After a while we are at the location "Mesa Mylos" where the source of Zakros is located.





## 6. Zakros - Gorge of the Dead - Kato Zakros





## ZAKROS

The source of Epano Zakros is created at the contact between the permeable limestones of Tripoli which are overthrust onto the impermeable metamorphic rocks of the Phyllite-Quartzite unit. The water moves inside the caves of the mountains of Zakros, until it reaches its way out, the source. The waters of the source supply the entire surrounding area with water supply, while also maintaining important ecosystems up to Kato Zakros.

The picturesque village of Zakros, with its rich springs, is located at the easternmost tip of Crete. It was and remains a large village with fertile agricultural land. It is marked on the Venetian maps of the region in the 17th century as "Xacro", while it is written as "Sacro" in written sources of the Venetian rule (notary documents, inventory of orthodox churches and monasteries). It is also mentioned in the Turkish census of 1880. There are various versions of the etymology of the place name that have not been confirmed.



Panoramic view of Zakros



## ZAKROS

In the small canyon, west of the village, there are several springs, the waters of which used to power the 11 traditional water mills that were structured in such a way that they were all supplied with water from the same water source and that the water was directed from one mill to the other, for the grinding of grain, for the processing of woolen textiles (mills) and for the grinding of olive fruit (factories). On its way, the water, from the biggest source of Zakros called "Mesa Mylos", until meeting the so-called "Gorge of the Dead" and continuing its course towards the sea, simultaneously served the other needs of the inhabitants.



The watermill, an ingenious and simple-to-operate construction, harnesses the power of water to move the millstones, while all the work and control was done by a single man, the miller.

The fruit that went to be milled was, mainly, barley and a few wheat and sorghum, which were cultivated in the area of Zakros and the nearby areas. Many were those who came from far away to grind their grain at the watermills of Zakros.

The construction of the watermill is generally that of a simple rectangular shape. It included the workshop and, in larger watermills, a reception area for customers, but also a living area for the miller with a fireplace for cooking and heating. Next to it was a stable for the animals and, in some of the watermills there was also an oven. Some ovens are still in use today.





## ZAKROS

The well is perhaps the most impressive structural element. Standing imposingly above the watermills with a height of 6-8 meters, it transfers the water with force to the water wheel, which in turn gives motion to the millstones to grind the fruit that falls from the pannier slowly and steadily, always with the supervision of the miller.

Today the watermills are no longer in operation, but three of them have been restored and turned into a Water power Museum, exhibiting many objects related to the use of water and their functions. In the center of the settlement is also the Natural History Museum of the Geopark of Sitia with small representations of habitats, stuffed animals, rocks and fossils of the area.

At the spring nearby is the church of Master Christ (Afentis Christos), while just outside the settlement there are the church of Panagia Viglou, near a spring and the church of Agia Paraskevi.

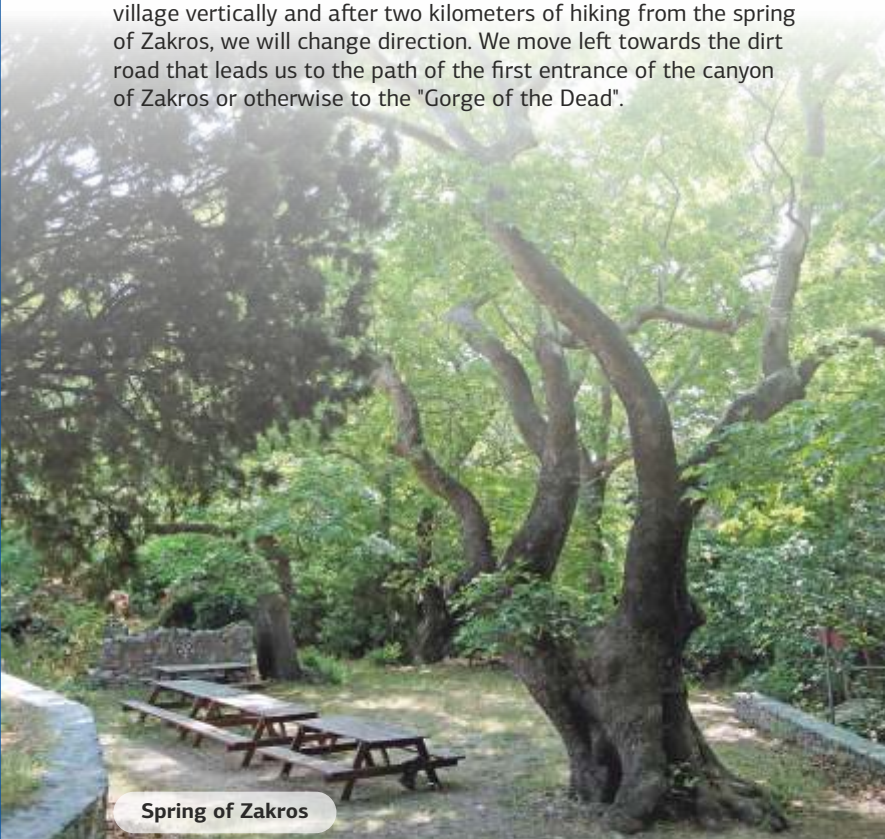


Water power Museum



## ZAKROS

Starting from the small square, in front of the Church of the Transfiguration of Christ which is a 17th century building and, after visiting the spring of Zakros with its plane trees and water mills, we go down the alleys to reach the village square. We follow the signs with the indication E4 on the main road that crosses the village vertically and after two kilometers of hiking from the spring of Zakros, we will change direction. We move left towards the dirt road that leads us to the path of the first entrance of the canyon of Zakros or otherwise to the "Gorge of the Dead".



Spring of Zakros

At the beginning the path is downhill and more attention is needed until we reach the canyon bed. The gully is overgrown with plane trees (*Platanus orientalis*), oleanders (*Nerium oleander*), wild olive trees (*Olea europaea* var. *oleaster*), clusters of carob tree (*Cerastonia siliqua*) and lentisk (*Pistacia lentiscu*), while in many places the presence of water in small lakes, even during the summer, creates beautiful images for the walker, but also special habitats for aquatic vegetation and aquatic organisms.



Church of the Transfiguration of Christ



River crab *Potamon potamios*



Dragonfly



Leaf fossil



## GORGE OF THE DEAD

The "Gorge of the Dead" as it is most known, was named so because tombs from the Minoan era were found in some large rock caves in its walls, but Late Minoan settlements with a fortification character have also been traced at the sites of Lenika and Kato Kastella. From the Lenika position the landscape changes with the vertical cave walls of the canyon and the special geological formations imposing themselves on the area.

The canyon of Kato Zakros, like most canyons, has preserved its rare biodiversity to a satisfactory degree, since it is one of the few places that man cannot "exploit". We can observe many species of flora, some of them rare, who have found refuge, mainly on the steep rocks and slopes of the canyon. Some of them are the Cretan aristolochia (*Aristolochia cretica*), the wild currant (*Delphinium staphisagria*), the osier (*Vitex agnus castus*), the

endemic wild carnation (*Dianthus fruticosus subsp. sitiacus*), the endemic *Bellevallia sitiaca*, plants such as: *Euphorbia dendroides*, *Lecokia cretica*, *Ephedra cambylopoda*, *Nepeta melissifolia*, caper (*Capparis spinosa*), arum (*Dracunculus vulgaris*), endemic bluebells (*Campanula pelviformis* and *Campanula spatulata ssp. filicaulis*), holly (*Phlomis lanata*), kermes (*Quercus coccifera*), bean trefoil (*Anagris foetida*), *Asphodelus aestivus*, *Phillyrea latifolia* many species of orchid, aromatic plants such as oregano (*Origanum onites*), savory (*Satureja thymbra*), thyme (*Thymus capitatus*), sage (*Salvia fruticosa*). The rocks we encounter are mainly limestones of Tripoli and Phyllites - Quartzites. Among the most characteristic and impressive rocks of the unit are the reddish to crimson (purple) argillaceous shales and phyllites with little to no metamorphism, but with intense schistification (thick layers of schist). The most characteristic appearances are found on and around Epano Zakros and within the canyon of Kato Zakros with very impressive and unusual mauve rocks.



*Dianthus fruticosus subsp. sitiacus*



*Capparis spinosa*



*Dracunculus vulgaris*



*Bellevallia sitiaca*



*Aristolochia cretica*



## GORGE OF THE DEAD

Inside the canyon, approximately in the middle of it, the characteristic overthrust of the tectonic cover of Tripoli (limestones) is observed on the tectonic cover of Phyllites – Quartzites (shales and other metamorphosed rocks). The tectonic contact (overthrust) is also observed in other places within the canyon and constitutes its base level, creating the conditions for the development of small springs.

At the exit of the canyon, the Geopark of Sitia has created well-secured climbing tracks, to the right and left of its walls.

After exiting the canyon, we follow the cemented road that will lead us to the archaeological site of Kato Zakros.



3 «eras» of water  
delivering networks



*Vitex agnus-castus*



Climbing tracks





## KATO ZAKROS

Kato Zakros is a small settlement at the exit of the "Gorge of the Dead" in a fertile plain with olive groves and small gardens. There is the archaeological site with the Minoan palace and its annexes.

The palace shows two main building phases. The first dates back around 1900 BC, while the second around 1600 BC. It was destroyed, like the other centers of Minoan Crete, in 1450 BC. Its position was strategic with a safe harbor and it was a trade center with the East during the Minoan Era as can be seen from the rich findings.

The road from the harbor led to the large central courtyard of the palace flanked by four wings, while around the palace was the settlement.



## KATO ZAKROS

The western wing was a place of worship with a hall of "rituals" and "banquets", the treasury, the archive and the Sanctuary with an underground "purification cistern" that had a purifying-ritual character, as can be seen from a ritual pot found there.



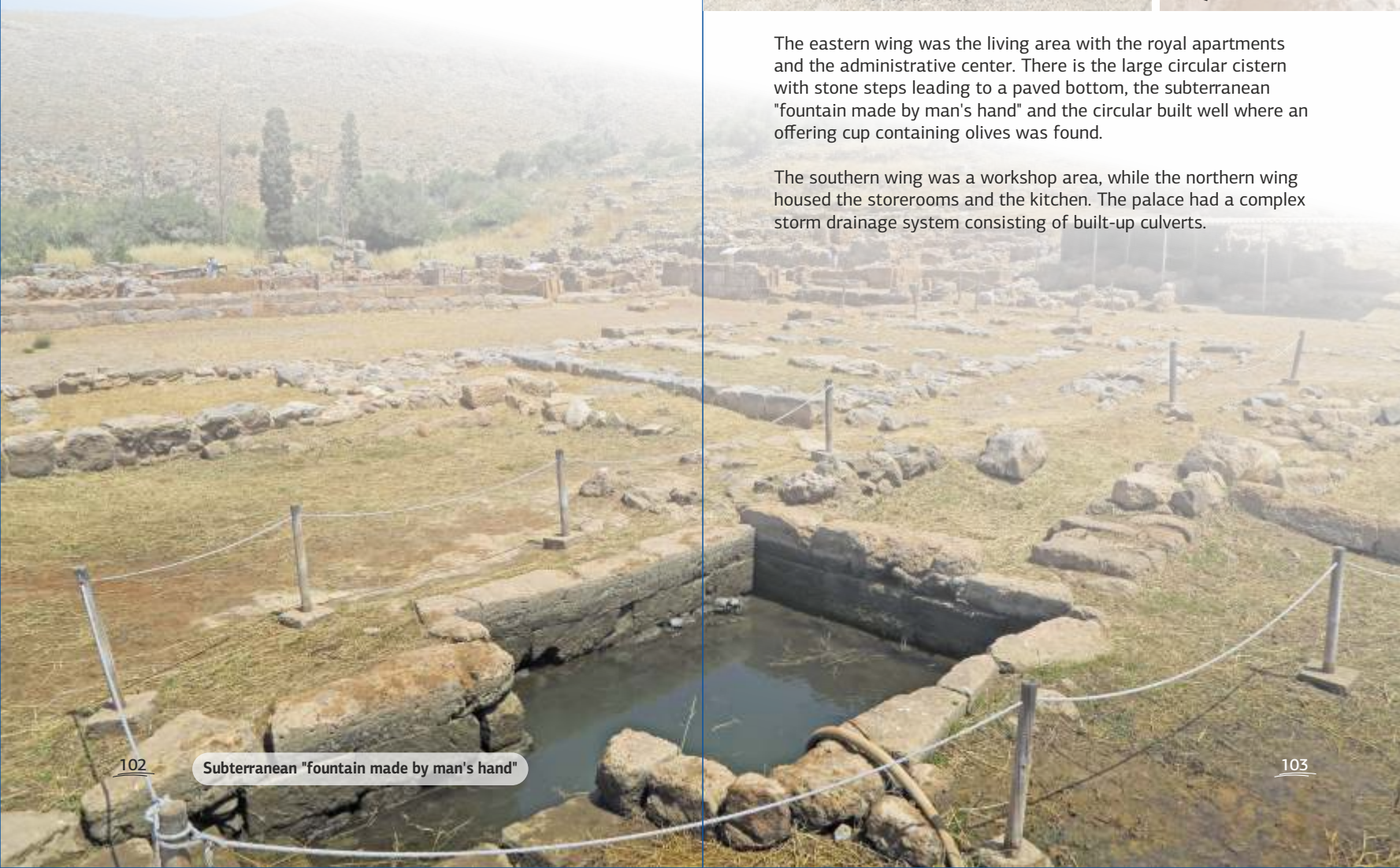
Circular cistern



Queen's bath

The eastern wing was the living area with the royal apartments and the administrative center. There is the large circular cistern with stone steps leading to a paved bottom, the subterranean "fountain made by man's hand" and the circular built well where an offering cup containing olives was found.

The southern wing was a workshop area, while the northern wing housed the storerooms and the kitchen. The palace had a complex storm drainage system consisting of built-up culverts.





## KATO ZAKROS

Inside the circular built well and generally where there is water, we meet the river turtle (*Mauremys caspica*), a unique species of water turtle in Crete.

The hike and the E4 trail ends at the beach of Kato Zakros which, in addition to the exceptional beauty of the landscape and the picturesque bay, presents a special geological significance, as here there is the globally important geosite with the Marine Terraces.



River turtle *Mauremys caspica*



## KATO ZAKROS

Along the entire length of the coastline around Kato Zakros, overlapping flat surfaces appear on the slopes of the mountains at different altitudes reaching up to 300 meters. These surfaces are indications of the sea level in earlier times and are created by the action of waves. The different altitudes of these ancient coasts show the gradual elevation of Crete which is particularly evident in this area. On the lower ancient coast, which is at a height of about 20 m above the current sea level, fossils of dwarf hippopotamus (*Hippopotamus creutzburgi*) and deer (*Candiacervus cretensis*) that lived at least 21,000 years ago have been found.

South of the gulf we find the estuary of the Creek of Kato Zakros. It is a coastal natural wetland which, apart from the estuary, also includes a wetmeadow area. The vegetation in most of the wetland consists of reeds (*Phragmites australis* and *Arundo donax*), while the wetmeadow is dominated by rushes (*Juncus sp.*) and on the beach by *Cakile maritima* and sea violet (*Matthiola tricuspidata*).

The wetland belongs to an area designated as a Natura2000 Special Protection Zone, the "Mountains of Zakros" a Landscape of Particular Natural Beauty, protected by the Law for the Preservation of Biodiversity (Law 3937/2011)

However, the E4 trail continues its route through the blue waters of the Cretan sea to find itself in Cyprus, where another Geopark, that of Troodos, has its own aquatic stories to tell you.







## EPILOGUE

E4 certainly told us many and interesting stories about the water, the people, the life, the history, the uniqueness of this place and the UNESCO Global Geopark of Sitia, a place that deserves the protection and attention of all of us, with the aim of sustainable development that will be based on the environment and people, that will respect history and monuments, that will listen carefully to the messages and see the signs of nature. Nature and the landscape show us the way to walk, as long as we keep our minds open and our thoughts on "tomorrow". The E4, as well as all the routes in the Geopark of Sitia, are constantly waiting for the tourist, the hiker, the naturalist to walk them and discover the wealth of this corner of the Earth that knows how to treat the landscape and the species it hosts with respect.



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# Interreg



ΕΥΡΩΠΑΪΚΗ ΕΝΩΣΗ

## Ελλάδα-Κύπρος

Ευρωπαϊκό Ταμείο Περιφερειακής Ανάπτυξης



**WATERWAYS**



**Γεωπάρκο ΣΗΤΕΙΑΣ**  
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**Co-funded by the European Union (ERDF)  
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Project: "Waterways and Stories in E4  
and the Geoparks of the Eastern Mediterranean- WATERWAYS"

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**Project “Waterways and Stories in E4 and the Geoparks of  
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The main objective of the project is to improve the attractiveness and increase the traffic on the intervention areas of Crete and Cyprus on the E4 - European Long Distance Trail, mainly mountainous areas that are at a disadvantage in terms of economic development and which are the most susceptible to climate change.

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