

Received: December 2023 Accepted: January 2024

DOI: <https://doi.org/10.58262/ks.v12i2.036>

Geoheritage as an Important Parameter for Geotourist Attractions: A Case Study in Asir Region, Saudi Arabia

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Abstract

Geoheritage is a resource for Geotourism and Geotourist attractions differ in aesthetic attractiveness. Asir region is several notable for groups of landforms unique importance of attractions. Examples of sites are described where Geoheritage an important parameter of Geotourist attractions, were analyzed of the region. The most interesting sites, from the point of view of science, tourism and aesthetic value of the landscape, were selected for study. The results of the study indicate the need to further promote the values of Geotourism for the lesser-known sites in the Asir region, and this will enable better tourism management in light of the vision of Saudi Arabia 2030, and the Asir development strategy "Qimam and Shem".

Keywords: *Geomorphological heritage; Geomorphosites; Geotourism; Landscape; aesthetic properties*

1. Introduction

Geoheritage has been recognized recently as an important resource bringing socio-economic benefits (Mikhailenko and Ruban, 2019). Much attention has been paid to defining Geoheritage understood as a resource by definition. In fact, in order for any natural element to be recognized as a resource, its general societal usefulness must be discussed. Geoheritage has value for scientists who need suitable objects for research, teachers who need explanation of some basic knowledge for students and their training, and tourists who are interested in learning more about nature. If so, then three types of Geoheritage resources can be recognized, namely, earth science resources, geographical education resources, and Geotourism resources. Of these, the latter are of particular economic importance because geoparks and other attractions related to geology bring direct profit, as well as facilitate the growth of the entire tourism industry due to the diversity of tourism products and services. Exploitation of a Geoheritage resource deepens people's understanding of the complexity and fragility of the natural environment and, therefore, contributes to the development of environmentally responsible behaviour. The interest in Geoheritage leads to diversifying the possibilities of tourist recreation and creating new job opportunities.

In Geotouristic activities, geodiversity is in the center of attention and represents the basic resource for Geotourism. According to (Rojas, 2005), geodiversity is “the number and variety of structures (sedimentary, tectonic, geological materials—minerals, rocks, fossils and soils), that constitute the substratum in a region, above which the organic activity is settled, the

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anthropic included.” A more detailed definition is presented by (Brilha, 2016): "geodiversity is the diversity coming from the nature itself (physical-geographical environment) and from the social processes, such as production, settlement and circulation (the human being and its activities)," considering human activities as part of geodiversity". From the perspective of Geodiversity, Geotourism offers the opportunity to understand the elements of a region's geological heritage (Carcavilla et al, 2008), thus constituting a basis for society's social, economic and even cultural development.

According to (Kubalíková, 2019), it has to be remembered that setting the links between geodiversity, biodiversity, culture, and history can help appreciate the geodiversity as a full-value resource for tourist activities, and thus, as an important resource for local and regional development. As for (Elassal, 2020) studied the geomorphological heritage of the Asir Mountains to develop Geotourism in the region. In these senses, the geological and geomorphological features of the Asir region were analyzed, which were identified landforms which consist in Geotouristic attractions. (Jaber, 2018) this paper primarily tackles the ecological diversity in Asir, in the Kingdom of Saudi Arabia and its effect on the sustainable development of tourism in the Asir region.

The objective of this chapter is to provide an overview of Geoheritage as an Important Parameter for Geotourist attractions of the Asir region, through descriptions and evaluations of the sites based on geographical sources, previous studies and field studies of the sites. The sites were selected for this study because they have a high grade of valuation of tourist attraction. Moreover, these include sites of importance for the valuable resources of Geoheritage associated with natural and cultural heritage, which are related to natural, archaeological and cultural areas and can be encouraging for local and regional tourism development in the study area. In this sense, the intention is to approach the inventory of Geomorphosites in the Asir region, and the relationship between these and the anthropic tourist sites. This relationship highlights the link between natural and cultural heritage, both of which are components of the region's heritage, and is considered as one of the branches of applied geomorphology.

2. Materials and Methods

The methodology that led to the realization of this paper has started from the current bibliographic referential (geological, geomorphological features, but also cultural-historical, literary or tourism geography), then the descriptive analysis and quantitative assessment of areas of Geoheritage as an important parameter for geo-tourist attractions. The sites were surveyed and evaluated with natural and human tourism potentials. A questionnaire was designed to determine the degree of attractiveness of tourist sites by tourists, a total of 1000 paper and electronic questionnaires were distributed. The questionnaires were analyzed using the SPSS program. And extracting the characteristics of the sample, in addition to clarifying the results of the responses of the study sample by extracting percentages to determine the degree of attractiveness of tourist sites according to the triple answer scale (high, medium, low), the arithmetic mean and the percentage of the degree of attractiveness were also extracted, in order to judge the tourist sites, whether they are attractive or not.

This comprises the following elements: general data (name, location, type, topographic representation, photos); qualitative data about the scientific, ecologic, cultural, aesthetic value; the presence of some human made tourism attractions; the existence of some management

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measures. Selected Geoheritage sites were finally included within the proposed routes.

3. Study Area

Asir region is located in the Southwest part of The Kingdom of Saudi Arabia between latitudes of 17° 25' north and 19° 50' north, and between longitudes of 50° 00' east and 41° 50' east. Asir region extends from the borders of Jazan Region in the Southwest to the borders of Yemen in the south and the borders of Najran in the east. It is situated Riyadh Region, the Red Sea, Mecca Region, and Al-Baha Region to the west. The area of the Asir region is 81,000 Km². Fig.1.

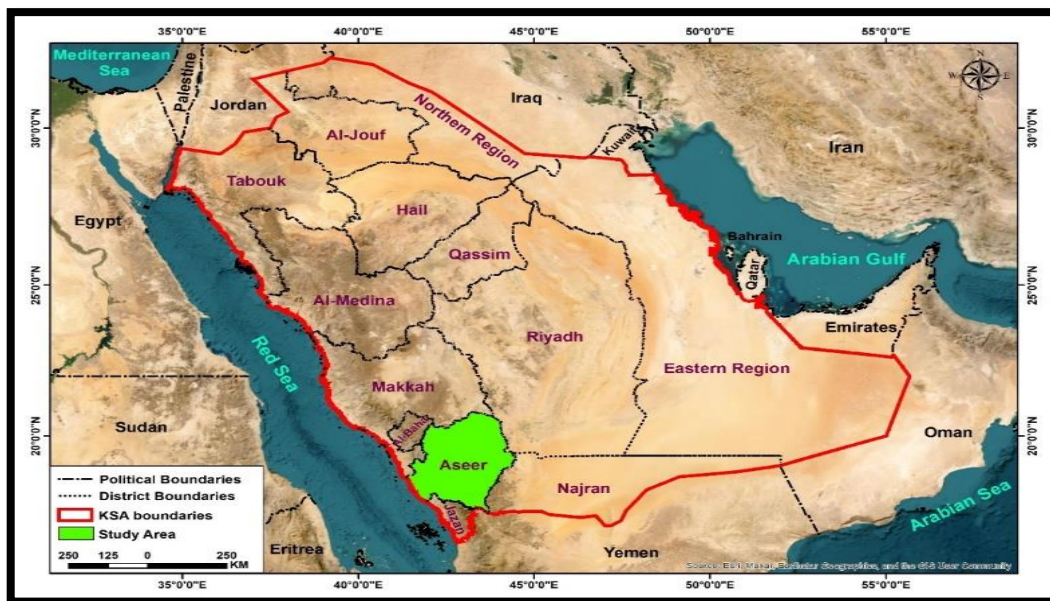


Fig.1: Location of the Study Area.

4. Geographical Setting

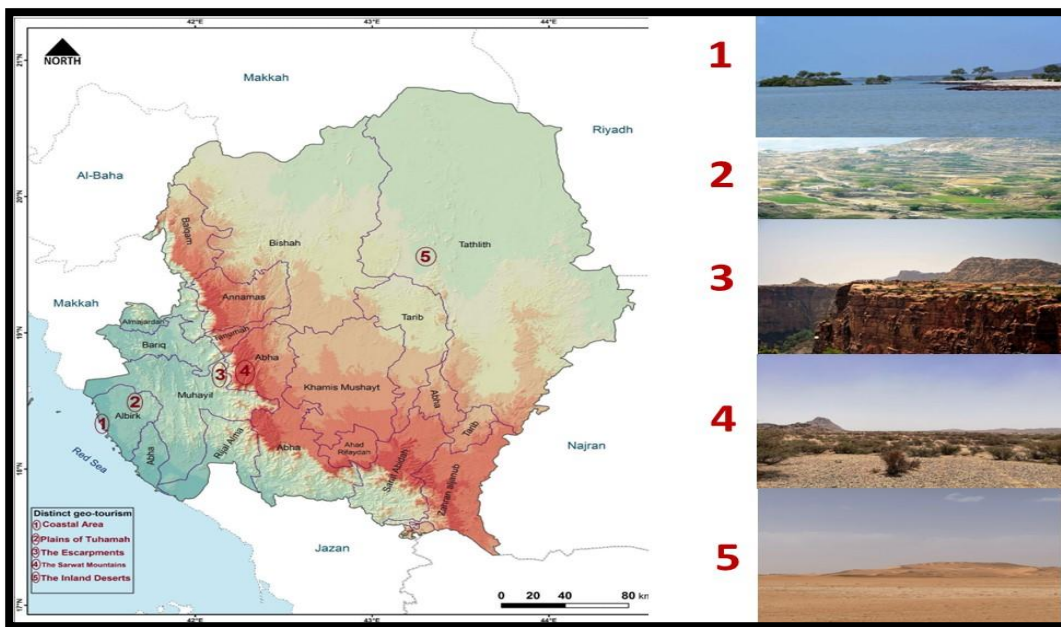
The Asir region is located on a high plateau that receives more amounts of rain than the rest of the regions of the Kingdom of Saudi Arabia, and contains the highest peaks of the country, which rise to nearly 3000 meters in Jabal Al-Soudah near Abha and Jabal Fara'a in Al-Harajah. The average annual rainfall in the highlands ranges from 300 to 500 millimeters, as it falls in two rainy seasons, the first in March and April and the second in summer. The temperatures are very extreme, and daily temperatures range in the highest elevations in the world. It is common for afternoon temperatures to be over 30°C, while mornings can be very cold and fog formation that reduces visibility to nearly zero percent.

The climate of the Asir region is a strong point in being a tourist destination all year round. A suitable climate is available in the region all year round, which makes this advantage a competitive force. Moreover, there is a lot of natural vegetation in Asir, as well as protected areas that even contain areas of dense coniferous forests, although the exposed hills are still very dry. Asir is home to many farmers who mainly grow wheat and fruit crops, although the use of irrigation methods has greatly expanded agricultural production. Agriculture represents

the main craft, in addition to the craft of sea fishing, and its agricultural environment is characterized by distinctive geographical features, namely the cultivation of terraces, in addition to the heritage villages that have a distinctive urban character.

5. The Elements of Tourism in the Study Area

The terrain in the Asir region varies and leads to a diversity of scenery and varying climatic conditions, as it varies between the plain and the mountain and from the shores of the sea to the desert, in Asir there are the highest mountain peaks, and most of the residential communities are based on them. To 3000 meters above sea level, the heights of Sarat are the line dividing the water between the coastal valleys of Tihama and the internal valleys, with a steep slope to the west and gradual to the north. Al-Ahmar, with a length of 125 km, is located within the historic port of Qahma, as well as a number of small islands overlooking it, the most famous of which is Kimble Island, while deserts are part of its natural components, which are spread in the governorates of Bisha and Tathleeth. The Asir region can be divided topographically into five main units as follows, Fig.2.:



(Elassal, 2020)

Fig.2: Topographical Units of the Study Area.

5.1 The Red Sea Coast and the Islands (Tehama Plain)

The Tihama Plain is part of the Red Sea Canyon, a narrow coastal plain that is a strip bordering the Red Sea. It consists of the coast of the Asir region, which is about 140 km long on the Red Sea coast. A number of barriers and coral islands of organic origin are scattered across from it in shallow waters whose depths are less than 200 m. These include Hadara Island, Marca Island, Maraya Island, Zukak Island, al'umi Island, Samir Island, Mount Kedembel Island, Duraiqi Island, Hadar Island, Jabal Island, Al-Aqamah Island, and others. These islands and barriers consist of limestone blocks that were originally parts of the solid skeletons of marine coral animals that build coral colonies, with the passage of time and these parts mixed with different

minerals to form various coral rocks (Saqqa, 1995).

The Asir coastline is characterized by its many ridges, and small ports called lagoons or anchorages are spread on it at irregular distances. Some of them are connected to the estuaries of the valleys descending from the Asir Mountains, which flow into the Red Sea. These outlets are called "Shroom", including Sharm El-Tana'a in the southern part of the coast of the Asir region. The hot climatic conditions prevailing in the coastal plain, and the presence of coral barriers, helped the formation of lagoons and swampy beach lagoons along the coast.

This plain is known as Tihama Asir and constitutes about 17.5% of the total Asir region. The western part of it is called the coastal Tihama, and the eastern part of it is known as Tihama al-Asdar. The boundary separating it from the coastline is a strip of sandy deposits that follows the path of the structural lines of the Red Sea depression. These plain forms a transitional area between the Red Sea and the high mountains of Asir in the east. Its average height ranges from 100-150 m above sea level, and the coastal plain penetrates a number of canyons and valleys that carry rainwater from mountainous areas and western slopes to flow into the Red Sea. In addition to the heat, they represent the most ancient forms, while coastal lakes and sand dunes represent the most modern forms (Mashat, 1987, p. 93: 126).

5.2 Foothills

It borders the coastal plain from the east, and is called by this name because it is located in the foothills of the high mountainous region, and it forms a transitional area of gradual gradient traversed by many valleys between the coastal plain and the mountains, its width ranges between 25-30 km. There are volcanic hills of faulty origin and covered by alluvial-gravel soil, and the height of these hills is less than 1000 meters above sea level, and this area gradually merges with the slopes of the western shelf of the Asir Mountains, Its hills are characterized by their strong inclinations and slopes, so people built agricultural terraces on their slopes wherever they could, Numerous valleys spread in it, whose upper courses coincide with the axes of the faults scattered in the region, which go from the north-east to the south-west in general, before the turn of these valleys to penetrate the coastal plain leading to the Red Sea, and most of these valleys are narrow gorges in which erosion is active to deepen and expanding its streams (Al-Zahrani, 2006, pp. 18-19).

5.3 Rocky Cliff

It is a steep rocky slope, its height ranges between 900 and 1800 m above sea level, and it consists of volcanic and metamorphic rocks, which arose due to the cracks and fractures that accompanied the formation of the Red Sea and the separation of the Arabian Peninsula from the African continent. The topography of the escarpment area is characterized by extreme ruggedness and the presence of steep valleys in the form of deep gorges, and the area is almost barren of pedestrian cover (soil) because the steep slopes are an obstacle to the formation and collection of soil, and therefore almost devoid of vegetation cover except for some scattered plants, especially trees Juniper that appears in some places (Ministry of Agriculture and Water, 1994).

5.4 Mountain Range

It is considered part of the western highlands of the Sarat Mountains, which is considered the most important topographical phenomenon in the Arabian Peninsula. The length of this chain in the Asir region is approximately 200 km, and the height of this chain ranges between 1800 and 3000 m above sea level, and extends from the northwest to the southeast It forms a narrow

strip, its width extends from the top of the cliff wall to the east, its average width is about 75-80 km, and it is dominated by rocky peaks of basalt and granite. This chain is also called Sarat Asir as it is part of the Sarawat Mountains. They are refractive mountains, and their slope ranges between 20°-35°, and exceeds them in some parts, and gradually descends towards the east towards the interior, and the heights of their peaks vary from one place to another. Its heights continue to increase as we head south towards the city of Abha, where it exceeds 3000 m, and where the summit of Al-Soudah (3,015 m above sea level) is located northwest of the city of Abha at a distance of 15 km, which is the highest peak of this chain in the Kingdom of Saudi Arabia, and to the south and east of the city Abha rises several peaks exceeding 2300 m, and valleys with steep sides and are spread in the form of the letter (V) with few deposits of alluvial sediments that are deposited by water. These valleys are evidence of the carving and erosion processes that this region witnessed, and led to the complexity of its topography (Al-Zahrani, 2006, pp. 18-19).

5.5 Eastern Plateau

This mountain range includes some mountain basins whose water drains towards the east, some of the tributaries of Wadi Bisha, such as Wadi Tarj and its tributaries, Wadi Nakab, Wadi Aya, Wadi Abha and others, and some of the tributaries of the valleys that drain water towards the Red Sea basin, such as Wadi Teh and Wadi Baqrah. Wadi Khat and others. In these basins, some small towns and villages were established, and their lands were used for agriculture. These cities include Sarat Ubaidah, Dhahran Al Janoub, and villages spread between the cities of Abha, Uhud Rafaida and Khamis Mushait (Al-Fares, 1988). This mountain range occupies about 34.3% of the total area Asir region (Al-Zahrani, 2006, pp. 18-19).

6. Geotourist Attractions

The Asir Mountains are distinguished by their rich and diverse geomorphological heritage. The reason for this is the dynamic and geotectonic activity. In addition, significant climate change during the Quaternary Era had an impact on this diversity. In terms of unique geographical diversity, the mountains are the "basic" of geographical diversity in the Asir region in general. Each mountain has its own geomorphological value and distinction in addition to the archaeological and historical value, which gave the Asir region a tourist distinction. Due to their natural and economic characteristics and characteristics, and distinct terrain diversity. 2030 and the Asir development strategy "Qimm and Shim" in making the Asir region a natural and sustainable tourist area throughout the year, by promoting tourism for geological and morphological areas, their protection and preservation, sustainable economic development, the involvement of the local community. In addition to the gardens, castles, forts, heritage villages, and the art of Al-Qatt Al-Asiri, as the Asir region has tourist attractions such as its unique nature represented by its high mountain peaks, the authenticity of its people and their rich cultural and social heritage.

6.1 Mountains

Located in the Asir region, the highest mountain peaks in the Kingdom of Saudi Arabia, where these peaks are tourist attractions for their unique nature and the possibility of practicing various sports activities. Al-Soudah Mountain is the highest mountain peak in the Kingdom, with a height of 3015 m. It is covered with juniper trees and surrounded by a number of agricultural villages, the most famous of which is the village of Al-Soudah. Among the towering mountain peaks is Jabal Fara'a in Al-Harajah Governorate, with a height of 3,004 m. Al Majaz

Mountain in Sarat Ubaida with a height of 2,902 m, and Mount Mushrif in the Al-Harjah Governorate, with a height of 2859 m. There are also a number of mountains in the area whose height exceeds 2500 m, including: Al-Sahla, Mana'a and Shawkan.

6.1.1 Al-Soudah Mountain

Al-Soudah Mountain is the highest mountain peak in the Kingdom of Saudi Arabia, with a height of 3015 meters above sea level, and it is covered with juniper trees, Al-Soudah is famous for planting terraces, where it forms green forests, especially in the summer. There is more rainfall than other places in Saudi Arabia, thus representing an important summer resort for tourists. Al-Soudah is also characterized by the presence of waterfalls whose water flows most of the year, as is the case with the waterfall in the area known locally as Al-Muhattaba Lake (Elassal, 2020), Fig.3.



Fig.3: Al- Soudah Mountain in the Study Area, a, and e Waterfalls are after the Rains and f Waterfall and its Formation of Al-Muhattaba Lake, b, d, and c Agricultural Terraces.

Source: <https://www.arrajol.com/>.

6.1.2 Qarn Mijal Mountain

Qarn Mijal Mountain, which is covered with black basalt rocks. The mountain takes a conical and streamlined shape, with a height of about 1172 m; It is isolated in a floor of granite rocks, in which the phenomenon of crusting and erosion of those rocks is evident, as several different shapes and carvings appear, It consists of granite rocks, and there are many distinctive shapes of granite rocks, in the form of cobras and mushrooms (mushrooms), caused by weathering, erosion, and flaking of granite, and at its summit basalt columns appear, and outcrops of lava columns of reddish-brown color appear. They are hexagonal basalt columns, and spread basalt lava columns in different sides of the mountain, Fig.4.

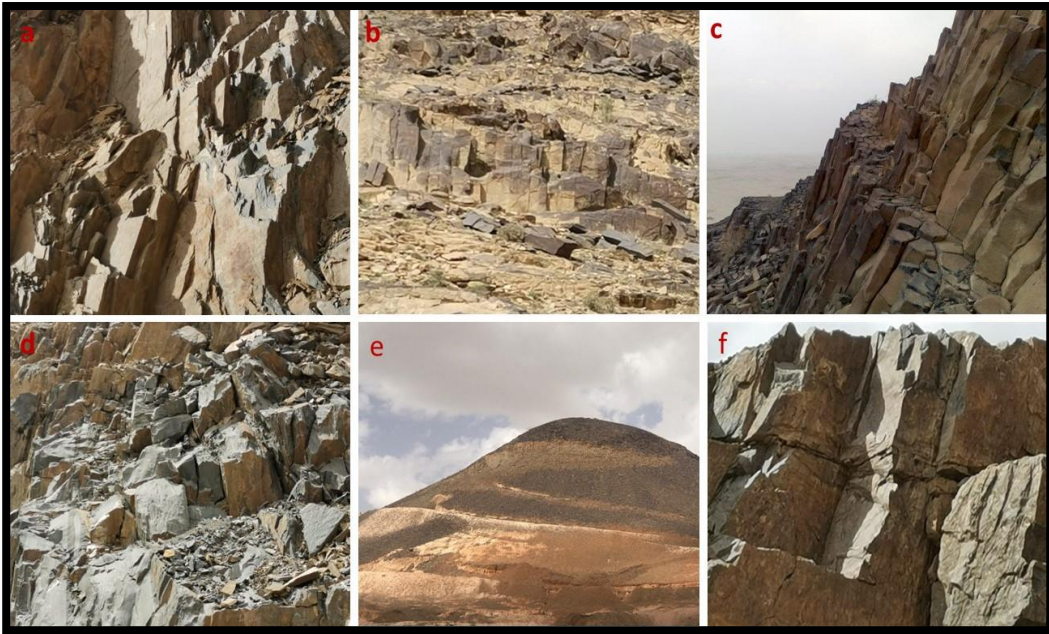


Fig.4: d Qarn Mijal Mountain Looks Like a Volcanic Cone. a, b, c e Basalt Columns, Dikes, and Jointing.

Source: (Elassal, 2020).

Musharaf Mountain

Musharaf Mountain is located at Wadi Awad in the Al-Harajah Center in the Asir region. Its height is 2859 m above sea level. It is formed from basalt rocks and consists of hexagonal basalt columns, and the diameter of the basalt columns in it ranges approximately 40-50 cm, which indicates the beauty of the geology of the place and its amazing charm, indicating its importance to be a tourist attraction in the future, Fig.5.

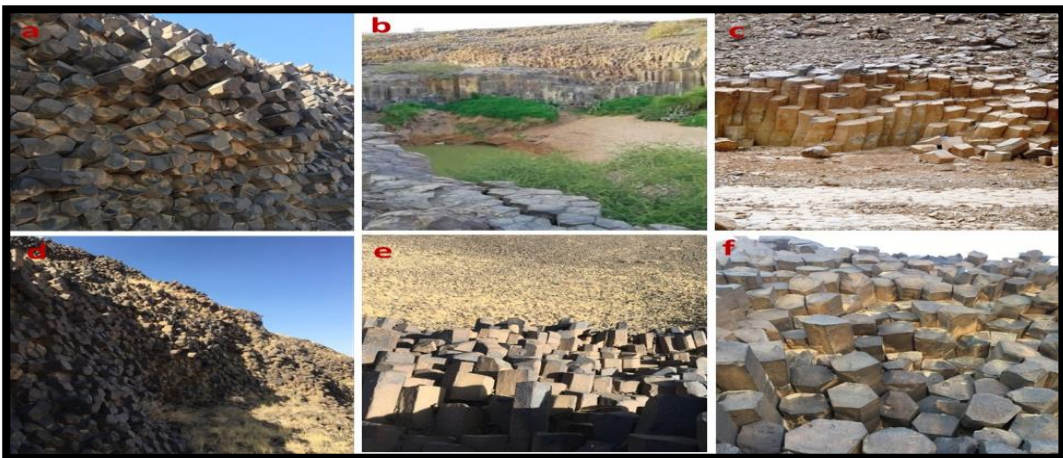


Fig.5: Musharaf Mountain in the Study Area, a–b–c–d–e and f Variety of Volcanic Landforms: Basalt Dikes and Extrusions and the Basalt Columnar Jointing.

Source: (Elassal, 2020)

6.1.3 Munea Mountain

Munea Mountain is a geomorphological, natural, historical and social landmark. It is the highest heights of the Eastern Province of Tanumah, at an altitude of 2463 m from sea level. It contains archaeological inscriptions. At the top, at the top, there is a large cave with inscriptions, as well as a mosque, and waterfalls flow from it when it rains, Fig.6.

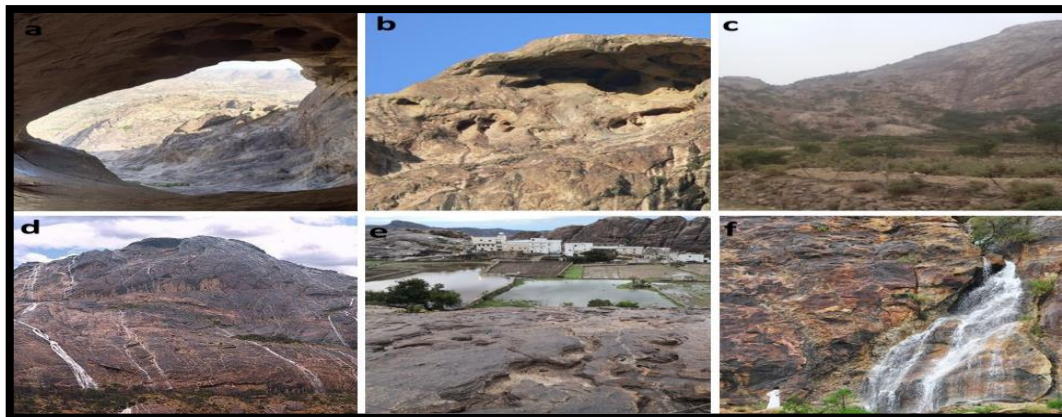


Fig.6: Munea Mountain in the Study Area, a Window Rock by Weathering and Erosion; b Tafoni n Gaps; d and f Smooth Black Rocks by Waterfalls and Gully Abrupt; c Composed Volcano; and e Smooth Black Rocks.

Source: (Ellassal, 2020).

6.1.4 Al-Sayra Mountain

Al-Sayra Mountain (the iceberg) is characterized by the white color, and is one of the most important and prominent natural geomorphological features in the Asir region. It resembles a white mole in the middle of a group of black and red mountains. The reason for its appearance in this white color is the presence of a mass of quartz stones that contain quartz. It differs from all the surrounding mountains, covered with white embroidered with some colored stones, a mass of brilliant white ice, rare in its form and image. The Mountain can be exploited as a tourist destination by providing the site with all the necessary elements of tourism (Ellassal, 2020), Fig.7.

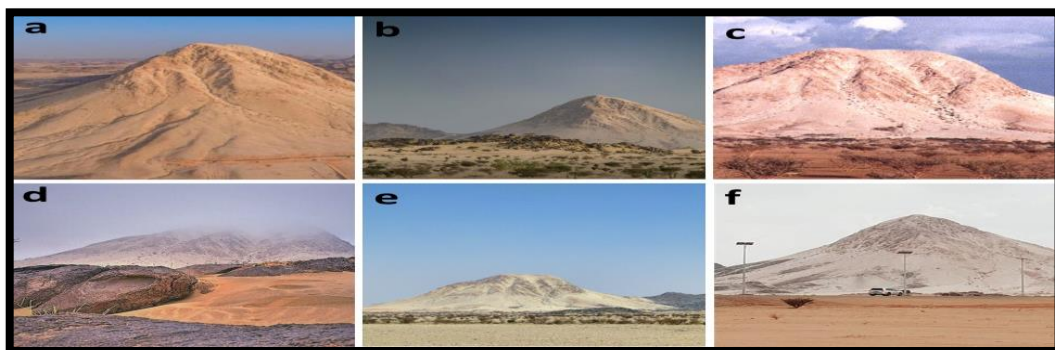


Fig.7: Al-Sayra Mountain in the Study Area, a-b-c-d-e and f White Al-Saahr Mountain consists of Quartz Stones.

Source: (Ellassal, 2020).

6.1.5 Umm Ish Mountain (Al Ish)

Umm Ish Mountain (the nest) is located in the ponds. It is formed from basalt rocks and consists of hexagonal basalt columns. It has inscriptions dating back 400 years before the mission of the Prophet Muhammad in the line of the ancient southern Arab kingdoms, the line of the Musnad line, bearing the names of flags and gods, including (Ather, Dhuhair, Elaf), these inscriptions are still clear in the mountain, Fig.8.



Fig.8: Umm Ish Mountain in the Study Area. a and d Inscriptions in the Al-Musnad Script, b and c Basalt Columnar Jointing.

Source: <http://www.tihamh-qn.com/?p=98160>

6.2 Waterfalls and Lakes

Waterfalls are one of the geomorphological phenomena that represent tourist attractions; In the Asir region, there are a number of seasonal mountain waterfalls that follow the rainfall directly. The reason for the large number of these waterfalls is due to the severe Al-Tadros and also the large number of heavy and severe rains resulting from light or moderate thunderstorms that sometimes accompany snow; The waterfalls are lakes in the estuarine areas, such as El-Habla waterfall, the Jabal Jandaf waterfall, the Jabal Manaa waterfall, the Al-Dahna waterfall, Al-Mohattaba waterfall, and Bani Mazen Waterfall, Fig.9.

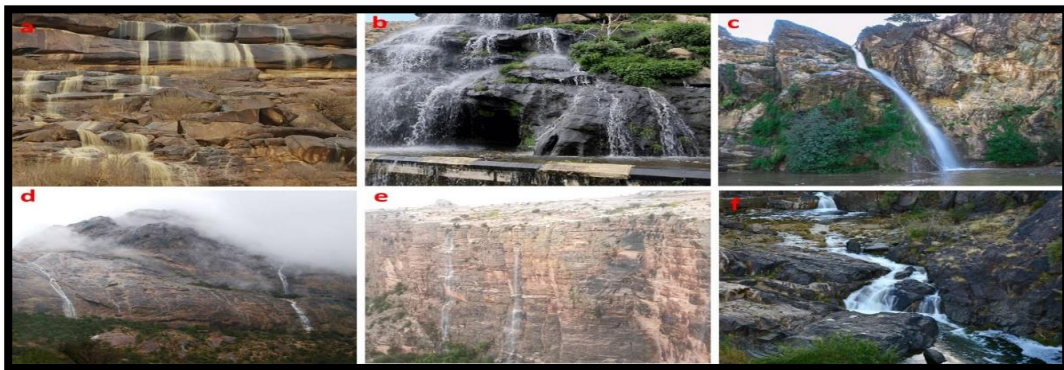


Fig.9: Waterfalls in the Study Area a Jabal Jandaf Waterfall, b Bani Mazen Waterfall, c Al-Dahna Waterfall, d Jabal Manaa Waterfall, e El-Habla Waterfall, and f Al-Mohattaba Waterfall.

Source: <https://twitter.com/faisalhamer12/status/659784396938047488?s=21>

The Asir region is considered one of the mountainous regions in which there is a lot of rainfall. It includes a number of types of lakes, such as mountain lakes, karst lakes, refractive and alpine lakes, and many other lakes. The smaller the area of the watershed is called ponds, but if it expands and grows, then it is called lakes. There are a number of valleys that embrace some lakes or ponds, such as Wadi Al-Jara (Wadi Najl) in Al-Birk Governorate, Containing a pond, rift lake, or "faulted lake".

There is a lake in Abha governorate, which is locally called "Lake Al-Mohattaba." a rocky slope of water across an interconnected chain of rocks estimated at a distance of approximately 150 m; The water slide then extends, creating a light run through the valley, Fig.10. In addition to a lake, it is a deep pool and is very similar to the phenomenon of "deep solution pools" as they are deep and deep pits in the rock, the reason for its depth is due to the continuation of the chemical action in the weak rock formations and their solubility, Fig.10.



Fig.10: b and c Lake Wadi Al-Jara (Wadi Najl), a and d Lake Mahtaba, and e A Mountain Lake at the Top of Tahawi Mountain.

Source: <https://twitter.com/saudigeology/status/1499700445287174144?s=21>

6.3 Ancient Mines

The Mountains of the Asir region contain mostly very rich iron mines in the Soudah Mountain, and mines of lead-silver and sulfur compounds are abundant in Asir. In addition to copper mines, and rock salt mineral, which is of a very precious type, in the western slopes of the Asir mountain range, and on the coasts of Asir there are petroleum and cement minerals (Kamali Pasha, 1791, pp. 910- 911). There are many ancient mining sites in the Asir region, which can be used as sites for tourism, the most important of which are the following:

6.3.1 Al-Ablaa Mine

Al-Ablaa is an ancient archaeological site, only its ruins and some archaeological evidence remain on its surface. It is located 60 km west of Bisha. It is an ancient site characterized by its location on the flow of a number of valleys and with good soil and fertile pastures. Its importance lies in gold and copper mines. The site of Al-Ablaa is large and spacious, and it contained veins of gold and copper ore. The buildings whose ruins are still visible indicates that the site was bustling throughout the year. In addition to the presence of fluorite deposits at the old copper mine in Al-Ablaa, where extensive mining operations were found, it can be concluded from its evidence that the ancient inhabitants of the region mined fluorite and used

it to smelt metals. Based on what was found in Al-Ablaa, it was not only an area with various mining activities, but also a prosperous economic center with its commercial, agricultural and pastoral components, Fig.11.



Fig.11: Al-Ablaa Mine in the Study Area.

Source: <https://www.wafyapp.com/>

6.3.2 Dhankan City

The city of Dhankan is a Mountainous city with a mosque at its top, and gold ore is available throughout. In addition, it is located on the Yemeni Hajj Road (ancient trade route). There was nothing left of the golden-coloured Dhankan mine except the remains of its foundations, also spread among the ruins of this mine and around its entrances are burnt iron slag, broken pottery vessels, and burnt golden clay juice. Mine furnaces and factories are intermittently scattered on its surface, including large and small ones (Al-Naami, 1983, p. 517), Thus, the Dhankan mine acquires historical importance as it is located on the old trade route and an economic value as it is a gold mine, which gives the site a touristic importance, and thus put it on the map of tourism in Asir.

5.4 Ancient Trade Route (Incense Path)

The ruggedness of the main part of the Asir region was not an obstacle to commercial activity, but rather contributed to making it suitable places for commercial caravans to stop for short periods, due to the availability of water. The multiplicity of the path of this road led to the emergence and prosperity of many cities and villages throughout the region, because the land roads were not stable due to the turbulence of the political conditions in the areas they pass through, which forced the owners of caravans to change the path of the road.

The site of the Asir region occupied an important position on this road, which penetrated the region through three different paths, from the eastern side of the region through the Tathleeth

Valley, and through the mountainous heights, and also through the coastal plain from the western side. Perhaps the oldest paths of this road is what was known as the incense trail that It was famous since the end of the second millennium BC, and it passed from Bir Hima, then the eastern parts of Asir, which are very easy places compared to the mountainous areas. Then he crosses the Sarawat Mountains to Taif, as it was probably built during the reign of King Abu Karb Asaad, who ruled during the period from 375-420 AD, and this is the road that his armies used to take when he was going from the south of the Arabian Peninsula to the north, and it is the same road that Abraha used in the past. After in his campaign on Mecca, it was famous for the "Elephant Trail" since then.

It seems that Abraha made some improvements to some parts of this road to suit what his army had of chariots and elephants. According to the ruggedness of the parts it passes through, it seems that this path was widely used during the Islamic era and was known as the Yemeni pilgrim trail connecting between Saada and Makkah al-Mukarramah, in addition to the western path that passed through the coast of Tihama and was considered the easiest of these roads at all, Fig.12.



Fig.12: Traces of the Old Trade Route in the Asir Region.

Source: <https://www.almowaten.net/>

5.5 Heritage Villages

Heritage Villages List evidence that expresses the region's civilization and its historical roots, and reveals something of its history and the life of its community. More than 4275 heritage villages have been recorded in the Asir region, the history of its establishment exceeds more than 500 years, an eyewitness to the unique originality for which the region is famous. The heritage villages in Asir witnessed special attention, so the humanization of heritage villages project was launched, which is a project stemming from the work of the urban landscape. It is useful in a wishing center. In addition, 70 heritage villages and archaeological sites were illuminated, Fig.13.

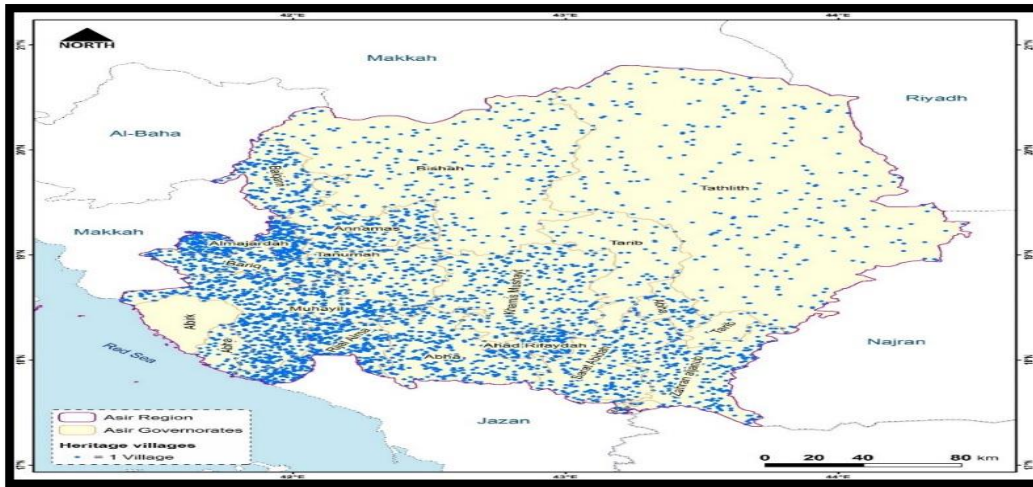


Fig.13: Location and Distribution of Heritage Villages in the Study Area.

5.5.1 Rijal Almaa Heritage Village

Rijal Almaa Heritage Village is a small settlement complex with a unique urban formation, consisting of 60 multi-storey palaces, built with stones, mud and wood (Al-Qarni, 2012). The villagers, with their own efforts, rehabilitated and invested the village with the support of the General Authority for Tourism and National Heritage and the Rijal Almaa Heritage Village municipality through the establishment of the Support Fund and the establishment of the Village People's Museum and the open theater (Al-Qarni, 2012). Rijal Almaa Heritage Village is an outstanding example of traditional human settlement that adapts to the ecological, social and economic systems, and is one of the important criteria adopted by UNESCO in the nomination of the village for the World Heritage List (UNESCO, Rijal Almaa Heritage Village in Assir Region, 2018). The principles of village investment were based on highlighting the heritage and cultural dimension and attracting and reviving industries traditional and craft, With the support of the people of the village, who donated to provide the museum with historical artifacts and heritage exhibits (Al-Ghabban et al., 2010), Fig.14.



Fig.14: Rijal Almaa Heritage Village in the study area.

Source: <https://heritage.moc.gov.sa>

5.5.2 Ghaya Heritage Village

It is a heritage village suspended above the volcanic Mount Tahwa on the surface of smooth and polished rocks; It is a unique marvel and one of the most beautiful tourist sites. It was built of stones on petrified lava rocks and reaches a height of more than 700 meters. This village is characterized by the rock formations that surround it from all sides where it is difficult to access. Seasonal rainfall, as it ends in rocky basins, which are considered as a watershed after the rains fall, as it helps to preserve the falling water as much as possible. As a result, Mount Tahui volcanic mountain combines a number of natural geomorphological phenomena as well as an ancient historical heritage, Fig.15.



Fig.15: Ghaya Heritage Village Located on Mount Tahwa.

Source: <https://twitter.com/theArabhash/status/1392472800158420996?s=21&t=GaUMmRNWDaobT4-B0jiMAw>.

5.6 Castles and Forts

Asir's forts and castles are a masterful architecture that rises to the tops, and it is a cultural and tourist heritage. Forts are fortified buildings used for military purposes at the time. As for the castles, they are luxurious buildings that were usually built for rulers and money owners. And palaces as well, but they were written down in space, and the Asir region is famous for al-Qasab, which is a type of construction. Circular or rectangular made of clay or stone or both of them that are used for military control purposes, and some of them are used for the purposes of storing grains (Qimm and Shem, Asir Region Development Strategy, 2021), Fig16.



Fig.16: Models of Some Castles and Forts in the Study Area.

Source: <https://www.alwatan.com.sa/article/363659>.

5.7 The Art of Al-Qatt Al-Asiri

Al-Qatt Al-Asiri is the art of painting and decorating the walls. It is one of the heritage arts, which reflects the culture, creed and civilization of the Asiri society. Al-Qatt Al-Asiri art is a colorful floral and geometric decoration, which appears from its covering of wall surfaces, whether internal or external, including ceilings, floors, walls and other architectural accessories. Influenced by its geographical environment, rich in plants and trees, and its different geographical terrain, which resulted in structural architectural patterns that were reflected in the decorative art of Al-Qatt Al-Asiri (Aref, 2017, p.1).

Al-Qatt Al-Asiri is one of the most prominent manifestations of the interior decoration of palaces and heritage buildings in the Asir region for hundreds of years and depends on geometric decorations inspired by the culture of the community and the colors of nature. 2017 AD, how in late 2015 AD the cat mural was displayed at the United Nations building in New York, executed by 12 girls from the Asir region under the name (Our Mothers Home) with a length of 18 m, and it received great admiration. Al-Qatt Al-Asiri art has been known for hundreds of years in the country of Tihama, which appeared at the hands of the Asiri woman. It is considered one of the important arts in the south of the Kingdom of Saudi Arabia, where it entered the world, after UNESCO included it in the list of intangible cultural heritage in 2017 (Al-Fawzan, 2018, P.31), Fig.17.



Fig.17: Models of Al-Qatt Al-Asiri art in Decorating the Houses in the Study Area.

Source: <https://ksaforunesco.org/>.

5.8 Parks and Nature Reserves

The Asir region is considered the greenest region in the Kingdom, with the spread of a dense vegetation cover that includes evergreen trees, which constitute a great and important tourist and environmental value. In the forests of Asir, which rises 2000 m, juniper and wild olive trees predominate, and in the slopes of the mountains towards the plains, at an altitude of less than 1500 m, acacia thorns prevail: Sumer, Sidr, Talha, and tamarisk. Mangroves are spread along the Red Sea coast. The Asir region includes 27 parks, the average height of the parks is (1754 m), the lowest wadi Mahaliya park is (647 m), the maximum height is Al-Soudah Park (2722 m), Fig.18.

Al-Raydah Reserve is located in the Raida cliff in the southwest of the Kingdom within the Hijaz Mountains, about 20 km northwest of the city of Abha, with an area of approximately 9 square kilometers. Dense trees and plants, the most important of which are juniper trees (Saudi wildlife Authority, 2015), in addition to the many waterfalls that descend from the top of the cliff and flow into Shuaib Raidah. The reserve is distinguished by the density of its trees and its vegetative cover, its trees varied between juniper, umbel, wild olive, acacia and many types of cactus, while the reefs contain a high percentage of diversity and density in vegetation cover.

Among the most important animals that are found in this region are the monkey, the Arabian wolf, foxes, striped hyena, white-tailed mongoose, lynx and hyena. This reserve is home to nine species of endemic birds in the Arabian Peninsula, the most important of which are the Arabian red-legged pheasant, the Arabian woodpecker, and the Asiri magpie, in addition to several species of East African origins, such as the gray abalone, the African blackbird, the malleus, the Ethiopian porcupine, and the small green bee eater. Also, taking care of parks and natural reserves constituted an important tourist tributary that relies on a charming nature.

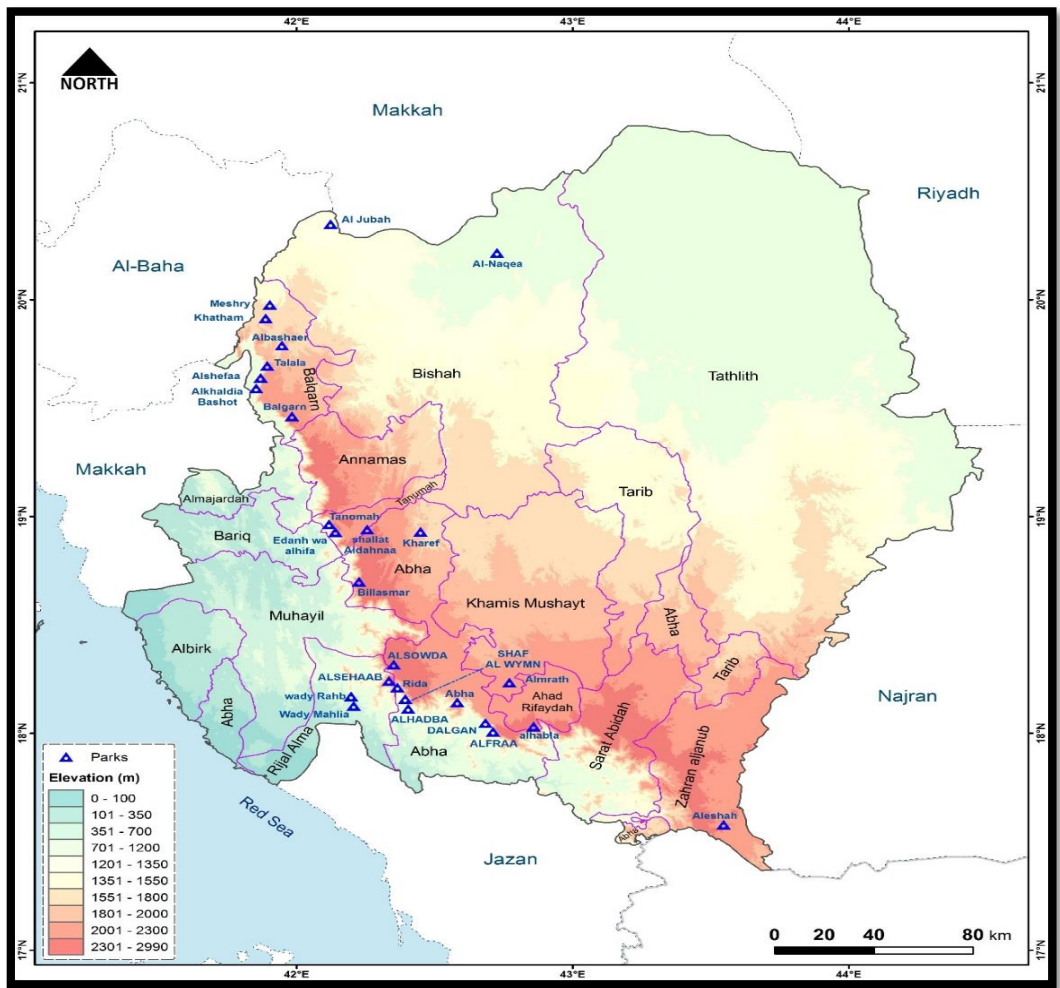


Fig.18: Parks Sites in the Study Area.

7. Results

Tourist places vary in the Asir region, and they are types: natural places, such as: mountains, valleys, waterfalls, and lakes. And places of civilization, such as: sites of inscriptions, ancient monuments, and sites of Islamic inscriptions, and they are spread in separate parts of them. and recreational places. The study showed that the percentage of tourists from the Asir region amounted to 69.9%, compared to tourists from outside the Asir region, whose percentage amounted to 17.0%, and from outside the region, whose percentage amounted to 13.1%. The study showed that the area is a family tourist attraction. Where the percentage of tourists with family reached 67.2%, compared to tourists with friends at a rate of 17.6%, and alone at a rate of 15.2%.

The results of analyzing the questionnaires to determine the difference between the average responses of the study sample individuals about the degree of preference for tourist areas according to the characteristic of the arrangement of tourist places. Wild tourism, as the percentage of it is 80% greater than the percentage of those who chose the historical, archaeological, and recreational tourist places, which is 20%, and where we find tourists coming from outside the Asir region who prefer natural wild sites, as the wild sites vary in them, such as: mountains, waterfalls, lakes, Parks, and gardens, etc., although the study area is very rich in archaeological and historical sites. The results showed that there are (11) tourist sites with a high degree of attractiveness, (26) sites with medium attractiveness, and (2) sites with low attractiveness from the point of view of tourists. As for by extracting the arithmetic mean and the percentage weight, it was found that there are (29) attractive sites for tourists, and (10) unattractive sites for them.

8. Conclusions and Perspectives

The development of mountain heights as a tourism resource in the Asir region is one of the important tourism geomorphological research studies that must be taken into consideration, as it gives a clear picture of the planning and decision-makers in the region, when conducting sustainable development projects for the mountainous heights in the Asir region; Because it shows the forms of the highlands in Asir and their tourism components, and the impact of human and natural factors in them due to the historical, archaeological and environmental value they contain, uniqueness, distinction and diversity of geological and geomorphological, places of their geographical distribution and various characteristics. The Asir region is economically important, which can be exploited in various fields of comprehensive military, economic, agricultural, tourism and industrial development, including the exploitation of mountainous heights in achieving Vision 2030 and the Asir development strategy "Qimam and Shem" of mountain tourism development throughout the year.

The Asir region possesses natural and human resources that qualify it to be one of the most important tributaries of the diversified national economy. On which the vision of the Kingdom of Saudi Arabia 2030 was based, in addition to the strategy of developing the Asir region "Qimam and Shem" to invest in strengths and enhance the region's distinguished position on the world tourism map, and to become a world-leading tourist destination and a destination for entertainment and culture, by achieving a balance between development and conservation, to protect the natural environment. Proposals have been developed to revitalize the Asir region and place on the global tourism map, as follows:

- 1 -Using drones as a next stage to cover the mountains that are difficult to climb, and making a documentary film to promote mountain tourism in Asir, with the film supporting it with scientific material, to make advertising and marketing campaigns for distinct tourism.

- 2 -Defining and classifying the areas that meet the criteria set by the World Parks Network in 2006 of the UNESCO Geo Park or Geo site.
- 3 -Documenting natural and human geographical studies and working with geographic information systems, and employing them in the development of mountain heights, and the importance of benefiting from the study of spatial analysis and choosing the optimal site by means of GIS and remote sensing.
- 4 -Encouraging the local community to participate in the development and support of mountain tourism by involving it in the tourism planning process "participatory planning", and by providing informed local labor and working as tourist guides.
- 5 -Allocating a local day for the Asir region entitled "Asir Mountain Tourism Day" from which advertising and marketing campaigns will be launched.
- 6- Activating Mountain tourism and bringing it to sustainable tourism. It is also necessary to work on providing the necessary ingredients and foundations, such as providing infrastructure and means of land and air transport. In addition to linking geoheritage sites with a tourist route.

Acknowledgements

The authors extend their appreciation to the Deanship of Scientific Research at King Khalid University for funding this work through Small Groups Project under grant number (RGP 1/243/44).

Funding

All authors are funded through the small research group project from the Deanship of Scientific Research at King Khalid University under research grant number (RGP 1/243/44).

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