

AN APPROACH TO CONSERVATION AND MANAGEMENT OF FARASAN ISLANDS' HERITAGE SITES, SAUDI ARABIA

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Abstract

The Farasan Islands in the Kingdom of Saudi Arabia includes a number of natural and cultural heritage sites, which are the focus of the attention of those interested in both local and international levels. This importance has made it necessary to monitor these sites and address them from a heritage and archaeological point of view by developing a proposal to manage and preserve them. The study defines the concept of conservation and management and propose a methodology for managing heritage sites by determining the importance of the site, its value and authenticity, monitoring the current use and their status, with providing information on the urban environment and development plans. This is followed by organizing the available information to monitor the site potentials', formulating the main objectives and identifying the means proposed to achieve them through an action and implementation plan. Therefore, this study aims at clarifying the importance of managing heritage sites through the following: highlight the importance of the Farasan Islands, develop a management plan to attain sustainable development, prepare a geographical database that covers all the heritage sites with the benefit of risk and crises management, conduct a SWOT analysis and support decision-making by relevant authorities.

Keywords: *Farasan Islands; Heritage Sites' Management; Sustainable Development; Natural Heritage; Cultural Heritage.*

Introduction

Management is considered as the most thorough concept to preserve heritage sites through maintenance, preservation of the surrounding environment, and providing the needs and requirements of the locals within the traditional features of the site.

Accordingly, the heritage management process, starts with the understanding of heritage site significance, proceed with the preparation of the plans for the management, and in the final stage enable the controlling of their implementation, with taking into account that all interested stakeholders take part in the process, while the process itself is guided and managed by the municipality [1].

As for the concepts of heritage , The Convention of the Protection of World Heritage [2] adopted it, as includes; Cultural Heritage, which involves a monument, group of buildings or

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site of historical, aesthetic, archaeological, scientific, ethnological or anthropological value, and Natural Heritage, which includes natural features consisting of physical and biological, geological and physiographical formations and natural sites which are of outstanding universal value from the aesthetic, scientific or conservational point of view.

The "archaeological heritage" is a physical part of cultural heritage, as it comprises all ruins of human existence and places relating to all manifestations of human activity, abandoned structures, and remains of all kinds (including subterranean and underwater sites), together with all the portable cultural materials associated with them [3].

Fortunately, the range of heritage has broadened significantly over the last half century. As Heritage properties tended to be individual monuments and buildings such as places of worship or fortifications and were often regarded as standalone, with no particular relationship to their surrounding landscape. But Today, the concept of a historic monument embraces not only the single architectural work but also the urban or rural setting which is found as an evidence of a particular civilization, a significant development or a historic event [4], thus helping to involve society and the possibility of achieving sustainable development.

The overall concept of sustainability is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs [5], it also means "improving the quality of life in the city, including ecological, cultural, political, institutional, social and economic components, without putting a burden on future generations, which is the burden of declining capital and excessive domestic debt" [6].

Through the concept of sustainability it is noted that there is a close relationship between cultural heritage conservation and sustainable development, as the issue of sustainable development can be apprehended as a concern for sustaining the heritage, considered as an end in itself, and part of the environmental/cultural resources that should be protected and transmitted to future generations to guarantee their development; or it can be apprehended as the possible contribution that heritage and its conservation can make to the environmental, social and economic dimensions of sustainable development [7].

Practical development

Management, in its simplest form, defines the organization and coordination of efforts scientifically to achieve certain objectives as a science and art that seeks to achieve specific organizational objectives through the employment of human and financial resources. Ultimately, management does not end with the development and setting of goals, it is an outlasting and ongoing process involving many basic administrative functions that integrate, overlap and converge to reach the desired aim [8].

Through this concept, dealing with heritage sites has become more different issue than that of the current time, as heritage sites have been managed for social, economic, scientific and cultural purposes and have been managed in partnership with the locals and it is seen as a measure of authenticity and an international emphasis [7].

A methodology was proposed to manage the heritage sites of the Farasan Islands through a series of steps as described in (Fig.1).

Determine the importance of the site, its values and authenticity:

The value of historic environment lies on its authenticity and the way in which its structure is kept intact. The historic core contributed significantly to the sense of place in our cities through the richness of its architectural qualities, picturesque, townscape and exciting activities that provide the life and charm of our cities [9].

Values and historical importance

The Farasan Islands have been known with early settlement since prehistoric, ancient, pre-Islamic, and later in Islamic and modern times until today [10]. The islands, along with their commercial importance, had the strategic importance of being an advanced maritime base

used by a number of global powers, besides Farasan Islands is characterized by a unique architectural style, this distinction and exclusiveness came as a result of trade trips for many years by Farasan traders, especially pearl traders and their relationship with the merchants of the Gulf countries and a number of east and west countries, which reflected on the architectural style of the region [11, 12].



Fig. 1. Proposed methodology for the management of the Farasan heritage sites

The site

The Farasan Islands are located between the longitudes of 41 ° 20 ' - 20 ° 43' east and the 20 ° 16' - 40 ° 17' north latitudes, they are 42 kilometers south-west of Jizan and administratively linked to it, as shown in figure 2.



Fig. 2. General Map of the Red Sea shows the location of Farasan Islands (a) and details for the Farasan Islands (b), (c)

These include a large group of other islands, the most important ones are; main Farasan, Sakeed, Kommah, Domisk, Zifaf, Dassan, Kira and Dushak [13].

The Farasan Islands foster many heritage sites, which give the islands special importance that makes them a strong attraction factor for tourists and those interested in heritage from inside and outside the Kingdom. The study is dedicated to a series of natural and cultural heritage sites, which are demonstrated below:

▪ Natural Heritage sites: The Farasan Islands have many scenic spots (Fig. 3), including a range of coasts such as the coast of the Qandal forest¹, Alghadir (Janaba), Alqarn, Abra and the coast of Alfaqua, beside the existence of a group of beaches overlooking the Gulf of Al-Hassis, the most notably Al-Harid Beach; this is in addition to the natural reserves of Farasan, the most important of which is the deer reserve.

▪ Cultural Heritage sites: The Farasan Islands have many archaeological and historical elements (Fig. 4) which include a number of sites that contain some of the Stone Age artefacts. Some sites also feature the spread of pottery fragments on their surfaces, as well as other sites containing foundations of various buildings. An example of this is Al-Qurayyat, Al-Gharain, Al-Kadmi (in the village of Al-Kessar), Luqman mountain, Al-Baqr mountain, Muharraq, Wadi Matar and the village of Sayr.



Fig. 3. Qandil Forest on Farasan Island, Coast of Hassis, the deer reserve



Fig. 4. Photographs showing the studied cultural heritage sites (a) El- Ghareen site, (b) Luqman mountain, (c) El Arady buildings, (d) Ottoman castle, (e) German House, (f) Hussein Al-Rifai House, (g) Abdullah Al-Rifai house, (h) one of Kessar's heritage houses

In addition, the Farasan Islands contain a number of military buildings represented in The Ottoman citadel that dates back to the period of Ottoman rule, and The German house that was established in 1901 to be a repository for coal used as fuel for vessels crossing the Red Sea.

Beside Historical buildings, the inhabitants of the Farasan Islands dive in their waters in search for pearls. This activity nourished the islanders who left their fingerprints on the upscale of islands and the buildings they left and still exist, including the houses of Rifai, House and masjid of Najdi.

Observing the current implementation of the heritage sites and their status:

The natural heritage sites are distributed along the Farasan Islands as the whole site is one of the natural reserves. Cultural heritage sites are mainly located on Farasan Island

¹ Qandal: A plant of the aquatic environment grows in different areas of the Red Sea, and shortens its presence in protected areas away from the waves and human influences.

alongside the Germen House on the island of Kommah. Their Uses and current conditions are divided into:

- Cultural heritage sites open for visit such as (Kessar's heritage houses - the Ottoman citadel).
- Heritage sites open for visit but not rehabilitated (most of the natural heritage sites - Ghareen buildings - El Arady buildings – Luqman mountain - House of Hussein Rifai).
- Cultural heritage sites in a serious construction condition (German house - Abdullah Ibrahim al-Rifai house).

The risks affecting natural and cultural heritage sites:

There are some risks and threats affecting the heritage sites at Farasan Islands and inhibiting management plans as natural heritage sites suffer from Offenses committed by some people through overfishing of marine and terrestrial habitats, such as the Al-Adami Al-Farasani deer and fishes, Effects of environmental factors on mangrove forests such as lack of rainfall, land desertification, and sand crawling, Exploitation of mangrove forests and urban development such as the construction of buildings and road networks without taking into account the heritage sites' nature.

As for Cultural heritage sites , it have a range of threats and natural obstacles such as climatic factors (wind (Ghubra), storms, rain and air pollution), scarcity of fresh water and the phenomenon of coastal erosion, besides the existence of a number of urban problems negatively affect the development plans, these include random growth of urban construction in the islands and the high costs of construction and gas prices [14], most of the services, commercial and industrial activities are found mainly in the governorate of Farasan. In addition to the lack of road network and sanitation, as well as the lack of air transportation`

Relations with stakeholders, Policies and legislation for the protection of urban heritage in the Kingdom

After highlighting the importance of the Farasan, stakeholders in the site, who have a mutually beneficial relationship with it, should be acknowledged and involved in all stages of the management process. Stakeholders include the local community and the residents, the General Authority for Tourism and National Heritage, the Governorate of Farasan Province, investors, heritage-obsession individuals and tourists from inside and outside the Kingdom.

A number of articles has been adopted to protect and preserve the urban heritage in Saudi Arabia, and have been organized dealing with buildings and their surroundings as when designing, expanding or beautifying town or village planning projects, it is necessary to preserve the areas and heritage sites in them, the municipalities shall be prohibited from granting building and restoration permits in places adjacent to heritage sites, unless approved by the Department of Antiquities. and it is the responsibility of ministries, departments and committees concerned, as well as the owners and others when organizing and beautifying cities and villages where there are archaeological areas or historic buildings, to take into account creating a protection zone that is a built-free area for archaeological and historical buildings, and it could be a distance of (200m) determined around the direct boundary of the building or the classified site, especially the area on which the facade of the building or site is located.

It also recognized the importance of conducting surveying and excavation works for the urban heritage for the purpose of protecting, ensuring their maintenance, and creating a record of them with the regulatory controls.

The Saudi Commission for Tourism and Antiquities is responsible for the preservation and development of urban heritage; with its reuse on cultural, economic uses and cooperation with other competent authorities , and the Commission shall protect historic buildings and heritage sites within the private property in order to preserve, rehabilitate and develop them, and propose expropriation in accordance with the expropriation system for the public interest and the placement of the temporary false possession [15].

The Authority, represented by the National Urban Heritage Centre and in partnership with other stakeholders such as the princes and the secretariats of the regions as well as the ministry of finance, developed other offers and solutions to the problems of the heritage sites owned by individuals.

Information about the urban and architectural structures:

When preparing a management plan for any heritage site, it is necessary to collect all available information about its urban fabric, its characteristics and main structure services, so as to determine the needs of the site and crisis management when needed.

The urban structure of the Farasan Islands:

Farasan is considered the largest island of the Red Sea with its area and population. This island is housing several villages: Muharraq, Kessar, the Messela, Al-Hussein and the village of Sair. In addition to the island of Al Sakeed, this is located in the north-west of Farasan and comes second in terms of area and population. It includes a group of villages and is separated from Farasan with a waterway. Sakeed colonizes a number of villages; Al Mahasour and Khottob.

In addition to the presence of some residential buildings on the island of Kommah, this is located southwest of main Farasan.

As for Farasan’s buildings, they are characterized by two different types of urban structure (Fig. 5):

- A. The pattern of scattered buildings where the clusters of buildings are distributed according to the locations of the villages and the roads leading to them in addition to the availability of services.
- B. The pattern of adjacent buildings (conjugated) within the villages. The buildings are adjacent without large spaces among them, showing narrow and winding streets.

Characteristics of Heritage Sites:

The cultural heritage sites are characterized by their semi-detached heritage sites, where their buildings and structures are clustered in a certain distinctive form that differs from the surrounding architecture (Fig. 6).



Fig. 5. The distribution of urban structure (a), the urban structure scattered in the islands (b), the interconnected urban structure within the villages (c)



Fig. 6. Images illustrating the semi-detached urban area of cultural heritage sites, (a) the Ottoman Citadel, (b) the house of Ahmad Menawar al-Rifai, (c) Elarady buildings

Main structure services in the Farasan Islands

Al-Kherami [16] discussed in detail the infrastructure, services and tourist facilities available on the site where the islands include a network of transport and communications. Its main nerve is the maritime transport to connect the Farasan to the city of Jizan, as for internal transport, the Islands have a good network of roads which are linking the villages of Farasan and many of its heritage features to one another.

The Island also has a grid of electricity, a water desalination plant and a communications network. In addition to the presence of several centers of the border guards sector, a police station, traffic center and a civil defence center (Fig. 7).

There is also a general hospital in Farasan and a number of mosques, gardens and green areas. It is noted that most of the main structure services are focused mainly on the Farasan Island.



Fig. 7. Farasan ferry (a), the bridge connecting Farasan with Al-Sakeed (b), Farasan Saline Water Desalination Plant (c)

Organize the available information to monitor the high potentials of the site

Due to the large amount of data and information available on the site, means should be used to facilitate their organization and ease their use in the management plan. Therefore, geographic information systems and a SWOT analysis strategy are used for this purpose.

Geographic information systems:

Geographic information systems (GIS) are digital systems that have the ability to create and manage geographic data and descriptive information, through means of input, classification, processing, analysis and geographic information display. This is done through a site Geographic reoccurrence system such as latitude and longitude circuits, the strength of the geographic information system lies in its ability to link different information in geographical content and thus extract the results from these relationships [17].

The application of the Geographic Information System in managing the heritage sites of the Farasan Islands helps easily to collect, document, update and analyse social, economic, natural, environmental and urban data on heritage sites. Through the creation of a digital map capable of meeting the needs of these projects and representation of the spatial elements that represent the different phenomena in the study area [18, 19].

The geographical database is easy to access, interact with, and easy to link between spatial and descriptive data stored in it, with obtaining large numbers of maps, as the application of the geographic information system on the Farasan Islands resulted in dozens of maps with different subjects. It provides a strong database for taking the necessary decisions for management plans.

Besides the simplicity to locate tourist and archaeological sites, hotels, resorts and natural heritage sites in the Farasan Islands with thorough information on the nature of the place and how to access it.

Monitoring the potential of the site through the SWOT analysis:

SWOT analysis is used in many fields, including urban planning, and can be used in the management of heritage sites to create a thorough view of the site and its needs, and it used for:

- The evaluation of the internal factors and external conditions that the site faces.

Therefore, it is used in the early stages of the management plan.

- Helping to make a decision on a logical basis without relying on a mere intuition.

Planning by the SWOT analysis to manage heritage sites at Farasan islands:

To perform a SWOT analysis, the strengths and weaknesses of the site as well as opportunities and threats (SWOT components) should be identified as shown in (Table 1).

Table 1. SWOT Matrix to identify strengths, weaknesses, opportunities and threats for the heritage site

	Helpful factors	Harmful factors
Internal factors	<p>Strengths:</p> <ul style="list-style-type: none"> - Registration of the Farasan Islands as a nature reserve. - Many natural attractions are available. - Availability of free means of transport from and to Farasan. - Its Moderate climate in winter. - Rehabilitation and restoration of some cultural heritage sites. - A good main road network is available in the Farasan Islands. - The presence of many services and facilities on the island. 	<p>Weaknesses:</p> <ul style="list-style-type: none"> - There are no paved roads for all natural and heritage features of the island. - The difficulty of the trip to Farasan because of the reservation of the ferry before the trip with enough period. - The need for many heritage cultural and natural monuments to be maintained, rehabilitated. - Lack of interest in the rest of the islands of Farasan and its villages and the lack of services and facilities. - Lack of entertainment and parks, as well as accommodation and its high cost.
External factors	<p>Opportunities:</p> <ul style="list-style-type: none"> - The possibility of linking Farasan Islands with Jizan City. - Undertaking the necessary development works, while taking advantage of the available sources of energy. - Benefiting from the sites of natural and cultural heritage in the islands and protecting them through the development of an integrated plan to manage these sites. - Provide infrastructure services and expand the road network to include all the islands of Farasan and its villages. 	<p>Threats:</p> <ul style="list-style-type: none"> - There are some natural threats and obstacles. - The existence of a set of structural problems negatively affect the development plans. - Most of the services, commercial and industrial activities in the province of Farasan without the other villages of Farasan. - Lack of air transport, which weakens its ability to attract investment and foreign tourism.

Formulation of the main objectives of the management of heritage sites:

Goals can be defined by maintaining and consolidating strengths. Thus, this leads to avoiding and reducing weaknesses. A set of objectives has been formulated to manage the heritage site, as follow:

- Take the advantage of all available natural, human, urban and economic resources in a balanced manner to ensuring sustainable development, this is aimed to help diversify and increase the sources of national income.
- Preserve the natural and cultural heritage sites in the Farasan Islands and highlight their values through the development of an integrated management plan.
- Study the possibility of connecting Farasan with the city of Jizan throughout the day without causing any delay to visitors.
- Improve the main structure services and all necessary facilities.
- Establish a group of developmental and educational centres to contribute to raising awareness, with the need for community participation when making decisions about heritage sites.
- Develop small and medium industries for traditional crafts and exploit natural resources such as pearl, coral and fish wealth to increase the incomes of the population.
- Increase the participation of the private sector in the financing efforts of the islands.
- Attract investors' funds to provide the necessary services that range from hotels, restaurants to entertainment places serving visitors to heritage areas and residents.

- Provide more employment opportunities for citizens either through work in the services surrounding the heritage sites or in the buildings of heritage and reuse buildings for new jobs (museums - libraries - hotels - ...).

Determine the proposed means to achieve the objectives:

This stage includes the work of a table for each goal that includes the means to achieve it, so it is suggested that:

- Monitor all available resources, and develop a plan to maintain these capabilities, and make maximum use of all available resources.
- Improve the educational level of the population, provide adequate educational facilities and raise awareness of the importance of education, while encouraging the establishment of charities and motivating them to contribute to social development activities.
- Expanding the road network and extending it to all the villages of Farasan to help in the reconstruction of these villages and not abandon them, with the improvement of the sanitation network and water treatment plants to improve the requirements of the sustainable environment and study the establishment of all the facilities needed by the islands, to improve the level of infrastructure and superstructure.

Develop an action and implementation plan:

The action plan:

It is important to develop an action plan indicating how the objectives will be realized through a series of specific actions delivering products or services, this action plan can be a series of strategies, or plans such as a visitor management plan, a conservation plan, a disaster risk management plan or a monitoring plan [7], Following table 2 shows the proposed action plan.

Table 2. The proposed action plan

Objectives	Means	who	Duration
Take advantage of all natural, human, physical and economic potential.	<ul style="list-style-type: none"> - Monitor all available resources. - Develop a plan to maintain and develop these capabilities. - Raise the institutional capacity of small business owners and promote the marketing of their products locally and internationally. - Exploiting heritage features as cultural resources in tourism industry and tourism investment; which is characterized by its huge return and flexibility of the penetration in many sectors of the economy. 	A dedicated team of all specialties.	Medium Term Plan
Community participation when making decisions about archaeological and historical buildings.	<ul style="list-style-type: none"> - Improving the educational level of the population. - Provide adequate educational facilities. - Establish charities and encourage them to contribute to social development activities. 	Responsible agencies with the use of volunteers from young people to conduct educational courses in the region.	Medium Term Plan
conservation of heritage sites	<ul style="list-style-type: none"> - Regular monitoring of site status. - Development a plan for emergency interventions for monuments with dilapidated construction state. 	An integrated team of engineers, restorer and archaeologists.	Short-term plan
Improve infrastructure and superstructure while providing all necessary services and facilities	<ul style="list-style-type: none"> - Improving the network of roads, transport and water systems. - Monitoring of infrastructure services, providing more tourist accommodation services (hotels - tourist resorts), buildings for religious, health and educational services in all villages of Farasan. 	Responsible authorities	Long-term plan
Attracting investors	<ul style="list-style-type: none"> - Provision of major services and facilities and improvement of roads, transport and communications network. - Facilitate procedures to save time and effort. 	Responsible authorities	Long-term plan

The implementation Plan:

The previous stage focused on the development of a vision, objectives (outcomes) and the identification of it. The next important stage in the management planning process is developing a strategy to implement these.

It is best to use an existing unit within the organization that is empowered to carry out the implementation of the plan; this unit may be focused more on coordinating than directing it [7].

Conclusions

The study illustrates the need to an urgent intervention with the work of rehabilitation and management for heritage sites in the Farasan islands, with the Community's participation and stakeholder's identification. In the field of management, it's necessary to utilization of geographic information systems to document, update and analyze all data related to heritage sites, while linking them with its spatial data. Also maximize the use of the SWOT analysis matrix to develop strategic plans for the management of heritage sites.

From the urban studies, it's clear the need to regulate and reduce the expansion of urban structure in the context of heritage, and the necessity for Managing natural and cultural heritage sites as an integral part of local and national management plans, in accordance with the laws and regulations.

Therefore, recommends with the Participation of the local community in the adoption and implementation of decisions issued to preserve heritage sites. This is supposed to show its customs and traditions to the visitors and tourists of the islands. This action creates love and communication between the concerned government agencies on the one hand and the local community on the other.

Search for necessary funding sources for the restoration of archaeological buildings and know how to preserve them, with Studying and analyzing the urban structure and its relation to heritage sites. This is done through the use of GIS to connect all sites and their available data through a map, and make them available as well as the possibility of developing an integrated plan for the protection of heritage sites during crises.

Publish the results of excavations which are carried out at the site, improving all infrastructure services throughout the islands and conducting social surveys aimed at studying the needs and wishes of the local community in the Farasan Islands.

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