

Potentials of Underwater Cultural Heritage in Tourism from the Perspective of Tour Guiding in Alexandria, Egypt

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ABSTRACT

Underwater cultural heritage has become a new attraction in the global tourism. Egypt in general and Alexandria in particular has great potentials in this matter. Many monuments and antiquities of this great ancient city have disappeared below the Mediterranean Sea. Some have been salvaged and others are still embraced by the maritime life. The aim of the research is to study the importance of this underwater cultural heritage in tourism from the perspective of tour guiding by answering three main questions: does the underwater cultural heritage actually play a role in tourism in Alexandria? Second, how can the sector of tour guiding be useful in this matter? And third, what are the future expectations for tourism and tour guiding in this field. Seeking to answer these questions, methodology of "case study" is used, and data is collected using "semi-structured interviews" addressed to tour guides and personnel working in the management of the underwater cultural heritage of Alexandria. The study has yielded interesting results indicating the great interest of the tour guides in the area of the study and their awareness of the obstacles, which prevent exploitation of such important tourist attraction in Alexandria, and how they can be overcome. For example, the study shows that most of the tourist programs do not include the submerged monuments, and most of the time tour guides make this effort by themselves. This means there is still a lack of sufficient awareness of the importance of this cultural heritage in tourism, and more efforts should be undertaken in this direction. The study also discusses a number of recommendations made by the respondents of interviews, and shows whether these recommendations can actually be carried out in future or not and why. The research finally concludes a highlight of the important role the underwater cultural heritage can play in

tourism in Alexandria, the expected outcome of this role, and the best solutions and recommendations that can be achieved on the ground.

Key Words: Alexandria, salvage, submerged monuments, tour guides.

INTRODUCTION

Alexandria was once the most glorious and superior city of the ancient world. For a long time it represented a symbol of challenge to difficulties and successive struggles. There once stood the great lighthouse of Pharos, the seventh wonder of the ancient world, the edifice of the Museion and the Great Library of Alexandria. Sadly, natural phenomena and repeated unrests caused throughout the times, have greatly affected the monuments of the ancient city; many were destroyed and many more sank under the Mediterranean. The great underwater heritage of Alexandria tells the story of this great city throughout its history as it has witnessed many events and episodes of different eras.

Ancient City of Alexandria

The city of Alexandria was founded under the orders of Alexander the Great in 331 BC. The plot which he chose for this city was located between the coast of Mediterranean in the north and Lake Mareotis in the south, opposite an island which was later known as Pharos. He gave orders also to erect a causeway known as *Hyptasatdion* (seven *stades*) between the coast and the island; thus forming two harbours, the eastern *Portos Magnos* (the Great Harbour) and the western *Eunostos* (Good Return). The great lighthouse of Pharos was raised on the east of the island (fig.1). The city was planned and finished during the reigns of Ptolemies I and II who built the Museion and the Great Library of Alexandria in the district "B" (Brucheum), while the royal palaces were built in district "A" on Cape Lochias (today known as Silselah) (fig.1), as the city was divided then into five main districts A, B, Γ, Δ, and E (Polyzoides, 2014).

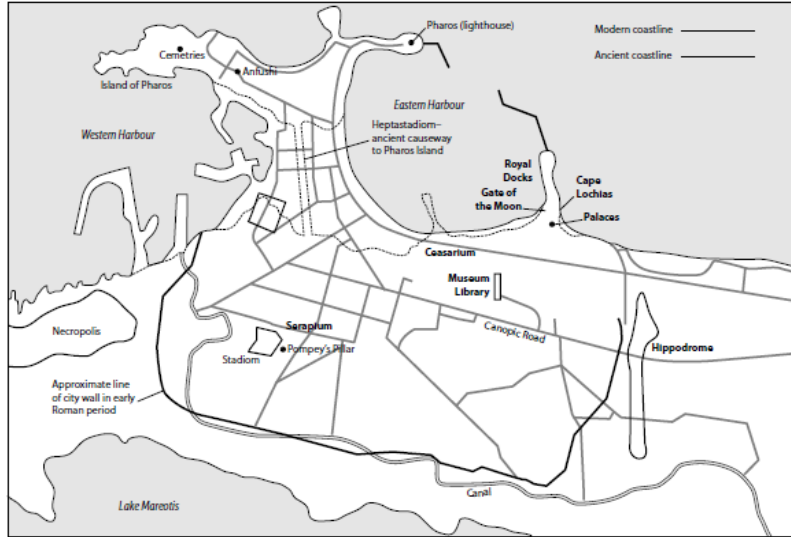


Fig.1 Map of Ancient Alexandria (Polyzoides, 2014).

Definition of Underwater Cultural Heritage

According to International Law Association (ILA) Draft Convention on the Protection of the Underwater Cultural Heritage (1994) Underwater Cultural Heritage "means all traces of human existence including: sites, structures, buildings, artifacts and human remains, together with their archaeological and natural context; and wreck such as vessels, aircraft, other vehicles or any part thereof, its cargo or other contents, together with its archaeological and natural context." According to art.1, par.1 of the UNESCO Convention on "Protection of Underwater Cultural Heritage" in November 2001, "Underwater cultural heritage means all traces of human existence having a cultural, historical or archaeological character which have been partially or totally underwater, periodically or continuously, for at least 100 years such as: sites, structures, buildings, artifacts and human remains, together with their archaeological and natural context; vessels, aircraft, other vehicles or any part thereof, their cargo or other contents, together with their archaeological and natural context; and objects of prehistoric character" (UNESCO, 2001; Rau, 2003; Frigerio, 2013).

History of the discovery of Submerged Monuments in Alexandria

The first attempt was made in 1859 by an engineer in Suez Canal called Larouse, who recorded that the ancient Canopic branch of the Nile at Abu Qir east of Alexandria extended to a distance of 8 km into the bay below seawater. In 1911, Gaston Jondet, the chief engineer of the Department of Ports and Lighthouses, observed some massive structures underwater close to the Fort of Qait Bey (fig.1) during the works of expanding the western harbour of Alexandria, which turned out to be parts of the ancient western harbour. Jondet believed that the harbour had had roots dated to the

Late New Kingdom from the time of king Ramses II or III (Jondet, 1916; Gsell, 1918). Other scholars dated it even earlier to the Old and Middle Kingdoms (El-Fakharany, 1963). Later in 1930s, a British pilot while flying from the British Royal Air force at Abu Qir remarked remains under sea water. He gave his remarks to Prince Omar Tousson who was very fond of antiquities then, and acted immediately with the help of a number of fishermen along with his engineer. They marked remains and columns of ancient buildings. This conducted him to make more effort with the assistance of Breccia and Adriani of The Graeco-roman Museum of Alexandria with the help of divers in early 1933. Their efforts came up with some important discoveries, and a map of archaeological remains under the sea was drawn (Halim, 2000).

For a long time the works underwater was suspended. In 1960s, it was Kamal Abul-Saadat, the diver who resumed the diving and surveying of the submerged monuments under the sea once again. He drew primitive maps indicating locations of antiquities underwater particularly at Qait Bey, Cape Lochias, and Abu Qir Bay (Halim, 2000). He and his crew salvaged many artifacts till his death in 1984. The project was put on hold once again (Morcos, 2000) and resumed by a French-Egyptian Expedition in 1994-1998 under Jean-Yves Empereur and the Centre d'Études Alexandrien (CEAlex) in Alexandria. The expedition undertook survey on the site of Pharos at Qait Bey Vicinity (Halim, 2000). It was the CEAlex who has made the first systematic survey of the underwater archaeology in Egypt since 1994 particularly at the area of Qait Bey. In 1996, a special Department for Underwater Antiquities (DUA) was established in Egypt to be responsible for monitoring and regulating foreign underwater missions in Egypt. Later on, this department undertook missions in archaeological sites underwater. However, the major part was undertaken by foreign expertise, due to the lack of Egyptian training and education in this field (Khalil, 2008).

In fact, promotion of the underwater heritage implies educational programs of different activities which can in turn raise the awareness of the local communities of the importance of this heritage (Frigerio, 2013; Timmermans, 2015). The idea of establishing a centre for maritime and cultural heritage underwater appeared on the scene in 2005. Alexandria University collaborated with different institutions like the University of Southampton, the Nautical Archaeology Society, and others to establish this centre funded by EU Tempus program (Singer, 2011). The centre was officially inaugurated as part of the Faculty of Arts at Alexandria University in 2009, and has provided since then education and training for maritime and underwater cultural heritage (Khalil, 2011).

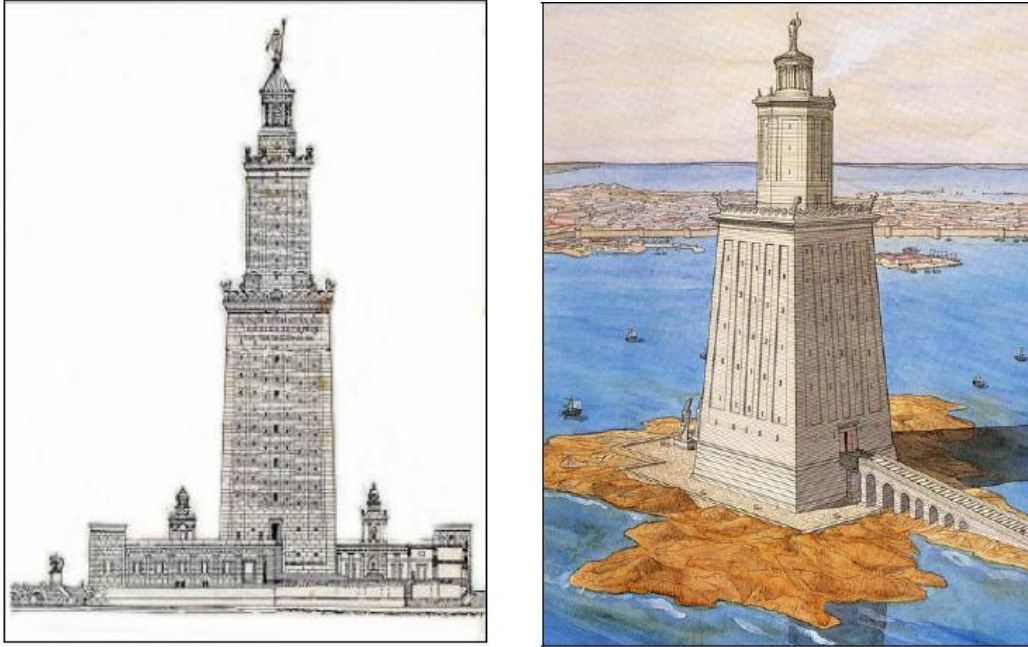


Fig.2 Graphic reconstruction of the lighthouse of Pharos (Dessandier & etal, 2008)

Underwater Cultural heritage sites in Alexandria

Alexandria owns the most important submerged cultural remains worldwide dated back to the successive periods of the history of the city, from Pharaonic period through to Graeco-roman and Islamic eras, with interesting stories and places like that of the lighthouse of Pharos (fig.2), the ancient harbours, the Cleopatra's palace and the Timonium of Mark Antony, which provide potentials of touristic attraction (Kimberly, 2004; Frigerio, 2013). The sites where most of the submerged monuments in Alexandria can be determined are: the vicinity of the Fort of Qait Bey, the eastern harbour and Cape Lochias (Silsileh), and Abu Qir Bay (Aboul Dahab, 2000).

Vicinity of Qait Bey Fort

The district bears the name of the fort of Mameluk Sultan Qait Bey, which was constructed at the eastern tip of the island of Pharos in the fifteenth Century AD (fig.2) (Empereur, 2000). A number of great artifacts and statutes have been discovered nearby, since 1960s such as a red granite statue 7 m long representing a lady wearing a Greek dress with the Egyptian knot of Isis at the chest, and her hair is plaited. This statue was recognized as goddess Isis-Pharia who received a cult on the island of Pharos being a protective deity of the sailors, and dated to the third century BC. (Morcos, 2000). In addition, many red granite blocks of the masonry of the ancient lighthouse of Pharos were also revealed by Kamel Abul Saadat and his crew (Halim, 2000) in addition to columns, capitals, sphinxes and statues were found by Empereur in 1990s, some of them are dated to

Pharaonic Period; like sphinxes of king Sesostris III of the twelfth dynasty. Around the area ship wrecks from fourth century BC to seventh century AD were found including amphorae, lamps, vases and anchors (Empereur, 2000; Empereur & Grimal, 1998).

Eastern Harbor of Alexandria and Cape Lochias (Cape Silsileh)

The causeway *Heptastadion* (7 stadia long) which Alexander the Great had ordered to be erected, divided the seashore of the city, forming two harbours; the eastern and the western (fig.1). The former was the main harbour that extended between the island of Pharos and the *Heptastadion* in the west, and the Cape Lochias in the east (fig.1). At the south-east corner of the harbour was the small inner royal port that served royalty and royal palaces on the Cape Lochias (Morcos, 2000).

Cape Lochias is the place where the temple of Isis-Lochias and the Mausoleum of Cleopatra VII stood in Ptolemaic period. The largest find of this area is a one-piece red granite Egyptian pylon tower; the only pylon found in Alexandria. It is believed that it belonged to the temple of Isis, and now it is displayed in Kom el-Dikka Open-air Museum in Alexandria (Tzalas, 2012; Tzalas, 2015).

Abu Qir Bay

Abu Qir lies at about 22 km east of Alexandria. The ancient site once embraced three settlements from the Graeco-roman period: Canopus, Heraclium (after Herakles) and Menouthis (Morcos, 2000). The underwater of Abu Qir Bay holds submerged monuments dated from Graeco-roman, Byzantine and Islamic periods in addition to the remains of the fleet of Napoleon Bonaparte which sank in the famous naval battle of Abu Qir against the British fleet in 1798. Kamal Abul Saadat marked three locations of the wrecks in 1965. He and a few divers assisted him to salvage some of the ships' belongings from 1966-1977. It was only in 1983 that the French diver Jacques Dumas along with the Marine Museum at Paris obtained the permission to dive and survey the wrecks of the French fleet under the bay of Abu Qir. The French expedition along with the Egyptian Navy defined the location of *l'Orient*, the flagship of napoleon's fleet 8 km away from the shore. Late in the same year, the sites of two other ship wrecks of *le Guerrier* and *L'Artemis* were also determined. Cannons, guns, anchors, buckles, buttons, bottles, silver coins and other artifacts were salvaged. They were first displayed in the Fort of Abu Qir (Morcos, 2000), and now some of the pieces are exhibited in the National Museum, and the others in the Antiquities Museum of Bibliotheca Alexandrina in Alexandria.

Threats of the Underwater Cultural Heritage Sites in Alexandria

In general, underwater cultural heritage suffers many difficulties of two main sources: natural agents and human activities. The protection of this type of legacy represents a great challenge. Conserving underwater cultural heritage aims to reduce the deterioration of this treasure by limiting all kinds of threats and thus ensure their study and enjoyment for generations to come

(Frigerio, 2013). The Mediterranean States have adopted laws and legalizations to protect underwater cultural heritage from pollution and dangerous activities like oil spills since 1970 (Négri, 2000). In Egypt, there is no national legalization specified for underwater archaeological and cultural heritage. Yet, it is regulated by the Egyptian Law on the Protection of Antiquities, or the sites can be protected under the Law on Environment and Law on Natural Protectorates by declaring these sites natural protectorates (Frigerio, 2013; Prott, 2000).

In Alexandria, the environmental problems in general and marine one in particular have increased greatly due to the growth of population density, unplanned engineering works, and industrial developments (fig.3). Therefore, the coast is threatened by human pressure, urban acceleration and land pollution in addition to the sanitation problem, besides natural agents including erosion, destruction and exhaustion of resources, the rise of the sea level (Abul Dahab, 2000), wave propagation, and sedimentation (Aelbrecht, 2000). The Alexandrian coast annually receives a huge amount of waste water of industrial and agricultural waste, and sewage which have caused sea pollution that may cause loss of artifact remains, besides being dangerous for divers in some areas (Abul Dahab, 2000).

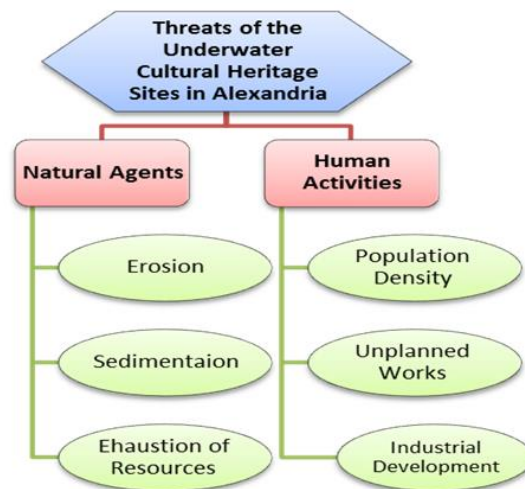


Fig. 3 Natural agents and human activities threat the underwater cultural heritage in Alexandria

Submerged monuments and Tour guiding in Alexandria

All the above mentioned details concerning the ancient history of the city of Alexandria and its submerged monuments indicate the great potentials of the underwater cultural heritage as a tourist attraction of Alexandria. However, these potentials still up today have not been exploited optimally. In reality, tourists who visit Alexandria know about its submerged monuments through two ways; first, the exhibited artifacts in archaeological museums of Alexandria, as the salvaged pieces are distributed in different museums; some pieces are to be found in the Open-Air Museum of Kom el-Dikka, others are displayed in the Qait Bey Fort Museum, Museum of Antiquities of Bibliotheca Alexandrina, and the National Museum of Alexandria; Second, by diving. The aim of

the research is to shed light on the type and amount of knowledge the tour guides in Alexandria have concerning this heritage, and their vision on how to develop its potentials in tourism, in addition to the vision of the personnel working in the Department of Underwater Antiquities (DUA) concerning the same topic. The methodology used is "case study", and data is collected using "semi-structured interviews" addressed to 15 tour guides and 5 personnel of the DUA.

The results of the interviews confirm that there is a considerable interest among the tour guides in the area of the study. All the knowledge they have about the submerged monuments is historical and archaeological, and their awareness of its importance ranges from very good to excellent. They all agree that interpreting the submerged monuments does not take sufficient time during the tours, or in museums; especially that most of the tourist programs do not include them, and most of the time tour guides make this effort by themselves on occasions in historical sites or in museums.

Concerning the questions asked by the tourists about the submerged monuments in Alexandria, the majority focus on the location of the sites of the submerged monuments, how they have been salvaged; less asked what has caused these monuments to end up under seawater, why there is no special underwater museum for this underwater cultural heritage and when it will be erected.

All the interviewed tour guides agree that all obstacles that confront more exploitation of this type of tourist attraction and constructing an underwater museum are only administrative and funding; thus ignoring the existence of other human and natural constraints as discussed above. In addition, they all agree that there are other problems in this concern related to the already salvaged pieces displayed in museums of Alexandria; due to lack of the knowledge and updated information among tour guides related to the discovery of the submerged monuments in Alexandria, lack of sufficient promotion of this type of monuments, besides not being distinctly exhibited in museums. For this matter, the interviewed tour guides recommend conducting training programs and holding more workshops for tour guides to provide them with the necessary information and practices in this field. This can be undertaken by different authorities like Ministry of Tourism, Ministry of Antiquities, and the Syndicate of the Tour Guides in Alexandria.

Concerning the diving to enjoy viewing the monuments in its context, currently there are only two centers for diving made for this purpose in Alexandria. According to the answers of the tour guides, there are problems encountered in the development of tourism in this sector as well as the centers which are not properly established for tourists with a lack of qualified tour guides who can interpret the sites historically and archaeologically to the diving tourists at these centers. There are other administrative problems concerning the long and slow procedures pursued to extract permissions for these centers and consequently for tourists to dive, in addition to the pollution and non-purity of the underwater which reduce the enjoyment of a full vision of the submerged monuments *in situ*.

Being aware of the funding and administrative problems related to the construction of the underwater museum, the tour guides in Alexandria yield interesting substitutes; first, use multimedia shows in the vicinity of one of the underwater cultural sites like the Fort of Qait Bey for tourist propaganda of the submerged monuments underwater showing how some of them were

salvaged. Second, collect all the salvaged pieces to be exhibited in Maritime Museum which is under construction; and in this way it will be easy for tour guides to focus on telling the story of the submerged monuments in Alexandria and interpreting them to tourists. Third, draw a professional map of all underwater cultural and archeological sites and submerged monuments of Alexandria and place it in the archaeological museums of Alexandria.

To evaluate the recommendations made by tour guides, they had to be addressed to the personnel working in the Department for Underwater Antiquities (DUA). Most of the suggestions were appreciated by the personnel, who confirmed the necessity of constructing the underwater museum and that Ministry of Antiquities is seeking to implement this huge project and the funding has been allocated for this purpose. On the other hand, all personnel agree that there is another undergoing project to convert the vicinity of the Fort of Qait Bey (the ancient site of lighthouse of Pharos (fig.1)) into an underwater park provided with a diving center, lecture halls, different multimedia, different shows of all that is related to the submerged monuments of Alexandria and how they are recovered, and underwater live video tours. They add that today, tourists who are interested in diving to sightsee the submerged monuments *in situ* can dive at diving centers owned by individuals under the supervision of the DUA, and that they can dive in the three sites of Qait Bey, the eastern harbour, and Abu Qir Bay. Up till now there is no studied plan or project of a virtual museum of the underwater cultural heritage in Alexandria. They conclude that tour guides can play a great role in future in the field of the underwater cultural heritage of Alexandria, especially when the two mentioned projects (the underwater museum and the underwater park) are finished.

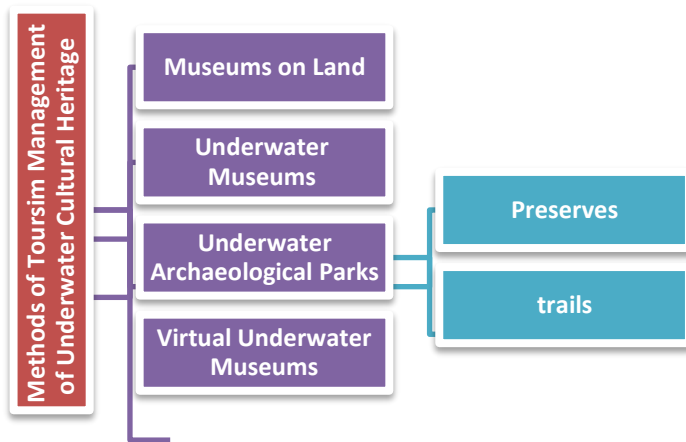


Fig. 4 Methods of tourism management of underwater cultural heritage

Toursim Management of Underwater Cultural Heritage

There are different methods of management of the underwater cultural heritage in general and tourism in particular. The methods can be chosen and used according to the nature of the underwater cultural sites; in each case one method can be more appropriate than the other, or two or more methods can be used altogether. The tourism methods are (fig.4):

Museums on Land

They are museums that exhibit and store the recovered archaeological objects and shipwrecks and allow people enjoy learning about the sunken heritage. However, the costs of conserving the pieces in these museums can be extremely high; it requires well-equipped laboratories especially for long-term conservation process and qualified conservators This method can be used in two main conditions; 1. When it is difficult to conserve underwater heritage *in situ* due to risks of loss, 2. when recovery of the site is important for scientific studies. All over the world, there are good examples of this type of museums; such as Wasa Museum in Sweden, and the National Museum of Underwater Archaeology at Murcia in Spain, (Frigerio, 2013; UNESCO, 2001).

Underwater Museums

Underwater museum is a construction that can create a connection between land and the underwater cultural site, which provides the visitors an opportunity to directly enjoy the submerged heritage *in situ* but without being wet. However, they are not common due to many constraints. First, the site should be close to the coast, stable and solid enough to resist the destructive waves and currents. Therefore, sunken cities and ancient structures of harbours are more suitable for this type of museums. Second, such construction can represent in some cases a risk of site destruction due to the use of heavy tools and dangerous materials, and hence measures should be provided to ensure the required protection of the site. Third, the guarantee of safety of the visitors and avoiding collapses should be considered. Fourth, such project implies extremely high costs (Frigerio, 2013). The first underwater museum in the world "Baiheliang Underwater Museum" was inaugurated in china in 2009 on an area of 12 million m² (UNESCO, 2001; Frigerio, 2013; Khakzad, 2014).

The preservation *in situ* comes as the first choice as there is a fact that after a certain period the underwater artifact finds a sort of equilibrium with the maritime environment and not threatened by degradation; besides, the authenticity of the submerged monuments is best enjoyed by tourists when it is *in situ* as a particularity of this heritage (Frigerio, 2013).

Underwater Museum in Alexandria

Constructing an underwater museum in Alexandria has become essential and is actually an opportunity to develop the city and provide it with a new tourist attraction that can be a turning point for the development of the whole city. The first proposal for constructing this museum was made in 1997 by the Egyptian Department for Underwater Antiquities (DUA) and the UNESCO. The design was made by the architect Jacques Rougerie and feasibility studies started in 2009 (Frigerio, 2013)

The location has been proposed for the construction of the museum at the area of the eastern harbour in front of the modern Bibliotheca Alexandrina. The advantages of this location can be summarized in the guarantee that the structure will not be made above historical remains in addition to the natural conformation in the area that make it protected from storms and waves (Frigerio, 2013). Moreover, this location is characterized by its ancient history being once the approach from the great eastern harbour and near the district of the Ptolemaic royal palaces facing the lighthouse of Pharos. Part of the museum is intended to be open to the sky, and the rest of the museum building descends gradually under the water of the Mediterranean (fig.5) (Hafiz, 2011).

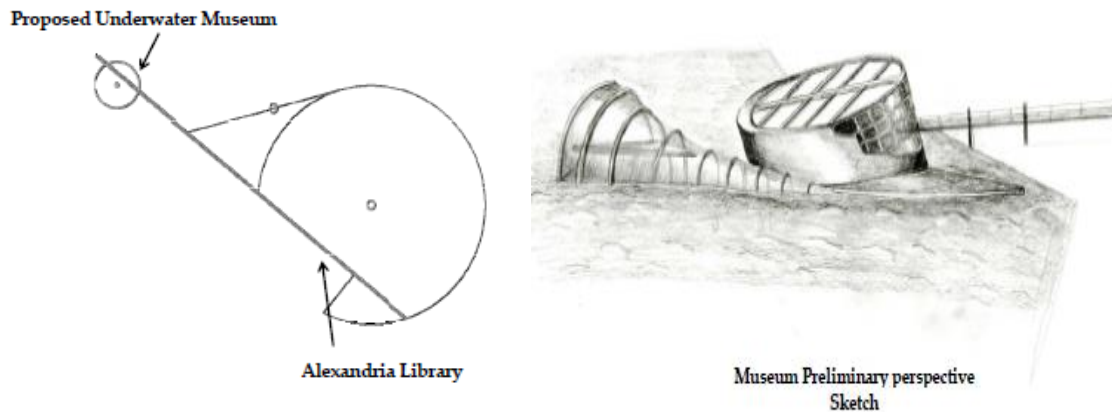


Fig.5 Proposed underwater museum near Bibliotheca Alexandrian (Hafiz, 2011)

There are a number of obstacles and barriers to the project:

- 1- High costs which can be up to \$140 million for the development of the planned museum.
- 2- The structural organization may cause intrusive effects on the disposition of the remains of artifacts.
- 3- The risk of damaging the site during the construction of the museum.
- 4- Pollution that causes poor visibility and impedes full enjoyment.

- 5- Exhibited artifacts would be brought from different underwater locations cause loss of authenticity.
- 6- The safety and stability of the submerged structure due to the strong underwater currents in the area (Abul Dahab, 2000).

Underwater Archaeological Park

It is another more practical method used to exhibit underwater cultural heritage *in situ*. It can be divided into two types: underwater archaeological preserves, in which access is controlled by different procedures like allowing a visit only when accompanied by a guide, or obtaining license, and underwater archaeological trails in which the public access is totally open and free of charge. In general, these parks are more practical as they make archaeological sites accessible to the divers; it provides knowledge of the underwater heritage by waterproof guides that offer visitors information and map of the sites, and installing buoys underwater; besides being officially recognized by the authorities (Scott-Ireton, 2005; Frigerio, 2013).

Such underwater parks are to be found in different places all over the world; in seas, rivers and lakes. Among the most famous is that of Baia in Italy, and the Florida's Underwater Archaeological Preserves with eleven sites of shipwrecks. Devices of mooring buoys are used at the sites for protection and safeguarding, and guiding divers to the locations of the sites (Scott-Ireton, 2005; UNESCO, 2001; Frigerio, 2013).

There are special criteria to organize an underwater cultural heritage park; first, the site should be easily accessed; second, environmental conditions should be suitable like clear warm and shallow water; third, being surrounded by diverse maritime ecosystems; fourth, the well state of preservation of the submerged site. It should be taken into consideration that not all underwater cultural heritage sites can be used as underwater parks; the sites should be able to sustain the increase in the number of visitors as well (Frigerio, 2013).

Virtual Underwater Museum

It is also called "electronic museum, digital museum, online museum, hypermedia museum, meta-museum, web museum, and cyberspace museum" (Varinlioğlu, 2011). Virtual museum is simply defined as "a collection of digitally recorded images, sound files, text documents, and other data of historical, scientific, or cultural interest that are accessed through electronic media" (Schweibenz, 1998). There is always a challenge to achieve a balance between the development of the underwater cultural heritage brought by tourism and its protection. Recently, some underwater parks have established a virtual tour through the official web-sites, provided with videos and multimedia. The multimedia used can be Virtual 3D reconstructions (which is a rebuilding of to its form in the past in a three dimension space) (Georgopoulos, 2014), augmented reality or mixed reality (which is reality enhanced by superimposing additional graphics) (LaValle,

2017), ROV (Remotely Operated Vehicles), interactive mobile applications, and real time videos that are also considered as a useful alternative for the visualization in the cases of deep sites, unclear water or heritage sites being located away from the coast. The multimedia can even help increase the attraction of an already existing underwater parks and museums (Varinliglu, 2016; Frigerio, 2013).

CONCLUSIONS

Ancient Alexandria, the great capital of Graeco-roman Egypt that had been founded under the orders of Alexander the Great stood up various historical unrests throughout its history. Its steadfastness has not stopped at this point, but extended to include tidal waves and natural constraints that have caused the erosion of its coast and the sinking of many buildings of this beautiful ancient city. Among the most important submerged monuments today found under the Mediterranean Sea in Alexandria are the remains of the great lighthouse of Pharos, the royal palaces of the Ptolemaic kings and ancient Greek and Roman settlements at Abu Qir, in addition to a great number of statues, stelae, inscribed blocks, shipwrecks and their contents, vessels, anchors and ...etc. All this makes Alexandria the most owning underwater cultural heritage city all over the world. In other words, Alexandria with its underwater cultural heritage owns great and distinctive tourist attraction that can be a turning point not only for the development of tourism in the city, but it can allow it to take an important position on the global tourism map, particularly that discoveries of such underwater heritage has started since the beginning of the twentieth century and excavations are still undergoing up to this moment in many sites underwater.

Despite that, the Alexandrian underwater cultural heritage has not been exploited optimally in tourism. Today, tourist can enjoy viewing this heritage through two methods; first in museums of Alexandria where many salvaged pieces are exhibited (Open-Air Museum of Kom el-Dikka, Qait Bey Fort Museum, Museum of Antiquities of Bibliotheca Alexandrina, and the National Museum of Alexandria); second, by diving through individually owned diving centres in threes underwater cultural heritage sites, which are the vicinity of the Fort of Qait Bey where remains of the ancient lighthouse can be found, the ancient eastern harbour where remains of the royal Ptolemaic palaces and buildings can be enjoyed, and Abu Qir Bay where the fleet of Napoleon Bonaparte sank and remains of ancient settlements can be seen.

The results of the study indicate the good knowledge and high awareness of the tour guides of the importance of the underwater cultural heritage of Alexandria on the three levels of history, archaeology and consequently tourism.

When applying the tourism management methods of the underwater cultural heritage in Alexandria, it is found that:

- 1- Museums on land, is already applied in Alexandria, however the artifacts are exhibited in different museums in Alexandria, and according the vision of tour guides it better to be exhibited in one museum.

- 2- Underwater museum is a necessity in Alexandria due to the huge historical heritage underwater. Despite the obstacles confronting the erection of such great project, it is already planned and funding is allocated for it.
- 3- Underwater archaeological park is another important project, very recommended by tour guides especially if provided with multimedia and tourist services. The project is still under study and highly recommended by the personnel of DUA as well.
- 4- Virtual underwater museum is the least costing and most executable method which can be a great promotion along with the other two methods of "underwater museum" and "underwater archaeological park". Moreover, it is highly recommended by the tour guides particularly because it can be a good solution and substitute until the study and the implementation of the two previously mentioned projects have been completed.

To sum up, the sector of underwater cultural heritage in Alexandria owns great potentials for tourism from the tour guides' point of view. In future, tour guiding will play a great role in this concern, especially with the establishment of the underwater museum and underwater archaeological park. Many training programs and workshops should be planned and conducted in order to provide the tour guides with the required information and practices related to the underwater cultural heritage of Alexandria.

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