Dead Sea tourism challenges in Jordan

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Received: Feb. 05, 2018 Accepted: March 11, 2018

ABSTRACT This study has been undertaken to investigate the world's tourism industry. This industry has evolved and grown over thousands of years to reach its current status. It has been observed that, as a result of various interactions between humans and their surroundings and environment, the tourism industry's challenge has evolved through several stages. It is a known fact that along with Jerusalem, the Dead Sea can be classified among the common popular visited places in Israel, as well as one of the zenith sightseer destinations for tourists in Jordan, drawing both domestic and foreign visitors in search of the mineral-rich mud's purported therapeutic benefits. In the present research, the Dead Sea tourism challenge in Jordan has been examined by considering the history of Jordan and the Dead Sea in particular. It is of paramount importance to explain that religions have long been considered important drivers of tourism growth in Jordan, particularly in the Dead Sea region. Its allure is discriminated against and heightened by its convenience to additional worth-mentioning locations, which include the Jewish fortress at Masada, as well as the city of Jericho and Qumran, where the Dead Sea Scrolls were exposed and discovered. It will be important to state that Madaba, Petra, and also Al-Karak are important on the Jordanian side of the Dead Sea. This research study's main objective is to present the issues concerning tourism in the Dead Sea region. Research study findings, estimates of Dead Sea water level changes, and an analysis of changing visitor trends serve as the study's underpinnings. It examines the impact of this phenomenon on the travel and tourism sectors.

KEY WORDS: Tourism industry, Jordan, Dead Sea, Challenge.

1. Introduction

One of the most well-liked tourist spots is the Dead Sea situated in Jordan as well as in Israel. The depth of Dead Sea is 306 m; it is one of the deepest hyper-saline lakes in the world. A number of scientific researches support quite a lot of therapies in practise at the Dead Sea which makes it suitable for the Medical tourism industry. Earth's lowest elevation on land, its surface and coastlines are 427 meters below sea level (Saleh et al.), Natural elements are crucial therapeutic components used, including weather, sunlight, water, air, and black mud. It has been observed that the Dead Sea is a singular tourist destination on a global scale due to a highly proportionate aspects number of elements, including the water level at a depth of 430 m below sea level (data is from year 2015) (Wendt), the average salinity of 26%, and the hot springs and many healing salts situated there. Its appeal is boosted by its close proximity to other noteworthy locations. It dropped 22 m to 418 m below sea level in 2006, attaining a decrease rate of 1 m per year from a height of 395 m below sea level in 1970. On the Jordanian side of the Dead Sea, Petra, Madaba, and Al-Karak are among the Jewish fortresses in this area, along with Masada, Jericho, and Qumran, where the Dead Sea Scrolls were found (Al Haija). The establishment of medical tourism and wellness resorts is ideal for the region's salinity and environment(Alomari and Al Omari). The unusual combination present allows for the rehabilitation and restoration of physiological functions. Due to the diverting of incoming water, the Dead Sea has been dramatically diminishing in recent decades. Although evaporation slows as surface area declines and salinity rises, the Dead Sea may never completely disappear but it is anticipated that it may significantly alter its characteristics.

The extraction of therapeutic minerals are providing the boost to the economy and the growth of medical tourism, which depends on salts from its waters for the chemical industry (Alrawadieh). However, due to the farming and agricultural practices in the region and as well as the urban usage of the waters of the River Jordan, which flow into the Dead Sea, it has been observed that the lake's water level has consistently decreased over the past century. Numerous political and economic issues have resulted from this. The issues that still need to be resolved include the Red Sea and also the Dead Sea Canal, the divide of Jordan's water resources, the preservation of the Dead Sea's unique reservoir, and the potential to impede the growth of tourism in the area. This research study's main objective is to present these issues. Research study findings, estimates of Dead Sea water level changes, and an analysis of changing visitor trends serve as the study's underpinnings. It analyses the impact of this phenomenon on the travel and tourism sectors.

The capacity of neighbouring beaches will be exceeded in places where the majority of well-liked tourist resorts are located and at present flow of regional tourism is intense. A rise in spending on infrastructure development for seaside tourism is also apparent. The expected decline in sea level would result in further tourism-related infrastructure improvements and modifications, restricted beach access for visitors, and more flooding. The expected decline in water level will likely to result in an ecological catastrophe, dramatic changes, and the growth of the tourism infrastructure. It will also make the shoreline less accessible to tourists and increase travel costs.

2. Tourism in Dead Sea region and functions

The Dead Sea is a famous lake that is incredibly rare and has many valuable natural resources. This has attracted multiple industries in the past 50 years. As a result of quick and unsustainable development the Dead Sea is shrinking by more than 3 feet per year, which is causing a great deal and additional issues for the local population. The lowest place on Earth is at the Dead Sea's surface. The planet's lowest point is currently 420 m (1,380 ft) below sea level, which indicates that it is adjusted annually (Gavrieli, I., A. Bein). A group of the minerals that are extracted have therapeutic uses, especially when they are added to mud baths and mineral springs. While these pharmaceuticals are frequently used in spas and other Dead Sea tourist attractions, they are also distributed to customers all over the world. The amount of salt that settles to the bottom of the Dead Sea brine is less than what the negative water balance would imply. Due of their salinity and limited volume, influx has a very minimal impact on the salt balance. The Dead Sea Lake expanded into the shallow southern basin at the turn of the 20th century, when the water level remained rather steady.

However, because of the increased extraction and degradation of the Dead Sea, these sectors have a detrimental effect on local tourism. Due to the sea losing around one-third of its surface area, many regions have become too risky to conduct business in due to the growth of enormous sinkholes. Of course, the retreating shoreline also has a direct influence on tourism. The major tourist locations and places currently make available visitors with the conveyance like buses to take them from their hotels to the Dead Sea, which has shifted several miles out because they are unable or unwilling to move hotels or spas closer to a continuously receding shoreline. Therefore, it has been pragmatic that since the tourism sector loses money and monetary deficit is an outcome today, many people lost their jobs, and over all the revenue made from minerals taken by huge businesses is syphoned off the local economy, this adverse impact on tourism can then have an impact on the local economy.

2.1 Data and Sources of Data

Secondary data has been gathered for this investigation. The data was analysed from numerous travel websites and scholarly articles. The last two decades have been the era of data collection includes the Setting of the Dead Sea in Water.

2.2 Hypothetical framework

Any tourism location must recognize the importance of accommodations and catering as fundamental concerns. Hotels are frequently regarded as the primary providers of tourist lodging in this country, but in industrialized nations, they frequently account for only one-third of total lodging used by European tourists. According to the World Tourism Organization(MEDUSA), there were 11.3 million hotels, motel, and other types of international tourist accommodations rooms available globally in 1991, and between 1987 and 1991, the global room inventory grew at an average annual rate of 2.5 percent. However, despite the fact that there are more rooms than ever, occupancy rates and hotel prices have been declining (compared to inflationary trends).

3. Theoretical framework and the finding analysis

The Dead Sea's surface temperature varies both spatially and temporally, and a study examined the origins of these oscillations in terms of weather conditions. The spatial changes in the diurnal cycle during the various seasons have received particular attention. The researchers created a four-step process for creating time series using sequences of individual MSG photos and in situ measurements. The time series includes wind speed, solar radiation, the average and standard deviation of SST, as well as the deviation of the average of several pixels (northern, central, and southern) (Nehorai et al.).

Jordan needs proper laws with a focus on financial incentives (such as tax exemptions) that can be utilized to promote ecotourism, urban rehabilitation, and the preservation of historical centres like the Dead Sea region. There is a need to establish defined intervention requirements, where the beautifying of urban landscape facades, the building of museums, and resident involvement are only a few examples of how to revitalize old centers, along with the availability of suitable tools and participation opportunities (Almakhadmah).

Cosmos Impact Factor 4.236

As the region's population is expected to grow further, reaching more than 300 million by 2050, the development of tourist leisure centres in the Dead Sea's South Basin necessitates comprehensive planning and execution approaches(Prideaux, Bruce & Moscardo, G. & Laws). As a result, there will be greater availability of drinkable water (from natural sources, desalination, or imports) to meet at least the minimum amount judged necessary for basic human needs. Domestic sewage must be properly treated according to environmental regulations, regardless of where it goes or whether it will be recycled. In light of this, every cubic metre (m3) allotted for residential and commercial consumption will be collected, treated, and made available for reuse (mainly in irrigation and environmental restoration). Each m3 allotted for home use provides between 0.6 and 0.65 m3 of treated (recycled) water thanks to modern recycling technologies(C. Klein and A. Flohn). Because they are based on 60 years of actual data and take into account the predicted slowing of population increase due to economic development, the population forecasts are reasonable. The area is a well-liked location for evaluating potential treatments because of its climate and low elevation:(Obaid El-Raodan)

- I. Treatment that takes advantage of the local climate, including temperature, humidity, sunshine, barometric pressure, and specific atmospheric components(Alafi).
- II. A treatment called heliotherapy takes advantage of the biological effects of solar light.
- III. A treatment called thalassotherapy that makes use of Dead Sea water bathing.

4. Conclusion and Discussion:

It can be concluded that there is a need of an enhancement in tourism infrastructure which includes the tourist zones can be obtained by implementing policies for the historical and natural landscape. The rehabilitation of a few carefully chosen historic sites must be primarily focused on meeting visitor demands. It is ne cessary to increase the private sector's involvement in tourism projects. To address the challenges of tourism in the Dead Sea region, cultural and economic problems that typically entail some level of incompatibility between people, societies, and local authorities must be resolved.

The sustainable appearance and manifestation of the water basin which feeds the Dead sea and its neighborhood including Israel, Jordan, and the Palestinian Authority, the sustainable supply of natural water may soon fall below 100 cubic metres (m3) per person per year(Gavrieli, I., A. Bein). This was brought on by upstream diversions, which over time deprived the Dead Sea of more than 90% of its historical and past inflow which caused a steady fall in its water level with negative impacts on the local ecosystem and infrastructure.

- 1) The study about water balance is very important and due to two main considerations, it is very difficult and complicated to accurately determine the water balance of hypersaline lakes in common and the Dead Sea in particular than it is for other comparable freshwater waters.
- 2) Owing to reduced water movement and evaporation rates, it is very difficult to calculate approximately the amount of evaporated water from Dead Sea. Because dissolved salts lower the free energy of the water molecules, evaporation from a brine surface, for instance, in the Dead Sea, is lower than evaporation from a freshwater surface. As a result, the saturation of vapour pressure above the brine can be observed.
- 3) The crisis that requires attention is the one involving the calculation of the net water deficit. Since the salt building effectively elevates the lake's floor, the salt precipitation from a hypersaline, chemically saturated lake does not adequately reflect the change in the lake's volume.
- 4) The energy budget method has been analysed through various studies, these researches are regarded as the most preferred method for long-term monitoring, it is used to address the long-term evaporation rate and water balance of the Dead Sea.

Table 1: The major Challenges for the Tourism in Dead Sea Region.

Focus of Attention	Positive aspect	Negative aspect
Accommodation	-20%	+20%
Medical Tourism	-40%	+40%
Religious Visit	-25-30%	+25-30%
Connectivity	-20-25%	+20-25%

The table displays the important issues over the previous two decades that have experienced a sharp decline and bad trend in conjunction with pressing human-related difficulties. The abundance of year-round lodging options on the lake's coast in Israel and Jordan demonstrates the widespread nature of the Dead Sea

region's tourism phenomenon. Thousands of beds are available in a variety of spa centers for the tourists and wellness hotels (as the health support centers), hospitals, medical centers, guesthouses, hostels, many furnished apartments, independent houses for residential purposes, and vacation/holiday cabins. Jordan's national economy depends heavily on tourism. It is also the second-highest producer of foreign exchange and the second-largest employer in the private sector.

However, the studies along with the challenges facing the tourism industry have revealed that for tourism to contribute to regional development, the participation of sectors in the market has a very important role to play, and how they must be organized and interact to achieve common goals in relation to the management of natural and cultural environments is of critical importance. The common goals for Jordan's tourism development include, among other things, improving local service standards, broadening tourist attractions, improving the competitiveness and effectiveness of tourism services and products, protecting and preserving the cultural and natural environment, and marketing destination. As a result, much work has been planned through various approaches, particularly in the research field, for the initial development of a geo-park network. The process of developing the tourism business in Jordan's historic towns is hampered by the inevitable socio-cultural conflict between the tourism sector and the local populace. This type of work generally emphasizes and recommends the implementation steps clearly through the description and communication, with an estimation and evaluation of the anticipated timeline and timeframe, the potential partner institutions will be inclined towards the regional involvement, and also the chances for realization.

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