

Article

The Brugada of Egyptian Coastal Heritage Cities

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Abstract:

Brugada the unusual word in the world of architectural heritage conservation, used here to express the slow death of heritage cities without having Symptoms of a certain disease appearing in the city itself, this word highly known in the medical world especially in cardiological studies when the patient having a slow death and he /she appears normal in all aspects, this syndrome expected to be happened to four of major Egyptian cities due to climate change consequences, those cities are Alexandria, Port said, Damietta and Rosetta, those cities formulate the most of Egyptian cities which located along the Mediterranean coast, the cities include spacious heritage sites suffer from the climate impacts, as due to the global warming Mediterranean sea started to get affected so it have high level of water which hits badly those cites, also what mostly make the expectation of this slow death as two cities have lower level than the surroundings which make them the Nile inflow, this why the scenario get worse at Damietta and Rosetta as both have sea and Nile pour into their lands together for their unique locations in between sea and river Nile, both cites appeared in scenario of Delta drowned and no solution appeared yet, from this point the research question appeared; do the coastal heritage need to repeat the Nubian monument solution to relocate or facing the Brugada of Egyptian heritage, this research follow the theoritical research method, the expected final outcome highlight the strategy which might be followed to solve the research problem of Coastal heritage Brugada and its related risk preparedness.

Keywords: Brugada; climate change; coastal heritage cities; sea level rise; Delta death; risk plan

Coastal topography and landforms greatly affect susceptibility. Flat geography could not be better in resistance, many regions usually declared at risk of severe land inundation, coastal cities in the coast face much more hazards than the downtown ones, whereas inland areas are less affected despite a 100-year sea level event. The River Delta, are particularly affected by waterways as usually it has lower land levels which make it vulnerable to drowned risk , this delta include for heritage cities facing this hazards coming from the climate change impact due to its vulnaribility.

Delta death

The cultural heritage is at danger from the effects of climate change and natural calamities. It is difficult for traditional approaches to take into account the many consequences that are imposed on the various types of heritage, and they frequently fail to take into consideration the indirect socioeconomic implications that are associated with these cultural sites.

Climate change affects many heritage sites. These issues become more problematic in coastal or seaside locations when water levels and high waves create erosion. Only an active process to adjust to sea-related changes to the heritage property can solve such problems. This adaptation should be flexible and not strict owing to the uniqueness of each heritage site, but after a given time, it may not be useful and full relocation may be expected. (see figure 1) [2].

The amount of arable land that has been developed around Alexandria from the 1980s to 2021 is shown by the two Landsat photos that are shown below. Urban centers are drab, whereas agricultural regions are verdant. While metropolitan areas grew by 11% between 1987 and 2019, the quantity of land around Alexandria dedicated to agricultural decreased by 11%, according to one analysis using Landsat images. Images from the region between the Nile's Rosetta and Damietta branches illustrate how urbanization is encroaching on farmland in the vicinity of Tanta and El Mahalla El Kubra

Results and Discussion

With the ongoing urban activities which declared in the four cities a lot of pressure will be happened, and the water lakes will increase, also the sea level will rise more, from the previous literature the expected solution generated from reversing the action which may cause the Brugada, this can be summarized to formulate major strategic steps as outline of the solution as follows;

- Reduce the gas emission which caused the global warming
- Decrease the urban pressure
- Use the engineering solutions to save the shoreline may be by Putting the ugly concrete blocks
- Develop the agricultural activities to the one suit salty soil to save the socioeconomic aspects
- Encourage studies to measure the deterioration range
- Prepare the risk scenario and the time horizon vision
- Document the heritage
- Transfer the heritage as Nubia

Conclusions

In conclusion, Mediterranean coast cultural heritage monuments are vulnerable to climate change impacts including coastal erosion and flooding. The study emphasizes the significance of utilizing all scenarios while dealing with these huge values, in the future research climate models for monitoring and managing cultural heritage assets should be performed and the literature also shall be enriched by urban growth comparative analysis of the four cities through wide timeline. New techniques are crucial for scientific research, development planning, and early warning systems for climate change impacts, including extreme weather and storm surges, supporting cultural heritage management decision-making. Encourage research and development in this field to better understand and manage the effects of climate change on cultural heritage sites, providing solutions, time horizon scenarios, and policies to conserve this heritage in situ or being prepared for the relocation, this conceptual research raised the problem and reflected to the medical slow death of humans without being aware of their cases as no one can felt their death, that what called heritage Brugada which we want to avoid, even if we will repeat the relocation worst case scenario.